

# National Drought Management Authority

## TURKANA COUNTY

### DROUGHT EARLY WARNING BULLETIN FOR DECEMBER 2019



A Vision 2030 Flagship Project



#### DECEMBER EW PHASE

Drought Status: **NORMAL**



Shughuli za kawaida

#### Early Warning (EW) Phase Classification

LIVELIHOOD ZONE	PHASE	TREND
PASTORAL-ALL SPECIES	NORMAL	STABLE
AGRO-PASTORAL	NORMAL	STABLE
FISHERIES	NORMAL	STABLE
COUNTY	NORMAL	STABLE

#### Drought Situation & EW Phase Classification

##### Biophysical Indicators

- Enhanced rainfall with a temporal distribution of 5-6 days was received across all the livelihood zones during the month of December. Cumulative rainfall received during the 6-month period (July to December 2019) represents 235 percent of the total rainfall normally received for the period.
- Further improvement in the condition of vegetation was witnessed in December with above normal vegetation greenness being observed across all the sub counties as evidenced by the shift in VCI-3month from 76 to 90.
- Most open water sources were recharged to full capacity.

##### Socio Economic Indicators (Impact Indicators)

- Body condition of all livestock species was good and improving. Distance to water source remained stable and within the normal range. Milk production level rose slightly and like consumption it was within the seasonal range.
- Terms of trade rose and fell above the range for the month by a slight margin. Neither was there migration taking place nor starvation/dehydration deaths reported in December.
- Coping strategy index remained stable and within the normal range with approximately twenty percent of households being classified as having a poor FCS. Proportion of children 'at risk' of malnutrition dropped marginally and remained within the normal range for the month under review.

Biophysical Indicators	Value	Normal Range
Rainfall (% of Normal)	235	80-120
VCI-3 month (County)	90	>35
VCI-3 month (T. East)	71	>35
State of Water Sources	5-6	5-6

Production Indicators	Value	Normal Range
Livestock Migration Pattern	Normal	Normal
Livestock Body Condition	Good	Good
Milk Production	2.5 Litre	> 2.5 Litres
Livestock deaths (attributed to drought)	No Deaths	No Deaths

Access Indicators	Value	Normal Range
Terms of Trade (ToT)	47	>43.3
Milk Consumption	2.1 Litre	>2.1 Litres
Return distance to water sources	2.7 km	< 5.8 km
Cost of Water(KSh/20L)	KSh. 0-5	<KSh .5

Utilization Indicators	Value	Normal Range
Nutrition Status, MUAC (% at risk of malnutrition)	15	<19.5
Food Consumption Score (FCS)	33	>35
Coping Strategy Index (rCSI)	16.2	<16.9

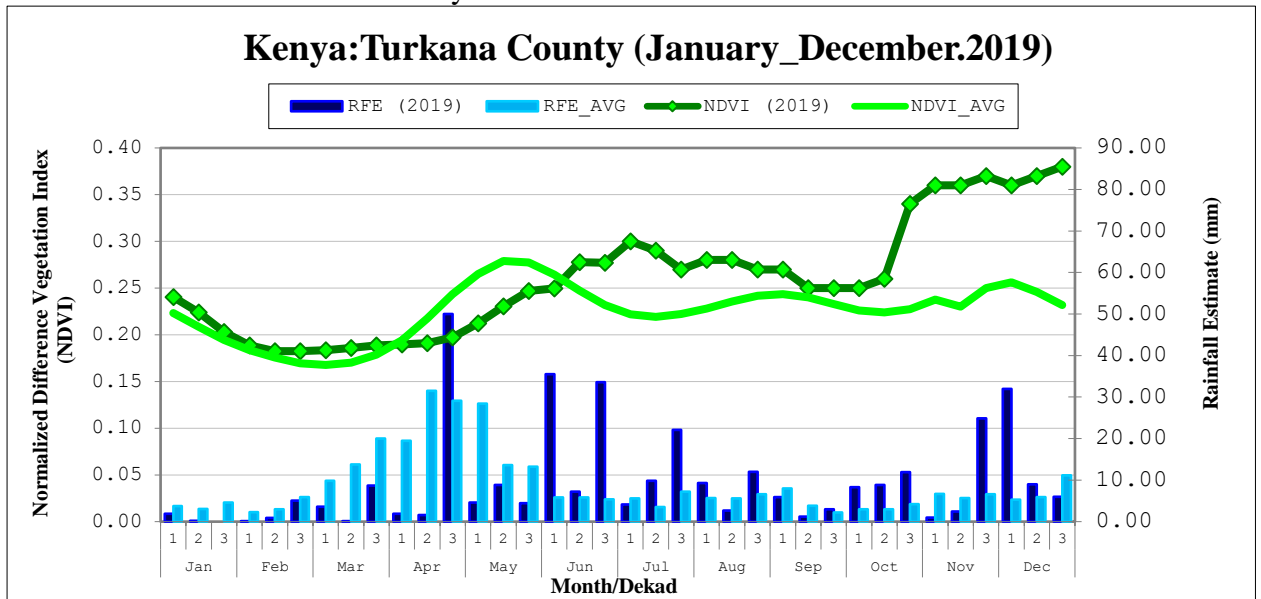
<ul style="list-style-type: none"> <li>▪ Short rains harvests</li> <li>▪ Short dry spell</li> <li>▪ Reduced milk yields</li> <li>▪ Increased HH Food Stocks</li> <li>▪ Land preparation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Planting/Weeding</li> <li>▪ Long rains</li> <li>▪ High Calving Rate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

