

**National Drought Management Authority**  
**LAIKIPIA COUNTY**  
**DROUGHT EARLY WARNING BULLETIN FOR APRIL 2018**



A Vision 2030 Flagship Project



**APRIL 2018 EW PHASE: ALERT**



**Drought Situation & EW Phase Classification**

**Biophysical Indicators**

**Rainfall:**

- In April, the County experienced 9-15 days of moderate to heavy rainfall. The rains received were generally well distributed in terms of time and space.

**Vegetation Condition:**

- The Vegetation Condition Index (VCI) is above the normal range for the period, indicating very good state of pasture and browse condition across most areas.
- The available pasture and browse is expected to last for at the least 2-3 months.

**Socio Economic Indicators (Impact Indicators)**

**Production Indicators:**

- There was no migration recorded.
- Milk production per household was within the normal range at this time of the year.
- The body condition of animals was within the normal range for the period.

**Access indicators:**

- The terms of trade are within the normal range
- Milk consumption is within the normal range
- The return distance from water sources to grazing areas is also within the normal range.

**Utilization indicators:**

- All within the normal range.

LIVELIHOOD ZONE	EW PHASE	TREND
PASTORAL	Normal	Stable
MMF	Normal	Stable
MF	Normal	Stable
<b>COUNTY</b>	<b>Normal</b>	<b>Stable</b>
Biophysical Indicators	Value	Normal range
% of Average rainfall	201%	80-120%
SPI-3 month (TAMSAT)	-	-1 to 1
VCI (1 month)	76.2	35-50
State of Water Sources	5	5
Production indicators	Value	Normal range
Livestock Migration Pattern	No Migration	No Migration
Livestock Body Condition	4-5	4-5
Milk Production (Lt)	5.1	4.9
Livestock deaths	No death	No death
Crops area planted (%)	-	% of LTA
Access Indicators	Value	Normal ranges
Terms of Trade (ToT)	112.8	90
Milk Consumption (Lt)	1.8	>1.7
Return Distance (Water Sources - grazing areas)	2.2	< 5
Return Distance water to Grazing areas (Pastoral)	3	<7
Utilisation indicators	Value	Normal ranges
MUAC (Mid at risk)	1.7	< 18
Coping Strategy Index (CSI)	-	<1

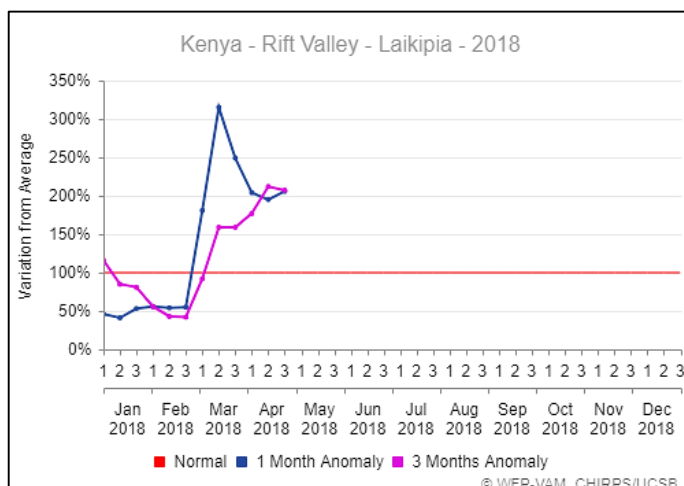
<ul style="list-style-type: none"> <li>▪ Short rains harvests</li> <li>▪ Short dry spell</li> <li>▪ Reduced milk yields</li> <li>▪ Increased HH Food Stocks</li> <li>▪ Land preparation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Planting/Weeding</li> <li>▪ Long rains</li> <li>▪ High Calving Rate</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 CLIMATIC CONDITIONS

