



National Drought Management Authority
LAIKIPIA COUNTY
DROUGHT EARLY WARNING BULLETIN FOR MAY 2021

MAY 2021 EW PHASE: ALERT

Drought Status: ALERT



Maandalizi ya mapema

Drought Situation & EW Phase Classification

Biophysical Indicators

Rainfall:

Performance: the County received on average 2 to 8 days of rainfall across the Pastoral, Marginal Mixed Farming (MMF) and Mixed Farming (MF) zones, with majority of the days being characterised by heavy to moderate rainfall. The temporal and spatial distribution of the rains was fair to poor across the County.

Vegetation Condition:

- The Vegetation Condition Index (VCI) was within the normal range for the period, indicating a largely fair state of pasture and browse, but poor in some pockets.
- The available pasture and browse can last for two to four months, depending on the area.

Socio Economic Indicators (Impact Indicators)

Production Indicators:

- There were few reported cases of livestock migration within Laikipia County and from Isiolo.
- The body condition of animals was below the normal range for the period.

Access indicators:

- The terms of trade were above the normal range
- The return distance from water sources to grazing areas was outside the normal range.

Utilization indicators:

- Within the normal range.

LIVELIHOOD ZONE	EW PHASE	TREND
PASTORAL	Alert	Declining
MMF	Alert	Declining
MF	Normal	Stable
COUNTY	Alert	Stable
Biophysical Indicators	Value	Normal range
% of Average rainfall	57%	80-120%
VCI (1 month)	36.49	35.0-50.0
State of Water Sources	4	4-5
Production indicators	Value	Normal range
Livestock Migration Pattern	Migration	No Migration
Livestock Body Condition	3-4	4-5
Milk Production (Lt)	4.3	> 6.1
Reported livestock deaths (due to drought)	No death	No death
Crops area planted (%)	-	% of LTA
Access Indicators	Value	Normal ranges
Terms of Trade (ToT)	105.5	>81.9
Milk Consumption (Lt)	1.6	>2
Return Distance (Water Sources to households)	3.2	<2.6
Return Distance (water sources to grazing areas)	4.6	<3
Utilisation indicators	Value	Normal ranges
MUAC (Mid at risk)	0%	< 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 May, the County received on average 2 to 8 days of rainfall across the Pastoral, Marginal Mixed Farming (MMF) and Mixed Farming (MF) zones, with majority of the days being characterised by heavy to moderate rainfall.
- The MMF zone reported 5 days of light showers to moderate rains and 3 days of heavy rainfall with fair distribution. The Pastoral livelihood zones recorded 3 days of heavy rainfall and 3 days of light showers with poor distribution while the MF zone reported 4 to 6 days of moderate to light rains with fair to poor distribution.

1.2 Amount of Rainfall and Spatial Distribution

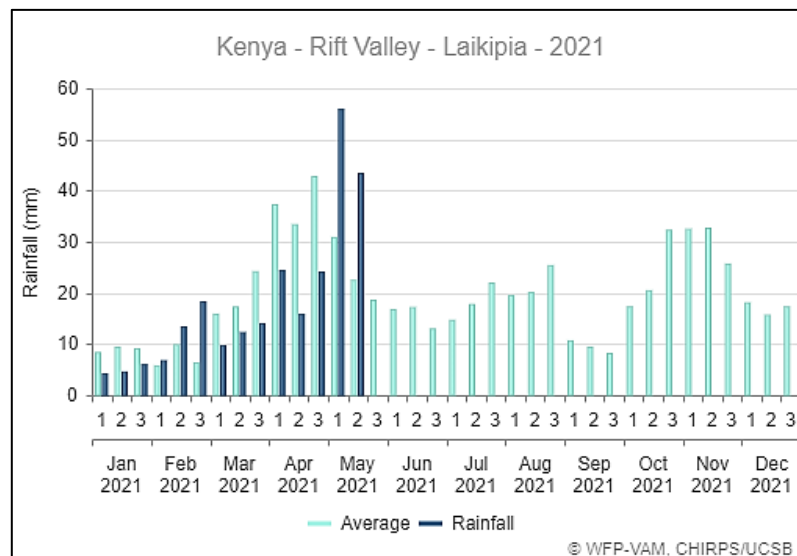


Figure 1: Rainfall (mm) for May 2021

Source – WFP VAM – CHIRPS

- For the month of May, the rains received amounted to 99.1 mm by the second Dekad (first 20 days), which is 186% of the long-term average of 53.2 mm by the same time and is way above the normal range expected for the period.
- Compared to the previous month by the same time (40 mm), the amount of rainfall received has increased.
- The temporal distribution and the spatial distribution of the rains was fair to poor across the County.
- The performance of the MAM rains as at now is way below normal of the expected amount.

