



A Vision 2030 Flagship Project



**National Drought Management Authority  
LAIKIPIA COUNTY  
DROUGHT EARLY WARNING BULLETIN FOR MAY 2022**



**Drought Situation & EW Phase Classification**

**Biophysical Indicators**

**Rainfall:**

- **Performance:** The County received on average 2 to 6 days of light to moderate rainfall across the Pastoral, MMF and MF zones. The temporal and spatial distribution of the rains was poor and fair respectively across the County.

- **Vegetation Condition:**

- The Vegetation Condition Index (VCI) was below the normal range for the period, indicating a largely poor state of vegetation. This is collaborated by field observations where some Pastoral zones were observed to be having extreme vegetation deficit.
- The available pasture and browse can last for zero to two months, depending on the area.

**Socio Economic Indicators (Impact Indicators)**

**Production Indicators:**

- There were observed cases of livestock migration within Laikipia County and from neighbouring Counties in some cases resulting in conflict and livestock theft.
- The body condition of animals was way below the normal range for the period.

**Access indicators:**

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

**Utilization indicators:**

- Within the normal range with some areas recording reduced food access due to increase in food prices.

LIVELIHOOD ZONE	EW PHASE	TREND
PASTORAL	Alarm	Stable
MMF	Alarm	Stable
MF	Alert	Improving
COUNTY	Alarm	Stable
Biophysical Indicators	Value	Normal range
% of Average rainfall	52.5%	80-120%
VCI (3 month)	14.28	35.0-50.0
State of Water Sources	1-3	3-4
Production indicators	Value	Normal range
Livestock Migration Pattern	Migration	No Migration
Livestock Body Condition	1-2	3-4
Milk Production (Lt)	3.1	>5
Reported livestock deaths (due to drought)	Yes	No death
Crops area planted (%)	-	% of LTA
Access Indicators	Value	Normal ranges
Terms of Trade (ToT)	69.5	>97
Milk Consumption (Lt)	1.5	>2.5
Return Distance (Water Sources to households)	3.5	<2.6
Return Distance (water sources to grazing areas)	5	<3
Utilisation indicators	Value	Normal ranges
MUAC (Mid at risk)	0.3%	< 18
Coping Strategy Index (CSI)	5.19	<3.0

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

# 1 CLIMATIC CONDITIONS

## 1.1 Rainfall Onset/Cessation

- The cessation of the long rains (MAM) in Laikipia County commenced in the first dekad (10 days) of May. As at the time of reporting, the county had received an average of 2 to 6 days of moderate to heavy rains in the period across the Pastoral, MMF and MF zones.

## 1.2 Rainfall Performance

- The MMF zones reported 3 to 5 days of light showers to moderate rains with fair to poor distribution, while the MF zone reported 4 days of heavy rainfall and 2 days of light showers with fair distribution. The Pastoral zones recorded 2 to 3 days of light showers to moderate showers with poor distribution.

## 1.3 Amount of Rainfall and Spatial Distribution

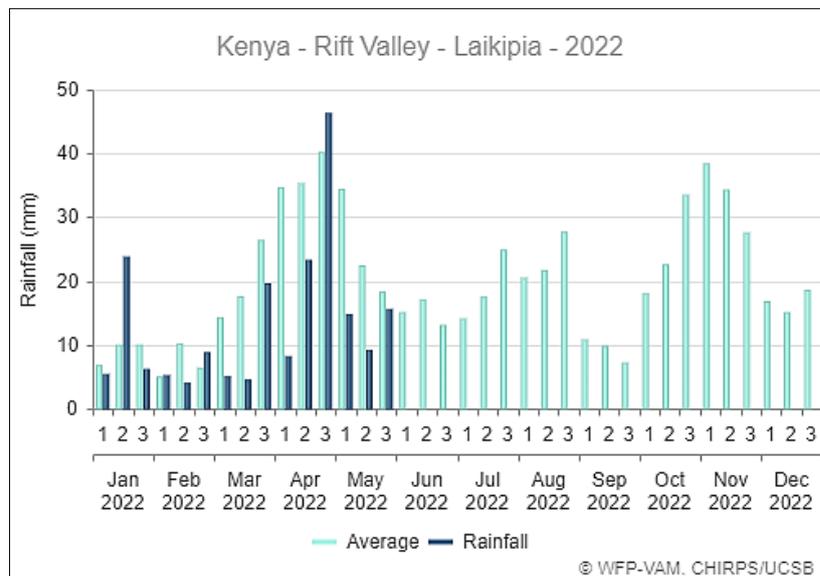


Figure 1: Rainfall (mm) for May 2022

Source – WFP VAM – CHIRPS

- According to the graph above, the rains received in May amounted to 39.3 mm, which is 52.5% of the long-term average of 74.8 mm by the same time. This is way below the normal range (80-120%) expected for the period.
- Compared to the previous month by the same time (77.5 mm), the amount of rainfall received has decreased, which is expected during this period.
- Generally, the temporal distribution and spatial distribution of the rains was fair to poor across the County.

