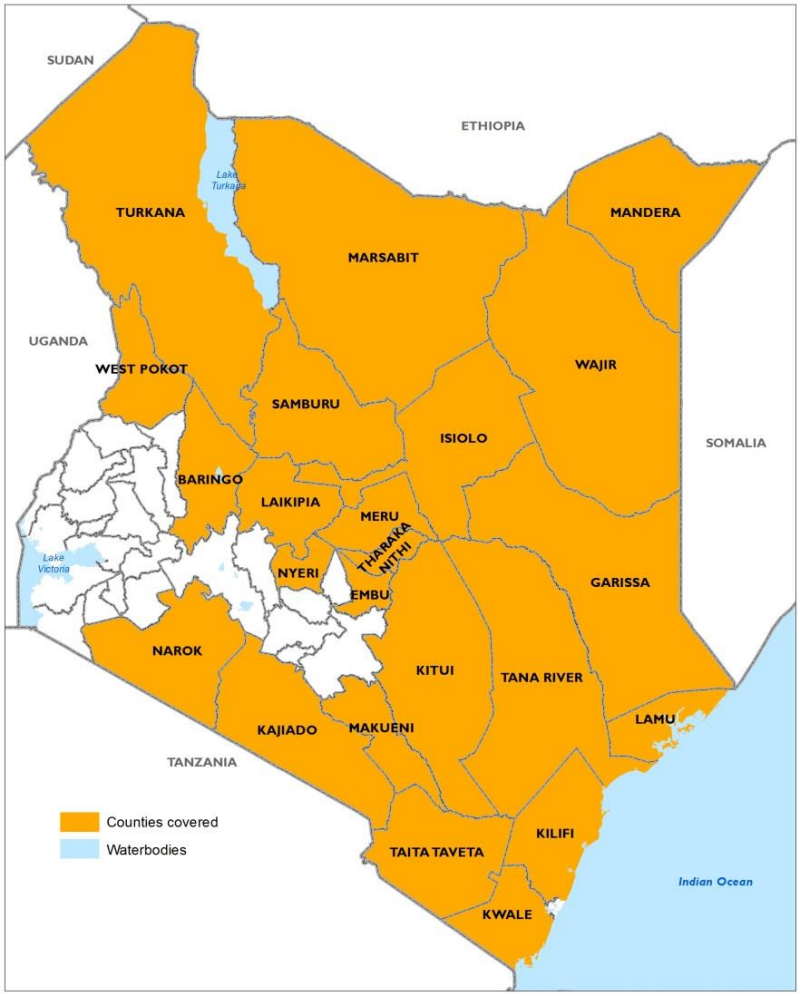
Government of Kenya

THE 2019 LONG RAINS SEASON ASSESSMENT REPORT

Kenya Food Security Steering Group (KFSSG)



Collaborative report of the Kenya Food Security Steering Group (KFSSG): Ministries of Devolution and ASALs; Agriculture, Livestock and Fisheries; Water and Irrigation; Health; and Education, Science and Technology; Regional Pastoral Livelihoods Resilience Project (RPLRP); the National Drought Management Authority (NDMA), WFP, FEWS NET, UNICEF, World Vision, ACF, and Arid and Semi-Arid Lands (ASAL) County Steering Groups (CSGs): with financial support from the Government of Kenya (NDMA), WFP, UNICEF and partners.

August 2019

Contents

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
FEWSNET	Famine Early Warning System Network
FMD	Foot and Mouth Disease
FNSA	Food and Nutrition Security Assessment
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

I. Introduction

The Food and Nutrition Security Assessment (FNSA) is a multi-agency, multi-sectoral exercise led by the government of Kenya, and is conducted in 23 arid and semi-arid Counties. Given the bimodal rainfall pattern in Kenya, and the importance of rainfall to food security, the assessments are conducted bi-annually after every season: the short rains (October-December) and the long rains (March-May). The 2019 Long Rains Assessment was conducted between 7th and 20th July 2019 by the Kenya Food Security Steering Group (KFSSG) in collaboration with the County Steering Groups (CSGs). The KFSSG is a multi-agency body comprised of government departments, UN agencies and NGOs concerned with food and nutrition security and is chaired by the National Drought Management Authority (NDMA) and co-chaired by the World Food Programme.

II. Objective

The overall objective of the assessment was to determine the extent and impact of the 2019 long rains on food and nutrition security in 23 ASAL counties, considering the cumulative effects of previous seasons and other shocks and hazards which affect food security.

III. Methodology

The analysis focused on acute food insecurity, although chronic issues with a direct impact on acute food insecurity were also considered. The assessment was based on the four pillars of food security – food availability, access, utilization and stability – and looked at the contributing factors and outcomes and the effects on each sector. The assessment also identified interventions to address the issues arising in each sector: agriculture, livestock, water, health and nutrition, education, peace and security, and markets and trade.

The assessment covered the 23 counties that comprise the arid and semi-arid region of Kenya, and which are generally the most food insecure given their levels of aridity and vulnerability. The area covers over 80 percent of Kenya's landmass, and is classified into various livelihood zones grouped into five broad clusters; Pastoral North-West; comprising Turkana, Samburu and Marsabit; Pastoral North-East, comprising Wajir, Garissa, Isiolo, Tana River and Mandera; South-East Marginal Agriculture, comprised of Kitui, Makueni, Tharaka Nithi, Embu, and Meru; Coastal Marginal Agriculture, comprising Kilifi, Kwale, Taita Taveta and Lamu; and the Agro-pastoral cluster of Baringo, Narok, Kajiado, West Pokot, Laikipia and the northern part of Nyeri county (Kieni sub-county). The main livelihood activities in these clusters are Pastoralism, Agro-pastoralism, Mixed Farming, Marginal Mixed Farming and some Irrigated Cropping, and these form the unit of analysis.

The assessment involved the collection of both primary and secondary data. The principal sources were: (i) the NDMA's drought early warning and monitoring system; (ii) data collected from the relevant sectors at county and sub-county level; (iii) community interviews and market interviews using focus group discussions and trader interviews; (iv) secondary data from nutrition surveys (SMART surveys); (v) field observations during transect drives; and (vi) agro-climatic data from FEWS NET.

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 carried out to understand both the food and non-food causes of malnutrition.

IV. Drivers of Food and Nutrition Security

Rainfall performance

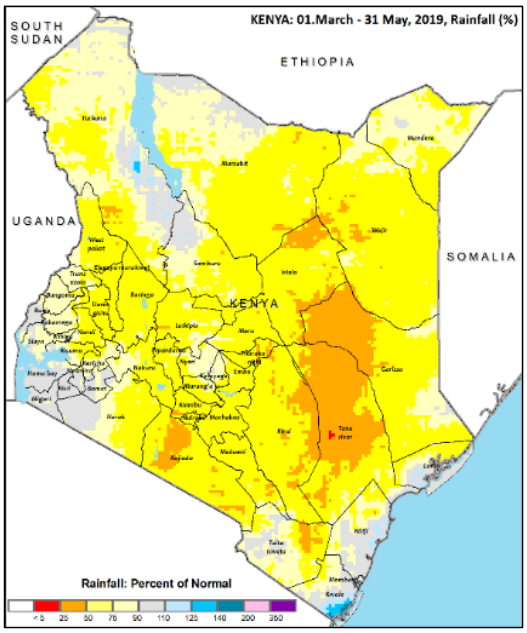


Figure 1.1: March to May long rains season Rainfall percent of Normal

The onset of the 2019 March to May long rains was delayed by more than four dekads in the pastoral and marginal agricultural areas. However, in the central parts of Meru (Meru North), Kitui, northern parts of Embu (Mbeere) and Tharaka Nithi counties in the south-eastern marginal agricultural areas, and the western parts of the north-western pastoral areas of Turkana County, onset was late by three to four dekads. The spatial and temporal distribution was poor throughout the season. Despite an enhancement of rains towards the end of May, significant moisture deficits prevailed throughout the season. Cumulative seasonal totals were 50-75 percent of normal in most of the pastoral and marginal agricultural areas and 50 percent below normal in eastern pastoral areas of Tana River, northern Garissa, northern Isiolo and western Wajir counties. Seasonal deficits were slightly lesser in north-western pastoral areas of Turkana and northern pastoral areas of western Marsabit.

Land Surface Temperatures

Between January and May, land surface temperatures were more than three Degrees Celsius above average in both the pastoral and marginal agricultural areas, according to USGS/FEWS NET. Temperatures were highest in April, during the peak month of the March to May long rains. The above average temperatures hastened the deterioration of pasture and browse conditions and the depletion of open water sources. The continuation of rains in the north-western pastoral areas of Turkana and the Agro-pastoral areas of West Pokot and Baringo into June, has lowered temperatures to near normal levels, allowing for the recovery of rangeland resources, albeit slowly. However, with temperatures remaining 1-2 Degrees Celsius above average in most of the north-eastern pastoral and marginal agricultural areas, rapid deterioration of rangeland resources will continue, negating the modest improvements that were realized during the rainy season.

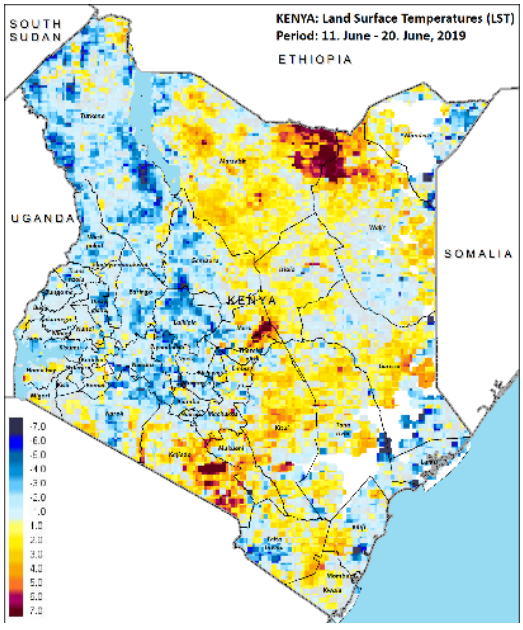


Figure 1.2: Land Surface Temperatures as at mid-June

V. Conflicts

The scarcity of rangeland resources triggered an earlier-than-normal livestock migration into dry season grazing areas and also into atypical grazing areas such as game parks and reserves, which resulted in resource-based conflicts. In the northern pastoral areas, conflicts occurred between rival pastoral groups, both local and from neighboring countries of South Sudan and Ethiopia. Resource-based conflicts in the marginal agricultural areas that border pastoral areas occurred between the migrating herders and local farmers. The conflicts, associated tensions and fear of retaliatory attacks limited access to grazing areas and watering points and led to some livestock losses, though not significant, and human displacements and death. In the North-western pastoral areas of Turkana East and Turkana South, over 300 herds of cattle shoats were lost to raiders while access to reserve grazing areas in Turkana West and Turkana North was constrained due to the presence of Toposa and Merille herders from South Sudan and Ethiopia. In the pastoral areas of Marsabit alone, an estimated 25 human lives were lost, 250 households displaced and close to 1,200 goats and sheep lost to rustlers from Ethiopia. In the South-eastern marginal agricultural areas of Kitui, conflicts between herders from Garissa and Tana River counties led to the displacement of 30 households at Kenanie and three human lives lost at Ngomeni. Also, in-migration of livestock from Isiolo County into the northern parts of Meru (Meru North) limited access to grazing and watering points and led to conflicts that resulted in the loss of one human life.

VI. Other Shocks and Hazards

An outbreak of Kalazaar disease was reported in the northern pastoral areas. Out of 1,464 cases positively identified in north-western pastoral areas of Marsabit, 16 of them were fatal. In the north-eastern pastoral areas of Wajir, seven fatalities were reported out of 380 cases of the disease. A total of five deaths were also reported from a cholera outbreak in the same area.

The most prevalent livestock diseases in both the pastoral and marginal agricultural areas were Foot and Mouth Disease (FMD), Contagious Caprine Pleuro-pneumonia (CCPP), Pestes des Petits Ruminants (PPR), Lumpy Skin Disease (LSD) and Heart Water. Hemorrhagic Septicemia in camels led to more than 860 mortalities in the northern pastoral areas. Flash floods in the north-western pastoral areas of Turkana led to the loss of 4,115 goats and sheep and over 40 households displaced in Letea, Lokangae and Nanaam. Fall Armyworm (FAW) affected maize crops during the critical germination to early vegetative stages in the marginal agricultural areas contributing significantly to the lowering of yields.

VII. Summary of Key findings

An estimated 2.6 million people face acute food insecurity and are in need of humanitarian assistance. Of the affected population, about 2.3 million are in Crisis Phase of food insecurity (IPC Phase 3) with the rest in Emergency Phase (IPC Phase 4). Those in Emergency are in Turkana, Marsabit, Isiolo, Mandera, wajir, Garissa, Tana River and Baringo Counties. The number acutely food insecure is an increase considering the long rains mid-season assessment that identified 2 million people to be acutely food insecure. The situation is likely to deteriorate further and by the peak of the lean season, an estimated 3 million people will experience acute food insecurity. Another 6.8 million people are in the Stressed Phase (IPC Phase 2) of food insecurity.

The pastoral counties are now experiencing the second consecutive failed season with Garissa, Tana River and Marsabit the worst hit. Pasture and browse regeneration was insufficient and their condition ranges from fair to poor and is expected to last for 1 – 2 months. Return trekking distances between grazing areas and water sources more than doubled and are 15 – 30 km compared to normal of 5 – 10 km in Mandera, Wajir, Garissa and Tana River while in Turkana, the distances are up to 10 km compared to normal of 2 – 5 km. Most of the surface water sources have dried up and pasture is being depleted rapidly. The distances were highest in Garissa at 26 – 30 km and parts of Marsabit of upto 50 km. consequently, watering frequency currently stand at 2-3 days every week compared to daily with camels being watered after 7 – 10 days.

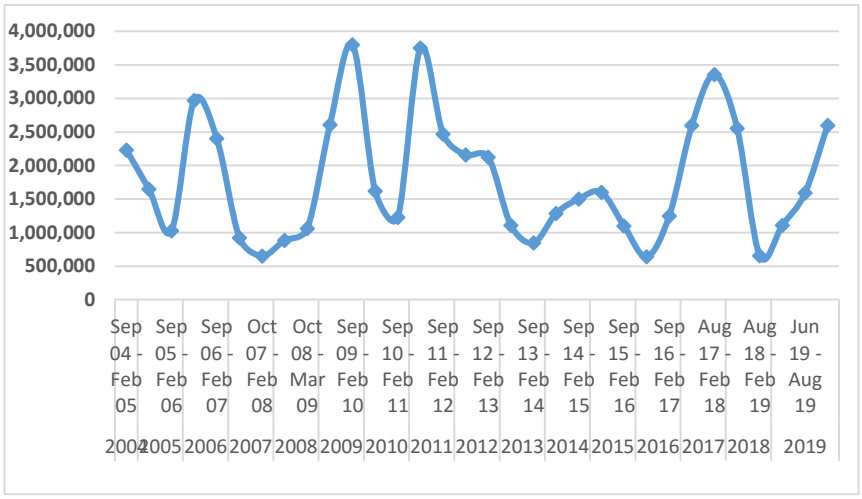


Figure 1.3: Trends of food insecure populations

Livestock body is below average with grazers being fair to poor and expected to deteriorate rapidly as distances to water and pasture increase. Milk production has declined by up to 50 percent and currently households produce 1-2 litres compared to normal of 2-3 litres. Due to prolonged drought, calving, kidding and lambing are below average. Moreover, milk prices have increased to Kshs 60-120 from normal of Kshs 40 – 60 per litre.

High staple food prices coupled with declining livestock prices have impacted negatively on households purchasing power with current terms of trade of 25 – 40 percent below the five-year average in Wajir, Mandera, Garissa and Tana River. However, in Samburu, Marsabit and Turkana, the terms of trade are favourable and currently 3 – 13 percent above the five-year average due to above average goat pries and relatively stable maize prices in these areas. Earlier than normal outmigration of about 60 – 90 percent of livestock have been witnessed mainly in search of pasture and water and likely to result into conflict and high risk of livestock diseases.

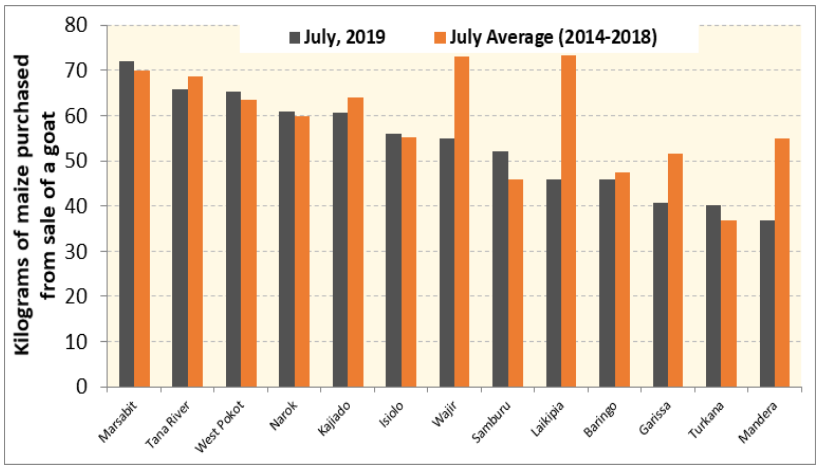


Figure 1.4: Comparative Terms of Trade in the Pastoral and Agro-pastoral

In the marginal agricultural areas, household food security continues to deteriorate particularly south-eastern marginal which has

experienced second successive failed season. Maize production reduced by 90 percent and households have minimal stocks of less than 10 percent with majority relying on market purchases. Similarly, Coastal marginal cluster experienced below average rainfall thus cutting maize production by more than 50 percent. High food prices are expected to continue until the end of the year further impacting on household food security.

VIII. Categories of Food Insecure Population

The Long Rains Assessment data was analysed using the Integrated Food Security Phase Classification (IPC), version 3.0 for both acute food insecurity and acute malnutrition. IPC for acute food insecurity identifies areas and populations with food deprivation that threatens lives or livelihoods, regardless of the causes, context and duration. This classifies households into five severity phases (Phase 1: None, Phase 2: Stressed, Phase 3: Crisis, Phase 4: Emergency and Phase 5: Catastrophe). Households classified in Crisis (IPC Phase 3) or worse are considered to have urgent need for humanitarian assistance in order to protect livelihoods and reduce food consumption gaps, save lives and livelihoods (in Emergency phase) and prevent widespread death and total collapse of livelihoods for worst phase (Catastrophe).

Overall, the food security situation has worsened in the recent past from the last three assessments. Currently the number of people in Crisis (IPC Phase 3) or worse was at 2.6 million people an increase from the estimated 1.6 million people that was established in May 2019 during the mid-season assessment. This was a further increase from 1.1 million people that had been identified in February 2019 after the short rains assessment. Consequently, this number is estimated to rise to just above 3 million people in the next three months by October 2019, which will be the peak just before the onset of the short rains season expected in October – November in some areas. This estimation is further based on the assumption that the onset of the short rains season will be timely, and progress will be normal or above normal. Contrary to

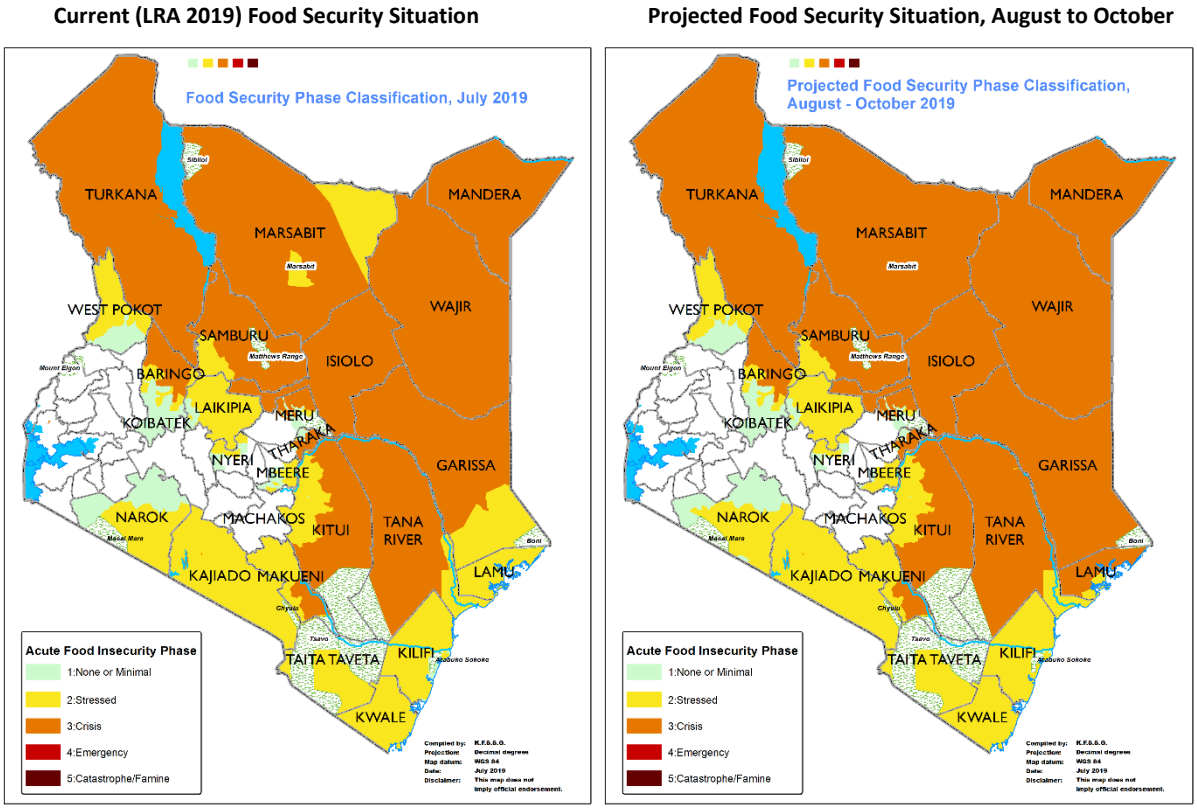


Figure 1.5: Current and projected food insecurity phase classification

this, would lead to a third failed rain season which would exacerbate the food security situation further.

In terms of distribution by severity and geographically, of the 2.6 million people, about 2.3 million are in Crisis (IPC Phase 3) while about 300,000 are in Emergency (IPC Phase 4). While almost all the counties have populations in either Crisis or Emergency, majority of these populations are in Turkana, Mandera, Baringo Wajir, Garissa, Marsabit and Tana river in the predominant pastoral livelihoods and Kitui, Makueni, Kilifi, Meru North in the marginal agricultural and agro pastoral livelihoods.

During the projected period, the population in crisis is expected to increase from 2.6 million people to about 2.7 million people by October while the population in Emergency may increase further to about 400,000 people. The geographic distribution for these numbers will be in the same counties, though significant numbers are expected in Isiolo, Tharaka and Samburu in addition to the above.

IX. National Nutrition Situation Summary

According to the Integrated Phase Classification for Acute Malnutrition[1] conducted in July 2019, nutrition situation has deteriorated in several counties compared to February 2019 (Figure 1.6) with Laisamis, Turkana South and North being in extremely critical phase (Phase 5; GAM WHZ ≥30 percent). North Horr, Turkana Central and West, Mandera, Wajir, Garissa as well as Tiaty in Baringo County were in critical phase (Phase 4; GAM WHZ 15.0 - 29.9 percent) while West Pokot and Isiolo Counties were classified in serious phase (Phase 3; GAM WHZ 10.0 -14.9 percent). Saku, Moyale, Baringo North and South were in Alert phase (Phase 2; GAM WHZ ≥ 5 to 9.9 percent) while Laikipia, Kitui, Narok, Kajiado, Taita Taveta, Kilifi, Kwale and Lamu were in acceptable phase (Phase 1; GAM WHZ <5 percent).

The high prevalence of acute malnutrition is mainly attributed to poor food availability with low milk production and consumption and increasing food prices observed in the most affected areas This has resulted from the cumulative negative effect of the below average 2018 short rains and the late on set of the 2019 long rains. High morbidity, limited access to health and nutrition services following scale down of integrated outreaches in some areas such as Laisamis in Marsabit, poor child practices coupled with pre-existing factors such as poverty, high illiteracy and poor infrastructure have aggravated the problem. Rains have been received in selected parts of ASAL counties such as Turkana and pasture has regenerated. However, the effect of the rains on milk availability will not be felt in the coming few months as animals will take time to breed as their body condition recover. In this regard, acute malnutrition levels are expected to remain high during the projection period (Figure 1.6).

