

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



A Vision 2030 Flagship Project



FEBRUARY 2018 EW PHASE: ALERT



Drought Situation & EW Phase Classification

Biophysical Indicators

Rainfall:

- In February, the County experienced little to no rainfall. The light showers received were poorly distributed in terms of time and space across and in only one livelihood zone - marginal mixed farming.

Vegetation Condition:

- The Vegetation Condition Index (VCI) is below the normal range for the period, indicating a fair to poor state of pasture and browse condition across most areas.
- The browse condition was largely fair in all 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 at this time of the year.
- The body condition of animals was slightly below the normal range for the period.

Access indicators:

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

Utilization indicators:

- All within the normal range.

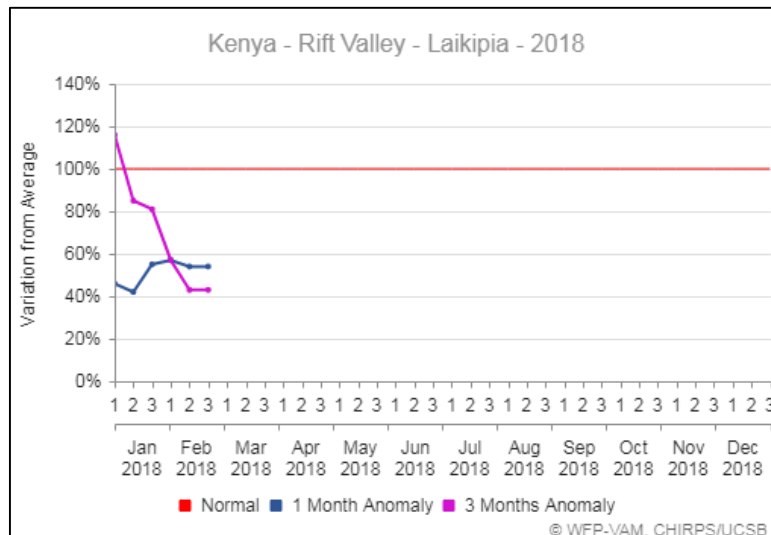
LIVELIHOOD ZONE	EW PHASE	TREND
PASTORAL	Alert	Worsening
MMF	Alert	Worsening
MF	Normal	Stable
COUNTY	Alert	Worsening
Biophysical Indicators	Value	Normal range
% of Average rainfall	55%	80-120%
SPI-3 month (TAMSAT)	-	-1 to 1
VCI (Entire County)	26.47	35-50
State of Water Sources	3	5
Production indicators	Value	Normal range
Livestock Migration Pattern	Yes	No Migration
Livestock Body Condition	3-4	4-5
Milk Production (Lt)	4.1	4.4
Livestock deaths	-	No death
Crops area planted (%)	-	% of LTA
Access Indicators	Value	Normal ranges
Terms of Trade (ToT)	98	90
Milk Consumption (Lt)	1.4	> 1.6
Return Distance (Water Sources - grazing areas)	6.1	< 5
Return Distance water to Grazing areas (Pastoral)	8.4	< 7
Utilisation indicators	Value	Normal ranges
MUAC (Mid at risk)	2.5	< 18
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

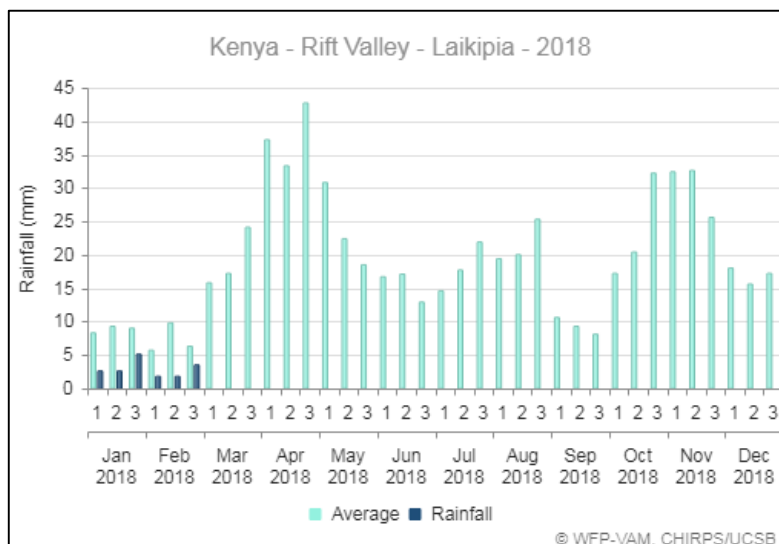
1.1 Rainfall Performance

- In February (month under review), Laikipia County recorded little to no rainfall, with only two days of light showers recorded in the MMF zone. The Pastoral and MF zones recorded no rainfall.



