

National Drought Management Authority
LAIKIPIA COUNTY
DROUGHT EARLY WARNING BULLETIN FOR NOVEMBER 2019



A Vision 2030 Flagship Project



NOVEMBER 2019 EW PHASE:



Drought Situation & EW Phase Classification

Biophysical Indicators

Rainfall:

Performance: the county received 6 to 14 days of moderate to heavy rains across the livelihood zones. The temporal distribution of the rains was good to fair whereas the spatial distribution was fair.

Vegetation Condition:

- The Vegetation Condition Index (VCI) was above the normal range for the period, indicating a fair to good state of pasture and browse.
- The available pasture and browse can last for two to three months, depending on the area.

Socio Economic Indicators (Impact Indicators)

Production Indicators:

- There were no reported cases of livestock in migration from neighbouring Counties.
- Milk production per household was within the normal range for this time of the year.
- The body condition of animals was within the normal range for the period.

Access indicators:

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

Utilization indicators:

- All within the normal range.

LIVELIHOOD ZONE	EW PHASE	TREND
PASTORAL	Normal	Stable
MMF	Normal	Stable
MF	Normal	Stable
COUNTY	Normal	Stable
Biophysical Indicators	Value	Normal range
% of Average rainfall	170%	80-120%
VCI (1 month)	75.6	35-50
State of Water Sources	5	4-5
Production indicators	Value	Normal range
Livestock Migration Pattern	No Migration	No Migration
Livestock Body Condition	4-5	4-5
Milk Production (Lt)	5.6	> 4.5
Reported livestock deaths (due to drought)	No death	No death
Crops area planted (%)	-	% of LTA
Access Indicators	Value	Normal ranges
Terms of Trade (ToT)	96.5	117
Milk Consumption (Lt)	2	>1.8
Return Distance (Water Sources to households)	2.2	3.1
Return Distance water to grazing areas	3.6	4.3
Utilisation indicators	Value	Normal ranges
MUAC (Mid at risk)	0.7	< 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

- During the month of November, the county received on average 6 to 14 days of moderate to heavy rains across the Pastoral, Marginal Mixed Farming (MMF) and Mixed Farming (MF) zones, with majority of the days being characterised by heavy rains.
- The temporal distribution of the rains was fair while the spatial distribution was fair to poor. The MMF reported 6 to 14 days of moderate to heavy showers with fair distribution, the Pastoral livelihood zones recorded 8 days to 12 days of moderate to heavy rains with good to fair distribution, while the Mixed farming zone reported 6 to 8 days of moderate to heavy rains with fair distribution.

1.2 Amount of Rainfall and Spatial Distribution

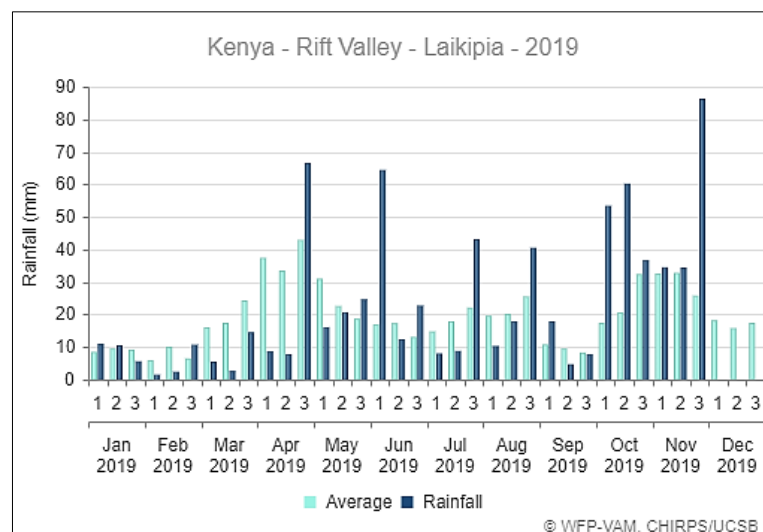


Figure 1: Rainfall (mm) for Nov 2019

© WFP-VAM, CHIRPS/UCSB
Source – WFP VAM - CHIRPS

- The amount of the rains received amounted to 154.6 mm in November, which is 170% of the long-term average of 90.6 mm by the same time. The rainfall is way above the normal range expected for the period.

