

National Drought Management Authority Baringo County Drought Early Warning Bulletin for August 2019



A Vision 2030 Flagship Project



AUGUST EW PHASE	Early Warning Phase Classification			
Drought Status: NORMAL Shinghuli ka ikwataha	LIVELIHOOD ZONE	EW PHASE	TRENDS	
<p>Drought Situation & EW Phase Classification Drought Phase: Alarm-Worsening</p> <p>Biophysical Indicators</p> <ul style="list-style-type: none"> Most biophysical indicators are within the expected seasonal ranges. Above average rainfall was received in the month of August 2019. The Vegetation Condition Index values for Baringo County are above normal and on an improving trend compared to the last month. The Water levels in most water sources are normal at (70%-90%). <p>Socio Economic Indicators (Impact Indicators)</p> <p>Production indicators:</p> <ul style="list-style-type: none"> The forage condition is fair to good in both quality and quantity and expected to improve with the on-going rains. Livestock body condition is fair to good in all livelihood zones. Milk production is below the normal seasonal range and on an increasing trend. No Drought related Livestock deaths reported in all Livelihood zones. <p>Access indicators</p> <ul style="list-style-type: none"> Terms of trade are currently below normal seasonal ranges and improving due to improving livestock body conditions. Distances to water sources for households currently are within normal seasonal ranges and on a declining trend due to recharge of most of surface water sources. <p>Utilization indicators:</p> <ul style="list-style-type: none"> The number of under-five children at risk of malnutrition was 18%, a decrease as compared 20.02% in the previous month. Copping strategy index for households is still within normal ranges. 	PASTORAL	NORMAL	IMPROVING	
	AGRO PASTORAL	NORMAL	IMPROVING	
	IRRIGATED CROP	NORMAL	IMPROVING	
	COUNTY	NORMAL	IMPROVING	
	Biophysical Indicators	Value for the month Baringo	LTA-Monthly Baringo	Normal ranges Kenya %
	Average rainfall MM (%)		110.2	80-120
	VCI-3month	84.21	54	35-50
	% Of water in the water pan	70%-90%		50-60
		Production indicators	Value	Normal ranges
		Livestock Migration Pattern	Normal	Normal
		Livestock Body Condition	4-5	3-4
		Milk Production (Ltr /HH/Month)	1.5	1.8
		Livestock deaths (for drought)	No deaths	No death
		Access Indicators	Value	Normal ranges
		Terms of Trade (ToT)	52	>63
	Milk Consumption (Ltr)	1.4	>=1.7	
	Water for Households-trekking distance (km)	3.6	0-4	
	Crops area planted for the season (%) (by July 2018)	3,000(Maize) 2,500(Beans)	LTA (40,046Ha) LTA (20,028Ha)	
	Utilization indicators	Value	Normal ranges	
	At Risk (%)	18%	<15	
	CSI	14.13	>19.0	

<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

1.2 AMOUNT OF RAINFALL AND SPATIAL DISTRIBUTION

- During the month of August, 36.8mm of rainfall was received in the 1st dekad.
- The amounts received were slightly below LTA.
- Both temporal and spatial distribution was good across all the sub-counties.
- The current NDVI was also above the LTA.

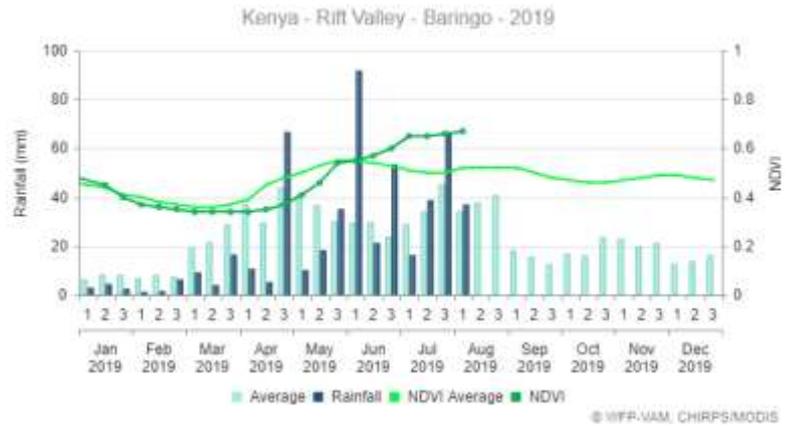


Fig. 1. Rainfall performance

2. IMPACTS ON VEGETATION AND WATER

2.1.1 VEGETATION CONDITION INDEX (VCI)

The vegetation condition in the County was above normal and improving compared to the previous month as shown in the table below.

