



A Vision 2030 Flagship Project



National Drought Management Authority

Baringo County

Drought Early Warning Bulletin for March 2020

MARCH EW PHASE	Early Warning Phase Classification			
Drought Status: NORMAL Shughull za kawaida	LIVELIHOOD ZONE	EW PHASE	TRENDS	
<p>Drought Situation & EW Phase Classification Drought Phase: Normal- Stable</p> <p>Biophysical Indicators</p> <ul style="list-style-type: none"> Most biophysical indicators are within the expected seasonal ranges. The Vegetation greenness as depicted by the VCI is above normal. The Water levels in most water sources are normal at 50%-60%. <p>Socio Economic Indicators (Impact Indicators)</p> <p>Production indicators:</p> <ul style="list-style-type: none"> The forage condition is good in both quality and quantity and is expected to remain stable until the next rainfall season. Livestock body condition is fair to good in all livelihood zones. Milk production is below the normal seasonal ranges and on an decreasing trend. No drought related livestock deaths were reported during the reporting period. About 75 swarms of desert locusts have been reported in all the six sub counties. <p>Access indicators</p> <ul style="list-style-type: none"> Terms of trade are currently slightly below normal seasonal ranges due to marginal decrease in livestock prices and increasing maize prices. Distances to water sources for households currently are below normal seasonal ranges and stable 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 is minimal and stable. Copping strategy index for households is still within normal ranges. 	PASTORAL	NORMAL	STABLE	
	AGRO PASTORAL	NORMAL	STABLE	
	IRRIGATED CROP	NORMAL	STABLE	
	COUNTY	NORMAL	STABLE	
	Biophysical Indicators	Value for the month Baringo	LTA-Monthly Baringo	Normal ranges Kenya %
	Average rainfall MM (%)	64	68.9	80-120
	VCI-3month	92.16		35-50
	% Of water in the water pan	50%-60%		50-60
	Production indicators	Value	Normal ranges	
	Livestock Migration Pattern	Normal	Normal	
	Livestock Body Condition	4-5	3-4	
	Milk Production (Ltr /HH/Month)	1.7	1.76	
	Livestock deaths (for drought)	No deaths	No death	
	Access Indicators	Value	Normal ranges	
	Terms of Trade (ToT)	60.7	>63	
Milk Consumption (Ltr)	1.5	>=1.7		
Water for Households-trekking distance (km)	4.2	0-4		
Crops area planted for the season (%)(January 2019)	(Maize) 2,500(Beans)	LTA (40,046Ha) LTA (20,028Ha)		
Utilization indicators	Value	Normal ranges		
At Risk (%)	13.75%	<15		
CSI	13.63	>19.0		

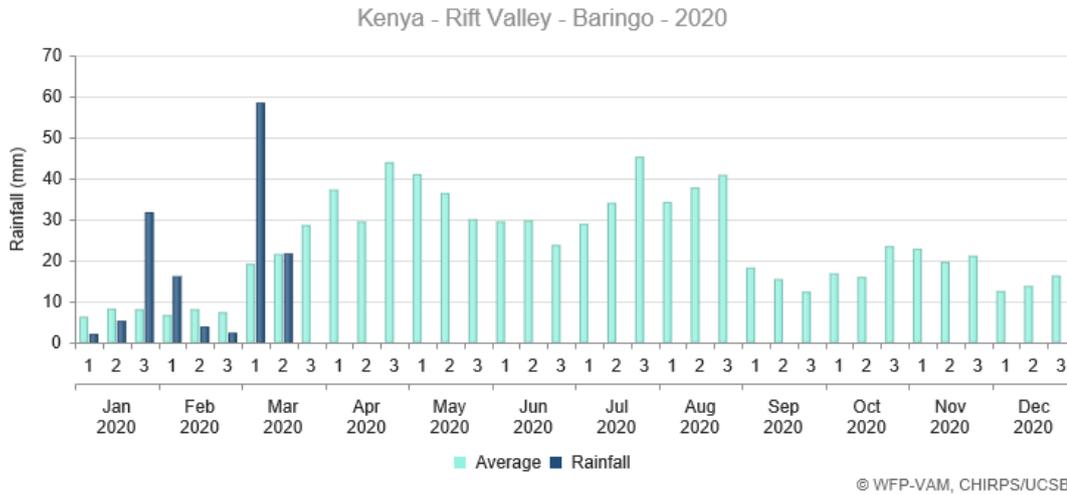
<ul style="list-style-type: none"> ▪ Short rains harvests ▪ Short dry spell ▪ Reduced milk yields ▪ Increased HH Food Stocks ▪ Land preparation 	<ul style="list-style-type: none"> ▪ Planting/Weeding ▪ Long rains ▪ High Calving Rate ▪ Milk Yields Increase 	<ul style="list-style-type: none"> ▪ Long rains 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

- The onset of the long rains season was normal and took place in the first dekad of the March. The county received above normal rains in the first dekad of the month.