2 IMPACT ON VEGETATION AND WATER

2.1 Vegetation Condition

2.1.1 Vegetation Condition Index (VCI)

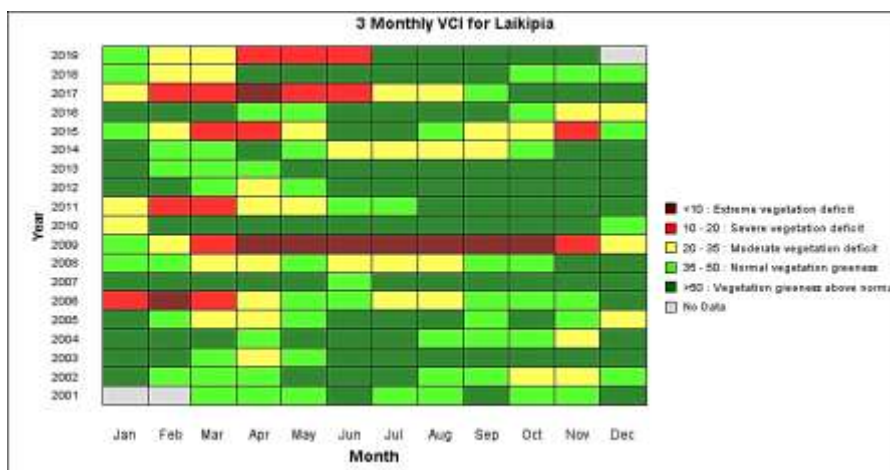


Figure 2: 3 monthly VCI Matrix Nov 2019

Source - BOKU

- The VCI matrix above indicates very good vegetation condition, which has been the case for the previous four months. However, from field observations, the vegetation condition in some pockets across the Pastoral and MMF zones was fair, which is largely attributed to moderate precipitation levels recorded in the zones.
- The actual VCI (3 month) at 75.6 was way above the normal range for the month.

2.1.2 Pasture

- Key informant interviews indicated that the pasture condition was partly good (59.1%), fair (40.9%) as shown in the chart below.

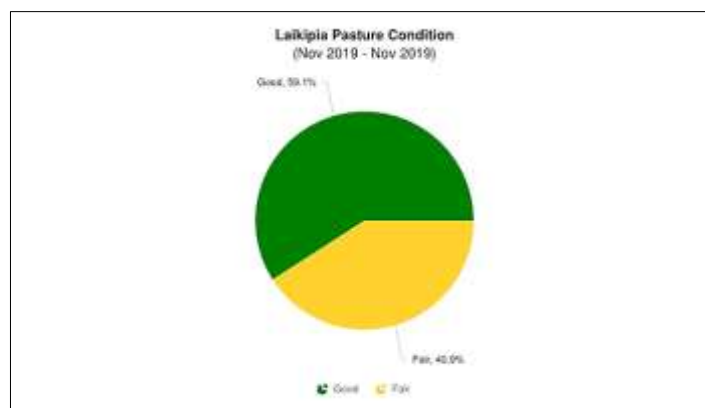


Figure 3: Pasture Condition Nov 2019

Source - KDEWS

- Compared to the previous month (good (41.7%) and fair (58.3%)), the vegetation condition recorded improvement in both quantity and quality across all livelihood zones except in some pockets of Pastoral and MMF zones that received depressed rains and had influx of livestock. The current situation is above the normal expected at this time of the year.
- There is no major constraint to pasture access.

2.1.3 Browse

- According to the key informants interviewed, the browse condition was good (77.3%) and fair (22.7%) as shown in the chart below.