- In relation to variation from the long term average, the minimal rain showers received in February were approximately 55% of the expected amount for the month, which is way below normal. However, this is a slight increase compared to the recorded 44% in January.

1.2 Amount of Rainfall and Spatial Distribution

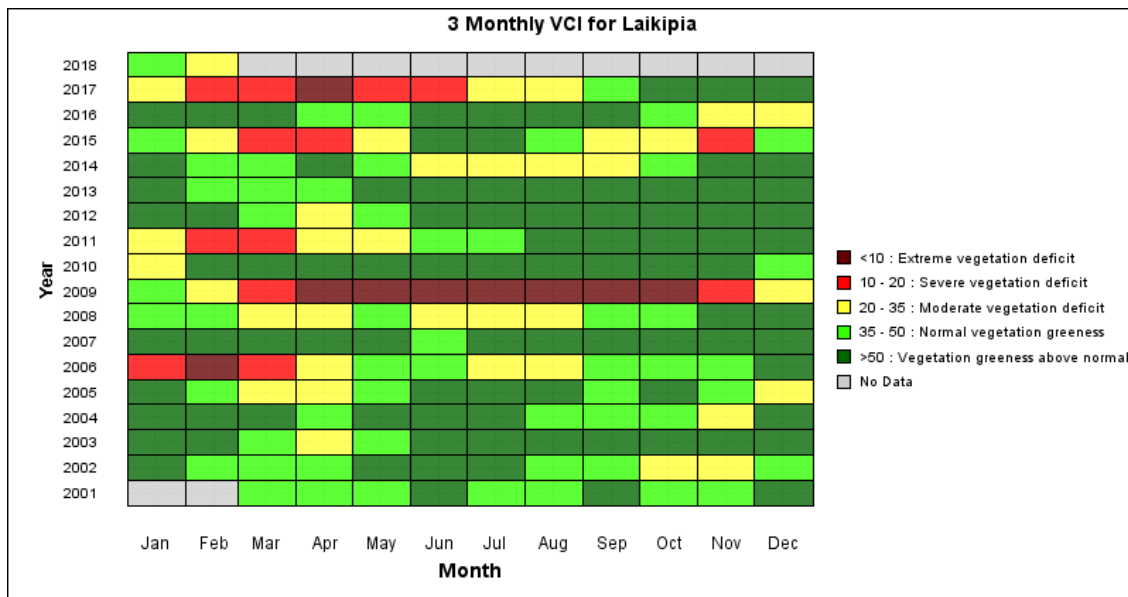


- According to the chart above, the minimal rain received in February amounted to 7.1 mm for the month, which is below the long term average of 21.7 mm by the same time hence way below normal.
- Compared to January, the precipitation levels decreased significantly. This is attributed to the cessation of the short rains in December and the subsequent sunny, hot and dry weather (as is expected in the January-February period).
- The rainfall distribution was poor in both time and space across all the livelihood zones.

2 IMPACT ON VEGETATION AND WATER

2.1 Vegetation Condition

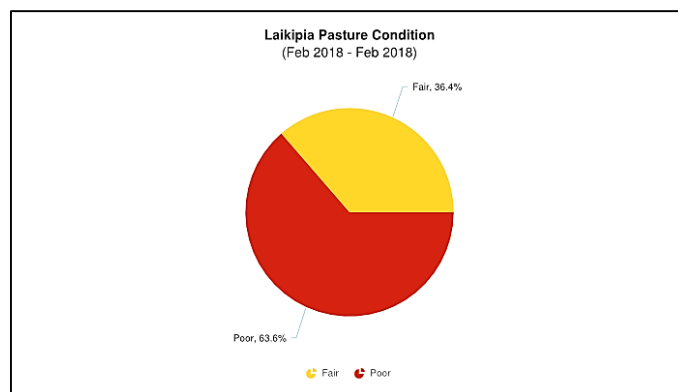
2.1.1 Vegetation Condition Index (VCI)



