

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



A Vision 2030 Flagship Project



JULY 2017 EW PHASE: ALERT

Drought Status: ALERT



Maandalizi ya mapema

Drought Situation & EW Phase Classification

Biophysical Indicators

Rainfall: For the month of July, the County has experienced rainfall ranging from light to moderate 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 way below the normal range, indicating a poor state of pasture and browse condition across most areas. According to field observations, the pasture condition in MF zones was fair to poor while in the Pastoral zones and most MMF zones the same was 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 were way below the normal range. However, the return distance from water sources to grazing areas in Pastoral zones was within the normal range.

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 very minimal 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.

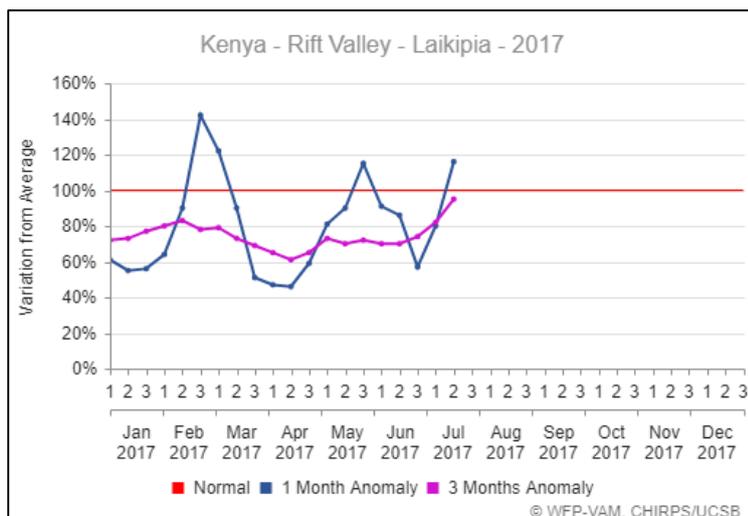
LIVELIHOOD ZONE	EW PHASE	TREND
PASTORAL	ALERT	Declining
MMF	ALERT	Declining
MF	ALERT	Stable
COUNTY	ALERT	Declining
Biophysical Indicators	Value	Normal range
% of Average rainfall (first 2 dekads)	98%	80-120%
SPI-3 month (TAMSAT)	-	-1 to 1
VCI (Entire County)	22.67	35-50
State of Water Sources	4	5
Production 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)	44	> 83
Milk Consumption (Lt)	0.61	> 0.6
Return Distance to Water Sources from grazing areas	3.3	< 5
Return Distance from Grazing areas (Pastoral)	4.5	< 5
Utilisation indicators	Value	Normal ranges
MUAC	5.2	< 18.36
Coping Strategy Index (CSI)	0.9	<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

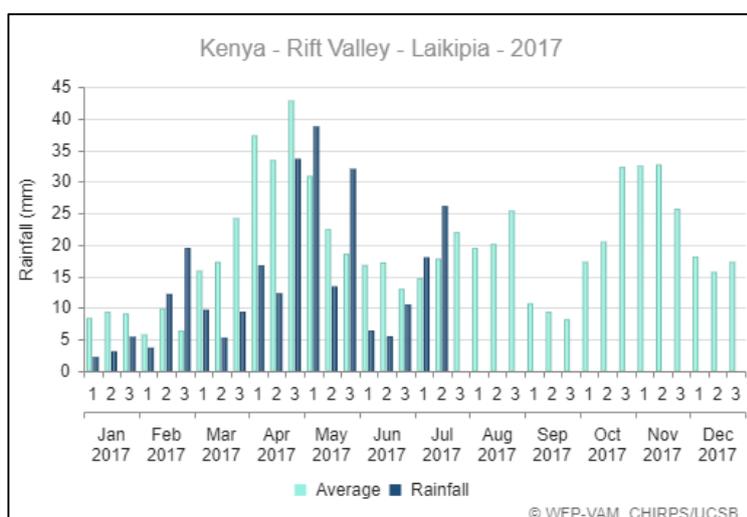
1.1 Rainfall Performance

- During the month of July, the County has experienced off season rainfall ranging from light showers to moderate rainfall. The rainfall distribution was fair in both terms of time and space in MF and MMF zones. In the Pastoral zone, the same was poor in both time and space.
- The Mixed Farming (MF) zone received 4 days of moderate rainfall fairly distributed whereas the Marginal Mixed Farming (MMF) reported 6 days of light showers to moderate rainfall which was fairly distributed in terms of space. The Pastoral (all species) zone reported 2 days of moderate 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 98% of the expected amount (for the first 2 dekads) for the month of July, hence it is within 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