Area	Global Acute Malnutrition 6 to 59 months	Severe Acute Malnutrition 6 to 59 months	Moderate Acute Malnutrition 6 to 59 months	Pregnant and Lactating Women
ASAL	558,318	112,297	446,021	67,537
Urban	65,496	21,068	44,428	1,788
Total caseload	**623,814**	**133,365**	**490,449**	**69,325**

[1] WHZ: Global Acute Malnutrition by Weight for Height: MUAC- Mid Upper Arm Circumference: MAM- Moderate Acute Malnutrition: SAM- Severe Acute Malnutrition. See Box 1 for an explanation of IPC Acute Malnutrition phases.

The total number of children 6 to 59 months requiring treatment of acute malnutrition is 623,814 while 69,325 pregnant and lactating women require treatment (Table below).

Estimated Caseloads of Children 6 to 59 Months and Pregnant & Lactating Women Requiring Treatment for Acute Malnutrition, July 2019

Current (LRA 2019) Nutrition Situation | **Projected Nutrition Situation, August to October 2019**

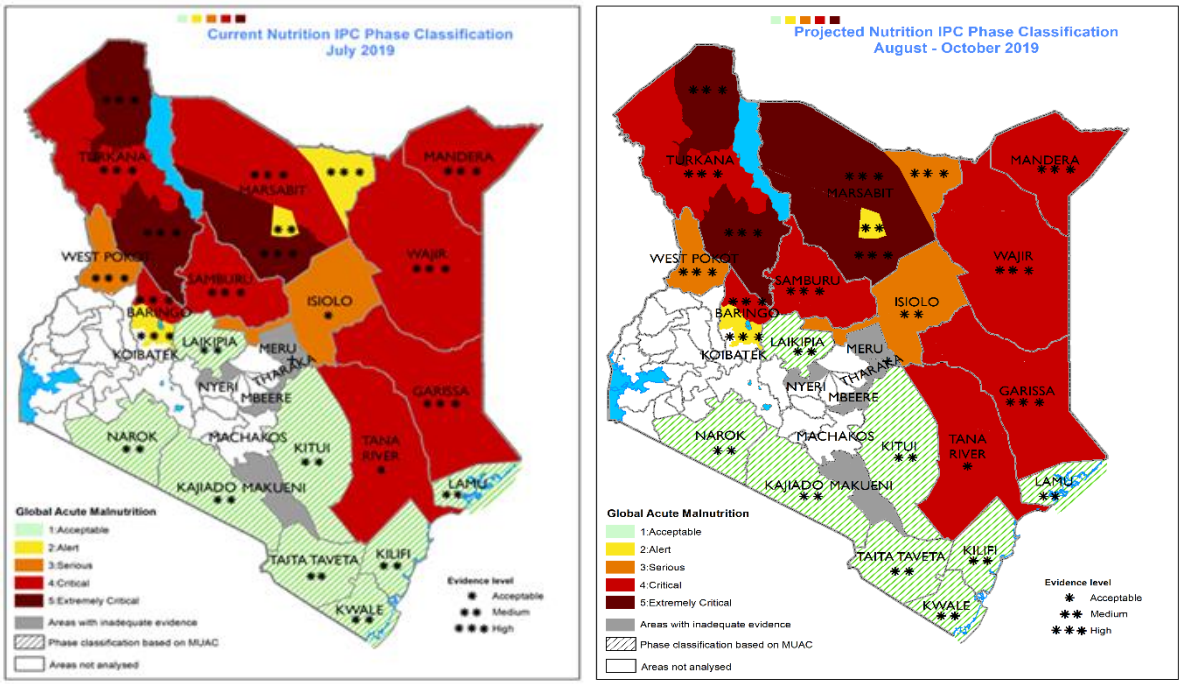


Figure 1.6: Current vs projected national nutrition

X. 2019 Crop Production and Prospects

Estimates from the State Department for Crop Development (SDCD) indicate that that total maize production for the 2019 long rains season from the medium potential areas of western Kenya and the Rift Valley is projected is to be 2.3 million metric tonnes (MMT) which is about 25 percent below the five-year averages. The delay in onset of long rains crop, erratic rains and reduced acreage resulted in reduced crop production. There was poor germination across all the regions which necessitated replanting of maize. Availability of the offseason rains in June-July sustained the maize crop planted in the month of April and is therefore likely to reach physiological maturity. Fall armyworms (FAW) and Maize Lethal Necrosis Disease were experienced in the Southern Rift region affecting 10 percent of the planted acreage. SDCD is forecasting a national maize deficit of 475,767 MT by September 2019.

In the marginal agricultural areas, the area under cultivation for maize crop was 10-25 percent below the long-term average due to loss of the first planted crop as a result of poor germination and wilting. A second planting was hindered by lack of inputs such as certified seed and fertilizer after losing the first crop. There was near crop failure in south eastern marginal clusters with a projected achievement of only 13 percent of the long-term average. The production of maize in Embu (Mbeere), Makueni and Kitui counties will be below five percent of the long-term average while in the coastal marginal cluster, maize production is expected to be 38 percent of the long-term average. The poor crop performance in these areas is attributed to a number of factors including; a false onset of long rains in mid-March, erratic and poor rainfall distribution and below-normal rainfall amounts which affected maize performance from the early stages of development. The length of the growing period for maize was generally

shortened due to a late seasonal onset. Other factors included FAW infestations and flash floods as result of above-average rains in late May in the coastal region that caused leaching of crops nutrients hence poor crop development. Production of other staples such as cowpeas, green grams and beans was also affected, with production of between 20-40 percent below average due to reduced acreage and poor rainfall performance. In Makueni and Kitui counties, green grams and cowpeas production was less than five percent of the five-year average.

XI. Food Price Trends

In the month of July, maize wholesale prices were higher than normal across all reference markets with prices 8-15 percent above average in Eldoret and Mombasa while they were 28 -33 percent above average in Nairobi and Kisumu exhibiting seasonal increases that were driven by tightening stocks countrywide but heightened by a combination of factors such as; High demand from marginal agricultural areas following poor long rains season production, Reduced seasonal cross-border inflows especially from Uganda due to poor production, and Increased speculative trade following uncertainties in the start of the long rains countrywide. The maize prices are expected to remain above 2018 prices for the rest of the year but other factors such as imports and production from the high and medium production areas will determine the price trends in the coming months relative to normal.

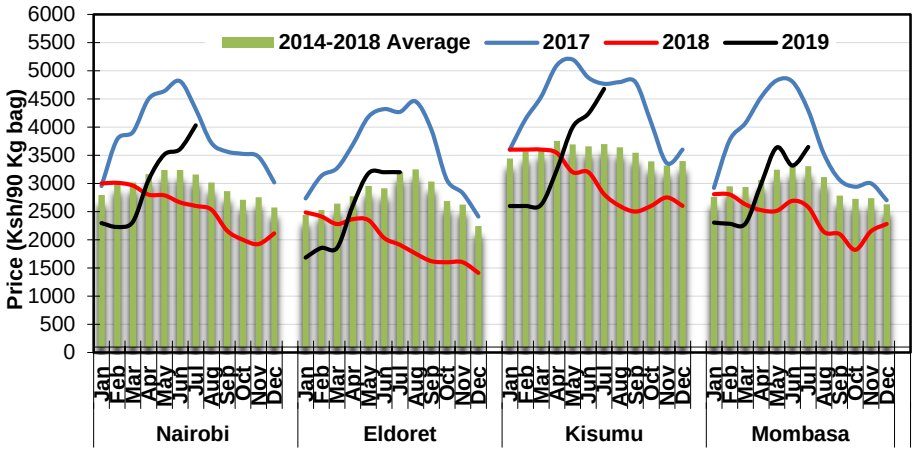


Figure 1.6. Maize prices in major urban markets

XII. Food Security Prognosis (August 2019-January 2020)

Marginal Areas

The long rains harvest will provide below average household income and food mostly for consumption at household level but insufficient for sale. Household food stocks across majority of the areas will be depleted by the end of August signalling increased dependence on markets for food commodities. From late August, staple food commodity prices are expected to remain above average reducing household food access and increasing household food insecurity from August through October. Households are set to increasingly apply consumption and livelihood coping strategies to bridge food and income gaps. Malnutrition in children under five years of age is expected to increase during this period with more households expected to deteriorate to Stressed (IPC Phase 2) with more to Crisis (IPC Phase 3) in Meru, Tharaka, Kitui, Makueni and Lamu counties. In October, harvests from Western Kenya and Rift Valley will reduce the staple food prices increasing food access. From late September, the short rains agricultural production activities are expected to commence in anticipation of the average October – December short rains and it is likely that production activities will be intensified following the poor long rains season improving household income and consequently food consumption. Improvement in forage and water resources is expected to drive livestock body conditions, productivity and market prices. Improved milk production from early November coupled with

increasing purchasing power will likely reduce malnutrition levels as food and milk consumption increase. From December, short cycle crops will gradually improve household food security through January as early main crop harvests become available. A number of households are expected to improve from Crisis (IPC Phase 3) to Stressed (IPC Phase 2).

Pastoral Areas

Declining livestock productivity and market prices is expected to significantly reduce household income from livestock production. Across most markets staple food prices are likely to increase and remain above average due to low supplies from source markets and increased demand. Reducing goat-to-cereals terms of trade are expected across the pastoral areas except in the northwest (Turkana, Baringo and West Pokot) where off-season rains are expected to improve the conditions for livestock. In addition to below average milk availability and consumption, poor households will likely face constrained household food access and engage in increased sales of livestock to marginally meet their minimum food needs, depleting their already low livestock holdings. Deterioration in livestock health is expected with livestock deaths expected from drought and disease. Non-livestock related income sources are likely to be increasingly depended on to mitigate increasing food gaps. Reduced milk production and consumption will drive a deterioration in malnutrition levels through October and in the same lean period, more households in Turkana, Marsabit, Isiolo, Wajir, Mandera, Garissa and in parts of Baringo, Samburu, Tana River and Lamu counties will face Crisis (IPC Phase 3) outcomes with the rest of the households in Stressed (IPC Phase 2). From late October, the short rains will drive regeneration of rangeland resources improving livestock body conditions, market prices, household purchasing power and food access. However, below average livestock-related income is expected as livestock slowly recover from the drought. A reduction in both consumption and livelihood coping strategies is expected from early November as household income increases from casual labor and livestock sales. Food security is expected to improve however households will remain unable to afford essential non-food expenditures improving to Stressed (IPC Phase 2), but some poor households with limited income generating capacity will continue to face food gaps and will remain in Crisis (IPC Phase 3).

The key factors to monitor over the next six months include:

- Performance of 2019 short rains given the poor performance of the cumulative effect of the below average 2018 short rains and late onset of the 2019 long rains
- Crop production in the high and medium rainfall areas.
- High and increasing staple food prices.
- Close monitoring of the trends of malnutrition and related outcomes such as morbidity and deaths in the most affected counties.
- Disease outbreaks e.g. Cholera, Measles, Kalazaar and the rising trend of diarrhea

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)	COST USD(M)
Agriculture	Provision of farm inputs, storage and insurance, promotion of water harvesting, pests and disease control and Postharvest management	1600	16
Livestock	Feed distribution, disease surveillance and vaccines, capacity building, trainings and community sensitization, pasture production and conservation	700	7
Water	Fuel subsidies, rehabilitation, repairs, Water trucking and capacity building on water management and catchment protection.	2000	20
Health	Scale up of mass screening, integrated outreaches and IMAM surge approach, Consider Blanket Supplementary Feeding Programmes, Increased program performance monitoring, coordination and surveillance, Update contingency and response plans and strengthen multi sectoral engagement.	1900	19
Education	Provision of water tanks to schools, relief food and CSMP.	200	2
Food Assistance	Scale up of Safety net programmes and market access programmes, unconditional and conditional cash transfers and in kind food transfers in selected areas.	2100	21
Peace & Security	Enhance and support resource based peace and conflict resolution mechanism in ASAL counties.	100	1
TOTAL		**8,600**	**86**

1.0 Introduction

1.1 Assessment Coverage and Objectives

The March to May 2019 long rains assessment was conducted from the 7th to 20th July 2019 in the 23 Arid and Semi-arid counties. The assessment was steered by the government of Kenya through the Kenya Food Security Steering Group (KFSSG), in collaboration with the 23 county governments through their respective County Steering Groups (CSGs). The KFSSG is a multi-agency body comprising of key government departments, UN agencies and non-Governmental organizations all with a stake in food and nutrition security in the country. The KFSSG is chaired by the National Drought Management Authority (NDMA) and co-chaired by the World Food Programme while the CSGs are county level multi-sectoral and multi-agency group that coordinates food security related activities.

Objectives

The overall objective of the assessment was to analyze and determine the extent and impact of the 2019 long 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 each sector: 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.

This 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 counties using checklists. Also included was data collected through community interviews and market interviews through focus group discussions and interviewing of traders respectively, secondary data from nutrition surveys (SMART Surveys), 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 analyze 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 Pastoral Northwest livelihood cluster comprises; Turkana, Marsabit and Samburu counties as shown in Figure 2.1. The cluster covers an approximate area of 173,772 square kilometres (km^2) with a projected population of 1,683,369 persons (KNBS, 2016). The main livelihood zones in the cluster include: Pastoral all species having 69 percent of the population; agro-pastoral with 24 percent and fishing/formal employment/business/petty trade having 7 percent of the population.

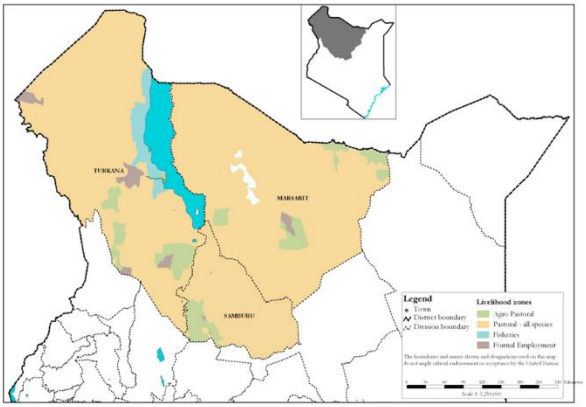


Figure 2.1: Pastoral Northwest cluster livelihood zones

2.1.2 Current Drivers of Food Insecurity

Rainfall Performance

The onset of the long rains was late by 3-4 dekads, with Samburu and Turkana having their onset in the 3rd dekad of April while Marsabit in the 4th dekad of April. Most parts of the cluster received between 90 to 110 percent of the normal rainfall amounts. There were pockets in Turkana and Samburu that received between 110-140 percent of the normal rains. The greater Marsabit received between 60-75 percent of normal rainfall. The rest of the cluster received between 75-90 percent of the normal amounts. The temporal and spatial distribution was poor and uneven across the cluster. The cessation was late in the 1st -2nd dekad of June.

Insecurity and Conflicts

Incidences of conflicts have been reported across the cluster as a result of competition for pasture and water, cattle rustling and retaliatory attacks in the aftermath of cattle rustling. In Turkana county, conflicts were reported in Turkana East, south and parts of north while in Samburu County, conflicts were reported in parts of Samburu north and Samburu East sub counties. In Marsabit County, cattle rustling occurred in Saku and Moyale Sub-Counties in along the Ethiopian border. In all cases there were significant losses of livestock and human lives. There were also cases of displacement reported in Marsabit County.

Shocks and Hazards

There were confirmed cases of Kalaazar outbreak in Marsabit County with 1,464 cases and 16 fatalities. Foot and mouth diseases (FMD) outbreak was confirmed in Samburu North, with the county department of veterinary imposing a quarantine in the sub county. Haemorrhagic *Septicaemia* in camels was confirmed in Samburu and Turkana counties with over 700 mortalities reported. Turkana County reported invasion of tree Locust affecting browse in parts of Turkana North, Central and East. Fall army worm infestation was also reported in the Agro-pastoral livelihood zones of Turkana south, central and Loima which affected maize and sorghum. Flash floods destroyed access roads in Turkana west leading to a rise in food commodity prices within the interior markets. Additionally, losses attributed to flash floods

were also recorded mainly in Turkana west Sub County with approximately 4,115 shoats being lost and over 40 households displaced in Letea, Lokangae and Nanaam.

2.1.3 Current Food Security Situation

The cluster is classified in the Crisis (IPC 3) phase of food insecurity with parts of Marsabit (Moyale and Saku) and agro pastoral livelihood in Samburu classified in the Crisis (IPC 2) phase of food insecurity. Households maize stocks are 33, 97 and 85 percent below the long-term averages (LTA) in Turkana, Marsabit and Samburu counties respectively. Maize prices were stable and goat prices remained above the LTA resulting in favorable terms of trade across the cluster. Milk production was below normal ranging between 0.5-2 litres per household per day compared to normal of 2–3 litres per household per day. Consumption subsequently declined across the cluster by 25-50 percent compared to the long-term averages. Water consumption across the cluster ranged between 10–20 litres per person per day.

The proportion of the household with poor food consumption stood at 19, 10 and 11 percent in Turkana, Marsabit and Samburu counties respectively. Global Acute Malnutrition (GAM) was 25.6 percent for Turkana County, 18 percent for Marsabit and 15.8 percent for Samburu County. The reduced consumption coping strategies index (rCSI) for Turkana, Marsabit, and Samburu Counties are 15, 12 and 17 percent respectively. In Marsabit County, majority of the households were consuming one meal per day compared to the normal three meals while in Samburu county, households in the pastoral livelihood zone are consuming 1-2 meals a day while agro pastoral are taking 2-3 meals in a day which was normal at this time of the year. In Turkana, majority of the household were consuming 1-2 meals on average.

2.1.4 Food Security Trends

Indicator	**Short rains assessment Feb. 2019 (Previous season)**	**Long Rains Assessment July 2019 (Current)**
Food security phase	Stressed (IPC Phase 2)	- Crisis (IPC Phase 3) - Stressed (IPC Phase 2) in Moyale, Saku and agropastoral in Samburu
Maize stocks	80 percent of LTA in Marsabit and Samburu and 30 percent in Turkana	Turkana County: 33 percent below LTA Samburu County: 85 percent below LTA Marsabit County: 97 percent below LTA
Livestock body condition	Good to Fair	Good to Fair except in parts of Marsabit County in poor.
Household water consumption	10 – 20 litres per person per day	10 - 15 litres per person per day
Meal frequency	1-3 meals per day	1-2 meals per day. 2-3 meals (Agro-pastoral in Samburu).
Household milk Consumption	-	20-50 percent below LTA
Terms of Trade	Above LTA across the cluster	Above the LTA in Marsabit and Samburu below LTA in Turkana
Coping Strategy Index	12.69 in Samburu, 16.4 in Turkana and 19.4 in Marsabit	16.6 in Samburu, 15.1 in Turkana, and 11.57 in Marsabit
Food Consumption Score	*Proportion of households with poor food consumption:* Marsabit – 1% Samburu – 8% Turkana – 25%	*Proportion of households with poor food consumption:* Marsabit – 10% Samburu – 11% Turkana – 19%
GAM	Below LTA in Marsabit and Turkana and within LTA in Samburu	Turkana – 25.6percent Marsabit – 18percent Samburu – 15.8percent

2.1.5 Impact of Drivers on Food and Nutrition Security

2.1.5.1 Crop Production

Rain-fed Crop Production

Long rain contributes 70 to 80 percent of annual food production in Samburu and Turkana counties respectively and 30 percent in Marsabit County. The major crops grown under rain fed agriculture are maize, beans and sorghum, cow peas and green grams. Area cultivated for maize, beans and sorghum was 74, 89 and 113 percents of LTA respectively. The below average area under cultivation for maize and beans was attributed to late onset of rains and below average amounts resulting into late land preparation and planting. On the contrary, there was an increase in area under sorghum by 13 percent of the LTA which was attributed to opening of more land in Turkana county through the support of county government and partners on land mechanization, land reclamation, soil and water conservation. Production of maize, beans and sorghum was 27, 8 and 43 percent of the LTA respectively attributed to below average and poor performance of rains and invasion of fall army worms in Turkana. Wilting of germinated crop due to dry conditions was experienced across the cluster and there was near total crop failure in Marsabit county.

Rain-fed crop production

Crop	Area planted during 2017 long rains season (Ha)	Long Term Average area planted during the long rains seasons (Ha)	2019 long rains season production (90 kg bags) Projected/Actual	Long Term Average (5yrs) production during long rains seasons (90 kgs bags)
Maize	10,508	14,280	23,330	86,485
Beans	4,110	4,600	500	5,900
Sorghum	7,249	6,390	30,005	69,453

Irrigated Agriculture

The major crops grown under irrigation were maize, sorghum and kales. Other crops include cow peas and tomatoes. Area under maize and sorghum was 69 and 89 percent of the LTA respectively. The decline was attributed to drying up of River Kerio and low recharge of River Turkwel, change of river course rendering some scheme non-operational. Other factors were, dilapidated irrigation infrastructure in Turkana county and stalled Kurungu and Songa irrigation schemes in Marsabit county, invasion of Prosopis Juliflora (Mathenge) in the irrigation schemes in Turkana. The acreage under kales was within the long-term average as a result of increased micro-irrigation schemes across the in Marsabit County. The projected production of maize is 69 percent of long-term average while production of sorghum is expected to be within the LTA due to better resilience of the crop under irrigation production.

Irrigated crop production

Crop	Area planted during 2017 long rains season (Ha)	Long Term Average area planted during the long rains seasons (Ha)	2017 long rains season production (90 kg bags) Projected/Actual	Long Term Average (3yrs) production during long rains seasons MT / (90 kgs bags)
Maize	2,290	3,308	44,986	65,435
Sorghum	4,385	4,882	50,236	50,582
Kales	35	37	130	121

Cereal Stocks

Maize stocks held by households and millers in the cluster were about 36 and 82 percent of the LTA while traders held near average stocks. The decline in households' stocks was attributed to decline in production. Rice stocks held was 90 percent above the LTA. Maize was supplied to Turkana through neighboring Counties of West Pokot, Trans Nzoia and Uasin Gishu and border trade through Moroto in Uganda. In Samburu traders sourced maize locally from NCPB to stabilize maize prices. In Turkana and Marsabit households were supported with food assistance through the Sustainable Food Systems Programme supported by World Food Programme.

Cereal stocks held

Commodity	Maize (90 kg bags)		Rice (50 kg bags)		Sorghum (90 Kg bag)	
	Current	LTA	Current	LTA	Current	LTA
Farmers	6,522	18,357	600	800	15,580	3,640
Traders	32,490	32,907	10,800	5,200	10,187	11,493
Millers	5,500	6,698	0	0	2,219	3,956
NCPB	3,800	3,500	0	0	0	0
Food Aid	10,845	7,500	0	0	0	0
TOTAL	**43,312**	**51,962**	**11,400**	**6,000**	**27,986**	**19,089**

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 condition was fair to poor across the livelihood zones in the cluster compared to good to fair at this time of the year. Pastures is expected to last less than a month in agro pastoral and fishing livelihood zones. While in the pastoral areas, pasture is expected to last by end of September. Browse condition was good to fair at this time of the year compared to good normally. The browse is expected to last for 2-3 months except in the fishing areas where browse will last for less than a month. In the cluster, access to pastures and browse was limited due to insecurity/cross-border cattle rustling incidences in Marsabit, diseases and lack of water. However, bush encroachment and emergence of unpalatable species of plants has also hindered the growth of pasture in most parts of Moyale sub-county.

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	1-2	Good - Fair	Good	2-3
Agro pastoral	Fair-Poor	Good-Fair	<1	Good - Fair	Good	2-4
Fishing	Fair-Poor	Good-Fair	<1	Good - Fair	Good	1

The livestock body condition of cattle in pastoral and agro pastoral livelihood zones was good to fair compared to good at this time of the year except in Marsabit where cattle was fair to poor. The body condition of goats and camels was good in the cluster except in the fishing livelihood zone, where the body condition was fair for both goat and camel. Livestock body

conditions are expected to worsen in one month due to diminishing pastures and browse, reduced water availability and increased trekking distances.