- The VCI matrix above indicates that the county was experiencing moderate vegetation deficit for the month of February compared to the previous month (normal vegetation greenness). From field observations, Laikipia North and East Sub Counties were the most affected.
- The vegetation deficit can be attributed to the effect of inadequate rains in December followed by a hot and dry spell in January and February. Wards with moderate vegetation deficit are Mukogodo East, West, Segera, Sosian, Ngobit, Salama and Tigithi wards and the vegetation is on a diminishing trend in the said areas.
- The actual VCI at 26.4 which is below the long term average for the month and shows significant decline compared to 44.7 in January.

2.1.2 Pasture

- According to the key informant’s interviewed, the pasture condition was split between poor (63.6%) and fair (36.4%) as shown in the chart below.

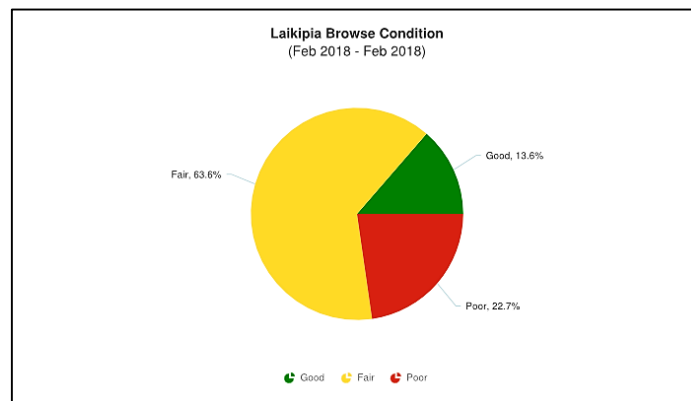


- Compared to the previous month, there was deterioration of the pasture condition in both quantity and quality.

- The decline in pasture condition is attributed to the minimal rainfall and early cessation of rainfall during December coupled with over grazing and the hot dry spell leading to poor pasture regeneration in denuded areas especially in the Pastoral zone and parts of Marginal Mixed farming zone (MMF).
- The main constraint to pasture access was wildlife in Pastoral and MMF livelihood zones.
- The quantity of pasture available is expected to last less than one month in the Pastoral and parts of the MMF zone. In the MF zone the pasture condition is expected to last for two months.

2.1.3 Browse

- According to the key informant’s interviewed, the browse condition was split between good (13.6%), fair (63.6%) and poor (22.7%) as shown in the chart below.

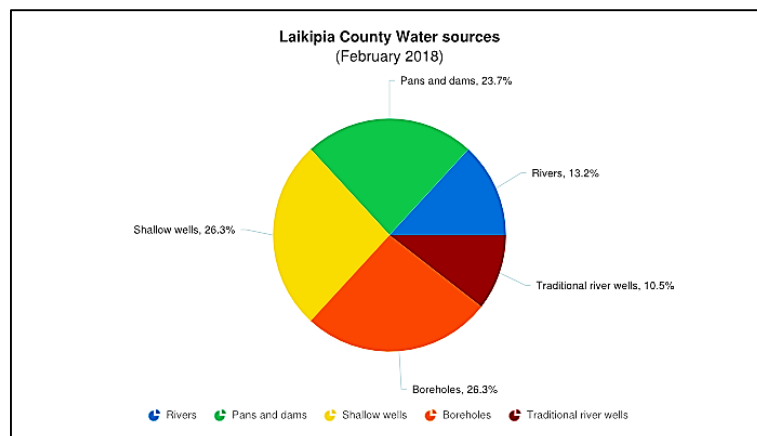


- Compared to the previous month, the browse condition remained more or less the same.
- The state of the browse condition is attributed to the minimal rainfall and early cessation of rainfall during December and the subsequent dry spell.
- The main constraint to browse access in Pastoral and MMF livelihood zones was wildlife.
- The quantity of browse available is expected to last one month in the Pastoral and parts of the MMF zone. In the MF zone the pasture condition is expected to last for one to two 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 boreholes (26.3%), pans and dams (23.7%), shallow wells (26.3%) and rivers (13.2%). Others were traditional river wells (10.5%).