COUNTY	Sub County	VCI as at 29 th July 2019	VCI as at 29 th August 2019	
BARINGO	County	56.01	84.21	The county is in above normal vegetation greenness with all its sub counties in normal to above normal vegetation greenness. The county experienced offseason showers from June that has improved the vegetation condition for the county from severe vegetation deficit to above normal vegetation condition.
	Central	39.37	72.3	
	Eldama	40.87	74.64	
	Mogotio	64.39	88.07	
	North	48.02	76.57	
	South	58.92	85.66	
	Tiaty	61.30	89.28	

Table.1. Source BOKU



Fig 2. VCI

The vegetation condition is on an improving trend and expected to improve more throughout the county due to the on-going rains.

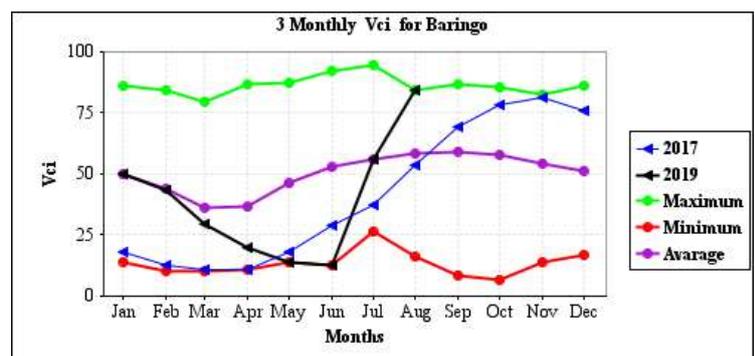


Fig.3.VCI trend

2.1.2 Pasture

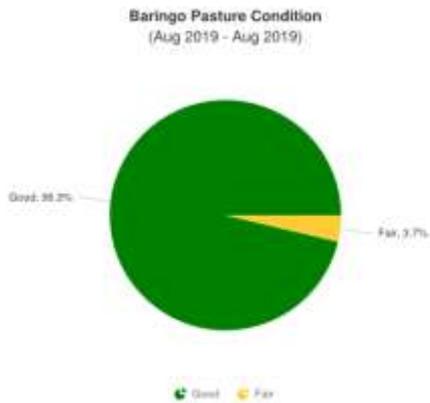


Fig.4.Pasture Condition

- The pasture condition is good both in quantity and quality in irrigated livelihood Zone. While fair to good in Agro Pastoral and Pastoral livelihood zones; these conditions are below normal at this time of the year.
- The pasture is expected to last for three to four months across all livelihood zones.

2.1.3 Browse

- The browse condition is good in quantity and quality across all livelihood zones; the condition is normal as compared to seasonal ranges for this time of the year.
- The available browse is expected to last for four to six months in pastoral and agro pastoral livelihood Zones and six months in irrigated cropping livelihood zone.

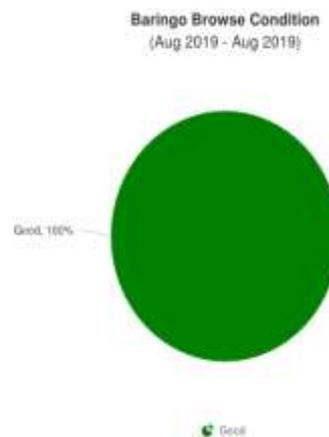


Fig.5. Browse Condition

2.2 WATER RESOURCE

2.2.1 Sources

- The main water sources for both livestock and human consumption across all livelihoods were Rivers, traditional river wells and water pans.
- Most water pans and dams were at 80% to 90% of their full capacity.
- Water quality and quantity across pastoral and agro-pastoral livelihoods is good, which is normal for this time of the year.
- The current water sources are expected to last for six months in irrigated farming livelihood zone.
- In pastoral and agro pastoral livelihood zones, the water is likely to last for three to four months due to rains being experienced.