## 1.1 Rainfall Performance

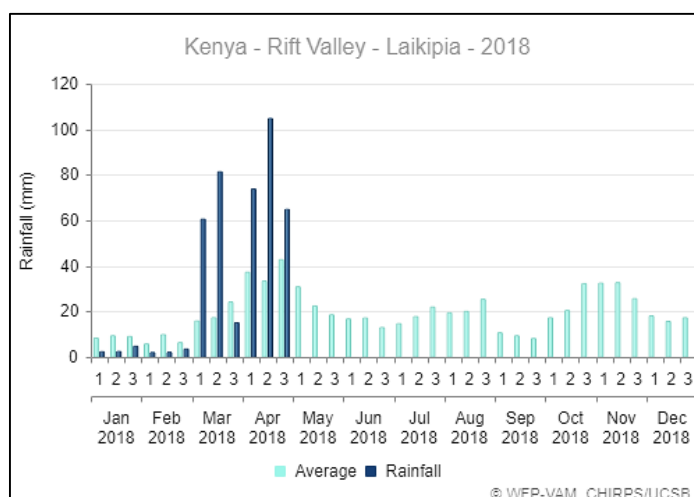
### Performance

- During the month under review (April), Laikipia County recorded rainfall ranging between moderate to heavy rains. The mixed farming (MF) livelihood zone recorded 6 days of heavy rainfall and 4 days of moderate rainfall. The marginal mixed farming (MMF) livelihood zones recorded 5 days of heavy and 4 days of moderate to light showers with good distribution in terms of space. The Pastoral livelihood zones recorded 10-15 days of moderate to heavy rainfall across the zone with good distribution.



- In relation to variation from the long term average, the rains received in April were approximately 201% of the expected amount for the month, which is way above normal. This is a major increase compared to the recorded 147% of the long term average in March.

## 1.2 Amount of Rainfall and Spatial Distribution

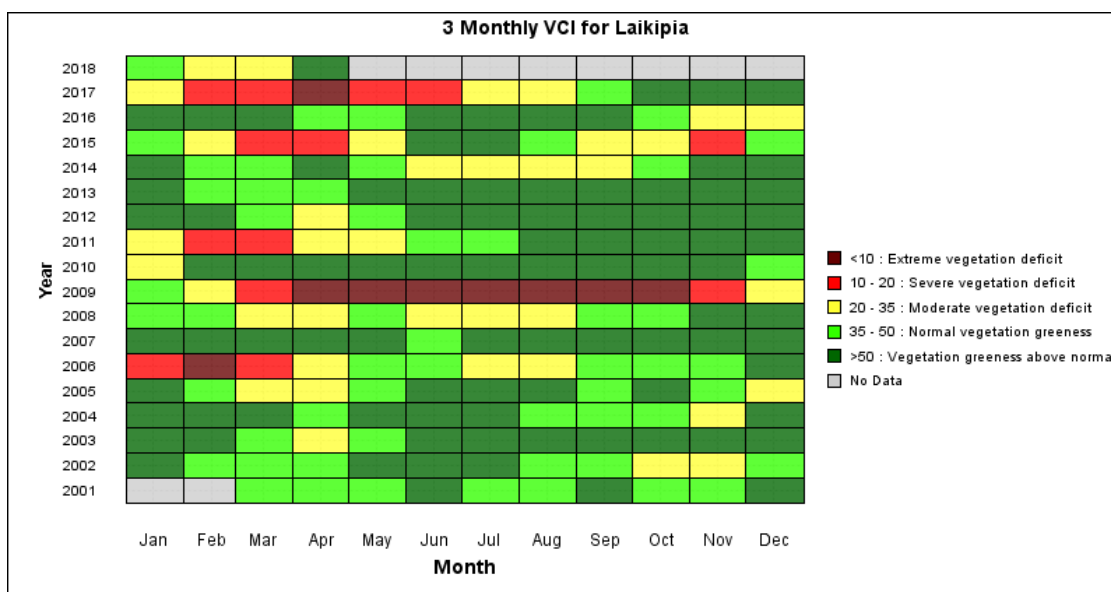


- According to the chart above, the amount of rain received in April amounted to 243.2 mm for the month, which is above the long term average of 113.2 mm by the same time hence way above the normal range.
- Compared to March at 138.8 mm, the precipitation levels increased significantly. This is attributed to the ongoing heavy rains.
- The rainfall distribution was largely good in terms of time and space across all the livelihood zones.

