

**National Drought Management Authority**  
**LAIKIPIA COUNTY**  
**DROUGHT EARLY WARNING BULLETIN FOR AUGUST 2017**



A Vision 2030 Flagship Project



**AUGUST 2017 EW PHASE: ALERT**



**Drought Situation & EW Phase Classification**

**Biophysical Indicators**

**Rainfall:** In August, the County has experienced rainfall ranging from heavy to light showers. Generally, the rains were distributed fairly in terms of time and poorly in terms of space.

The received rainfall was approximately 98% of the expected amount for the month, which is within the normal range.

**Vegetation Condition:** The Vegetation Condition Index (VCI) is still below the normal range, indicating a fair to poor state of pasture and browse condition across most areas. According to field observations, the pasture condition in MF zones was fair while in the Pastoral zones and most MMF zones the same was fair to poor largely due to the poor regeneration coupled with overgrazing. The browse condition was largely fair across all livelihood zones.

**Socio Economic Indicators (Impact Indicators)**

**Production Indicators** – Livestock migration patterns in the pastoral and some MMF zones were not normal for the time of the year. Milk production per household was below the normal range. The body condition of animals is still below the normal range for the period but there is hope of improvement due to the off season rains.

**Access indicators** - The terms of trade are still way below the normal range. However, the return distance from water sources to grazing areas in was within the normal range, with the exception of the Pastoral zones.

**Utilization indicators** – were all still within the normal range.

The EW phase is **Alert** for the whole County.

The impact of off season rains is limited and due to the ongoing dry spell, the food security situation is on a decline. In view of the situation, it is important to embark on drought response activities across the County.

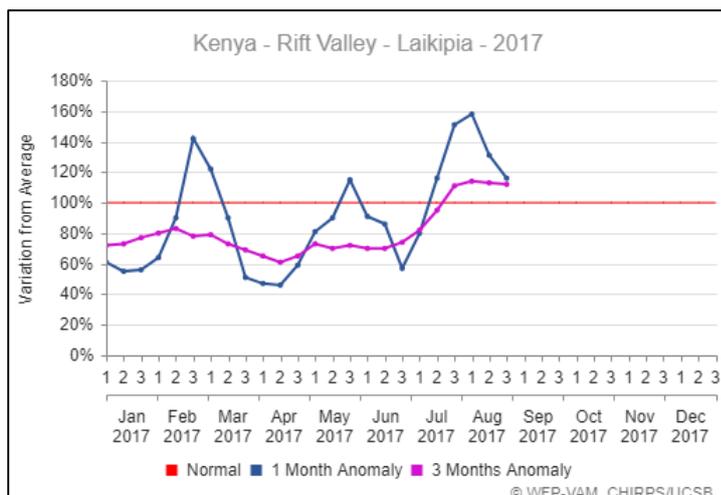
LIVELIHOOD ZONE	EW PHASE	TREND
PASTORAL	ALERT	Declining
MMF	ALERT	Declining
MF	ALERT	Stable
<b>COUNTY</b>	<b>ALERT</b>	<b>Declining</b>
Biophysical Indicators	Value	Normal range
% of Average rainfall (first 2 dekads)	113%	80-120%
SPI-3 month (TAMSAT)	-	-1 to 1
VCI (Entire County)	31	35-50
State of Water Sources	4	5
Production indicators	Value	Normal range
Livestock Migration Pattern	Not Normal	Normal
Livestock Body Conditions (score) County Wide	2-3	4-5
Milk Production (Lt)	1.4	1.5 to 2
Livestock deaths	Yes	No death
Crops area planted (%)	NA	% of LTA
Access Indicators	Value	Normal ranges
Terms of Trade (ToT)	50	> 83
Milk Consumption (Lt)	0.6	> 0.6
Return Distance to Water Sources from grazing areas	4	< 5
Return Distance from Grazing areas (Pastoral)	5.5	< 5
Utilisation indicators	Value	Normal ranges
MUAC	5.3	< 18.36
Coping Strategy Index (CSI)	0.9	<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