1.2 Amount of rainfall and spatial distribution



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Figure 1. Rainfall performance

- Most parts of the county received above normal rains in the first dekad of the month (Figure 1). In dekad 2, the amounts received were normal compared to the previous seasons.
- Both temporal and spatial distribution was fair across all the livelihood zones.

2.0 IMPACTS ON VEGETATION AND WATER

2.1 Vegetation condition index (vci)

The vegetation greenness as depicted by the vegetation condition index (VCI) is above normal (Figure 2).

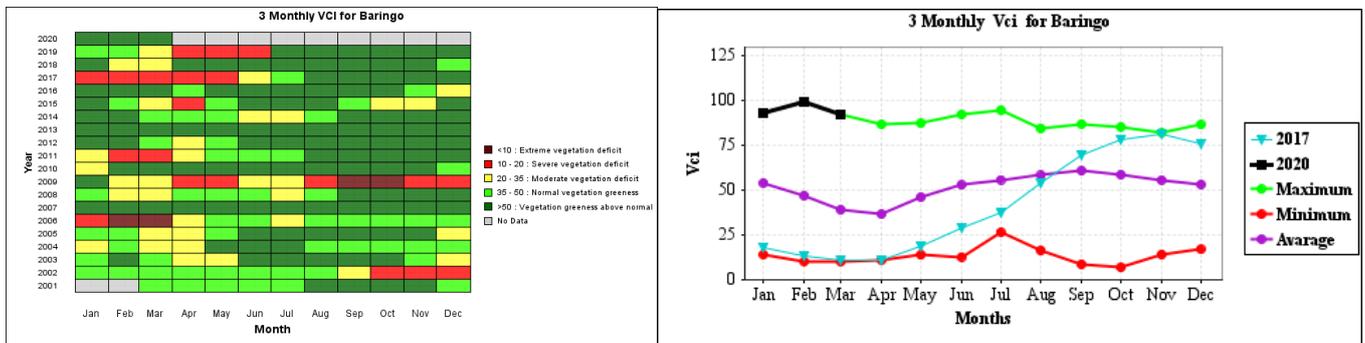


Figure 2. Vegetation Condition Index

The vegetation condition index for the county is 92.16. The above normal greenness has been attributed to the cumulative effects of good rainfall performance for the last few months. The onset of the long rains season is expected to sustain the existing good vegetation conditions.

2.1.1 Field observations

2.1.1.1 Pasture

- The pasture condition is poor to fair both in quantity and quality in the pastoral livelihood zones and fair to good in the agro pastoral and irrigated livelihood zones (Figure 3).
- These conditions are normal at this time of the year.

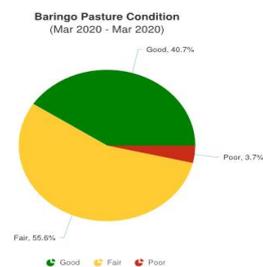
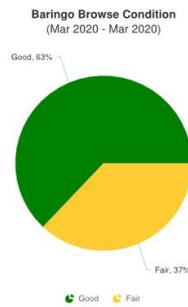


Figure 3: Pasture Condition

- The current pasture is expected to last for one months in the pastoral and agro pastoral livelihood zones and two months in irrigated livelihood zone.

2.1.1.2 Browse



- The browse condition is good to fair both in quantity and quality in the pastoral and agro pastoral livelihood zones and good in the irrigated livelihood zone (Figure 4). The condition is normal as compared to seasonal ranges for this time of the year.
- The available browse is expected to last for three months in pastoral and agro pastoral livelihood zones and four months in irrigated cropping livelihood zone

Figure 4: Browse Condition

2.2 WATER RESOURCE

2.2.1 Source

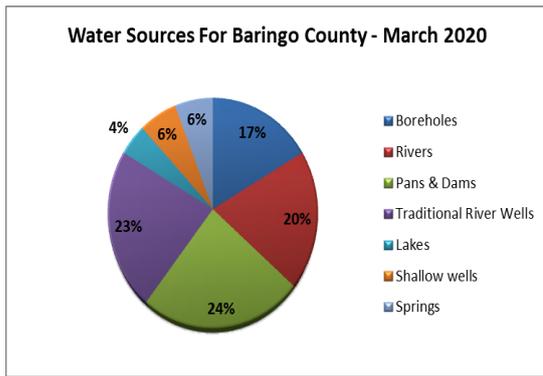


Figure 5: State of water Sources

- The main water sources for both livestock and human consumption across all livelihoods were water pans ,rivers and traditional river wells (Figure 5).
- Most water pans and dams were at 50% to 60% of their full capacity.
- Water quality and quantity across pastoral and agro-pastoral livelihoods is fair, which is normal at this time of the year.
- The current water sources are expected to last for three months in irrigated farming livelihood zone
- In pastoral and agro pastoral livelihood zones, the water is likely to last for two months.