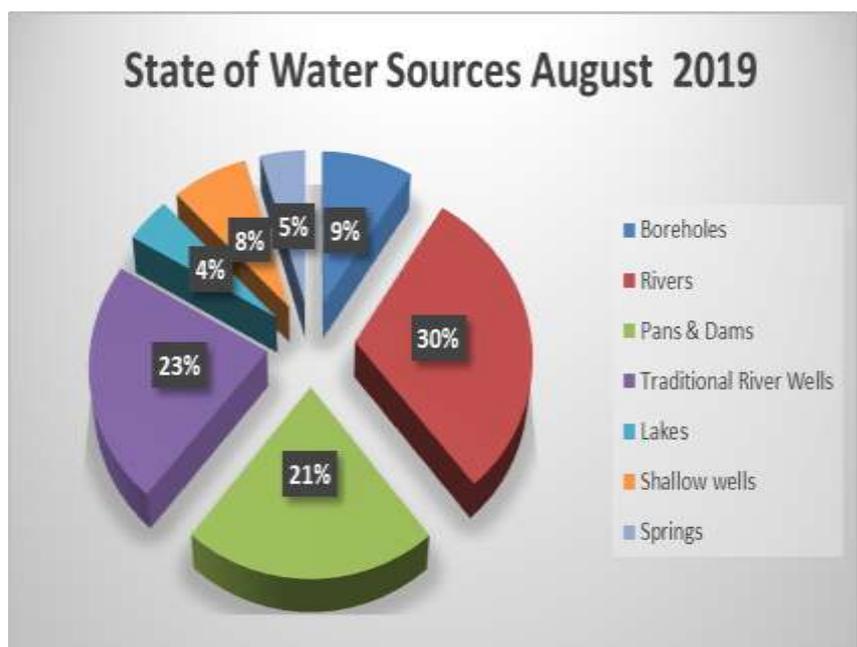


Fig.6 State of water Sources

1.3.2 Household access and Utilization

- The average household trekking distance to water sources reduced by 30% from 5.3km to 3.6Km in comparison to the previous month.
- The distances are above the LTA by 38 %.
- Irrigated cropping zone recorded the least average distance of 1.7km while Agro pastoral livelihood recorded the highest average of 5.3km.
- The decrease in distances is attributed to recharge of water sources across all livelihoods.

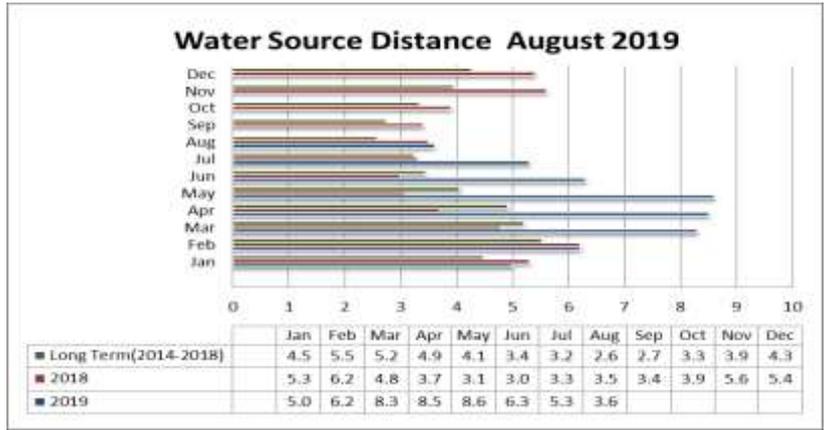


Fig.7. Water Source Trekking Distances

2.2.3 Livestock access

- The return distance for livestock from grazing zones to water points reduced from 7.3Km to 6.4Km as recorded from the previous month. The pastoral livelihood zone covered the longest average distance of 7.7km while irrigated livelihood zone covered the shortest average distance of 1.7km.
- The situation is attributed to regenerating pastures and water availability at the traditional grazing zones across all livelihood zones forcing herders to move back.