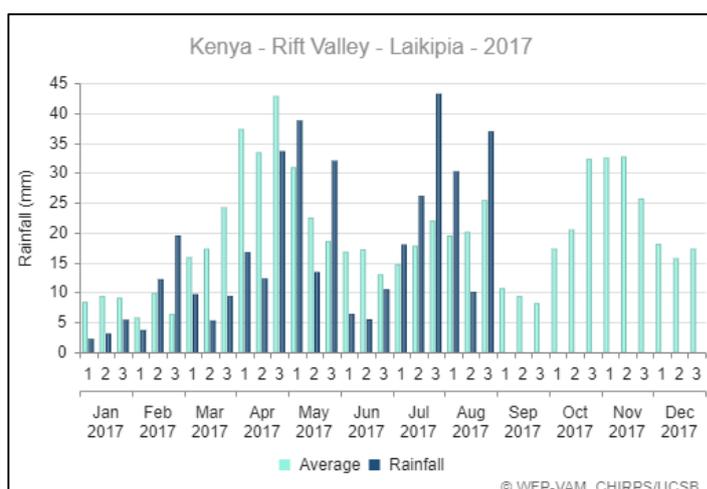
## 1.1 Rainfall Performance

- During the month of August, off-season rains ranging from heavy rains to light rains were observed across the County. The rainfall distribution was fair in both terms of time and space in MF and parts of MMF zones. In the Pastoral zone, the same was poor in both time and space.
- The Mixed Farming (MF) zone received 4 days of heavy to moderate rainfall fairly distributed whereas the Marginal Mixed Farming (MMF) reported 4 days of heavy rainfall to light showers which was fairly distributed in terms of space but poorly in terms of time. The Pastoral (all species) zone reported 1 day of heavy rainfall which was poorly distributed in terms of both time and space during the period under review.



- In terms of variation from the long term average, the amount of rain received was approximately 113% of the expected amount for the month, up from 98% in July, hence above the normal range. This is a significant increase compared to the recorded 70% of the expected amount in June.

## 1.2 Amount of Rainfall and Spatial Distribution

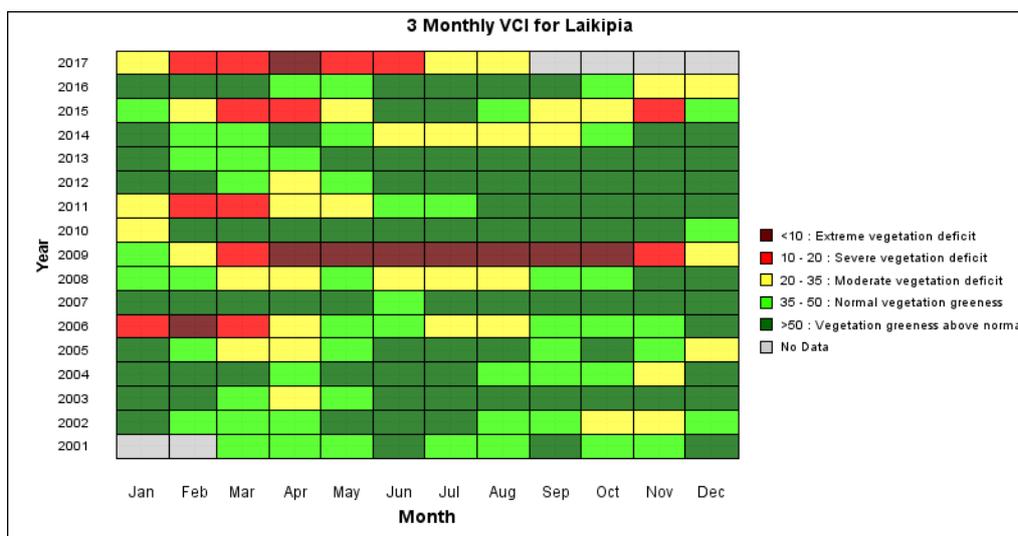


- According to the chart above, the rain received in August amounted to 87 mm, way above the long term averages of 54.2 mm and 76.9 mm in July. This is a significant increase in precipitation levels across all livelihood zones.
- The rainfall distribution was fair in both terms of time and space in MF zones and poor in both time and space in the Pastoral zone.

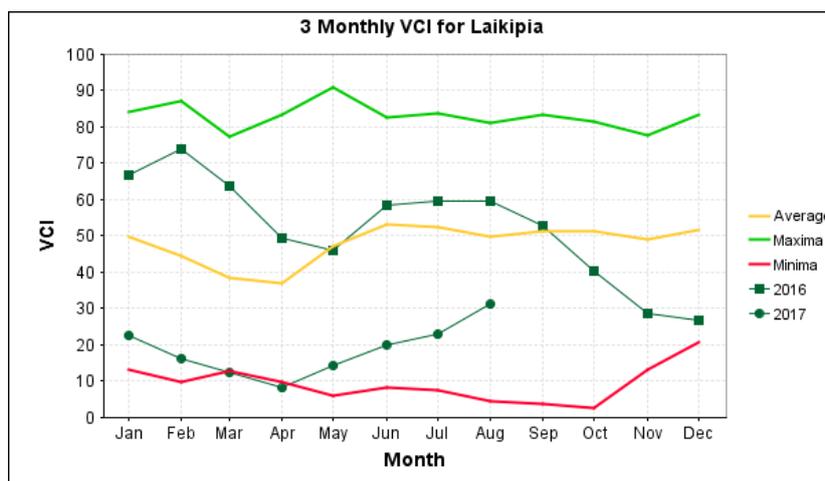
## 2 IMPACT ON VEGETATION AND WATER

### 2.1 Vegetation Condition

#### 2.1.1 Vegetation Condition Index (VCI)



- The VCI matrix above indicates that the County is experiencing moderate vegetation deficit in August, same as the previous month. From field observations, this is largely true with some hotspots in areas like Tigithi and Mukogodo East and West wards experiencing extreme vegetation deficit