## 1.1 RAINFALL PERFORMANCE

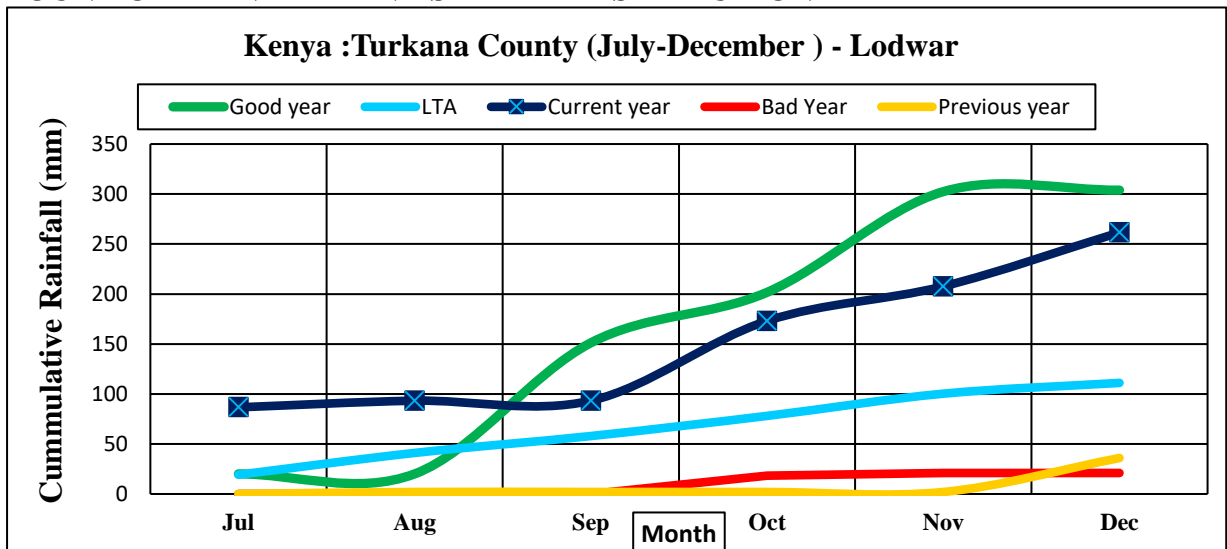
- Rainfall experienced during the first dekad of the month under review was highly enhanced with the continuity towards dekad two being fair. The average distribution in time across all livelihood zones was five to six days in December.



**Figure 1: Dekadal Rainfall (mm) and NDVI Values Compared to the Long Term Average**  
 Source: VAM-World Food Programme

- As shown in figure 1 above, dekadal rainfall for estimate amount for the first dekad was significantly higher than the corresponding long term dekadal average while the successive dekads recorded a dip in amount received culminating to a normal cessation.

## 1.2 AMOUNT OF RAINFALL AND SPATIAL DISTRIBUTION



**Figure 2: Six Month Cumulative Rainfall Trend**  
 Source: Meteorological Department-Turkana

- The cumulative rainfall recorded for the period commencing July 2019 to December 2019 represented 235 percent of the normal cumulative rainfall for the period as illustrated in figure 2 above.
- Amount of rainfall received in Lodwar town during the month of December, which is normally the baseline for the county accounted for 500 percent of the normal rainfall for the month.

- During the period, the distribution in space of the rainfall received was highly even especially across the first dekad. Consequently, all sites remained wet during dekad one and two.
- Cumulative rainfall recorded for a similar six month period during the previous year was significantly lower than that of the current year 87 percent.
- The period starting July 2009 to December 2009 was considered to be the bad year within the last twelve years having recorded only 21mm of rainfall.

### 1.3 OTHER EVENTS

- Flooding was witnessed in a number of sites in Turkana south, central, east, west and Loima that resulted to loss of property during the period under review. Some of the wards affected included Songot, Nanaam, Letea, Kerio, Lopur, Lobokat, Katilu, Lokori/ Kochodin, Kaputir, Kakuma, Lokichoggio, Turkwel, Lobei/ Kotaruk and Kangatotha.

## 2.0 IMPACTS ON VEGETATION AND WATER

### 2.1 VEGETATION CONDITION

#### 2.1.1 Vegetation Condition Index (VCI)

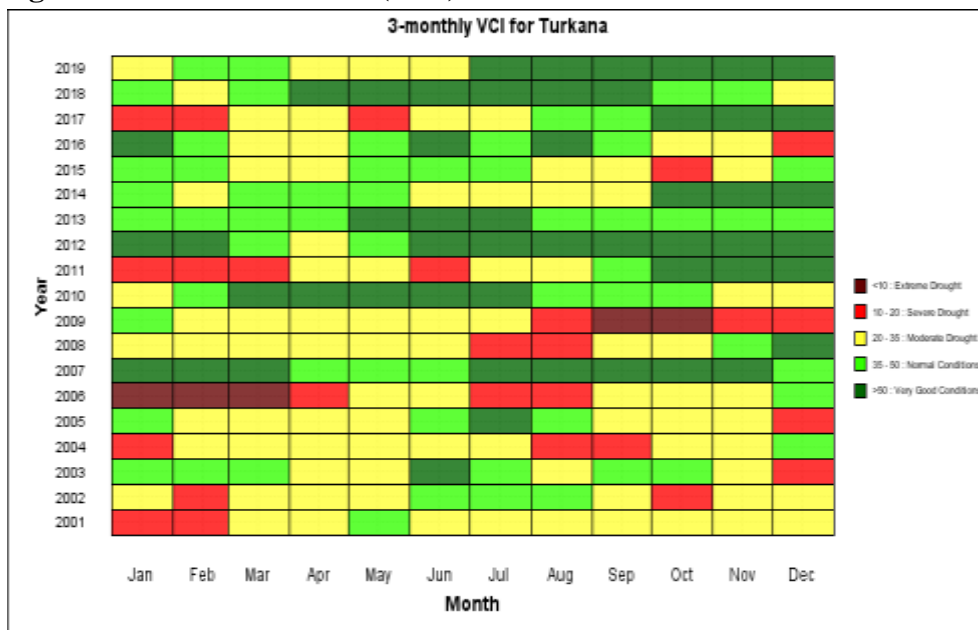


Figure 3: Vegetation Condition in Turkana County

- Continued improvement in the condition of vegetation was witnessed in December as depicted by the shift in the VCI-3month for the county from 76 reported in November to 90 during the month under review. The level of vegetation greenness across the county was thus above normal as

illustrated in figure 3 that represents a retrogressive analysis of the condition of vegetation.