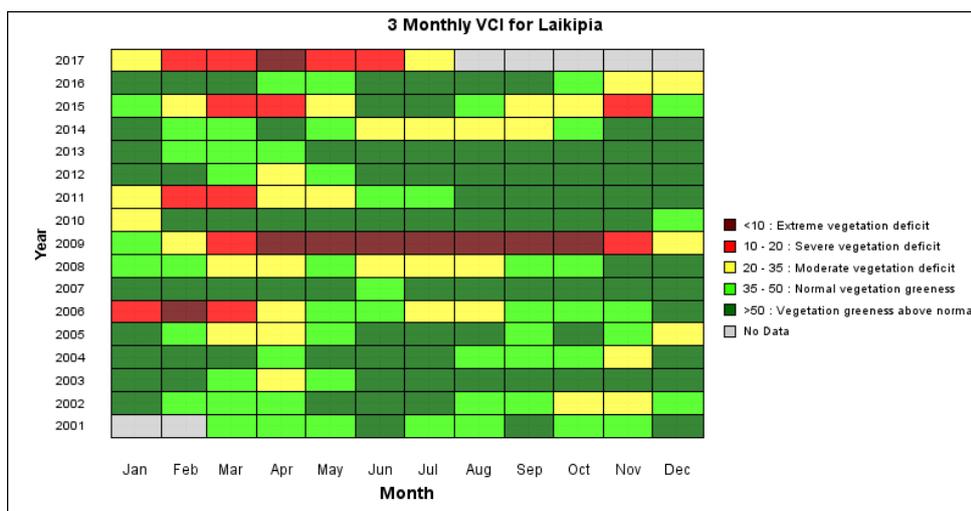


- According to the chart above, there was a significant increase in precipitation levels in the month of July compared to the previous month across all livelihood zones.
- The rainfall distribution was fair in both terms of time and space in MF and MMF zones and poor in both time and space in the Pastoral zone.

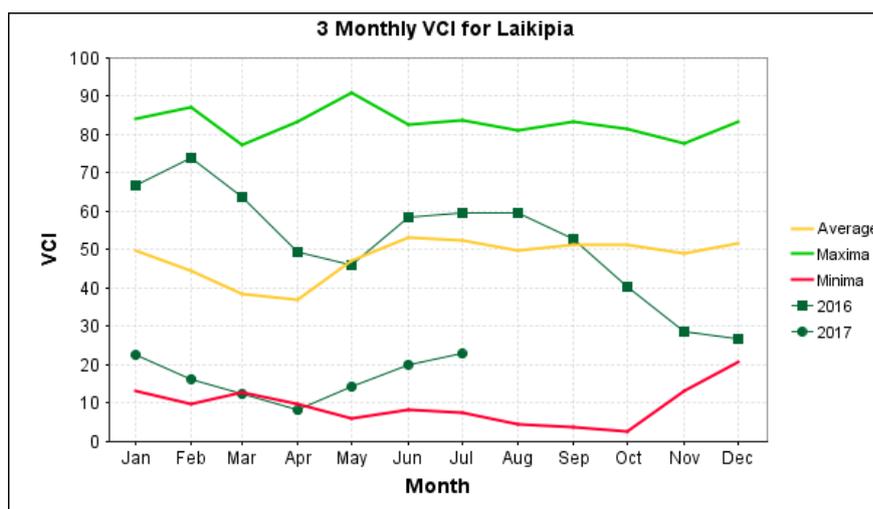
2 IMPACT ON VEGETATION AND WATER

2.1 Vegetation Condition

2.1.1 Vegetation Condition Index (VCI)



- According to the VCI matrix charts above, the vegetation condition has recorded a slight improvement over the last one month. The county is now at moderate severe vegetation deficit with all areas affected compared to severe vegetation deficit in June.



