

# National Drought Management Authority

LAMU COUNTY

DROUGHT EARLYWARNING BULLETING FOR MAY 2018



A Vision 2030 Flagship Project



## May 2018: EW PHASE

Drought Status: **NORMAL**



Shughuli za kawaida

### Drought Situation & EW Phase Classification

#### Biophysical Indicators

- Above normal precipitation was recorded during the Month.
- The vegetation condition Index (VCI-3Month) was showing an increase of 45 percent compared to previous month.
- The VCI indicated normal vegetation greenness with improving trend. The overall drought phase in the county was at Normal in May.
- Forage condition was generally good across all livelihoods zones during the month.

#### Socio Economic Indicators

##### Production indicators

- All livestock species exhibited good body condition and on improving trend.
- Milk production decreased by 17 percent compared to previous month of April due out migration of livestock.

##### Access indicators

- Terms of trade were not favorable to crop farmers in mixed farming livelihood zones.
- Water access for both human and livestock was good and improving in all the livelihood zones.
- Milk consumption improved and higher than the long term Average.

##### Utilization indicators

- The proportion of children at risk of malnutrition cases increased slight and below the normal range as indicated by percent of mid upper arm Circumference (MUAC).
- The average coping strategy increased compared to previous month.

### Early Warning (EW) Phase Classification

Livelihood Zone	Phase	Trend
Agro pastoral/Fishing	Normal	Improving
Mixed farming/Irrigated cropping	Normal	Improving
Fisheries /Mangroves	Normal	Improving
Farming/Casual Labour	Normal	Improving
Agro pastoral	Normal	Improving
County	Normal	Improving
Biophysical Indicators	Value	Normal Range/Value
Rainfall (% of Normal)	47	80 -120
SPI-3Month(TAMSAT)	0.45	-0.1 to 1.0
VCI-3Month	66..1	<50
Forage condition	Good	Good
Production indicators	Value	Normal
Crop Condition(specify crop)	Good	Good
Livestock Body Condition	Good	Good
Milk Production	2.9	>12.75 Litres
Livestock Migration Pattern	Normal	Normal
Livestock deaths (from drought)	No death	No death
Access Indicators	Value	Normal
Terms of Trade (ToT)	115	84
Milk Consumption	1.6	36 litres
Return distance to water sources	3.6	<5 Km
Cost of water at source (20 litres)	3-10	<5Kshs
Utilization indicators	Value	Normal
Nutrition Status, MUAC (% at risk of malnutrition)	5.3%	<6.6%
Coping Strategy Index (CSI)	8.13	<0.95

### Seasonal Calendar

<ul style="list-style-type: none"> <li>▪ Short rains harvests</li> <li>▪ Short dry spell</li> <li>▪ Reduced milk yields</li> <li>▪ Increased HH Food Stocks</li> <li>▪ Land preparation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Planting/Weeding</li> <li>▪ Long rains</li> <li>▪ High Calving Rate</li> <li>▪ Milk Yields Increase</li> </ul>	<ul style="list-style-type: none"> <li>▪ Long rains harvests</li> <li>▪ A long dry spell</li> <li>▪ Land preparation</li> <li>▪ Increased HH Food Stocks</li> <li>▪ Kidding (Sept)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Short rains</li> <li>▪ Planting/weeding</li> </ul>								
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec

# 1.0 CLIMATIC CONDITIONS

## 1.1 Rainfall performance

- Rainfall continued being received across the county, with more intensity compared to the previous month as recorded in the first and third dekad of May.
- The ongoing long rains season is expected to continue until the end of the next month.
- This is not normal during the time of year as the onset of long rains were expected on third dekad of April.
- The current NDVI values were below the historical NDVI values due to poor season of the short rains. The trend is improving with the increased precipitation.

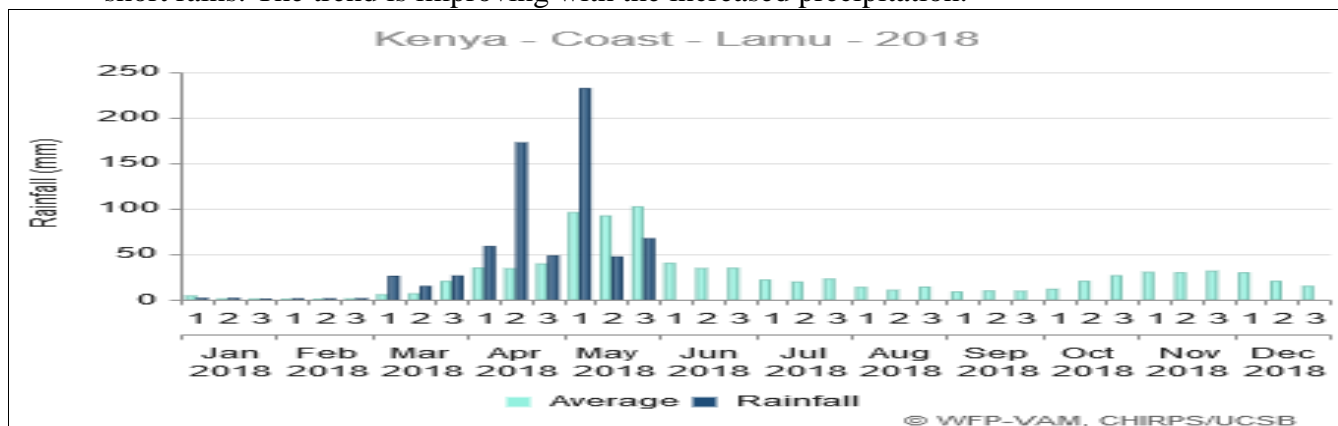


Figure 1: Rainfall Satellite data. (Source: wfp-Vam)

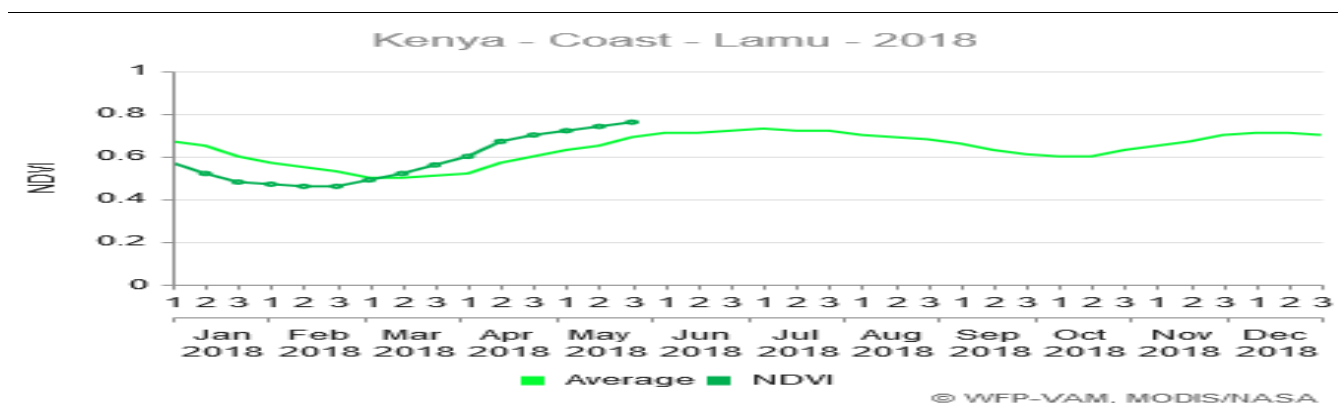


Figure 2: NDVI data. (Source: wfp-Vam)

## 1.2 Amount of rainfall and spatial distribution

- According to VAM WFP rainfall data, the County received a total of 231.3, 46.8 and 66.8 of rainfall in the Month of May in the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> dekad respectively. This was 48.6 percent above the normal rainfall as in figure 1 above.
- This 344.9mm of rainfall was higher than the amount of 290.5mm received in same period of the previous year.
- In addition, the current amount of rainfall received was higher than Long term average of 289mm.
- The performance of the rains was erratic but above normal.
- The amount of rainfall received during the month was 47 percent above the normal.
- The rainfalls received were fairly distributed in both time and space in all parts of the livelihood zones of the county.