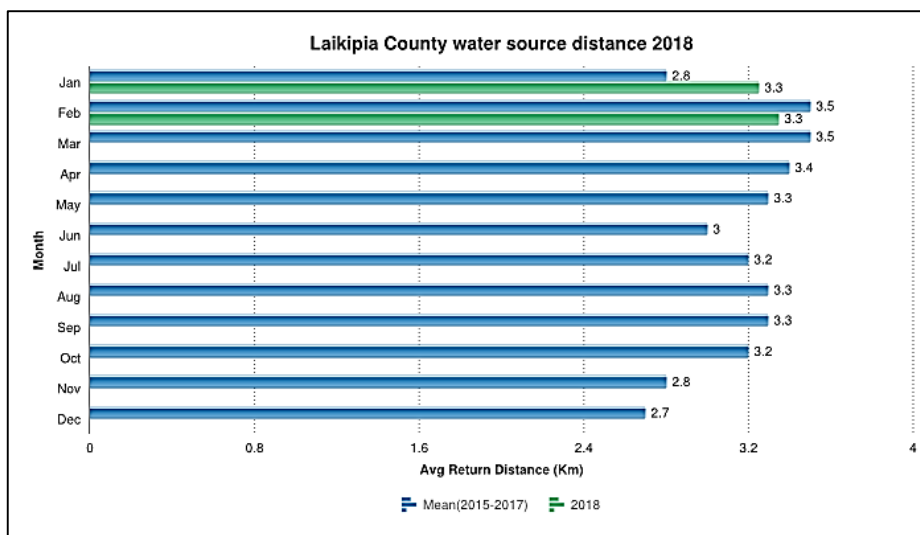
- Compared to the previous month, the quantity and quality of water has reduced significantly due

to the prevailing hot and dry weather conditions and competition with wildlife.

- The main water sources are expected to last as follows:- Pastoral (boreholes - permanent, pans and dams – less than 1 month), MMF (borehole - permanent, rivers – 1 to 2 months , pans and dams – 1 month), MF (shallow wells - 2 months, traditional river wells – 2 months, pans and dams – 1 months).

2.2.2 Household Access and Utilization

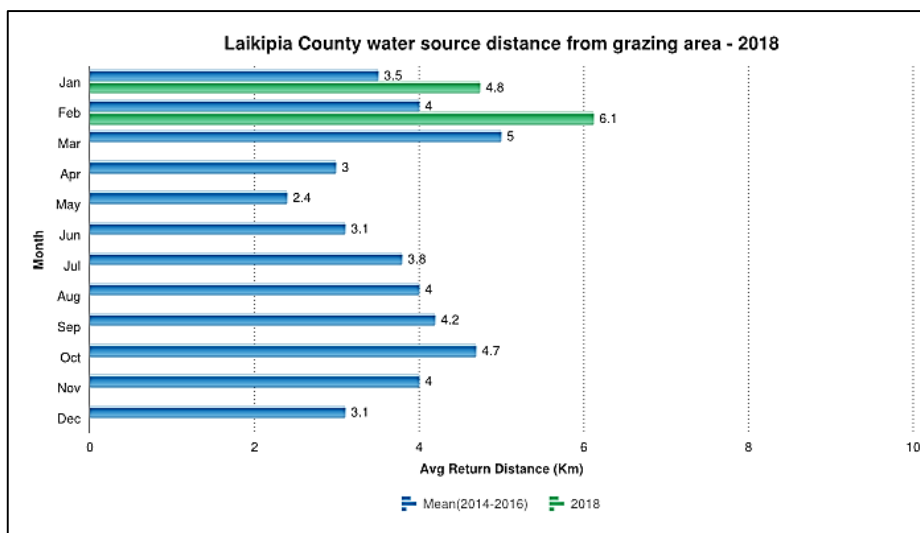
- The average return distances from households to water sources remained the same as in January at 3.3 km. The furthest return distance of 3.8 km was recorded in the Pastoral zone (mainly Laikipia North) up from 3.6 km in January.