- All the sub counties recorded notable improvement as for instance illustrated in figure 4 below that shows the trend in vegetation condition recovery for Turkana east.
- Receipt of enhanced rainfall in December coupled with the cumulative effect of the rainfall experienced in October and November was the major driver of the improved vegetation condition.

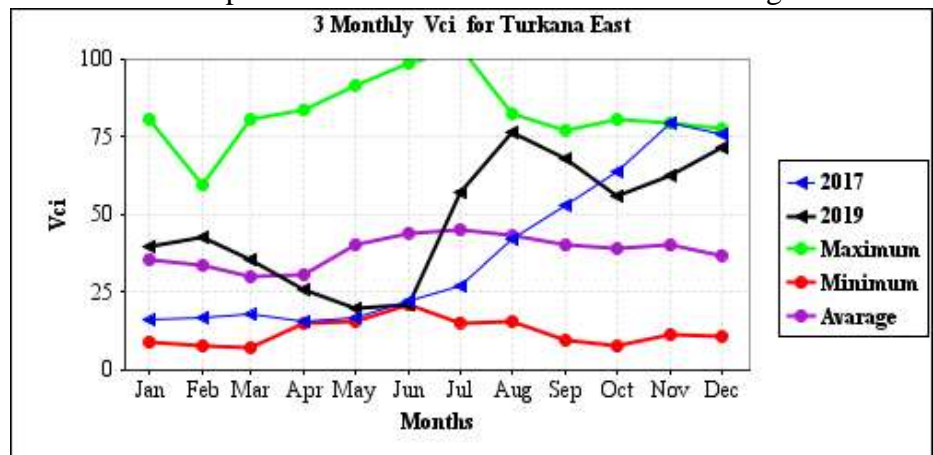
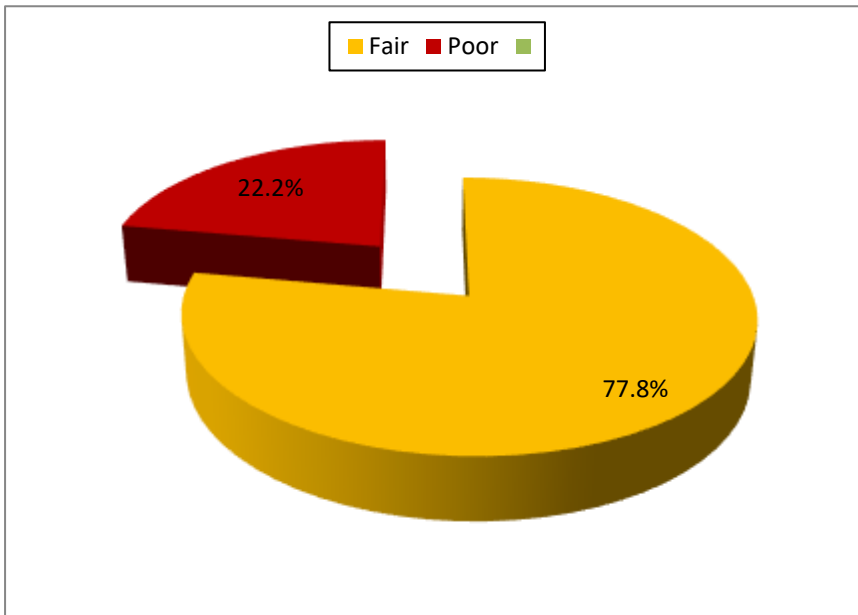


Figure 4: Vegetation Condition Trend in Turkana East



**Figure 5: Pasture Condition-December 2019**

### 2.1.2 Pasture

- Condition of pasture was generally fair across most sites within the plains as depicted in figure 5. The observed pasture level was marginally above the one normally witnessed at such a time of the year in the county.

- Stable pasture condition could be attributed to receipt of enhanced rainfall in December compounded by the cumulative effect of the one received in October and December.

- Available

pasture in the Pastoral, Agro Pastoral and some parts of the Fisheries livelihood zones is anticipated to last for at least a period of one to two months.

- There was no major/serious hindrance to pasture resource access across the three livelihood zones during the month of December.
- Uniformity in terms of quantity and quality of pasture was observed in all the three livelihood zones during the period under review.

