

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



A Vision 2030 Flagship Project



OCTOBER 2017 EW PHASE: ALERT



Drought Situation & EW Phase Classification

Biophysical Indicators

Rainfall: The October November December (OND) rains commenced as at the third week of October. The County experienced rainfall ranging from heavy to light showers. Generally, the rains were distributed fairly in terms of time and space except in few pockets in the Pastoral zone.

The received rainfall was approximately 135% of the expected amount for the month, which is slightly above the normal range.

Vegetation Condition: The Vegetation Condition Index (VCI) is slightly above the normal range, indicating a fair to good state of pasture and browse condition across most areas. From field observations, this is largely true but there still exists areas with moderate vegetation deficit i.e. some parts of Mukogodo East & West, Sosian, Ngobit and Tigithi wards. The browse condition was largely fair to good in the MMF and MF zones but fair in the Pastoral zone with some few pockets experiencing poor browse.

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 within the normal range at this time of the year. The body condition of animals is still slightly below the normal range for the period but there is hope of improvement as the OND rains continue.

Access indicators - The terms of trade are still way below the normal range. The return distance from water sources to grazing areas is within the normal range.

Utilization indicators – were all still within the normal range.

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

A larger part of the county (approx. 85%) is within the normal range with the rest still experiencing drought effects. However, with the commencement of the OND rains, the remaining areas are expected to improve if the rains persist.

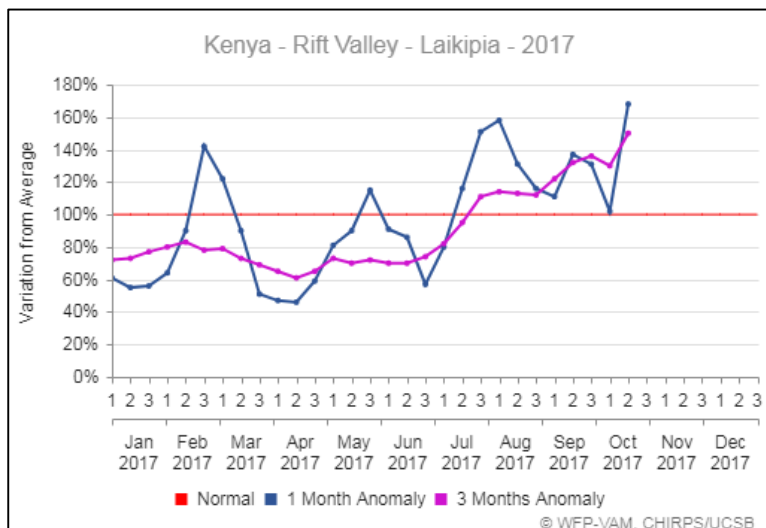
LIVELIHOOD ZONE	EW PHASE	TREND
PASTORAL	ALERT	Improving
MMF	NORMAL	Stable
MF	NORMAL	Stable
COUNTY	ALERT	Improving
Biophysical Indicators	Value	Normal range
% of Average rainfall (first 2 dekads)	135%	80-120%
SPI-3 month (TAMSAT)	-	-1 to 1
VCI (Entire County)	54.5	35-50
State of Water Sources	5	5
Production indicators	Value	Normal range
Livestock Migration Pattern	Yes	None
Livestock Body Condition (score) County Wide	3-5	4-5
Milk Production (Lt)	4.2	4.1
Livestock deaths	59	No death
Crops area planted (%)	-	% of LTA
Access Indicators	Value	Normal ranges
Terms of Trade (ToT)	62	> 83
Milk Consumption (Lt)	1.4	> 1.5
Return Distance (Water Sources - grazing areas)	5	< 5
Return Distance water to Grazing areas (Pastoral)	6.9	< 7
Utilisation indicators	Value	Normal ranges
MUAC (Mid at risk)	2.7	< 18.36
Coping Strategy Index (CSI)	-	<1