- The increase in distances can be attributed to the cessation of the short rains and the subsequent hot and dry weather conditions.

2.2.3 Livestock Access

- The average return distance from water sources to grazing areas significantly increased to 6.1 km up from 4.8 km in January. The longest return distance of 8.4 km was recorded in the Pastoral zones, a significant increase compared to 6.5 km in January. MMF zones recorded 4.7 km a slight increase from 4.5 km the previous month.



- The increase in distances from water sources to grazing areas can be attributed to the increase 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 3-4 (moderate to borderline).
- The livestock body condition remained to be fair for cattle, while for shoats it was good to fair. This is normal at this time of the year.
- Compared to same time last year whereby the body condition of livestock was fast deteriorating, this time the current body condition is better.
- The livestock body condition has slightly declined compared to last month due to the increase in trekking distance in search of pasture and water coupled with decrease of pasture quantity and quality.
- The body condition of cattle in the mixed farming (MF) zone was good to fair while in the marginal mixed farming (MMF) zone and Pastoral zone the same was fair. For shoats, the body condition was good to fair across all the livelihood zones.

3.1.2 Livestock Diseases and Deaths

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

3.1.3 Milk Production

- The sampled households recorded a decreased average milk production of 4.1 litres per household per day in February down from 4.4 litres in January. The Pastoral zone recorded the least milk production per household at 1.7 litres which is a slight decrease compared to 1.9 litres in January. Most of the milk was obtained from cattle.
- The decrease in milk production is attributed to the increase in trekking distance in search of pasture and water coupled with decrease of pasture quantity and quality.
- The milk production is below the average levels (4.4 litres per household) at this time of the year.

3.2 Rain-fed Crop Production

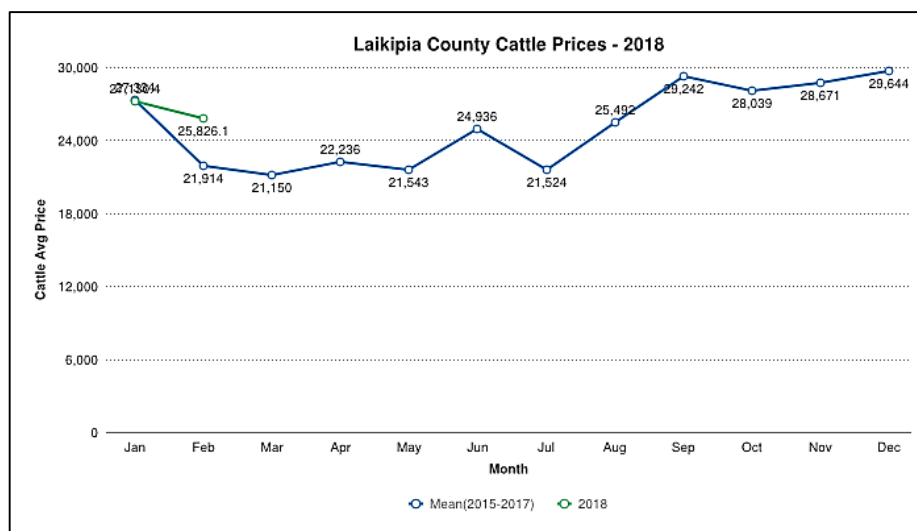
3.2.1 Stage and Condition of Food Crops

- Currently there are no crops in the farms but some farmers are now planting in anticipation of the rainy season ahead while others are now preparing their farms.
- No major pests and diseases were reported during the period under review.