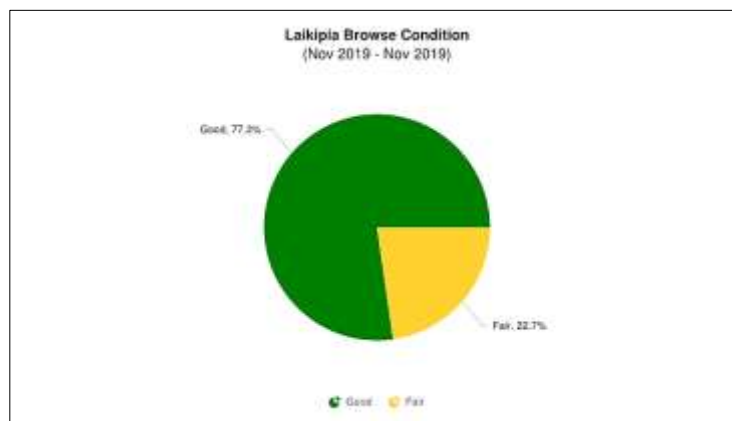


Figure 4: Browse condition Nov 2019

Source - KDEWS

- Compared to the previous month (good (79.2%) and fair (20.8%)), the browse condition has been on a positive trend recorded a significant improvement. No major constraint to browse access was reported.

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 (25%), boreholes (27.3%), shallow wells (20.5%) and rivers (18.2%). Others were traditional river wells (9.1%).