Livestock body condition

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

Milk production in the cluster declined by 55-65 percent compared to the long-term averages. Consumption of milk across the livelihood zones declined by 25-50 percent compared to the long-term averages except in fishing areas where consumption declined by over 65 percent. The prices of milk were 80-100 percent above the long-term averages.

Milk production, consumption and price

Livelihood zone	Milk Production (Litres) /Household		Milk consumption (Litres)/Household		Prices (Ksh)/Litres	
	Current	LTA	Current	LTA	Current	LTA
Pastoral All species	0.25-2	2-3	1-2	1-3	60-120	40-60
Agro pastoral	0.25-2	2-3	0.5-1	1-2	60-120	40-60
Fishing	0.5-1	2	0.5-1	2	80	40

The birth rates in the cluster were near average except in Turkana where the birth rates were delayed due to drought as well as unreliable rainfall that interfered with the breeding patterns. The tropical livestock units for the poor income households in agro pastoral and pastoral livelihood zones declined by 13 and 42 percent respectively compared to long term average. While in medium income households in agro pastoral and pastoral areas, the TLU declined by 20-43 percent compared to long term averages.

Tropical livestock unit (TLUs)

Livelihood zone	Poor income households		Medium income households	
	Current	Normal	Current	Normal
Agro-pastoral	1-6	2-6	5-15	10-15
Pastoral	2-5	4-8	8-12	15-20
Fisher-folk	3	4	6	8

Return trekking distances to water points from dry grazing areas in the pastoral areas increased from 2-5 kilometres normally to 3-10 kilometres. In agro pastoral zones, the distances were stable compared to the normal. Distances in Turkana were stable, however in parts of the pastoral areas in Turkana North and South livestock trekked for up to 15-20 kilometres. Distances in pastoral livelihood zone increased due to low recharge of open water sources. However, in pastoral and agro pastoral areas in Marsabit, distances increased by up to100 percent compared to the long term averages due to drying up open water sources. In North Horr (Marsabit) longer distances of up to 50 kilometres were reported especially in Turbi/Bubisa, Maikona and North Horr wards. Water in the cluster is expected to last for one to two months. Water frequencies decreased for all livestock species in the cluster due to long trekking distances to water points. Insecurities/conflicts over resources and diseases have limited access to water in Marsabit and Turkana.

Water for livestock

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

Livestock migration had begun and in Turkana, livestock migrated through Karamoja border route due to availability of pastures and water. Influx of livestock was reported in Samburu from Marsabit. Majority of livestock from Samburu east migrated to agro-pastoral areas while others moved towards Laikipia and Isiolo Counties. Migration was also reported in Marsabit where livestock moved from Laisamis to parts of Isiolo and Samburu, others from North Horr moved to wajir. Livestock from Moyale moved to Wajir North, Southern Ethiopia and some from Saku moved to Jaldesa, Sololo and Dukana.

Foot and Mouth Disease, Newcastle in poultry, Lumpy Skin Disease and Anthrax (Anthrax in sheep and goats in Marsabit) were reported in Samburu and Marsabit. Endemic cases of Contagious Bovine Pleuropneumonia (CBPP), Contagious Caprine Pleuropneumonia (CCPP), East Coast Fever (ECF), Enterotoximia, Sheep and Goat pox, Peste des Petit Ruminants (PPR) were prevalent in the cluster. Haemorrhagic Septicemia in camels was reported in Turkana, Samburu and Marsabit. Tick-borne diseases such as East Coast Fever have been reported in the cluster. In Marsabit, outbreak of Pasteurellosis in cattle resulted to 16 deaths in Ambalo. The veterinary department across the cluster continued with disease surveillance, vaccination and treatment of different livestock diseases.

2.1.5.3 Market Performance

Typical market operations were witnessed across most of the main markets with majority being well positioned with essential food commodities and livestock products. However, market disruption was reported in some sections of the cluster. There was a quarantine imposed that was impacting negatively on the normal livestock trading in Samburu North. Damballa, Fachana, Turbi and Forolle feeder markets in Marsabit remained non-operational due to security related threats. Increased cases of inter-clan conflict in some parts of North Horr including Dukana, Maikona, Ileret also hindered access to food commodities and affected livestock trading. Further, the sporadic attacks triggered by cattle rustling along the Turkana-West Pokot border not only affected market operations in Kainuk leading to high commodity prices but also led to spillover effect in the neighboring supply source areas for livestock which highly restricted livestock movement. Poor road infrastructure also affected supply of staples to Kibish in Turkana and El-hadi and Balesa markets in Marsabit. Market supplies were sourced within the cluster and across the neigbouring counties outside the cluster such as Nyahururu in Laikipia County, Nyandarua and Meru Counties.

Market Prices

The trend of maize price has shown a steady rise during the period under review in Samburu and Marsabit counties but are still within the seasonal averages. However, they remain above the prices in a similar period last year. In Turkana county the prices are below the long-term average and attributed to influx of relief from early 2019 and also the price stabilization following the exceptionally good season of 2018. In Samburu county, the rise in maize price trends is attributed to diminishing household stocks coupled with poor performance of the 2018 October to December rainfall season thus making households market reliant for staple food commodities. Marsabit county recorded the lowest average price at Ksh 48 per kilogram while Turkana county recorded the highest average price in the cluster at Ksh. 67 per kilogram. A

medium sized goat retailed at an average price of Ksh. 2,688 in Turkana, Ksh. 2,756 and Ksh. 3,464 in Samburu and Marsabit counties respectively. The goat prices were however below the prices reported same period in 2018 across the cluster but above the long-term average prices in Samburu and Marsabit counties due to relatively good to fair body condition. In Turkana county, lower prices were occasioned by low demand coupled with more livestock sales in the market to meet food and other non-food essentials. Highest goat prices were recorded in Moyale livestock market with prices ranging between Ksh. 4,500-5,500.

Terms of Trade

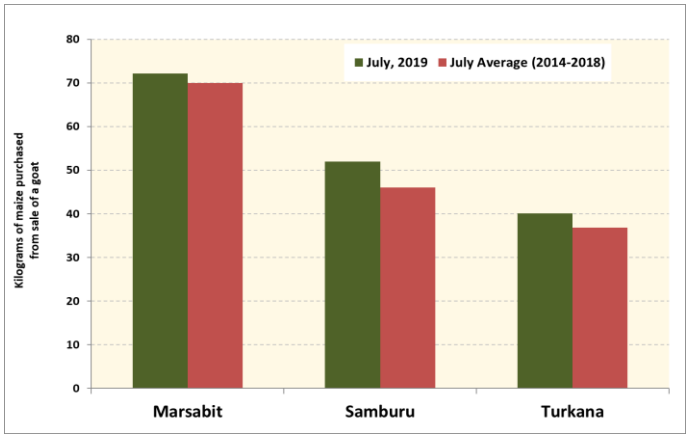


Figure 2.2: Comparative terms of trade in the cluster

Terms of trade in the cluster was favourable and was above the long-term averages across the cluster as shown in Figure 2.2. The highest terms of trade were reported in Marsabit where the sale of one medium sized goat would purchase 72 kilogrammes against the long-term average of 69 kilograms. Turkana reported the least favourable terms of trade among the three counties within the cluster at 40 kilograms mainly due to the higher maize prices in the cluster.

2.1.5.4 Water Access and Availability

The main water sources for domestic use across the clusters are boreholes, shallow wells and water pans. Boreholes are the main permanent water sources across the cluster with 85-90 percent operational capacity. The few boreholes not operating are mainly due to salinity, vandalism and pumps malfunctions. Consequently, boreholes are the most concentrated water points across clusters. Some of the concentrated points include Laisamis and Moyale in Marsabit County as well as Turkana west and central. Recharge levels for the open water sources varied across cluster, ranging from 10-30 percent in Marsabit with exception of Moyale sub-county which received torrential rainfall. In Turkana and Samburu recharge levels for open water sources ranged between 40-80 percent across pastoral and agro-pastoral livelihood zones. Open water sources across the clusters are expected to last until end of August, compared to October normally. However, shallow wells that rely on permanent rivers and those recently recharged with floods will go beyond end of August. The return trekking distances to water sources for domestic use was 1-5 kilometres across the cluster, with exception of parts of Samburu and Marsabit where return distance of 10-15 kilometres was reported. Exceptionally longer trekking distances of up to 30 kilometres were observed in parts of Laisamis, North Horr and Moyale Sub-Counties in Marsabit.

Waiting time at water sources ranged between 30-60 minutes in all livelihood zones in Marsabit and Samburu from the normal 20-30 minutes while in Turkana the waiting time reduced to 10-20 minutes from normal time of 20-30 minutes. The reduction in waiting time in Turkana was as a result availability of water in alternative sources. Cost of water at the source was within the normal Ksh. 2-5 per 20-litre jerrican across the clusters. However, the cost doubled from the normal Ksh 5 and Ksh. 2 in the pastoral and agro-pastoral zones of Samburu respectively. Vendors were selling the commodity at Ksh. 30 in Kalokol (Turkana), Moyale and Hurri (Marsabit). Water consumption in litres per person per day varied across the cluster. In the pastoral and agro pastoral areas of Marsabit and Samburu, consumption was 10-15 litres per

person per day against an average rate of 15-20 litres. An increase in consumption was reported in the pastoral livelihood zones in Turkana at 10 litres compared to normal of 5 litres and was 10 and 20 litres in the fisheries and agro-pastoral livelihoods respectively.

2.1.5.5 Food Consumption

The proportion of households with poor food consumption stood at 19, 10 and 11 percent in Turkana, Marsabit and Samburu counties respectively implying consumption of a starch and vegetable mostly and occasional (less than 3 days in a week) consumption of other high nutrient food groups. Compared to a similar period in 2018, there was deterioration in food consumption with significant proportion of household shifting to poor and borderline consumption which is attributed to reduced livestock and crop production in the cluster which was heavily affected by poor rainfall performance.

2.1.5.6 Coping Strategy

The reduced coping strategy index (rCSI) for the cluster during the month of July was highest in Samburu at 16.6, followed by Turkana and Marsabit at 15.1 and 11.6 respectively. Variations across the livelihood zones within the cluster were reported with the pastoral livelihood zone in Turkana county recording the highest rCSI of 18.2. Reduced portion size and reliance on less preferred food/less expensive food were the predominant consumption-based coping strategies employed by households. According to the SMART survey conducted in the three counties, reliance on less preferred and less expensive foods, reducing the number of meals, limiting portion sizes, restricting consumption of foods by adults for young children to eat and borrowing food were some of the frequently employed coping strategies in the county. Compared to the same period in 2018, households were employing more severe coping strategies to meet the short-term food consumption gaps which was largely attributed to compromised household food insecurity during the season under review.

2.1.5.7 Health and Nutrition

Nutritional Status

Nutrition situation has worsened across the cluster with Turkana South, Turkana North and Laisamis at extremely critical phase (IPC AMN phase 5 GAM ≥30) as shown in Figure 2.3. Turkana West, Turkana Central, North Horr and Samburu are in critical phase (IPC ACM Phase 4 GAM 15.0 to 29.9 percent) while Saku and Moyale are in alert (IPC AMN Phase 2 GAM 5.0 to 9.9 percent). GAM trends across the years show an increasing trend across the cluster during this season. In North Horr, the assessment did not include clusters selected in Illeret ward due to insecurity. With inclusion of Illeret clusters, GAM levels in North Horr would have been expected to be higher than the 25.1 percent reported, as it is usually a hotspot for malnutrition. Further, analysis show that MUAC trends has remained high across the cluster in the period under review and is expected to increase. Samburu recorded the highest level of proportion of

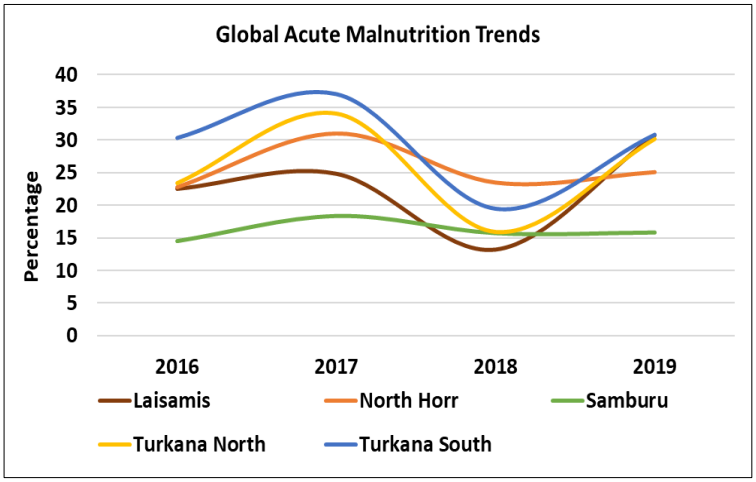


Figure 2.3: Trends of malnutrition in the cluster

children with MUAC <135 mm at 28.9 percent, which is an increase from 24.8 percent in May 2019.

Turkana and Marsabit were at 18.0 and 18.1 percent respectively and have remained above the long-term average. Similarly, IMAM program admission trends (both OTP and SFP) from January to June 2019 show that admission trends are high, with Turkana recording the highest cases, followed by Marsabit and Samburu. In Turkana, the peak in admissions was observed in the month of April. Overall, nutrition situation remains of great concern in the cluster and is projected to deteriorate *slightly* if appropriate and timely interventions are not activated because of expected increase in burden of diseases (ARIs and Diarhoea), scarcity of water and food insecurity. The major contributory factors to acute malnutrition in the cluster include high disease burden, food insecurity, suboptimal child care and feeding practices and insecurity.

Morbidity and Mortality

Acute Respiratory Infections (ARI), Diarrhea and Malaria cases remain high among children in the cluster. Prior to the survey in 2019, 44, 27 and 29 percent of the children were reported to be sick in Turkana, Samburu and Marsabit, respectively. Of the three illnesses, ARI is the most prevalent in with Samburu, Marsabit and Turkana recording 64, 55 and 39.2 percent respectively. The highest cases of malaria were recorded in Turkana at 38.5 percent with Samburu recording the least at 24 percent. Diarrhoea cases could be attributed to poor water, sanitation and hygiene practices across the cluster and conflicts along the borders limiting access to water. Outbreak of Kalazaar was reported in Marsabit County with 1,464 cases reported as at 8th July 2019 out of which 16 patients were reported to have died. ARI and dirahoea are projected to remain major contributory factors to acute malnutrition between August and October 2019.

Immunization coverage improved across the cluster for all antigens (BCG, OPV and Measles) and remained above the national target of 80 percent, except for measles in Samburu at 78 percent. Similarly, coverage of vitamin A supplementation for children 6-59 months remained above the national target of 80 percent for Marsabit (98.9 percent) and Samburu (107.8 percent). However, coverage for Turkana County is low at 53.6 percent. Improved coverage for both immunization and Vitamin A supplementation across the cluster could be associated with accelerated *Malezi* Bora campaigns conducted in November 2018 and May/June 2019.

Water Hygiene and Sanitation

Water treatment is generally low across the cluster with 24.6, 18.4 and 22.0 percents of households in Samburu, Turkana and Marsabit respectively reported treating their water for drinking. The main water treatment methods were boiling and use of water treatment chemicals (SMART surveys 2019). Majority of the households' reported consuming <15 litres of water per person/day at 83.2 percent and 76 percent in Samburu and Turkana respectively, which is below the SPHERE standards. Latrine coverage remains sub optimal across the cluster with Turkana and Samburu recording the lowest coverage at 21 and 27.4 percent, respectively. Latrine coverage in Marsabit was 55.5 percent. Over 75 percent of the population within the cluster were aware of hand washing practices. However, those practicing hand washing at four critical times was low across the cluster at only 11.8, 28.6, and 27.0 percent in Samburu, Turkana and Marsabit, respectively. Poor hygiene practices and sanitation services coupled with use of unsafe water could be some of the major contributory factors to high cases of diarrheal diseases among the children below five years and general population and remains some of the major limiting factors to utilization pillar of food security.

2.1.5.8 Education

Access: Enrolment

There were improvements in enrolment for all levels of education; the highest being ECD at 18 percent followed by 6 percent and 3 percent at Primary and secondary levels, respectively. The percentage of boys enrolled at all levels of education was higher than that of girls, the largest disparity being at secondary school where 57 percent boys were enrolled compared to 43 percent for girls. Girls represent an average of 48 percent, 49 percent and 43 percent at ECD, Primary and Secondary levels, respectively. The high increase in ECD enrolment in this cluster can be attributed to sustained School Meals Programmes (SMP) in the three counties supported by the County Governments. Enrollment drives by UNICEF in Turkana County through the Out of School Children project also contributed to increased enrollment for both ECD and primary levels. Even though 100 percent Government transition policy and availability of bursaries was expected to significantly increase enrolment at secondary level, the increase was marginal. The enrolment rates for girls have always been lower due to cultural perceptions of girl's education and cultural practices of dowry weighting. However, the effect of drought has exacerbated the matter for girls.

Enrolment in the cluster

	Term I 2019			Term II 2019 (includes new students registered and drop-outs since Term I 2019)			Increase or Decrease Variation)	% Increase or decrease	% Boys Enrolment	% Girls Enrolment
Enrolment	№ Boys	№ Girls	Total	№ Boys	№ Girls	Total				
ECD	74001	67761	141762	87354	80127	167481	25719	18%	52%	48%
Primary	125528	118042	243570	132253	126488	258741	15171	6%	51%	49%
Secondary	19922	15172	35094	20643	15452	36095	1001	3%	57%	43%

Participation: Attendance

The average attendance rates were highest in ECD at 87 percent, while at Primary and secondary, the rates were 79 percent and 78 percent, respectively. Attendance was especially high in Turkana County (99 percent) for all levels. There were no notable differences in attendance between boys and girls. Increase in attendance in ECD between January and June could have been contributed by consistent availability of School Meals in most of the sub-counties in this cluster. Turkana county Government was fully involved in ensuring supply of school meals, the reason for almost 100 percent attendance. School attendance for primary and secondary levels were estimated at 85-90 percent with frequent absenteeism noted in a number of schools. This occurrence was attributed to lack of School Meals Programme in all some primary schools in Samburu and Marsabit Counties. Other factors include insecurity particularly for schools along the Kenya/Ethiopia border and Marsabit Central Sub-Counties, closure of boarding wings in some schools especially Torbi and Forole in Marsabit due to insecurity, migration of learners with livestock in search for pasture and negative cultural practices such as marriage ceremonies, initiation and rite of passage.

Retention: Dropout

There were notable higher drop outs in term I compared to term II at all levels of education. This is consistent with high attendance and enrollment in term two, a fact that can be explained

primarily by limited supply of School Meals that was experienced in term I but improved in term II. There were, however, no reported cases of dropouts of learners at secondary level in Marsabit County.

Other factors that have been reported to contribute to school dropout in this cluster include: inadequate schools around communities, migration in search of pasture and water, and the negative perceptions of the value for education coupled with retrogressive cultural practices. Cases of insecurity in Marsabit especially in Saku and North Horr sub counties led to notable dropouts while early pregnancies contributed to girls' dropouts in Turkana County. These factors are exacerbated during the time of drought when there is increased migration and reduced ability to pay school fees. Frequent teacher absenteeism and inadequate number of teachers was also reported to be among key factors that contributed to dropouts of ECD learners in Turkana.

School Meals Programme

Schools in the cluster relied exclusively on Regular School Meals Programme (RSMP) supported by Government of Kenya with direct provision of food. During the period, 221, 540 learners benefitted from school meals and this programme has contributed to an increased and sustained enrolment in all public primary schools within the counties by attracting children to school, improving learners' attendance and boosting their concentration while in class. All the 290 ECDE centers in Marsabit were provided with food from the month June. On the other hand, all 182 public primary schools had no food until the beginning of term II when 86 primary schools in three sub counties (Moyale, Chalbi and Laisamis) received meals that only lasted for 50 days. In Samburu a good number of learners reported having missed food primarily due to delays in food delivery, lack of water and source of energy to cook the available food, food being culturally inappropriate and inadequate food supply. Occasional water shortages and lack of firewood have constrained the provision of meals to pupils in this cluster. Consequently, children walk long distances to get water for the preparation of food in schools, having a negative impact on learning outcomes.

2.2 The Pastoral North-East Livelihood Cluster

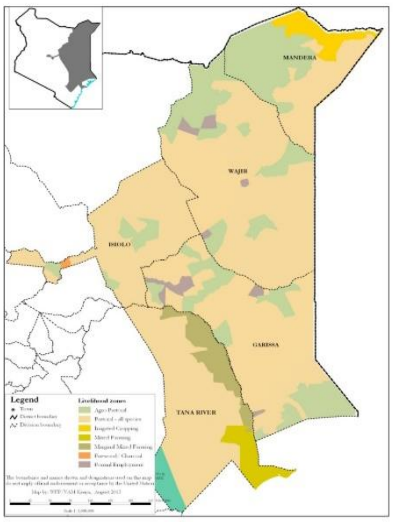


Figure 2.4: Pastoral Northeast cluster livelihood zones

2.2.1 Cluster Background Information

The cluster consists of Mandera, Wajir, Garissa, Isiolo and Tana River Counties. It covers an estimated area of about 193,244.9 square kilometres with a projected population of 2,060,479 persons (KNBS, 2016 projection). The main livelihood zones in the cluster are pastoral holding 57 percent, agro-pastoral 21 percent, marginal mixed farming nine percent of the population, irrigated with seven percent and informal/formal employment/business/petty trade with six percent as shown in the Figure 2.4.

2.2.2 Current Drivers of Food Insecurity

Rainfall Performance

The onset in the cluster for the March – May rainfall was late by four dekads (40 days) as compared to the normal third dekad of March. Major parts of the cluster received rainfall of 50 – 75 percent of the normal with parts of Galole and Bura in Tana River County

and Balambala and Lagdera in Garissa County receiving depressed precipitation of 25-50 percent of the normal. Northern parts of Mandera County recorded rainfall of about 75-90 percent of the normal. Spatial distribution was even while temporal distribution was poor across the cluster. The cessation was normal in the first and second dekad of May across the cluster.

Insecurity and Conflicts

Resource-based conflicts were reported in various parts in the cluster especially between herders and crop farmers. In Garissa County, inter sub county border disputes exist. Human wildlife conflicts were experienced in the cluster where wild animals destroyed crops and caused deaths and injuries to human and livestock. Al-Shabaab terror attacks were experienced in Wajir County along the border of Kenya (Konton and Khorof harar) and Somalia affecting movement of pastoralists towards the border.

Other Shocks and Hazard

There was outbreak of Kalaazar in Wajir county with a total of 380 cases and Garissa with nine cases. Cholera outbreak was reported in Wajir and Garissa with 211 and 623 cases respectively. Measles outbreak was reported in Dadaab sub-county Garissa with 10 cases reported.

2.2.3 Current Food Security Situation.

All the counties in the cluster are classified in crisis (IPC Phase 3) except mixed farming zone of Tana River and Ijara sub county in Garissa which is classified as Stressed (IPC Phase 2). Forage condition was fair to poor in the cluster except in Mixed Farming livelihood zone of Tana River County which had good forage condition. The cattle and sheep body condition were ranging between fair to poor save for mixed farming of Tana River County which reported good body condition for cattle. Grazers had good to fair body condition across the cluster. Milk production has declined to 1-3 litres compared to normal of 2-6 litres per household.

Households stocks have been depleted in Isiolo and Wajir Counties while farmers are below normal in Mandera, Garissa and Tana River Counties. Maize yields are below 50 percent while markets prices were above the long-term average. Goat prices were below normal in Mandera and Wajir Counties and stable in Garissa and Tana River Counties. Terms of trade are below normal except Isiolo County which is stable. Water consumption was ranging between 10 – 20 litres per person per day compared to 15 – 30 litres normally across the cluster. The proportion of households in acceptable food consumption score category was high in Mandera and Isiolo counties at 76.8 and 54.9 percent while it was 36.6 percent in Garissa, Tana River and Wajir counties. Wajir and Tana River had the highest number households with poor food consumption category at 25.7 and 22.5 percent respectively. The nutrition situation is critical (GAM rates above 15%) in Mandera, Garissa and Wajir counties.