2.2.2 Household access and Utilization

- The average household trekking distance to water sources was 4.1km, which was a marginal increase as compared to the previous month at 3.6km (Figure 6).
- The distances are below the long term average (LTA) by 38 percent.
- Irrigated cropping zone recorded the least trekking distance of one kilometre while pastoral livelihood

zone recorded the highest average of 4.4 km.

- This slight increase in distances is attributed to the normal drying of open water sources across all livelihoods.

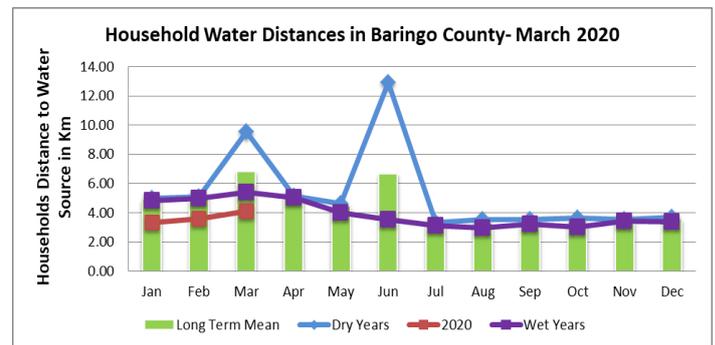


Figure 6: Water Source Trekking Distances

2.2.3 Livestock access

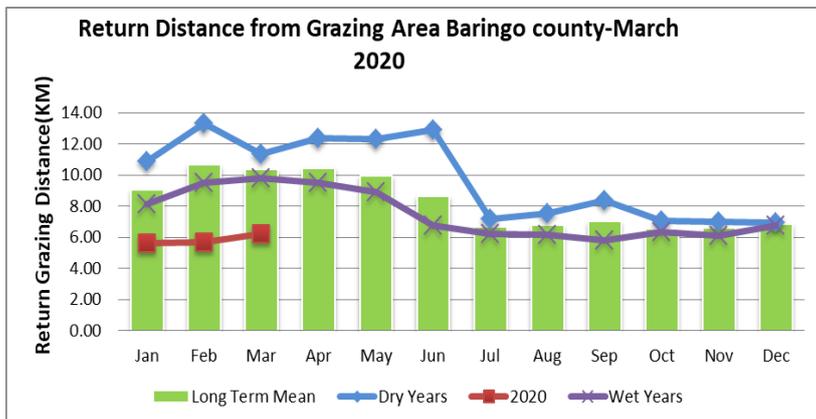


Figure.7. Water Source Grazing Distance

- The return distance for livestock from grazing zones to water points increased by nine percent at 6.2 km in comparison to the previous month at 5.7 km (Figure 7).
- The agro pastoral livelihood zone recorded the longest average distance of 8.6 km while irrigated livelihood zone recorded the shortest average distance of two kilometres.
- The situation is attributed to availability of pastures and water at the traditional grazing zones across all livelihood zones.

3.0 PRODUCTION INDICATORS

3.1 Livestock Production

3.1.1 Livestock Body Condition

- The livestock body condition is good to fair across all livelihood zones. This has been occasioned by availability of enough pasture, browse and water across the livelihood zones.
- The current livestock body condition will remain stable until the end of the current rainfall season.

3.1.2 Livestock Diseases

- Foot and mouth disease cases are present in Baringo North sub county particularly in Barwessa region.
- Minimal CCP and CBP diseases were reported in all livelihoods, which is normal. The livestock department has concluded livestock vaccinations and treatment of these cases.

3.1.3 Milk Production

- The average milk produced per household per day was at 1.6 litres, which was a marginal increase as compared to the previous month (Figure 8).
- The milk was mainly from cattle and goats.
- Irrigated livelihood zone had an average of 2.7 litres while agro pastoral had the least at 1 litre.
- The current milk production is within the normal range.

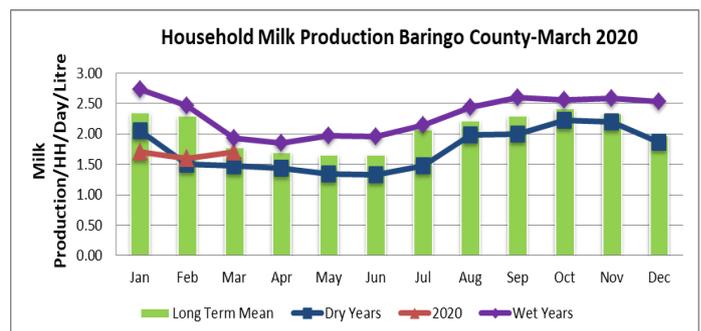


Figure 8: Milk Production

3.2 Rain fed crop production

3.2.1 Stage and Condition of food Crops

- Currently most farmers are clearing the farms in preparation for the long rains season across all livelihood zones. Other farmers are planting their seasonal crops. However, with the presence of desert locusts in the county, there are fears that the young crops could be lost to these pests.