- According to the chart above, the VCI at 22.67 is still way below the normal range (35-50) but has slightly increased compared to June at 19.89.
- 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 remained to be poor to fair in both quantity and quality in various pockets of the county especially in parts of MMF and Pastoral due to denuded lands as a result of overgrazing experienced during the dry spell.
- The pasture condition is fair in the MF zones and still below normal in the Pastoral zones and most parts of MMF zones. In spite of the off season rains that have been reported in the all livelihood zones, the pasture condition has yet to record significant improvement.
- The pasture condition in the Pastoral zone is still in poor condition whereby there is bare ground in most of the areas due to overgrazing (especially in Mukogodo West) and poor regeneration

owing to the poor rains received in the area during the long rain season. In addition, pastures in the ranches have been depleted.

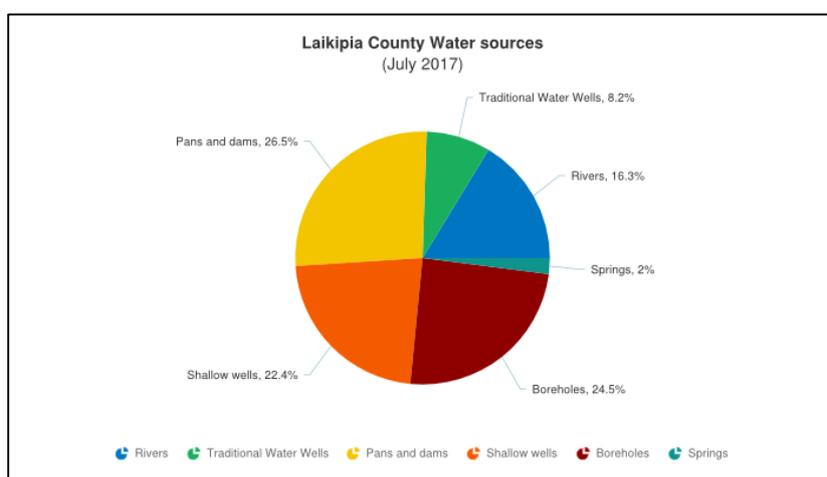
- The quantity of pasture available is expected to last less than a month in few areas with some little pastures remaining (mainly in the ranches and MF zones), hastened by overgrazing and the below normal rains that had been experienced.

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. In the MF zones, the browse condition is fair whereas that of the MMF zone is fair to poor.
- 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 1 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 pans and dams, boreholes, and shallow wells in that order.
- The Pastoral livelihood zone zones used shallow wells, pans, dams, wells and boreholes as their main water sources. Alternate water sources were hand pumps while in the MMF and MF zone alternate water sources were permanent rivers and traditional wells.
- The current water levels in water sources have slightly reduced in levels during the period under review owing to the low or no precipitation at all previously experienced in most parts of the County and upstream in the forests but the situation might change owing to the offseason rains being experienced.
- 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 2.1 Km, up from 1.9 Km in June. The furthest return distance of 3.5 Km was recorded in Pastoral zones followed by 2.3 Km in MMF livelihood zones, slightly higher than previous month.
- The lowest distance of 0.4 Km was recorded in the Mixed Farming zone, same as 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 slightly to 3.3 Km, up from 3 Km the previous month. The longest return distance of 4.5 Km was recorded in the Pastoral zones, slightly up from 4.3 Km in June. MMF zones recorded 2.5 Km, up from 2.2 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 poor and in some cases emaciated. For MF the same was fair to poor.
- The cattle body condition is slightly declining due to the poor pasture and browse quality and quantity in addition to the trekking distances to grazing fields and water sources. This situation applies across all livelihood zones, with the Pastoral zone being the most affected.
- The body condition of browsers was fair 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 as having resulted from exhaustion due to increased trekking distances in search of pasture. Cattle and sheep deaths were reported in MMF and Pastoral zones.