### 2.1.3 Browse

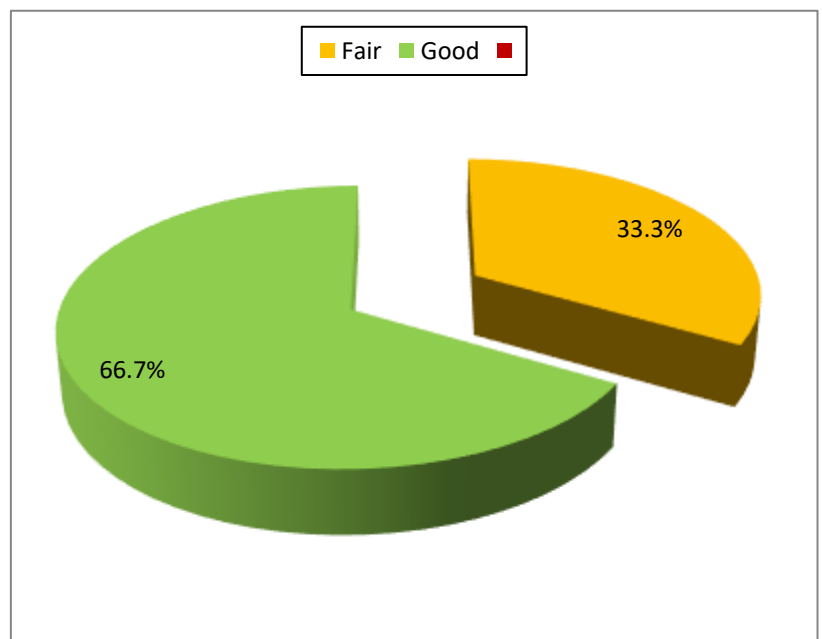
- The condition of browse in December was good with some pockets especially in the Fisheries livelihood zone having browse of fair condition as shown in figure 6 below.

- Receipt of enhanced rainfall during the first dekad of the period under review was the major factor that accelerated/stabilized the condition of browse.

- Available browse across the Pastoral, Agro Pastoral and Fisheries livelihood zones is forecasted to last into the long rains season.

- During the reporting period, there was no major impediment to browse access reported across all the sites in the county.

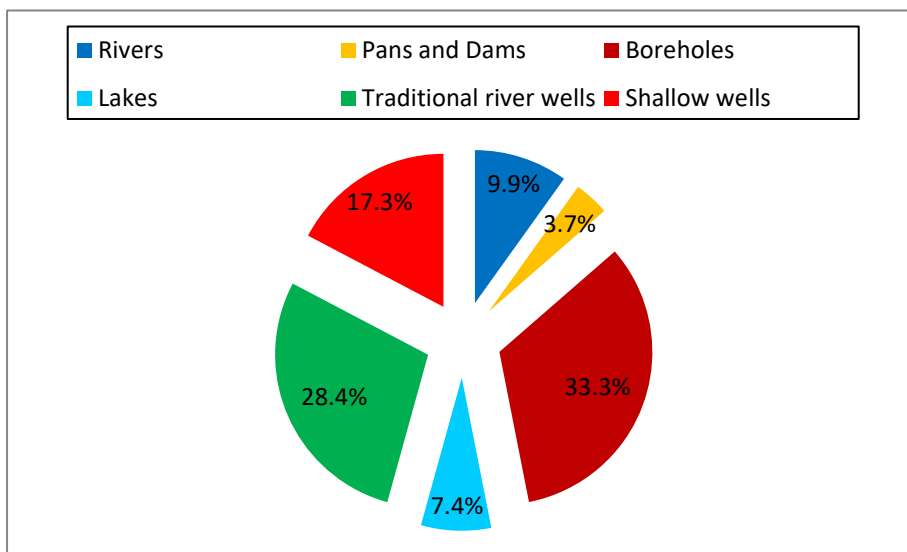
- The quality and quantity of browse observed in the three livelihood zones during the month of December did not show any significant variation.



**Figure 6: Browse Condition-December 2019**

## 2.2 WATER RESOURCE

### 2.2.1 Sources



**Figure 7: Water Sources in Turkana County**  
wells dropping by 11 percent in December.

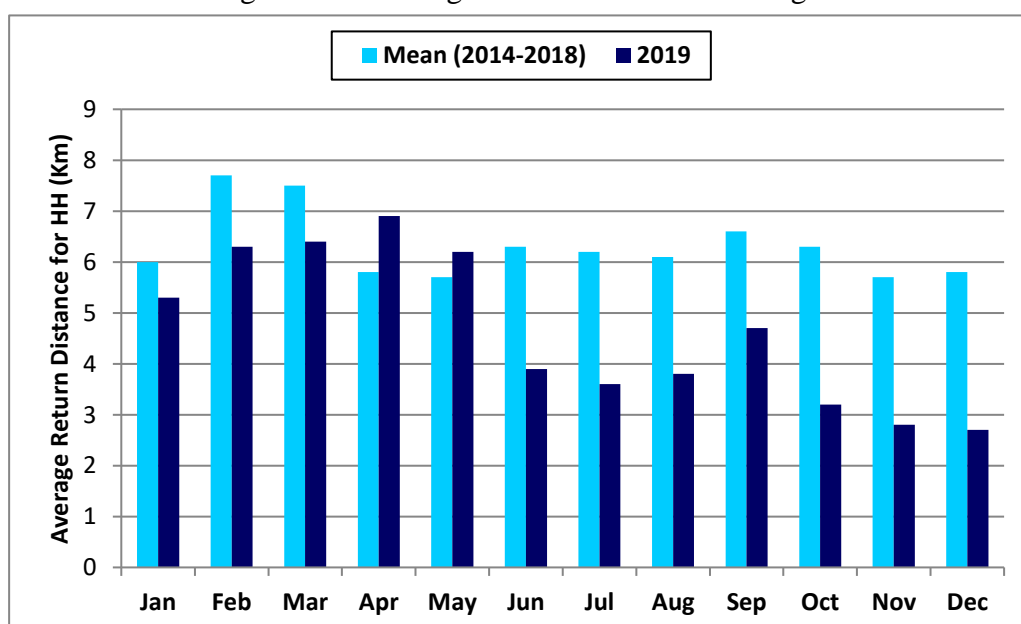
- Majority of the open water sources including pans, dams and rock catchments were at full capacity across the three livelihood zones. Significant water volume along most seasonal rivers including Kerio, Kawalase, Kospir, Lokichar, and Natiira was witnessed during the first dekad of the month. Consequently, available water is projected to last for a period of two to three months.
- The observed water situation during the month under review was considerably better in comparison to the one normally witnessed for the period across the three livelihood zones. Receipt of enhanced rainfall within the catchment areas of river Turkwel resulted to overflows being witnessed along the channel of the river during dekad one.
- The water sources in use during the period under analysis were the normal sources where households drew water from at such a time of the year across all the sites in the county.