2.2.4 Food Security Trends

Indicator	**Short Rains Assessment, February 2019 (Previous season)**	**Long Rains Assessment, July 2019 (Current)**
Food security phase	Stressed (IPC Phase 2) across all the livelihood in the cluster.	Crisis (IPC Phase 3) across all counties except mixed farming zones of Tana River and Ijara sub county in Garissa. Which are in stressed phase
Food stocks	Stocks of maize held by various actors were below long-term averages across the counties	Depleted in Isiolo and Wajir while below normal in Mandera, Garissa and Tana River Counties.
Livestock body condition	Good to fair.	Cattle and sheep: Fair to Poor save for mixed farming - good.

Indicator	Short Rains Assessment, February 2019 (Previous season)	Long Rains Assessment, July 2019 (Current)
		Goats and Camels: - Good to Fair.
Household water consumption	Mandera, Wajir and Isiolo recorded 15-20 litres per households per day while Wajir and Tana river recorded 10-15 litres per household per day.	10 – 20 litres per person per day
Meal frequency	2-3 meals across the cluster	

2.2.5. Impacts of Drivers on Food and Nutrition Security

Rain fed Crop Production

The main crops grown under rain fed production are maize, beans, sorghum, green grams and cowpeas. The area planted under maize, cowpeas, sorghum, green grams and beans were 77, 55, 70, 40 and 79 percent of the LTA respectively. The decline in area was attributed to delayed onset and below average rainfall received. Production of maize, cowpeas, green grams and sorghum were 53, 29, 28 and 8 percent of LTA respectively. The decline in production was attributed to moisture stress, pests and diseases, wildlife destruction and inadequate availability of certified seeds within the cluster.

Irrigated Crop Production

Irrigation agriculture was undertaken along rivers through the use of shallow wells and water pans. The main crops grown under irrigation are maize, bananas, and mangoes. Other minor crops are cowpeas, rice, mangoes and vegetables. Area planted under maize decreased to 97 percent of LTA attributed to reduced water levels in rivers and shallow wells especially in Wajir and Isiolo counties. The area under mangoes and banana was six and 13 percent above LTA, attributed to stakeholder support in development of irrigation water infrastructure in Garissa County. Production of rice and cowpeas decreased by 34 and 39 percent respectively of the LTA due to reduced water. The decline of vegetable production was attributed to water scarcity.

Cereal Stocks

Maize stocks held by farmers, NCPB and traders were 11, 77 and 89 percent below LTA respectively (Figure 3). This was attributed to poor crop performance due to depressed rains. Millers had 66 percent of the stock above the LTA. Millers were able to source the stock from other regions in the country. Sorghum held by NCPB, and traders were 94 and 68 percent respectively of LTA. Those held by farmers were within the LTA. Rice held by traders and NCPB were above the LTA by eight and 67 percent respectively. Rice held by farmers was 62 percent of the LTA. The green gram held by farmers and traders were 39 percent and 87 percent of LTA respectively while millers and NCPB held no stock.

Cereals stocks in the cluster

Commodity	Maize		Rice		Sorghum		Green gram	
	Current	LTA	Current	LTA	Current	LTA	Current	LTA
Farmers	2,019	18,410	1,410	2,260	20	2,179	740	1,896
Traders	24,075	26,970	77,051	70,960	2,300	3,387	1,696	1,945
Millers	2,570	1,544	0	0	0	20		
NCPB	5,988	7,800	2,500	1,500	32,940	3,500		
TOTAL	**34,652**	**54,724**	**80,961**	**74,720**	**35,260**	**9,086**	**2,436**	**3,841**

2.2.5.2. Livestock Production

Pasture and browse condition was fair to poor across all the livelihood zones compared to good to fair at a similar period of the year. However, in parts of pastoral areas of Tana River, Mandera and Wajir pastures and browse was depleted. Pasture and browse conditions was a deteriorating rapidly due to high temperatures in the region while in some areas like Sericho and Garba Tula wards in Isiolo county and Tana Delta in Tana River county, livestock influx has led to increased pressure on available forage resource. Pasture and browse are expected to last for 1-2 months in both the pastoral and marginal mixed zones in the cluster as compared to the normal three months. Forage and browse were accessible in the cluster except in few areas towards Lamu due to insecurity and Tsetse fly infestation.

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	1-2	Fair-Poor	Good-Fair	1-2
Agro pastoral	Fair-Poor	Good-Fair	1-2	Fair-Poor	Good-Fair	1-2

Livestock body condition for cattle and sheep was fair to poor across all the livelihood zones in the cluster. However, goats and camels body condition was good to fair. The body condition of grazers is likely to deteriorate further due increased trekking distances in search of water and pastures.

Milk production in the cluster declined by 50 percent compared to LTA across all livelihood zones. In pastoral and agro pastoral zones, milk production ranged 1-2 litres per day per household. Mandera county had the highest milk production at three and four litres in the pastoral and agro pastoral livelihood zones respectively. Milk consumption at household level was below average by 50 percent compared to the LTA. The average cost of milk in the cluster increased from the normal Ksh. 40-60 to Ksh. 50-130 per litre. The lowest price of Ksh 50-60 per litre was recorded in Tana River county while Garissa and Mandera counties had the highest prices of Ksh 100-130 per litre.

The return trekking distance to water points from grazing areas increased twice the average (2 times) the normal distance in the cluster. In the pastoral areas of Garissa, trekking distances ranged from 26-30 km compared to the normal of 15-18 km. The average watering frequency was after 2-3 days for cattle, sheep and goats across all livelihood zones in the cluster. In Wajir county camels were being watered after 7-10 days. However, long distances, fear of conflicts, breakdown of boreholes and livestock diseases (PPR and Sheep and Goat Pox in Wajir) resulted to limited access to water for livestock.

Return distances, duration and water frequency

Livelihood zone	Return trekking distances-km		Expected duration to last (Months)		Watering frequency (Days per 7 days)	
	Current	Normal	Current	Normal	Current	Normal
Pastoral	10-30	10-15	Less than a month	3-4	After one day/days	daily
Agro pastoral	10-20	5-8	Less than a month	3-4	After one day/days	daily

Due to decline in rangeland resources, migration of livestock in and out of the cluster has been witnessed. The movements were towards dry season grazing areas and drought reserves, however they were earlier than normal in May and continued through July. Livestock from Mandera and Garissa, migrated to areas bordering Ethiopia and Somalia, while others crossed the border into neighbouring countries. Migration across and between the counties in the cluster has been witnessed with out-migration to neighbouring counties of Meru, Laikipia, Kitui and Kilifi. High influx of livestock from neighbouring counties of Samburu and Marsabit have also been observed. In Tana River county, unusual migration of camels into the Tana Delta belt has been witnessed for the first time despite the fear of Tsetse flies. As the pastures continue to get depleted elevated livestock migrations are expected across in the cluster which might lead to resource based conflict and spread of livestock diseases. Decline milk availability and income will continue to be witnessed.

The main diseases reported in the cluster were CCPP, PPR, Black quarter, FMD (Isiolo) and Sheep and Goat Pox. In poultry, Fowl pox, Fowl typhoid, New castle and Coccidiosis including parasitic infections by fleas, mites and ticks were reported in Isiolo. Infestation by lice was also reported in Garissa county. No elevated mortalities reported in the cluster apart from a few cases in Mandera. The department of veterinary services continued to carry out routine disease surveillance and vaccinations and treatments.

2.2.5.3 Market Performance

Available food commodities within the markets included maize, rice, beans, posho, meat, milk, pasta and wheat flour albeit at relatively moderate quantities. During the season there was no major disruption in market functionality across most areas in the cluster except the terror threat in Mandera town, Lafey and Elwak that affected the normal operations in those markets with reduced market activity being witnessed across markets in Tana River occasioned due to reduced household purchasing power. However, stability in market functionality was anticipated across September save for Wajir where the likelihood of disruption at the onset of the short rains was high since the road infrastructure was destroyed. It was noted that a significant proportion of the population within the cluster approximately 90 percent was heavily reliant on the market in supplementing their household food needs. Most of the market supply sources for this cluster were from neighbouring counties like Moyale, Meru, Thika, Nairobi, Malindi, Mutha and Waldena and Mombasa for their main staples. The common commodities sold were staples, pulses, vegetables, sugar, milk and cooking oil. Commodities that were on demand were staples and livestock.

Market Prices

The average price of a kilogramme of maize across the cluster was above the long-term average prices and lowest was Ksh. 55 in Tana River county and highest of Ksh. 76 in Mandera county. In Garissa for instance, the higher than long term average prices of maize were attributed to increased demand of maize grain which was used to feed weak livestock and unavailability of the product in the peripheral markets. However, in Isiolo the high prices were mainly due to low maize stock in the county and inconsistent supplies limited by long distances and community cereal preferences. Price stability was reported in Wajir county since April mainly associated with distribution of relief food and steady supply inflows from the terminal markets of Thika, Meru, Nairobi and from Ethiopia through Moyale. Goat prices vary from county to county within the cluster and range from Ksh. 2,769 in Garissa to Ksh. 3,623 in Tana River county. Prices were reported to be on a declining trend in Mandera and Tana River due to relatively poor body condition, longer trekking distances in search of water and forage and some instances high supply especially in Wajir.

Terms of Trade

The current terms of trade in the cluster was unfavorable for all counties except Isiolo which have recorded below the long-term average terms of trade as shown in Figure 3. In the month of July, Tana River county reported the highest kilograms of maize that could be purchased from the sale of a medium sized goat at 66 kilograms, followed by Isiolo and Wajir at 56 and 55 kilogrammes respectively. Garissa and Mandera counties reported the least kilogrammes of maize from the sale of a medium sized goat at 41 and 37 kilograms respectively. The unfavorable terms of trade in the cluster was attributed to the declining and below long-term average goat prices coupled by high maize prices.

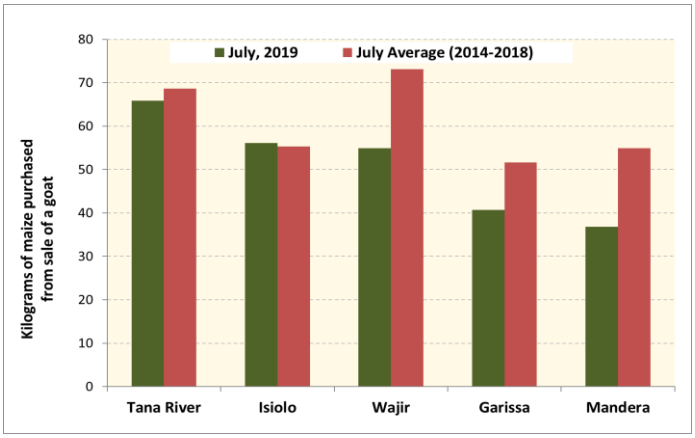


Figure 2.5: Comparative terms of trade in the cluster

2.2.5.4. Water access and availability

The main sources of domestic water are boreholes, shallow wells, Benane springs in Garissa, river Daua in Mandera County, river Tana serving Garissa and Tana River counties and river Isiolo, Ewaso Nyiro, Bisanadi and Kinna in Isiolo County. Most water pans were recharged to about 40 percent of their capacity. About 80 percent of the water pans have dried up in the cluster. Available water pans/dams with water in the cluster are likely to last for a month. At this time of the year, water pans form part of the major water sources. In Tana River, shallow wells in Kilelengwani and Kipini and most boreholes have higher salinity levels except those located near Tsavo East, Kora Game reserves and Kitui Conservancy.

High congestion of human and livestock influx at water sources was observed in Sericho, Duse, Oldonyiro, Cherab and Chari zone in Isiolo County, Elkambere, Kulubow, Sarirah, Handaro, Mathaamarub, Welmerel, Baraki, Santa Abaq, Dadaab, Hamaey and Dertu in Garissa, the pastoral all species in Wajir West, pastoral south and agro-pastoral livelihood zones in Wajir County and all boreholes in pastoral areas of Tana River. Most concentrated shallow wells in Tana River include Kone, Odoganda, Assa, Onjila, Gerasa, Baridi, Kipini.

Average return distances to water sources are within the seasonal range of 2-6Km in Isiolo, Tana River and agro-pastoral areas of Wajir. Return distances in the agro-pastoral areas of Mandera and pastoral areas of Wajir, Oldonyiro and Sericho wards in Isiolo and Lafey in Mandera range from five to 10 kilometres. Highest return distances between 10 and 15km were noted in the pastoral areas of Garissa, Mandera and Wayu, Kinakomba and Mikinduni in Tana River. Water trucking took place in the cluster. Waiting has remained within the seasonal norm of 30 to 60 minutes in Mandera and pastoral and marginal mixed livelihood of Tana River and Isiolo. However, waiting time has increased from the normal 20 minutes to 2-3 hours in Garissa and Wajir Counties due to drying up of water pans and shallow wells. Exceptional areas in Tana River where high waiting time was observed included Bangale where households are waited up to two hours to collect water supplied by a water boozer. Lowest waiting time of less than 15 minutes was experienced in the mixed farming zones of Tana River and agro-pastoral livelihood zones of Isiolo County. The cost of a 20 litres jerrycan was normal at Ksh.2-5.

However, water from vendors ranged between Ksh. 20 and 50 per 20 litres jerrycan in Wajir town, Modogashe, Barfin, Jilango, Jarajara, Kone, Hulugho, Shabel Dulla, Gailab and Elan in Garissa County and pastoral areas of Mandera and Tana River. Water vendors had doubled the cost in the pastoral areas of Mandera to Ksh. 10-20 per 20 litres jerrycan. Water consumption has declined from the normal 15-20 litres to 10-15 litres per person except for the mixed farming zones of Tana River where consumption was normal at 15 to 20 litres per person per day.

2.2.5.5 Food Consumption

The proportion of households in acceptable food consumption category was high in Mandera and Isiolo counties at 76.8 and 54.9 percent respectively compared to 46.1, 37 and 36.6 percent in Garissa, Tana River and Wajir counties respectively. Conversely, Tana river and Isiolo counties registered a decline in household with acceptable food consumption by 49 and 16 percent respectively in July 2019 compared to February 2019. This was an indicative of reduced household dietary diversity and meal consumption resulting from reduced livestock productivity which impacted negatively on household purchasing power. Majority of households in Wajir and Tana River counties were in poor food consumption category at 25.7 and 22.5 percent respectively compared to 10.9, 9.1 and 6 percent in Mandera, Isiolo and Garissa counties respectively.

2.2.5.6 Coping Strategies

The mean reducing coping strategy index (rCSI) remained stable in the cluster in July 2019 compared to February 2019 apart from Isiolo County which recorded an increase of 57 percent. This was an indication that, households in Isiolo County were employing consumption based coping strategies more frequently in July compared to February 2019. Moreover, 33 and 26 percent of households in Mandera and Tana River counties employed crisis coping strategies to cope with lack of food or money to buy food in July 2019 compared to 17.1, 16.7 and 3.1 percent in Isiolo, Garissa and Wajir counties respectively. High food prices and reduced income at household level were the main contributing factors for escalation of household coping mechanisms.

2.2.5.7 Health and Nutrition

Nutrition status

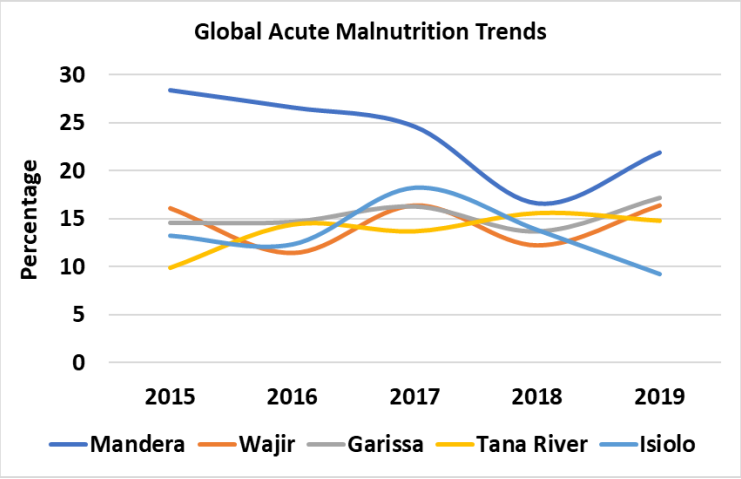


Figure 2.6: Trends of malnutrition in the cluster

Nutrition situation according to Integrated Phase Classification (IPC) for Acute Malnutrition was Critical (Phase 4, GAM WHZ 15.0 - 29.9%) in Mandera, Wajir, Garissa and Tana River while Isiolo was Serious (Phase 3) as shown in Figure 2.6. The Proportion of children with mid upper arm circumference (MUAC) less than 135 millimeters increased steadily across the cluster from January with a peak in April as shown in Figure 4. Increase in March 2019 was 44 and 39 percent in Tana River and Isiolo respectively above the long-term average (LTA). Garissa and Mandera increased by 22 and 23 percent in April. Admissions into IMAM program

have been on the increase in the cluster, peaks observed in different counties in March and April was attributed to either integrated outreach services or mass screening that was done in the various counties in the cluster.

Nutrition situation according to MUAC and IMAM admission trends are showing an increase in malnutrition in the cluster. Immunization coverage for measles at nine months and OPV 3 was above 70 percent in most counties except Mandera which was at 56.4 and 54.5 percent respectively. Three counties performed above the national target (80 percent), with Mandera reaching only 28 percent of the children. High coverage observed was attributed to ongoing interventions such as Global Alliance for Vaccine and Immunization (GAVI), Transformative Health Service-World Bank (THS-WB) supported outreach services, *malezi bora* and universal health care being piloted in Isiolo that target Expanded Programme on Immunization (EPI) and Maternal and Neonatal Health (MNH) indicators. Low coverage in Mandera was attributed to the persistent insecurity coupled with migration of communities that hampered service delivery and access to health care.

Morbidity and Mortality

The most prevalent disease affecting under-five and general population in the cluster was upper respiratory tract infection (URTI). The trend analysis based on routine DHIS data revealed a uniform highest peak in URTI cases in the month of March within the cluster. These could be attributed to seasonality due dusty conditions. Highest cases of diarrhea were reported in Mandera. Other Counties with increased diarrhea cases were Garissa and Wajir. The increased diarrhea cases could have contributed to the acute malnutrition in the North East Pastoral cluster. Malaria cases were high in Mandera and Tana River in the month of May. Outbreaks of measles, cholera and Kala azar were reported in Wajir, Garissa and Mandera. Case fatality rate in the cluster for cholera and Kala azar was 3.0 and 0.7 percent respectively.

Water Hygiene and Sanitation

The underlying determinants of acute malnutrition include; unhealthy environment, inadequate access to water, sanitation, and hygiene. Majority (72%) of the households within the cluster don't treat their water before drinking. Open defecation was high in Tana River and Wajir at 57.1 and 43 percent respectively and low in Mandera at 12.6 percent. Handwashing with soap and water stood at 20.6 percent in Wajir and 80.3 percent Isiolo. Poor water sanitation and hygiene practices in the cluster contribute to high morbidity of diarrheal diseases among children and general population.

2.2.5.8 Education

Access: Enrolment

The percentage of boys enrolled in the cluster at all levels of education was higher than that of girls. Girls enrollment was 47, 43 and 38 percent at ECD, primary and secondary levels respectively. The enrolment was attributed to progressive reduction of the girls' enrolment as they transit from ECD, primary through secondary level. Unlike in other counties, Isiolo county registered enrolment of girls at ECD, primary and secondary levels at 52, 51 and 48 percent respectively, implying higher gender parity enrolment ratio for girls. The cluster enrolment for boys in secondary school for term II reduced by 167 compared to term I which were contributed by Garissa and Isiolo counties, where the enrolment reduced by 196 girls and 530 boys during the reporting period.

Enrolment in the cluster

Enrollment	Term I 2019			Term II 2019 (includes new students registered and drop-outs since Term I 2019)			Increase or Decrease Variation)	% Increase or decrease	% Boys Enrolment	% Girls Enrolment
	№ Boys	№ Girls	Total	№ Boys	№ Girls	Total				
ECD	44190	38828	83018	44616	38587	83203	185	0%	53%	47%
Primary	143145	109409	252554	145894	111177	257071	4517	2%	57%	43%
Secondary	31863	19804	51667	31696	19822	51518	-149	0%	62%	38%

Participation: Attendance

In the cluster, the average attendance rates reported for ECD, primary and secondary levels were 92, 94 and 95 percent respectively. There are no notable changes in attendance rates among the boys and girls in all the three levels. Whereas all the counties in the cluster reported similar average attendance ratios, Isiolo county had lower attendance rates at; ECD (62%), primary (59%) and secondary (81%).

Retention: Dropout

There were high dropout rates in the cluster with average total drop-out reported at ECD (5%), primary (2%) and secondary (3%). The high dropout rates in ECD were contributed by Garissa (13%), Mandera (6%) and Tana river (5%) counties, whereas the increase in primary and secondary drop-outs rates were mainly influenced by Garissa county at four and nine percent respectively. The increased dropouts in the cluster was attributed to migration of families from the school areas in search of water and pasture and hence children leaving school, lack of enough teachers in schools, households not appreciating the value of education, increased insecurity and violence, early marriages/child pregnancies and school fee costs especially in secondary schools. In all counties the dropout rates in boys was higher compared to the ones for girls. The sub counties that are affected by high dropout rates in Garissa County are Fafi, Lagdera and Garissa Township.

School Meals Programme

The 254,989 children benefitted from school feeding through Regular School Meals Programme (RSMP) being implemented in all counties in the cluster. Clearly, there exist a relationship between provision of school meals; by the National and County governments; with improved enrollment, attendance, and retention of learners in school. A total of 812 schools were able to provide meals for ECD, primary and secondary leaners targeting 277,876 beneficiaries. On the other hand, 124 schools were experiencing serious food shortages and unable to provide meals for their learners. However, it was observed that some county governments do not supply food for ECD learners on time, schools run out of stocks before the end of the school term, experience food delays, have acute water shortage restricting their ability to cook meals and sometimes lack funding to hire cooks or buy firewood.

Inter-sector links

Drought was experienced in the cluster that led to scarcity of water which affected learning in schools. The drought led to children dropping out of school to migrate with their families in search of pasture and support in looking after their livestock. Some schools had enough food supply yet could not cook due to lack of water within the school and the surrounding. Due to

conflicts arising from pressure on pasture and water resources or land/boundary disputes in some areas, communities were displaced to areas considered safe and alongside with their children who fail to access an education. Six schools (three in Garbatulla Sub County in Isiolo County and three in Lagdera Sub County in Garissa County) were closed due to insecurity. In addition, three more schools in Garbatulla had internally displaced persons living in and around the school thus exerting pressure on the limited school infrastructure or otherwise distracting the learning environment which affects learning outcomes.

2.3 The Agro Pastoral Livelihood Cluster

2.3.1 Cluster Background Information

The agro-pastoral cluster comprises of six counties which include: Kajiado, Narok, Laikipia, Nyeri, Baringo and West Pokot counties. The cluster covers an area of 71,471 square kilometres with a projected population of 3,983,079 persons (KNBS Projection, 2016). The cluster is divided into five livelihood zones with the proportion of population of 27, 11, 31, 20 and 10.7 percent for pastoral, agro-pastoral, mixed farming, marginal mixed farming and formal employment/tourism/trade/business zones respectively (Figure 2.7). Households in this cluster are largely involved in livestock keeping and crop farming. The main sources of income are livestock production and sale of crops.

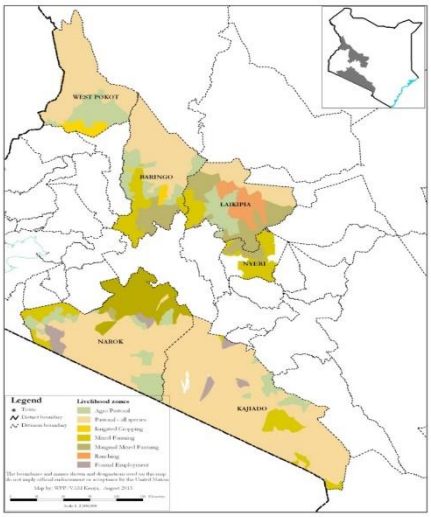


Figure 2.7: Agro pastoral cluster livelihood zones

2.3.2 Current Drivers of Food Insecurity

Rainfall Performance

The entire cluster experienced a late rainfall onset which were delayed by 2 – 4 dekads. Most of the counties (West Pokot, Baringo, Laikipia and Narok) received 75-90 percent of normal with some areas in these counties receiving enhanced rainfall of 90 - 110 percent of normal rainfall. Kajiado County generally received depressed precipitation of 50-75 percent of the normal rains. The rains were poorly distributed in time and space across the cluster and characterized by normal cessation in the third dekad of May with exception of Narok and Laikipia counties that recorded late cessation in the third dekad of June and first dekad of July respectively.

