

# National Drought Management Authority

## Baringo County

### Drought Early Warning Bulletin for May 2019



A Vision 2030 Flagship Project



MAY EW PHASE	Early Warning Phase Classification			
	LIVELIHOOD ZONE	EW PHASE	TRENDS	
<p><b>Drought Situation &amp; EW Phase Classification</b>  <b>Drought Phase: Alarm-Worsening</b>  <b>Biophysical Indicators</b></p> <ul style="list-style-type: none"> <li>Most biophysical indicators show fluctuations outside the expected seasonal ranges.</li> <li>Below average rainfall was received in the month of May 2019.</li> <li>The Vegetation Condition Index values for Baringo County are below normal and on a worsening trend compared to the last month.</li> <li>The Water levels in most water sources are below normal at (5% - 10 %).</li> </ul> <p><b>Socio Economic Indicators (Impact Indicators)</b></p> <p><b>Production indicators:</b></p> <ul style="list-style-type: none"> <li>The forage condition is poor in both quality and quantity and expected to worsen with the continuing dry spell. Livestock migrations were reported in pastoral livelihood zones.</li> <li>Livestock body condition is fair to poor in all livelihood zones.</li> <li>Milk production is below normal the seasonal and on a worsening trend.</li> <li>Drought related Livestock deaths were reported in Pastoral and Agro pastoral Livelihood zones.</li> </ul> <p><b>Access indicators</b></p> <ul style="list-style-type: none"> <li>Terms of trade are currently below normal seasonal ranges and worsening as many households can hardly afford major food commodities.</li> <li>Distances to water sources for households currently are above normal ranges with the Pastoral and Agro Pastoral livelihood zones being mostly affected.</li> </ul> <p><b>Utilization indicators:</b></p> <ul style="list-style-type: none"> <li>The number of under-five children at risk of malnutrition was 19.3%, an increase as compared 14.8% in the previous month.</li> <li>Copping strategy index for households is still within normal ranges but on a worsening trend.</li> </ul>	PASTORAL	ALARM	STABLE	
	AGRO PASTORAL	ALARM	STABLE	
	IRRIGATED CROP	ALARM	STABLE	
	COUNTY	ALARM	STABLE	
	<b>Biophysical Indicators</b>	<b>Value for the month Baringo</b>	<b>LTA-Monthly Baringo</b>	<b>Normal ranges Kenya %</b>
	Average rainfall MM (%)	21	110.2	80-120
	VCI-3month	13.46	54	35-50
	% of water in the water pan	3 (5-10%)		5-6
	<b>Production indicators</b>	<b>Value</b>	<b>Normal ranges</b>	
	Livestock Migration Pattern	Normal	Normal	
	Livestock Body Condition	4-5	2-3	
	Milk Production (Ltr /HH/Month)	1.4	1.8	
	Livestock deaths (for drought)	Some Deaths	No death	
	<b>Access Indicators</b>	<b>Value</b>	<b>Normal ranges</b>	
	Terms of Trade (ToT)	44.6	>63	
Milk Consumption (Ltr)	1.4	>=1.7		
Water for Households-trekking distance (km)	8.6	0-4		
Crops area planted for the season (%) (by July 2018)	3,000(Maize) 2,500(Beans)	LTA (40,046Ha) LTA (20,028Ha)		
<b>Utilization indicators</b>	<b>Value</b>	<b>Normal ranges</b>		
At Risk (%)	19.3%	<15		
CSI	16.3	>19.0		

<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 PERFORMANCE

## 1.2 AMOUNT OF RAINFALL AND SPATIAL DISTRIBUTION

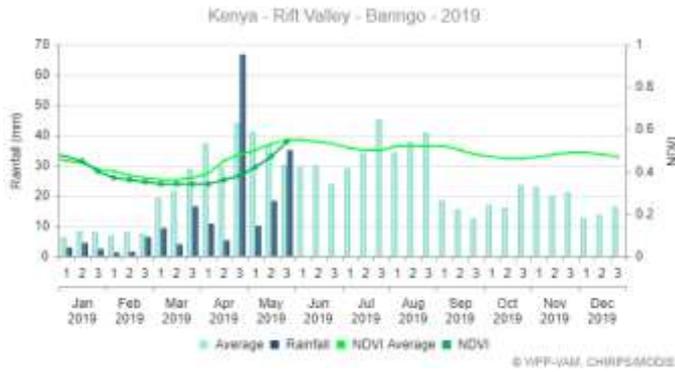


Fig. 1

- Both temporal and spatial distribution was poor across all the sub-counties.
- The current NDVI was also below the LTA.

- During the month of May, 9.9mm, 18.1mm and 34.9mm of rainfall was received in the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> dekad respectively.
- The amounts received in the 1<sup>st</sup> and 2<sup>nd</sup> dekad were below the LTA while the rainfall received in the 3<sup>rd</sup> dekad was above the LTA.