## 1.3 Flooding or any other hazards.

- Flood was reported in areas surrounding lake Kenyatta, after the Lake burst its banks, however there were no report of death or loss of Livelihoods.

## 2.0 VEGETATION CONDITION

### 2.1 Vegetation Condition Index (VCI)

- The vegetation condition index for the month of May increased by 45 percent compared to the previous month. This was due to the rainfall received during the Month.
- The vegetation condition index for the month of May was 66.1 compared to 45.59 in the previous month.
- The VCI indicated vegetation greenness above normal in both Sub-Counties.
- The VCI-3Months is above the long-term average and the previous month as shown in the figures 3, 4 and table1 below.

**Table 1: May 2018 VCI (3M)**

ADMINISTRATIVE UNITS		Vegetation greenness	
County	Sub-County	VCI-3Month as at 26 <sup>th</sup> April 2018	VCI-3Month as at 26 <sup>th</sup> May 2018
LAMU	County	45.59	66.1
	Lamu East	51.77	72.4
	Lamu West	42.02	62.46

Figures below show three Months Vegetation Condition Index (VCI) matrixes for Lamu County {Source: Boku University, Austria}

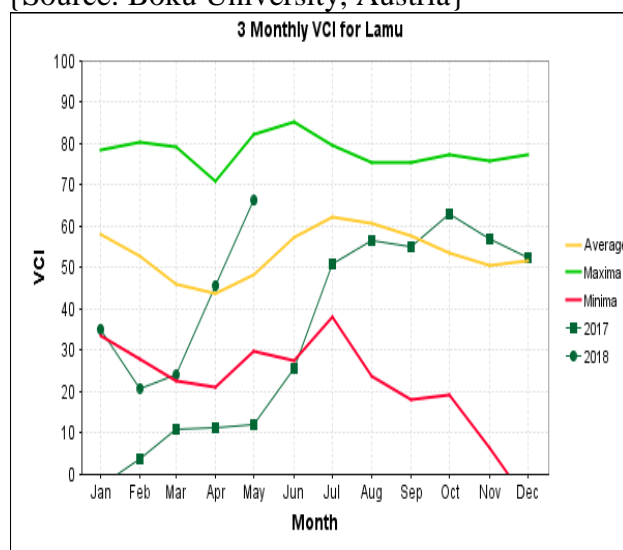


Figure 3: Vegetation Condition index (VCI)

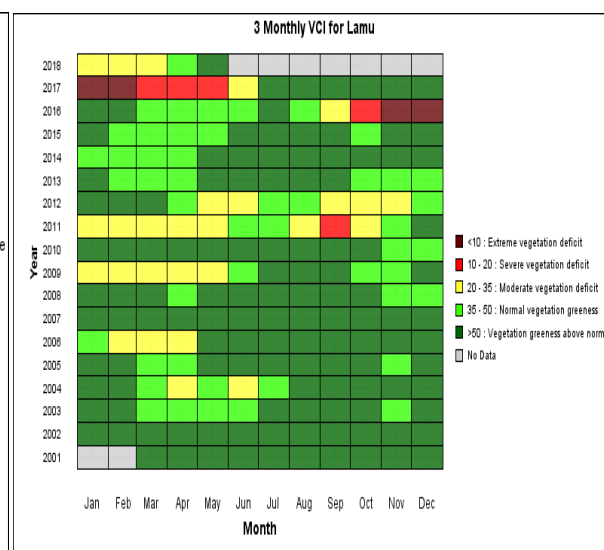


Figure 4: VCI-Lamu County

## OBSERVATIONS

### Pasture and Browse Conditions

#### 2.1.2 Pasture

- Pasture condition was good across all livelihood zones both in quality and quantity.
- 90 percent of Community members interviewed stated that pasture was very good while 10 percent indicated that pasture was good but with improving trend as in figure 5.
- Pasture condition by livelihood zones; Agro pastoral is good, mixed farming is good and fishing/ mangrove was good as well.
- The available pasture is expected to last not more than three months due to the presence of in-migrant livestock from neighbouring counties.

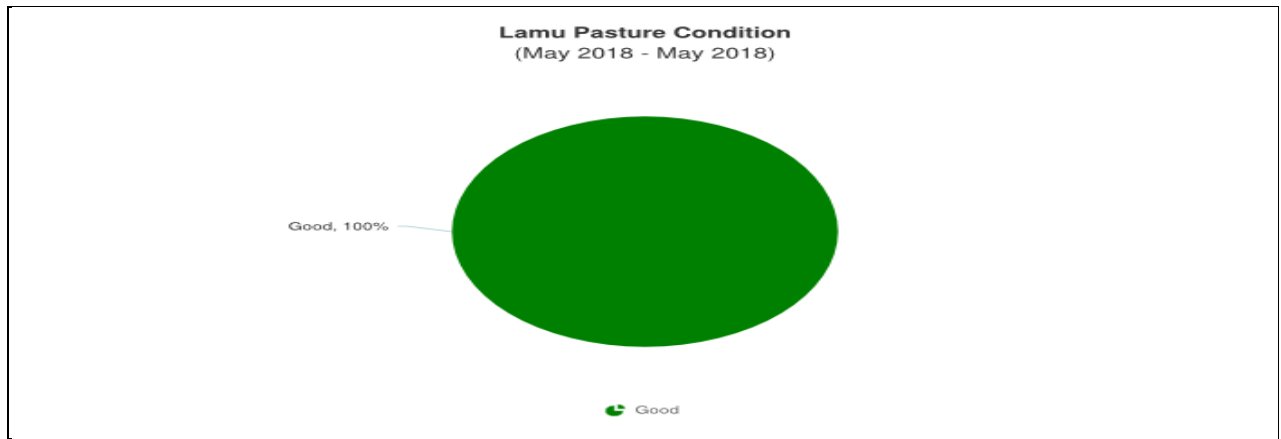


Figure 5: Pasture condition

### 2.1.3 Browse

- The quantity and quality of browse was good across all livelihood zones for the month of May.
- Community members interviewed indicated; 90percent of the respondents stated that browse was very good while 10percent stated it was good but on improving trend due to heavy rains and low rate of transpiration as in figure 6.
- Browse condition by livelihood zones; Agro pastoral and fishing mangrove was very good while mixed farming was good.
- The available browse quantity is above normal compared to normal year.
- The browse is expected to last for more than three months.