- Shallow wells, traditional river wells and boreholes remained the major water sources in use by the community during the month under review as shown in figure 7.

- An increase of six percent was recorded in the proportion of households drawing water from boreholes and traditional rivers with that of shallow

### 2.2.2 Household access and Utilization

- Stability in the household return trekking distance to water source was observed during the period under review with the average distance being 2.7 km as illustrated in figure 8 below.
- Compared to the five year average household trekking distance to water source, the reported distance for the month of December was remarkably lower by a margin of 53 percent.
- The Pastoral livelihood zone reported



**Figure 8: Household Access to Water Source**

the longest distance in relation to the one recorded along the Fisheries and Agro Pastoral livelihood zones.

- The average waiting time at the water source remained unchanged from the one reported during the previous month. Therefore, across the three livelihood zones, households spent less than 15 minutes in the queue to access water in December.
- In addition, the average water consumption per person per day did not vary from the one reported in November with household's resident in the Agro Pastoral livelihood zone consuming an average of 50-60 litres while those along the Fisheries and Pastoral livelihood zones consumed an average of 40-50 litres in December.
- The cost of water remained free at source with a 20 litre jerrycan being dispensed at five shillings at the point of sale along the major urban centres.
- The reported price of water during the month under review was within the seasonal range for the period.

### 2.2.3 Livestock access

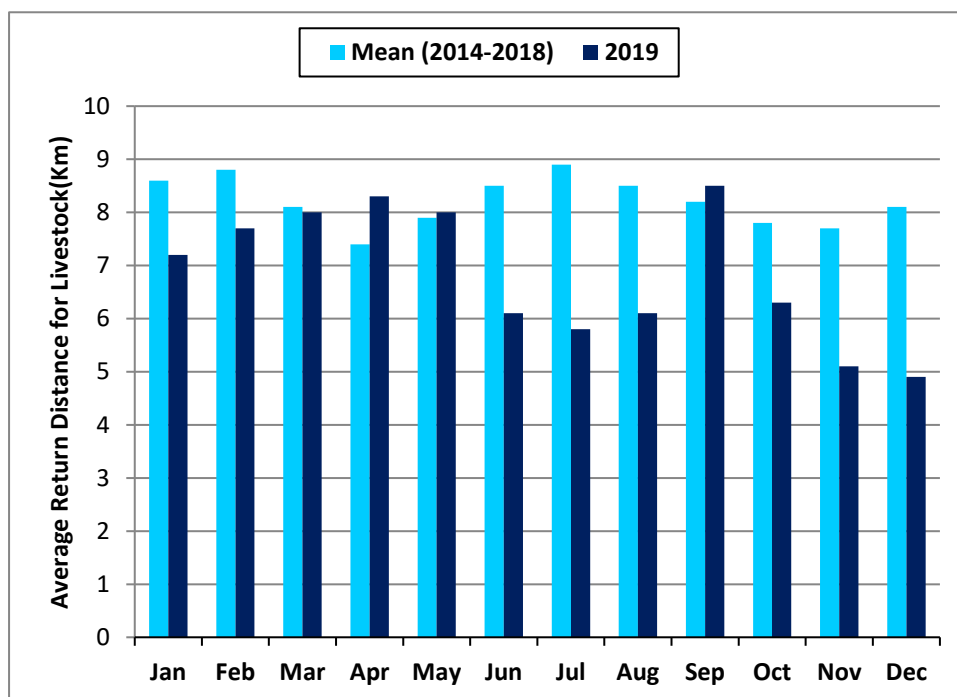


Figure 9: Return Distance to Water Source from Grazing Areas

- During the period under analysis, the trekking distance from grazing sites to water sources remained unchanged from the one recorded in November and thus averaged 4.9 km as depicted in figure 9.

- The recorded distance for the month under review was significantly lower than the five year average trekking distance for the period by 40

percent.

- The longest trekking distance from grazing sites to water source was recorded along the Fisheries livelihood zone in comparison to the one reported in the Agro Pastoral and Pastoral livelihood zones.
- The stabilization in the average trekking distance to water source from grazing areas could be attributed to pasture availability within sites in close proximity to water sources such as traditional river wells and shallow wells.
- There was no variation in the watering frequency for livestock from the one reported in November and therefore, across the Pastoral, Agro Pastoral and Fisheries livelihood zones, all livestock species accessed water at least six times per week.
- Stability in watering frequency for livestock could be ascribed to increased number of functional boreholes and shallow wells coupled with a significantly reduced depth of traditional river wells averaging less than one metre along the numerous seasonal rivers traversing most parts of the county.

### 3.0 PRODUCTION INDICATORS

#### 3.1 LIVESTOCK PRODUCTION

##### 3.1.1 Livestock Body Condition

- The body condition for all livestock species was good across the three livelihood zones during the month under analysis. Cattle were fat and blocky while the tail in sheep was fatty; on the other hand, goat exhibited a smooth body condition with the hump in camels well built.
- Improved livestock body condition across the month of December could be attributed to availability of substantial reserves of browse and pasture coupled with the reduced trekking distance to water source.

##### 3.1.2 Livestock Diseases

- The prevalence of tick borne diseases was high across all the sub counties with some households especially in Loima and Turkana south reporting incidents of Mange in camel during the month of December
- Cases of Contagious Caprine Pleuropneumonia (CCPP) and sheep/goat pox continued being reported in Turkana central and Loima during the month under review.