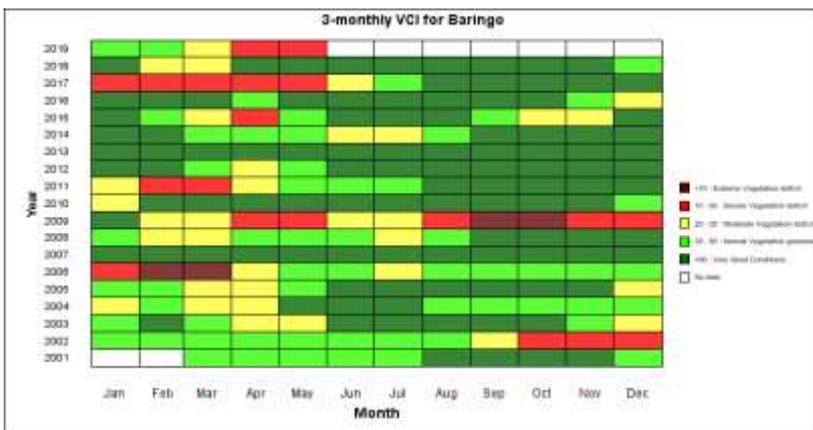
# 2. IMPACTS ON VEGETATION AND WATER

## 2.1.1 VEGETATION CONDITION INDEX (VCI)

The vegetation condition in the County was below normal and on worsening trend compared to the month of April 2019 as shown in the table below.

COUNTY	Sub County	VCI as at 29 <sup>th</sup> April 2019	VCI as at 29 <sup>th</sup> May 2019	
BARINGO	County	19.39	13.46	Below normal vegetation conditions experienced in Baringo county compared to last month. All sub-counties are experiencing depletion in vegetation cover as indicated in the table.
	Central	22.65	13.38	
	Eldama	18.45	11.44	
	Mogotio	12.97	5.4	
	North	17.19	12.43	
	South	22.7	14.53	
	Tiaty	20.44	16.12	

Table.1. Source BOKU



The vegetation condition index for Baringo County was at 13.46 indicating below normal vegetation greenness as compared to the LTA. In comparison to the previous month the current vegetation cover has reduced in quantity and quality. This attributed to the on the current drought.

Fig.2

The vegetation condition is on a worsening trend throughout the county due to the continued dry weather conditions, the situation is expected to worsen given the failed long rains.

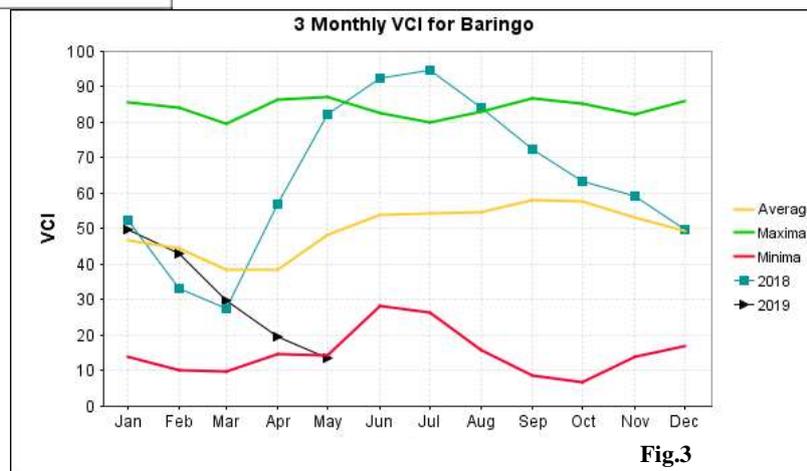


Fig.3

## 2.1.2 Pasture

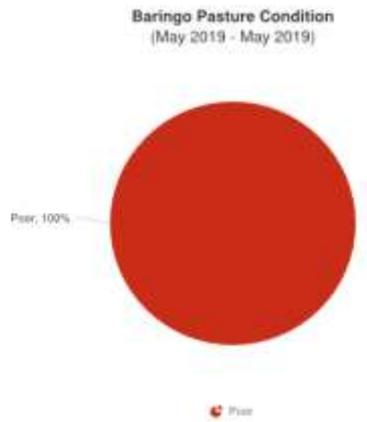


Fig.4

- The pasture condition is poor both in quantity and quality in all the livelihood zones; these conditions are below normal at this time of the year.
- The pasture is expected to last for less than one month across all livelihood zones.

## 2.1.3 Browse

- The browse condition is fair to poor in quantity and quality across all livelihood zones; the condition is below the normal seasonal ranges for this time of the year.
- The available browse is expected to last for approximately less than one month in pastoral and agro pastoral livelihood Zones and one month in irrigated cropping livelihood zone.