## 2 IMPACT ON VEGETATION AND WATER

### 2.1 Vegetation Condition

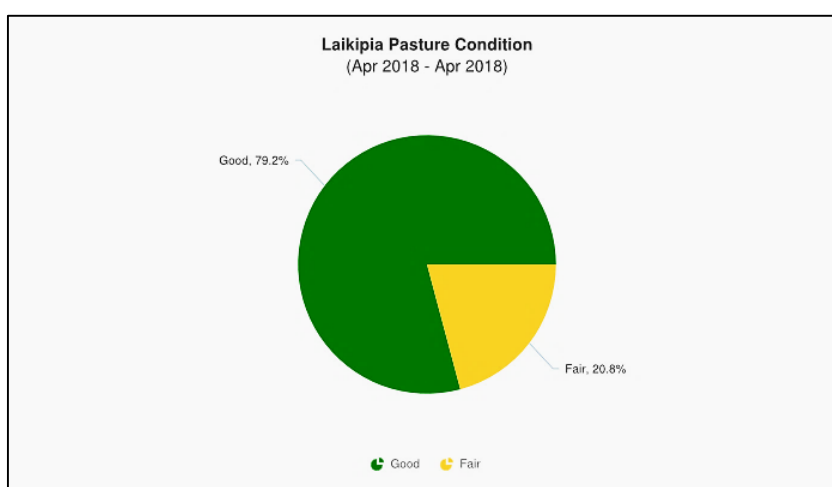
#### 2.1.1 Vegetation Condition Index (VCI)



- The VCI matrix above indicates an above normal vegetation greenness for the month of April, which is a tremendous improvement compared to the previous month which had a moderate vegetation deficit. From field observations, this was also the case as major improvement in vegetation quality and quantity was observed.
- The vegetation improvement can be attributed to the effect of the ongoing above normal rains and the previous off-season rains. Previously, wards which had moderate vegetation deficit i.e. Mukogodo East, Mukogodo West, Segera, Sosian, Ngobit, Salama and Tigithi wards are now recording normal vegetation greenness.
- The actual VCI (one month) at 76.02 is well above the long term average for the month, a tremendous improvement compared to 30.14 in March.

#### 2.1.2 Pasture

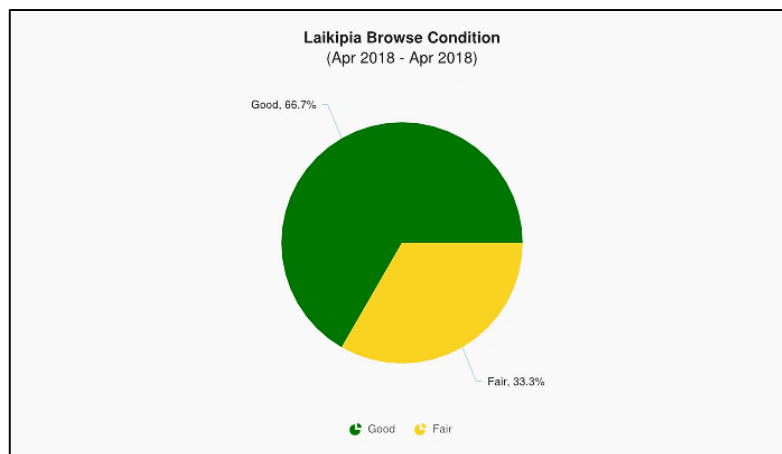
- Key informant interviews indicated that the pasture condition was good (79.2%) and fair (20.8%) as shown in the chart below.



- Compared to the previous month, there was a substantial improvement of the pasture condition in both quantity and quality.
- The improvement in pasture condition is attributed to the pre-season rains and the ongoing long rains (MAM).
- There was no major constraint to pasture access.
- The quantity of pasture available is expected to last 2 to 3 months in the Pastoral and parts of the MMF zone. In the MF zone the pasture condition is expected to last for at least 3 months.

### 2.1.3 Browse

- According to the key informants interviewed, the browse condition was split between good (66.7%) and fair (33.3) as shown in the chart below.

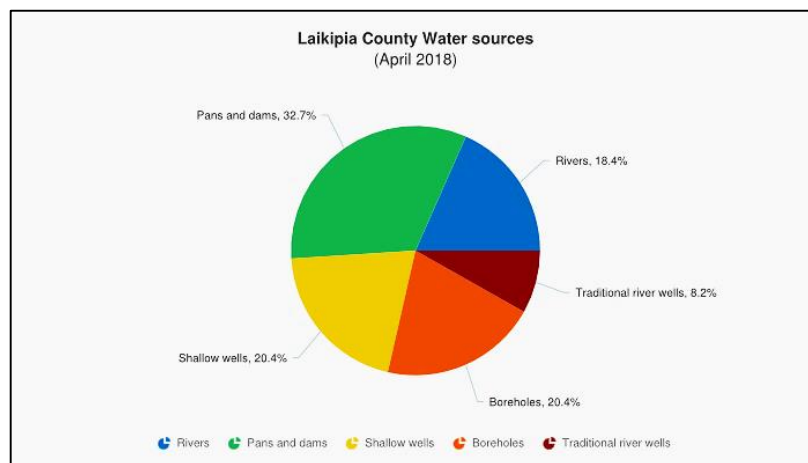


- Compared to the previous month, the browse condition recorded a significant improvement.
- The improved state of the browse condition is attributed to the pre-season rains and the ongoing long rains (MAM).
- No major constraint to browse access was recorded.
- The quantity of browse available is expected to last 3 months in the Pastoral and parts of the MMF zone. In the MF zone the pasture condition is expected to last for 3 to 4 months.