4 MARKET PERFORMANCE

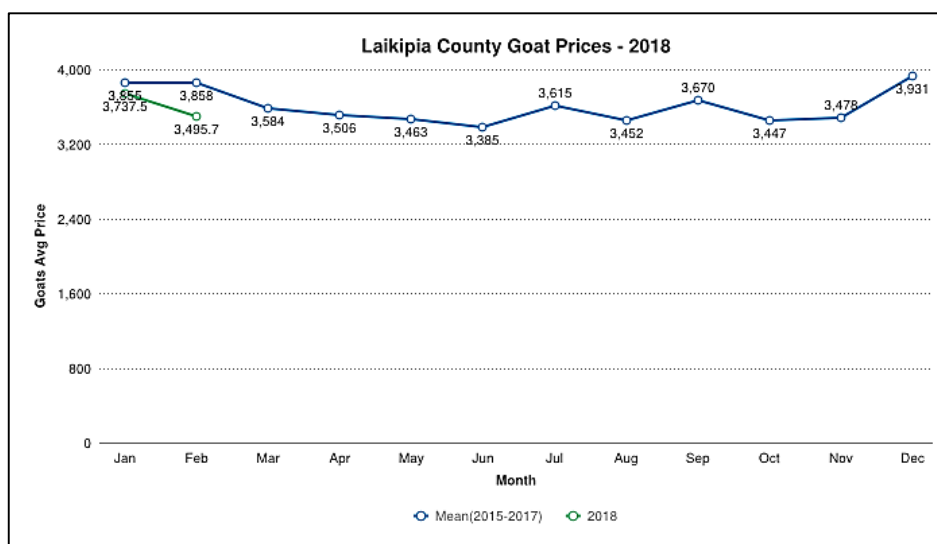
4.1 Livestock Marketing

4.1.1 Cattle Prices (Market)



- In February, the county recorded an average cattle price of Kshs. 25,826 at the markets, a slight decrease (by 5%) compared to the previous month. This can be attributed to the slight deterioration of the body condition as a result of increased 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 lower than the long term average by 18% hence below normal.

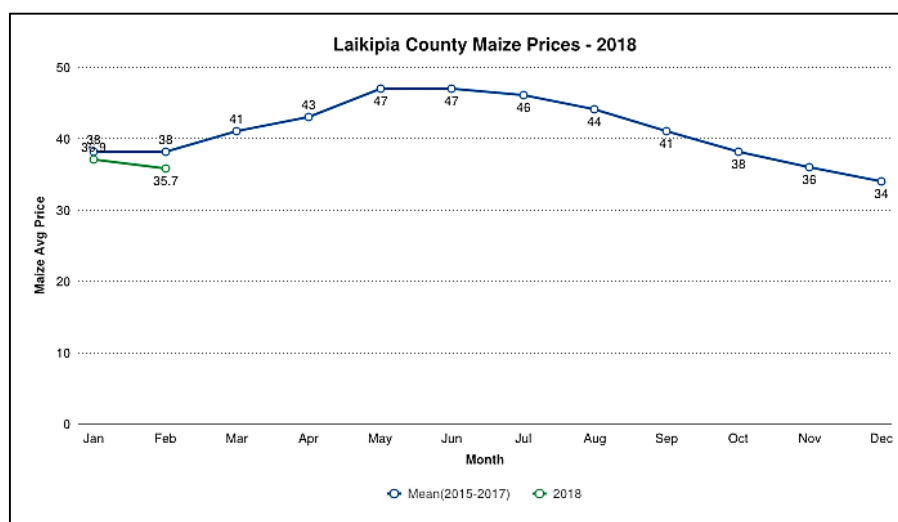
4.1.2 Small Ruminants Prices (Goat)



- During the month under review, the average price of a goat in Laikipia was recorded at Kshs. 3,496, a 6% decrease compared to the previous month. The decrease in goat price can be attributed to the slight deterioration of the body condition and increased supply at the markets, as opposed to high demand in the December- January period.
- 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 lower by 9% compared to the long term average, hence within the normal range.