## 2 IMPACT ON VEGETATION AND WATER

### 2.1 Vegetation Condition

#### 2.1.1 Vegetation Condition Index (VCI)

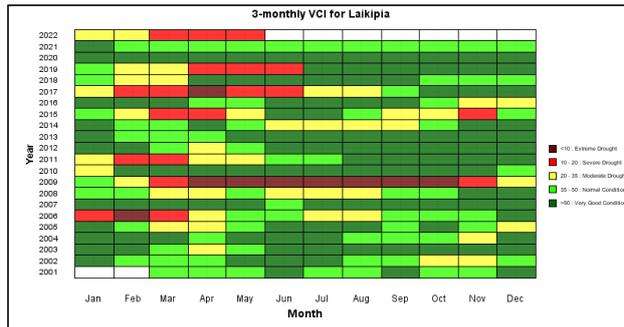


Figure 2: 3 Monthly VCI Matrix May 2022

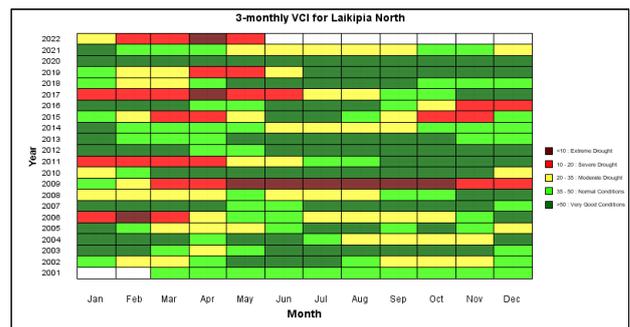


Figure 2.1: 3 Monthly VCI Matrix-Lkp North May

Source - BOKU

- According to the VCI matrices above, a severe vegetation deficit was recorded for the whole Laikipia County in May, same as the previous month. Physical observation indicated that the most affected wards were Mukogodo West, Salama, western part of Mukogodo East, Rumuruti, western part of Segera, and Ngobit wards. The pasture condition is way below normal for the period, which is largely attributed to below normal OND rains, the succeeding long sunny spells and the below normal MAM rains recorded in the zones.
- The actual VCI (3 month) at 14.28 indicated a slight increase compared to the previous month (12.46).
- Laikipia North Sub County recorded the most noticeable increase of VCI at 10.49, down from 9.44, which is at severe vegetation deficit phase (Figure 2.1).

#### 2.1.2 Pasture

- Key informant interviews indicated that the pasture condition was poor (41.7%), fair (54.2%) and good (4.2%) as shown in the chart below.

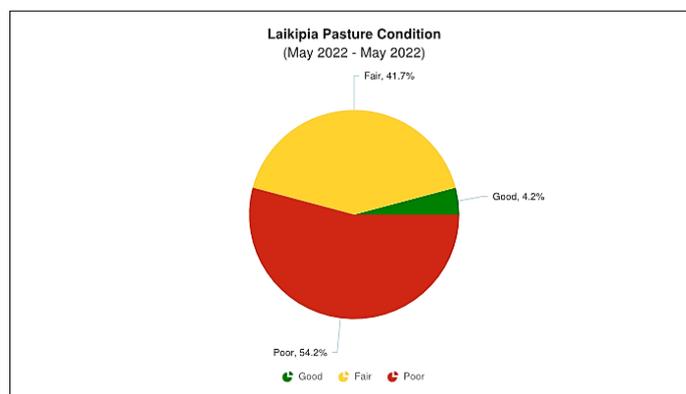


Figure 3: Pasture Condition May 2022

Source - KDEWS

- Compared to the previous month; poor (66.7%), fair (29.2%) and good (4.2%), the pasture condition recorded a slight improvement. However, from field observations, the pasture and browse was observed to be still poor in most parts of the pastoral zone. The current trend is attributed to the hot and dry conditions and overgrazing, coupled with the effect of below normal OND rains and faltering MAM rains.
- The current general situation is below normal for this time of the year due to below normal MAM rains, failure of the OND rains coupled with hot weather.
- The major constraint to pasture access was diminished pastures in Pastoral, MF and MMF zones.

### 2.1.3 Browse

- According to the key informants interviewed, the browse condition was good (4.2%), fair (87.5%) and poor (8.3%) as shown in the chart below.