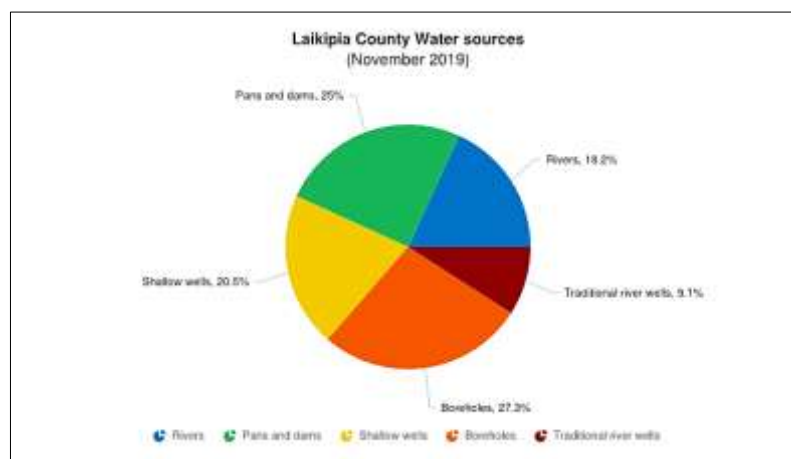


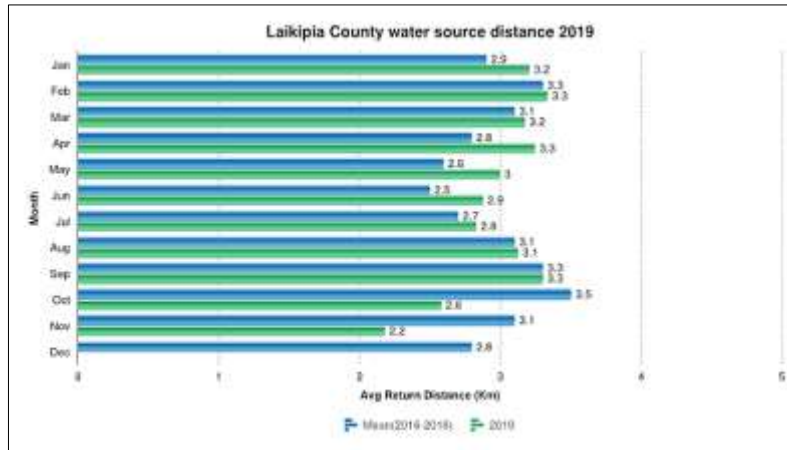
Figure 5: County Water Sources Nov 2019

Source - KDEWS

- Compared to the previous month, pans and dams (30.2%), boreholes (26.4%), shallow wells (20.8%) and rivers (15.1%). Others were traditional river wells (7.5%) and springs (1.9%), the water quantity is stable and there is a shift towards surface water sources, specifically rivers and river wells, indicating an increase in precipitation levels, which is expected at this time of the year.
- The main water sources are expected to last as follows: - Pastoral (boreholes - permanent, seasonal rivers – 3 months, pans and dams – 3 months), MMF (borehole – permanent, seasonal rivers – 3 months, pans and dams – 3 months), MF (shallow wells – 2 months, traditional river wells – 4 months, pans and dams – 3 months).

2.2.2 Household Access and Utilization

- The average return distances from households to water sources decreased to 2.2 km in November, down from 2.6 km in October. The MMF zone recorded the farthest return distance of 2.9 km.



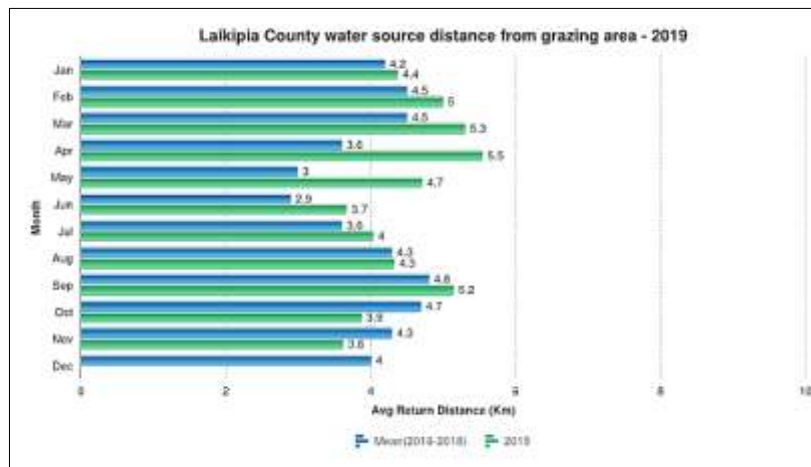
Graph 1: County Water Distances – Nov 2019

Source - KDEWS

- The current distances are way below the long-term average.
- The stable distances are attributed to the ongoing OND rains.
- The main constraint to water access is pollution.

2.2.3 Livestock Access

- The average return distance from water sources to grazing areas has significantly decreased to 3.6 km, down from 3.9 km in October. The longest return distance of 4 km was recorded in the Pastoral zones, a significant decrease compared to 4.5 km the previous month.



Graph 2: County Water Distances to Grazing Areas – Nov 2019

Source - KDEWS

- The current distances were below the long-term average for the month. This is attributed to the ongoing above normal OND rains.

3 PRODUCTION INDICATORS

3.1 Livestock Production

3.1.1 Livestock Body Condition

- For the month of November, the livestock body condition across the County was classified at level 4 (moderate, neither fat nor thin) to 5 (Normal) and showed improvement.
- Generally, the livestock body condition was largely fair to good for both grazers and browsers across all livelihood zones. The body condition is above the normal for this time of the year.
- Compared to last month, the livestock body condition has shown improvement. Most grazers range from moderate to normal.
- Compared to same time last year, the body condition of livestock is above normal.

3.1.2 Milk Production

- The sampled households recorded an average milk production of 5.6 litres per household per day, a significant increase compared to the previous month at 4.9 litres. The largest share of the increase was recorded in the MF and MMF zones. This milk was largely obtained from cattle.
- The milk production is above the average levels (> 4.5 litres per household) expected at this time of the year.