4.0.0 MARKET PERFORMANCE

4.1.0 Livestock marketing

4.1.1 Cattle prices.

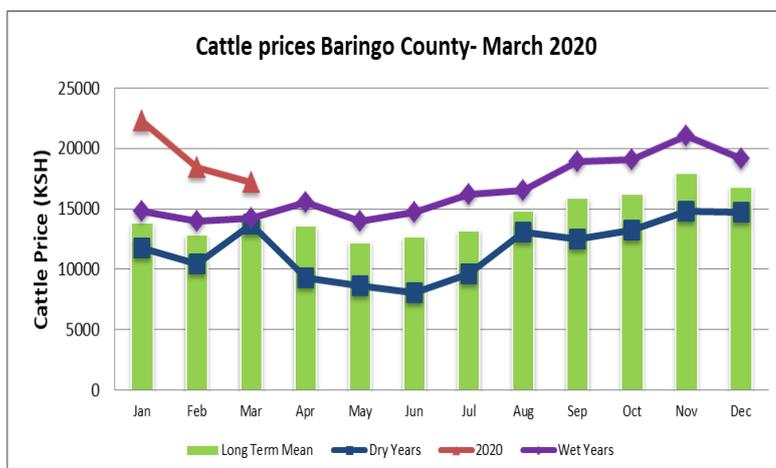


Figure 9: Cattle Prices

- The average price for medium-sized cattle decreased by six percent at Ksh. 17,204 in comparison to the previous month at Ksh. 18,407. The price was above the long-term average by 23 percent. Irrigated livelihood zones posted the highest prices of Ksh.26,167 while pastoral livelihood zone recorded the least average price of Ksh.15,375.
- The decrease in prices was due to low market demand mostly in pastoral areas.

4.1.2 Goat Prices.

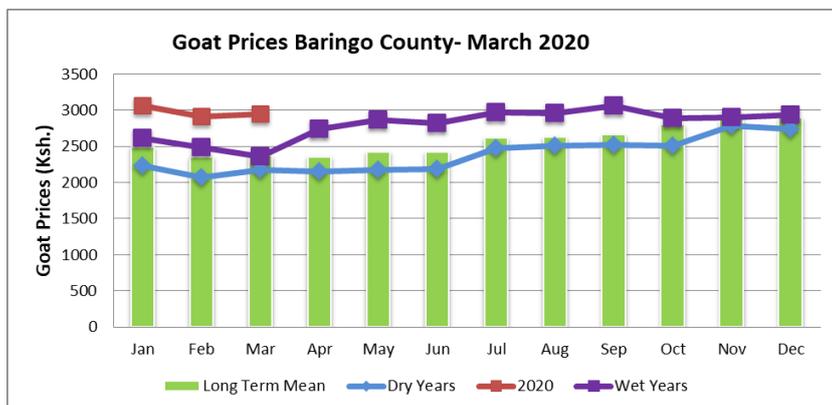


Figure.10: Goat Prices

numbers available for sale in the markets.

- The average price of a medium sized goat was relatively stable at Ksh. 2,946 as compared to the previous month at Ksh. 2,917 (Figure 10). The price was above the LTA by 25 percent.
- The prices were highest in irrigated cropping livelihood zone at Ksh. 3,583 and lowest in agro pastoral livelihood zone at Ksh.2,500. The high prices were as a result of good livestock body conditions and limited livestock

4.2.0. Crop prices

4.2.1 Maize

- The current average price for a kilogram of maize was at Ksh. 48.5, a marginal increase of three percent as compared to the previous month at Ksh. Ksh. 47.3 (Figure 11). The price was stable in comparison to the long-term average at this time of the year.
- Pastoral livelihood zone recorded the highest price of Ksh.50 per kg while irrigated livelihood zone recorded the lowest at Ksh.38 per kg.
- The price stability can be attributed by the decreasing stocks at household stocks which is pushing up demand for maize.