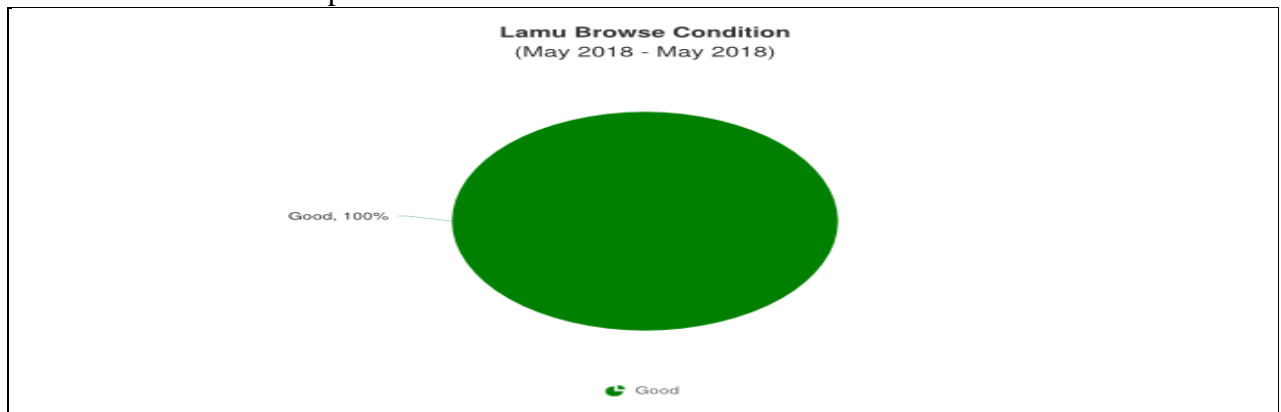


Figure 6: Browse condition

## 2.2.0 HYDROLOGICAL DROUGHT

### 2.2.1 Water Sources and Availability

- The state and condition of water sources in the County was good across most livelihood zones. However, the current water situation has improved compared to previous month.
- The open water sources were recharged between 85 -95 percent of their capacity due to heavy downpour during the month under review.
- The main water sources in the month of May:-Pans and dams -12.5percent, shallow wells-37.5percent, springs 12.5percent, Traditional water wells and Rivers-25percent respectively as in figure 7 below.

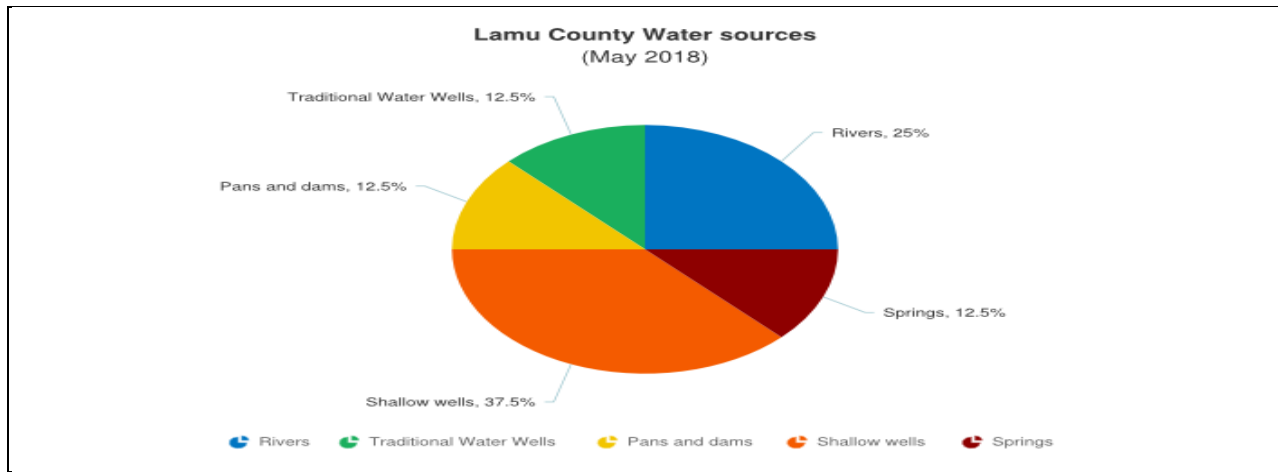


Figure 7: Main sources of Water

### 2.2.2 Household access and Utilization

- Average Household watering return distance was 3.6Km in May, a 50percent decrease from 7.2Km in April.
- This was due to significant rainfall amount received which led to increased in water levels.
- Household return water distances per livelihood zone were as follows: the Agro pastoral - 2Km, Fishing & Mangrove Harvesting 1.1Km and for Mixed Farming Zone it was 1.3Km and irrigated farming 1Km respectively.
- The 2013-2017 average household water distances for May was 1.40 Kilometres which was lower than the current average household watering distance for May as in figure 8.
- The average household water consumption per person per day is at 15-20 litres in all livelihood zones.
- Water costs at source are 3-5Kshs in town/village centres for 20 litre Jerrican.

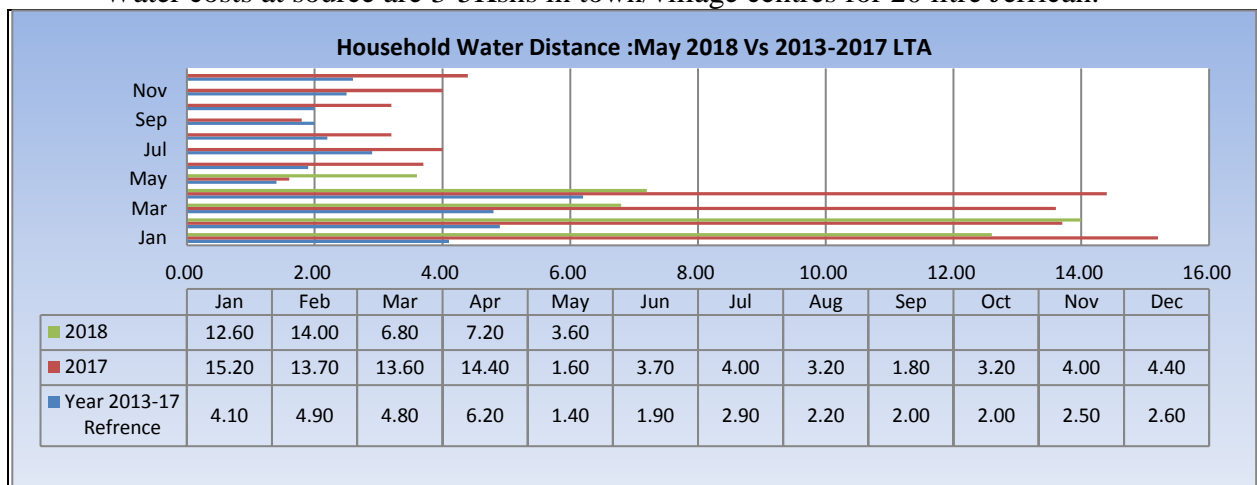


Figure 8: Household water distance

n=150

### 2.2.3 Livestock access to Water

- Livestock average distance to water source from grazing Area was 3.9 kilometres in the month of May from 6.8km in month of April as in figure 9.
- Grazing return water distances per livelihood zone were as follows: the Agro pastoral - 2.9Km, Fishing & Mangrove Harvesting 1Km and for Mixed Farming Zone it was 1.7Km and irrigated farming 2.8Km respectively.
- The decrease from last month's distance was due to rainfall received during the month which led to fair to good recharge of the open water sources.
- Frequency for watering cattle and goats is 1-3 times in a week.
- The current average grazing water distance for May was 3.9Kilometers was lower than the long-term average of 5.90 Kilometres.