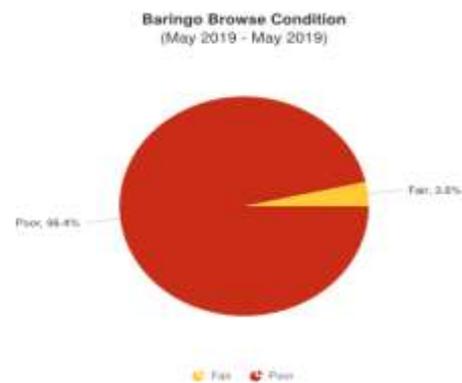


Fig.5

## 2.2 WATER RESOURCE

### 2.2.1 Sources

- The main water sources for both livestock and human consumption across all livelihoods were boreholes, traditional river wells and rivers.
- Most water pans and dams were at 5% to 10% of their full capacity. Households are mainly depending on boreholes for water with a number already having dried up.
- Pumping and waiting time at the boreholes has increased in all livelihood zones.
- Water quality and quantity across pastoral and agro-pastoral livelihoods is poor, which is abnormal for this time of the year.
- The current water sources are expected to last for one month in irrigated farming livelihood zone. In pastoral and agro pastoral livelihood zones, the water is likely to last for less than one month due to congestion at source high temperatures and strong winds being experienced.

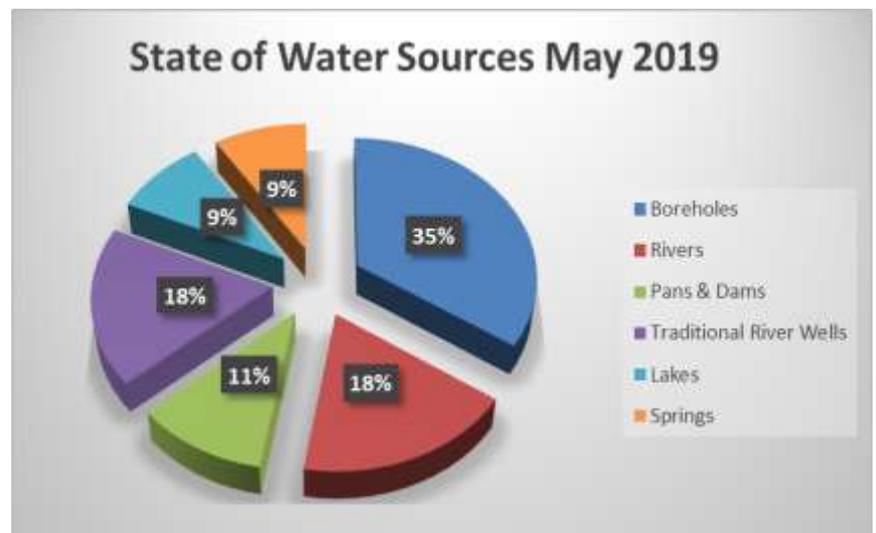


Fig.6

## 1.3.2 Household access and Utilization

- The average household trekking distance to water sources increased slightly from 8.5km to 8.6km in comparison to the previous month.
- The distances have doubled as compared to the LTA.
- Irrigated cropping zone recorded the least average distance of 3km while pastoral livelihood recorded the highest average of 14km in Kollowa and Ng'oron.

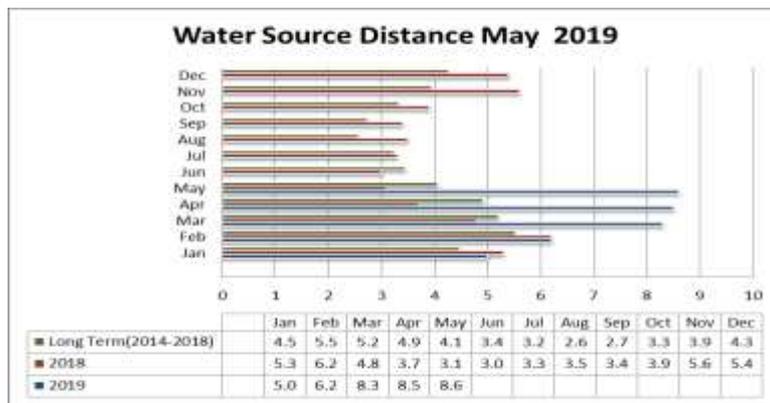


Fig.7

- The increase in distances is attributed to drying up of 95% of the water pans and other open water sources in all livelihood zones.