## 2.2 Water Resource

### 2.2.1 Sources

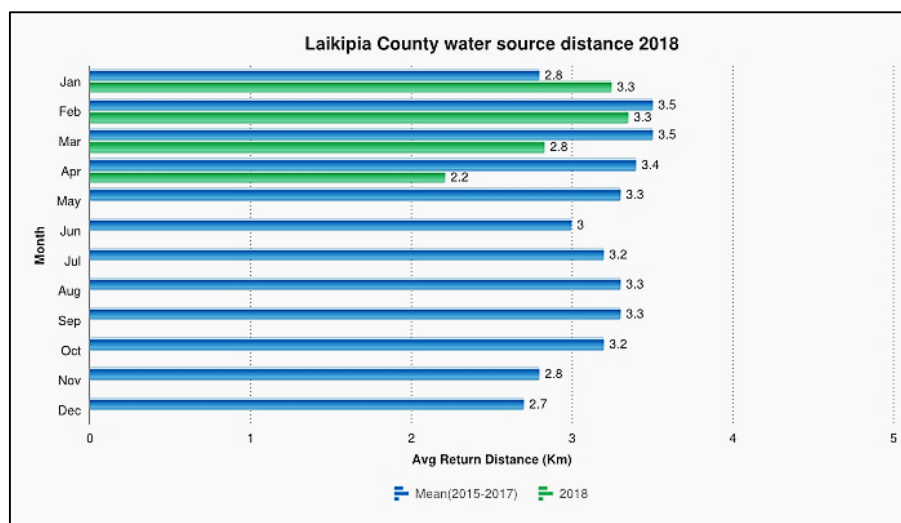
- During the month under review, the main water sources for domestic and livestock use in the County were pans and dams (32.7%), boreholes (20.4%), shallow wells (20.4%) and rivers (18.4%). Others were traditional river wells (8.2%).



- Compared to the previous month, the quantity and quality of water has increased due to the prevailing rains. The main water source has shifted from boreholes to pans and dams.
- The main water sources are expected to last as follows: - Pastoral (boreholes - permanent, pans and dams – 2-3 months), MMF (borehole - permanent, rivers – 3 months, pans and dams – 2-3 months), MF (shallow wells - 3 months, traditional river wells – 4 months, pans and dams – 3 months).

### 2.2.2 Household Access and Utilization

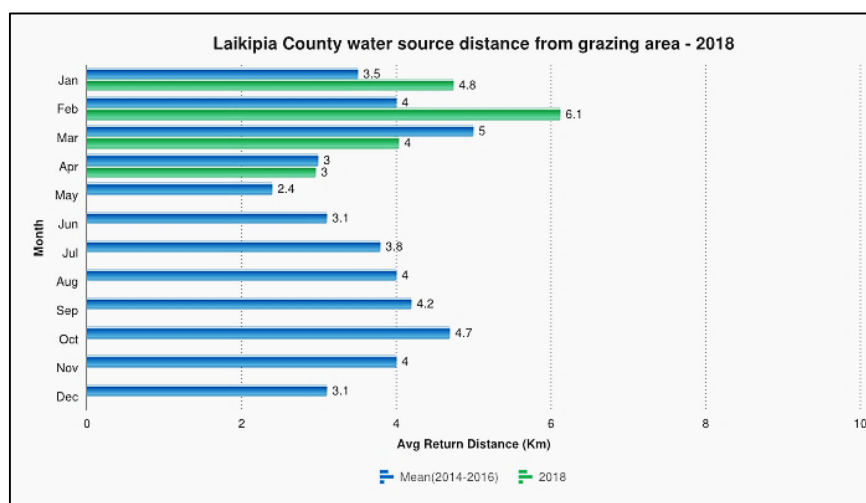
- The average return distances from households to water sources recorded a significant decrease in April at 2.2 km, down from 2.8 km the previous month. The furthest return distance of 2.4 km was recorded in the Pastoral zone (mainly Laikipia North) down from 3.5 km in March.



- The decrease in distances can be attributed to the pre-season rains and the onset of MAM rains.