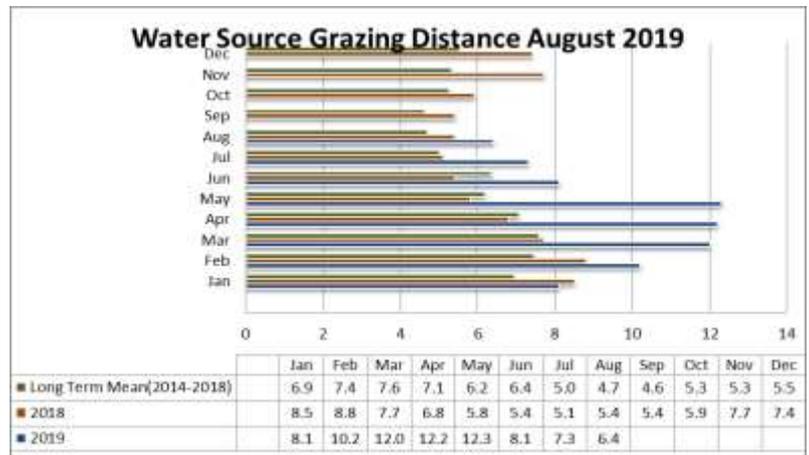


Fig.8. Water Source Grazing Distance

3.0.0 PRODUCTION INDICATORS

3.1 Livestock Production

3.1.1 Livestock Body Condition

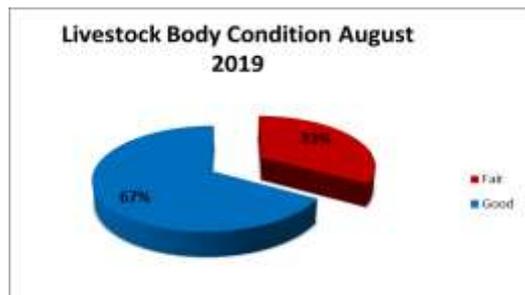


Fig.9. Livestock body condition

- During the month 11% of interviewed households reported poor livestock body condition with 59% indicating fair and 30% reporting good.
- As occasioned by regeneration of pasture and recharge water sources across livelihood zones.
- The situation is likely to improve given the current rains.

3.1.2 Livestock Diseases

- CCPP and CPPR were reported in all livelihoods; the livestock department is currently carrying out vaccinations against these diseases. There were no major livestock disease outbreaks in the county during the month.

3.1.3 Milk Production

- The average milk produced per household per day was stable at 1.5 litres compared to the previous month.
- The amount is below long-term average by 25 percent.
- The milk was mainly from camels and cows.
- Irrigated livelihood zone had an average of 2.3 litres while agro pastoral had the least at 0.7 litres.

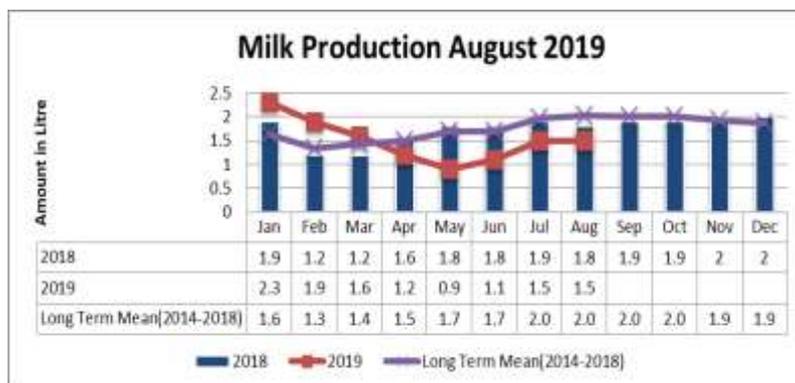


Fig.10. Milk Production

RAIN FED CROP PRODUCTION.

3.2.1 Stage and Condition of food Crops

- Currently the maize is at tussling stage; while the cowpeas, beans and green grams are being harvested. The acreage under both rain fed and irrigated agriculture is anticipated to reduce in the current cropping season as compared to the long-term average.

4.0.0 MARKET PERFORMANCE

4.1.0 LIVESTOCK MARKETING

4.1.1 Cattle Prices

- The average price for medium-sized cattle was at Ksh. 16,000 an increase of 9 percent as compared to the previous month at Ksh. 14,731.
- The price was above the long-term average by 19 percent.
- Irrigated livelihood zones had the highest average prices of Ksh.24,000 while Pastoral livelihood zone recorded the least average price of Ksh.13,833.
- The increase in prices was attributed to improving livestock body condition across all livelihood zones.

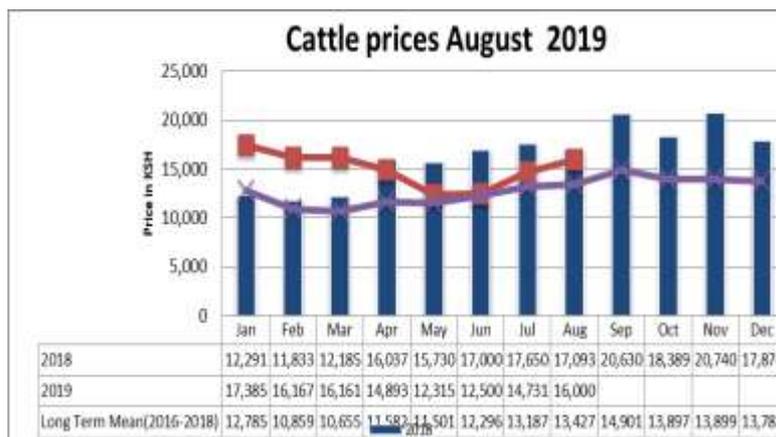


Fig.11. Cattle

4.1.2 Goat Prices



Fig.12. Goat Prices

- The average price of a medium size goat increased by 10 percent at Ksh.2,839 as compared to the previous month at Ksh. 2,564.
- The average price of a goat was above the LTA by 16 percent.
- The prices were highest in irrigated cropping livelihood Zone at Ksh. 3,433 and lowest in Pastoral livelihood zone at Ksh.2,636.
- The better prices were as a result of improved livestock body conditions.