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

1 CLIMATIC CONDITIONS

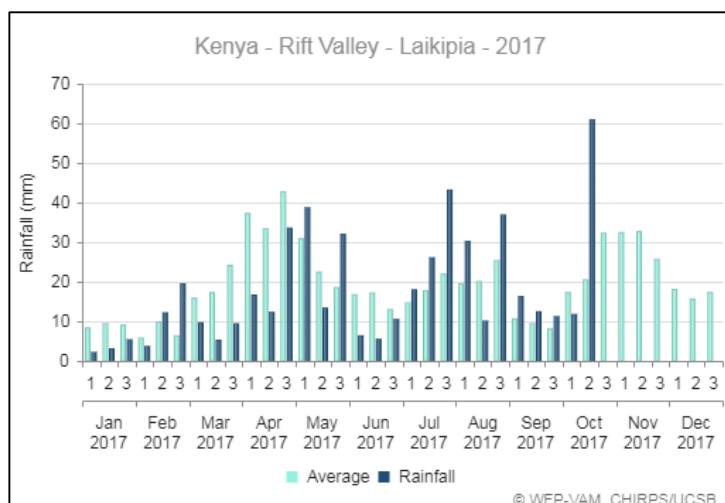
1.1 Rainfall Performance

- The October November December (OND) rains commenced as at the third week of October. The rains ranging from heavy to moderate were observed across the County.
- The Mixed Farming (MF) zone received 7 days of heavy to moderate rainfall whereas the Marginal Mixed Farming (MMF) reported 7 days of moderate rainfall to light showers. The Pastoral (all species) zone reported 8 days of moderate to light showers.



- In relation to variation from the long term average, the amount of rain received was approximately 135% of the expected amount for the month (in regards to the first 2 dekads) hence above the normal range (80-120%). This is a significant increase compared to the recorded 124% of the expected amount in September and 113% in August.

1.2 Amount of Rainfall and Spatial Distribution



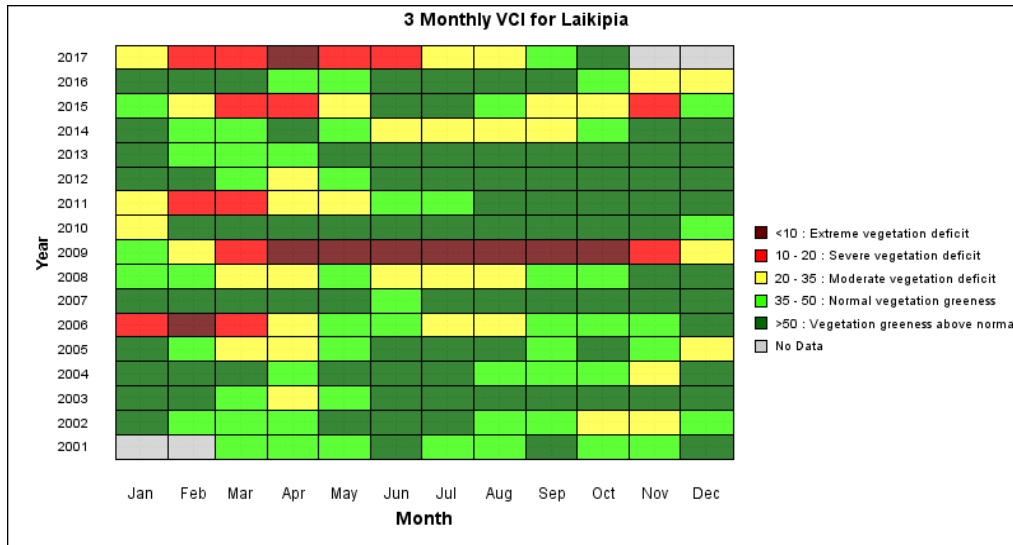
- According to the chart above, the rain received in October amounted to 72.5 mm by the second dekad, which is above the long term average of 37.6 mm in October hence way above normal. Compared to September, the precipitation levels increased significantly.
- The rainfall distribution was fair in both terms of time and space in the MF and parts of MMF zones. In the Pastoral zone, the same was largely fair in time and space. However, some few spots recorded poor distribution.