3.1.3 Milk Production

- The sampled households recorded an average milk production of 1.4 litres per household per day, a decrease compared to the previous month. Most of the milk was obtained from cattle.
- The quantity of milk produced in July recorded a slight decrease compared to the previous month. This is 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 MMF zones, maize is at flowering stage, beans and potatoes are at flowering stage and at second moulting respectively.
- The major on-going agricultural farming activity is spraying, 2nd weeding and top dressing in the MF and MMF zones.

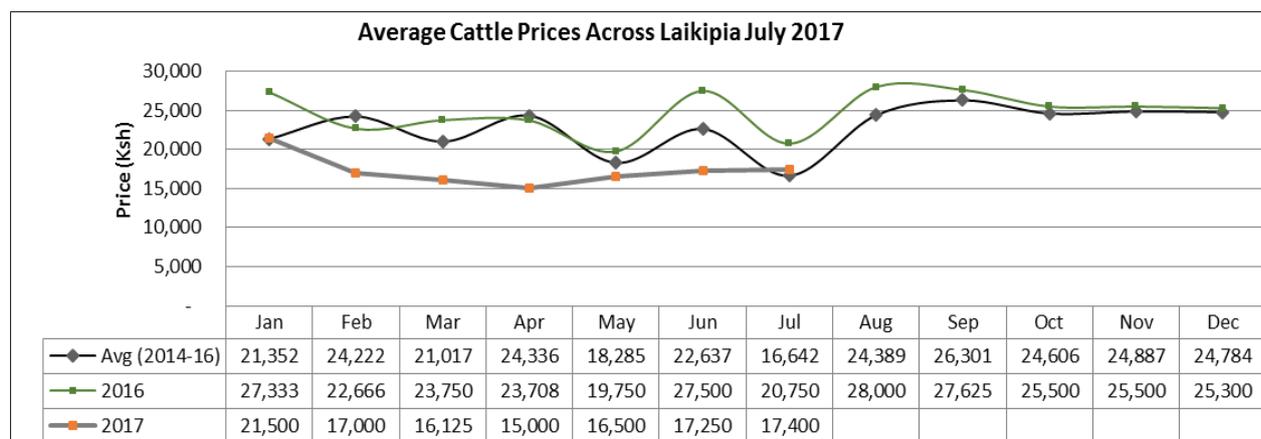
3.3 Implications on Food Security

- The 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 given farmers who planted late into the long rains season or who planted long term maize types the hope of getting some harvest.

4 MARKET PERFORMANCE

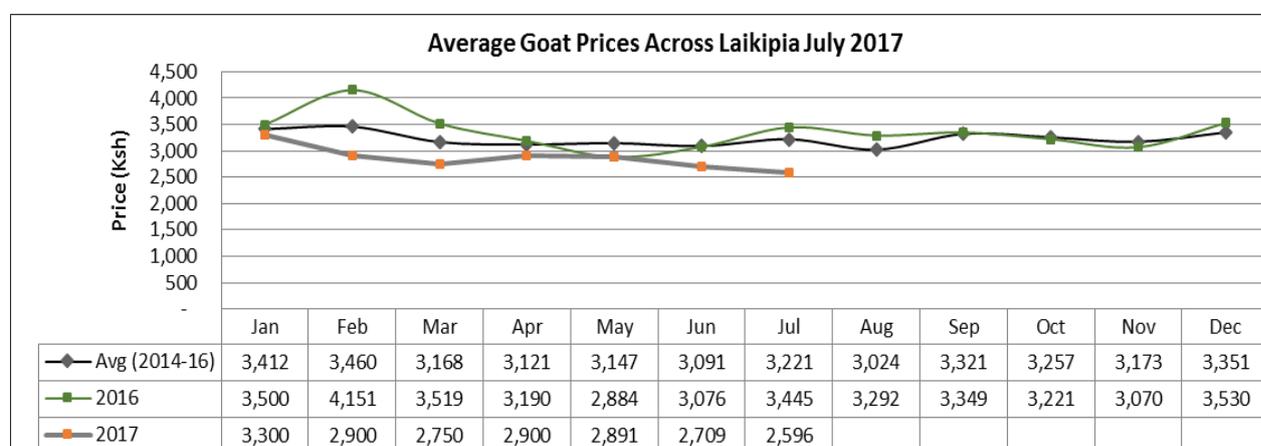
4.1 Livestock Marketing

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 in July because of insecurity concerns.
- 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%.