2 IMPACT ON VEGETATION AND WATER

2.1 Vegetation Condition

2.1.1 Vegetation Condition Index (VCI)

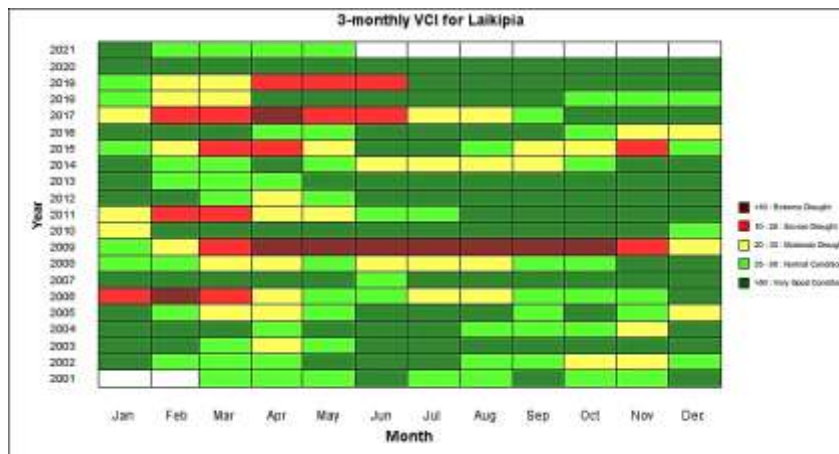


Figure 2: 3 Monthly VCI Matrix May 2021

Source - BOKU

- The VCI matrix above indicates a normal vegetation condition, same as the previous month. According to field observations, the vegetation condition has mostly remained the same with little improvement across some Pastoral zones and MMF zones (especially in Mukogodo East, Mukogodo West, Sosian, Olmoran, Rumuruti, Segera, Tigithi, Ngobit and Salama wards), which is largely attributed to low precipitation levels and long sunny spells recorded in the zones.
- The actual VCI (3 month) at 36.49 was within the normal range for the month.
- Laikipia North Sub County recorded the lowest VCI at 32.31 (moderate), slightly down from 36.5 (normal) the previous month.

2.1.2 Pasture

- Key informant interviews indicated that the pasture condition was good (8.3%), fair (70.8%) and poor (20.8%) as shown in the chart below.

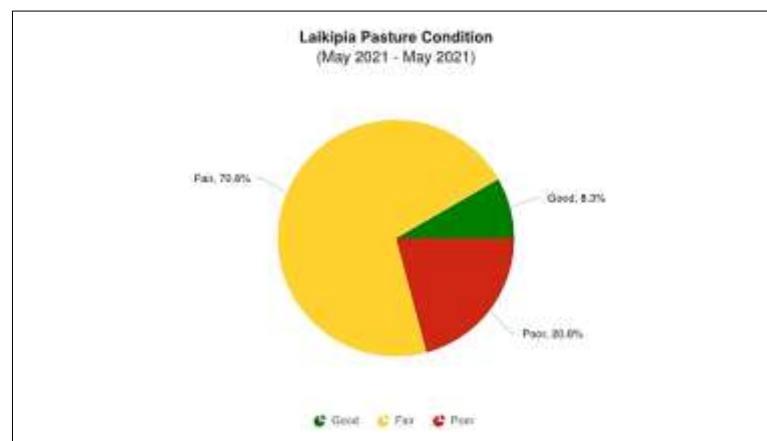


Figure 3: Pasture Condition May 2021

Source - KDEWS

- Compared to the previous month (good (4.3%), fair (39.1%) and poor (56.5%)) and in addition to field observation, the vegetation condition is has slightly improved in both quantity and quality across most of the Pastoral zones and some MMF zones. The current trend is attributed to the slightly increased precipitation levels across the County for the month of May.
- The current general situation is not normal for this time of the year.
- There major constraint to pasture access was diminishing pastures in some Pastoral zones i.e. parts of Mukogodo East and West.

2.1.3 Browse

- According to the key informants interviewed, the browse condition was good (37.5%), fair (45.8%) and poor (16.7%) as shown in the chart below.