2 IMPACT ON VEGETATION AND WATER

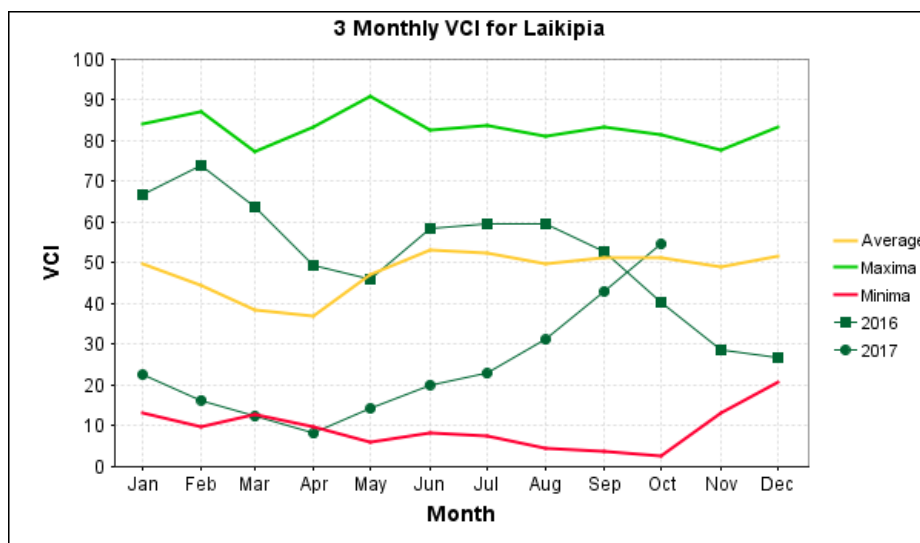
2.1 Vegetation Condition

2.1.1 Vegetation Condition Index (VCI)

- The vegetation condition has shown improvement across the county.



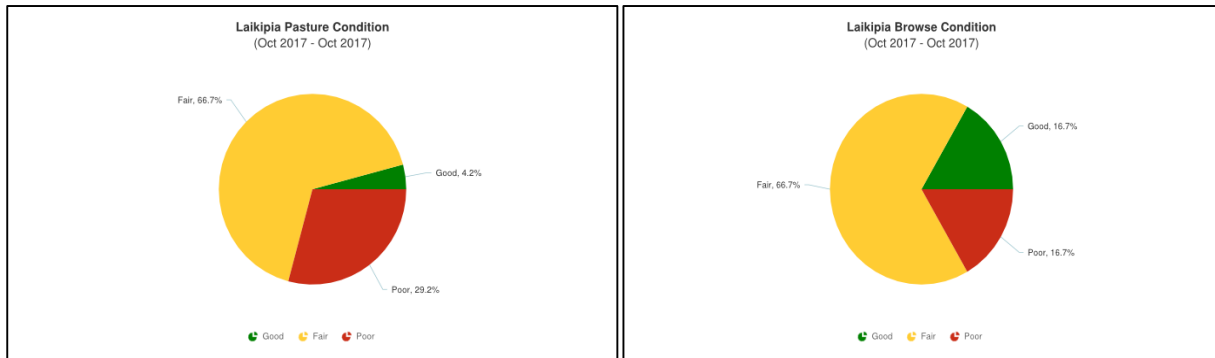
- The VCI matrix above indicates an improving trend with slightly above normal vegetation greenness compared to normal vegetation greenness in September. From field observations, this is largely true but there still exists areas with moderate vegetation deficit i.e. some parts of Mukogodo East & West, Sosian, Ngobit and Tigithi wards.



- According to the chart above, the VCI at 54.5 is within the normal range (35-50) and shows tremendous improvement compared to September at 42.85.

2.1.2 Pasture

- According to the key informant's interviewed, the pasture condition was largely fair (66.7%), Poor (29.2%) and good (4.2%) as shown in the chart below. The poor pasture quantity and quality was found mainly in the Pastoral zone (Mukogodo East ward) and parts of the MMF zone (Ngobit, Tigithi and Sosian wards) although this is fast changing due to the commencement of the OND rains and the resultant pasture regeneration.