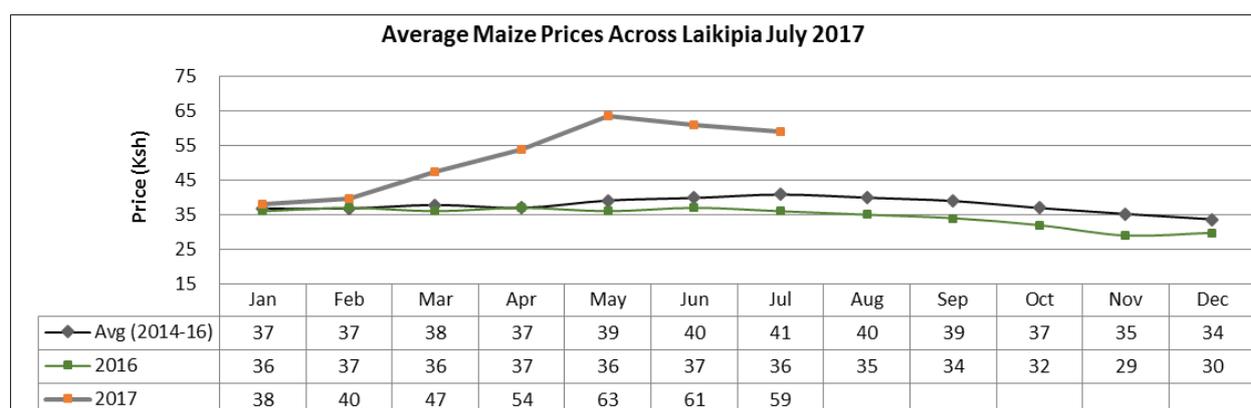
4.1.2 Small Ruminants Prices



- During the month under review, the average price of a goat (at the farm gate) in Laikipia decreased to Kshs 2,596, a 4% decrease compared to the previous month. The price is lower (by 19%) 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 Pastoral zone followed by the MMF zone.
- The current price is lower compared to the same time last year and the long term average.