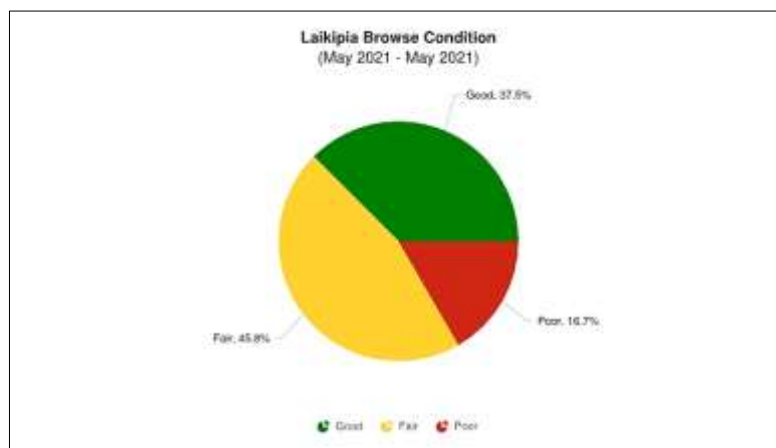


Figure 4: Browse Condition May 2021

Source - KDEWS

- Compared to the previous month: (good (21.7%), fair (43.5%) and poor (34.8%)), the browse condition is largely fair and has slightly improved in terms of quantity and quality.
- No major constraint to browse access was reported.

2.2 Water Resource

2.2.1 Sources

- The main water sources for the month under review for both domestic and livestock use in the County were pans and dams (28.3%), boreholes (28.3%), shallow wells (20.8%) and rivers (15.1%). Others were traditional river wells (7.5%), as shown in the chart below.

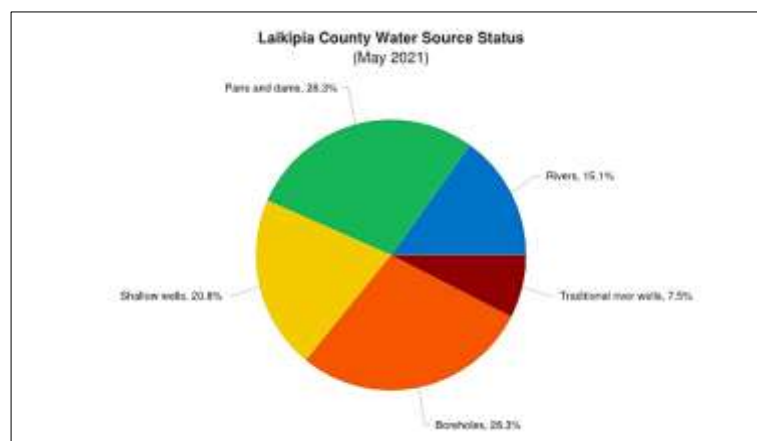


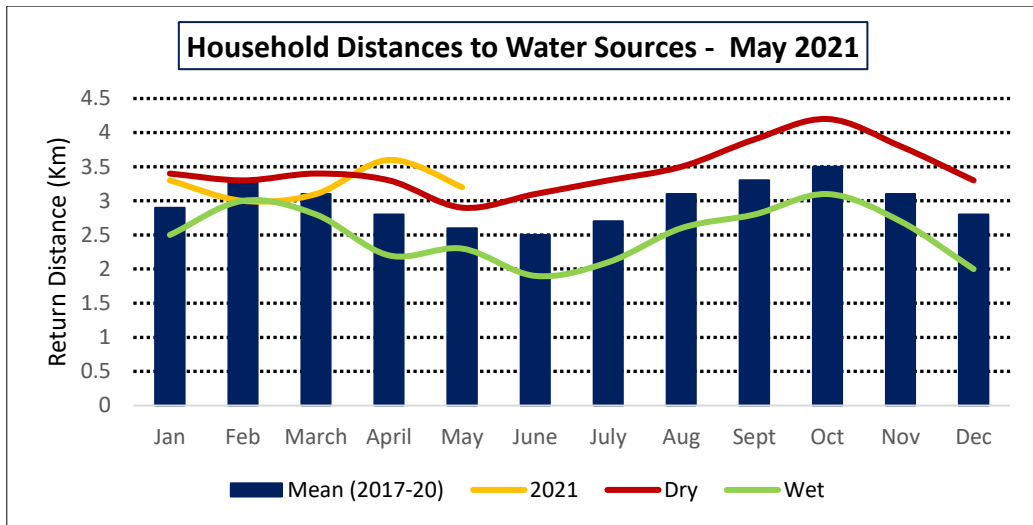
Figure 5: County Water Sources May 2021

Source - KDEWS

- Compared to the previous month: pans and dams (16.3%), boreholes (32.7%), shallow wells (26.5%), rivers (16.3%) and traditional river wells (8.2%), the water quantity is stable and there is a significant shift towards surface water sources, specifically pans and dams, indicating increased precipitation levels compared to the previous month.
- The main water sources are expected to last as follows: - Pastoral (boreholes - permanent, seasonal rivers – 2 months, pans and dams – 1 month or less), MMF (borehole – permanent, seasonal rivers – 2 months, pans and dams – 1 month), MF (shallow wells – 3 months, traditional river wells – 3 months, pans and dams – 3 months).