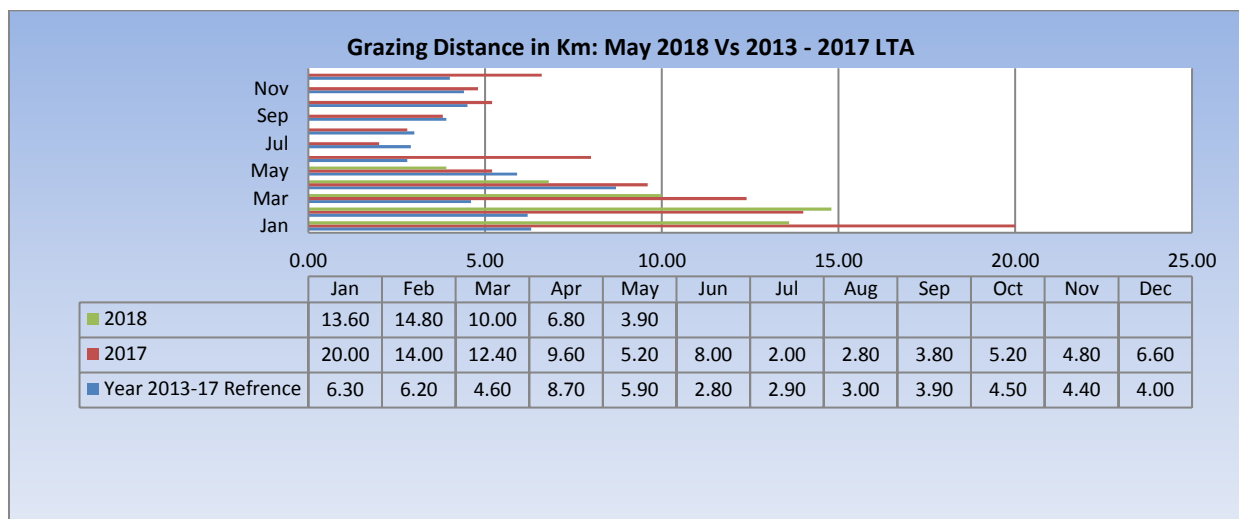


Figure 9: Grazing distance -Km

n=150

### 2.2.4 Household Income

- The main household income for the month of May was as follows: Casual labour 61percent, Employment 16percent, trade 14percent sale of Livestock/Livestock products 9percent respectively as in figure10 below.
- However, casual labour increased by one percent while there was decrease in sale of livestock products compared to previous month.

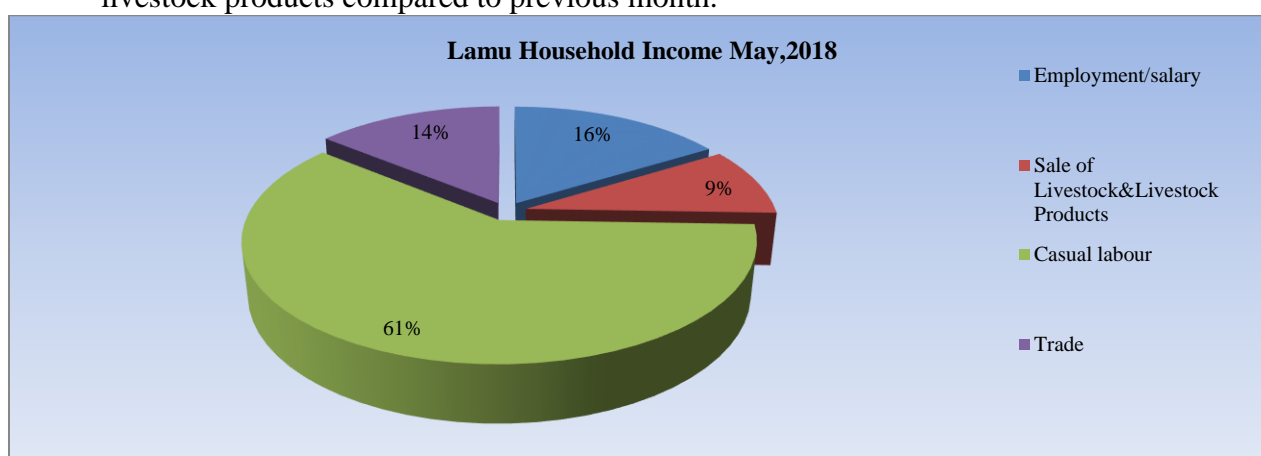


Figure 10: Households sources of income

### 2.4 Implication to Food Security

- There was enough rainfall recorded during the month of May with improved recharging of major open water sources leading to reduced distance access to water for both livestock and domestics uses in Agro pastoral and Mixed farming zone.
- Fishing and Mangrove zones livelihood zones which were previously affected improved especially in Faza, Patte, Tchundwa, Mtanga-wanda.
- The distances to water sources have had a positive impact on the body condition of animals and household hygiene standards.

### 3.0 PRODUCTION INDICATORS

#### 3.1. Livestock Production

##### 3.1.1 Livestock Migration Patterns

- There was out-migration of livestock from Didewaride, to nearby counties of Tana River.
- There were also in migration of livestock from Ijara to Kiunga and Bargoni areas.

##### 3.1.2 Livestock Body Condition

- The livestock body condition was good for cattle and goats in both the Mixed farming and Agro Pastoral and was fair in fishing/Mangrove livelihood zones . This is attributed to increased quality and quantity of pasture and browse due to ongoing rainfall.
- In comparison to similar periods during previous years, the body condition of all species was good and this is attributed to improving forage condition in all the livelihood zones. However due to ongoing long rains, the body conditions are expected to improve further.

##### 3.1.3 Livestock Diseases

- There were no incidences of Livestock diseases or deaths reported during these Month.

##### 3.1.4 Milk Production

- Milk production decreased from 3.5litres in April to 2.9litres in May 2018. This was higher than the long-term average of 0.9 litres in May as in figure11 below.
- Milk productions were distributed as follows: Mixed farming Produced 1.5litres, Fishing 0.5litres, and Irrigated 1.0litres while the Agro pastoral Zone produced average of 1litres.
- In comparison to a normal season, the current household milk production is below the normal by 77percent.
- The change of the household milk production recorded is due to animals relocating to the nearby counties of Tana River and Garissa owing to less pests and easy accessibility.

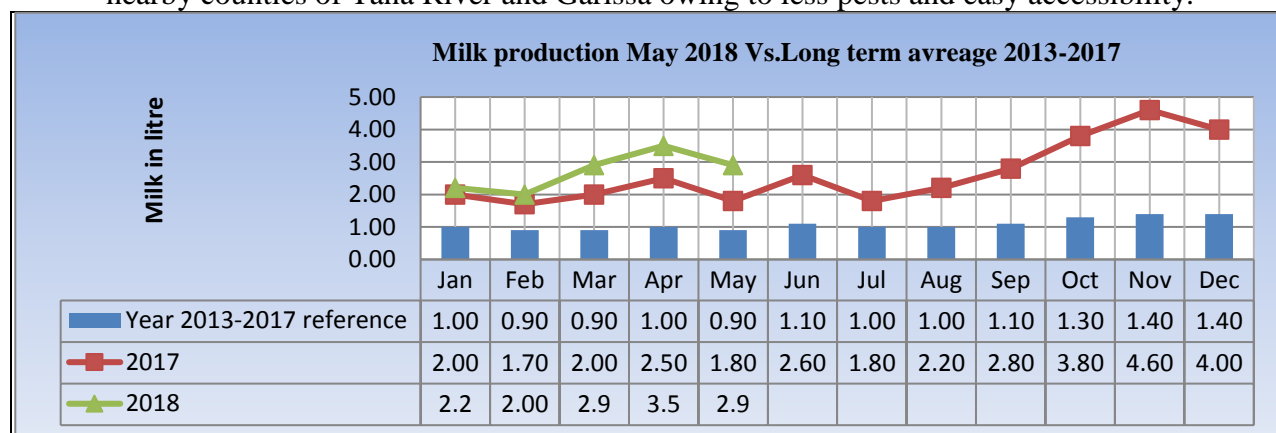


Figure 1: Milk production

n=150

#### 3.2 Rain fed crop production

##### 3.2.1 Stage and condition of food crop

- The main crops grown are Maize, Cowpeas and Green grams in the County.
- Crop planting and weeding are main activity in the farm during the month under review
- Farm crops are at flowering stages in Agro pastoral and mixed farming livelihood zones.
- Agro pastoral/Fishing/Mangrove livelihood zones are planting, the maize crop are at knee high and above.

##### 3.2.2. Crop Harvest

- Crop farmers have started harvesting green maize in mixed farming livelihood zones.