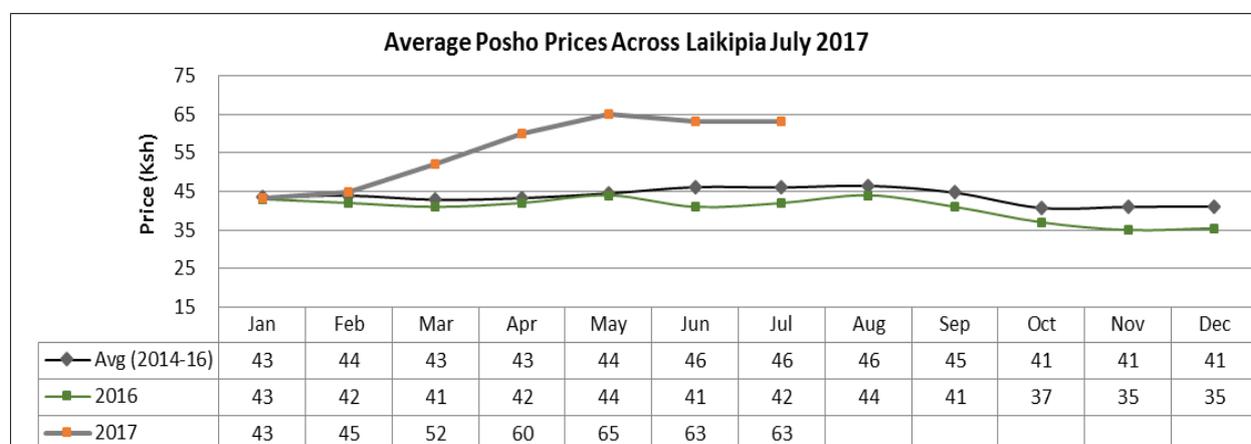
4.2 Crop Prices

4.2.1 Maize (market price)



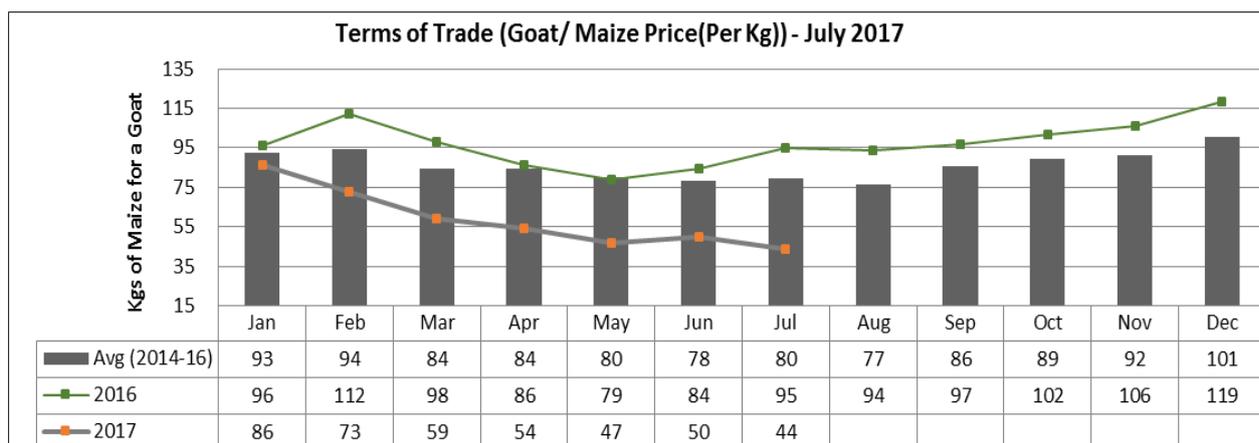
- The recorded average maize prices at the markets recorded a slight decrease (by 5%) from Kshs.61 in June to the current Kshs.59. The high maize price is attributed to the cease in maize harvest activities across all maize growing zones and also due to decline in available stocks across the country as a result of drought.
- The highest average market price of maize at Kshs.67 was recorded in the MMF zones. The lowest average price of Kshs. 63 was recorded in the MF zone.
- Compared to the three year average, the current price is much higher by 44%. 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 remained same as the previous month at Kshs. 63.
- 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 2,596 is able to purchase only 44 Kg of maize, which is a significant decrease compared to the previous month at 50 Kg. The ToT (Terms of Trade) favours maize farmers/ brokers as maize prices have increased whereas at the same time livestock prices have declined. 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 2.04 goats to purchase a 90 Kg bag of maize, which is higher compared to the previous month at 1.8 goats across all livelihood zones in Laikipia County.

4.4 Implication on Food Security

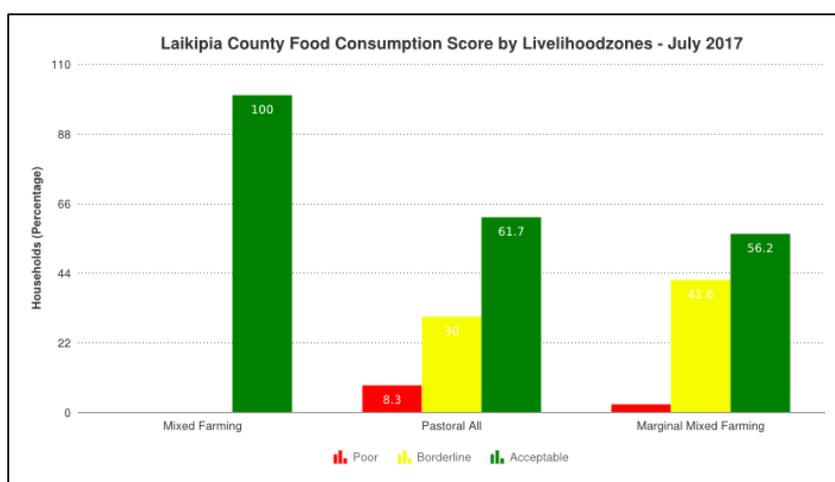
- The still below normal body condition of livestock continues to command poor livestock prices and therefore livestock keepers are still unable to get better value for their livestock. The off-season rains may contribute positively to the improvement of the livestock body condition hence farmers will be able to fetch better prices. However, the persisting issue of insecurity has however 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 0.61 litres per day and this was mostly milked from cattle. The quantity of milk consumed in July is smaller compared to the previous month (at 0.72 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 (64% and 57% 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.