### 2.2.3 Livestock access

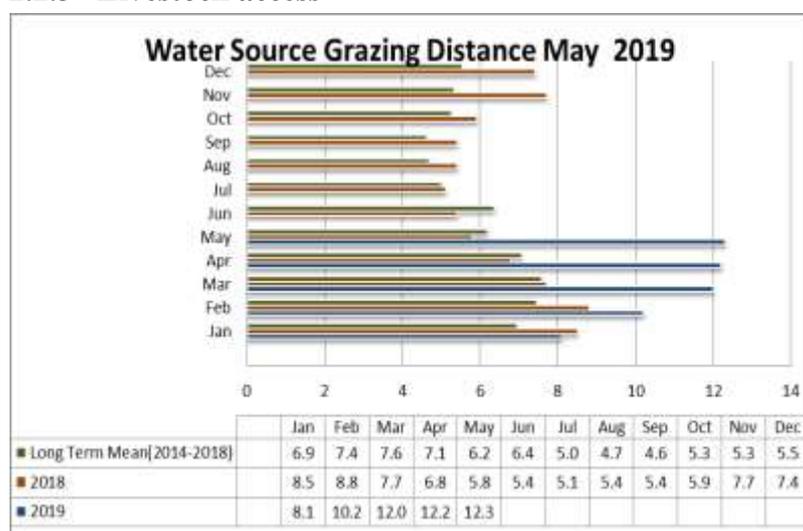


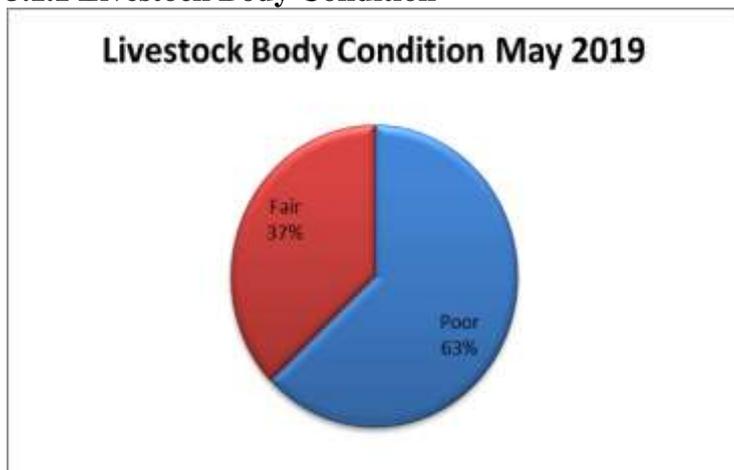
Fig.8

- The return distance for livestock from grazing zones to water points increased from 12.2km to 12.3km recorded the previous month. The pastoral livelihood zone covered the longest average distance of 15km while irrigated livelihood zone covered the shortest average distance of 7km.
- The situation is attributed to dwindling pastures and water at the traditional grazing zones across all livelihood zones forcing herders to move further in search of the pasture.

## 3.0.0 PRODUCTION INDICATORS

### 3.1 Livestock Production

#### 3.1.1 Livestock Body Condition



- During the month 63% of households interviewed reported poor livestock body condition with 37% indicating fair.
- As occasioned by dwindling pasture and water access across livelihood zones.
- The situation is likely to worsen given the current drought.

Fig.9

#### 3.1.2 Livestock Diseases

- Foot and Mouth and CPPR were reported in Agro-pastoral and mixed farming livelihood zones of Mochongoi in Baringo South and Baringo North sub-counties. The livestock departed is currently carrying out vaccinations against these diseases.

#### 3.1.3 Milk Production

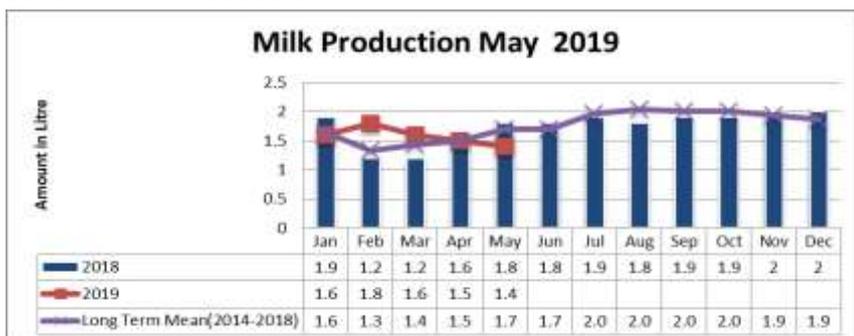


Fig.10

- The average milk produced per household per day was 1.4 litres a reduction as compared to the previous month.
- The amount is below long-term average by 17%.
- The milk was mainly from camels and Goats.

### RAIN FED CROP PRODUCTION.

#### 3.2.1 Stage and Condition of food Crops

- Most farmers have not planted their farms as they are still waiting the onset of the long rains season. The few who planted their crops failed to germinate due to low soil moisture. The acreage under both rain fed and irrigated agriculture is anticipated to reduce by over 50% in the current cropping season.