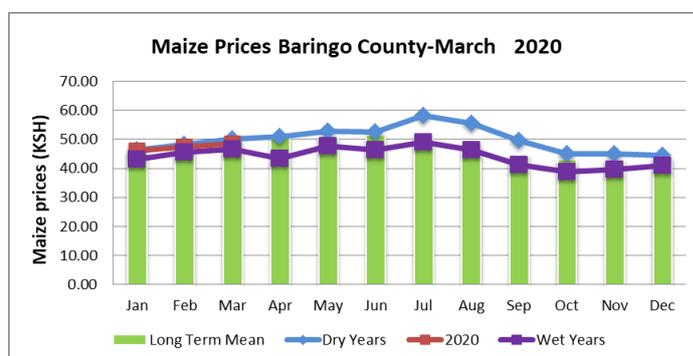


Figure.11: Maize Prices

4.2.2 Posho (Maize meal)

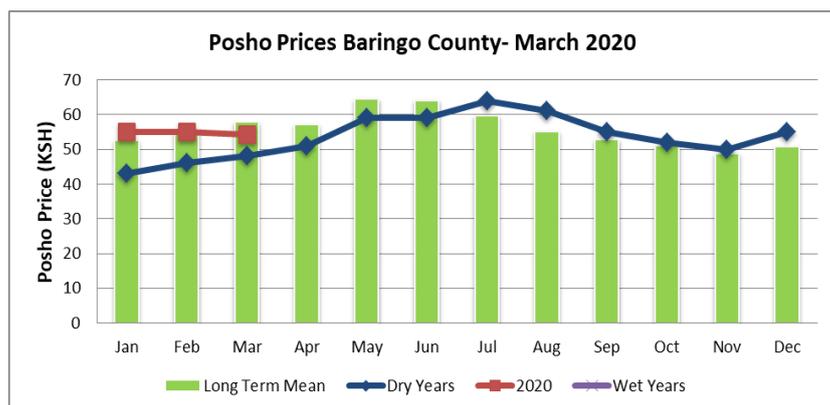
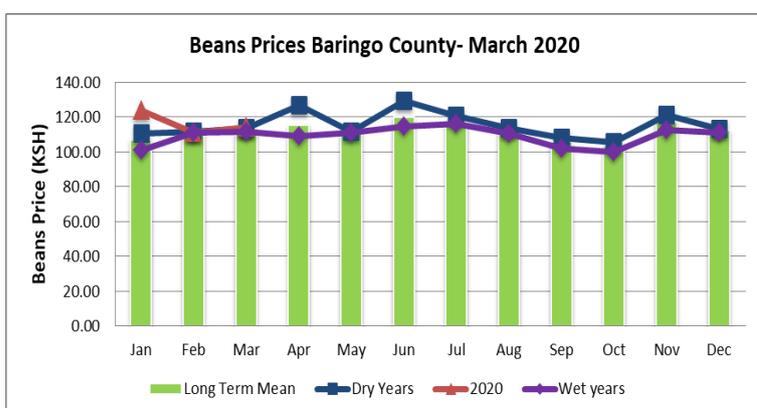


Figure 12: Posho prices

- The price per kilogram of posho was stable at Ksh.54.3, as compared to the previous month at Ksh.55. (Figure 12).
- These prices are attributed to relatively stable maize prices and availability of stocks held by the retailers.
- The price was slightly below the long-term average by four percent.



4.2.3 Beans Prices

- The average price per kilogram for beans increased by three percent at Kshs.114.2 in comparison to the previous month at Ksh. 111.5 (Figure 13).

- The price increase was attributed to demand of farm inputs including planting seeds in preparation for the planting season
- The current prices are stable as compared to the long-term average.
- Agro pastoral livelihood zone recorded the highest average prices of Ksh.121 while the irrigated livelihood zone recorded the least prices of Ksh.90.

Figure 13: Beans Prices

4.3 Livestock Price Ratio/Terms of Trade

- The terms of trade declined slightly by two percent in comparison to the previous month at 61.7 to stand at 60.7 currently (Figure 14).
- This was attributed to increase in maize prices.
- The current terms of trade are better in comparison to the long-term average.
- Irrigated cropping livelihood zone had the highest terms of trade of 80.6 while agro pastoral livelihood zone had the least at 55.6.

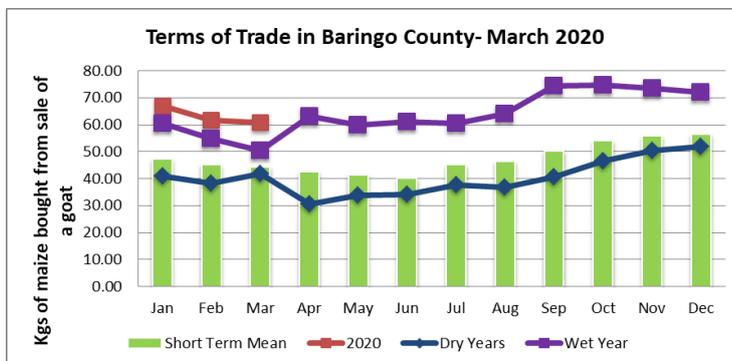
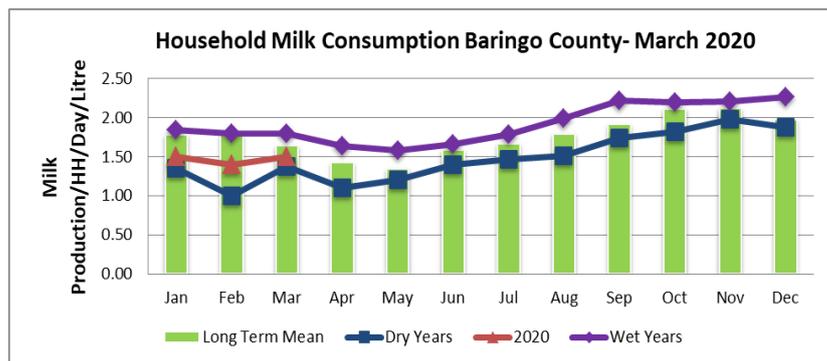