4.2.0. CROP PRICES

4.2.1 Maize

- The current average price for a kilogram maize was stable at Ksh.55 as compared to the previous month at Ksh.56.
- The price was above the long-term average at this time of the year by 22 percent.
- Pastoral livelihood Zone recorded the highest price of Ksh.57 per Kg while irrigated Livelihood Zone recorded the lowest of Ksh.40 per Kg.
- This can be attributed to declining stocks at household levels and at local retailers.

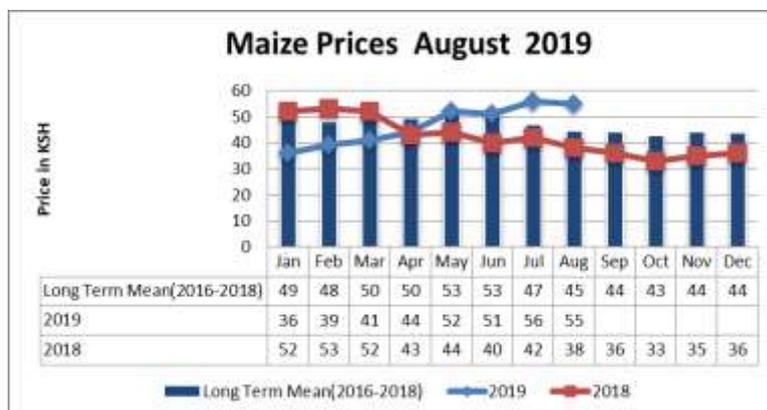


Fig.13. Maize Prices

4.2.2 Posho (Maize Meal)



- The price per a kilogram of Posho was at Ksh.61, a slight decrease as compared to the previous month.
- The price was above the long-term average for the month by 18%.
- These prices are attributed appreciating maize prices and diminishing stocks at household level and those held by the retailers

Fig.14.posho prices

4.2.3 Beans Prices

- The average price per kilogram for beans decreased by 10 percent from Ksh.139 to currently Ksh. 126.
- The price was attributed to the scarcity of the commodity across livelihood zones.
- The current prices are above the long-term average by 20 percent.
- Pastoral Livelihood Zone recorded the highest average prices of Ksh.137 while the irrigated recorded the least prices of Ksh.100.

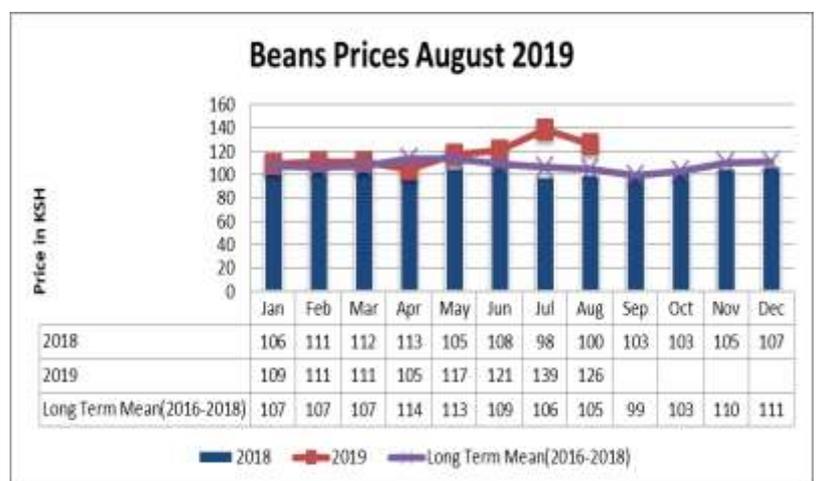


Fig.15. Beans Prices

4.3.0 Livestock Price Ratio/Terms of Trade



Fig.16. Terms of Trade

- The terms of trade were at 52 a slight increase as compared to the previous month at 46 this was attributed increase in the livestock prices.
- The current terms of trade are below the long-term average by 5 percent.
- Irrigated cropping livelihood zone had the highest terms of trade of 68.9 while Agro pastoral livelihood Zone had the lowest at 43.8.