3.2 Rain-fed Crop Production

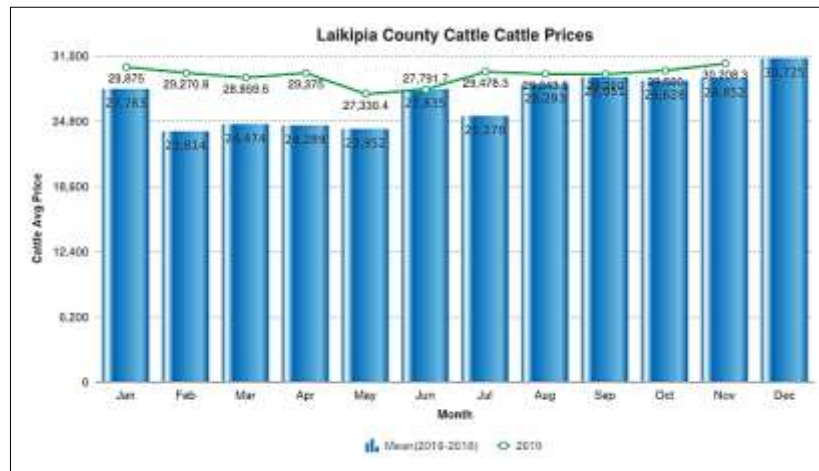
3.2.1 Stage and Condition of Food Crops

- In some places in the MMF zone, maize growth ranged from germination to 25 inches for those who planted before onset and after onset. Beans were at podding and flowering stage; potatoes were at mature shredding of flowers whereas wheat was at popping stage in some farms. In small pockets in the same zone, drying maize was still on the farms (due to the previous off-season rains). In these areas, some of the maize did not fill up well hence likelihood of low harvests. In the MF zone, maize was mature and at drying stage while Wheat farmers are harvesting. Horticultural farmers are at early stages of preparing the land and early planting respectively. while in other areas, maize was nearing maturity and likely to rot because of heavy rains. Wheat was at harvesting stage and farmers were experiencing challenges due to the rains. For some pockets of the Pastoral zone where they do farm, all crops were at germination stage.
- Ongoing farm activities in most farms especially in MMF zones include 2nd weeding, 2nd moulding and spraying of crops with pesticides and herbicides.
- Casual labour is available in plenty at this time.

4 MARKET PERFORMANCE

4.1 Livestock Marketing

4.1.1 Cattle Prices (Market)

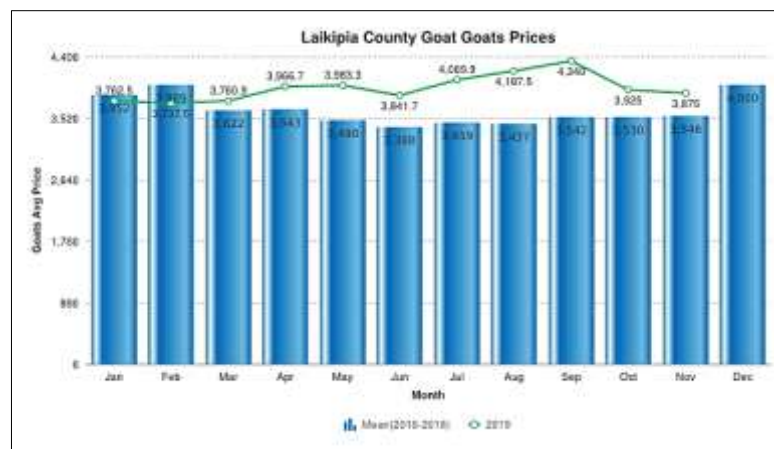


Graph 3: County Cattle Prices – Nov 2019

Source - KDEWS

- During the month under review, the County recorded an average cattle price of Kshs. 30,200 at the markets, a slight increase compared to the previous month. The current price is attributed to the fair to good body condition of the livestock on sale.
- The MMF zone recorded the highest cattle price.
- Compared to the long-term average, the current price is slightly above by 5%.