- The pasture condition is largely good to fair in the MF zones and most of the of MMF zone.
- Compared to the previous month, there was a major improvement and this can be attributed to the off season rains and the commencement of the OND across most areas.
- The quantity of pasture available is expected to last a month in the Pastoral and parts of MMF zone. In the MF zone the pasture condition is expected to last for 2 months.

2.1.3 Browse

- The browse condition in Pastoral zone is largely fair in both quantity and quality, with the exception of some few areas in Mukogodo East which had poor browse. The browse condition in the MF zones is fair to good whereas in MMF zone the same is fair.
- The browse condition is within the normal range compared to the long term average in all livelihood zones.
- The quantity of browse available is expected to last an average of 2 months in the MF and 1 to 2 months in the MMF and Pastoral zones.

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 (30.6%) same as pans and dams followed by shallow wells (22.4%), rivers (14.3%) and springs (2%).
- 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 systems.
- The current water levels in water sources have slightly increased owing to the rains experienced in most parts of the County.

2.2.2 Household Access and Utilization

- The average return distances from households to water sources decreased to 2.9 km compared to 3.4 Km in September. The furthest return distance of 3.9 Km was recorded in Pastoral zones followed by 3 Km in MMF livelihood zones.
- In general, the decreasing distances can be attributed to the prevailing off season rains. The distances are expected to decrease as the OND rains continues.

2.2.3 Livestock Access

- During the current month under review, the average return distance from water sources to grazing areas slightly increased to 5 Km from 4.9 Km in September. The longest return distance of 6.9 Km was recorded in the Pastoral zones, a slight increase compared to 6.7 Km in September. MMF zones recorded 4.8 Km, slightly up from 4.6 Km the previous month.
- The slight increase in distances from water sources to grazing areas can be attributed to the increase in distances covered in search of pasture.

2.3 Implication to Food Security

- The combined effect of the off season rains and OND rains which have commenced has led to improved vegetation cover. However, the vegetation is still poor in some areas in the Pastoral and MMF zones (small parts of Mukogodo East & West, Sosian, Ngobit and Tigithi wards) due to poor rains coupled with over grazing exacerbated by the immigration of livestock from neighbouring counties and poor regeneration.
- The OND and off season rains have helped recharge some of the traditional water sources therefore slightly improving water access. The distances to water sources for both livestock and humans have remained low.

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 across the County. In the Pastoral zone and most parts of the MMF zones, the cattle body condition was fair to good and fair for lactating cows. For MF the same was good.
- The cattle body condition has had a significant improvement in MF and parts of MMF zone due to the off season rains experienced and the ongoing short rains season in the parts which have seen growth of pasture and browse quality and quantity. In the Pastoral zone, significant improvement of pasture has been observed although some few pockets are yet to recover pasture wise.
- The body condition of browsers was fair to good across all livelihood zones.
- On average, livestock body condition trend across the county is that it is on an improving trend.

3.1.2 Livestock Diseases and Deaths

- No major livestock disease outbreaks were reported during the period under review. However, of the 180 households interviewed, 11% reported having lost at least one livestock due to disease (cold related) whereas 15% lost an animal due to predation. 6% of the households reported having lost an animal due to starvation, exacerbated by cold.

3.1.3 Milk Production

- The sampled households recorded an average milk production of 4.2 litres per household per day in October, up from 3.8 litres in September. The Pastoral zone recorded the least milk production per household at 1.6 litres. However, this is an improvement compared to 1.2 litres in September. Most of the milk was obtained from cattle.
- The milk production is slightly above the average levels (4.1 litres per household) at this time of the year.
- The improvement in milk production levels is attributed to the improvement of forage as a result of off season rains and the ongoing OND rains.