### 3.2.3 Implications on Food Security

- The good body condition of cattle /goat across the livelihood zones has increased the prices resulting to increased income for livestock farmers.

## 4.0 MARKET PERFORMANCE

### 4.1 Livestock marketing

#### 4.1.1 Cattle Prices

- Average cattle market price in the month of May was Kshs 23,667 which is slight increase from previous month as in figure 12 below.
- This increase in price could be attributed to high demand and fewer supplies in the markets owing to long rains experienced during this month.
- The cattle average market prices were distributed as follows: Faza 30,000 Kshs, Witu 18,000 Kshs, Kiunga 30,000 and Mokowe 23,000 Kshs respectively.
- The average market cattle price for the month of May was, however higher than the 2015-2017 long-term average price of Ksh.17, 600.

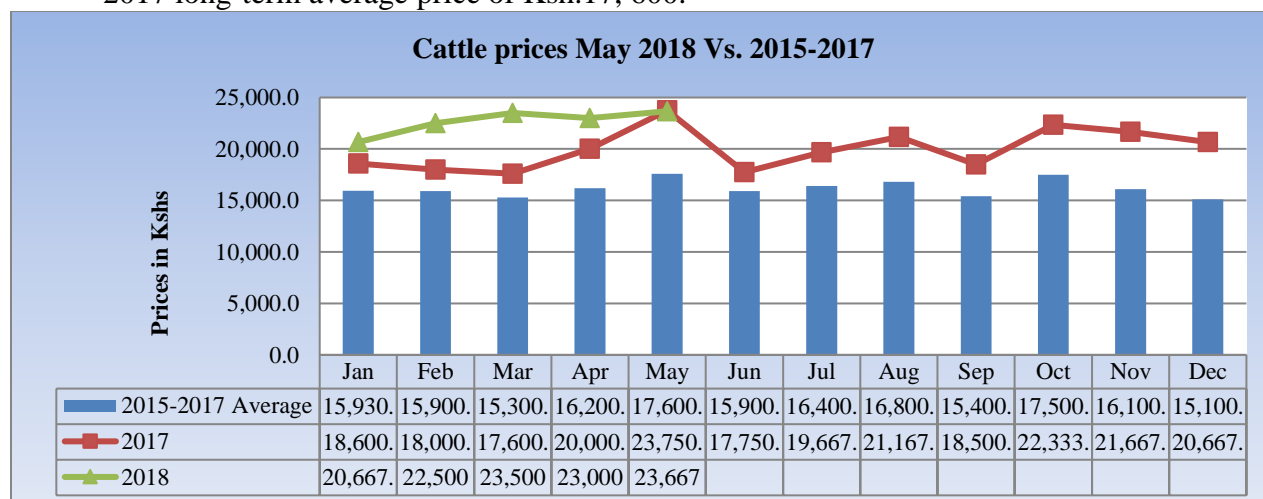


Figure 2: Cattle prices

#### 4.1.2 Small Ruminants Prices

#### 4.1.3 Goat Prices

- Goat prices for medium size animal decreased from Kshs 4,875 for the month of April to Kshs 4,750 in May as shown in figure 13 below. This decrease in price of goats could be attributed to the weather not conducive for the survival of Goats and low demand.
- The goat average market prices were distributed as follows: Mpeketoni Kshs 3,000, Witu Kshs 5,000 Kiunga Kshs 6,000 and Mokowe Kshs 5,000 respectively.
- The long-term average goat price for the month of May was Kshs. 3,580 which was lower than the current average price for the month of May.



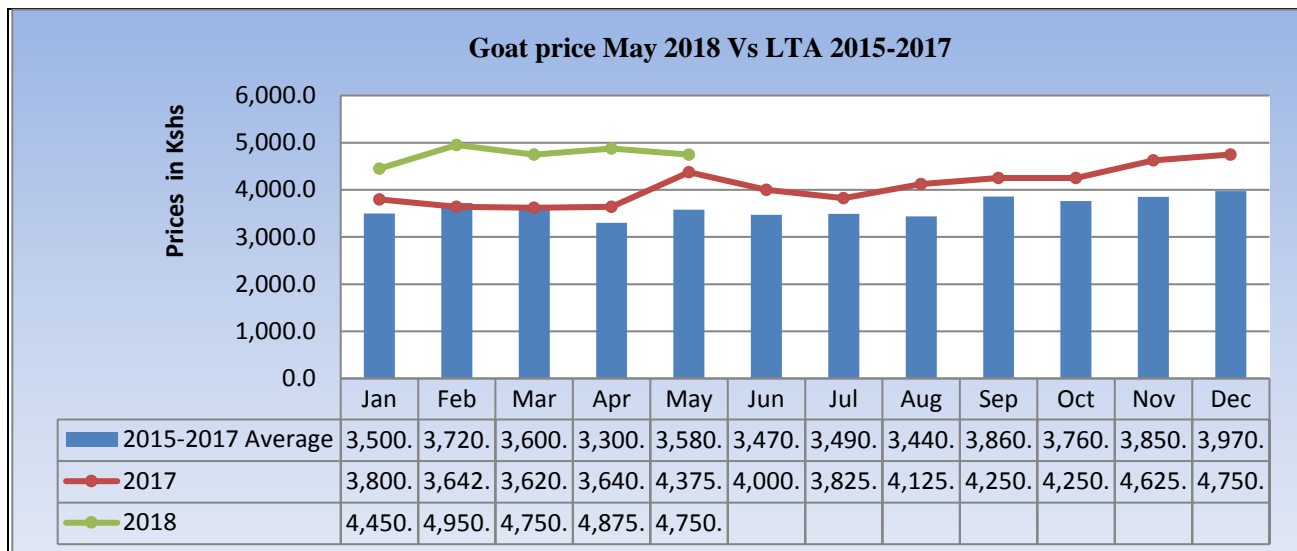


Figure 3: Goat prices

## 4.2 Crop prices

### 4.2.1 Maize price

- Average price of a Kg of maize in the Month of May was Kshs 41.0/Kg which was a decrease from Kshs 44 during the previous month as shown in figure 14 below.
- The prices were distributed as follows: Hindi centre Kshs 55, Patte Kshs 30, Witu Kshs 40, Mpeketoni Kshs 40 and Kiunga Kshs 50 respectively. However, price ranges is determined by commodity supply in the different markets.
- The average price of maize in May was lower when compared with the long term-average price of Kshs 42.