Figure 14: Terms of Trade

5.0.0 FOOD CONSUMPTION AND NUTRITION STATUS

5.1 Milk Consumption



- The average milk consumption per household per day was at 1.5 litres, which was an increase of seven percent compared to the previous month (Figure 15).
- The milk consumption was highest in the agro pastoral livelihood zone at 1.8 litres and lowest in the fishing livelihood zone at 1.4 litres.

- The amount consumed was below the long-term mean by eight percent.

Figure 15: Milk Consumption

5.2 Food Consumption Score

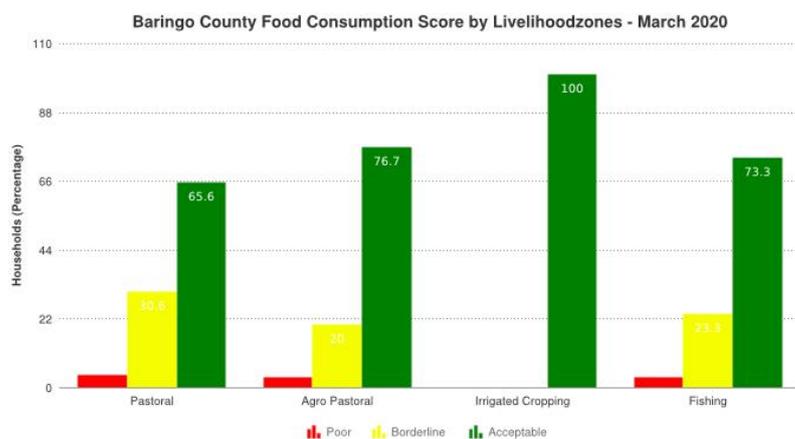


Figure 16: Food Consumption Score

- About 3.9, 3.3 and 3.3 percent of the households reported poor food consumption and were in the pastoral, agro pastoral and fishing livelihood zones respectively (Figure 16).
- The proportion of households with borderline food consumption was 30.6 percent in pastoral, 23.3 percent in fishing and 20 percent in agro pastoral livelihood zones.
- Generally, a proportion of 5.3, 25.3 and 71.4 percent of the households across the livelihoods have poor, borderline and acceptable food consumption scores respectively.

5.3.1 Health and Nutrition Status

- The nutrition status of the sampled children under five years of age is stable at 13.75 compared to the previous month (Figure 17).
- Komolion and Kollowa wards in the pastoral livelihood zone recorded highest levels of malnutrition at 24.49% and 24.17% respectively. This was partly contributed by diarrhoea cases experienced in these areas.

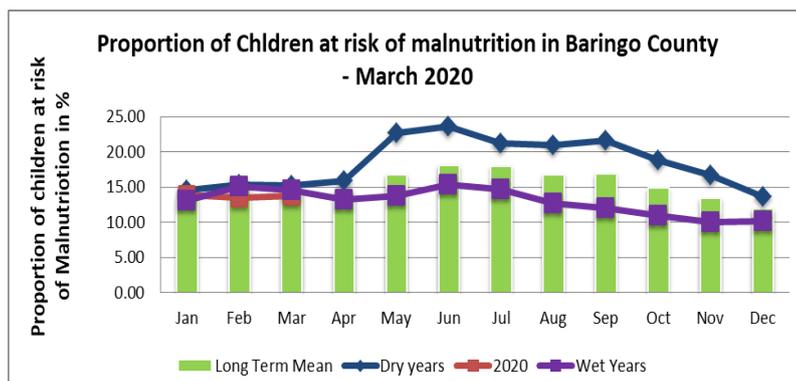


Figure 17: Nutrition status

5.3.2 Health

- During the reporting period, the illnesses that were reported were malaria and diarrhoea across livelihood zones. The diarrhoea cases were occasioned by use of water from stagnant bodies and poor hygiene practices at household level.
- There is heightened sensitization campaigns on the preventive measures to be adopted by the communities against the corona virus disease. So far no positive cases have been identified in the county.