3.2 Rain-fed Crop Production

3.2.1 Stage and Condition of Food Crops

- Beans are being harvested in most farms in the MF zones depending on when they were planted. Maize in most of the farms in MF zone is at final weeding stage while in some other farms in the area and MMF zones, green maize is being harvested in piecemeal respectively.
- Some farms are in planting stage for the short rains season.

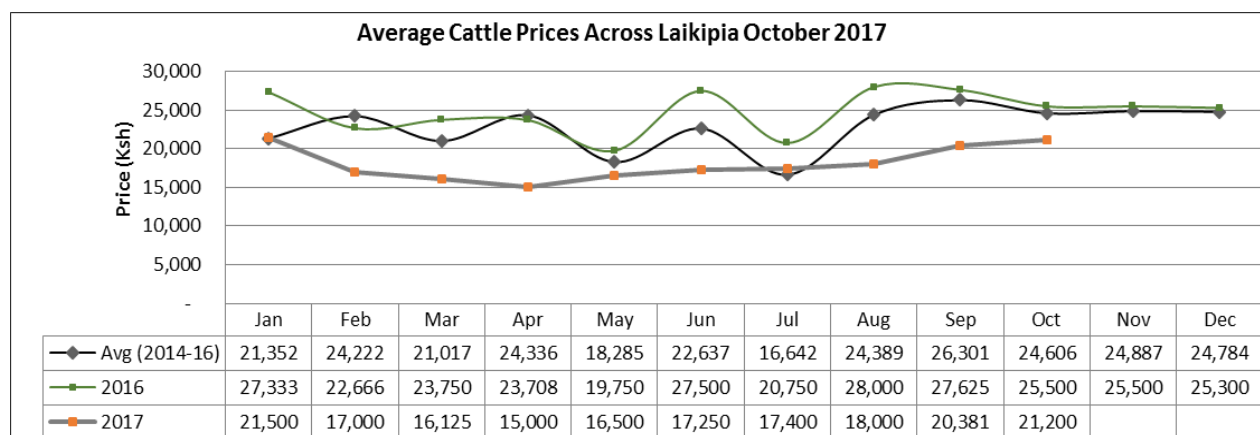
3.3 Implications to Food Security

- The effect of the previous off season rains combined with the ongoing OND rains is expected to positively impact on pasture regeneration leading to the improvement in the body condition of livestock across the county which in turn will lead to the increase in milk production. It is then presumed that this will lead to improved food security.
- Livestock deaths in some Pastoral zones have negatively affected household income. However, the improvement of pasture is expected to result in increased kidding rates and therefore enable recovery to an extent.
- The off season rains have resulted to the current maize harvests ongoing in the MF zone of Laikipia west. This in turn has improved food security in the area and at the same time resulted in the drop in maize prices.