Conflict and Insecurity

Incidences of insecurity were reported along the West Pokot/Elgeyo Marakwet border and along West Pokot/Turkana borders resulting to closure of adjacent market and loss of livestock respectively. Cattle rustling was reported in parts of Baringo leading to high tension in some areas limited access to the market. In Nyeri county, resource-based conflict was reported between farmers and pastoralists that had migrated from the neighbouring counties. Human-wildlife conflicts were reported in Kajiado, Narok and Laikipia counties, where wildlife predated on livestock and invading crops.

Shocks and Hazards

Livestock diseases such as Foot and Mouth Disease (FMD) were reported across the cluster while endemic diseases such as Contagious Caprine Pleuro-pneumonia (CCPP), Pestes des Petits Ruminants (PPR), Lumpy Skin Disease (LSD) and Heart water (sheep and goats) were

reported in Kajiado and Narok counties. Fall Army Worm (FAW) infestation affected maize in Kajiado, Narok, West Pokot and Baringo counties.

2.3.3 Current Food Security Situation

The mixed farming livelihood zones in Baringo, Narok, West Pokot, Laikipia and Nyeri counties are classified in the Minimal (IPC Phase 1) food insecurity. Kajiado County, Agro-Pastoral zones of Baringo, pastoral zones of West Pokot are classified under Stressed (IPC Phase 2) while the pastoral livelihood zones in Baringo, particularly in Tiaty, classified in Crisis (IPC Phase 3). Maize stocks held by various actors in the cluster were 64 percent of the long-term average (LTA) with households holding about 30 percent of LTA in Kajiado, Nyeri and Baringo counties. Households in Narok held 80 percent of LTA stocks while those in West Pokot and Laikipia counties were holding above 20 percent of LTA. Cattle body condition was fair to good compared to good normally except in the marginal mixed farming areas where the body condition of cattle was fair to poor compared to good normally. Body condition of goats and camel was good across the cluster. Milk production decreased across the cluster, leading to decreased consumption from 2-3 litres per day to 1-1.5 litres per day. The terms of trade in the cluster are favourable and above the LTA where the sale of a goat can be exchanged for 60 to 76 kilogrammes of maize, except in Baringo and Laikipia counties where they are below the LTA. Household water consumption in the mixed farming and the marginal mixed farming livelihood zones was 10-15 litres per person per day while in the agro-pastoral and pastoral livelihood zones it was varying between five to 10 litres per person per day. Meal frequency remained 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. Over 60 percent of households in the cluster had acceptable food consumption, with those in Narok and Kajiado counties having over 80 percent. Households with borderline consumption ranged between 16 and 26 percent in most counties while Nyeri and Baringo counties had 35 and 38 percent respectively under this category. Less than five percent of households in the cluster were categorized as having poor food consumption. The mean reduced coping strategy index (rCSI) ranged between three and six which is indicative of a stable but deteriorating situation, with the exception of Baringo county which had an rCSI of 14.3 signifying higher food insecurity levels. The proportion of children at risk of malnutrition had an increasing trend with West Pokot and Laikipia recording 3.9 and 2.6 percent respectively while Nyeri, Narok and Kajiado having 4.3, 9.8, 9.7 percent respctively. Baringo county maintained the highest proportion of children at risk in the cluster at 20.2 percent.

2.3.4 Food Security Trends

Indicator	Short Rains Assessment, February 2019 (Previous season)	Long Rains Assessment, July 2019 (Current season)
Food security phase	**Minimal:** Mixed farming zones of Baringo, W. Pokot, Narok and Laikipia. **Stressed:** Pastoral and Agro pastoral zones of Baringo, W. Pokot, Narok and Laikipia. **Crisis**: Tiaty sub county in Baringo	**Minimal**: Mixed farming zones of Baringo, Narok, West Pokot, Laikipia and Nyeri. **Stressed**: Kajiado, agro-pastoral zones of Baringo, **Crisis:** Tiaty sub county in Baringo
% maize stocks at household level	40% of LTA	30 percent of LTA in Kajiado, Nyeri and Baringo 80 percent of LTA in Narok and 20 percent of LTA in West Pokot and Laikipia
Household water consumption	**Mixed farming zones** (10-15 litres per person per day) **Agro Pastoral and Pastoral zones** (5-10 litres per person per day)	Mixed farming 10-15 litres per person per day Agro-pastoral and pastoral 5 – 10 litres per person per day.

Indicator	Short Rains Assessment, February 2019 (Previous season)	Long Rains Assessment, July 2019 (Current season)
Meal frequency	**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	1-2 meals a day in pastoral and marginal mixed farming and 2-3 times a day in the mixed farming livelihood zone
Terms of trade	**Below LTA** (Baringo, Kajiado, Narok and Kieni) **Above LTA** (W. Pokot and Laikipia)	Higher than LTA except Baringo and Laikipia
Coping strategy index	15.74 Baringo, 9.1 W. Pokot 6.93 Kajiado, 4.91 Kieni 3.74 Laikipia, 3.40 Narok	3-6, Baringo 14.3.
Food consumption score	Poor: 5.5% Borderline: 18.2% Acceptable: 76.4%	Poor: 2-5% Borderline: 16-26% Acceptable: 60-80%
Children with MUAC less than 135 millimeters	**Reduction**-Laikipia (1.9%), Nyeri-Kieni, Narok (8.3%) and West Pokot (5.8%) **Increased**- Kajiado (17.6%) and Baringo (18.0%)	**Increased**: West Pokot and Laikipia (3.9 and 2.6%), Nyeri, Narok and Kajiado (4.3, 9.8, 9.7%), Baringo stable at 20.2%

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 to food and 40 percent to cash income for households. The main crops grown in the cluster include maize, beans, Irish potatoes and millet. The area planted under maize and beans was 91 percent of the long term average; 93 percent of the long term average for Irish potatoes while that of millet was 22 percent above the long term average. Production of beans, maize and potatoes reduced to 37, 49 and 65 percent of the long term average. The decline in production is attributed to poor distribution of rainfall across the cluster. There was fall army worm experienced in West Pokot affecting 20-40 percent of the acreage planted and is likely to reduce the projected production if effective control measures are not put in place. The reduction in area planted in Laikipia is attributed to reduced acreage under maize and beans, poor crop germination as well as total crop failure due to dry spells affecting a total of 6,426 Hectares.

Rain fed Crop Production

Crop	Area planted during 2019 long rains season (Ha)	Long term average area planted during the long rains season (Ha)	2019 Long rains season production	Long term average production during the long rains season
Maize	182,847	200,095	2,514,485	5,105,407
Beans	88,697	97,887	421,938	1,131,789
Potato	17,888	19,331	718,122	1,109,078
Millet	6,402	5,220	41,513	34,325

Irrigated Crop Production

Irrigation is mainly done in irrigation schemes and along rivers. The main crops grown under irrigation are onions, cabbages and tomatoes. Other crops grown under irrigation include kales and carrots. The area put under irrigation for onion, cabbages and tomatoes declined by 20, 24 and 29 percent below the long term average respectively. Production declined by 16, 18 and 19 percent below the long term average. The decline was attributed to water shortages as a

result of poor performance of the long rains. Area under seed maize increased and is 35 percent above the long term average attributed to more schemes being engaged in seed production like Loboi Lorwai irrigation scheme in Baringo South which had continuous supply of water.

Irrigated Crop Production

Crop	Area planted during 2019 long rains season (Ha)	Long term average area planted during the long rains season (Ha)	2019 Long rains season production	Long term average production during the long rains season
Onion	277	345	2,495	2,985
Cabbage	204	270	6,360	7,725
Tomato	84	119	1,820	2,235
Seed Maize	2,054	1,524	78,052	57,150

Cereal Stocks

The total maize, sorghum and millet stocks available in the cluster were about 90, 86 and 95 percent of long term average respectively while that of rice was 13 percent above the long term average and was mainly with the traders. Household maize stocks are about 84 percent of the long term average due to reduced production in parts of the cluster. Maize stocks will last for 2-3 months in Baringo and West Pokot as compared to 3-4 months and for four months in Laikipia, while stocks will last for less than a month in Kajiado and Nyeri counties.

Cereal Stocks

	Maize		Rice		Sorghum		Millet	
	Current	LTA	Current	LTA	Current	LTA	Current	LTA
Farmers	554,642	660,589	0	200	6,400	5,621	2,434	1,646
Traders	259,931	191,001	29,815	22,826	1705	3,560	1,802	651
Millers	94088	143,962	310	0	134	299	158	22
Food assistance/ NCPB	140,962	165,,,,,598	32	3,600	0	0	0	2,319
Total	**1,049,623**	**1,161,150**	**30,157**	**26,626**	**8,239**	**9,480**	**4,394**	**4,638**

2.3.5.2 Livestock Production

Livestock production in the marginal mixed farming, pastoral and agro pastoral contributes 40-60 percent to cash income while in the mixed farming it contributes to 22-25 percent. Pasture condition in the mixed farming livelihood zone was fair to good except in West Pokot County where pasture condition was good due to off season rainfall. Pastures are expected to last for 1-2 months in the cluster. Browse condition was generally good in the cluster. However, presence of invasive weeds (*No-one petrel*) in Nyeri and Kajiado, competition with wildlife and TseTse fly infestation in Narok and insecurity in pastoral areas of Baringo, continue to limit access to pastures and browse.

Pasture and Browse condition

Livelihood zone	Pasture condition			Browse condition		
	Current	Normally	Projected Duration to last (Months)	Current	Normally	Projected Duration to last (Months)
Mixed farming zones	Fair to Good	Good	2-4	Good	Good	1-3
Marginal mixed farming	Fair	Fair to good	1	Good	Good	1-3
Pastoral	Fair to Poor	Fair to good	1-2	Fair to Good	Good	1-3
Agro pastoral	Fair	Good	1-3	Good	Good	2-5
Irrigated Cropping	Good	Good	2	Good	Good	2

The body condition for cattle was fair to good compared to good normally except in the marginal mixed farming areas where the body condition of cattle was fair to poor compared to good normally. Body condition of goats and camel was good in the cluster. The body condition for cattle is expected to remain fair to good while for the browsers it is expected to remain good.

Livestock body condition

Livelihood zone	Cattle		Sheep		Goat		Camel	
	Current	Normally	Current	Normally	Current	Normally	Current	Normally
Mixed farming zones	Fair to Good	Good	Good-Fair	Good	Good	Good	Good	Good
Marginal mixed farming	Fair to Poor	Good	Good-Fair	Good	Good	Good	Good	Good
Pastoral	Fair	Fair To Good	Good	*Good-Fair*	Good	Good	Good	Good
Agro pastoral	Fair	Good	Good	Good-Fair	Good	Good	Good	Good

Birth rates across the cluster were near normal, however calving and kidding was delayed due to below average performance of the previous season. In the marginal mixed farming areas, birth rates were below normal due to fair to poor body condition especially for cattle. Tropical livestock unit (TLU) declined across the cluster except in marginal mixed farming livelihood zone. In poor income households, the TLUs declined by 44, 8, 20 and 31 percent in mixed farming, pastoral, agro pastoral and irrigated cropping respectively compared to the normal. In medium income households, the TLUs also declined by 23 percent in mixed farming and pastoral livelihood zones as well as 11 and 22 percent in agro pastoral and irrigated cropping. The decline in TLUs was as result of diminishing land size due to land demarcations, increased sales to cater for other necessities, diversification to improved breeds and practicing semi intensive systems of livestock production.

Tropical Livestock Unit

Livelihood zone	Poor income households		Medium income households	
	Current	Normal	Current	Normal
Mixed farming zones	1-4	2-7	2-8	3-10
Marginal mixed farming	1-3	1-3	3.5-4	3.5-4
Pastoral	4-7	5-7	7-20	15-20
Agro pastoral	2-6	3-7	5-20	7-21
Irrigated Cropping	2.4	3.5	3.9	5

Milk production across the cluster declined by 22-39 percent compared to the long term average. In Kajiado County, however, production increased by 25 percent compared to the long term average. Household milk consumption also declined across the livelihood zones in the cluster and lowest in the marginal mixed farming. Prices across the livelihood zones were below the normal average except in pastoral areas where prices were above by 25 percent to the averages.

Milk Production and Consumption

Livelihood zone	Milk Production (Litres)/Household		Milk consumption (Litres) per Household		Prices (Ksh)/Litre	
	Current	LTA	Current	LTA	Current	LTA
Mixed farming zones	2-9	2-10	1-3	2-5	30-60	30-60
Marginal mixed farming	2-5	2-7	0.5-1.5	1-2	30-35	28-35
Pastoral	1.5-4	2-7	0.5-2	2-4	50-75	40-60
Agro pastoral	2-7	2-10	1-3	2-3	40-60	40-90
Irrigated Cropping	6	8	1-2	2	50	60

The main sources of livestock water include rivers, pans, dams, boreholes, springs and wells across the cluster. Return distances for livestock remained near the average in cluster. The water is expected to last until the next rainy season. Watering frequencies for livestock across the cluster has remained once/daily due to near average distances and access to water points. However, water access in some parts of Baringo and Narok was limited due to human wildlife conflicts.

Return trekking distances to Water source

Livelihood zone	Return trekking distances-km		Expected duration to last (Months)	
	Current	Normal	Current	Normal
Mixed farming zones	0.5-10	0.5-10	2-3	3-4
Marginal mixed farming	3	3	2	2
Pastoral	4-10	2-8	1-2	2-3
Agro pastoral	2-10	2-7	2-3	3-4
Irrigated Cropping	0.5-2	1-1.5	2-3	2-3

There were no livestock migrations reported in the cluster however, there were movements within the counties except in West Pokot, where in migration was observed as cattle returned from Uganda especially in pastoral livelihood zones. Illegal grazing in private ranches was reported in Nyeri resulting to conflicts as livestock moved in from Laikipia. Foot and Mouth Disease (FMD), Lumpy Skin Diseases and Newcastle disease (NCD) in poultry were reported in the cluster. Endemic diseases such as Contagious Bovine Pleuro pneumonia (CBPP), Peste des Petits Ruminants (PPR), Contagious Caprine Pleural Pneumonia (CCPP) were also reported across the cluster. Other diseases included tick borne related cases reported across the livelihood zones in the cluster. Hemorrhagic Septicemia diseases in camels were reported in Baringo. However, the veterinary departments in the cluster continue to offer disease surveillance, vaccination and treatment of diseased livestock. Minimal mortalities in livestock were reported in the cluster.

2.3.5.3 Market Performance

Despite normal operations being witnessed across most markets in the cluster, Chesegon market in West Pokot remained closed due to insecurity while supplies to Loruk market in Baringo was affected by tension. There was an increase in the proportion of pastoralists relying on markets for supplies, for instance 80-90 percent of pastoralists in West Pokot and Narok

were dependent on the markets entirely for supplies compared to a proportion of 70 percent normally. The markets were generally well provisioned with essential food stuffs such as maize, pulses, rice, sugar, maize flour, sorghum, millet, cowpeas and green grams. The food commodities were being sourced locally and also from the neighboring counties such as Kitale in Trans Nzoia, Nakuru, Eldoret in Uasin Gishu.

Market Prices

Maize prices across the cluster have been on an increasing trend and have risen above the long-term average prices and even prices reported same period in 2018. Currently, the average price of a kilogram of maize across the cluster retail at Ksh. 55 to Ksh. 60 with the highest being in Nyeri. The increase in prices was attributed to declining stocks held at household level and by local retailers. The high prices were attributed to the high demand for the maize commodity which was in short supply in some of the markets in the pastoral areas which usually would get maize from external markets such as Kitale and cross- border imports from Uganda. On the other hand, goat prices have recorded significant variations across all counties within the cluster but have remained above the long-term average prices in West Pokot, Narok, Kajiado and Baringo counties while in Nyeri and Laikipia counties, the prices reported were below the long-term average prices. Compared to same period in 2018, the current prices are however lower with exception of West Pokot. The low prices in relation to 2018 were mainly attributed to deterioration of the body condition of livestock and low demand. In Nyeri, the prices were stable due to good body condition occasioned by availability of forage. The highest prices in the cluster as at July were reported in Nyeri at Ksh. 3,900 while the lowest was reported in Baringo and Laikipia at averagely Ksh. 2,560.

Terms of Trade

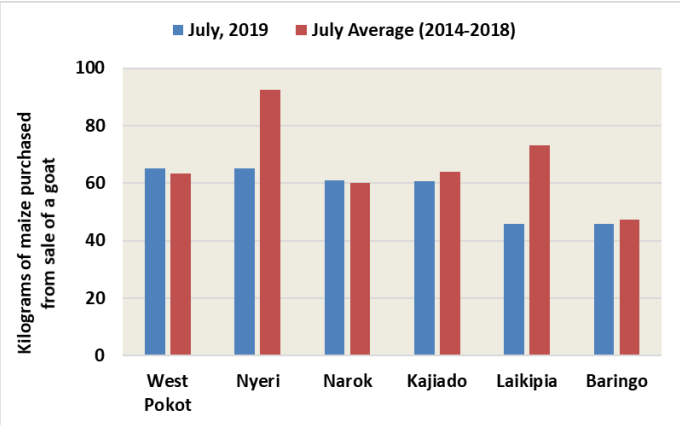


Figure 2.8: Comparative terms of trade in the cluster

Current terms of trade in the cluster is unfavorable compared to the long-term averages save for West Pokot and Narok counties that have comparable terms of trade with the long-term average for July. Significant deterioration of terms of trade was noted in Laikipia and Nyeri counties where the sale of a medium-sized goat would only purchase 46 and 65 kilograms compared with the long-term average of 73 and 92 kilograms respectively as shown in Figure 2.8.

2.3.5.4 Water and Sanitation

The main sources of water in the cluster are rivers, boreholes, streams, shallow wells, springs, pans/ dams and piped water schemes. Normally, most of the open water sources would be having enough water to last into the next season. The rains impacted positively in terms of recharge to open water sources. However, this recharge was varied ranging from 30-45 percent in Kajiado, Baringo and Kieni while Laikipia, Narok and West Pokot Counties received 65-100 percent. As a result, most open water sources in Kajiado have dried up as a result of poor recharge, and the households are relying more on the permanent sources available. In areas where recharge was good, water is expected to last for 2-3 months while in areas where it was poor, water is expected to last until end of August. About 75-80 percent of boreholes are

operation with the rest having broken down and others mismanaged by the borehole committees.

Distance to open water sources was within the normal 1-3 kilometres in the agro pastoral and mixed farming livelihood zones. In the pastoral and marginal mixed farming zones of Narok and Laikipia distances were also within the normal 3-7 kilometres. The cost of water remained within the normal Ksh. 3-5 in the cluster except Laikipia County where reduced to Ksh 5 from the normal 10-20. Vendors are however selling the commodity at Ksh. 20-40 depending on the distance from the preferred water source. Waiting time at the source remained within the normal less than 10 minutes in Baringo, pastoral and agro pastoral zones of Laikipia as well as Mixed and Agro-pastoral zones of Kajiado Counties. There was a reduction in waiting time across the cluster by about 50 percent and was lowest in the mixed farming zones of West Pokot at 10-20 minutes compared to the normal 30-40 minutes.

Water consumption was 15-20 lpppd which is normal at this time of the year. However, the pastoral and agro pastoral livelihood zones of Baringo and Kajiado counties recorded asligtly lower consumption of 10-15 litres per person per day compared to the normal 15-20 litres per person per day. The areas that recorded the least consumption of 8-10 in litres per person per day were the pastoral zones of West Pokot as well as isolated areas in the pastoral zones of Baringo County.

2.3.5.5 Food Consumption.

The proportion of households with acceptable food consumption was highest in Kajiado and Narok at 82 percent followed by Lakipia, West Pokot at 73 and 70 percent respectively. On the other hand, Baringo, West Pokot and Narok counties had 4.9, 4.0 and 4.1 percent of the population with poor food consumption implying households are consuming two food groups (starch and vegetable) frequently. Proportions of households consuming more than five food groups in West Pokot improved to 46.4 from 31 percent while in Baringo North and South it decreased to 53 percent from 73.4 percent reported during the same time last year. In Tiaty Sub county in Baringo County, the proportion consuming more than five food groups decreased from 38.2 percent in July 2018 to 22.8 percent in July 2019. The most consumed food groups were cereals, vegetables, oils and milk. Currently, milk consumption across the cluster is within normal thresholds and production and consumption is expected to improve.

2.3.5.6 Coping Strategy

The reduced coping strategy index (rCSI) for the month of July 2019 was highest in Baringo at 14.3. However, this was still an improvement compared to the same period in 2018. In the rest of the counties, the rCSI was between 2 – 6 5 and was lowest in West Pokot County. Compared to a similar period in 2018, rCSI increased for Nyeri, Laikipia and Kajiado counties. West Pokot and Narok Counties have the highest number of households not employing any coping strategy, while Baringo is the only county in the cluster that have household applying crisis strategy. The households that are in stressed and crisis category in the cluster are mostly employing borrowing, purchasing food on credit, relying on well off relatives, reduced number of meals, and giving preference to children during meal times and reducing the portion size.

2.3.5.7 Health and Nutrition

Nutrition Status

Nutrition situation varies widely across the counties in the cluster. According to Integrated Phase Classification (IPC) for acute malnutrition conducted in July 2019 for children under five years, the situation was Critical in Tiaty in Baringo County (Phase 4;GAM 20.9%), Serious

in West Pokot (Phase 3; GAM 11.7%), Alert in Baringo North/South (Phase 2; GAM 9.3%) while it was Acceptable in Narok and Kajiado (Phase 1; GAM <5%). Data was not available to classify Kieni in Nyeri county. Admission trends in this cluster for IMAM (OTP and SFP) were stable. Trends of the proportion of children having MUAC less than 135 millimeters trends were below the long term average (LTA) except in Baringo County where they were above (Figure 2.9).

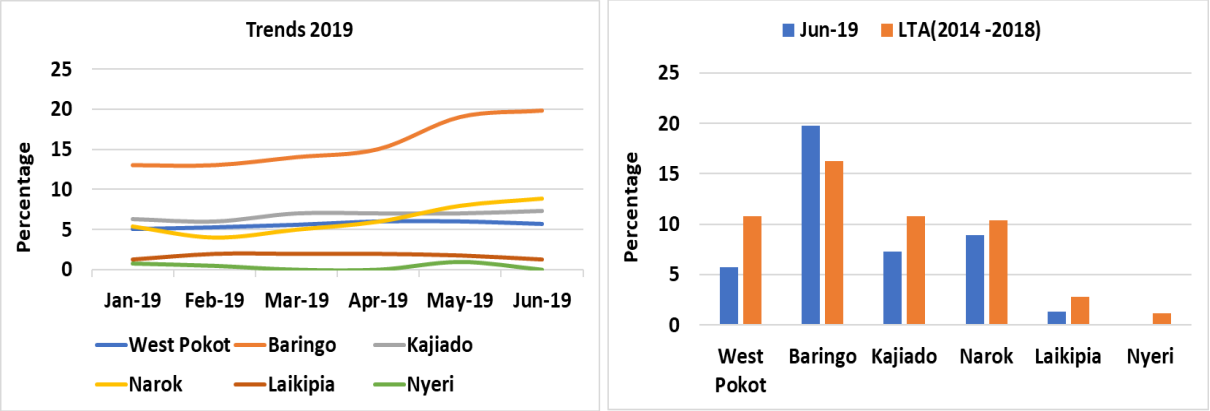


Figure 2.9: Proportion of children at risk of malnutrition (MUAC <135mm)

Dietary diversity and practices for children remain sub-optimal within the cluster greatly contributing to the high acute malnutrition levels witnessed. Breastfeeding and complementary feeding practices remains suboptimal in the entire cluster. The poor child care practices are attributed to cultural practices such as women's limited ability to make economic decision on child care practices especially on dietary choices; high food insecurity; and maternal workload. The dietary diversity is however, projected to improve across the clusters with the anticipated harvest in the month of August-September.