### 2.2.3 Livestock Access

- The average return distance from water sources to grazing areas significantly decreased to 3 km, down from 4 km in March. The longest return distance of 4 km was recorded in the Pastoral zones, a significant decrease compared to 5.3 km in March. MMF zones recorded 2 km, also a significant decrease from 3.1 km the previous month.



- The decrease in distances from water sources to grazing areas can be mainly attributed to the decrease in distances covered in search of water and pasture.

### **3 PRODUCTION INDICATORS**

#### **3.1 Livestock Production**

##### **3.1.1 Livestock Body Condition**

- Across the county, the livestock body condition was classified at level 4-5 (moderate to normal).
- The livestock body condition was fair to good for cattle, while for shoats it was fair to good. This is normal at this time of the year.
- Compared to same time last year, the body condition of livestock is better.
- The livestock body condition has improved compared to last month due to the decrease in trekking distance in search of pasture and water coupled with the increase of pasture quantity and quality.
- The body condition of cattle in the mixed farming (MF) zone was good while in the marginal mixed farming (MMF) zone and Pastoral zone the same was fair to good. For shoats, the body condition was good across all the livelihood zones.

##### **3.1.2 Livestock Diseases and Deaths**

- There were no major cases of livestock diseases and deaths reported in March.

##### **3.1.3 Milk Production**

- Across the county, the sampled households recorded an increased average milk production of 5.1 litres per household per day in April, up from 4.5 litres in March. The Pastoral zone recorded the least milk production per household at 2 litres, which is a slight increase compared to 1.7 litres in March. This milk was obtained from cattle.
- The increase in milk production is attributed to the decrease in trekking distance in search of pasture and water and also the increase of pasture quantity and quality.
- The milk production is slightly above the average levels (4.9 litres per household) at this time of the year.

#### **3.2 Rain-fed Crop Production**

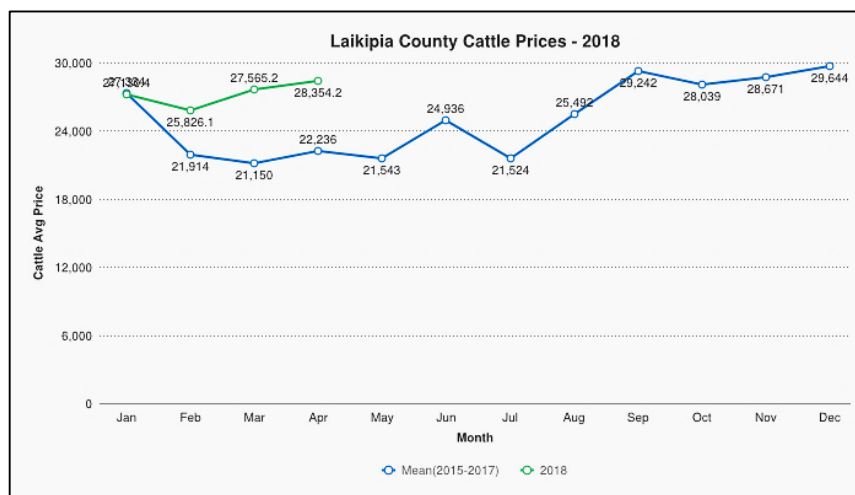
##### **3.2.1 Stage and Condition of Food Crops**

- Currently, crops to be found in most farms in the MF and MMF zones are maize, potatoes and beans. The crops are doing well although threat of army worm in is of a great concern to farmers. Maize is at germination to knee high stage, for beans, first few leaves are out. For potatoes it is at the leave stage of growth. The current excessive rains have resulted in leaching in farms in the crop growing zones.
- Cases of army worm has been reported in farms in the MF zones. No major diseases were reported during the period under review.