##### 3.1.3 Milk Production

- During the reporting period, thirty three percent of the sampled households reported on own milk production and thus the proportion did not vary significantly from the one that reported on own milk production during the month of November across the three livelihood zones.

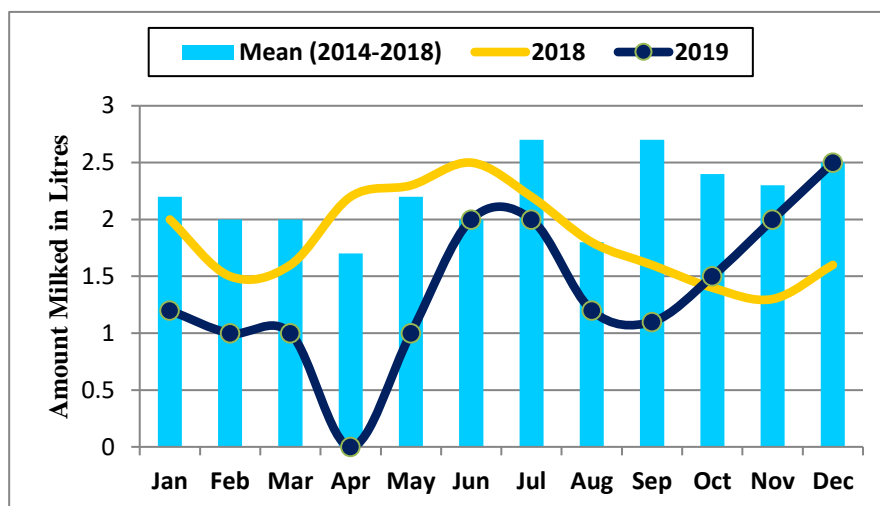


Figure 10: Average Amount of Milk Produced Per Household

- Amount of milk produced per day per household increased to two and half litres from the two litres reported previously as depicted in figure 10 above.
- The reported production level for the period under analysis was at par with the five year production average for the period but significantly higher than that reported for the same month the previous year by 56 percent.
- The cost of a litre of milk remained the same as the one reported in November where in the Pastoral and Agro Pastoral livelihood zones it retailed at KSh. 60.
- The rise in milk production could be attributed to pasture/browse and water availability within remarkably shorter trekking distances coupled with the high calving rate witnessed in December.

### 3.2 RAIN-FED CROP PRODUCTION

#### 3.2.1 Stage and Condition of Food Crops

- Weeding was the major agricultural activity taking place across all the rain-fed farms mainly in the Agro Pastoral livelihood zone in December.
- Harvesting and supply of horticultural products including mangoes, green leafy vegetables, tomatoes and water melon to major markets was witnessed over the entire month under review.

## 4.0 MARKET PERFORMANCE

### 4.1 LIVESTOCK MARKETING

#### 4.1.1 Cattle Prices

- The price of a 4-year old medium sized bull increased by KSh.2, 170 and thus it traded at KSh. 17,150 during the month under review across the three livelihood zones as illustrated in figure 11.

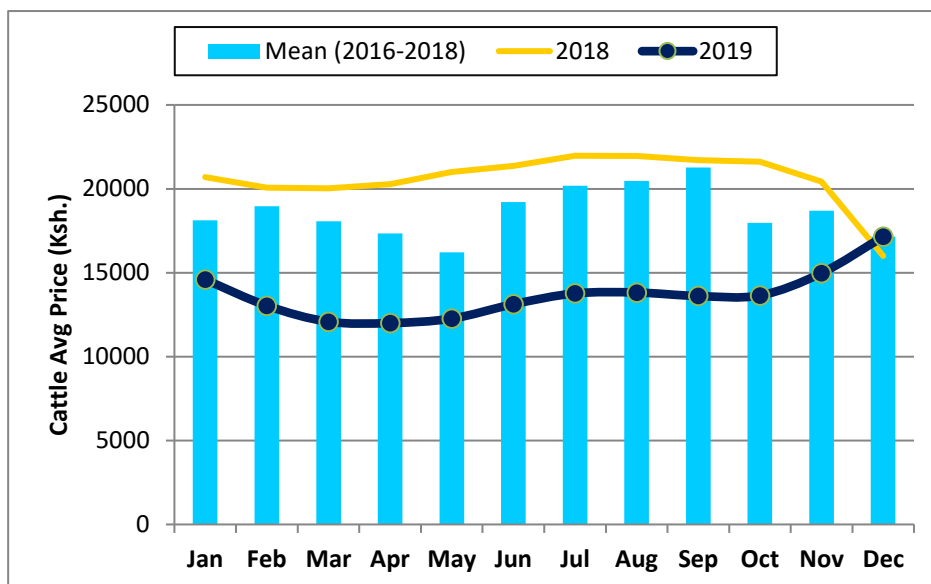


Figure 11: Cattle Price Trend in Turkana County

- Improved cattle body condition ascribed to adequate pasture and water availability within decreased trekking distances compounded with reduced supply to market were the major drivers of the increased trading price during the month of December.
- The Pastoral livelihood zone reported an average price of KSh. 15,115 while the Agro Pastoral livelihood zone recorded an average price of KSh. 15,250 during the period under analysis.
- The reported market price of cattle for the month under review was at par with the three year average price for the period but slightly higher than the one posted for the same month the previous year by seven percent.

#### 4.1.2 Small Ruminants Prices (Goat price)

- Despite adjusting upwards, the shift in the price of a 2-year old medium sized goat was insignificant in relation to the one reported in November and thus it exchanged at KSh. 3,080 as illustrated in figure 12 below.
- The reported adjustment albeit marginal could be ascribed to the improved goat body condition occasioned by availability of quality browse and water in adequate levels across all sites.