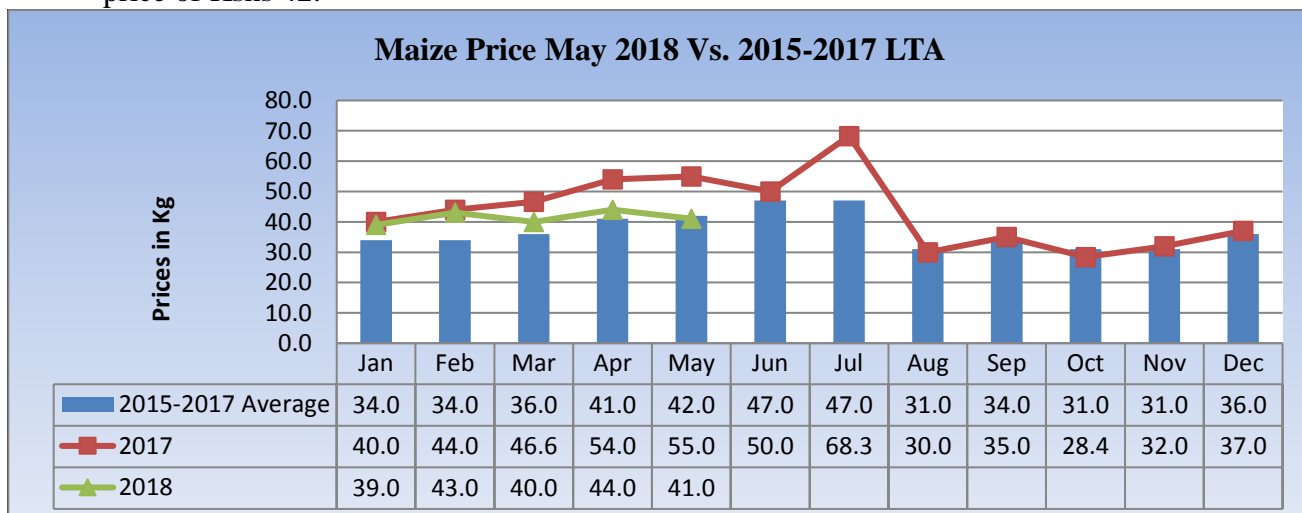


Figure 4: Maize prices

### 4.2.2 Beans

- Average price of Kg of beans was Kshs 112 in May, a slight increase compared to the previous month as in figure 15 below.
- The beans price was distributed as follows: Mswakini centre 100, Patte Kshs 100 and Witu Kshs 90, Mpeketoni Kshs 90 and Kiunga Kshs 140 respectively. However, price ranges is determined by commodity supply in the different markets.
- The long-term average price of beans was Kshs 104 which is lower compared to the current beans price for the month of May.

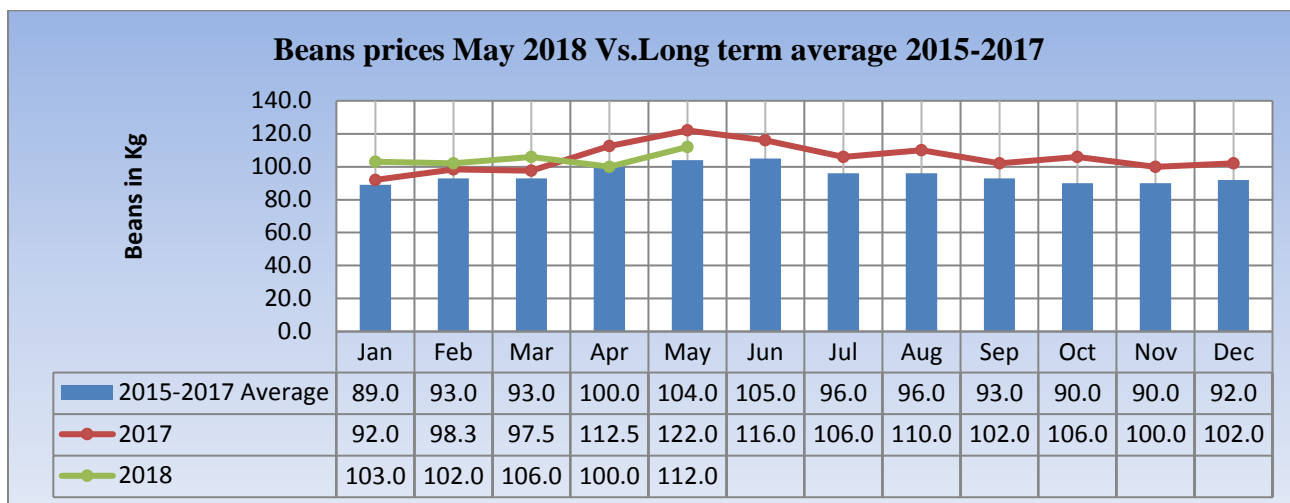


Figure 5: Beans prices

### 4.3 Livestock Price ratio/Terms of Trade

- The average Term of Trade (ToT) for the month of May was 115.2kg, slight increase compared to 111.4Kg during the previous month as in figure 16 below.
- Sale of a medium goat in May would cost a household about 115.2 kg of maize. This showed the exchange ratio increased in favour of goat sellers to crop farmers. However, this was determined by supply in the different markets.
- The ToT was 96.3Kg in Lamu West and 200Kg in Lamu East. The ToT for May was higher than the long term average of 84Kg.

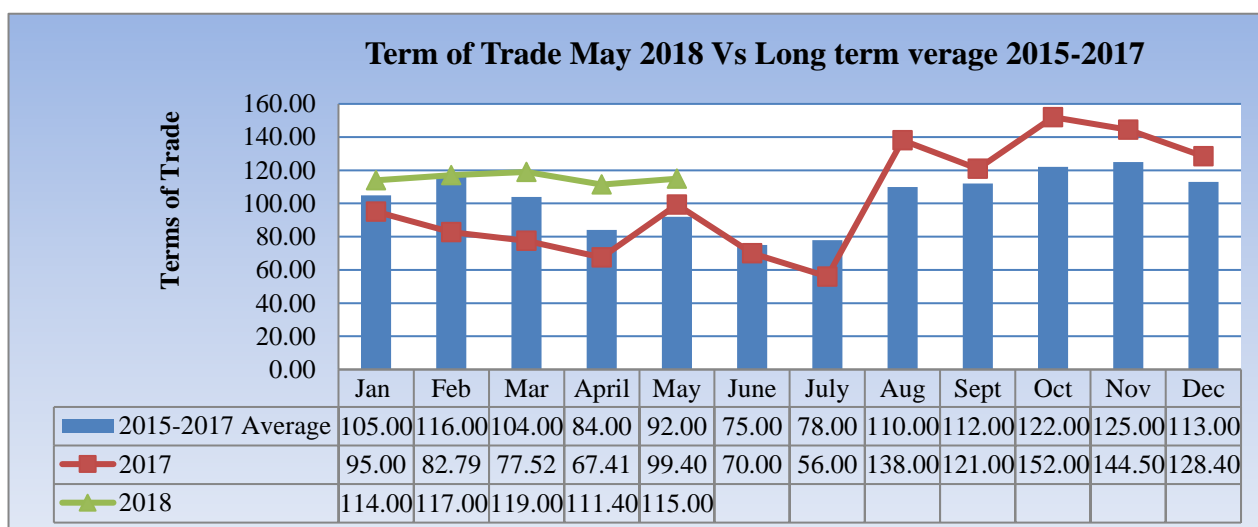


Figure 6: Terms of Trade

### 4.4 Implication on food security

- The good body condition of livestock have increased livestock prices especially for goats, therefore livestock farmers are able to get better value for their livestock contributing to food security in Mixed and Agro pastoral zones.
- Maize prices decreased due to harvest of the green maize by crop farmers.
- Farmers are able to sell livestock (especially goat and cattle) at fair prices, hence improves food security at household level.
- The Terms of Trade were less favorable in the mixed farming livelihood zones compared to agro pastoral livelihood zone.

## 5.0 FOOD CONSUMPTION AND NUTRITION STATUS

### 5.1 Milk for Household Consumption

- Milk Consumption was 1.6litres in the month of May which is an increased slightly compared to 1.5 litres during the previous month as in figure 17 below.
- The increase in milk consumption level is as a result of fluctuating production attributed to the forage and transportation of Milk from neighbouring Counties.
- May long term average milk consumption of 0.70 litres which was lower than the current average of milk consumption.