5.0.0 FOOD CONSUMPTION AND NUTRITION STATUS

5.1 Milk Consumption

- The average milk consumption per household per day was at 1.4 litres.
- The milk consumption was highest in the Irrigated Livelihood zone at 2.3 and lowest in the Agro Pastoral livelihood zone at 0.2 litres.
- The amount consumed was below the long-term mean by 17%.

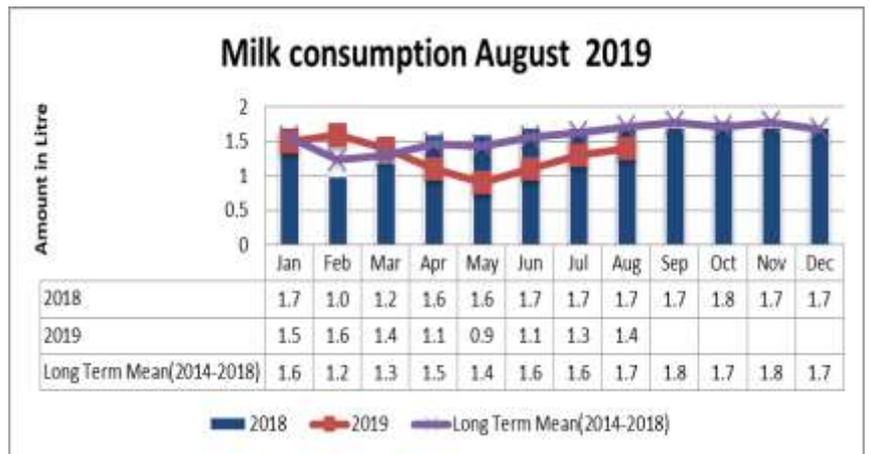


Fig.17. Milk Consumption

5.2 Food Consumption Score

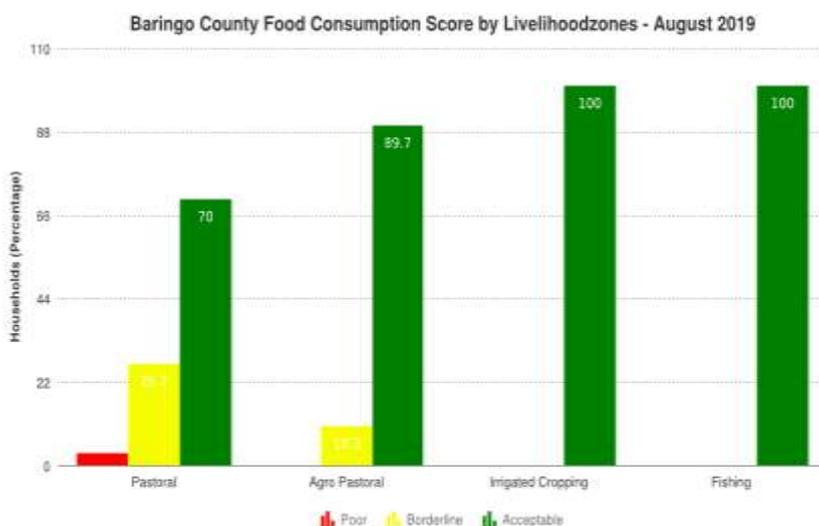


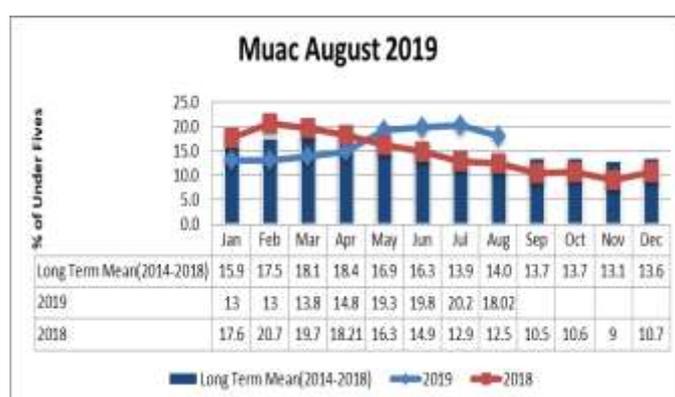
Fig. 18. Food Consumption Score

- There were households with poor food consumption gaps only in the Pastoral Livelihood Zone.
- The proportion of households with borderline food consumption was 26.7% and 10.3% in pastoral and Agro Pastoral Livelihood Zones.
- The current FCS has improved as compared to the previous month.
- A proportion of 2%, 19% and 79% of the households across the livelihoods have poor, borderline and acceptable food consumption score respectively.