### 4.0.0 MARKET PERFORMANCE

## 4.1.0 LIVESTOCK MARKETING

### 4.1.1 Cattle Prices

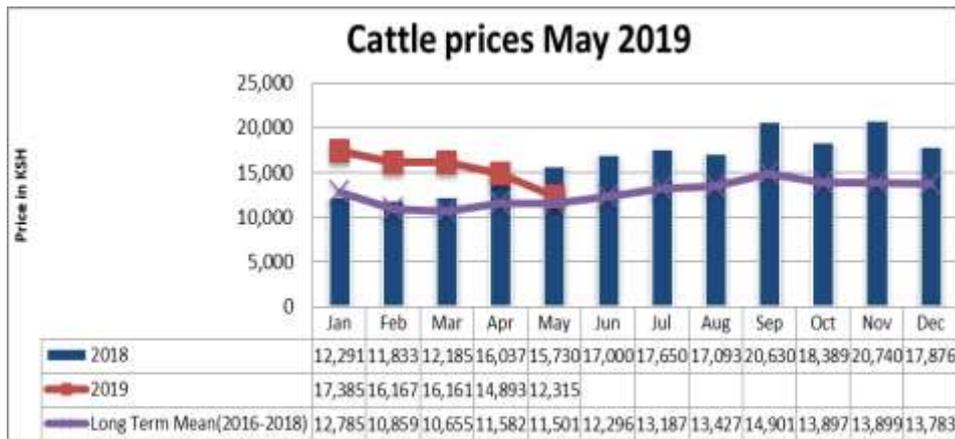


Fig.11

- The average price for medium-sized cattle was at Ksh. 12,315 a reduction of 17% as compared to the previous month.
- The price was slightly above the long-term average by 7%.
- Irrigated livelihood zones had the highest average prices of Ksh.17, 208 while Pastoral livelihood zone recorded the least average price of Ksh.7,000.
- The decline in prices was attributed to declined livestock body condition and panic sale across all livelihood zones.

### 4.1.2 Goat Price



Fig.12

- The reduction in prices was due to farmers increased sales in exchange for cereal and pulses purchase in the local markets
- The average price of a medium size goat decreased marginally by 6 percent from Ksh. 2, 477 to Ksh. 2,313 as compared to the previous month but below that for same month in 2018.
- The average price of a goat was above the LTA by 4 percent.
- The prices were highest in irrigated cropping livelihood Zone at Ksh. 2,975 and lowest in Pastoral livelihood zone at Ksh.1, 667.

## 4.2.0. CROP PRICES

### 4.2.1 Maize

- The average price for kilogram maize was Ksh.52 during the reporting period that is 18% increase of as compared to the previous month.
- The price was relatively comparable to the long-term average at this time of the year
- Pastoral livelihood Zone recorded the highest price of Ksh.65 per Kg while irrigated Livelihood Zone recorded the lowest of Ksh.38 per Kg.



Fig.13

- This can be attributed to declining stocks at household levels and at local retailers.

### 4.2.2 Posho (Maize Meal)

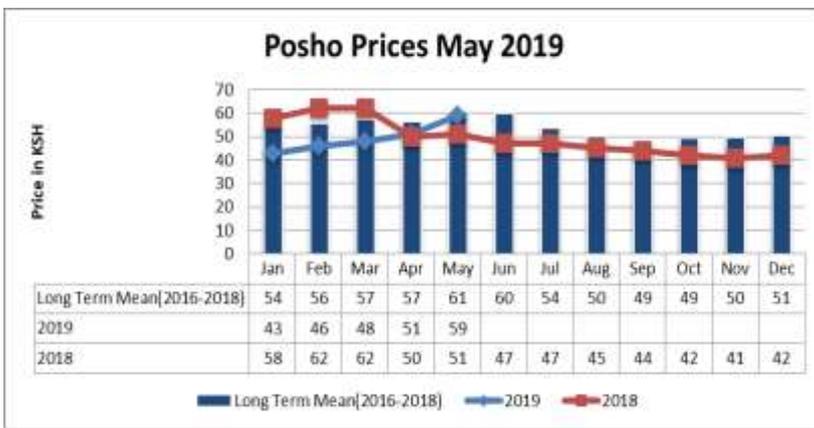


Fig.14

- The price of a kilogram of Posho was at Ksh.59, an increase as compared to the previous month at Ksh.51.
- The price was below the long-term average for the month by 3%.
- These increased prices are attributed appreciating maize prices and diminishing stocks at household level and those held by the retailers.

### 4.2.3 Beans Prices

- The average price per kilogram for beans was at Ksh.117 compared to Ksh. 105 the previous month; the increase in prices was attributed to the scarcity of the commodity across livelihood zones.
- The current prices are above the long-term average by 4 percent.
- Pastoral Livelihood Zone recorded the highest prices of Ksh.160 while the irrigated recorded the least prices of Ksh.90