Morbidity and Mortality

The three most common diseases among under-fives in the cluster are upper respiratory tract infections (URTIs), malaria and diarrhea. Diarrhea and malaria cases reported in this season were higher compared to the same season last year across the cluster with significant increase of cases noted in Tiaty in Baringo county and West Pokot County (SMART survey results, 2019). The prevalence of children who were reported to have diarrhea in Tiaty increased to 31 percent compared to five percent reported same time last year while in West Pokot County the proportion increased to 22.6 percent from 14 percent. The increase could be attributed to limited access to water during the prolonged dry period, poor hygiene practices and limited access to sanitation facilities. Malaria prevalence in West Pokot significantly increased to 42.9 percent in July 2019 from 18 percent recorded in July 2018. The increase in malarial cases was attributable to the on-going rains in the county where stagnant water provides breeding grounds for mosquitoes. Malaria and diarrhea cases are expected to continue increasing thus negatively impacting on acute malnutrition. Cholera and measles outbreaks were reported in Kajiado County and were still active as at 7th July 2019.

Water Hygiene and Sanitation

Majority of the households in the cluster were using open water sources with the highest proportion reported in Baringo County (Tiaty 76.2 percent and Baringo North and South 52.3 percent) Water treatment is generally low across the cluster and lowest in Baringo and West Pokot Counties having less than 10 percent. Latrine coverage was generally low for the cluster with exception of Baringo North/South sub Counties having the highest at 72.4 percent and

was lowest in Tiaty at 6.6 percent. Hand washing practices at all critical times remains sub-optimal with Baringo County (Tiaty Sub County) having the poorest at 2.2 percent followed by West Pokot at 7.5 percent and Kajiado at 15 percent. The cluster therefore experiences poor water and sanitation practices, which contribute to high waterborne morbidity including diarrheal, malaria and dysentery.

2.3.5.8 Education

Access: Enrolment rate

The enrolment statistics from this cluster indicate a near equal enrolment at the ECD and secondary levels among the boys and girls. There was a one percent difference in enrolment between boys and girls in the primary level indicating a near equal gender parity. Overall, gender parity index on access to education in this cluster was seen to improve with key informants in the counties mentioning an increase of girl's access to education. The improvement maybe attributed to the effort by development partners working in the different counties in areas of child protection particularly in the pastoralists' counties of West Pokot, Baringo, Kajiado and Narok. At the ECD level, there was eight percent decrease in enrolment between term I and term II and this was contributed greatly by 27 percent decrease in enrolment in Narok County. The decrease in ECD enrolment was directly attributed to delays in delivery of school meals in term II and adverse effects of the drought that leads to instability in families and displacement of families due to migration of livestock away from areas close to schools. It was also reported that about 589 schools across the cluster had challenges implementing the school meals programmes directly affecting about 272,133 boys and girls.

Enrolment in the Cluster

	Term I 2019			**Term II 2019 (includes new students registered and drop-outs since Term I 2019)**			**Variation**	**% Increase or decrease**
Enrollment	№ Boys	№ Girls	Total	№ Boys	№ Girls	Total		
ECD	99656	99694	199350	93149	89973	183122	-16228	-8%
Primary	338291	324644	662935	337277	326406	663683	748	0%
Secondary	83682	82058	165740	88449	87899	176348	10608	6%

Participation: Attendance rate

Attendance rates have fluctuated across the cluster, over the different counties and over the months January 2019 – June 2019. The average attendance rate was above 80 percent for both boys and girls at the three levels of education. There was noted low average attendance of 52, 50 and 49 percent at ECD, primary and secondary level respectively in Narok County indicating that at every given school day, more than 50 percent of children were absent. Failure of the 2018 short rains and 2019 long rains exacerbated by the pastoralist migratory lifestyle of the majority of the population in the county contributed significantly to this relatively low attendance.

Retention: Dropout rate

Average dropout rates across the three levels of education and across the two terms for both boys and girls were below one percent, however, more girls dropped out of school in both terms. In other counties in the cluster, girls dropped more in both primary and secondary levels as a result of child protection concerns like child marriages and teenage pregnancies. There

was also a notable decrease in drop out between term I and II and reasons for the higher drop out in term I were lack of food in schools (West Pokot, Narok, Baringo), family labour responsibilities (Baringo, Narok, Nyeri, West Pokot), migration from the area and far distances to schools (Narok, West Pokot, Baringo), and insecurity/violence (Baringo).

School Meals Programme

Availability of school meals and water was noted to contribute towards increased enrolment and improved participation of children in education across the county. Key informants in the counties also highlighted that meals provided in schools discouraged school dropout. Home Grown School Feeding Program was widespread in the cluster with West Pokot having the highest number of schools receiving meals. Inadequate access to clean water for preparation of meals in the cluster has affected smooth implementation of the program. Delayed disbursement of Ministry of Education (MoE) capitation funds to primary schools or delays in delivery of food at the ECD level by county or its absence, increased food prices, lack of funds for firewood and wages for the cook, and insecurity and delays in registration of new schools for allocation of free primary and subsidized secondary education funds were cited as the main reasons for children missing food.

Inter-sector linkages

In Baringo and West Pokot, the Ministry of Health with support from development partners regularly carried out deworming and Vitamin A supplementation at ECD centres as a food security and nutrition-related intervention. In Baringo, the national government through the Ministry of Interior held peace-building campaigns in an attempt to curb the insecurity that had been experienced in Baringo North, East Pokot and Marigat sub-counties. Two schools in Baringo South (Lumungum and Kiserian) and one in Laikipia Central (Shalom) had IDP camping inside the schools affecting attainment of learning outcomes.

2.4 The South Eastern Marginal Agricultural Livelihood Cluster

2.4.1 Cluster Background Information

The cluster consists of Kitui, Makueni, Embu (Mbeere), Tharaka Nithi (Tharaka) and Meru (Meru North) counties and covers 46,255 square kilometers. The cluster has a projected population of 3,448,026 according to the Kenya National Bureau of Statistics (KNBS, 2016). The two major livelihood zones are the Mixed Farming Livelihood Zone with a population of 26 percent and the Marginal Mixed Farming Livelihood Zone with 65 percent of the total population. The Rain-fed cropping and formal employment make the remaining nine percent (Figure 2.10).

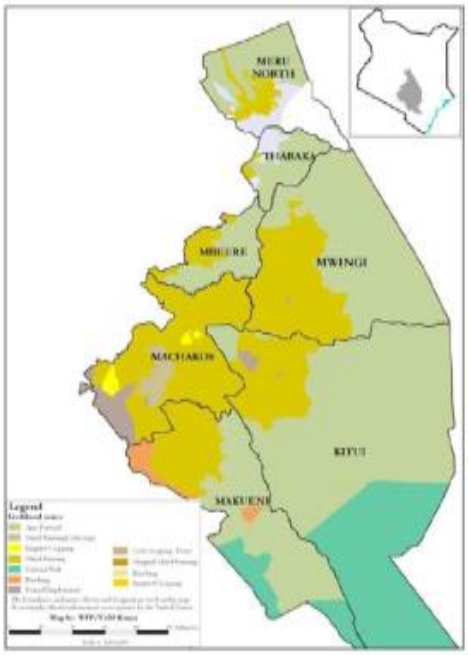


Figure 2.10: Southeastern marginal agricultural cluster livelihood zones

2.4.2 Current Drivers of Food Insecurity

Rainfall Performance

The performance of the 2019 March to May long rains was generally poor across the cluster counties. The rainfall onset was delayed by 30 days and the season characterized by poor spatial and temporal distribution. Cumulative season totals ranged between 50-75 percent of normal across the cluster. However, cumulative season totals in the eastern parts of Kitui county bordering Tana River county and isolated areas of the Marginal Mixed Farming Livelihood Zone in Kibwezi sub county in Makueni county, were below 50 percent of normal. The cessation was normal across the cluster in 2nd -3rd dekad of May.

Conflict and Insecurity

The earlier-than-normal livestock migration from Garissa, Isiolo and Tana River into northern parts of Meru (Meru North) and eastern parts of Kitui County resulted in resource based conflicts. In the Marginal Mixed Farming areas of Ngomeni in Kitui county, at least three persons lost their lives while in the northern parts of Meru (Meru North), one person died due to skirmishes of grazing rights. In Embu County (Mbeere), conflicts were reported in Mwea and Makima over land ownership which limited access and utilization of agricultural land for productivity.

Shocks and Hazards

Fall army worm infestation in maize and mealy bugs in papaya fruit trees were noted in Mixed Farming and Rain-fed Cropping livelihood zones of Embu and Tharaka Nithi counties respectively. Foot and Mouth Disease, Rabies, Tick borne diseases and Anthrax were among the major livestock diseases across the cluster. In Meru (Meru North) two persons died after consuming meat from a carcass infected with Anthrax. Newcastle disease and Fowl pox were the major poultry disease in the cluster.

2.4.3 Current Food Security Situation

Currently, the Marginal Mixed Farming Livelihood Zone in Tharaka, Kitui and Makueni counties and the Agro-pastoral Livelihood Zone in Meru (Meru North), are classified as Crisis (IPC Phase 3). The Mixed Farming, Rain-fed Cropping and Formal Employment livelihoods zones are classified as Stressed (IPC Phase 2). The total maize stocks held by households and traders in the cluster were 35 and 69 percent of the long-term average (LTA) respectively. However, the stocks held by households in Tharaka were five percent of the long-term average while stocks held by traders in Makueni were 95 percent of the long term average. Livestock body condition was generally good to fair for all species. However, in the Marginal Mixed Farming Livelihood Zone of Tharaka and Embu (Mbeere), the body condition of cattle was fair to poor. Milk production across the cluster was low ranging between 30-50 percent of the LTA. The goat-to-maize price ratios in the cluster had declined to 6-30 percent below the LTA. Water consumption across the cluster counties ranged between 10 – 20 litres per person per day compared to an average of 20-40 litres per person per day. In the Marginal Mixed Livelihood Zone of Kitui, water consumption had declined to 8-10 litres per person per day. The proportion of children at risk of acute malnutrition was within the long-term averages, although the highest numbers were in Meru (Meru North).

2.4.4 Food Security Trends

Indicator	Short Rains Assessment, February 2019	Long rain assessment July 2019
Food security phase	Stressed (IPC Phase 2) except Meru north and Mbeere in None/Minimal (IPC Phase 1)	Generally, the cluster is in stressed (IPC Phase 2) except marginal mixed farming livelihood zone in Kitui and Meru North in crisis (IPC Phase 3).
Household food stocks (90 kg bags)	21% below LTA	Cluster has 60-90% below LTA, except Tharaka with 5 percent below the LTA.
Livestock body condition	Good – Fair and fair – poor in MMF of Mbeere	Good-fair Generally. Except marginal mixed farming livelihood zone in Tharaka and Embu with fair to poor.
Household water consumption	10 – 30 litres across except in MF in Embu with 60 litres per person per day	Water consumption ranges from 60 -100 percent of normal. 10-20ltr/pp/pd
Coping strategy index	rCSI 3.6-4.0, Exceptions in Makueni and Meru north at 7.0 and 11 respectively.	CSI for the cluster :7-15%
Food consumption score	Over 77 percent of households had Acceptable food consumption score	Over 96 percent of households had Acceptable and borderline food consumption scores
Children at risk of malnutrition	Below LTA across the cluster except in Makueni County that was 26% above LTA	Below LTA except kitui at 8% within LTA

2.4.5 Impact of Drivers on Food and Nutrition Security

2.4.5.1 Crop Production

Rain fed Crop Production

The March to May long rains are less dependable and contribute 40 percent of annual food production in the cluster. The main crops grown in the cluster are maize, green grams and cowpeas. Other crops grown include beans, sorghum and millet. The area under green grams, maize and cow peas was nine, 23 and 35 percent below the five-year average respectively. The decline in area achieved resulted from wilting and drying of a significant proportion of germinated crop following a false rainfall onset at the beginning of the season. Subsequently, a significant number of poor households were unable to replant citing high costs of certified seeds and other inputs. Production of green grams, maize and cowpeas declined significantly to 20, 13 and 5 percent of the five-year average. The decline in production resulted from a combination of lower than average area achieved and the poor performance of rainfall during the season.

Rain fed crop production

Crop	Area planted during 2019 Long rains season (Ha)	LTA area planted during the Long rains season (Ha)	2019 Long rains season production (90 kg bags) Projected/Actual	LTA production during the Long rains season (90 kg bags)
Maize	104618	136491	131048	1011931
Green grams	55664	61275	59680	296638
Cow peas	34647	52910	11561	232010

Irrigated Crop Production

The main crops grown under irrigation are tomatoes, kales and water melons. Other crops include green maize, paw paws and cabbages. Area planted under tomatoes increased to 2,501 Ha from 1,185 Ha, that of kales to 2,312 Ha from 956 Ha while that of watermelons increased

to 1,740 Ha from 551 Ha. In Kitui, the county government invested Ksh 24 million through provision of certified seeds, pesticides, equipment and extension services to farmer groups under the MYANDA program. In addition, CARITAS-Kitui also funded a significant number of farmers groups to establish small-holder irrigation schemes. Both investments increased acreage under the major irrigated crops in Kitui county. As a result, production of watermelons, kales and tomatoes increased to 55, 128 and 178 percent above the five-year averages.

Cereal Stocks

The main cereals consumed in the cluster are maize and rice while millet and sorghum are mainly produced for sale with limited consumption. The overall maize stocks held by households and traders in the cluster were 35 and 69 percent of the five-year average. Stocks held by National Cereals and Produce Board (NCPB) was 286,807 bags but sale to traders and general population was limited. Following the depleted stocks, households were mainly relying on markets for their weekly supplies of cereals in Kitui and Tharaka counties. The current household maize stocks held will last for 2 - 3 months in Meru county as compared to a normal of six months.

Cereal stock held

Commodity	Maize		Rice		Sorghum		Green gram		Millet	
	Current	LTA	Current	LTA	Current	LTA	Current	LTA	Current	LTA
Farmers	132,593	377,787	517	937	17,120	147,245	15,360	157,693	2,668	7,799
Traders	410,163	597,423	67,971	390,045	27,066	20,144	18,206	48,650	3,115	4,794
Millers	9,915	8,700	0	0	405	400	0	0	605	580
Food Aid/NCPB	286,807	205,867	57	1,520	0	0	0	0	0	0

2.4.5.2 Livestock Production

Livestock production contributes 23-60 percent to cash income in the Marginal Mixed Farming Livelihood Zone and 15-45 percent in the Mixed Farming Livelihood Zone. Also, livestock production contributes 15-26 percent to cash incomes in Rain-fed Cropping Livelihood Zone and the Agro-pastoral Livelihood Zone. The pasture and browse conditions were fair to poor across the cluster compared to fair to good conditions typically. However, in the Mixed Farming Coffee/Dairy Livelihood Zone of Meru (Meru North) and the Mixed Farming Livelihood Zone of Makueni, pastures and browse were of good conditions. Across the cluster, pastures and browse are anticipated to last only last through August compared to late September normally. However, in the Mixed Farming Coffee/Dairy Livelihood Zone of Meru (Meru North) and the Mixed Farming Livelihood Zone of Makueni, pastures are likely to last through to late September and early October. Following the poor performance of crops in the farms, the availability of crop residues to supplement pastures and browse is highly limited. Water scarcity across all the livelihoods, wildlife conflicts and insecurity caused by invasion of pastoralists from Isiolo, Garissa and Tana River limited access to pasture and browse.

Pasture and browse condition

Livelihood zone	Pasture condition			Browse condition		
	Current	Normally	Projected Duration to last (Months)	Current	Normally	Projected Duration to last (Months)
Mixed Farming	Fair-Poor	Good – Fair	1-2	Fair-Poor	Good -Fair	1-2
Mixed Farming Coffee/Dairy	Good	Good	2	Good	Good	2.5-3
Mixed Farming Crops	Poor	Good	1.5	Fair	Good	2-3
Rain-fed Cropping	Fair to Poor	Good	1 month	Fair to Poor	Good	1
Marginal Mixed Farming	Fair-Poor	Good – Fair	1-2	Fair-Poor	Good-Fair	1-2
Agro-pastoral	Poor	Good	≤1	Fair to Poor	Good	Fair to Poor

The body conditions of both cattle and the small stock ranged from good fair across the cluster compared to good conditions normally. However, in the Marginal Mixed Farming Livelihood Zone, cattle body conditions were fair to poor due to reduced pasture availability. The absence of crop residues that would have otherwise substituted the depleting pastures and browse, will hasten the deterioration of livestock body conditions earlier than normal.

Livestock body condition

Livelihood zone	Cattle		Sheep		Goat	
	Current	Normally	Current	Normally	Current	Normally
Mixed farming	Fair	Good	Fair	Good	Good- Fair	Good
Mixed Farming-Coffee/Dairy	Good	Good	Good	Good	Good	Good
Mixed Farming-Crops	Good to Fair	Good	Good	Good	Good	Good
Rain-fed cropping	Good to Fair	Good	Good to Fair	Good	Good to Fair	Good
Marginal Mixed farming	Fair- Poor	Good	Good	Good	Good	Good
Agro-pastoral	Good to Fair	Good	Good to Fair	Good	Good to Fair	Good

Milk production declined considerably as livestock body conditions began to deteriorate due to pasture, brwose and water scarcity. Production was the least in the Marginal Mixed Farming Livelihood Zone, where the average milk production per household per day ranged between 0.3 – 0.5 litres compared to a five-year average of 1-4 litres. Milk production was relatively stable in the Mixed Farming Livelihood Zone of Meru (Meru North) at 6-8 litres per household per day , as pastures and browse were still in good conditions and available. All milk produced was consumed within the households but consumption levels were below average, given the bekow average production. The price of milk increased to Kshs 50-70 compared to Kshs 40-50 normally.

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
Mixed Farming	1.5	2-4	1-2	1.5 - 2	70	50
Mixed Farming- Coffee/Dairy	1.25	1.5	0.5	0.75	50	50
Mixed Farming- Crops	1.5	2-4	1-2	1.5 – 2	70	50
Rain-fed Cropping	1-2	3-5	1	2	50	40
Marginal Mixed Farming	0.5-1.5	1-2	0.5	0.5 – 1	70	60
Agro-pastoral	1	2-3	1	1-2	50	40

Water for Livestock

Across the cluster, earth dams, water pans, sand dams, boreholes, shallow wells, traditional river wells and piped water were the main sources of water for livestock. Majority of open water sources have since dried up following the below average recharge during the March to May long rains. In addition, yields of the majority of boreholes and shallow wells had significantly reduced as a result of poor recharger to the underground aquifers. As a result, the reduction in available water sources, distances from grazing areas to watering points increased significantly in all livelihood zones. Particularly, watering distances in the Marginal Mixed Farming Livelihood zone were 2-4 km longer than the average. Watering frequencies decreased to once in every two days compared to daily, in all livelihood zones. Given the prevailing above average land surface temperatures across the cluster, the available water sources are anticipated to last at least two months in the Mixed Farming Livelihood Zone and the Rain-fed Cropping Livelihood Zone compared to 2-3 months normally. However, in the Marginal Mixed Farming Livelihood Zone and the Agro-pastoral Livelihood Zone, available water is likely to last for a month and a half compared to two 2-3 months. The increasing salinity of some open water sources as water evaporates, in Makueni and Kitui counties, will also make them unusable.

Water sources and trekking distances

Livelihood zone	Return trekking distances-km		Expected duration to last (Months)		Watering frequency (Days per 7 days)	
	Current	Normal	Current	Normal	Current	Normal
Mixed Farming	3-7	2-3	2	3	3	7
Mixed Farming- Coffee/Dairy	1-2	0.5-1.5	2.5	3	7	7
Mixed Farming- Crops	3-6	2.5-6	2.5	3	7	7
Rain-fed Cropping	4-5	2-3	2	3	7	7
Marginal Mixed Farming	3-12	8-10	1.5	3	3	7
Agro-pastoral	10-15	<10	≤1	2	4	7

Livestock holdings were below average among the poor and medium income households in all livelihood zones in the cluster. Livestock numbers are yet to improve to optimal numbers following two consecutive below average seasons that lead to increased sales to fund both food and non-food expenses. Livestock births were normal across all breeds but there was depressed conception rate among cattle in Marginal Mixed Farming Livelihood zone.

Tropical livestock units (TLUs)

Livelihood zone	Poor income households		Medium income households	
	Current	Normal	Current	Normal
Mixed Farming	1-2	2-3	2-3	3.6
Mixed Farming-Coffee/Dairy	0.75	1.2	2.2	2.5
Mixed farming- crops	1.6	2	2.6	3
Rain-fed Cropping	2-3	2-3	3-5	3-5
Marginal Mixed Farming	1-2	3-5	3-5	4-7
Agro-pastoral	3	3	10	10

Livestock Migration, Diseases and Mortalities

Earlier-than-normal livestock in-migration from Garissa and Tana River counties into eastern parts of Kitui and from Isiolo into Meru (Meru North) in Igembe North sub county (Inono area) and lower Imenti forest was noted. Migration within and outside the cluster was also reported with livestock moving into the dry grazing areas, riverine and hill tops and into atypical areas of the Meru and Kyulu National Parks, where pastures was fairly in good condition. Livestock in-migration contributed to destruction of shrubs and trees and conflicts between farmers and pastoralists in Meru. Few cases of Contagious Caprine Pleuro-pneumonia (CCPP) and Goat and Sheep Pox disease were reported in the Marginal Mixed Farming Livelihood Zones of Kitui and Tharaka. Majority of farmers bought drugs and treated their livestock rather than seeking veterinary assistance. Foot and Mouth Disease, Rabies, Tick borne diseases and Anthrax were reported in Meru and Makueni, resulting to two human death and livestock deaths in Meru. Disease surveillance, vaccination and treatment were conducted by county Governments. Newcastle diseases and Fowl pox in poultry were reported in the cluster.

2.4.5.3 Market Performance

The Markets were well provisioned, operated normally and were supplied both internally within the cluster and externally from Busia, Kitale, Loitokitok, Eldoret, Kajiado, Tanzania and Nairobi. The key food commodities traded were green grams, pigeon peas, cowpeas, beans, maize, cassava, vegetables while the major livestock traded were goats, sheep, cattle, and poultry. The demand for food commodities was high in the markets across the cluster as a result of two consecutive below average seasons.

Market Prices

Currently, maize prices within the cluster range from Ksh 45-48 per kilogram. The highest price was in Tharaka Nithi while the lowest was in Kitui and Makueni. Across the cluster, maize prices increased atypically from March through to July driven by increased demand resulting from depleted household stocks and the prospects of significantly below harvests in August/September. By July, prices were significantly above the five-year average and those of 2018.

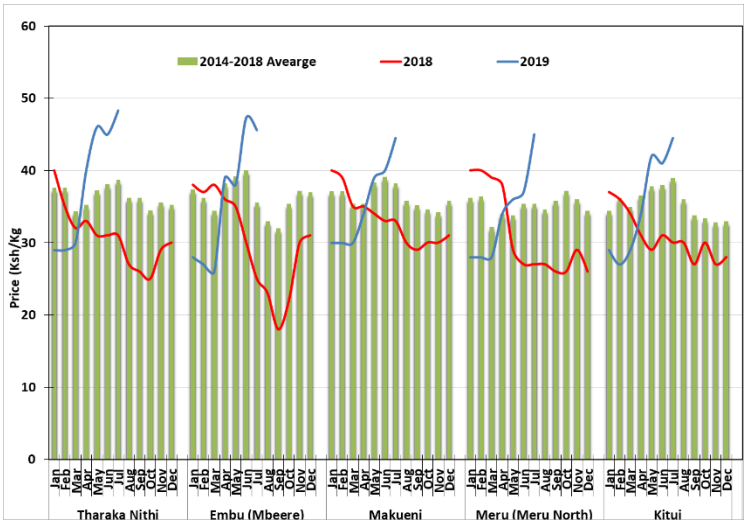


Figure 2.11: Comparative maize price trends across the cluster

2.4.5.4 Water Access and Availability

The main water sources for domestic use in the cluster are boreholes, rivers, dams and springs. The majority of open water sources in the cluster did not recharge to full capacity following the below average long rains. Water pans, dams and other open sources recharged to 20-40 percent of their capacities in most areas except in the Mixed Farming Livelihood Zone areas of Tharaka Nithi, Meru North and Makueni where a recharge of 40-70 percent was achieved. Currently, majority of open water sources in the Marginal Mixed Farming Livelihood Zone areas of Meru (Meru North), Tharaka Nithi (Tharaka), Kitui, and Makueni are dry. Boreholes and shallow wells are now they most significant water sources although their recharge was equally low. Apart from permanent water sources, the remaining open water sources will be depleted within 1-2 months across the cluster compared to the normal range of 3-4 months.