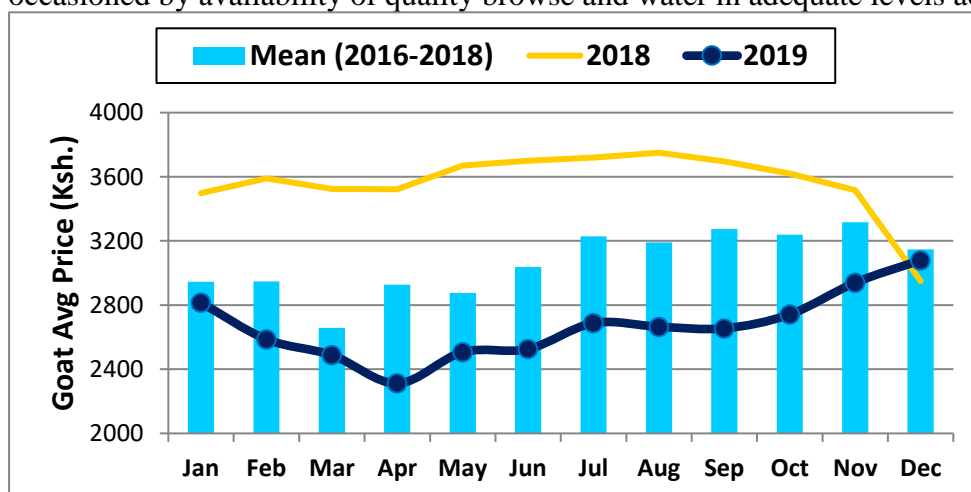


Figure 12: Goat Price Trend in Turkana County

- The reported price of goat for the month of December was at par with the three year average price for the period but slightly higher than the one recorded for a similar period during the previous year by a paltry four percent.

The Agro Pastoral livelihood zone reported the highest trading price of KSh. 3,210 while the Pastoral and Fisheries livelihood zones returned an average price of KSh. 3,070 and KSh. 3,000 in that order.



### 4.1.3 Camel Prices

- During the month under review, the price of a 4-year old camel remained the same as the one reported previously and hence it traded at KSh.25, 200 across the Agro Pastoral and Pastoral livelihood zones as depicted in figure 13.
- The observed stability in the price of camel could be attributed to the fact that the body condition of camel did not adjust significantly from the one observed in November owing to the push factors not changing considerably to have a positive impact.

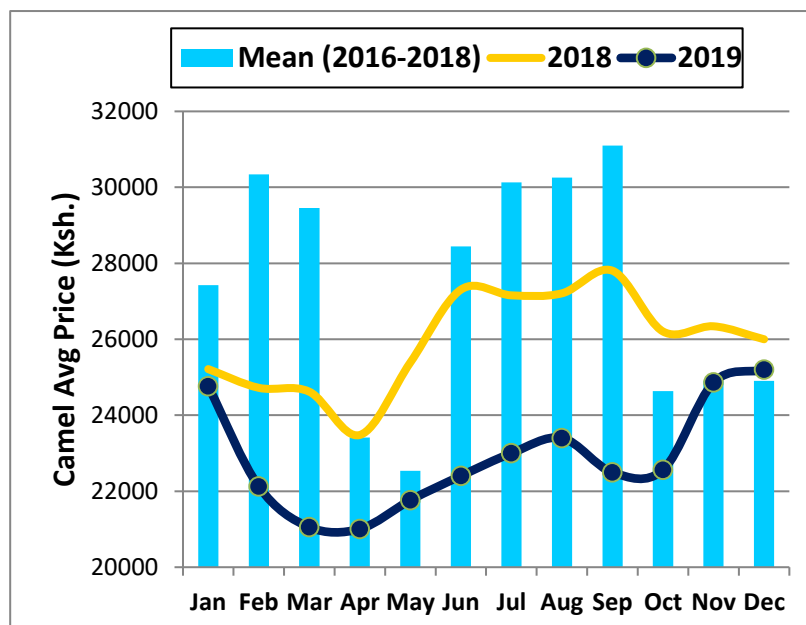


Figure 13: Camel Price Trend in Turkana County

- The Pastoral livelihood zone reported an average price of KSh. 25,600 while the Agro Pastoral livelihood zone returned an average price of KSh. 25,040 during the month under analysis.
- Whereas the recorded price of camel during the month under review was at par with the three year average price for the period, the reported price of camel for a similar period during the previous year was however slightly higher albeit by five percent.

## 4.2 CROP PRICES

### 4.2.1 Maize

- A kilogram of maize retailed at KSh. 65 during the period under analysis as illustrated in figure 14 below and thus remained stable in relation to the month of November.
- Compared to a similar period the previous year, the reported price during the month of December was slightly higher by eight percent but almost at par with the short term average price for the month under review.
- The lowest price of KSh. 60 was recorded along the Agro Pastoral livelihood zone while the highest of KSh. 69 was posted along the Pastoral livelihood zone with the Fisheries livelihood zone returning an average price of KSh. 61 over that period of time.

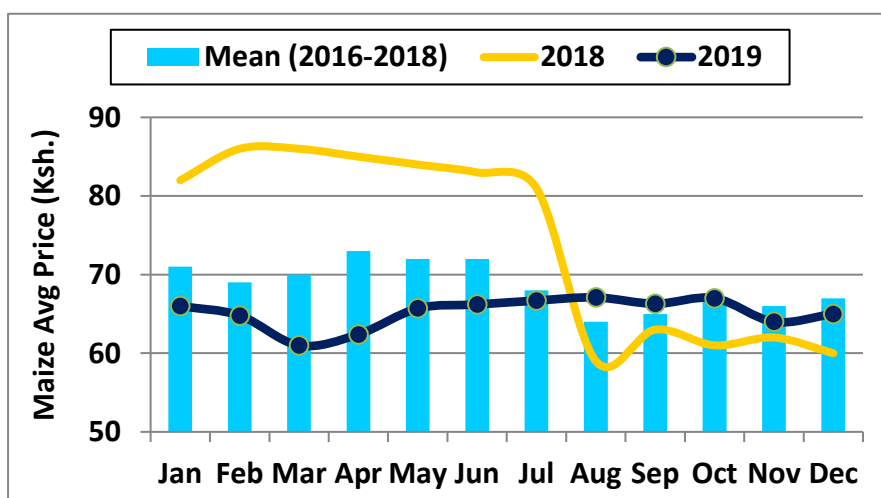


Figure 14: Maize Price Trend in Turkana County

markets were the major drivers of the observed stability in price during the period under review.