4 MARKET PERFORMANCE

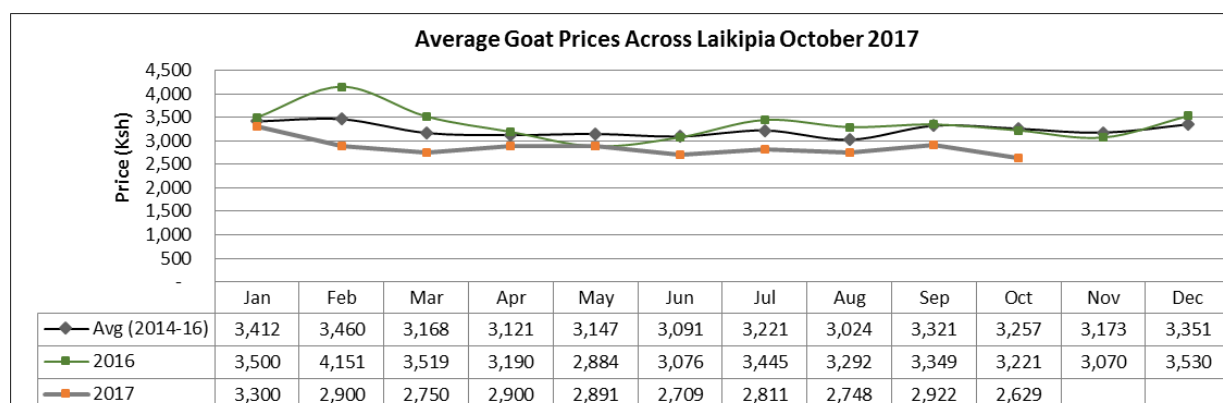
4.1 Livestock Marketing

4.1.1 Cattle Prices (at the farm gate)



- The average price of cattle across the County at the farm gate recorded a slight increase in October compared to the previous month. This can be attributed to the slightly improved body condition in most areas and hoarding in order to fatten in anticipation of better prices.
- Compared to the long term average, the current price is way much lower than the long term average by 14%.

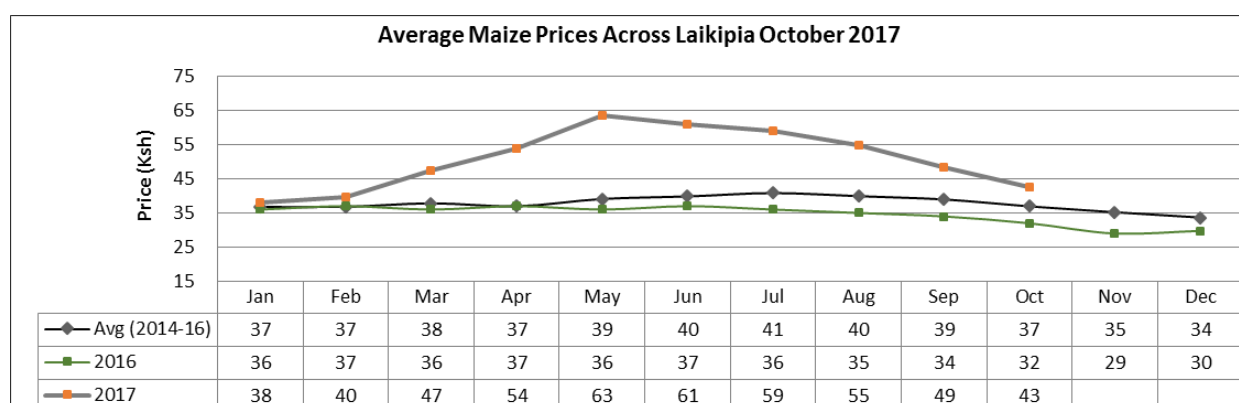
4.1.2 Small Ruminants Prices (Goat)



- During the month under review, the average price of a goat (at the farm gate) in Laikipia decreased to Kshs. 2,629, a 10% decrease compared to the previous month. Compared to the long term average, the current price is lower by 19%. The decrease in goat price can be attributed to the significant drop in price of the same in some pastoral zones over the period as a result of the decline in sheep and goats body condition in those areas.
- The highest average goat price was recorded in the MF zone followed by the MMF zone. The current price is lower compared to the same time last year and the long term average.