- According to the chart above, the VCI at 31 is still below the normal range (35-50) but has slightly increased compared to July at 22.67.
- The vegetation regeneration has been poor largely due to overgrazing which is fuelled by immigration and denuded lands.

#### 2.1.2 Pasture

- Across the County, the pasture condition was fair to poor in both quantity and quality in all the livelihood zones of the county especially parts of MMF and Pastoral zones as a result of overgrazing exacerbated by the immigration of livestock from neighbouring counties during the prolonged dry spell leading to denuded lands.
- The pasture condition is fair in the MF zones and parts of MMF zone but still below normal in the Pastoral zones and parts of MMF zones near the Pastoral zone. Pasture condition in all the livelihood zones has recorded improvement due to the off season rains that have been reported in the all zones although in the Pastoral zone (Both Mukogodo East and West) the pasture

condition has yet to record significant improvement although signs of regeneration of pasture has been seen.

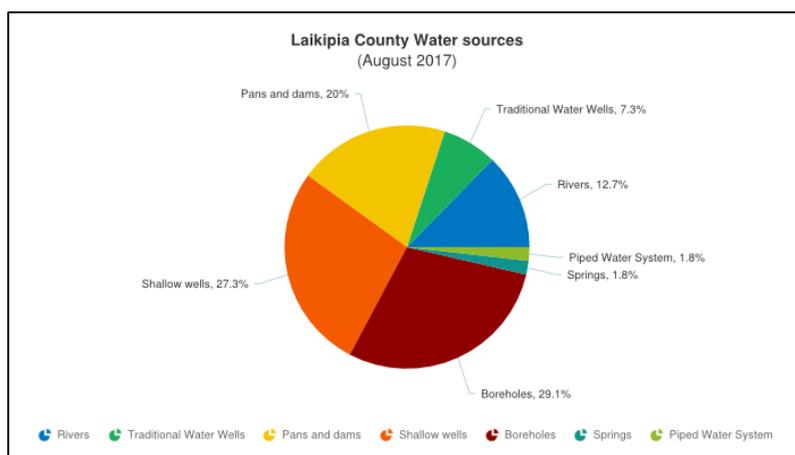
- The pasture condition in the Pastoral zone is still in poor condition although signs of shooting and lash pasture regeneration has been seen due to the off season rain reported in the areas. Most of the land in the area is bare ground due to overgrazing (especially in Mukogodo East and West). In addition, pastures in the ranches remain to be in poor condition and depleted.
- The quantity of pasture available is expected to last less than a month in the Pastoral and parts of MMF neighbouring the Pastoral zone hastened by overgrazing and the below normal rains that had been experienced. In the MF zone the pasture condition is expected to last for 1 month due to the off season rains experienced in the area.

### 2.1.3 Browse

- The browse condition in Pastoral zone is fair to poor in both quantity and quality. In some areas the browse condition is deteriorating in quantity compared to last month owing that no precipitation was recorded. In the MF zones, the browse condition is fair whereas that of the MMF zone is fair to poor owing to the off season rains reported in the areas.
- The browse condition is below normal in all livelihood zones since most of the palatable species had been exhausted especially in the MMF and the Pastoral areas.
- The quantity of browse available is expected to last an average of 1 to 2 months in the MF and MMF zones and less than a month in the Pastoral zone.

## 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 boreholes (29.1%) followed by shallow wells (27.3%), pans and dams (20%) and rivers (12.7%). Boreholes have overtaken pans and dams as the most utilized water sources.
- The Pastoral and MMF livelihood zones largely utilized boreholes followed by pans and dams whereas the MF zone largely utilized shallow wells also followed by pans and dams. Alternate water sources were rivers, traditional water wells, springs and piped water.
- The current water levels in water sources have slightly increased owing to the off season experienced in most parts of the County.
- Challenges in access to water sources were the congestion at the sources by wildlife especially in the Pastoral zones.