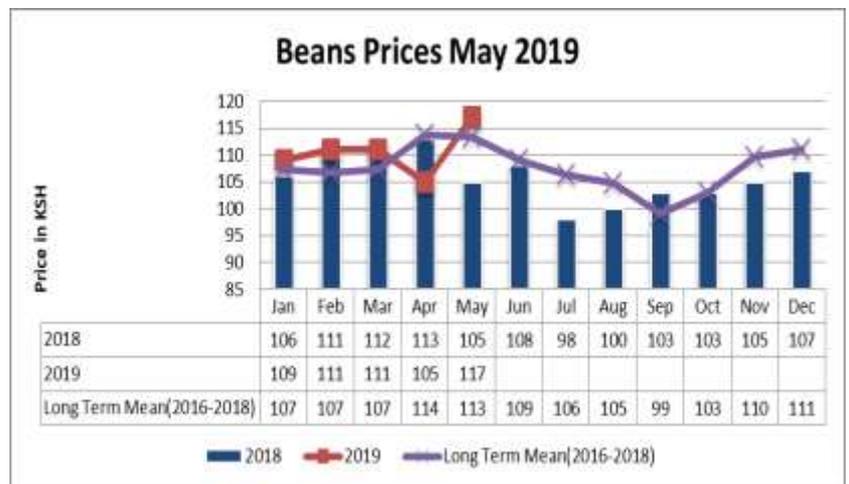


Fig.15

### 4.3 Livestock Price Ratio/Terms of Trade

- The terms of trade decreased by 9 percent from 48.9 the previous month to 44.6 currently; this was attributed to decrease in the livestock prices and increase in maize prices.
- The current terms of trade are below the long-term average by 5percent.
- Irrigated cropping livelihood zone had the highest terms of trade of 72 while pastoral livelihood Zone had the lowest at 43.2

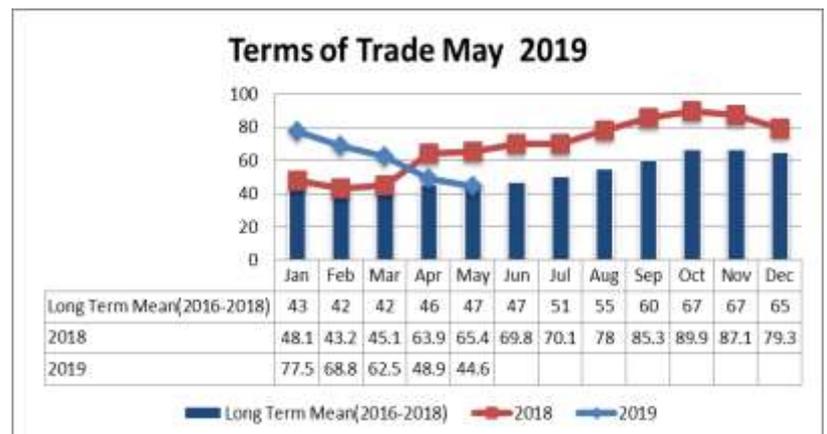


Fig.16

## 5.0.0 FOOD CONSUMPTION AND NUTRITION STATUS

## 5.1 Milk Consumption

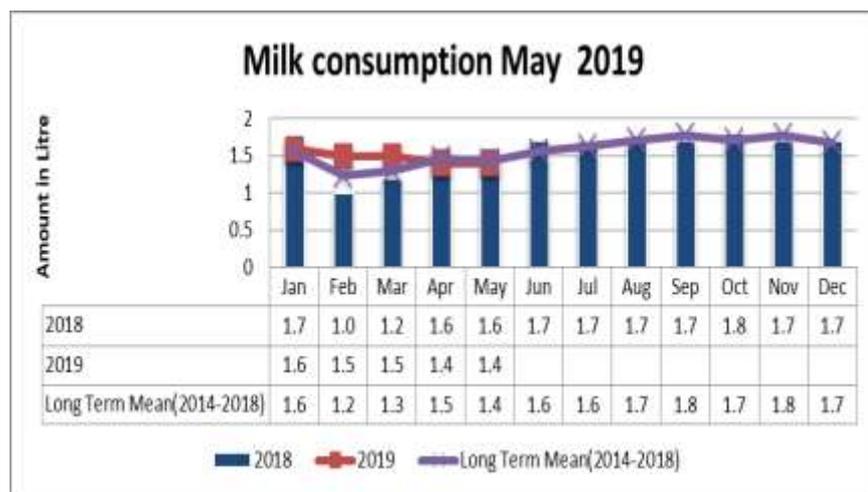


Fig.17

- The average milk consumption per household per day steady at 1.4 litres. The milk consumption was highest in the irrigated livelihood zone at 1.8 litres. While 1.3 litres and 1 litre in the Pastoral and Agro Pastoral livelihood Zones respectively.
- The amount consumed was similar to the long-term mean.

## 5.2 Food Consumption Score

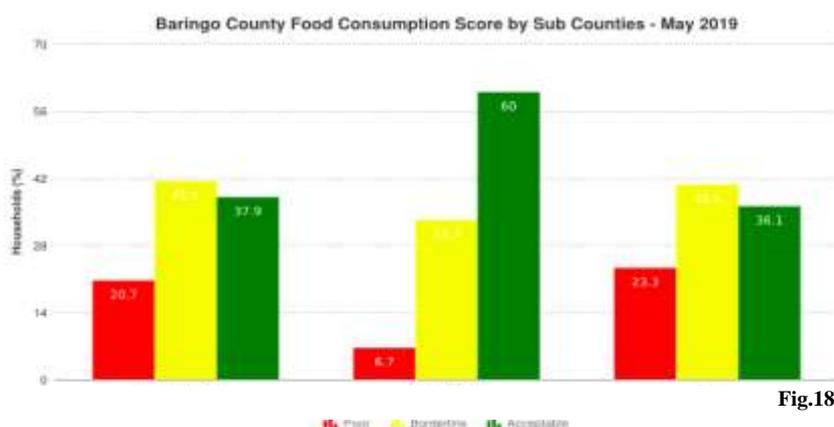


Fig.18

- There were households with poor food consumption gaps across all livelihoods.
- The proportion of households with borderline food consumption was 41.4%, 40.6% and 33.3% in Agro-pastoral, Pastoral and irrigated Livelihood Zones respectively.
- The current FCS has declined as compared to the previous month.
- A proportion of 19%, 39% and 42% of the households across the livelihoods have poor, borderline and acceptable food consumption score respectively.

borderline and acceptable food consumption score respectively.