4.1.2 Small Ruminants Prices (Goat)



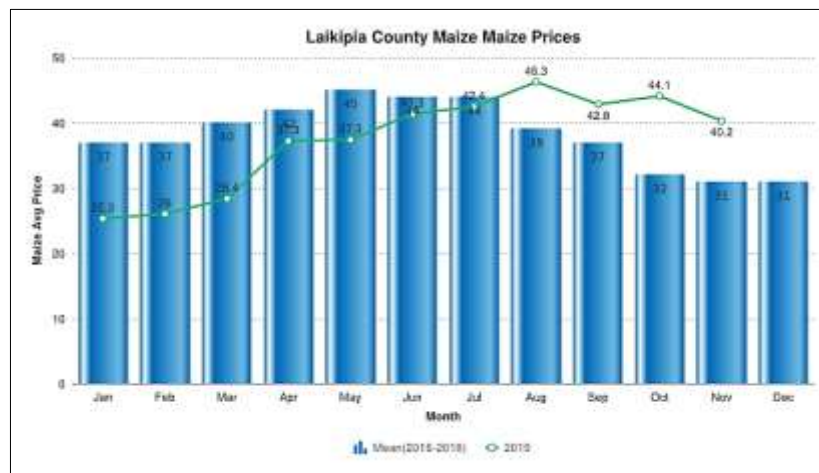
Graph 4: County Goat Prices - Nov 2019

Source - KDEWS

- During the month under review, the average price of a goat in Laikipia was recorded at Kshs. 3,875; a slight (1%) decrease compared to the previous month. The decrease in goat price was attributed to the increased supply at the markets.
- The lowest goat price was recorded in the MMF zone.
- Compared to the long-term average, the current goat price was higher by 9% hence above the normal range for the period.

4.2 Crop Prices

4.2.1 Maize (market price)

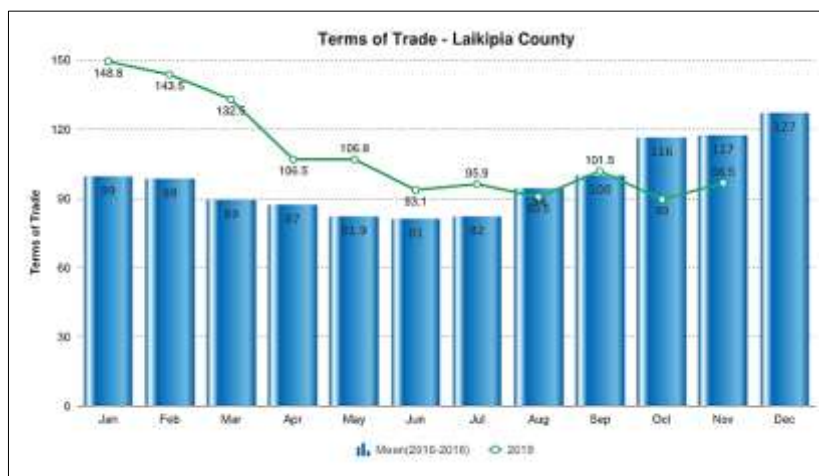


Graph 5: County Maize Prices – Oct 2019

Source - KDEWS

- The average maize price of Kshs. 40 per Kg was recorded at the markets as shown above, a significant (9%) decrease compared to the previous month. The decrease in market price was attributed to the slight increase in maize supply both at the markets and at the household level.
- The highest average market price of maize at Kshs.50 per Kg was recorded at Sirima market (MMF) whereas the lowest at Kshs. 28 was recorded at Olmoran market (MMF).
- Compared to the three-year average, the current price is higher by 30%.

4.3 Livestock Price Ratio/Terms of Trade



Graph 6: Terms of Trade (Goat/ Maize) - Nov 2019

Source - KDEWS

- According to the graph above, the November average price of a goat at Kshs. 3,875 was able to purchase 96.5 Kg of maize, a significant increase (8%) compared to the previous month at 89 Kg.
- The current trend in the ToT (Terms of Trade) can be attributed to the decrease in maize prices and stable goat prices at the markets. For November, The ToT has slightly shifted in favour of livestock keepers; they are able to purchase more cereal for the price of a goat compared to the previous month.
- When compared to the three-year average, the ToT is below the normal range (by 17%) for the period.