- Food security situation across all livelihood zones has improved as compared to the previous month; this is attributed to availability of leafy vegetables and increase in purchasing power across all livelihood zones. The situation is expected improve due to the on-going rains across the county thus increase in availability of vegetables.

5.3.1 Health and Nutrition Status

- The proportion of sampled children under five years of age at risk of malnutrition was at 18%, a decrease as compared to the previous month, the situation is attributed to increase in milk production and consumption at household level together with improved households' purchasing power across livelihoods.
- Komolion, Kapenguria and



Kolowa wards in the pastoral livelihood zones recorded highest levels of malnutrition at 33%, 30% and 27.1% respectively.

5.3.2 Health

- During the reporting period, the commonly reported illnesses were diarrhoea across livelihood zones and major malaria outbreak in Tiaty Sub County. This was due to poor hygiene practices at Household Level.
- No other major human disease outbreaks were reported during the month.

5.4.0 COPING STRATEGIES

Coping Strategy Index

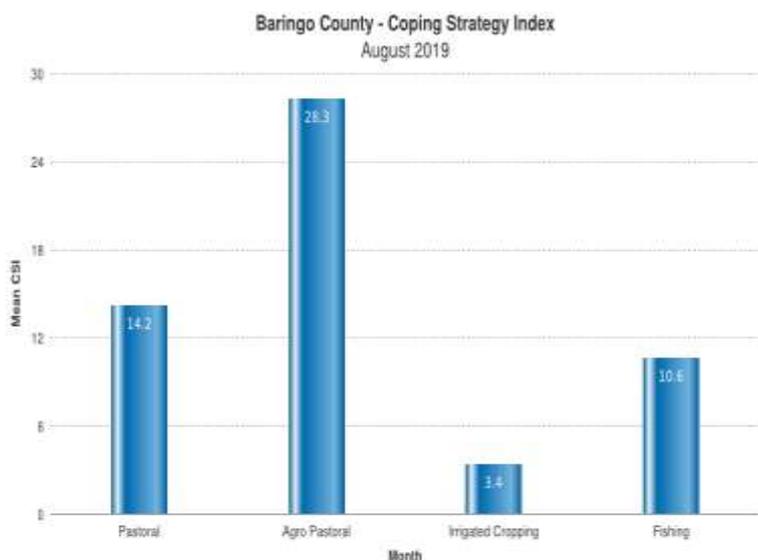


Fig.20. Coping Strategy Index

- The average coping strategy index decreased marginally at 14.13 as compared to last month at 14.35.
- Households in Agro-Pastoral livelihood zone employed most coping strategies at 28.3 followed by Pastoral at 14.2. The irrigated zones employed least coping mechanisms at 3.4.
- The high coping strategies in the Agro Pastoral livelihood zone was due to increased tensions in the area that has disrupted households' economic activities.

6.0 CURRENT INTERVENTION MEASURES

6.1 NON-FOOD INTERVENTIONS

National Drought Management Authority

- Monitoring and evaluation of drought response water storage prepositioning tanks.
- Commissioning of Plesian drought preparedness project for the Plesian center of excellence at Plesian primary school.
- Organized for coordination meetings and monitoring of drought situation in the county
- Coordination and support to the food security assessment exercise and performance of the long rain and its impact on general food security situation in the county
- Support to the multi-sector long rains food security assessment. Leah and Osman to provide information

Baringo County Government

- SFSP (Sustainable Food Systems Program, finalized the mop up exercise for beneficiary Registration and community sensitization of the SFSP rollout to various targeted areas in preparation for project implementation
- Purchase and installation of 10,000liters capacity plastic water tanks complete with concrete slab and roof water harvesting in 6 schools, 1 community borehole and a police post with support from Fin Church Aid
- Routine operation and maintenance for community boreholes and intakes
- Limited water trucking targeting institutions
- Routine disease surveillance for both human and livestock Get data from Kangogo

Regional Pastoral Livelihood Resilience Project

- Support to livestock vaccination program against FMD & PPR (100,000 doses for FMD, 750,000 doses for PPR)
- Distributed of poultry incubators to six pastoral field schools'/pasture production groups for Income Generation Activities (Kamar, Mugurin, Salabani, Kipcherere, Lelmen & Kapkalelwa)

Anglican Development Service (ADS)

- Routine monitoring of ongoing climate change resilience project in Ribko, Loyamorok and parts of Silale ward

Action Aid

- Baringo county government climate change adaptation plan development 2018-2022 supported by ActionAid.