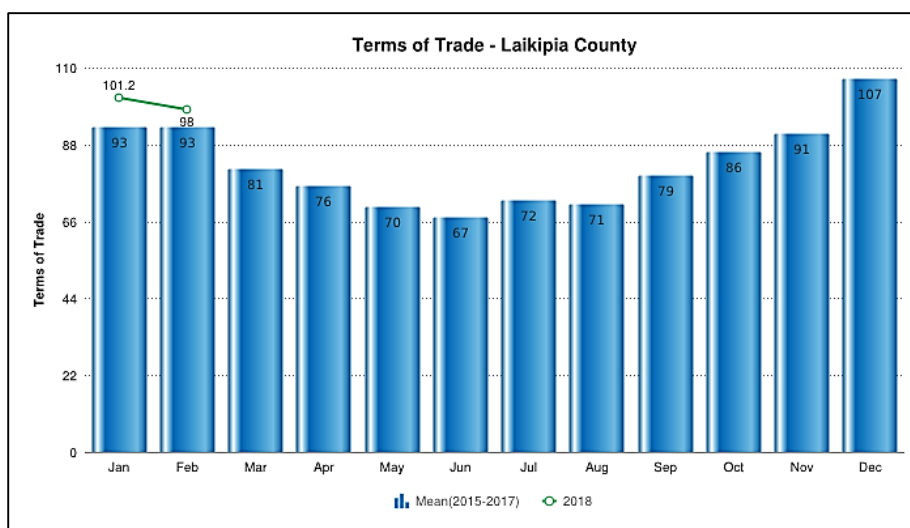
4.2 Crop Prices

4.2.1 Maize (market price)



- The county recorded an average maize price of Kshs. 36 at the markets for the month of February as shown in the graph above, which represents a very slight decline compared to January. 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.50 was recorded in Sirima market (MMF) 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 2 shillings.

4.3 Livestock Price Ratio/ Terms of Trade



- From the graph above, the January average price of a goat at Kshs. 3,496 was able to purchase 98 Kg of maize, a slight decrease compared to the previous month at 101 Kg.
- The shift in ToT (Terms of Trade) can be attributed to the slight drop 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

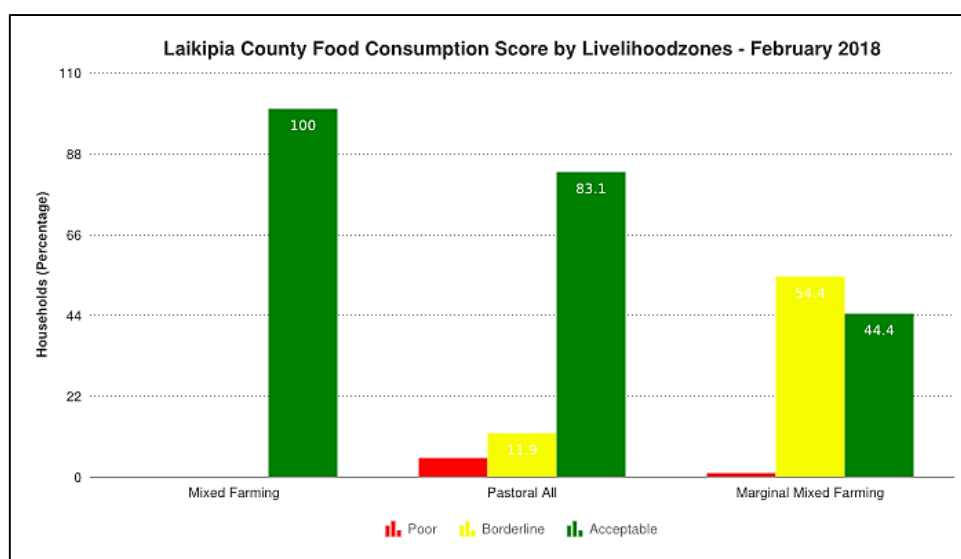
- The slight decrease in livestock prices due to a slight deterioration of the body condition and increased supply at the markets is bound to have a negative effect on household's purchasing power.
- However on the other hand, the stable maize food prices will ensure that households continue to have access to food hence foster a stable household food security status.
- Should the prevailing hot and dry weather conditions persist, the stability of food prices will be negatively affected hence increased household vulnerability.

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 which is a slight decrease compared to the previous month, with most of the milk coming from cattle.
- The milk consumption levels are still within the normal levels (>1.5 litres) expected at this time of the year.
- For the MMF and MF zones, the larger percentage of the milk produced (70% and 59% 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.