2.2.2 Household Access and Utilization

- The average return distances from households to water sources was 3.2 Km in May, a slight decrease compared the previous month (at 3.6 Km). This trend can be attributed to the increased precipitation levels compared to the previous month. The MMF zone recorded the farthest return distance of 4 Km.



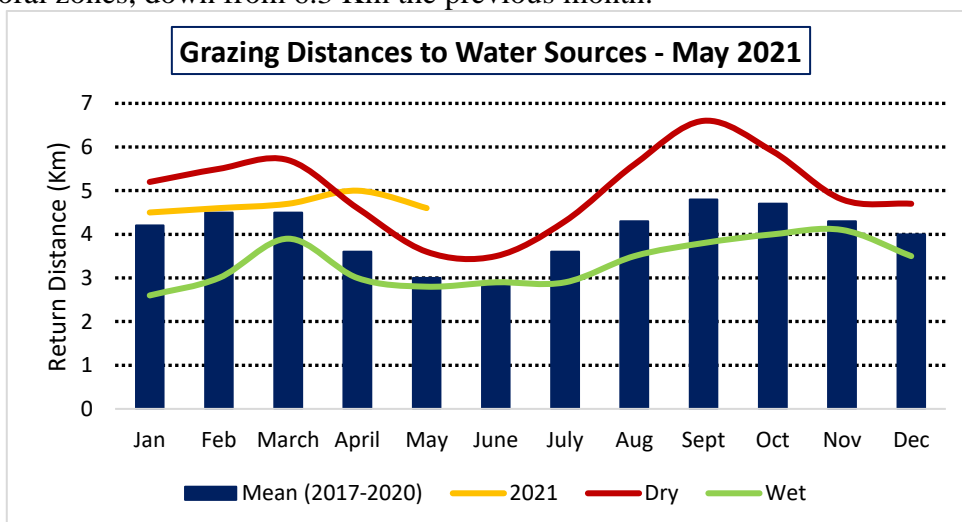
Graph 1: County Water Distances – May 2021

Source – KDEWS

- The current distances are way above the long-term average for the period.
- The current trend is attributed to the slightly increased precipitations across the County compared to the previous month.
- There was no notable constraint to water access at water access points.

2.2.3 Livestock Access

- The average return distance from water sources to grazing areas was 4.6 km, a slight decrease compared to the previous month (5 km). The longest return distance of 5.5 km was recorded in the Pastoral zones, down from 6.3 Km the previous month.



Graph 2: County Water Distances to Grazing Areas – May 2021

Source – KDEWS

- The current distances were way above the long-term (at 3 Km) average for the month.
- The high grazing distance is attributed to the below normal vegetation condition as a result of an underperforming MAM rain season across the County.

3 PRODUCTION INDICATORS

3.1 Livestock Production

3.1.1 Livestock Body Condition

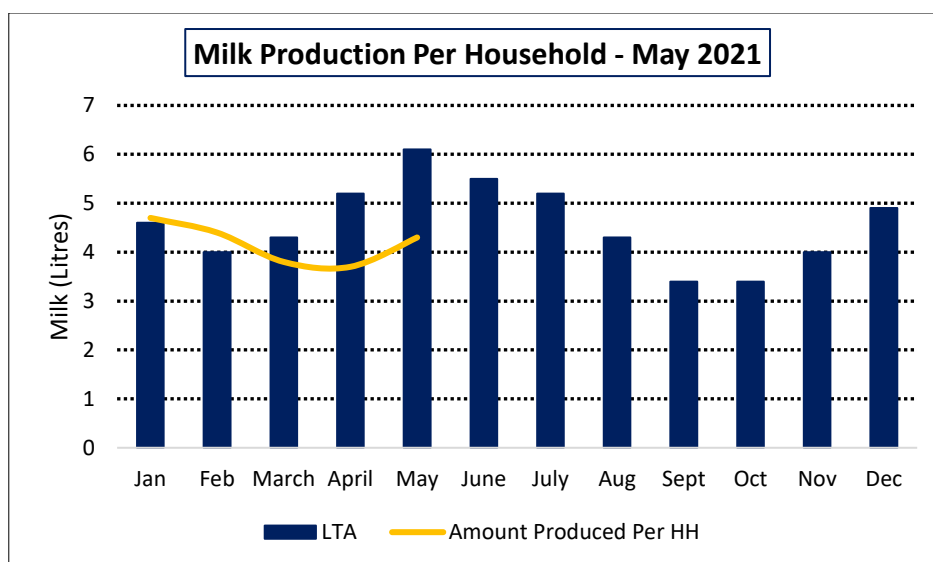
- During the month under review, the livestock body condition across the county was classified at level 4 (moderate, neither fat nor thin) to 3 (Borderline fore-ribs not visible. 12th & 13th ribs visible).
- Generally, the livestock body condition was fair for grazers and showing signs of stress (especially for some Pastoral and MMF zones) and fair for browsers across all livelihood zones.
- Compared to last month, the livestock body condition has remained the same.
- Compared to same time last year, the body condition of livestock is below normal.