- Food security situation across all livelihood zones has deteriorated; however the situation is expected to worsen due to the on-going drought across the county, decreased purchasing power and decrease of foodstuffs in the local markets.

## 5.3 Health and Nutrition Status

- The proportion of sampled children under five years of age at risk of malnutrition was at 19.3%, an increase as compared to the previous month, the increase is attributed to decrease of milk production and consumption and reduction in the number of food groups consumed at household level together with declining households' purchasing power across livelihoods.
- Kapenguria, Komolion and Ribko, wards in the pastoral livelihood zones recorded highest levels of malnutrition at 42.4%, 32.4% and 31.7% respectively.

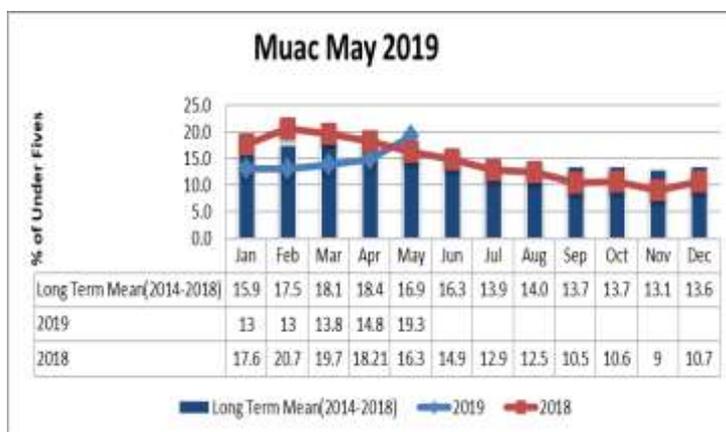


Fig.19

### 5.3.2 Health

- During the reporting period the commonly reported illnesses were diarrhoea, malaria and respiratory infections across livelihood zones. This was due to poor water quality and quantity and dust occasioned by strong winds.
- No major human disease outbreaks were reported during the month of May.

## 5.4.0 COPING STRATEGIES

### Coping Strategy Index

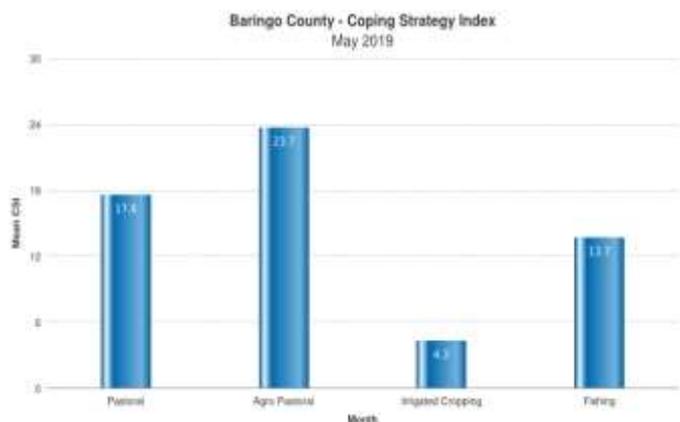


Fig.20

- The average coping strategy index increased from 15.9 to 16.3 compared to last month.
- Households in Agro-Pastoral livelihood zone employed most coping strategies at 23.7 followed by Pastoral at 17.6. The irrigated zones employed least coping mechanisms at 4.3.
- This trend is attributed to increasing food prices in the pastoral and Agro pastoral livelihood zones.

## 6.0 CURRENT INTERVENTION MEASURES.

### 6.1 Non-food interventions

- a) SFSP (Sustainable Food Systems Program targeting of vulnerable households for social protection support supported by GoK and WFP.) Targeting and beneficiary registered 4500HHs as follows:
- Tiaty sub county- 1915HHs
  - Mogotio Sub county- 554HHs
  - B. South Subcounty - 532HHs
  - Central SubCounty- 419HHs
  - North Subcounty- 1080HHs

Electronic Registration of tier 1 beneficiary attained 99.6% among the projects for implementation during the first year are; Pasture establishment, Provision of water through water pan and sinking of boreholes and farm ponds equipping.