### 2.2.2 Household Access and Utilization

- Despite the off season rains experienced, the average return distances from households to water sources slightly increased to 2.5 Km, up from 2.1 Km in July. The furthest return distance of

3.9 Km was recorded in Pastoral zones followed by 2.4 Km in MMF livelihood zones, slightly higher than previous month.

- The lowest distance of 0.6 Km was recorded in the Mixed Farming zone, slightly higher than the previous month.
- In general, the slight increase in distances can be attributed to the prevailing hot and dry weather conditions coupled with poor recharge in the previous long rains season.

### **2.2.3 Livestock Access**

- The average return distance from water sources to grazing areas has increased to 4 Km, up from 3.3 Km the previous month. The longest return distance of 5.5 Km was recorded in the Pastoral zones, significantly up from 4.5 Km in July. MMF zones recorded 2.9 Km, up from 2.5 Km the previous month.
- Overall, the increase in distances from water sources to grazing areas can be attributed to increased distances in search of pasture across the County.

### **2.3 Implication on Food Security**

- The off season precipitation has led to slight vegetation regeneration. However the vegetation is still poor due to over grazing leading to denuded lands. The available vegetation has contributed to slight relief from the previous severe drought conditions especially in all of the Pastoral zone, most of MMF and some MF zones.

### **3 PRODUCTION INDICATORS**

#### **3.1 Livestock Production**

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

- During the period under review, the general body condition of cattle was fair to poor across the County. In the Pastoral zone and most parts of the MMF zones, the cattle body condition was fair and poor for lactating cows. For MF the same was fair.
- The cattle body condition is slightly improving in MF and parts of MMF zone due to the off season rains experienced in the parts which have seen regeneration of pasture and browse quality and quantity. The Pastoral zone remains most affected due to most pockets in the zone having received less or no precipitation at all during the long rains season and also the poor off season rains experienced in the zone.
- The body condition of browsers was fair to good across all livelihood zones.
- On average, livestock body condition trend across the county is that, in all the livelihood zones the body condition of all the livestock classes is on a declining trend with the body condition of lactating cattle being in a poor to fair condition.

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

- No major livestock disease outbreaks were reported during the period under review.
- Some livestock deaths in cattle (mostly calves) were observed and reported in MMF and Pastoral zones as having resulted from exhaustion due to increased trekking distances in search of pasture.

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

- The sampled households recorded an average milk production of 1.4 litres per household per day, same compared to the previous month. Most of the milk was obtained from cattle.
- The below normal milk production levels are attributed to the prevailing hot and dry weather conditions coupled with increased trekking distances to grazing points.
- The milk production is below the normal levels (1.5 to 2 litres per household) expected at this time of the year.

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

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

- Different crops are at different stages depending on when they were planted and the onset of the rains at various livelihood zones. Stunted growth of food crops due to moisture stress and accelerated crop pest and disease have been reported in farms in MMF zones and parts of the MF but farmers are hoping to get some harvest as a result of the off season rains experienced during the period under review. In most farms in parts of the MF and MMF zones, maize is at flowering stage. Beans are now almost ready for harvest for farmers who planted early enough while most farms are in second weeding stage as at the time of review.
- The major on-going agricultural farming activity is spraying, 2<sup>nd</sup> weeding and top dressing in the MF and MMF zones.

##### **3.3 Implications on Food Security**

- The fair to poor pasture and browse condition has led to the poor body condition of cattle and sheep across the county which may result in decreased milk production hence negatively affecting food security.
- The late onset and early cessation of the long rain season resulted into late crop planting and

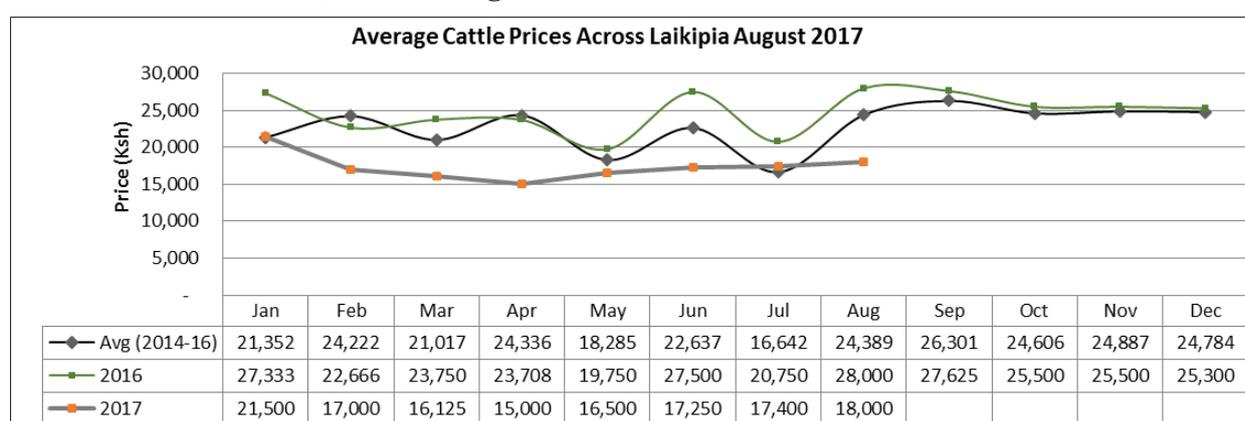
chances are high that this may lead to significant crop failure affecting maize, beans and potatoes.