## 4 MARKET PERFORMANCE

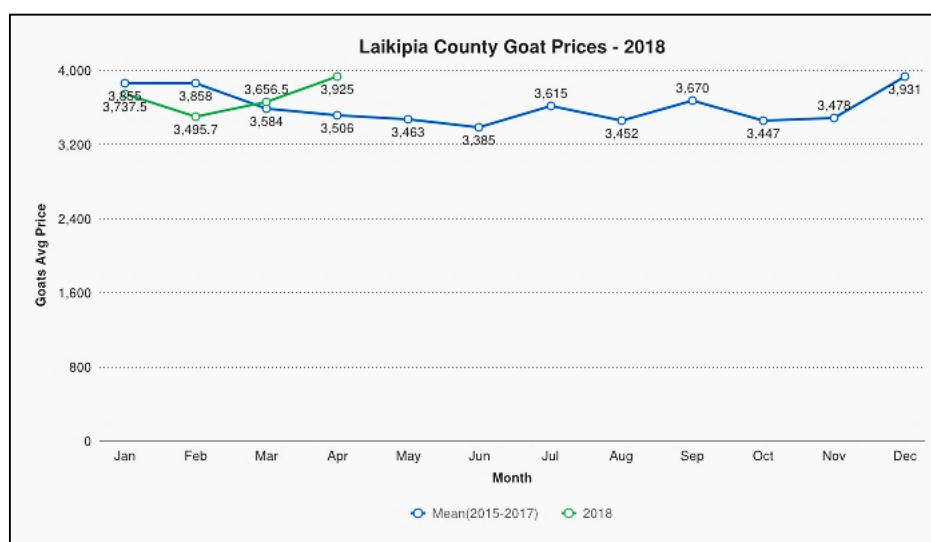
### 4.1 Livestock Marketing

#### 4.1.1 Cattle Prices (Market)



- In April, the county recorded an average cattle price of Kshs. 28,354 at the markets, a slight increase (by 3%) compared to the previous month. This can be attributed to the slight improvement of the body condition as a result of decreased trekking distances in search of pasture and water.
- The pastoral zone recorded the highest cattle price whereas MMF recorded the lowest.
- Compared to the long term average, the current price is higher than the long term average hence above normal.

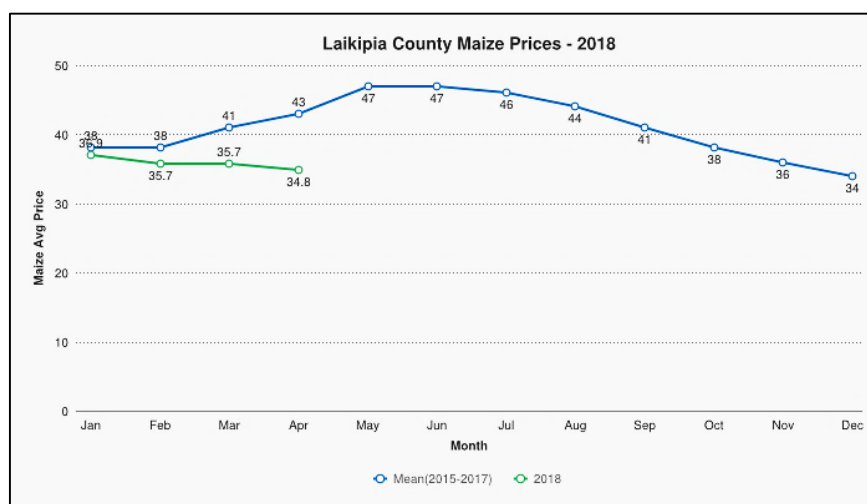
#### 4.1.2 Small Ruminants Prices (Goat)



- During the month under review, the average price of a goat in Laikipia was recorded at Kshs. 3,925 which is a 7% increase compared to the previous month. The increase in goat price can be attributed to the slight improvement of the body condition and robust supply at the markets.
- The highest average goat price was recorded in the MF zone whereas the lowest price was recorded in the MMF zone. The current goat price is slightly higher by 12% compared to the long term average, hence above the normal range.