3.1.2 Livestock Diseases and Deaths

- No cases of livestock diseases was reported during the period under observation.

3.2 Milk Production

- The sampled households recorded an average milk production of 4.3 litres per household per day, an improvement compared to the previous month at 3.7 litres. The largest share of the increase was recorded in the Pastoral zones. This milk was largely obtained from cattle.



Graph 3: Milk Production per Household – May 2021

Source – KDEWS

- The milk production is way below the average levels (> 6.1 litres per household) expected at this time of the year.

3.3 Rain-fed Crop Production

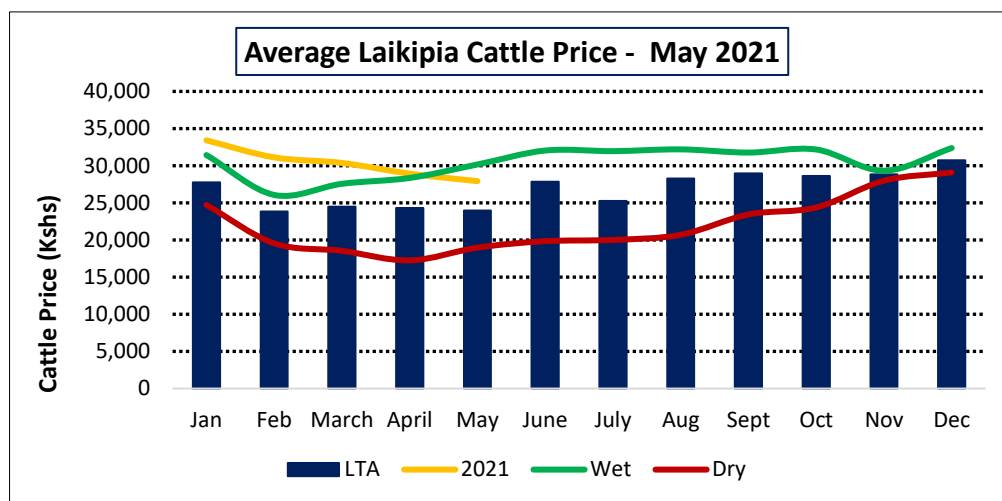
3.3.1 Stage and Condition of Food Crops

- In the MF zone and some MMF zones, in most farms weeding is taking place for different crops while in some other parts of MMF zones some few farms are undertaking partial harvesting of beans and potatoes.
- Casual labour is available but daily wages have increased in some areas across the County.