- However, the off season rains have led to the assurance that farmers who planted late into the long rains season or who planted long term maize types will get some harvest.

## 4 MARKET PERFORMANCE

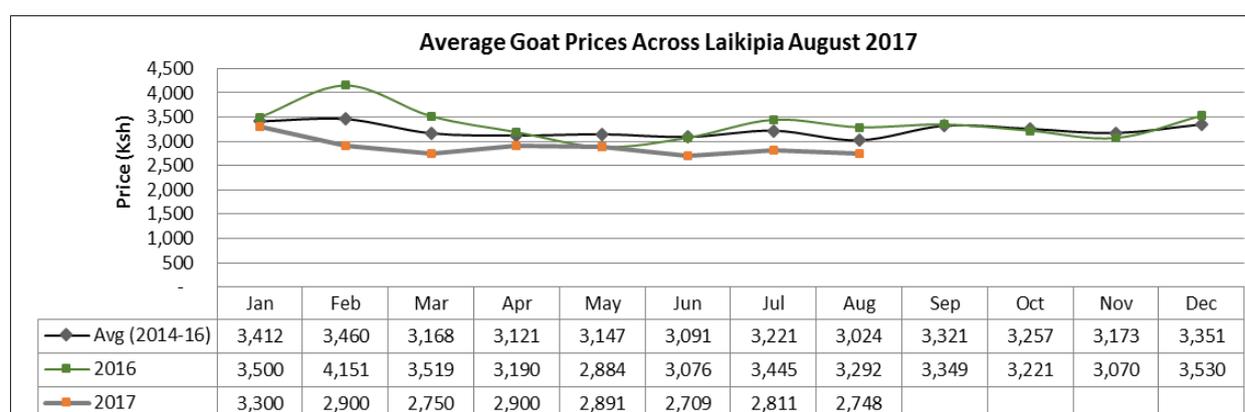
### 4.1 Livestock Marketing

#### 4.1.1 Cattle Prices (at the farm gate)



- The average price of cattle across the County at the farm gate recorded a very slight increase compared to the previous month. Livestock keepers are holding their stock in anticipation of improved pasture quality and quantity as a result of the off-season rains being experienced. Some livestock markets like Olmoran have been inactive since July because of the ongoing conflict between security personnel and illegal herders.
- In Laikipia, the lack of direct access to external markets in most areas especially in the Pastoral and MMF zones negatively affects the net value accrued from animal sales by livestock keepers. This situation only favours brokers, with the farmer not getting value for their cattle.
- Compared to the long term average, the current price is slightly higher than the long term average by 5%.

#### 4.1.2 Small Ruminants Prices

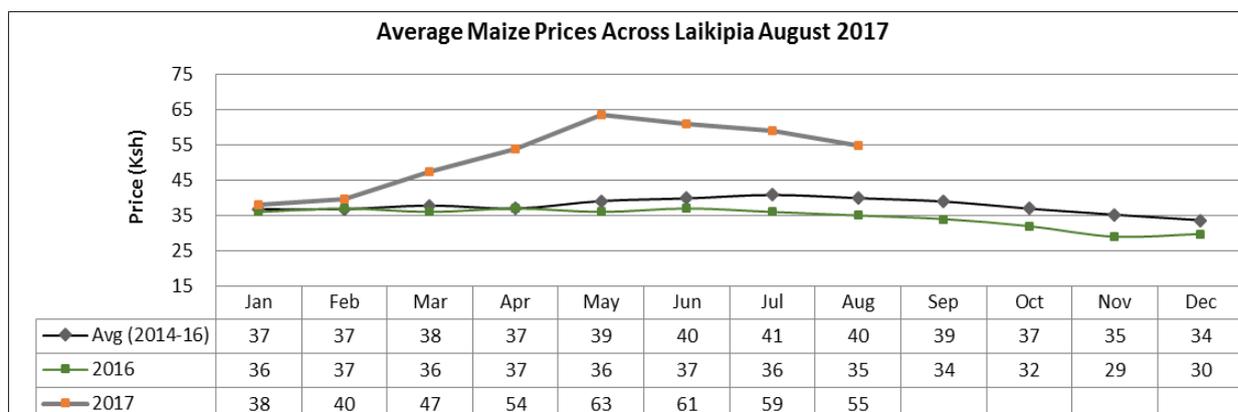


- During the month under review, the average price of a goat (at the farm gate) in Laikipia decreased to Kshs. 2,748, a 2% decrease compared to the previous month. The price is lower (by 9%) compared to the long term average. The decrease in goat price can be attributed to insecurity in parts of Laikipia North and West which has disrupted market operations.
- The highest average goat price was recorded in the MMF zone followed by the Pastoral zone.