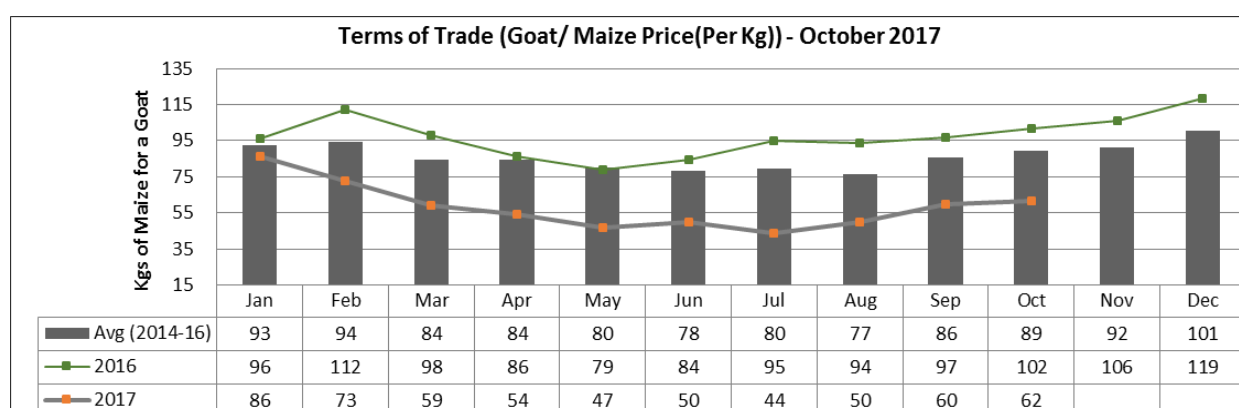
4.2 Crop Prices

4.2.1 Maize (market price)



- The average maize prices at the markets recorded a significant decrease from Kshs.49 in September to the current Kshs.43. The decline in price is attributed to the commencement of piecemeal maize harvests in Laikipia West and increased supply from other counties.
- The highest average market price of maize at Kshs.54 was recorded in Sirima market (MMF). Compared to the three year average, the current price is much higher by 16%.

4.3 Livestock Price Ratio/ Terms of Trade



- The average price of a goat at Kshs. 2,629 is able to purchase 62 Kg of maize, which is a slight increase compared to the previous month at 60 Kg. The shift in ToT (Terms of Trade) can be attributed to the drop in maize prices across all livelihood zones. The shift favours livestock keepers as they are now able to purchase more maize for the price of a goat.
- When compared to the three year average, the ToT are still way below normal.

4.4 Implication on Food Security

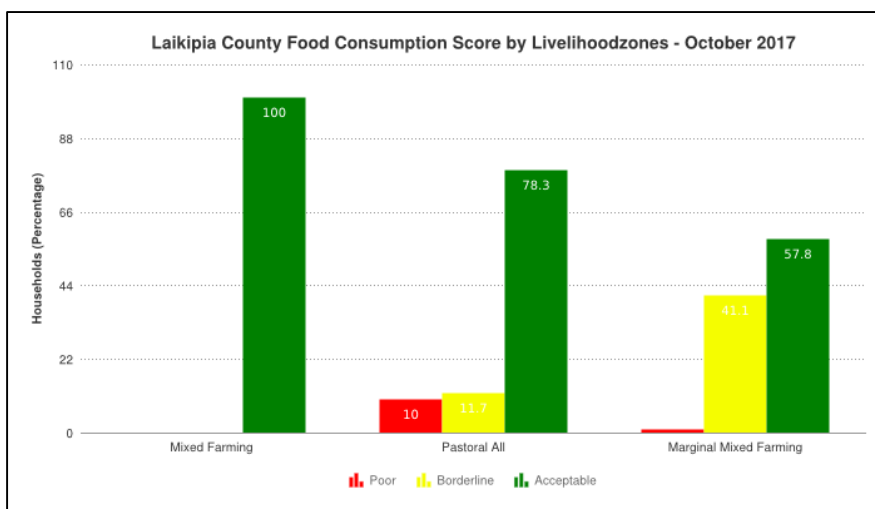
- The improved pasture quantity and quality has had a positive contribution to the improvement of the livestock body condition. This has led to a slight improvement in cattle prices. The increased income will foster food security.
- The persisting issue of insecurity in the Pastoral and MMF zones has hampered market operations in Laikipia North and West and this has negatively affected market prices. Some livestock markets like Olmoran have been inactive since July because of the ongoing conflict between security personnel and illegal herders.
- The reduction in maize prices has had a positive contribution to food security since now most households are able to afford.

5 FOOD CONSUMPTION AND NUTRITION STATUS

5.1 Milk Consumption

- During the month under review, the sampled households recorded an average milk consumption of 1.4 litres per day, a slight increase compared to 1.3 litres in September, with most of the milk coming from cattle.
- The milk consumption levels are still within the normal levels (>1 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.