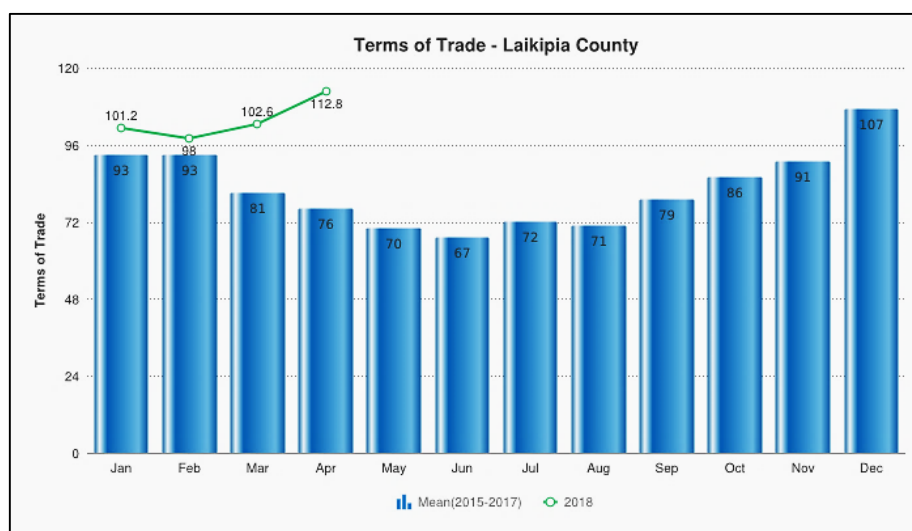
## 4.2 Crop Prices

### 4.2.1 Maize (market price)



- For the month of April, an average maize price of Kshs. 35 was recorded at the markets as shown in the graph above, slightly lower than March. The low market price is attributed to the availability of maize at household level as a result of previous maize harvests and robust supply from other counties.
- The highest average market price of maize at Kshs.44 was recorded in Kimanjo market (Pastoral) whereas the lowest at Kshs. 25 were recorded in Olmoran (MMF) and Kinamba (MF) markets.
- Compared to the three-year average, the current price is lower by 8 shillings.

### 4.3 Livestock Price Ratio/ Terms of Trade



- From the graph above, the April average price of a goat at Kshs. 3,925 was able to purchase 112.5 Kg of maize, a significant increase compared to the previous month at 102.6 Kg.
- The shift in ToT (Terms of Trade) can be attributed to the slight increase in goat prices across all livelihood zones. The ToT favours livestock keepers as they are still able to purchase more maize for the price of a goat.
- When compared to the three-year average, the ToT is above normal.



#### **4.4 Implication on Food Security**

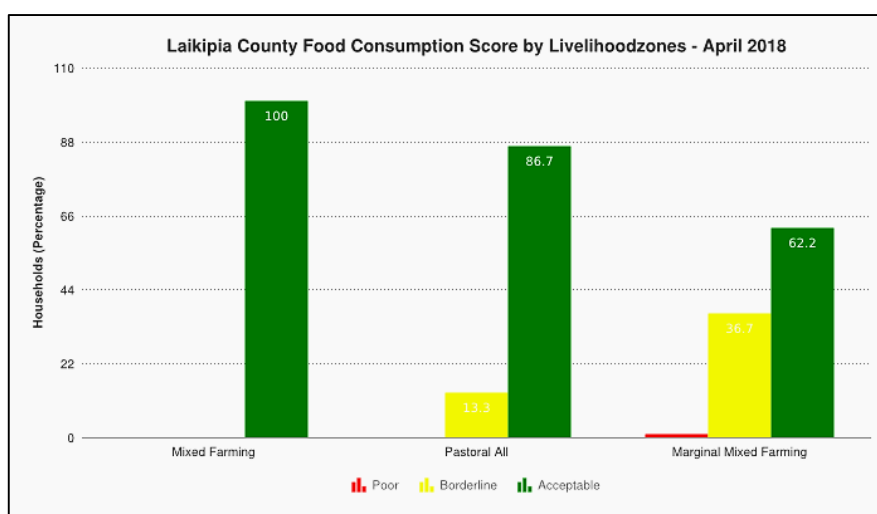
- The slight increase in livestock prices due to the improvement of the body condition and robust supply at the markets is bound to have a positive effect of a household's purchasing power.
- The stable maize food prices will ensure that households continue to have access to food hence foster a stable household food security status.
- Should the ongoing MAM rains continue to the expected cessation period, the stability of food prices will be positively affected hence ensuring a stable food security status at the households for the foreseeable future.

## 5 FOOD CONSUMPTION AND NUTRITION STATUS

### 5.1 Milk Consumption

- During the month under review, the sampled households recorded an average milk consumption of 1.8 litres per day, which is a significant increase compared to the previous month (at 1.5), with most of the milk coming from cattle.
- The milk consumption levels are within the normal levels (>1.7 litres) expected at this time of the year.
- For the MMF and MF zones, the larger percentage of the milk produced (75% and 58% respectively) was sold as households sought to raise income for other household needs whereas for Pastoral zones, 99% of the milk produced was used to supplement the diet.