- The current price is lower compared to the same time last year and the long term average.

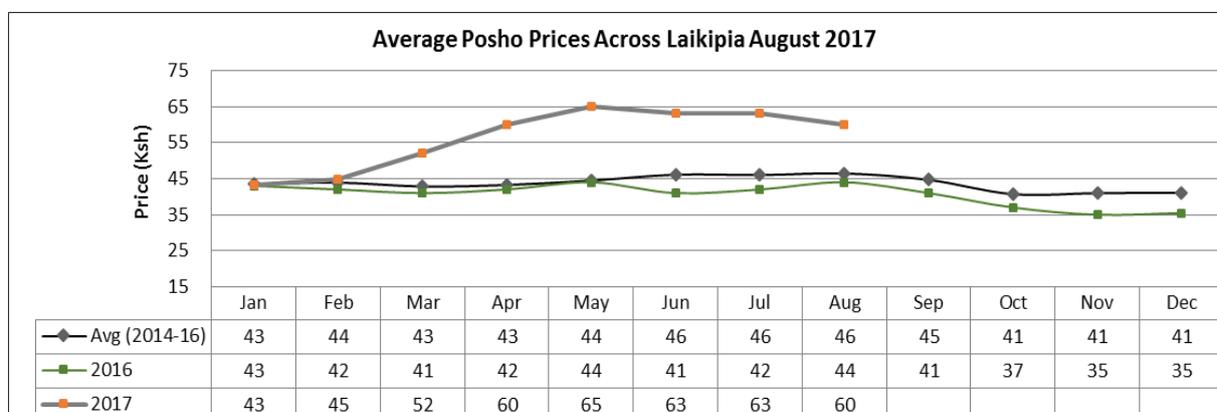
## 4.2 Crop Prices

### 4.2.1 Maize (market price)



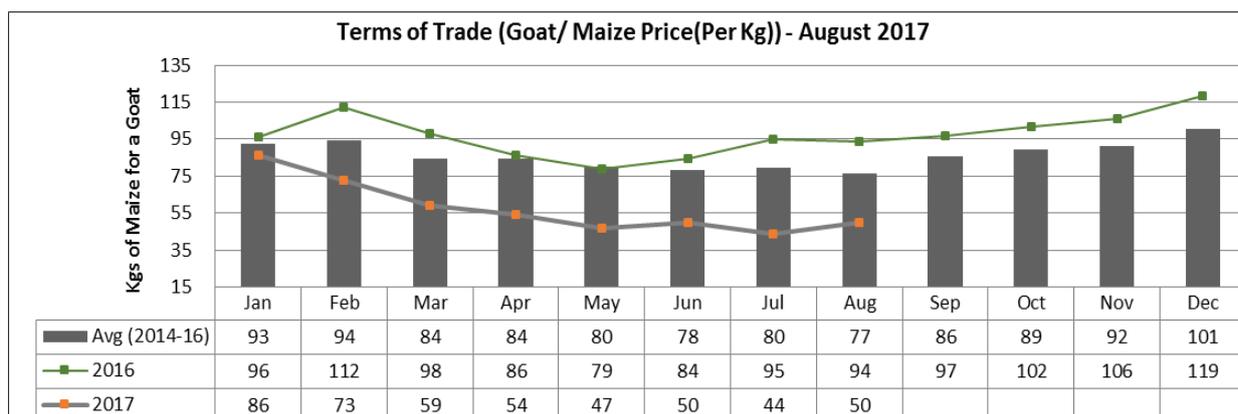
- The recorded average maize prices at the markets recorded a slight decrease (by 7%) from Kshs.59 in July to the current Kshs.55. The prevailing high maize price is attributed to the decline in available stocks across the country as a result of drought and poor long rains season.
- The highest average market price of maize at Kshs.70 was recorded in Olmoran market (MMF).
- Compared to the three year average, the current price is much higher by 38%. Last year (2016) had recorded much improved weather conditions in general but the short and the subsequent long rains ceased earlier than normal, leading to the sharp increase in cereal prices. The prolonged drought spell also worsened the situation.