4.4 Implication on Food Security

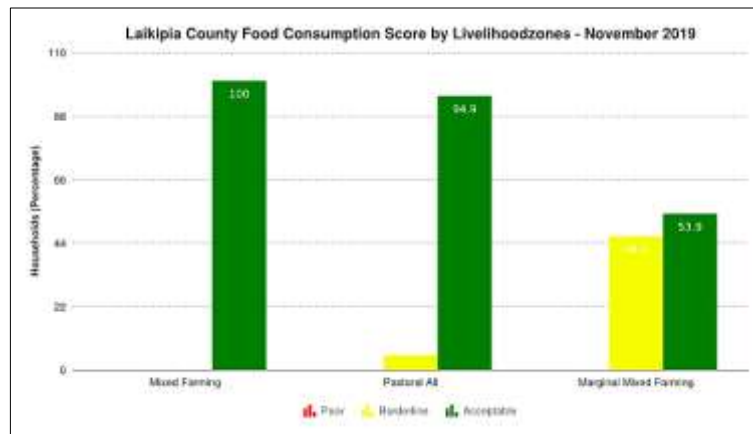
- The ongoing OND rains are above normal and have had a significant positive effect on the vegetation, water availability and accessibility, crop and livestock production food availability. The rains have complemented the positive effects of the previous off-season rains recorded in the June-August period.
- The heavy rains have, however, had a somewhat negative effect on areas, which still had maize and wheat on the farms and have complicated harvesting; hence, some crop yield loss may be experienced as a result.
- Livestock productivity is within the expected levels and in some places above normal compared to same time last year. The received rains have contributed positively to indicators such as distance to water sources, forage availability and water availability.

5 FOOD CONSUMPTION AND NUTRITION STATUS

5.1 Milk Consumption

- During the month under review, the sampled households recorded an average milk consumption of 2 litres per day, same as the previous month, with most of the milk coming from cattle.
- The milk consumption level is within the normal (>1.8 litres) expected at this time of the year.
- For the MMF and MF zones, the larger percentage of the milk produced (61% and 72% 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



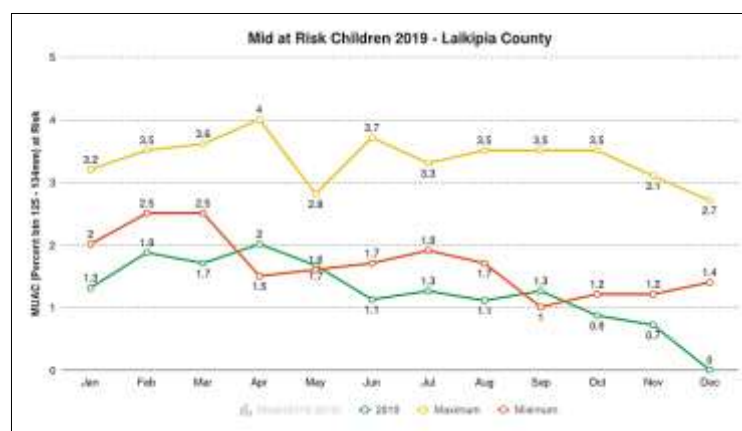
Graph 7: Food Consumption Score for Nov 2019

Source - KDEWS

- According to the graph above, all of the sampled households in the Mixed Farming livelihood zone maintained an acceptable food score. The Pastoral zone followed with an acceptable food score of 94.9 (higher than the previous month at 86.7%), a borderline food score of 5.1% (slightly lower than the previous month at 8.5%) and no poor food score (compared to the previous month at 5%) hence indicating significant increase in dietary diversity in the zone.
- 53.9% of the households in the Marginal Mixed Farming (MMF) zone had an acceptable score, 46.1% had a borderline score and no poor food score. This is a slight improvement compared to last month's 46.7% acceptable and 51.1% borderline and 1.1% poor.
- The household dietary diversity remained stable across all the livelihood zones.