World Vision Kenya

- Carried out beneficiary identification, selection and registration for Lokis and Mogotio, a total of 250 beneficiaries were successfully identified
- Procured water storage tanks for 2 schools
- Conducted evaluation for Esangeri SFD septic tanks
- Started the engagement of county department of water for Kamar solar project
- Distribution of farm inputs (seedling) to farmers a long Mario River in Tirioko

Kenya Red Cross Society

- Carried out routine medical outreaches and managed to reach a total of 1239 persons with 566 pregnant and lactating mothers and 995 under five children through nutrition services

6.2 Food interventions

- a) Food aid in all livelihood Zones by GOK/KRC. A total of 4,660 households were reached; Maize- 88,248Kgs (88.2 MT), Beans- 38,000Kgs (38.0 MT) and Cooking Oil- 540liters (20pcs@20L, 14pcs@10L
- b) Limited Water trucking to ECD centers and health facilities by 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
4	Wild Dogs	Ng'ambo Kiserian	Sheep

- Tension remains high in areas of Chemoe, Kagir, Tuluk, Chemanangoi, Nawe Natan and Ng'aratuko in Baringo North following incidents of cattle rustling.
- Human-wildlife conflicts where a number of livestock were killed as highlighted in the Table.

7.2 Migration

- There have been no cases of livestock migrations reported during the month; however, the livestock are still at the dry season convergence zones.

7.3 FOOD SECURITY PROGNOSIS

- The stability in the in the on-going rains, has resulted into rejuvenated forage and browse and recharge of water sources thus reduced water access distance for both livestock and households in most parts of the county particularly, the pastoral and Agro-pastoral livelihoods. This situation coupled with improving livestock body condition and milk availability and increasing livestock prices will likely enhance household incomes and purchasing power and impact positively on households. Equally the good performance of the on farm crops more so availability of local vegetable and harvests of beans and access to green maize will enhance dietary diversity an decrease the current malnutrition among the under-fives. This situation will however be highly dependent the performance of the on going rains in the County and the control and management of the Fall Army Warm challenge.
- The on-going relief food provision and all other safety net initiatives by ACTED, Action Aid, World vision and World Food Program should be sustained across the most vulnerable households in the hotspot livelihoods to ensure the safety of lives and livelihoods in the affected zones.

8.0 RECOMMENDATIONS

8.1.1. General Recommendations:

- Strengthening drought status CSG surveillance and reporting for inform timely resource mobilization, recovery, monitoring and reporting.
- Regular Sub- County drought coordination, monitoring and reporting meetings with emphasis on the nature of on-going interventions partnerships and resources gaps.
- Support inter-community peace building activities and meeting on existing hot spots

8.2.0 Proposed Recommendations

8.2.1. Water Sector

- Construction of 4 Big dams for domestic and irrigation water use
- Construction and Rehabilitation of 10 potential water supplies systems
- Drilling and Equipping of 12 strategic BHs along migratory routes and settlement areas

- Capacity strengthening for community water resource management and intake/catchment protection committees
- Capacity building on Wash/ Water management/Resources based Conflict resolution and management committees
- Prepositioning of fast moving spare parts for strategic borehole along migratory routes and areas of convergence during drought
- Water Bowser servicing and repairs including Motor vehicle tyres provision

8.2.2. Nutrition and Health

- Purchase and distribute water treatment drugs
- Scale up mass screening 80 sites 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.
- Provision for rain water harvesting in schools hard hit by water shortages during dry spell
- Pipeline extension to schools that are neighboring permanent water source e.g. boreholes and river intakes
- Training of board of management on basic O&M of water supply systems and roof water harvesting system for sustainability

8.2.4. Livestock and Veterinary sector. Osman

- Carry out routine disease surveillance and vaccination over notifiable diseases to ensure normal livestock market operations.
- Establishment of strategic livestock feed reserves; 3 in Tiaty, 2 in Baringo North 2 in Baringo south and 1 in Mogotio
- Support pasture establishment and management for pastoral and agro-pastoral communities
- Construct strategic hay store for communities and farmers that engage in pasture production in Baringo South, Baringo North, Mogotio, Tiaty

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.
- Promote Water Harvesting for household food security- Farm ponds and equipping existing ones and irrigation schemes
- Control of FAW through sensitization and supply of demonstration Materials and training (Traps, pheromones, and chemical and sprayers)

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.
Recovery:			
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.