4 MARKET PERFORMANCE

4.1 Livestock Marketing

4.1.1 Cattle Prices (Market)

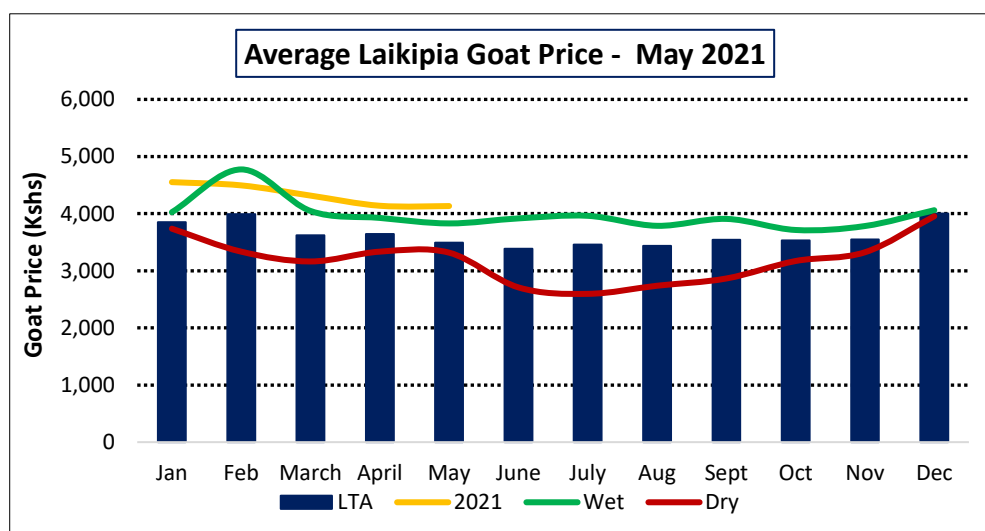


Graph 4: County Cattle Prices – May 2021

Source - KDEWS

- The County recorded an average cattle price of Kshs. 27,917 at the markets in May, 3.5% lower compared to the previous month at Kshs. 29,926. The current price decrease was attributed to increased supply at the markets. The prices are slightly more than the average expected for the period.
- The MMF zone recorded the highest cattle prices at Kshs. 35,000 (Matanya, olmoran and Sirima markets).
- Compared to the long-term average, the current price is above what is expected for the month by approx. 14.2%.

4.1.2 Small Ruminants Prices (Goat)



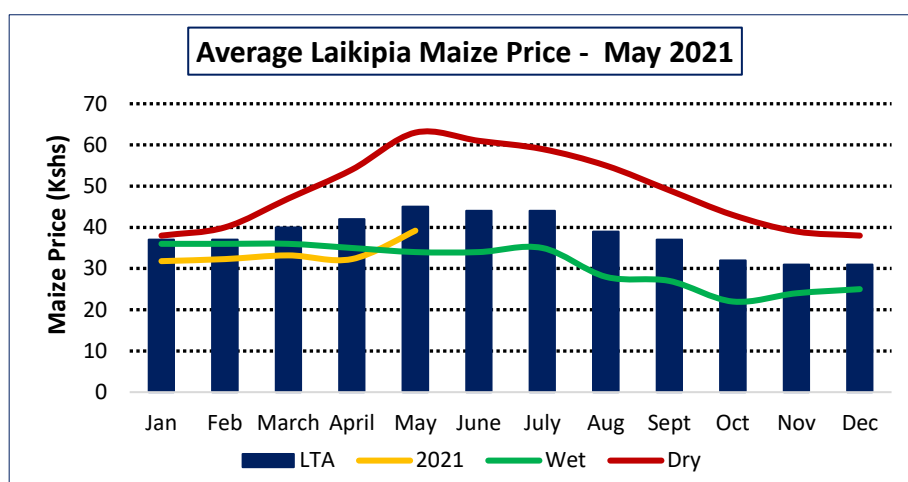
Graph 5: County Goat Prices – May 2021

Source - KDEWS

- During the month under review, the average price of a goat in Laikipia was recorded at Kshs. 4,133; the same compared to the previous month at Kshs. 4,138. The above average goat price was attributed to renewed demand as markets stabilised but is reducing because of increase of supply at the markets.
- The highest average goat price was recorded in the MF zone at Kshs. 7,250.
- Compared to the long-term average, the current goat price was higher by 18% hence above the normal range for the period.