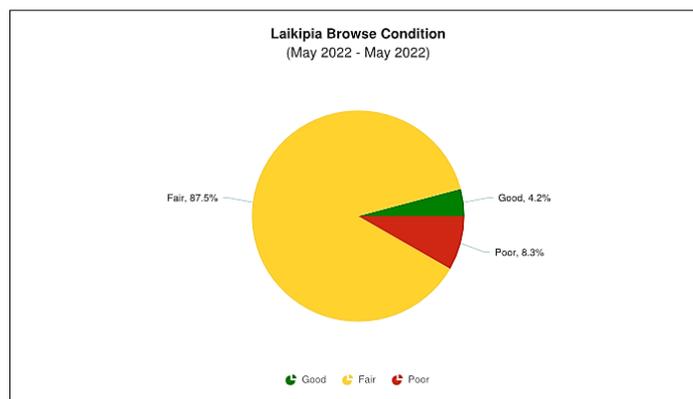


Figure 4: Browse Condition May 2022

Source - KDEWS

- Compared to the previous month: good (4.2%), fair (66.7%) and poor (29.2%), the browse condition is largely fair and slightly improved in terms of quantity and quality. Field observations indicated that the browse conditions have improved in most areas but still below normal.
- The major constraint to browse access was poor browse quality and quantity in some areas.

## 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 (28.8%), boreholes (25%), shallow wells (21.2%) and rivers (17.3%). Others were traditional river wells (7.7%), as shown in the chart below.

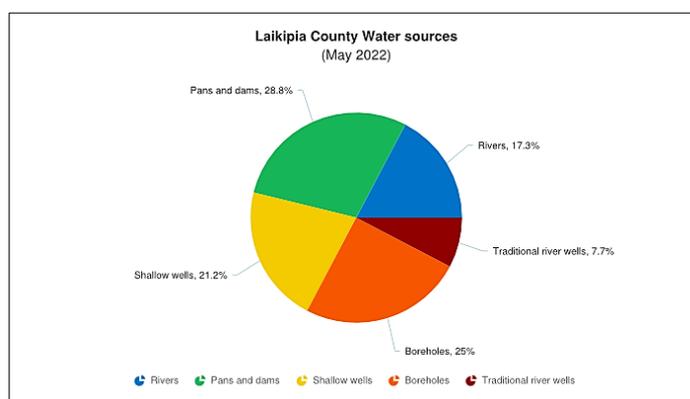


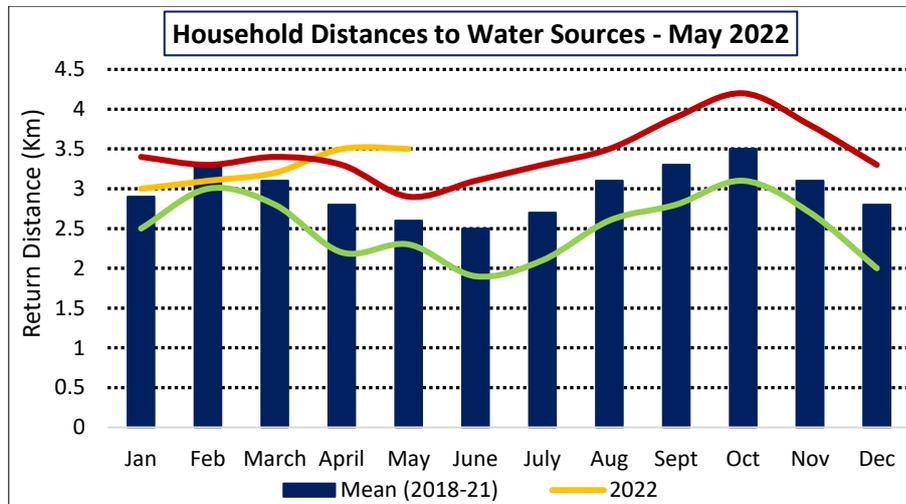
Figure 5: County Water Sources May 2022

Source - KDEWS

- Compared to the previous month; pans and dams (27.1%), boreholes (29.2%), shallow wells (18.8%), rivers (16.7%) and traditional river wells (8.3%), the water quantity at surface water sources recorded slight increase. However, some surface water sources have totally dried up in some places in Laikipia North. The river flow in these areas is diminishing rapidly. In Laikipia West, there is a shift to sub surface water sources like pans and dams as they recharge.
- The main water sources are expected to last as follows: -
  - Pastoral (boreholes - permanent, seasonal rivers - 0-1 month, pans & dams - 2 month or less).
  - MMF (borehole – permanent, seasonal rivers – 0-2 months, pans & dams – 1-2 months).
  - MF (shallow wells - 4 months, traditional river wells - 3 months, pans & dams – 2-4 months).

### 2.2.2 Household Access and Utilization

- The average return distances from households to water sources was 3.5 Km in May, same compared to the previous month (at 3.5 Km). The MMF zone recorded the most significant increase in return distance of 4.9 Km, up from 4.5 Km the previous month.