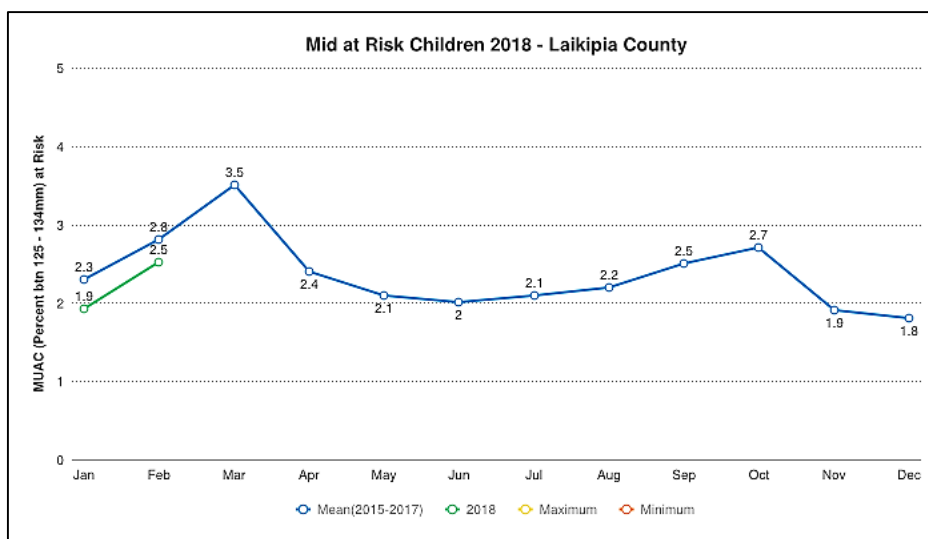
5.2 Food Consumption Score



- 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 83.1%, a borderline food score of 11.9% and a poor score of 5.1%.
- 44.4% of the households in the marginal mixed farming zone had an acceptable score whereas 54.4% had a borderline score.
- There was a slight decline in dietary diversity in the Pastoral zone (a poor food score of 3.3% in January) and a slight decline of the same in marginal mixed farming zones on both borderline and acceptable food scores (46.7% and 53.3% respectively in January).

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 2.5%, which is higher 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 malaria and scabies at Olmorani sentinel site for children in the sampled households.

5.4 Consumption based coping strategies

- The most common types of the strategies employed were taking fewer meals, swapping consumption to less preferred or cheaper foods 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 intervention was reported in the County during the period under review.

7 EMERGING ISSUES

7.1 Insecurity/Conflict/Human Displacement

- Cases of wildlife attacks on livestock have been reported at Chumvi area in Pastoral zone during the period under review.

7.2 Migration

- During the month under review, no cases of human migration were reported in the County.
- Cases of livestock movement within the county (Intra migration) were reported at Ilgwesi area in Mukogodo East ward (Pastoral zone) from neighbouring areas towards Mukogodo and Mt. Kenya forests in search of pasture.
- Livestock immigration from Isiolo and Samburu County to Laikipia North (Sieku) was also reported.

7.3 Food Security Prognosis

- The prevailing hot and dry weather conditions coupled with little to no precipitation have led to the deterioration of the pasture and browse condition. This will be further worsened by the likely influx of livestock from neighbouring counties. As a result, pressure on resources such as water and pasture will increase significantly. This will lead to increased cases of insecurity which will in turn negatively affect markets and loss of livelihoods.
- The stability of food prices will be negatively affected hence lead to increased household vulnerability.
- Wards which need special attention are Mukogodo East and West, Segera, Ngobit and Tigithi wards

8 RECOMMENDATIONS

- Provision of certified seeds at subsidized rate to farmers ahead of the planting season **Action: FAO, ASDSP, County Govt, and Private Stakeholders.**
- Capacity building farmers on Conservation Agriculture as a modern method of farming **Action: FAO, ASDSP, County Govt, and Private Stakeholders.**
- Activate the drought response plan to mitigate the effects of the Feb- March 2018 dry spell **(NDMA, County Govt, Stakeholders).**
- Conduct rapport building meetings between communities, ranchers from within and neighbouring counties with the aim of creating mutual agreements to avoid conflict over use of natural resources. **Action: County Government, NDMA, Stakeholders.**
- Increase peace building activities and surveillance in conflict prone zones **Action: County Commissioner, County Government, NDMA, Private Stakeholders.**
- Initiate interventions geared towards curbing 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.