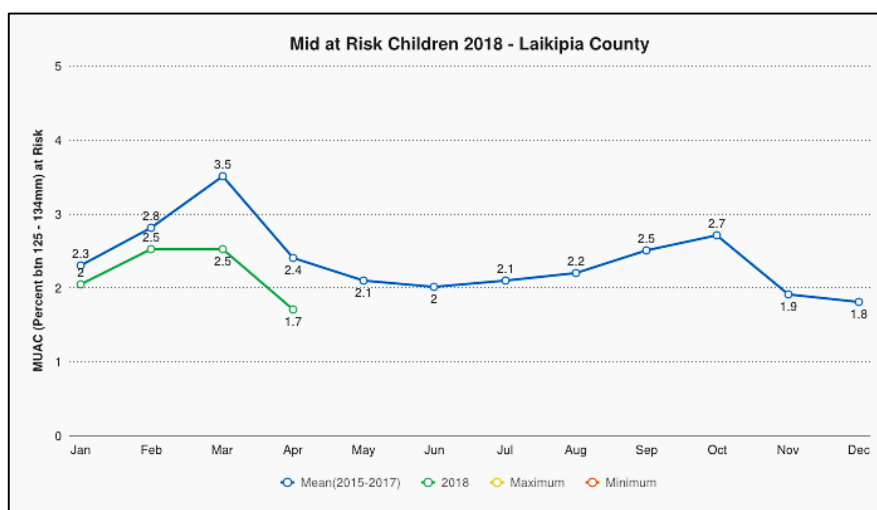
### 5.2 Food Consumption Score



- According to the chart above, all the households in the mixed farming livelihood zone maintained an acceptable food score. The Pastoral zone followed with an acceptable food score of 86.7% and a borderline food score of 13.3%.
- 62.2% of the households in the marginal mixed farming (MMF) zone had an acceptable score, 36.7% had a borderline score whereas 1.1% had a poor food score.
- In general, there was a slight increase in dietary diversity in all the livelihood zones.

## 5.3 Health and Nutrition Status

### 5.3.1 Nutrition Status



- The percentage of children under-five years of age who are at risk of malnutrition is 1.7%, slightly lower than the previous month.
- There were no reported cases falling under SAM and MAM for the current month.

### 5.3.2 Health

- There were no reported major diseases apart from cases of common cold affecting both adults and children across the sentinel sites during the period under review in the sampled households.

### 5.4 Consumption based coping strategies

- The most common types of the strategies employed were taking fewer meals and purchasing food on credit.

## 6 CURRENT INTERVENTION MEASURES (ACTION)

### 6.1 Non-Food Interventions

- No non – food interventions were reported in the County during the period.

### 6.2 Food Aid

- No food interventions were reported in the County during the period under review.

## 7 EMERGING ISSUES

### 7.1 Insecurity/ Conflict/ Human Displacement

- Cases of flooding of in farms have been reported at Matanya and weruine (Matanya sentinel site in MMF zone) and destroying crops in the farms.
- Roads in most remote areas have been affected by the rains and rendering them impassable most of the times especially after downpour due to gully's resulting from runoff water
- Areas most are in Tigithi, Salma, Ngobit and Mukogodo West wards. Some traders in these zones have not been able to access nearby markets due to poor roads.

### 7.2 Migration

- During the month under review, no cases of both human and animal migration were reported in the County.

### 7.3 Food Security Prognosis

- The pre-season rains and the onset of the long rains have led to the tremendous improvement of the pasture and browse condition. As the rains continue, the resultant increase in pasture and browse condition has resulted in the improvement of the livestock body condition, leading to better prices at the markets. If the rains persist, a good crop yield is expected except in areas where leaching and flooding has occurred.

## 8 RECOMMENDATIONS

- Provision of certified fertilizers at subsidized rate to farmers **Action: FAO, ASDSP, County Govt, National Govt, and Private Stakeholders.**
- Capacity building farmers on Conservation Agriculture as a modern method of farming **Action: FAO, ASDSP, County Govt, and Private Stakeholders.**
- Conduct rapport building meetings between communities, ranchers from within and neighbouring counties with the aim of creating mutual agreements to avoid conflict in as a result of natural resource constraints. **Action: County Government, NDMA, Stakeholders.**
- Initiate long term interventions geared towards curbing human wildlife conflicts. **Action: KWS.**

## REFERENCE TABLES

**Table 1: Drought Phase Classification**

Normal	Alert	Alarm	Emergency
All environmental Agricultural and pastoral indicators are within the seasonal ranges	Biophysical drought indicators move outside seasonal ranges	Environmental and at least three 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	Meteorological 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	Agricultural Drought Category
	<b>3-monthly average</b>	
	≥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)
5	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
4	Moderate	Moderate. neither fat nor thin
3	Stressed	Borderline fore-ribs not visible. 12th & 13th ribs visible
2	Critical	Thin fore ribs visible
1	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.