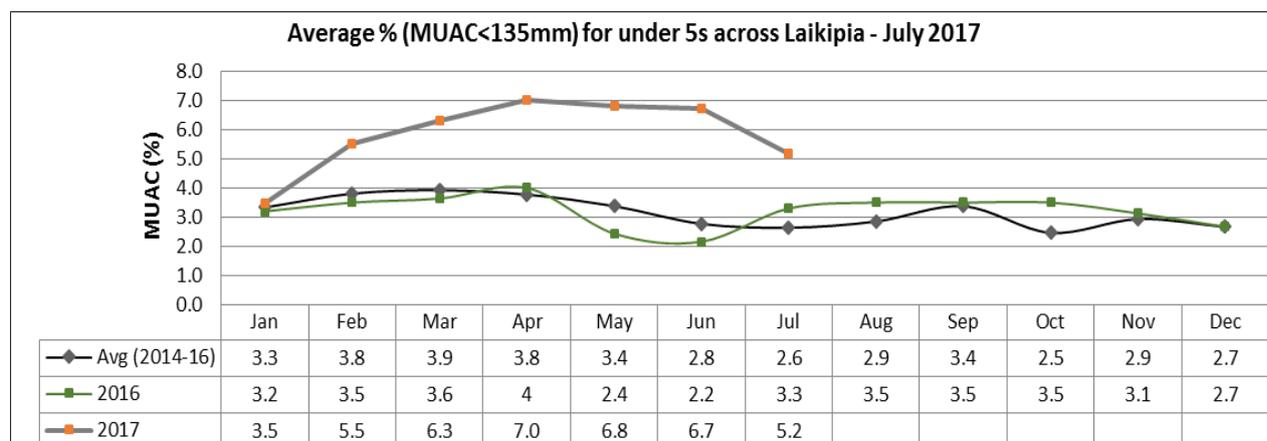
5.2 Food Consumption Score



- 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 41.6% and a poor food score of 2.2%. The Pastoral zone is the least food secure with a poor food score of 8.3% and a borderline food score of 30%. This can be attributed to the massive crop failure recorded across the MMF zone and poor pasture and browse regeneration.

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 5.2%, lower than 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 2.6 %.

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 little contribution to dietary diversification as livestock (mainly cattle) are yet to recover fully due to poor pasture regeneration.
- The off season rains, however minimal, have contributed positively to food security through slightly 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

- Food aid distribution from National Government in form of maize, beans, rice and cooking oil was reported at Kimanjo (Pastoral zone) during the period under review.

7 EMERGING ISSUES

7.1 Insecurity/ Conflict/ Human Displacement

- Cases of cattle rustling as a result of immigration of herders from neighbouring counties (Samburu) in Iingwesi (Pastoral zone) and Withare (MMF zone) area has been reported during the period under review.
- Cases of human wildlife conflict have been reported at eighteen in Mwenje (MF zone) and Ex-rock in Withare (MMF zone) as wildlife and livestock compete for the available water sources and pasture.
- Deadly conflicts between ranch and farm invaders and government security organs have been widely reported in Matuiku, Olmorani and Sosian areas of Laikipia West and North.

7.2 Migration

- The immigration of livestock in search of pasture has been reported at Iingwesi (Pastoral zone). Also some local herds from around the Pastoral zones were also reported to have migrated to NgareNdare, Mukogodo and Mt. Kenya forests.

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.
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.