4.2 Crop Prices

4.2.1 Maize (market price)

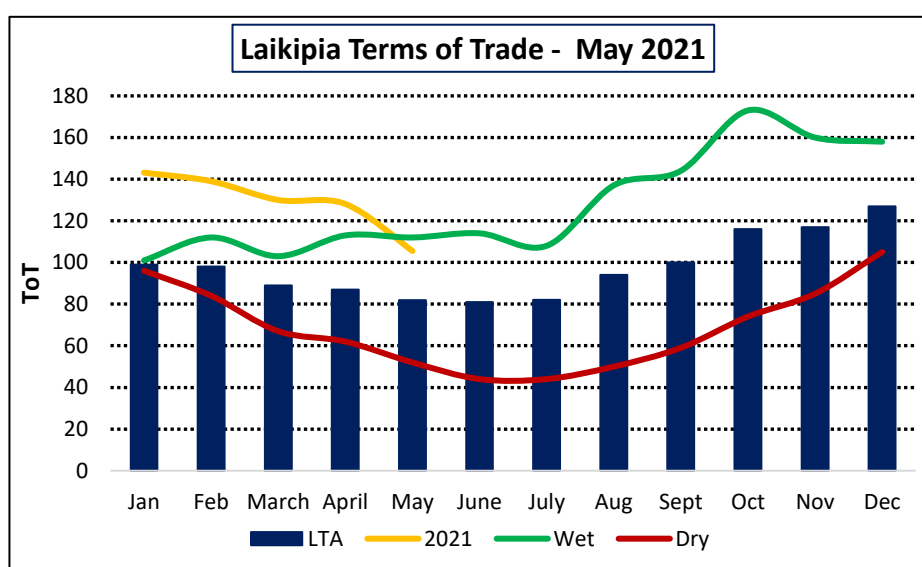


Graph 6: County Maize Prices – May 2021

Source - KDEWS

- The average maize price of Kshs. 39.2 per Kg was recorded at the markets as shown above, a significant increase (by 17%) compared to the previous month at Kshs. 32.3. The increase in market price was attributed to the reduction of maize stock at the household level and now more households are purchasing at the shop.
- The highest average market price of maize at Kshs.45 per Kg was recorded at Sirima (MMF) whereas the lowest at Kshs. 35 was recorded at Matanya and Timau markets (MMF).
- Compared to the three-year average, the current price is slightly lower (by approx. 13%).

4.3 Livestock Price Ratio/Terms of Trade



Graph 7: Terms of Trade (Goat/ Maize) – May 2021

Source - KDEWS

- As per the graph above, the May average price of a goat at Kshs. 4,133 was able to purchase 105.5 Kg of maize, a significant decrease compared to the previous month (at 128 Kg).
- The current trend in the ToT (Terms of Trade) can be attributed to the increasing maize price and a slight decrease of goat price at the markets. For the month of May, the ToT tilted in favour of crop farmers; but compared to the long term average, the ToT were still in favour of livestock keepers.
- When compared to the three-year average, the ToT is way above the normal range (by 29%) for the period.

4.4 Implication on Food Security

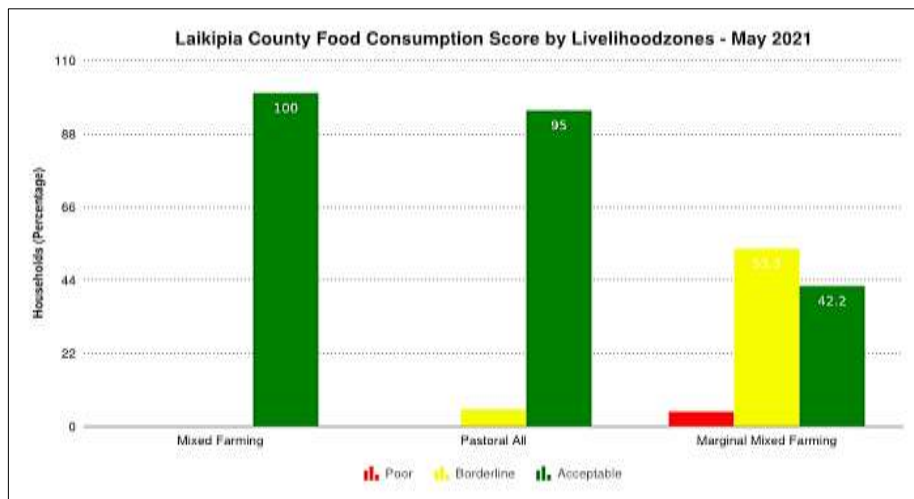
- The onset of the MAM rains in March was expected to lead to positive indicators. The low key onset coupled with the below normal rains recorded in April, better rains in the first half of May and the below normal rains thereafter coupled with the prevailing hot and dry weather conditions has seen slight improvement of the vegetation condition and distance to water sources which is way below normal of the expected level at this time of the year. Crop production has been compromised as a result.
- Areas indicating effects of below normal precipitation levels are mostly in Laikipia East and North Sub Counties.
- The livestock productivity is lower compared to the expected levels for the period.

5 FOOD CONSUMPTION AND NUTRITION STATUS

5.1 Milk Consumption

- During the month under review, the sampled households recorded an average milk consumption of 1.6 litre per day, slightly more than the previous month (1.4), with most of the milk coming from cattle.
- The milk consumption level is below the normal (>2 litres) expected at this time of the year.
- For the MMF and MF zones, the larger percentage of the milk produced (70% and 69% 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



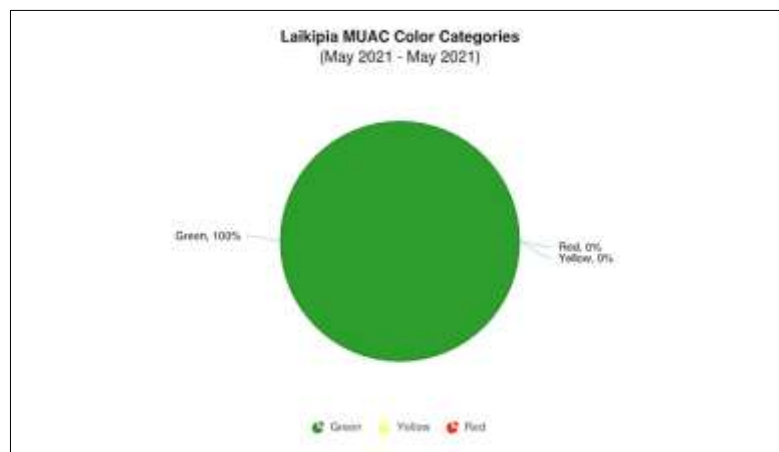
Graph 8: Food Consumption Score for May 2021