### 4.2.2 Posho



- The recorded average Posho prices at the markets slightly declined to Kshs. 60.
- The prevailing high Posho prices are as a direct result of maize scarcity as discussed above.
- The current Posho prices are way above the long term averages by 37%.

### 4.3 Livestock Price Ratio/ Terms of Trade



- The average price of a goat at Kshs 2,748 is able to purchase only 50 Kg of maize, which is a significant increase compared to the previous month at 44 Kg. The ToT (Terms of Trade) favours maize farmers/ brokers as maize prices have remained high whereas at the same time livestock prices have remained low compared to the long term. However, maize farmers may not take advantage of the increase in maize prices because their stocks have been exhausted or have drastically declined.
- When compared to the three year average, the ToT are way below normal.
- Households were able to sell up to 1.8 goats to purchase a 90 Kg bag of maize, which is higher compared to the previous month at 2.04 goats across all livelihood zones in Laikipia County.

### 4.4 Implication on Food Security

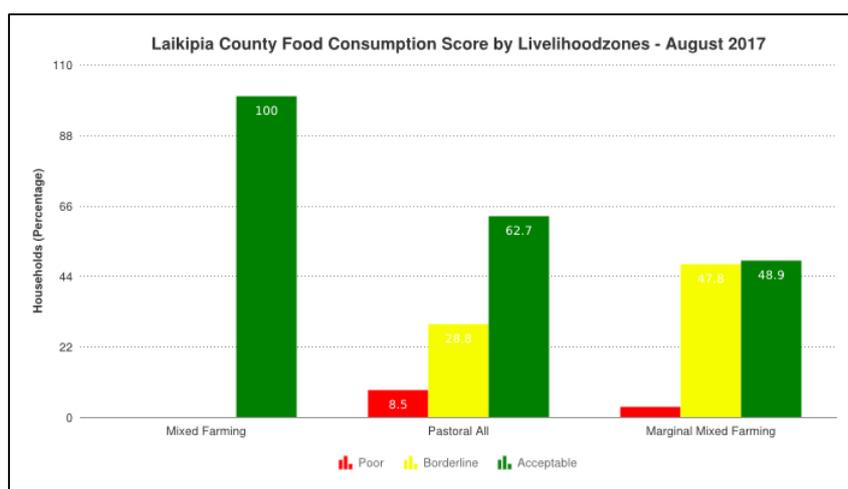
- The still below normal body condition of livestock continues to command poor livestock prices and therefore livestock keepers are still unable to get better value for their livestock. The off-season rains have had a slight positive contribution to the improvement of the livestock body condition. However, the persisting issue of insecurity in the Pastoral and MMF zones has hampered market operations in Laikipia North and West and this has negatively affected market prices.
- The high maize prices have had a negative contribution to food security. However, the government has intervened through maize imports and some areas are getting subsidised sifted maize meal at 90-110 Kshs. per 2 Kg packet.
- The terms of trade now favour maize farmers, although the majority may not take advantage of the increased maize price because most of them had already sold-off their stock in the November–December period at throw away prices.

## 5 FOOD CONSUMPTION AND NUTRITION STATUS

### 5.1 Milk Consumption

- The sampled households recorded an average milk consumption of 0.6 litres per day and this was mostly milked from cattle. The quantity of milk consumed in August is same compared to the previous month (at 0.61 litres).
- The milk consumption levels are still within the normal levels (>0.6 litres) expected at this time of the year.
- For the MMF and MF zones, the larger percentage of the milk produced (70% and 65% 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.