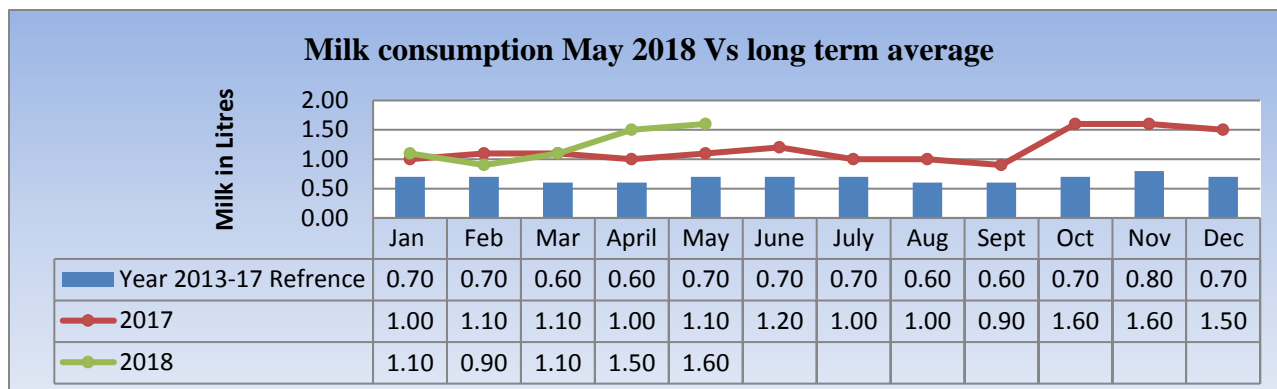


Figure 7: Milk production

### 5.2 Health and Nutrition status

#### 5.2.1 MUAC

- The proportion of children under five at risk of malnutrition with Mid Upper Arm Circumference below 135mm was 5.3 percent in May an increase from 5.0 in April indicating declining situation. This increase was attributed to decreased milk production and low consumption.
- The rates of Malnutrition cases are decreasing in the Agro pastoral and Mixed farming Zones of Witu, Hindi wards.
- This figure of 5.3 percent MUAC for May was a slight increase compared to long term average of 5.2 percent as in figure 18 below.

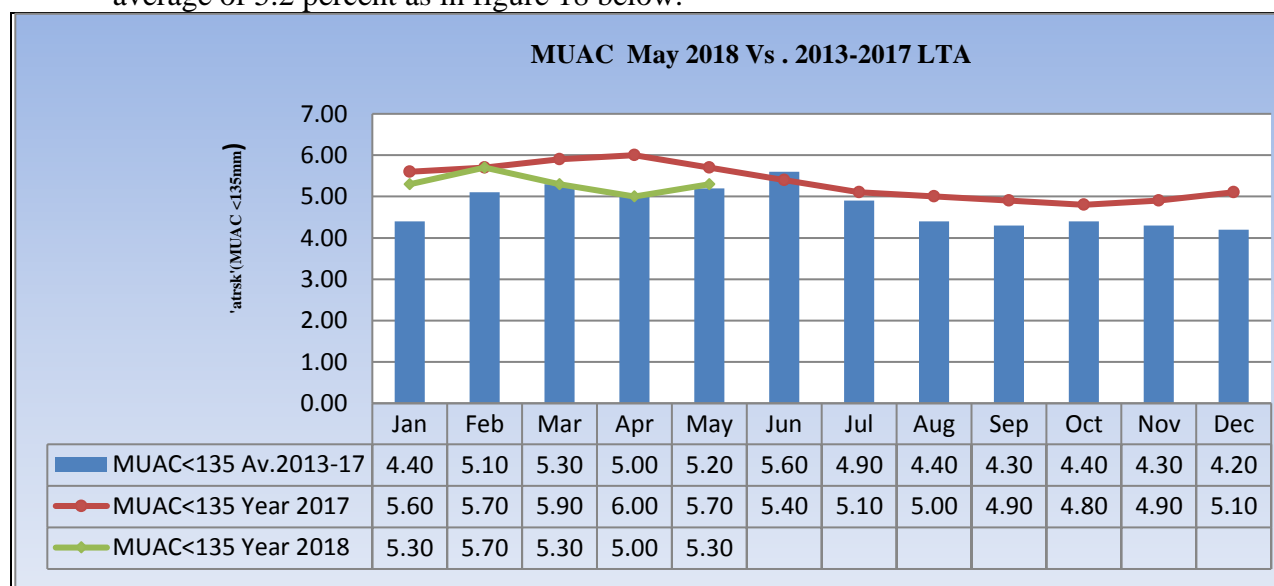


Figure 8: MUAC

n=150

#### 5.2.2 Health

- There were no cases of major disease outbreak both for children and general population in the County.

### 5.3 Food consumption score (FCS)

- Agro pastoral livelihood zone is only livelihood with poor dietary diversity at 1.7.
- Acceptable food consumption was noted in Agro pastoral and fishing /Mangrove zone with 78.3 and 100 percent of households respectively, owing to availability of food in the markets with improved purchasing power.
- Household percentage with poor food consumption decreased significantly from 5 to 0 percent in May in Mixed Farming and 3.3 to 1.7 percent in Agro Pastoral livelihood zones as figure 19 below.

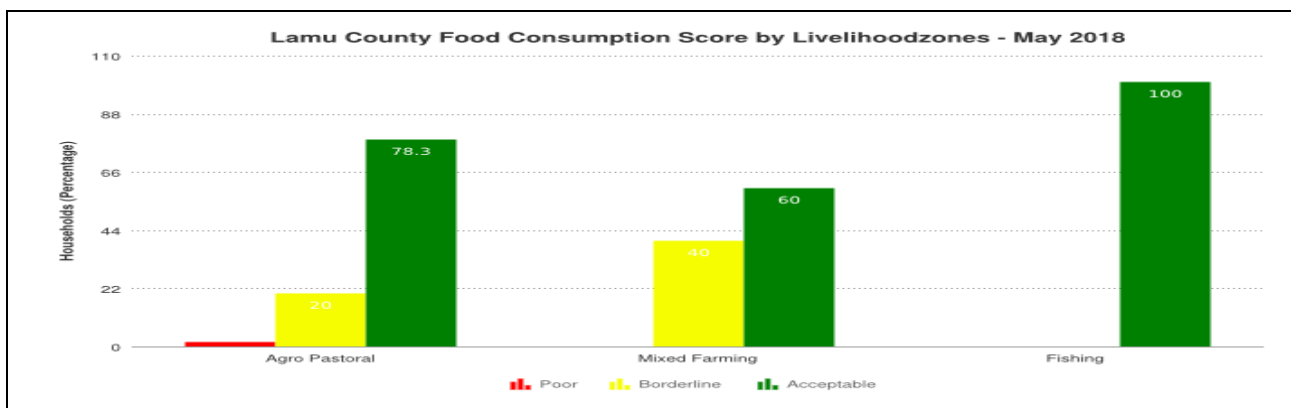


Figure 9: Food consumption score (FCS)

### 5.4 Coping strategy index

- The mean coping strategy Index in the Month of May increased to 8.13 from 7.78 in April, indicating increased coping strategies at household level.
- Agro pastoral Zone had CSI of 5.8; Mixed Farming livelihood zone had 10.4 while Fishing Livelihood zone had a copying strategy index of 8.2 as figure 20 below.
- Common coping strategies employed by food insecure households in the month of May were:
  - ✓ Opting for less preferred or less expensive food.
  - ✓ Reduction in the number of meals.
  - ✓ Purchase on credit/remittances from relatives.
  - ✓ Borrow food from friends or relatives.