Source - KDEWS

- The graph above indicates that 100% of the sampled households in the Mixed Farming livelihood zone continued to maintain an acceptable food score. The Pastoral zone followed with an acceptable food score of 95% (96.7% the previous month) and a borderline food score of 5% (3.3% the previous month) hence indicating a slightly decreased dietary diversity.
- 42.2% of the households in the Marginal Mixed Farming (MMF) zone had an acceptable score, 53.3% had a borderline score and 4.4% poor food score. This is a slight improvement on the acceptable score but a slight increase in the poor score (compared to last month's 31.1% acceptable, 65.6% borderline and 3.3% poor), indicating a few areas in the MMF zone with increased poor dietary diversity.
- However, the household dietary diversity remained relatively stable across livelihood zones.

5.3 Health and Nutrition Status

5.3.1 Nutrition Status



Graph 9: Percentage of Children at Risk of Malnutrition for May 2021

Source - KDEWS

- The percentage of children under-five years of age who are at risk of malnutrition is 0%, a slight decrease compared to the previous month at 0.2%. The prevailing low percentage can be attributed to the stable but declining 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

- The County is still on alert for COVID-19 and isolation centres are functional.
- There were no reported major human diseases apart from reported cases of URTIs i.e. 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 and relying on well off relatives.

6 CURRENT INTERVENTION MEASURES (ACTION)

6.1 Non-Food Interventions

- No Non- Food interventions were reported during the period under review.

6.2 Food Aid

- No Food aid interventions were reported during the period under review.

7 EMERGING ISSUES

7.1 Insecurity/Conflict/Human Displacement/ Pests and Diseases

- Insecurity cases were reported at Kona mbaya (MMF Zone) in Ngobit Ward, Kamwenje, and Robere areas (MF Zone) in Githiga Ward along the Laikipia Ranching (LNC) borders.

7.2 Migration

- Immigration of livestock from neighbouring Isiolo County to areas around Sieku River at Ingwesi in Mukogodo East Ward (Pastoral zone) in search of pasture were reported.

7.3 Food Security Prognosis

- The onset of the MAM rains in March was expected to lead to positive indicators. The low key onset coupled with the below normal rains recorded in April, better rains in the first half of May and the below normal rains thereafter coupled with the prevailing hot and dry weather conditions has seen slight improvement of the vegetation condition and distance to water sources which is way below normal of the expected level at this time of the year. Crop production has been compromised as a result.
- Areas indicating effects of below normal precipitation levels are mostly in Laikipia East and North Sub Counties.
- The livestock productivity is lower compared to the expected levels for the period.
- The underperformance of the ongoing MAM rains coupled with the reduced economic activity occasioned by the effects of the Covid-19 pandemic is threatening food security in the near future.

8 RECOMMENDATIONS

- Conduct a rapid assessment to determine the extent of deterioration of forage and water resources in affected areas. Action; CSG, NDMA
- Provide adequate and relevant advisories to crop farmers in consideration of the commencing rainfall season. Action: County Govt – Agric, MET Dept, ASDSP, relevant stakeholders
- Sensitize farmers on conservation agriculture and the adoption of drought tolerant/ escaping crops as a way to maximise on crop yield. Action: ASDSP, County Govt.; relevant stakeholders
- Enhance animal disease surveillance along the stock migratory routes as migration cases increase. Action: County Govt. – Livestock
- Implement projects geared towards enhancing community resilience and building new livelihoods, especially in consideration of the ongoing Covid-19 pandemic. Action: County Govt. and relevant stakeholders.
- Implement measures/ interventions geared towards mitigating conflict now and in future. Action: County Government, County Commissioner (Interior), KWS and Other stakeholders
- Advice communities on sanitation, hygiene and social distancing in order to mitigate the effects of the covid-19 pandemic. Action: County Govt. (Health and Water).

REFERENCES

MMF – Marginal Mixed Farming Zone

MF – Mixed Farming Zone

Pastoral Zone

MAM – March, April and May rains

OND – October, November and December rains

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 follows:

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.