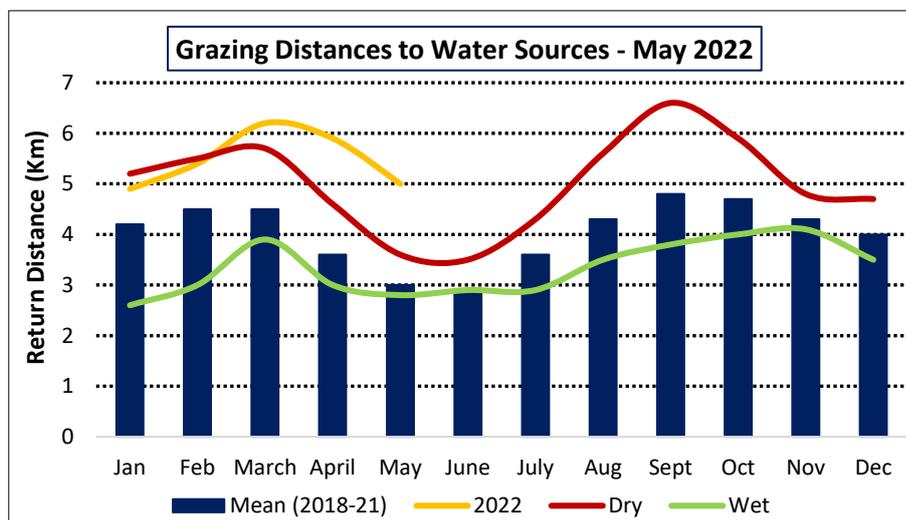
Graph 1: County Water Distances – May 2022

Source – KDEWS

- The current distances are above the long-term average for the period.
- The current trend can be attributed to the long dry spell despite the recorded rains.
- The notable constraint to water access is above normal distances and pollution.

### 2.2.3 Livestock Access

- The average return distance from water sources to grazing areas was 5 km, a decrease compared to the previous month (5.9 km). The longest return distance of 7.9 km was recorded in the Pastoral zones, down from 5.7 km the previous month.



Graph 2: County Water Distances to Grazing Areas – May 2022

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 very poor pasture and browse condition in the northern and central parts of the County as a result of the hot and dry conditions coupled with overgrazing and faltering (below normal) MAM rains.

### 3 PRODUCTION INDICATORS

#### 3.1 Livestock Production

##### 3.1.1 Livestock Body Condition

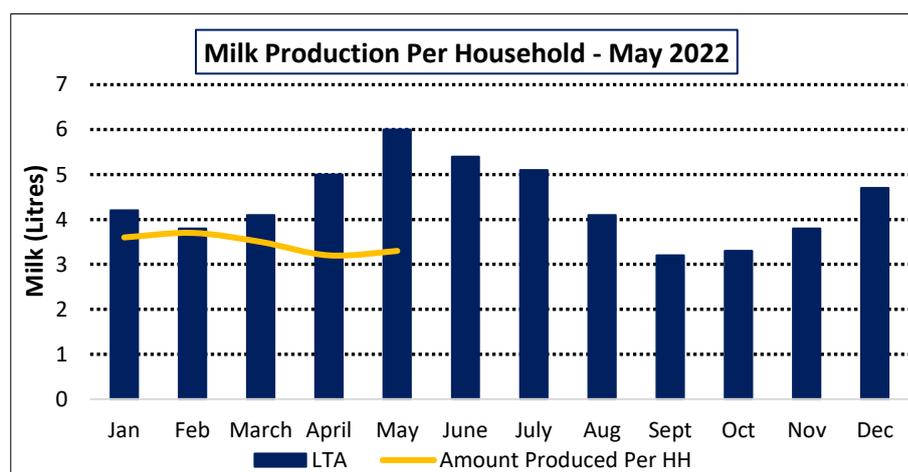
- During the month under review, the average livestock body condition across the county was classified at level 3 (Stressed – 12th & 13th ribs visible) to level 1 (Very thin, Emaciated-no fat left) depending on the area.
- Generally, the livestock body condition was fair to poor for browsers and small grazers. Large grazers mostly ranged from stressed to emaciated (esp. in Pastoral and some MMF zones where most cattle were in level 1 (emaciated- very thin, no fat, bones visible).
- Compared to last month, the livestock body condition has largely remained the same.
- Compared to same time last year, the body condition of livestock is way below normal.

##### 3.1.2 Livestock Diseases and Deaths

- Numerous cases of livestock deaths were observed (Mukogodo East, West, Sosian, Salama, Segera and Olmoran wards) during the period under observation in grazing areas and along migratory routes.