5.4 Coping strategies

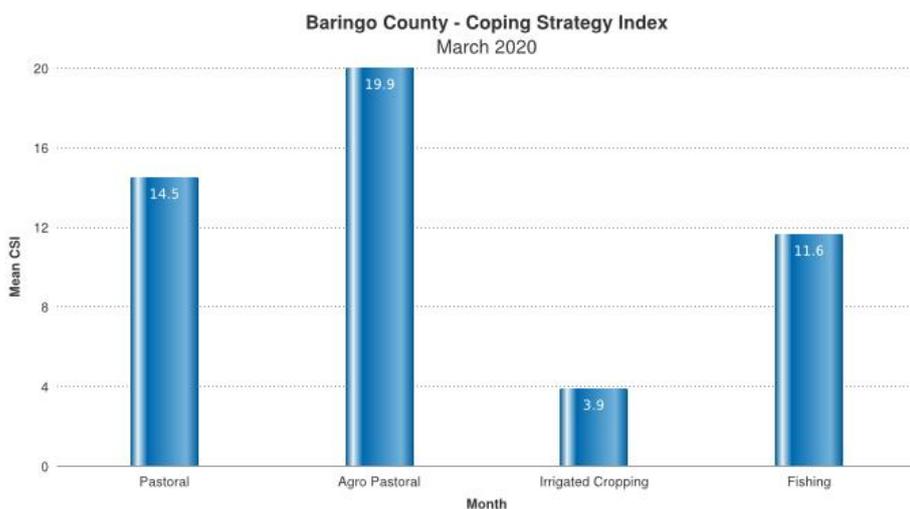


Figure 18: Coping Strategy Index

5.4.1 Coping Strategy Index

- The average coping strategy index is stable at 13.63, compared to last month at 13.88 (Figure 18).
- Households in agro pastoral livelihood zone employed most coping strategies at 19.9 followed by pastoral at 14.5 The irrigated zone employed least coping mechanisms at 3.9.
- The stability in coping strategies was due to availability of food at households level across all livelihood zones.

6.0 CURRENT INTERVENTION MEASURES.

6.1 Non-food interventions

Kenya Red Cross

- Supported sensitization and training of staff and other volunteers in various government institutions such as prisons, police stations among others on how to handle the covid-19 pandemic. They also supported the County through Ministry of Health to undertake mass awareness creation through public address system on Covid-19 IN Baringo South, Eldama Ravine, Baringo Central and Baringo North Sub Counties majorly conveying key messages regarding preventive measures, signs and symptoms, causes and referral pathways.

- Through UNICEF Flexi project, KRCS supported one cycle, two integrated medical outreaches in parts Tirioko ward East Pokot Sub County. Health and nutrition surveillance continued at household level supported by community Health Volunteers using MUAC who then refer to the link facilities where surveillance is done by both MUAC and WHZ.
- Kenya Red Cross Society through support from UNICEF continue carrying out emergency hygiene education targeting drought and floods affected communities and schools in East Pokot, Tiaty East and Baringo South Sub Counties.
- Strengthening disaster risk reduction and emergency response through USAID/OFDA support. The project aims to improve the capacities of communities, county governments and KRCS to anticipate, prepare and respond to disaster risks.
- Building Community Awareness/Mobilization. The project supported community awareness creation meetings in 6 wards in Baringo County; Saimo Soi ward, Barwessa ward, Kipsaraman Ward in Baringo North, Tirioko Ward, Loyamorok ward and Silale ward in Tiaty sub county reaching **1279** people directly on disaster preparedness, mitigation management, dissemination of early warning information on drought cycle management for early warning, planning and action. Aim is to enhance and increase level of preparedness to climate change related disasters among pastoralist communities in six wards covered under DRR sites.

Baringo County Government

- Surveillance and monitoring of the areas where locust swarms have roosted to see if there are any hatchlings of hoppers to control them, especially along the Kerio Valley and Mogotio Sub County

World Vission

- Equipping Magoi and Kamar BHs to increase access to water
- .Enhanced EWW activities enabling people to preserve water in pan dams and tanks
- .Through FMNR people are able to increase vegetation cover mitigating effects of drought
- . Cash transfer to 300HHs in Kisanana, Tirioko and Bartabwa wards to mitigate thee impact of last year's drought.

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, Komolion	Sheep

- Human-wildlife conflicts where a number of livestock were killed as highlighted in the Table.

- Incidences of locust invasion were reported in Kaplengno ,Kapkararam,Nyalilbuch,Chebirbei ,Noiwet ,Kiprota ,Oinopsos (Kamarich village) ,Kipngorom (Kamose village),Kipngorom (Kamose village),Kapkirwok,Kapkelelwa,Salabani, Mogotio (Equator)and Kiptoim Location.
- High tensions of insecurity was experienced along the borders of Baringo North and Tiaty as well as areas of kapedo and Amaya. .
- The corona virus disease pandemic in the country is causing some scare in the county as unprecedented measures are being applied in a bid to control it. This has disrupted social lifestyles of the community and has the potential to affect food chain systems such as market operations, production systems among others.