Distances to watering points increased in all livelihood zones within the cluster. In the Mixed Farming areas of the cluster, distances ranged between 4-5km compared to normal distances of 1-4km. Similarly, in the Marginal Mixed Farming areas, distances increased to 5-12 km compared 2-7km normally. Isolated pockets within the Marginal Mixed Farming areas of Kitui and Makueni, distances were more than 12 km. Distances in the Agro-pastoral livelihood areas of Meru were up to nine kilometers compared to eight kilometers normally while the Rain-fed cropping areas distances were three kilometers compared to 1-2 km normally. As a result of reduced water sources and consequent increase in distances, waiting time at source increased to 30 minutes from 10 minutes normally in the Mixed Farming Livelihood Zone. In the Marginal Mixed Farming and Agro-pastoral Livelihood Zones, waiting time increased to 60 minutes. However, in the Marginal Mixed Farming areas of Kitui and Makueni, waiting time at source in isolated areas was 3-12 hrs due to congestion at watering point and low borehole yields due to poor recharge.

Water consumption has generally declined across the cluster. In the Mixed Farming Livelihood Zones of the cluster, water consumption reduced to 15-20 litres per person per day compared to 20-30 litres. In the Marginal Mixed Farming Livelihood Zones, consumption declined to 10-15 liters per person per day compared to 20 litres per day. In Kitui, consumption declined significantly to 8-10 litres per person per day. The cost of ware remained unchanged at a range of Kshs 2-5 per 20 litre jerry can. Cost of water upon delivery by water vendors varied based on distance convered. While in most areas the cost ranged between Ksh 20-30, in isolated areas in the Agro-pastoral parts of Igembe North in Meru (Meru North), the cost ranged between Ksh 50-70.

2.4.5.5 Food Consumption

The proportion of households with acceptable food consumption, as indicated by the Food Consumption Score (FCS), was highest in Kitui and Makueni counties at 72 and 61 percent respectively, and lowest in Meru (Meru North) at 46 percent. Tharaka Nithi (Tharaka), Meru (Meru North) and Makueni had the highest proportion of households with borderline food consumption at 42 percent, 40.5 percent and 38 percent respectively. In Meru (Meru North), 12.9 percent of households had poor food consumption scores. Majority of households in the Mixed Farming, Agro-pastoral and Marginal Mixed Farming Livelihood zones were consuming 1-2 meals a day compared to 2-3 meals normally, hence the large proportion of households with borderline and poor food consumption scores. Children, including those under five years were having the same meal frequency as adults. Dietary diversity across the cluster was generally poor with meals for both adults and children comprised of a cereal (mostly maize) and pulses (mostly cowpeas or beans).

2.4.5.6 Coping Strategies

The adoption of consumption-based coping strategies was more frequent in Meru (Meru North) and Tharaka Nithi (Tharaka), compared to Kitui, Makueni and Embu (Mbeere) pointing to increased food unavailability and limited access. According to the NDMA Early Warning Bulletins for July, 51 percent and 27 percent of households in Meru (Meru North) and Tharaka Nithi (Tharaka) respectively, were engaging in Crisis consumption coping strategies. Only two percent of households in Embu (Mbeere) were engaged in Crisis coping strategies. The most common coping strategies adopted by households were reduced portion size, consumption of less preferred foods, skipping of meals, and consuming less expensive foods.

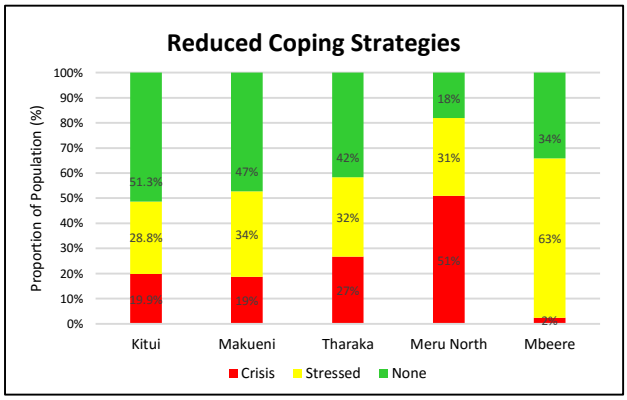


Figure 2.12: Proportion of households employing coping

2.4.5.7 Health and Nutrition

Nutrition Status

The proportion of children under five years who were at risk of acute malnutrition, measured by Mid-Upper Arm Circumference (MUAC<135 mm), was highest in Meru (Meru North) throughout the season, according to NDMA monthly sentinel site data.

Although the prevalence of acute malnutrition is still within the average leves, several interventions including MALEZI bora, Integrated Management of Acute Malnutrition (IMAM) programs in Meru North, Kitui and Makueni are currently on going. The admission trends for children with Severe Acute Malnutrition (SAM) increased by 84.9 percent, between January and June, in the cluster compared to a similar period last year. Of all the children admitted, 46.9 percent of them were in Kitui. Maukeni, Meru (Meru North) and Embu (Mbeere) also had considerable number of children with SAM.

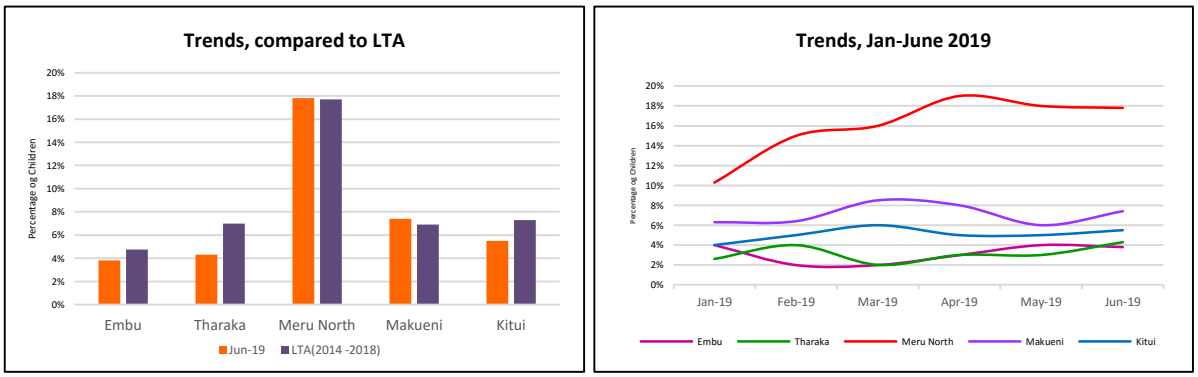


Figure 2.13: Proportion of children at risk of malnutrition (MUAC <135mm)

Morbidity and Mortality

The prevalent diseases among children under five years and general population were Upper Respiratory Tract Infections (URTI), diarrhea, and malaria. The prevalence of the diseases was normal within the season and followed seasonal trends. URTI caseloads were higher compared to the diarrhea and malaria. During the season, there were no outbreaks of notifiable diseases except in Manyatta ward of Embu (Mbeere) where a cholera outbreak was reported. Additionally, 38 cases for cutaneous anthrax, with 2 deaths, were reported in Muthara ward of

Meru (Meru North) after consumption of meat from a dead animal. Besides these isolated cases, mortality rates remained within the normal thresholds of <1/10,000/day for under-fives and <0.5/10,000/day for the general population.

Immunization and Vitamin A coverage

The proportion of Fully Immunized Child (FIC) was below the national target of 80 percent in the cluster except in Makueni and Embu where FIC was 92 percent and 99 percent respectively. In Meru (Meru North) and Kitui, immunization coverage was the least, at 62 percent and 66 percent respectively, due to vaccine stock outs. Vitamin A supplementation (VAS) coverage among children aged 6-11 months and 12-59 months was above the national target of 80 percent in most of the cluster except in Meru (Meru North) and Embu (Mbeere) where coverage was below the target. In Meru (Meru North), VAS coverage among children aged 6-11 months was 69 percent while among children of 12-59 months, coverage was 63 percent. In Embu (Mbeere), coverage was 72 percent for children of 6-11 months and 78 percent for children of 12-59 months. Despite not reaching the national target, VAS coverage had improved compared to a similar period last year, due to improved outreaches into ECDE centers, MALEZI bora campaigns and community sensitizations.

Water Hygiene and Sanitation

The main sources of water for the cluster were mainly open surface water with Meru County having the highest population using unprotected water sources at 50 percent. Water treatment before consumption was low across the cluster with Makueni having the lowest at 20 percent. Household trekking distances to the main water sources increased across the cluster with an average distance of 5-12 km. Hand washing practices remains low across the cluster with all the counties less than half of the population practicing hand washing at four critical times. Tharaka Nithi reported handwashing of 4.3 percent. The poor hand washing practices in the cluster greatly contributes to high water borne diseases.

Education

School enrolment increased in ECD and Secondary levels but decreased by two percent at the Primary level in Term II across the cluster. Enrolment declined by 5.4 percent in Makueni and by 1.7 percent in Meru (Meru North). In Makueni, the decline was a result of unavailability of school meals while in Meru, students transferred to schools where there were school meals, especially in Isiolo County. The Home Grown and Regular School Meals Program (RSMP) supported by World Food Program and Government of Kenya have benefitted 215,337 learners across the three levels of education direct provision of food. In the ECDE centres, meals were primarily provided by the respective county governments.

2.5 The Coastal Marginal Agricultural Livelihood Cluster

2.5.1 Cluster Background Information

The counties in the cluster include Kilifi, Taita Taveta, Kwale and Lamu. The cluster covers an estimated area of 45,172.7 square kilometers with a projected population of 2,406,491 (KNBS, 2016). The main livelihood zones are Mixed Farming with 60 percent of the projected population, Trade/ business/ formal employment/casual labour

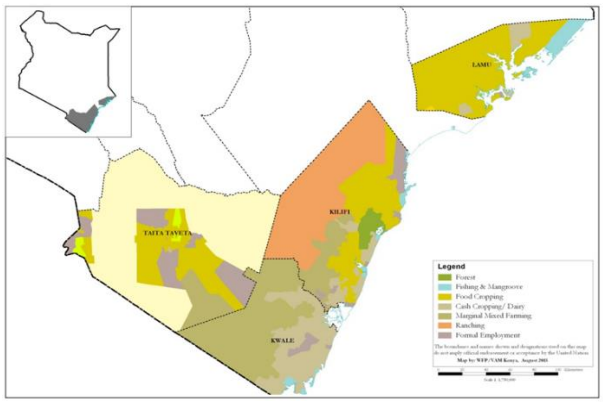


Figure 2.14: Coast marginal agricultural cluster livelihood

consist of 21 percent of the projected population and marginal mixed farming having 11 percent of the population (Figure 2.14).

2.5.2 Current drivers of food insecurity

Rainfall Performance
The March to May 2019 long rains season onset was late by four dekads (40 days period) except pockets of Taita Taveta County with one to three dekads late onset. Major parts of the cluster received rainfall amounts of 50 – 90 percent of the normal with marginal pockets receiving 90 – 110 percent of the normal. Mixed farming zones of Kwale County recorded highest amounts of 110 – 350 percent of the normal. Generally, the cluster had uneven spatial distribution and poor temporal distribution. Cessation was normal within the cluster save for Taita Taveta County which had late cessation occurring in third dekad of May compared to the normal first dekad of May.

Conflict and Insecurity
Human-wildlife conflicts were reported in Kilifi, Taita Taveta especially along the Tsavo National Park and Lamu with elephants destroying maize crops in the farms. Tension of Alshabab and armed forces security operations in Lamu have adversely affected market supplies since traders cannot access the market freely leading to low trade volumes. Incidences of resource-based conflict over pasture and water due to influx of livestock were experienced in Kilifi County and in areas of Pangani, Lumshi, Witu, Bahari and Mkunumbi Wards of Lamu County.

Shocks and Hazards
Substantial maize crop losses were reported in Taita Taveta, Kilifi and Lamu counties due to infestation of Fall Army Worm infestation (FAW). Flash floods were experienced in Lamu County that caused high leaching of crops nutrients and stunted growth as a result of heavy rains at the early stage of crops.

2.5.3 Current Food Security Situation
The cluster is generally classified in Stressed (IPC Phase 2) in terms of food security classification. Livestock condition for all species was ranging between good to fair which supported good to fair livestock body condition across the cluster. Projected maize yields are expected to be below normal due to delayed onset and poor temporal and uneven spatial distribution of the rainfall leading to crops suffering from moisture stress. Maize stocks held by farmers are below normal across the cluster. Market maize prices were above normal save for Taita Taveta County that was stable compared to long term average (LTA). Goats selling prices were above the LTA with Kilifi County recording 61 percent and Taita Taveta having 16 percent above normal. Terms of trade was favourable for all the counties save in Kwale County where terms of trade were unfavourable which was 43.8 percent below the LTA. Water consumption per person per day was within and above the SPHERE standard threshold of 15 litres person per day except in food crop/livestock zone of Taita Taveta County and island of Patte in Lamu County where water consumption was 10 litres per person per day.
Milk production was relatively below normal save in Mixed farming zone of Kwale with above normal milk production and stable in Mixed Farming (Horticulture/ Dairy and Irrigated/ Livestock) of Taita Taveta County. The prevalence of children at risk of malnutrition remained above normal except in Taita Taveta County where MUAC rate was 93 percent below the LTA.

2.5.4 Food Security Trends

Indicator	Short rains assessment, February 2019 (Previous Season)	Long rains assessment, July 2019 (Current Season)
Food Insecurity Phase	Kilifi and Lamu classified as **Stressed** (IPC Phase 2), Taita Taveta and Kwale classified in **None/Minimal** (IPC Phase 1)	Stressed (IPC Phase 2)
Livestock body condition	Good	Good to fair
Distance to grazing (km)	1 - 6	1 - 6
Water Consumption (litres per person per day)	10 – 30 lppd	10-20
Price of maize (per kg)	42	48
Food Consumption score (%)	Poor: 3.7 Borderline: 21.7 Acceptable: 75	Poor: 4 Borderline: 28 Acceptable: 68

2.5.5 Impact of Drivers on Food and Nutrition Security

2.5.5.1 Crop production

Most parts of the cluster including Lamu, Kwale and the coastal areas of Kilifi County are dependent on the long rains season for crop production. Taita Taveta County and the hinterland of Kilifi County are mainly dependent on the short rains season. The main crops grown in the cluster are maize, green grams and cowpeas. Other minor crops grown are cassava and beans.

Rain fed Crop Production

The total area under the maize and green grams was 92 and 87 of the long term average respectively while cowpeas was 21 percent above the Long-Term Average (LTA). The decline in area planted for maize and green grams was attributed to to delayed onset of rains. The area under cowpeas increased in Kwale and Lamu due to campaigns to promote production by county governments. The production of maize, green grams and cowpeas and was 38, 59 and 81 of LTA which was attributed to poor temporal distribution of rainfall. A long dry spell was experienced in April after planting in late March exposed the crops to extreme moisture stress. In Taita Taveta and Lamu county maize production was depressed by fall army worm infestation during the early stages of growth which affected about 1,000 hectares.

Rain-fed crop production

Crop	Area planted during 2017 Long rains season (Ha)	Long Term Average area planted during the Long rains season (Ha)	2017 Long rains season production (90 kg bags) Projected	Long Term Average production during the Long rains season(90kgbags)
Maize	106,102	114,939	425,912	1,147,532
Green grams	12,316	14,230	71,605	121,261
Cowpeas	10,980	9,041	51,650	63,523

Irrigated Crop Production

Irrigation in the cluster is mainly carried out in small irrigation schemes along the rivers. The main crops grown under irrigation are maize, bananas and tomatoes. Other crops grown under irrigation were beans, kales, rice, onions, water melon, Okra, brinjals and French beans. A total of 3,904 hectares were planted compared to the LTA of 3,633 hectares. Bananas were mainly grown in Taita Taveta County. The acreage of banana increased by 10 percent above the LTA

while green maize was within the LTA. The area under tomatoes increased by 38 percent due to increased production in Kwale county under micro-irrigation scheme. Production of bananas by seven percent due increased adoption of better varieties (tissue culture banana seedlings) and good agricultural practices.

Irrigated crop production

Crop	Area planted during the 2017 Long rains season (ha)	Long Term Average (3 years) area planted during Long rains season (ha)	2017 Long rains season production (90 kg bags/MT) Projected/ actual	Long Term Average (3 years) production during 2017 Long rains season (90 kg bags/MT)
Bananas	2,200	1,989	75186	69800
Green Maize	1,575	1,551	29,274	28,059
Tomatoes	129	93	5,383	2940

Cereal Commodity Stocks

The overall maize stocks held in the cluster was 44 percent while household stocks held 17 percent of LTA. Households in Kwale had depleted their stocks and mainly relied on markets with more preference to maize flour. The total maize stock in Lamu was only four percent of the total maize in the cluster due to insecurity and dismal production of the previous seasons. The National Cereals and Produce Board (NCPB) in Taita Taveta was holding 74,827 bags of 90 kg, which is mostly harvests from the Galana Kulalu Irrigation scheme. Traders' stocks were 77 percent of LTA. The reduced stocks was attributed to decline in production and low availability across the cluster. Rice stocks held by households was 34 of LTA while traders had 15 percent above the LTA.

Cereal commodity stocks held

Commodity	Maize (90 kg bags)		Rice (50 kg bags)	
	Current	LTA	Current	LTA
Farmers	46119	272465	2743	8050
Traders	81613	106153	45985	30389
Millers	3922	2114	298	2465
NCPB	74827	77719	0	0
TOTAL	**206180**	**458451**	**49026**	**40904**

2.5.5.2 Livestock Production

The main livestock types in this cluster are cattle, sheep, goats, and poultry. Livestock production is a major income earner in the cluster and contributes 45 percent of income in mixed farming, 20 percent in marginal/mixed farming and 20 percent in the agro-pastoral livelihood zone. Livestock production contributes to cash income to household through sale of meat, milk, hides and skins impacting positively on food security.

The long rains experienced across the cluster though the onset was late and performed below average, helped to generally improve pastures and browse conditions in most parts of the cluster and across the livelihood zones by supporting both their regeneration and growth. During the period under review pasture and browse condition was good to fair across all livelihood zones in the cluster. However, in some agro pastoral areas of Taita Taveta county

(Voi sub county) pastures were reported to have rapidly deteriorated due to significant rainfall deficits experienced in the area that were not adequate to support good regeneration and growth. Available pastures in the cluster were projected to last up to two months across all livelihood zones in the cluster with exception of Kwale where it is projected to last for 3 months up to mid-October compared with the normal four months up to mid-November. Browse will last for three months in the mixed and marginal mixed farming zones and one to two months in agro-pastoral areas. For the current season, the use of crop residue such as maize stalks were greatly reduced since they were mostly unavailable due to the crop failure experienced. Apart from Lamu county where access to pasture and browse was limited by insecurity as well as conflict between crop and livestock farmers in other counties of the cluster there was normal access for pasture and browse.

Pasture and browse condition

Livelihood zone	Pasture				Browse condition			
	Condition		Projected Duration to last (Months)		Condition		Projected Duration to last (Months)	
Current	Normally	Normally	Current	Normally	Current	Normally	Current	Normally
Mixed farming	Good	Good	2	2-3	Good	Good	2-3	2-3
Marginal mixed farming	Fair	Good	2	2-3	Good	Good	2-3	2-3
Agro-pastoral	Fair Poor	Good	1-2	2-3	Good	Good	1-2	2-3

Livestock body condition was good for all livestock types across the mixed farming and marginal mixed farming livelihood zones which was normal for the season while for agro pastoral zone the body condition was good to fair as the animals were on an improving trend due to pasture and browse availability. Livestock body condition is projected to deteriorate, especially in the agro pastoral zones due to increased distance to water points and as forage condition worsens. With fairly good livestock body condition, milk production was likely to continue to be sustained availing milk for household level consumption.

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	Good	Good	Good	Good	Good
Agro-pastoral	Good to fair	Good	Good	Good	Good	Good

In most of the counties in the cluster, the milk production per household remained almost the same as the normal apart from Lamu where there was a reduction of about 50 percent compared to the normal. This could be attributed to pasture regeneration leading to good animal body condition due to the long rains. The same reason could be attributed to the 33 percent increase in milk production above the long term average in mixed farming livelihood zones in Kwale County. Milk consumption in the mixed farming zones of Lamu, Kwale and Kilifi reduced by 50 percent as much of the milk was offered for sale due to the demand and attractive prices offered at the urban centres in those areas. Milk prices were higher than normal at between 10-25 percent in mixed and marginal mixed farming zones across the cluster due to high demand for milk in highly populated urban areas.

Milk production, consumption and price

Livelihood zone	Milk Production (Litres)/Household		Milk consumption (Litres)per Household		Prices (Ksh)/Litre	
	Current	LTA	Current	LTA	Current	LTA
Mixed farming	1-4	2	1-2	1.3	60	40
Marginal mixed	3-5	3.5	2	2	65	45
Agro pastoral	2-3	3	1-2	1.5	50	70
Livestock Farming	2	2	2	2	50	50

The main water sources in the cluster included water pans, shallow wells, boreholes and rivers. The average returned trekking distances across the livelihood zones in the cluster was near average compared to normal (Table 8). In mixed farming (food crop/livestock), return distances were 3.5-6 km compared to the normal of 3-4km. Water across the livelihood zones is expected to last until the mid-October. In Lamu county, water is expected to last for 1-2 months due to influx of livestock from the neighbouring counties. Water frequencies was 4-6 days in a week, however in some parts in Kwale the frequency was daily while in Taita Taveta it was normal.

Water for livestock

Livelihood zone	Return distances (km)		Expected duration to last (months)	
	Current	Normal	Current	Normal
Mixed Farming	1-5	1-8	2-4	3 -4
Marginal Mixed Farming	2-5	4-6	1	2-3
Agro Pastoral	2-5	2-15	1-2	3
Livestock Farming	4-5	3-5	2-3	2-3
Fishing Mangrove	1.1	1	3	2

2.5.5.3 Markets and Trade

Market Operations

The main commodities readily available across the markets during the season were maize, beans, green grams, maize flour, sugar, cowpeas, rice and vegetables with main livestock species traded being cattle, sheep, goat and poultry. Despite normal operations being witnessed across most markets, disruptions were noted in some areas within the cluster mainly affecting livestock trade. There was low supply of stocks from the local farmers hence supply source for these commodities came from terminal markets such as as Loitoktok, Nakuru, Kericho, Tana River and Tanzania. The common commodities sold at the markets included staples, pulses, vegetables, milk and livestock. A significant proportion of households approximately 75-90 percent in Kwale and Kilifi were relying on markets for daily supplies compared to 60 percent normally. Staples, milk and livestock were the most demanded commodities.

Market Prices

There is an increasing trend in maize prices across the cluster with exception of Lamu county where the trend analysis shows an increase from January to March followed by a decline in prices. The prices have remained above those reported same period last year. Whereas the price trends in Kwale and Kilifi county seem to follow the seasonal norms, there was a notable contrast in Taita Taveta and Lamu counties where the maize seem to sharply rise above the seasonal norm. In Taita Taveta for instance, the increase in maize prices was attributed to low supply of maize in the county due to poor harvest from 2018 short rains season. The highest average price was recorded in mixed farming zones (Mpeketoni) in Lamu county due to insecurity which affected households' access to food as there was short supply in the markets, resulting to few traders bringing the commodities to the market.