#### 3.2 Milk Production

- The sampled households recorded an average milk production of 3.3 litres per household per day, a slight increase compared to the previous month at 3.2 litres. This milk was largely obtained from cattle.



Graph 3: Milk Production per Household – May 2022

Source – KDEWS

- The milk production is way below the average levels (> 6 litres per household) expected at this time of the year. The below normal milk production is attributed to the very poor body condition of cattle recorded across the County, especially in the pastoral zone.

#### 3.3 Rain-fed Crop Production

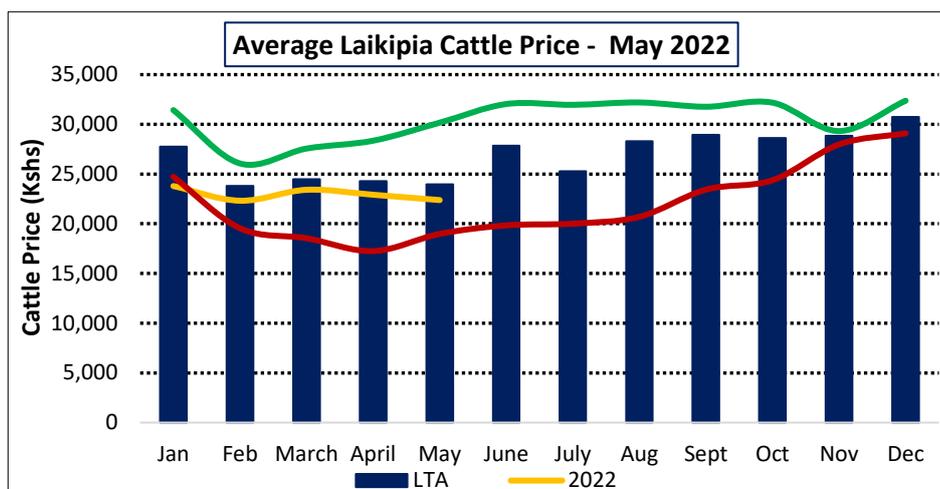
##### 3.3.1 Stage and Condition of Food Crops

- The main activity in farms was mainly planting in areas that received the MAM rains late in parts of MMF and MF zones. Some farmers in parts of MMF zones that received some rains a bit early and planted beans, maize and potatoes are reporting that most of the plants are now withering (especially beans), maize have retarded growth while potatoes are now at second molding stage due to the uneven rains experienced in those parts. In the MF zones, germination of crops is taking place for those farmers who planted late.
- In addition, horticultural activities were recorded in the MF zone and some parts of MMF zones, with the main challenge being rising cost of farm inputs.

## 4 MARKET PERFORMANCE

### 4.1 Livestock Marketing

#### 4.1.1 Cattle Prices (Market)

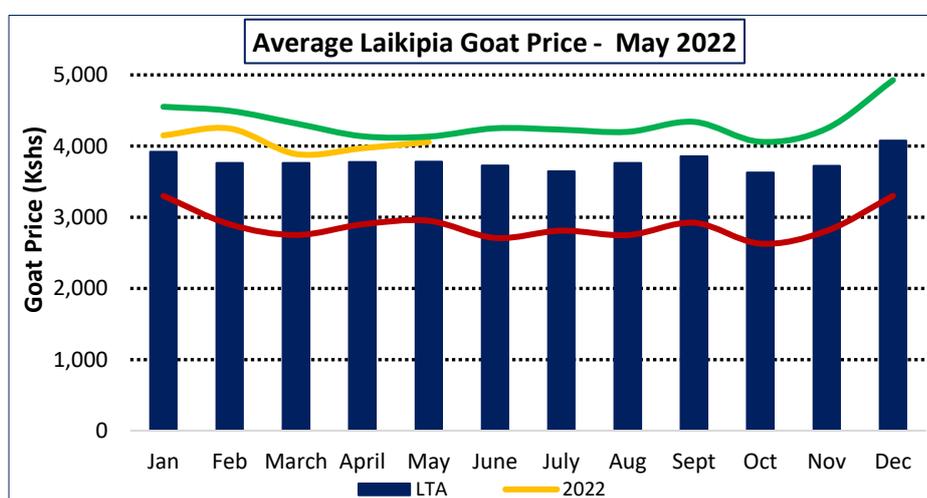


Graph 4: County Cattle Prices – May 2022

Source – KDEWS

- According to the chart above, the County in May recorded an average cattle price of Kshs. 20,379 at the markets, a slight decrease (3%) compared to the previous month at Kshs. 20,917. The current slight price decrease was attributed to the poor body condition of most of the animals in the livestock rearing zones. The body condition is way below normal for the period.
- The MMF zone recorded the highest average cattle price at Kshs. 30,000 (Sirima market) and the lowest at Kshs. 16,000 (Timau).
- Compared to the long-term average, the current price is below what is expected for the month by (approx. 7%).