7.2 Migration

- There have been no cases of livestock migrations reported during the month in the county; however, most livestock are still at the traditional wet season grazing zones.

7.3 Food security prognosis

- The onset of the long rains season is expected to have a positive impact on various sectors of food security. The recharge levels of various water sources is expected to improve. Farmers are expected to do timely planting of their seasonal crops while forage resources are expected to get better in terms of quality and quantity. However, the presence of the desert locusts in the county is likely to reverse the expected gains in the agriculture sector. So far the locusts have been reported in all the six sub counties of Baringo. The affected wards are Tenges, Emining, Saimo Soi, Bartabwa, Marigat, Ribko and Tirioko. There are fears that the swarms might have laid eggs in these wards and therefore the next generation of swarms to hatch will coincide with the germination period of crops. If it so happens, farmers stand to lose their crop to the locusts.
- Markets functionality is likely to be affected by the outbreak of the corona virus disease in the country. The ongoing measures to control the disease have affected the normal social lifestyles of the people and therefore affecting supply of goods and services in the markets. Furthermore, the county government has ordered the closure of open air markets in a move to enhance social distancing.

8.0 RECOMMENDATIONS

8.1.1. General Recommendations:

- Close monitoring of food prices is required due to market disruptions that are being caused by the Covid19 pandemic. The information will assist in finding out the impact of the pandemic on food security at the household level.
- Resource Mobilization for capacity strengthening, surveillance, control and assessment of the social economic and environmental impact of desert locust invasion in affected sub-counties
- Provision of regular updates from the National/County government to the communities affected by the desert locust through well customized communication material in the popular vernacular radio stations
- Establish a multi sectoral and multi-disciplinary team of professionals that will develop post invasion strategies to support locust invaded farming communities and rehabilitate affected rangelands
- Strengthen cross-border coordination and prioritize effective locust control measures at cross-border invasion sites.
- Strengthening sector specific drought preparedness and resilience building initiatives at Sub-County and community level.
- Regular County and Sub- County drought coordination, monitoring and reporting meetings with emphasis on the nature of on-going interventions partnerships and resources gaps
- Need for joint resource mobilization towards addressing food insecurity and under nutrition cases
- Continuous engagements to address under nutrition cases in in the county.

8.2.0 Proposed Recommendations

8.2.1. Water Sector

- Construction of climate proofed strategic water sources in under-provided areas to ensure optimum coverage through construction of mega dams taking advantages of surface water runoff, water supplies systems,
- Drilling and equipping of new boreholes in drought affected hard to reach communities
- Capacity building of community water management committees as well as formation of water user associations.
- Rehabilitate existing water sources, water harvesting and construction of underground cisterns
- Sensitization of communities on sanitation and hygiene, water management/resources based conflict resolution and management committees

8.2.2. Nutrition and Health

- Enhance sensitization campaigns on preventive measures against corona virus disease (Covid 19).
- Initiate and roll out IMAM surge model and link with early warning information

- 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
- Strengthen the technical and human resource capacity for health care workforce in health and nutrition service delivery through technical trainings.
- Intensify disease surveillance especially in areas where there is upsurge in malaria cases
- Support hygiene and sanitation health campaigns (health promotion)
- Provision for de-worming of all school going children

8.2.3. Education

- Equip schools with roof catchments and covered storage tanks and cisterns
- Pipeline extension to schools that are neighboring permanent water sources e.g. boreholes and river intakes
- Training of board of management on basic operation and maintenance of water supply systems and roof water harvesting system for sustainability
- Provision for De-worming of school going children

8.2.4. Livestock and Veterinary sector

- Closely monitor the impact of desert locust to pasture and browse which may trigger earlier migration
- Infrastructure development in feeder and main livestock markets
- Improvement of livestock market information system
- Promote production and storage of hay as well as strengthening of capacity on use of crop residue as forage
- Community sensitization on need for commercial off-take
- Carry out routine disease surveillance and vaccination over notifiable diseases to ensure normal livestock market operations especially for foot and mouth disease
- Provide for strategic disease control infrastructure, and promote inter-county and cross border disease surveillance and control mechanisms

8.2.5. Agriculture Sector

- Equipping of county-based ground control technical teams monitoring locust invasion to stabilize the food and nutrition security situation in the county
- Carry out an objective assessment on economic, environmental and social impact of the locust invasion
- Support development of integrated water and soil conservation infrastructure for crop production
- Support cultivation of drought tolerant and early maturing crops
- Promote water harvesting for household food security- Farm ponds and equipping existing ones and irrigation schemes
- Support development of risk management institutions such as cereal banks
- Support strategic post-harvest management of crops

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
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> +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.