### 6.2 Food interventions

- a) Food aid in all livelihood Zones by GOK/KRC. A total of 4,660 household were reached; Maize- 88,248Kgs (88.2 MT), Beans- 38,000Kgs ( 38.0 MT) and Cooking Oil- 540liters (20pcs@20l, 14pcs@10L)
- b) Water trucking to institutions and health facilities by NDMA/BCG

## 7.0 Emerging Issues

### 7.1 Insecurity/Conflict/Human Displacement

	Wild Animal	Areas Reported	Livestock
1.	Baboons	Ribko, Akoret, Kolloa, Ng'oron	Shoats
2.	Lynx	Akoret, Ribko, Kolloa	Shoats
3.	Hyena	Ribko, Akoret, Komolion	Shoats

- There were no major insecurity incidences in county though still there are tensions along the borders.
- Human-wildlife conflicts where a number of livestock were killed as highlighted in the Table 1

Table 1.

## 7.2 Migration

- There have been cases intra-county livestock migrations reported during the month of May especially within the Pastoral and agro-pastoral livelihood zones.
- The livestock migration routes currently are:-
  - Kolloa-tioko-kasarani- mallaso
  - Amaya/Churo towards Samburu and Laikipia
  - Saimo soi-Arabal-Rugus
  - Barwessa-Kerio river zones
  - Yatya-Sibilo-Barketiew hills
- Migrations of people were reported in Kollowa and Ng'oron areas towards the neighbouring county of west Pokot.

## 7.3 FOOD SECURITY PROGNOSIS

Dwindling forage and browse, drying up of water sources has resulted in increased water access distance for both livestock and households in most parts of the county particularly, the pastoral and Agro-pastoral posing serious threat to the livestock sector. This situation coupled with declining livestock body condition and milk availability has resulted into increasing malnutrition among the under-fives, declining livestock market prices and Household purchasing power that will likely affect the overall County food and nutrition security across Livelihoods. This situation will be made worse following the failed long rains season in the County.

The current situation will require urgent multi-sector response strategies and resource mobilization and allocation more proactive response mechanisms from the Baringo County government drawing from the County emergency fund with focus on overall health and nutrition integrated outreaches, WASH through provision of clean portable water and water treatment chemicals to schools and households, provision of livestock feeds and accelerated commercial off-take with a high likelihood of initiating slaughter off take in the coming months

The on-going relief food provision operations and all other safety net initiatives should be scaled up and sustained across the vulnerable households in the hotspot livelihoods to ensure the County guarantees the safety of all lives and livelihoods.

On the over the lowlands of Tiaty, Baringo south and north and Mogotio are experiencing Severe to Extreme agricultural drought that demand for IMMEDIATE and Very URGENT response ACTION.

## 8.0 RECOMMENDATIONS

### 8.1.1. General Recommendations:

- Strengthening drought status CSG surveillance and reporting for inform timely resource mobilization, response, monitoring and reporting. Regular Sub- County drought monitoring and reporting meetings with emphasis on the nature of on-going interventions partnerships and resources gaps.

### 8.2.0 Proposed Recommendations

#### 8.2.1. Water Sector

- Mechanized Desilting and expansion of 24 No. Critical water pans during this dry period.
- Scale up water trucking to schools and health institutions and provision of Water treatment Chemicals to forestall closures.
- Provision of fuel/diesel subsidy to community high yielding boreholes.
- Repair and servicing of the existing water bowsers
- Allocation of resources to the rapid response teams to address the current water crisis in the County.
- Repair of broken down water supply systems and critical boreholes to ensure normalcy.

#### 8.2.2. Nutrition and Health

- Stepping up of Vitamin A Supplementation
- Scale up mass screening in Baringo North, Tiaty and Baringo South and Mogotio.
- Intensify Nutrition Surveillance and service provision in the hard to reach areas to support case findings through nutrition and health outreaches through partnership with stakeholders

### 8.2.3. Education

- Provision of School meals programme to the ECDEs to reduce pressure on the regular school meals programme in primary schools.

### 8.2.4. Livestock and Veterinary sector.

- Disease surveillance and vaccination over notifiable diseases to ensure normal livestock market operations.
- Provision of livestock Concentrate feeds to the vulnerable herds in the hotspots.
- Purchase and distribution of livestock feeds to areas experiencing acute pasture shortage especially in Tiaty, Baringo North, South and Mogotio Sub-counties.
- Promotion of accelerated commercial livestock off-take

### 8.2.5. Agriculture Sector

- Pre- positioning of farm inputs provision to support households in the irrigated livelihood zones.
- Dissemination of live messages to communities on post harvest management strategies.

## REFERENCE TABLES

**Table 3: Drought Phase Classification**

Normal	Alert	Alarm	Emergency
All environmental Agricultural and pastoral indicators are within the seasonal ranges	Meteorological drought indicators move outside seasonal ranges	Environmental and at least two 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 signaled by the environmental indicators returning to seasonal norms; local economies starting to recover			

**Table 4: 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 5: 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 6: Livestock Body Condition**

Level	Classification	Characteristics (this describes majority of the herd and not individual isolated Stock)
1	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

2	Moderate	Moderate. Neither fat nor thin
3	Stressed	Borderline fore-ribs not visible. 12th & 13th ribs visible
4	Critical	Thin fore ribs visible
5	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, and 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 signaled 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.