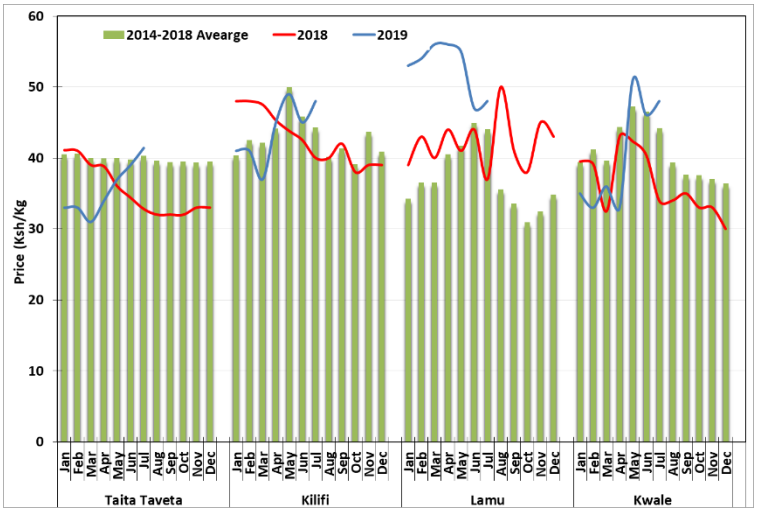


Figure 2.15: Comparative maize price trends across the cluster

2.5.5.4 Water availability and Access

The main water sources include boreholes, water pans, shallow wells, Rivers, springs, dams' lakes, Piped water, Desalination plants and Djabias. Recharge to open water sources was 60-95 of their capacity. 40 percent the water pans in Taita Taveta County have dried up, which is not normal at this time of the year. The remaining water in open water sources in Taita Taveta and Lamu is projected to last for 1-2 months due influx of livestock in Lamu while in Kwale, the water last 2-3 months. Distance to water sources was below normal range of 2-6 kilometers (Km) across the cluster. However, exceptionally longer distances of 7-10 kms were recorded in Fishing and Mangrove Harvesting of Bahamisi and Mtagawanda when compared to the normal 1-3 kms. The distances and waiting time are however expected to increase during the lean season and as demand of water increases that could result in breaking down of some water sources in the cluster. However, longer distances of 14 kms were recorded in Fishing and Mangrove livelihood zone of Bahamisi and Mtagawanda villages.

A few are areas in Kilifi County where water pans have dried up are relying on other water sources such as pipelines, rivers and water trucking. Exceptionally longer distances of 21 kilometers were recorded in isolated areas of Lamu County as a result of drying up of water pans. There was no water concentrated points in the cluster except in Lamu due influx of livestock in the Agro pastoral areas. The distances are however expected to increase during the lean season as open water sources continue to dry. Waiting time was within the normal range of 10-30 minutes in the cluster except in few pockets in Taita Taveta and Lamu where waiting time has increased to one to three hours from the usual 20 minutes. The longest waiting time of 3-4 hours compared to the normal 10-30 minutes was recorded in mixed farming livelihood zones of Lamu at Bargoni, which was attributed to drying up of open water sources. The average cost of water at source ranges from Kshs. five to 10 shillings per 20 litres jerrycan in the cluster, while the highest was selling at Kshs. 30 to 100.

The average cost of water at source ranges from Kshs. 3- 10 shillings per 20 litres jerrycan in the cluster. About 30 percent of household are buying water which is mainly supplied by motorbikes or private water vendors in kilifi. High cost of water ranging from Kshs 20 to 30 per jerrican was reported in some isolated areas in Kwale County where households relied on water vendors. Average water consumption in litres per person per day was 15-20 across the cluster Taita Taveta and Kwale are consuming above 30lpppd, which is normal. The lowest water consumption of 10-15 compared to the normal 15-20 lpppd was recorded in the Island of Patte (Mtagawana and Bahamisi) and Bargoni in mixed farming livelihood zone due to salinity of the shallow wells. Water consumption in marginal mixed livelihood zone of Rabai sub-county in Kilifi County has reduced from the normal 30 litres to 15-20 litres per person per day due to water rationing and drying up of water pans.

2.5.5.5 Food Consumption

The proportion of the households with acceptable food consumption in Kilifi, Kwale, Lamu and Taita Taveta Counties was 86.2, 61.4,38 and 81 percent respectively. The highest was recorded in Kilifi at 86.2 percent while the lowest was Lamu at 38 percent. The trend reduced when compared with the same period 2018. The average for the acceptable food consumption category for the cluster was 66.6 percent which implied that most households are consuming an average of 2-3 meals per day across the four counties with good dietary diversity. The average for the borderline food consumption category is 30 percent which implies that households are consuming 2 food groups with less dietary diversity. 3.5 percent of the cluster population are in poor food consumption category and are consuming 1-2 food groups with poor dietary diversity.

2.5.5.6 Coping Strategy Index

In coastal marginal agricultural cluster (Kilifi, Kwale, Lamu, and Taita Taveta), the reduced coping strategy index (rCSI) for the four counties of were 4.03. 15.4,9.46 and 2.6 respectively. Kilifi and Taita have higher percentage of households not employing any coping strategy while Kwale and lamu with high number of households in stressed level of coping strategy. Kwale County had highest number of households in the crisis level and are employing reduced number of meals per day; borrowing from friends or relatives; and relied on less preferred and/or less expensive food.

2.5.5.7 Health and Nutrition

Nutrition Situation

All analysis areas are classified as acceptable (IPC phase 1). Analysis of children at with MUAC less than 135mm in Coastal marginal cluster indicated a stable trend apart from Lamu County where the children with MUAC less than 135mm relatively increased between April and June 2019. Children with MUAC less than 135mm were more compared to long term average in Lamu and Kwale counties but low in Kilifi County. The admissions of SAM and MAM shows mixed trends across the cluster. Decreasing trends were observed in Kwale and Lamu Counties. In Kilifi and Taita Taveta, there was an increasing trend for both SAM and MAM admissions. The main contributing factor in Kilifi County is drastic increment in morbidity mainly diarrhea.

Dietary Intake

Minimum meal frequency was 65% in Kilifi, 56.7% in Kwale and 66% in Taita Taveta. Whereas there was no data on minimum dietary diversity for Taita Taveta and Lamu, the

figures were 25% and 30.5% in Kilifi and Kwale respectively. The indicators point to a chronic situation of inadequate dietary diversity and suboptimal meal frequency.
Milk availability and consumption was within the long term average in Kilifi, Taita Taveta and Kwale. Lamu County had the highest reduction in milk production and consumption compared to the long term average. Price of the commodity was higher than the long term average in the county.

The current phase of acute food insecurity is stressed (IPC phase 2) across the cluster. The proportion of households that achieved acceptable FCS in Kilifi and Taita Taveta was above 80%. Conversely, less than half of the households in Lamu and slightly above 50% of households in Kwale achieved acceptable food consumption score. This data suggests that households in Kilifi and Taita Taveta had higher caloric intake than those in Lamu and Kwale. Food security assessment findings showed that most of the households in the cluster received 2-3 meals per day. Some households in Kilifi (Ganze and Magarini) received 1-2 meals. In Kwale, half the population reduced the number of meals during the season compared to about a quarter of the population in the same season last year.

Morbidity trends among children aged below 5 years
Upper Respiratory tract infections (URTI) are the leading cause of morbidity across the cluster, followed by diarrhea. The trend in Upper Respiratory Tract Infections (URTI) and diarrhea among under-fives is increasing in Kwale and Kilifi counties, with Kilifi presenting a steep surge in May and June. Lamu has recorded the lowest episodes of diarrhea which could be

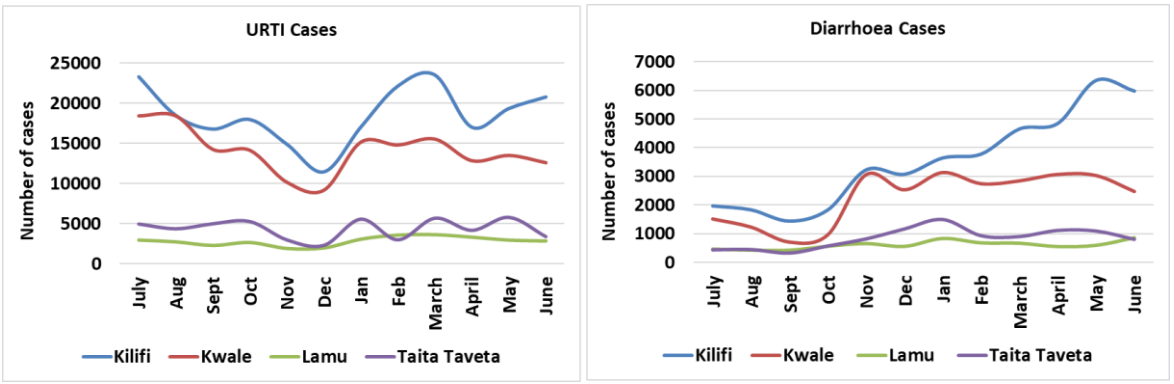


Figure 2.16: Morbidity trends July 2018 - June 2019 in the cluster

attributed to the relatively higher latrine coverage (72%). Morbidity in Lamu and Taita Taveta remained within the long-term thresholds.

Immunization and Supplementation Coverage
Immunization coverage for measles, OPV and BCG indicate that all the counties for the measles, OPV and BCG have attained the national target except for Kilifi and Kwale that show lower levels of OPV at 57% and 60.5% respectively.

Vitamin A supplementation coverage for Kwale surpassed the target, having achieved 110% for children aged 6-59 months in the first semester (January to June 2019). Kilifi, Lamu and Taita Taveta did not attain the national target of 80 percent having achieved 65 percent, 69 percent and 58 percent respectively. Iron and folic acid supplementation (IFAS) coverage was 92.2 percent in Kwale, 75.2 percentin Lamu, 87.8 percent in Taita Taveta and 89.6 percent in Kilifi.

2.5.5.8 Education

Access: Enrolment

There was an overall increase in the number of children enrolled in term II compared to term I in this cluster with 10 percent and 12 percent increase in enrolment at the ECD and secondary level respectively. The increase in enrolment in ECD was contributed by improved service delivery in the county Government's feeding program while at secondary level, the increase was attributed to the 100 percent transition policy from primary to secondary level implemented by the MoE in conjunction with the Ministry of Interior and Coordination of National Government. At the primary level, however, it was noted that there was an overall drop in enrolment of less one than percent This was notable in Taita Taveta and Kilifi Counties and majorly attributed to the untimely delivery of school meals to schools in term I, resulting from change of the mode of delivery.

On Gender parity index, boys have a higher access ratio to education than girls in ECD (53 percent), but the situation was reverse for primary and secondary levels reported at 52 percent and 55 percent respectively. It was noted that transition for boys from ECD to higher levels of education was lower than that of girls. This could have been contributed by boys taking part in income generating activities like fishing in Taita Taveta and Lamu counties, and boda boda business in major towns in the cluster with an aim of supporting their families.

Participation: Average attendance

The average attendance rate for ECD, primary and secondary was 59 percent 63 percent and 65 percent respectively school. The report indicate at any given time, more than 35 percent of children were absent from school directly affecting the attainment of basic education outcomes. It was noted that girls had a lower attendance rate than boys across the three levels with the disparity largest at the secondary level. This could be attributed by the fact that girls have a huge role to play in fetching water and collecting firewood, preparation of food and taking part in household chores that the boy child is not normally participating in. This has denied the girl-child valuable learning time and the situation has been exacerbated by the failure of the long rains thus increasing the distance to water points.

In Kilifi County for example, the high level of absenteeism could be linked to lack of school feeding witnessed in most schools as a result of late supply of food items.

Retention: Dropout rate

The dropout rates for the three levels of education across the two academic terms were lower than one percent. Furthermore, there was a notable decrease in the number of drop outs from 949 in term I to 639 in term II. More boys dropped out of school in term I as compared to term II in unlike girls whose drop-out increased. Of concern, was the high number of dropouts in ECD in Kilifi during term I that was attributed to delay in dispatch of food to the centers by the County Government of Kilifi.

School Meals Programme

Kwale County reported the highest proportion of schools benefitting from Regular School Meals Programs in the cluster with five hundred and five (505) out of the 567 schools reported. As for Taita Taveta, Lamu and Kilifi, there was a substantial delay in the delivery of commodities to schools at the primary level contributing to the high absenteeism cases in primary and reduced enrolment in that level. At the ECD level, the County Governments in the cluster have implemented the feeding program and delivery has been commendable. This factor contributed to the increase in the enrolment of children at ECD level.

Sectoral Linkages

There was inadequate access to clean water in schools across the cluster with counties attributing this to the failed 2018 short and 2019 long rains. The limited access to clean water contributed to children's absenteeism and is seen a contributing factor towards dropout. Deworming and vitamin A supplementation activities were provided in some schools in the cluster in which the Ministry of Health and development partners worked closely with the Ministry of Education in implementing the same at the ECD and Primary level. Taita Taveta County highlighted two key child protection interventions in schools through support from different stakeholders. The first was geared towards promoting attendance through eradicating child labor through support from Action Aid, while the other dabbed - *Boresha Matokeo* was aimed at improving enrolment through support from the County Development Fund for the Wundanyi Constituency. In Lamu County, the Ministry of Interior and coordination of National Government functions worked closely with the Ministry of Education in ensuring that children access an uninterrupted education through ensuring security in the volatile areas.

3.0 Food Security Prognosis

3.1 Assumptions

- According to North American Multi-Model Ensemble (NMME) climate forecasts, the remainder of main season (February to August 2019) rainfall in unimodal (western) Kenya based on uncertainty in the El Nino forecast, is most likely to be average through end of August resulting in near average total cumulative rainfall. The October to December 2019 short rains season is most likely to be average to above average in eastern/bimodal Kenya.

- The mean air temperature in eastern Kenya is likely to be above average from August – October 2019 ranging from 0.25 – 1 deg C driving accelerated depletion of forage and water resources.

- Maize prices in the urban markets are expected to remain above average driven by increased demand following reduced cross border imports especially from Uganda and speculative trading sparked by the poor start to the long rains season across the Country and overall seasonal performance in the bimodal areas. The prices are expected to remain above the five-year averages and above 2018 prices.

- Goat prices are expected to decline to below average levels from August through early October as the deteriorating livestock body conditions are anticipated to impact the market price as they tend to below average in some areas despite sustained demand for goats. Projections indicate that prices could decline to 25 percent below average during the period.

- In the marginal agricultural areas, due to successive poor performing seasons and significantly below average long rains crop production, household food stocks are below average and likely to be depleted across most of the marginal agricultural areas abnormally early by late August signalling a return to market dependence.

- Household income in the marginal agricultural areas is expected to be below average in August due to reduced agricultural wage labor opportunities like harvesting as a result of poor crop performance. However, from late September, in anticipation of the forecasted average October – December short rains, agricultural wage labor opportunities such as land preparation, planting and weeding are set to increase thus raising household income to average levels.

- According to estimates by the State Department for Crop Development (SDCD), due to the delayed rainfall onset, erratic rains and reduced acreage, total maize production for the 2019 long rains season from the medium potential areas of western Kenya and the Rift Valley in October is projected is to be 25 percent below the five-year averages.

3.2 Food security Prognosis (August 2019 – January 2020)

Marginal Areas

Across the marginal agricultural areas, reduced harvesting activities of the long rains crop will provide below average household income from labor while the harvest will provide little food mostly for consumption at household level and insufficient both for in-kind payment for labor and for sale to provide income. Household stocks across majority of the marginal areas will be depleted by the end of August driving increased dependence on markets for food commodities. Staple food commodity prices are expected to remain above average from August through

October reducing food access and heightening household food insecurity as as low food availability and income constrain household purchasing power. During this period, households are likely to increasingly apply consumption coping strategies like reduction of meal portion sizes, skipping meals and adults skipping meals in favour of children. Livelihood coping strategies such as purchase of food on credit, spending savings, borrowing money, harvesting immature crops and consumption of seed stocks in order to bridge food and income gaps. Malnutrition in children under five years of age is expected to increase during this period but will likely remain within Acceptable (GAM WHZ <5 percent and GAM by MUAC <6 percent) levels. More households are expected to deteriorate to Stressed (IPC Phase 2) and Crisis (IPC Phase 3) in Meru, Tharaka, Kitui, Makueni and Lamu counties. In October, harvests from the high and medium production areas of Western Kenya and Rift Valley will become available and make their way to the markets reducing the staple food commodity prices. Agricultural production activities such as land preparation and planting are expected to commence from late September in anticipation of the forecasted average October – December short rains. It is likely that at least average acreage planted will be achieved as households seek to achieve some substantial crop production considering it is the main production season in these areas, boosted by subsidized tractor services, seeds and fertilizers. Agricultural production activities will provide average household income improving household purchasing power and consequently food consumption. Improvement in forage and water resources is expected to lead to reduction in trekking distances for livestock and drive their recovery from late October improving body conditions, productivity and market prices. Increasing purchasing power and improved milk production is expected from early November reducing malnutrition levels as food and milk consumption increase. From December, short cycle crops such as vegetables will become available improving consumption and dietary diversity gradually improving household food security through January as early main crop harvests become available. A number of households are expected to improve from Crisis (IPC Phase 3) to Stressed (IPC Phase 2).

Pastoral Areas

From August, declining forage and water resources and increasing trekking distances will drive declining livestock body conditions, productivity and market value coupled with reduced livestock – related labor demand is expected to significantly reduce livestock-related income. Staple food prices are likely to increase and remain above average across most markets due to low supplies from the long rains harvests and increasing demand. Livestock prices are expected to decline to below average levels from mid-August reducing the goat-to-cereals terms of trade except in the northwest (Turkana, Baringo and West Pokot) where off-season rains continue to improve rangeland resources. In addition to below average milk availability and consumption, poor households will likely face constrained household food access and engage in increased sales of livestock to marginally meet their minimum food needs, depleting their low livestock holdings yet to recover from the 2016 - 2017 drought. Deterioration in livestock health is expected and it is likely that above normal livestock deaths will occur from drought and disease. Non-livestock related income sources such as petty trade, charcoal and firewood sales, remittances from relatives, regular and emergency safety nets are likely to be increasingly depended on to mitigate increasing food gaps. Reduced access to milk due to migration and almost negligible milk production and consumption from the smaller milking herds is set to keep acute malnutrition prevalence at high levels ranging from Serious to Extremely Critical with deteriorations in Marsabit where Moyale sub county moves from Alert to Serious and North Horr sub county from Critical to Extremely Critical. During the August through October lean period, households in Turkana, Marsabit, Isiolo, Wajir, Mandera, Garissa and in parts of Baringo, Samburu and Tana River counties are expected to only marginally

meet their minimum food needs by means of intensive application of both consumption and livelihood coping strategies and will face Crisis (IPC Phase 3) outcomes. In the remaining pastoral areas, household food insecurity will be mitigated by stable food prices and relatively better livestock prices and productivity and will be Stressed (IPC Phase 2). From late October, the likely average October 2019 short rains are expected to drive regeneration of rangeland resources from early November, causing the return of livestock to wet season grazing areas. Improved forage and water resources are set to improve livestock body conditions and market prices improving household purchasing power and food access. Expected below normal livestock births will result in below average milk sales and consequently, below average overall livestock-related income. A reduction in both consumption and livelihood coping strategies is expected from early November as household income increases from casual labor and livestock sales. Households are expected to bridge food consumption gaps but still remain unable to afford essential non-food expenditures. Acute malnutrition levels will likely improve slightly but remain high driven by low milk consumption, disease incidences and poor child-care practices. Driven by increasing household income, food security is projected to improve as more households improve to Stressed (IPC Phase 2), but some poor households with limited income generating capacity will continue to face food gaps and will remain in Crisis (IPC Phase 3).

The key factors to monitor over the next six months include;

- Performance of 2019 short rains given the poor performance of the cumulative effect of the below average 2018 short rains and late onset of the 2019 long rains
- Crop production in the high and medium rainfall areas.
- High and increasing staple food prices.
- Close monitoring of the trends of malnutrition and related outcomes such as morbidity and deaths in the most affected counties.
- Disease outbreaks e.g. Cholera, Measles, Kalazaar and the rising trend of diarrhea

4.0 Proposed Sectoral Interventions

4.1 Agriculture Sector: Priority Interventions August 2019 – January 2020

Intervention	County	Cost in Kshs, (M)
Provision of farm inputs, storage and insurance, promotion of water harvesting, pests and disease control and postharvest management	Baringo, Laikipia Turkana, Samburu, West Pokot, Narok, Nyeri, Meru North, Isiolo, Kitui, Makueni, Narok, Meru, Embu, Kitui, Lamu, Taita Taveta, Kwale, Tharaka, Kajiado and Tana river and Marsabit	
Total		**1,600**

4.2 Livestock Sector: Priority Interventions August 2019 – January 2020

Intervention	County	Cost in Kshs, (M)
Feed distribution, disease surveillance and vaccines, capacity building, trainings and community sensitization, pasture production and conservation	Laikipia, Kajiado, Baringo, , Nyeri, Narok,Makueni, Meru, Embu, Meru, West Pokot,, Kwale, Samburu, Marsabit, Taita Taveta, Kilifi, Makueni, Kitui, Isiolo, Mandera, Wajir, Tana River, Garissa, Turkana,	
Total		**700**

4.3 Water Sector: Priority Interventions August 2019 – January 2020

Intervention	County	Cost in Kshs, (M)
Fuel subsidies, rehabilitation, repairs, Water trucking and capacity building on water management and catchment protection	Isiolo, Mandera, Wajir, Tana River, Garissa, Marsabit, Samburu, Turkana, Kilifi, Kwale, Taita Taveta, Lamu, Baringo, West Pokot, Tharaka Nithi, Meru North, Kajiado, Kitui, Makueni, Mbeere and Nyeri.	
Total		**2,000**

4.4 Health and Nutrition Sector: Priority Interventions August 2019 – January 2020

Intervention	County	Cost in Kshs, (M)
Scale up of mass screening, integrated outreaches and IMAM surge approach, Consider Blanket Supplementary feeding Programmes, Increased program performance monitoring, coordination and surveillance, Update contingency and response plans and strengthen multi sectoral engagement.	Turkana, Samburu,Garissa, Wajir, Mandera, Tana River, Isiolo, Kwale, Lamu, Taita Taveta, Kilifi Embu, Mbeere, Nyeri, Tharaka, Baringo, West Pokot, Kajiado Narok, Makueni, kitui and Meru and Marsabit	
Total		**1,900**

4.5 Education Sector: Priority Interventions August 2019 – January 2020

Intervention	County	Cost in Kshs, (M)
Provision of water, tanks to schools, relief food and CSMP.	Isiolo,Garissa, Kilifi, Tana River, Mandera, Wajir, Turkana, Samburu, Marsabit, Kwale, Lamu, Taita Taveta, Embu, Nyeri, Kitui, Tharaka, Baringo, West Pokot, Kajiado and Narok	
Total		**200**

4.6 Peace and Security Sector: Priority Interventions August 2019 – January 2020

Intervention	County	Cost in Kshs, (M)
Enhance and support resource based peace and conflict resolution mechanism in ASAL counties.	Samburu, Turkana, Mandera, Garissa, Isiolo, Laikipia, Marsabit ,West Pokot, Baringo and Meru	
Total		**100**

4.7 Food Assistance Sector: Priority Interventions August 2019 – January 2020

Intervention	County	Cost in Kshs, (M)
Scale up of Safety net programmes and market access programmes, unconditional and conditional cash transfers and in kind food transfers in selected areas.	Isiolo, Garissa, Kilifi, Tana River, Mandera, Wajir, Turkana, Samburu, Marsabit, Kwale, Lamu, Taita Taveta, Embu, Nyeri, Kitui, Tharaka, Baringo, West Pokot, Kajiado and Narok	
Total		2,100
Grand Total		**8,600**

4.8 Food Insecure Populations by County, August 2019 – January 2020

County	County population (2016 projected)	Population in need of assistance after the 2019 LRA	Peak projected population in need October – December 2019
Turkana	1,083,653	379,000	433,000
Wajir	458,900	115,000	138,000
Mandera	711,117	249,000	284,000
Garissa	431,950	130,000	173,000
Marsabit	315,936	111,000	127,000
Samburu	283,780	71,000	85,000
Laikipia	505,712	51,000	76,000
West Pokot	649,418	65,000	97,000
Tana River	303,047	106,000	121,000
Isiolo	155,465	55,000	63,000
Kajiado	870,721	44,000	52,000
Baringo	703,697	105,000	141,000
Narok	1,077,719	0	0
Sub-total, Pastoral	**7,551,115**	**1,481,000**	**1,790,000**
Makueni	959,022	192,000	240,000
Kwale	820,199	123,000	123,000
Kilifi	1,399,975	210,000	210,000
Kitui	1,097,687	220,000	274,000
Taita Taveta	358,173	36,000	54,000
Embu (Mbeere)	219,220	33,000	44,000
Tharaka-Nithi (Tharaka)	141,061	79,000	99,000
Meru (North)	775,982	155,000	194,000
Nyeri (Kieni)	175,812	9,000	18,000
Lamu	128,144	26,000	32,000
Sub-total, Marginal Agricultural	**6,075,275**	**1,083,000**	**1,288,000**
Total	**13,626,390**	**2,564,000**	**3,078,000**