#### 4.1.2 Small Ruminants Prices (Goat)



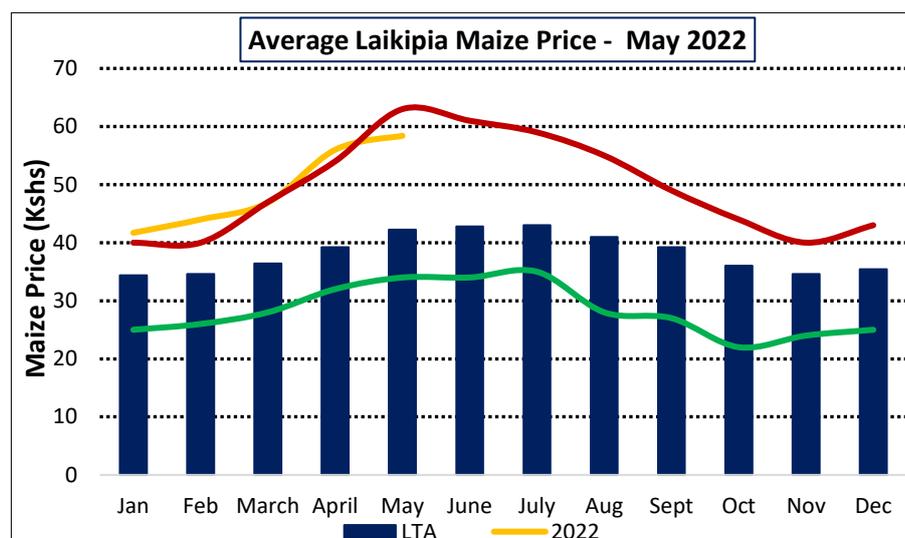
Graph 5: County Goat Prices – May 2022

Source – KDEWS

- During the month under review, the average price of a goat in Laikipia was recorded at Kshs. 4,058; a slight increase compared to the previous month at Kshs. 3,969. The stable goat price was attributed to the hoarding in anticipation for improving body condition hence better prices at the markets.
- The highest average goat price was recorded in the MF zone at Kshs. 6,575. The lowest price was recorded at Kimanjo (Pastoral) at Kshs. 2,450.
- Compared to the long-term average, the current goat price was higher by 7% hence above the normal range for the period.

## 4.2 Crop Prices

### 4.2.1 Maize (market price)

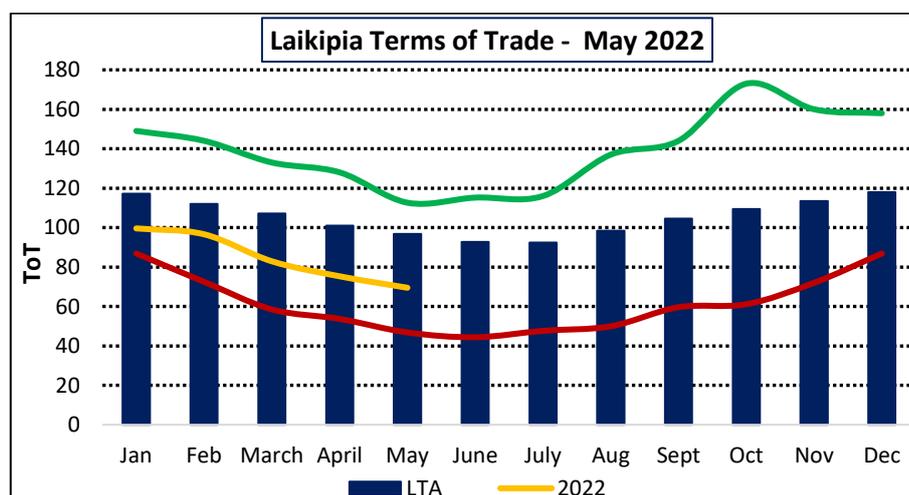


Graph 6: County Maize Prices – May 2022

Source – KDEWS

- The average maize price of Kshs. 58.4 per Kg was recorded at the markets as shown above, a slight increase compared to the previous month (at Ksh.56). The increase in market price was attributed to the decrease in maize stocks at the household level, largely attributed to poor harvests in the last harvest. Some of the maize sold at local markets is obtained from neighbouring countries.
- The highest average market price of maize at Kshs.75 per Kg was recorded at Sirima and Olmoran markets (both MMF) whereas the lowest at Kshs. 35 was recorded at Timau market (MMF).
- Compared to the long term average (LTA), the current price is way higher (by approx. 39%).