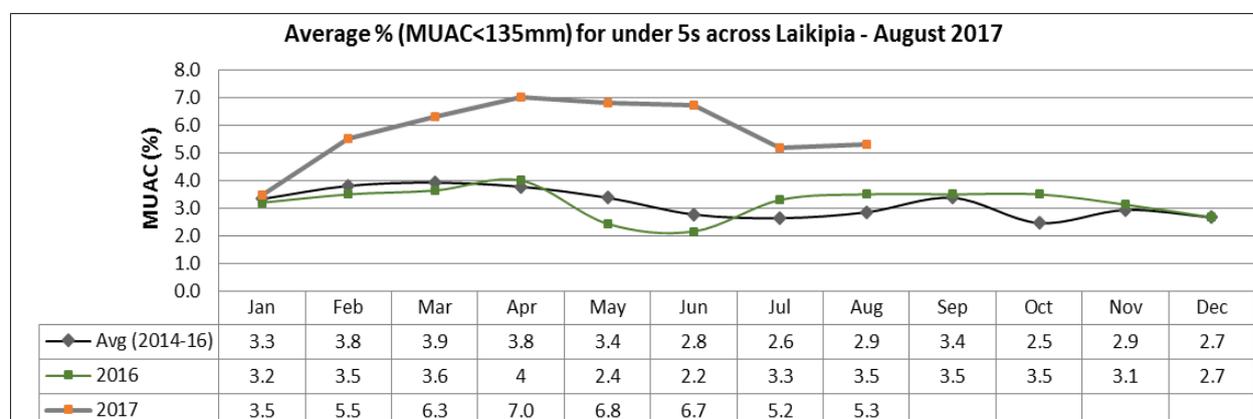
### 5.2 Food Consumption Score



- According to the chart above, the MF livelihood zone has the highest prevalence of households with an acceptable food score at 100%. The MMF zone follows with borderline food score of 47.8% and a poor food score of 3.3%, up from 41.6% and 2.2% respectively (the previous month). The Pastoral zone is the least food secure with a poor food score of 8.5% and a borderline food score of 28.8% compared to 8.3 and 30% the previous month. This can be attributed to the massive crop failure recorded across the MMF zone and poor pasture and browse regeneration in the Pastoral zone.

### 5.3 Health and Nutrition Status

#### 5.3.1 Nutrition Status



- The percentage of children under five years of age who are both at risk of malnutrition and have malnutrition was recorded as 5.3%, same as the previous month. The overall percentage of

children who are at risk of malnutrition and with malnutrition is much higher compared to the three year average (2014-2016) by 2.4 %.

### **5.3.2 Health**

- There were no major reported cases of disease outbreaks apart from cases of respiratory tract infections in both adults and children in MF, MMF and Pastoral zones.

### **5.4 Coping Strategies**

- The most common types of the strategies being employed are swapping consumption to less preferred or cheaper foods, taking fewer meals and purchasing food on credit.

### **5.5 Implication on Food Security**

- The static milk consumption levels across the Pastoral and MMF zones have had limited contribution to dietary diversification as livestock (mainly cattle) are yet to recover fully due to poor pasture regeneration.
- The off season rains have contributed positively to food security through improved water access hence leading to better sanitation in households thus minimising diseases. Households in the MF and MMF zones are also able to supplement their diets with leafy vegetables hence increased dietary diversity, leading to improved food security.

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

### **6.1 Non-Food Interventions**

- No non-food intervention was reported in the County during the period under review.

### **6.2 Food Aid**

- No non-food intervention was reported in the County during the period under review

## **7 EMERGING ISSUES**

### **7.1 Insecurity/ Conflict/ Human Displacement**

- Incidences of cattle rustling as a result of immigration of herders from neighbouring counties (Samburu) in Iingwesi (Pastoral zone) and Withare (MMF zone) area are still being reported.
- Cases of human wildlife conflict have been reported at eighteen in Mwenje (MF zone) and Exerock in Withare (MMF zone) as wildlife and livestock compete for the available water sources and pasture.
- Community members who were displaced from around Nadungoro sample area (Iingwesi Pastoral zone) due to invading herders are yet to go back.
- Insecurity has led to the closure of Olmoran livestock market at Marginal Mixed farming zone area.(parts of Laikipia West bordering Laikipia North)

### **7.2 Migration**

- Outmigration of livestock in search of pasture has been reported at Iingwesi (Pastoral zone) whereby local herds from around the area have been reported to have migrated to Ngare Ndare, Mukogodo and Mt. Kenya forests.
- Outmigration of pastoralist from the neighbouring Baringo County has been reported at Olmoran (MMF zone) due to the ongoing security operations by the government.

### **7.3 Food Security Prognosis**

- The ongoing off season mild rains have contributed to slight relief from the severe drought experienced since February. There has been a slight improvement on the vegetation condition and water is available although distances to water sources have slightly increased.

- However, the effects of the late onset and the below normal level of the long rain season are still being felt such as poor pasture regeneration (which has been worsened by overgrazing) and massive crop failure. This is further worsened by ongoing immigration and resulting conflicts over resources. There is therefore need to prepare for the worst case scenario at the earliest opportunity.

## 8 RECOMMENDATIONS

- Commence drought response operations through activation of the drought contingency fund (DCF). **Action: NDMA**
- Increase peace building activities and surveillance in conflict prone zones **Action: County Commissioner, County Government, Private Stakeholders**
- Close monitoring, continued screening and referral of malnutrition cases in the county, sensitization of mothers on diet diversification for the under-fives. **Action: County department of Health.**
- Increase disease surveillance especially in high livestock convergence zones and migratory routes. **Action: County Government, NDMA**
- Rehabilitate broken down boreholes and dams in MMF and Pastoral zones. **Action: County department of Water, NDMA.**
- Put in place intervention measures to curb the human wildlife conflicts especially in areas of Withare, Mwenje, Muruku, Endana, Matanya, Olmorani and Survey. **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	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	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.