5.3 Health and Nutrition Status

5.3.1 Nutrition Status



Graph 8: Percentage of children at risk of malnutrition for Nov 2019

Source - KDEWS

- The percentage of children under-five years of age who are at risk of malnutrition is 0.7%, slightly lower than the previous month. This can be attributed to the increased food availability

and dietary diversity across the county.

- There were no reported cases falling under SAM and MAM for the current month.

5.3.2 Health

- There were no reported major human diseases apart from cases of common cold, flu and fever affecting both adults and children across the sentinel sites during the period under review.

5.4 Consumption based coping strategies

- The most common types of the strategies employed were borrowing and purchasing food on credit, relying on well off relatives.

6 CURRENT INTERVENTION MEASURES (ACTION)

6.1 Non-Food Interventions

- No non-food interventions were reported in the sentinel sites during the period under review.

6.2 Food Aid

- No food aid interventions were reported in the sentinel sites during the period under review.

7 EMERGING ISSUES

7.1 Insecurity/Conflict/Human Displacement

- Minimal incidences of flash floods and water logging were reported in some few pockets i.e. Mwiyo (MMF) and Tandare, Nndika (MF). No major damage so far except minimal damage to crops and road sections (i.e. Nanyuki-Rumuruti road).
- Human-wildlife conflict incidences were reported at Kijabe and Ex-rock (MMF) areas bordering Olpejeta conservancy in Ngobit Ward whereby Elands invaded and destroyed maize crops in neighbouring farms.

7.2 Migration

- No major migration movements were recorded for the reporting period. However, animals, which had migrated to Olenaisho ranch, Naibunga conservancy and Mt. Kenya forests, had not returned yet as at the time of reporting.

7.3 Food Security Prognosis

- The ongoing OND rains are above normal and have had a significant positive effect on the vegetation, water availability and accessibility, crop and livestock production food availability. The rains have complemented the positive effects of the previous off-season rains recorded in the June-August period.
- The heavy rains have, however, had a somewhat negative effect on areas, which still had maize and wheat on the farms and have complicated harvesting; hence, some crop yield loss may be experienced as a result.
- Livestock productivity is within the expected levels and in some places above normal compared to same time last year. The received rains have contributed positively to indicators such as distance to water sources, forage availability and water availability.
- Food consumption indicators are within the normal range across all zones.
- The main emerging threat is possible damage by floods and water logging to crops and other livelihoods.
- Generally, the food security outlook for the county is improving because of the OND rains. The current worst-case scenario is minimal food stress in the pockets experiencing a smaller amount of precipitation compared to the general trend and low crop yield due to water logging and flooding.

8 RECOMMENDATIONS

- Sensitize communities on avoidance of flood plains and water ways. **Action: County Government (Water departments), County Commissioner, NDMA.**
- Advise communities on sanitation and hygiene. **Action: County Govt. (Health and Water).**
- Sensitize farmers on conservation agriculture and the adoption of drought resilient crops as a way to maximise on crop yield. **Action: FAO, ASDSP, County Govt.; and private stakeholders.**
- Sensitize communities on pasture management and water conservation techniques. **Action: County Government (Livestock and Water departments).**
- Implement measures/interventions geared towards curbing human-wildlife conflicts. **Action: KWS, Local Community.**
- Enhance animal disease surveillance to curb animal production losses. **Action: County Govt. – Livestock.**

REFERENCES

Livelihood zones

MMF – Marginal Mixed Farming Zone

MF – Mixed Farming Zone

Pastoral Zone

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	Meteorological Drought Category
	> +1.5 or more	Wet Conditions
	0 to +1.5	No drought
	-0.1 to -0.99	Mild drought
	-1 to -1.99	Severe drought
	<-2 and less	Extreme drought

Table 3: Vegetation Condition Index Values (VCI)

Color	VCI values	Agricultural Drought Category
	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.