### 4.3 Livestock Price Ratio/Terms of Trade



Graph 7: Terms of Trade (Goat/ Maize) – May 2022

Source – KDEWS

- As per the graph above, the May average price of a goat at Kshs. 4,058 was able to purchase 69.5 Kg of maize, a decrease compared to the previous month (at 75.3 Kg).
- The current trend in the ToT (Terms of Trade) can be attributed to the increasing cereal prices at the markets. Compared to the long term average, the ToT slightly shifted in favour of crop cereal farmers for the month. However, crop farmers have very low cereal stocks.
- When compared to the three-year average, the ToT is significantly below the normal range (by 27%) for the period.

#### 4.4 Implication on Food Security

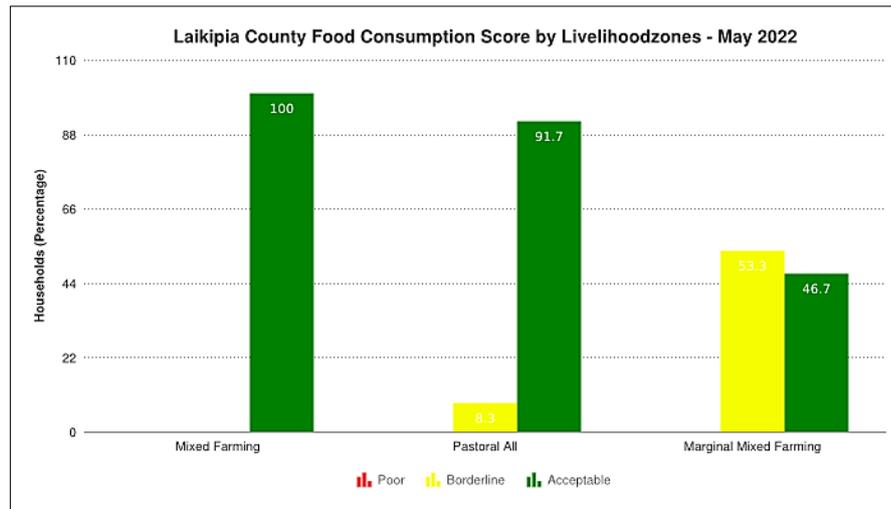
- The ended MAM rains have had a slightly positive effect in terms of vegetation and water availability in some areas, especially Laikipia West, East and some parts of Laikipia North bordering Meru County. However, areas such as Mukogodo West, western part of Mukogodo East, western parts of Segera, Ngobit, upper parts of Salama and Rumuruti have recorded significant precipitation deficit. The hot and dry weather conditions experienced since January, the effect of the delayed and depressed OND rains and the faltering MAM rains have led to a largely poor pasture and browse condition, above normal distances to water sources from grazing areas, below normal water levels in water sources in the MMF and Pastoral zones and the underperformance of crop production. Other factors contributing to the declining situation were insecurity and overgrazing by migrant herds. As a result of insecurity, crop growth and harvesting in Githiga, Sosian and Olmoran wards was interrupted by invading herders and very minimal harvests were realised. This has contributed to above normal price of cereals compared to same time in previous years. The amounts of MAM rains received across the season were below normal.
- The body condition for large stock has slightly improved in some few areas but largely ranges from poor to very poor depending on the area. The body condition was fair to poor for small stock. Numerous livestock deaths as a result of drought were reported in grazing areas and migratory routes. In places which received rains late, the livestock died due to the sudden cold climate coupled with lack of feeds. Livestock productivity in most areas is way low compared to the expected levels for the period.

## 5 FOOD CONSUMPTION AND NUTRITION STATUS

### 5.1 Milk Consumption

- In May, the sampled households recorded an average milk consumption of 1.5 litre per day, slightly more compared to the previous month (1.3), with most of the milk coming from cattle.
- The milk consumption level is way below the normal (>2.5 litres) expected at this time of the year.
- For the MMF and MF zones, the larger percentage of the milk produced (67% and 91% 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



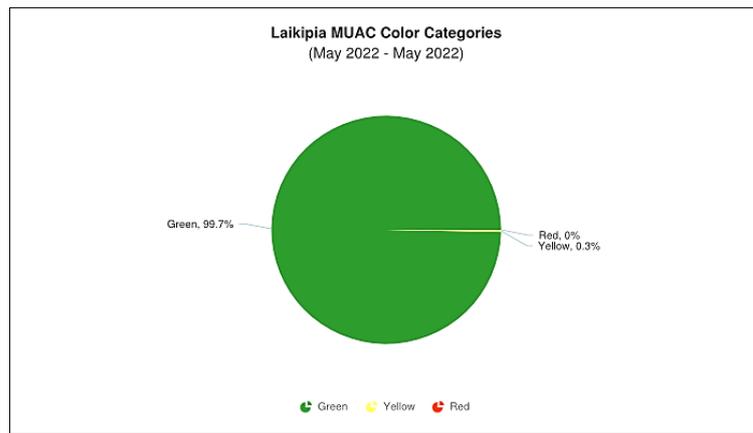
Graph 8: Food Consumption Score for May 2022