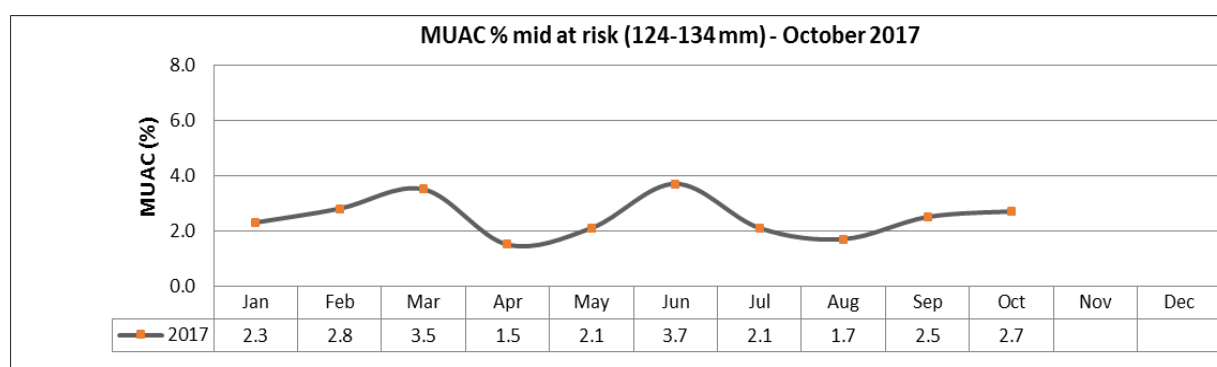
5.2 Food Consumption Score



- According to the chart above, all the households in the MF livelihood zone remain to have an acceptable food score. The MMF zone follows with an acceptable food score of 57.8% and a borderline food score of 41.1%. This is an improvement as there are minimal households with poor food score.
- 10% of the households in the Pastoral zone had a poor food score compared to September's 5%, indicating decline in dietary diversity. However, there was an improvement as 78% of the households in the zone attained an acceptable food score compared to the previous months, 68%. The food consumption gaps can be attributed to poor pasture and browse regeneration in some parts of the Pastoral zone which has resulted in below normal milk production and consumption, reduced incomes and above average food commodity prices.

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 2.7%, slightly higher than the previous month. The slight increase in the children at risk can be attributed to the pockets in the county which had poor pasture and browse, hence the resultant below normal milk production.

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 slightly improved but still below normal 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 however this is expected to change for better if the OND rains continue.
- The off season rains and the ongoing OND 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

- Distribution of Drought pellets courtesy of NDMA with the aid of European Union in Laikipia North and Parts of Laikipia East and West amounting to 7800 bags of 50kg was undertaken in the County during the period under review.

6.2 Food Aid

- No 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 rustlers from neighbouring counties (Samburu) in Iingwesi (Pastoral zone) area are still being reported.
- Cases of human wildlife conflict have been reported at Eighteen in Mwenje (MF zone) and Ex-erock in Withare (MMF zone) as wildlife invade farms.
- Community members who were displaced from around Nadungoru (Iingwesi Pastoral zone) due to invading herders are yet to go back due to fear of repeat attacks.

7.2 Migration

- Outmigration of livestock in search of pasture has been reported at Iingwesi (Pastoral zone) in Mukogodo East whereby local herds from around the area have been reported to have migrated to Ngare Ndare, and Mt. Kenya forests.

7.3 Food Security Prognosis

- The off season rains coupled with the OND rains have had a significant impact on various indicators, particularly the biophysical indicators. The socio-economic indicators are expected to improve for better if the OND rains persist accordingly.

- Human security, which is a major factor affecting food security needs to be addressed comprehensively in order to enable communities to increase production and hence alleviate food scarcity.

8 RECOMMENDATIONS

- Sensitization of farmers on Conservation agriculture. **Action: County department of Agriculture, FAO, Private Stakeholders.**
- Provision of Certified seeds and subsidized fertilizer to small scale farmers. **Action: County Government.**
- Increase peace building activities and surveillance in conflict prone zones **Action: County Commissioner, County Government, Private Stakeholders**
- Initiate interventions geared towards curbing 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.
Recovery: 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
	3-monthly average	
	≥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.