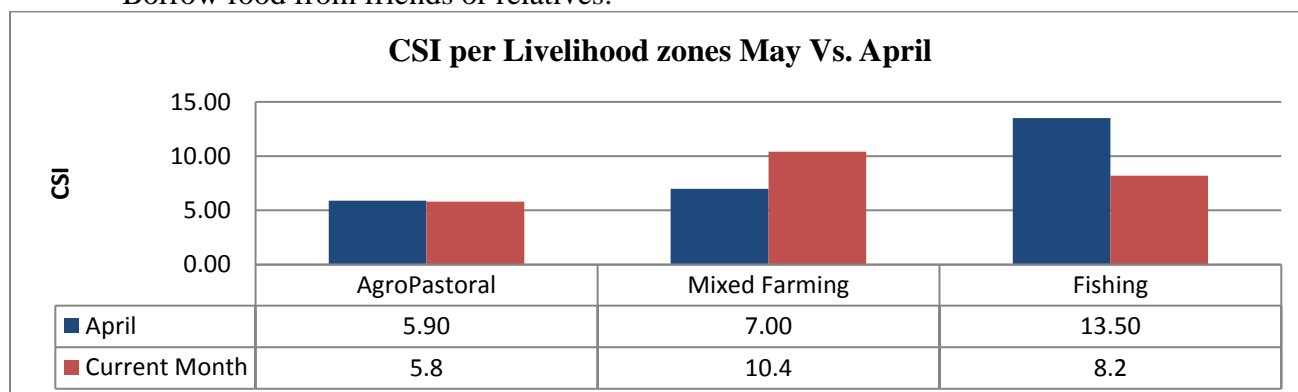


Figure 10: Coping strategy index (CSI)

### 5.5 Implication on Food Security

- Low milk consumption at household levels across all the Livelihood zones could lead to decreased dietary diversification and thereafter a negative impact on food insecurity.

## **6.0 CURRENT INTERVENTION MEASURES (ACTION)**

### **6.1 Food and Non-food interventions**

### **6.2 Drought Response Interventions**

- Cash transfer by the Social protection department to 3000 households for older persons, Orphans and people with severe disabilities respectively for the entire county.
- The cash transfer will improve the purchasing power of the households to access food of their preferences.
- The County commissioners' Office is planning to distribute relief food e.g. 1000 bags of Rice.
- RPLRP is also planning to carry out restocking of ruminants in affected areas.

## **7.0 EMERGING ISSUES**

### **7.1 Insecurity**

- There were no cases of insecurity reported during the month under review.

### **7.2 Migration**

- There were no abnormal cases of human migration during the month.

### **7.3 Food security prognosis**

- The long rains season (MAM) will be above average in terms of performance.
- Households will continue employing consumption related coping strategies.
- Markets will continue to operate normally despite poor infrastructure.
- The improving livestock body condition will increase the purchasing power of farmers to access commodities in the markets hence improve food insecurity at household level.
- Term of trade is expected to decline due to decrease in goat prices.
- Water availability and accessibility situation is expected to improve for both domestics and livestock due to ongoing rains.
- Nutrition status will improve in the coming month.
- Forage condition will continue improving and hence stabilize livestock body conditions, production and prices in coming months. Food prices are expected to decrease.
- The May 3-Month Vegetation Condition Index indicating above normal greenness for the entire County and hence on improving trend.

## **8.0 RECOMMENDATIONS**

### **Water**

- Promotion of rain water harvesting, repair of Djabias, roof catchment areas, installation of gutters and tanks in Villages and Institutions.
- Constructions/rehabilitation of water pans for preparedness.
- Conducting of hydro geological survey and drilling of boreholes.

### **Livestock**

- Upscale efforts aimed at stock piling livestock feeds in strategic hay reserves for use during the dry season by providing farmer groups with pasture seeds so as to maximize production over the long rains season.
- Accelerate completion of Nagele Livestock market for Linkage to other Livestock markets.
- Livestock disease surveillance, Vaccinations and control to curb spread of livestock diseases.
- Promote Pasture and fodder planting in the county during the long rains.
- Provision of hay band machines for harvesting.
- Provision of storage facilities for Animal feeds.
- Promote livestock insurance services.

### **Agriculture**

- Provision of relief seeds, fertilizers and subsidized tractor services for crop farmers.
- Build Capacity of crop farmers to plant drought resistance food crops.
- Mobilization and sensitization of farmers' on crop insurance.

### **Health and Nutrition**

- Strengthen malnutrition screening and active case search as well as strengthen integrated management of acute malnutrition in the community.
- Enhance disease and nutritional surveillance.

### **Education**

- Support to schools feeding programmes for the most vulnerable communities focusing on the most vulnerable areas in the county to minimize drop outs.
- Provide Food for fees for students hailing from Vulnerable and poor families.
- Provision of boarding facilities to vulnerable communities within the County.

### **Peace and Security Sector**

- Peace and security meetings should be enhanced in the County
- Inter Counties peace and security to be enhanced in order to avert future conflicts.

### **Information Communication Technology**

- Promote use of ICT on Drought information sharing and development programmes.

## REFERENCE TABLES

**Table 1: Drought Phase Classification**

Normal	Alert	Alarm	Emergency
All environmental Agricultural and pastoral indicators are within the seasonal ranges	Meteorological drought indicators move outside seasonal ranges	Environmental and at least two production indicators are outside Long term seasonal ranges	All Environmental, Metrological and Production indicators are outside normal ranges.
<b>Recovery:</b> The drought phase must have reached at least Alarm stage. Recovery starts after the end of drought as signalled by the environmental indicators returning to seasonal norms; local economies starting to recover			

**Table 2: Standardized Precipitation Index (SPI)**

Color	SPI Values	Metrological Drought Category
	> +1.5 or more	Wet Conditions
	0 to +1.5	No drought
	-0.1 to -0.99	Mild drought
	-1 to -1.99	Severe drought
	<-2 and less	Extreme drought

**Table 3: Vegetation Condition Index Values (VCI)**

Color	VCI values 3-monthly average	Agricultural Drought Category
	≥50	Wet
	35 to 50	No agricultural drought
	21 to 34	Moderate agricultural drought
	10 to 20	Severe agricultural drought
	<10	Extreme agricultural drought

**Table 4: Livestock Body Condition**

Level	Classification	Characteristics (this describes majority of the herd and not individual isolated Stock)
1	Normal	Very Fat Tail buried and in fat
		Fat, Blocky. Bone over back not visible
		Very Good Smooth with fat over back and tail head
		Good smooth appearance
2	Moderate	Moderate. neither fat nor thin
3	Stressed	Borderline fore-ribs not visible. 12th & 13th ribs visible
4	Critical	Thin fore ribs visible
5	Emaciated	Very thin no fat, bones visible
		Emaciated, little muscle left

### **Definition of Early Warning Phases**

The EW phases are defined as follow:

**NORMAL:** The normal phase occurs when **biophysical drought indicators ( VCI and SPI) show no unusual fluctuations** hence remain within the expected ranges for the time of the year in a given livelihood zone, division or county

**ALERT:** The alert phase is when either the **vegetation condition index or the standard precipitation index (biophysical indicators) show unusual fluctuations below expected seasonal ranges** within the whole county/sub-county or livelihood zones.

**ALARM:** The alarm phase occurs when both **biophysical and at least three production indicators fluctuate outside expected seasonal ranges** affecting the local economy. The production indicators to be considered are livestock body condition, crop condition, milk production, livestock migration and livestock mortality rate.

If **access indicators** (impact on market, access to food and water) move outside the normal range, the status remains at “alarm” but with a worsening trend. Proposed access indicators include ToT, price of cereals, availability of cereals and legumes, and milk consumption. The trend will be further worsening when also welfare indicators (MUAC and CSI) start moving outside the normal ranges.

**EMERGENCY:** In the emergency phase, **all indicators are outside of normal ranges**, local production systems have collapsed within the dominant economy. The emergency phase affects asset status and purchasing power to extent that seriously threatens food security. As a result, coping strategy index, malnutrition (MUAC) and livestock mortality rates move above emergency thresholds

**RECOVERY:** **Environmental indicators returning to seasonal norms.** The drought phase must have reached at least Alarm stage. Recovery starts after the end of drought as signalled by the environmental indicators returning to seasonal norms while production indicators are still outside the normal seasonal range but local economies start to recover. The status changes to normal once the bio physical and production indicators are back to normal range.