Source - KDEWS

- The graph above indicates that 100% of the sampled households in the Mixed Farming livelihood zone recorded an acceptable food score, same compared to the previous month. The Pastoral zone recorded an acceptable food score of 91.7% (85% the previous month) and a borderline food score of 8.3% (15% the previous month) hence indicating a slight increase in dietary diversity.
- 53.3% of the households in the Marginal Mixed Farming (MMF) zone had an acceptable score, 46.7% had a borderline score. This is a slight improvement on the acceptable score (compared to last month's 53.3% acceptable, 45% borderline and 1.7% poor score), indicating a few areas in the MMF zone with poor dietary diversity.
- According to the above data, the MMF and Pastoral zones have recorded a slight improvement in household dietary diversity compared to the previous month. The faltering MAM rains have contributed to the slight improvement. MF zones remain food secure.

## 5.3 Health and Nutrition Status

### 5.3.1 Nutrition Status



Graph 9: Percentage of Children at Risk of Malnutrition for May 2022

Source - KDEWS

- For the households under review, the percentage of children under-five years of age who are at risk of malnutrition was 0.3%. The fair dietary diversity across the County can be attributed to the generally acceptable food accessibility. However, there are pockets with poor food dietary diversity as a result of low food availability (due to increased prices) in Pastoral and MMF zones that need to be addressed.
- 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 URIs 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

- Distribution of Maize seeds by the National Government in conjunction with the county government.

### 6.2 Food Aid

- No food Aid intervention was reported during the period under review.

## 7 EMERGING ISSUES/ PROGNOSIS

### 7.1 Insecurity/Conflict/Human Displacement/ Pests and Diseases

- Cases of insecurity and petty theft were reported in Lobere and Eighteen in Githiga Ward (MF zone) and Magadi in Sosian Ward both in Laikipia West Sub County.

### 7.2 Migration

- Migration of livestock migration within Pastoral and MMF areas and from neighbouring Counties to Mt. Kenya Forest, Mukogodo forest and Aberdare Forest. While some livestock have been reported to have moved to parts of neighbouring counties of Baringo and Samburu

### 7.3 Food Security Prognosis

- The ended MAM rains have had a slightly positive effect in terms of vegetation and water availability in some areas, especially Laikipia West, East and some parts of Laikipia North bordering Meru County. However, areas such as Mukogodo West, western part of Mukogodo East, western parts of Segera, Ngobit, upper parts of Salama and Rumuruti have recorded significant precipitation deficit. The effect of the depressed OND rains and the subsequent faltering MAM rains have led to a largely poor pasture and browse condition, above normal distances to water sources from grazing areas, below normal water levels in water sources in the MMF and Pastoral zones and the underperformance of crop production. Other factors contributing to the declining situation were insecurity and overgrazing by migrant herds. As a result of insecurity, crop growth and harvesting in Githiga, Sosian and Olmoran wards was interrupted by invading herders and very minimal harvests were realised. This has contributed to above normal price of cereals compared to same time in previous years. The amounts of MAM rains received across the season were below normal.
- The body condition for large stock has slightly improved in some few areas but largely ranges from poor to very poor depending on the area. The body condition was fair to poor for small stock. Numerous livestock deaths as a result of drought were reported in grazing areas and migratory routes. In places which received rains late, the livestock died due to the sudden cold climate coupled with lack of feeds. Livestock productivity in most areas is way low compared to the expected levels for the period.
- The drought situation recorded since March has slightly improved in some areas but still remains severe in other parts of the County in May (especially parts of Laikipia North and Central affected by extreme vegetation deficit). These areas need urgent intervention to stem loss of livelihoods.

## 8 RECOMMENDATIONS

- Enhance drought response activities in drought-affected zones. **Action: County Government, County Commissioner (Interior), NDMA and Other stakeholders**
- Promotion of Water harvesting techniques to household in order to encourage saving water for future use. **Action: (Action: National & County Governments, relevant stakeholders.**
- Enhance animal disease surveillance along the stock migratory routes as migration cases increase. **Action: County Govt. – Livestock, relevant stakeholders.**
- Implement measures/ interventions geared towards mitigating conflict now and in future. **Action: County Government, County Commissioner (Interior), KWS and Other stakeholders**
- Implement projects geared towards enhancing community resilience i.e. water, crop and pasture development projects etc. **Action: County Govt. and relevant stakeholders**
- Carry out health out reaches and Mass Screening to a certain cases of Malnutrition. **Action County Govt. Health Department, NDMA and Other stakeholders.**

## 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.
<b>Recovery:</b> 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.