## 4.2.2 Beans

- As illustrated in figure 15 below, the price of beans in December remained the same as the one reported in November with a kilogram of beans exchanging at KSh.102 across all the three livelihood zones.
- Improved availability of the pulse in the market occasioned by continuous supply of the commodity from the external markets where harvesting had taken place was the major factor influencing the observed stability during the period under review.

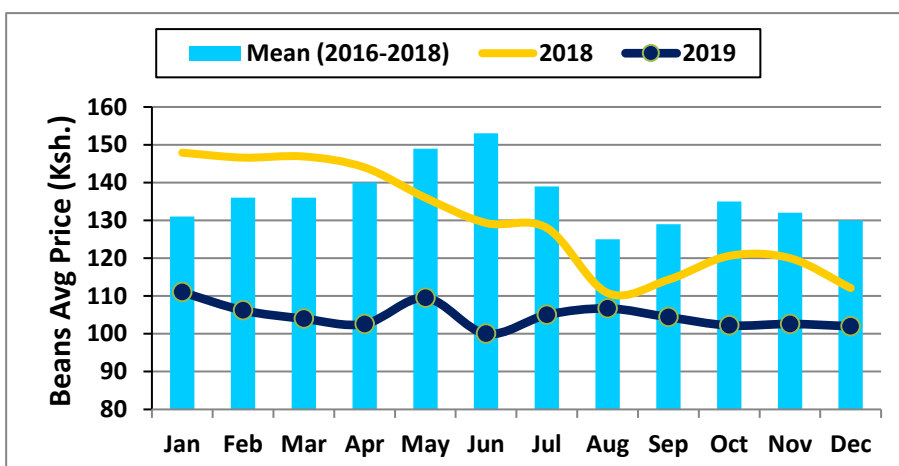


Figure 15: Beans Price Trend in Turkana County

- The Fisheries livelihood zone reported an average price of KSh. 103 while the Pastoral and the Agro Pastoral livelihood zones recorded an average price of KSh. 102 and KSh. 100 respectively.
- Not only was the reported price of beans for the month under review lower than that posted for a similar period during the previous year by nine percent but also considerably lower than the short term average for the period by 22 percent.

## 4.3 Livestock Price Ratio/Terms of Trade

- A slight shift upwards in the terms of trade was recorded during the month under review with the ToT being 47 as shown in figure 16 below. Consequently, from proceeds obtained upon sale of a goat similar to the one traded previously, pastoralists were in a position to add two more kilograms of maize to the quantity purchased in November.
- Whereas the reported terms of trade for December was lower than the one recorded for the same period during the previous year by five percent, it was higher than the three year average terms of trade for the month under analysis by nine percent.
- Therefore, pastoral households remained advantaged during the month under analysis owing to the relatively superior terms of trade translating to better access.

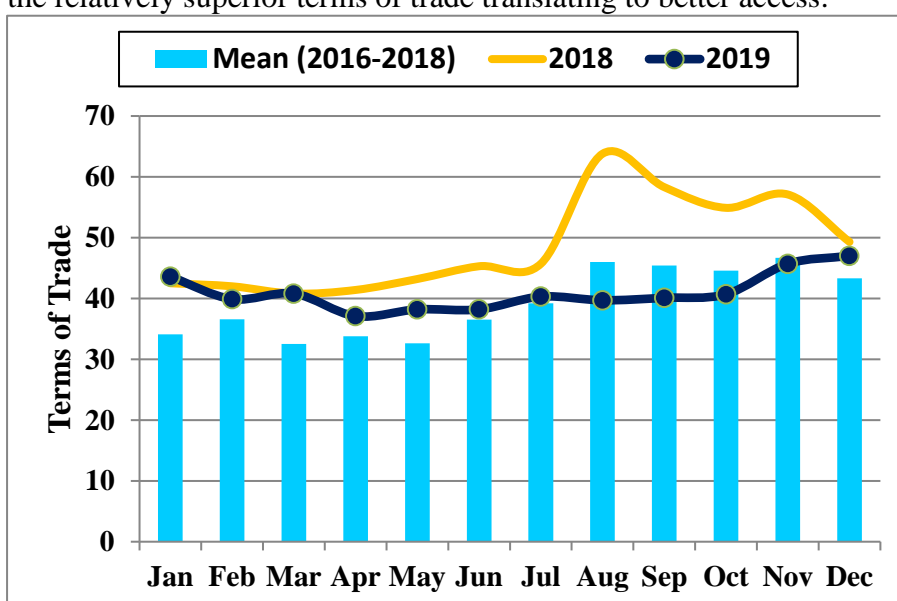


Figure 16: Terms of Trade Trend in Turkana County

- The marginal rise in the price of goat albeit insignificant was the major driver of the shift in the terms of trade during that period.
- Stability in the terms of trade will most likely be witnessed across January with no significant shift in the price of neither goat nor maize that is likely to have an impact anticipated across that month.

## 5.0 FOOD CONSUMPTION AND NUTRITION STATUS

### 5.1 MILK CONSUMPTION

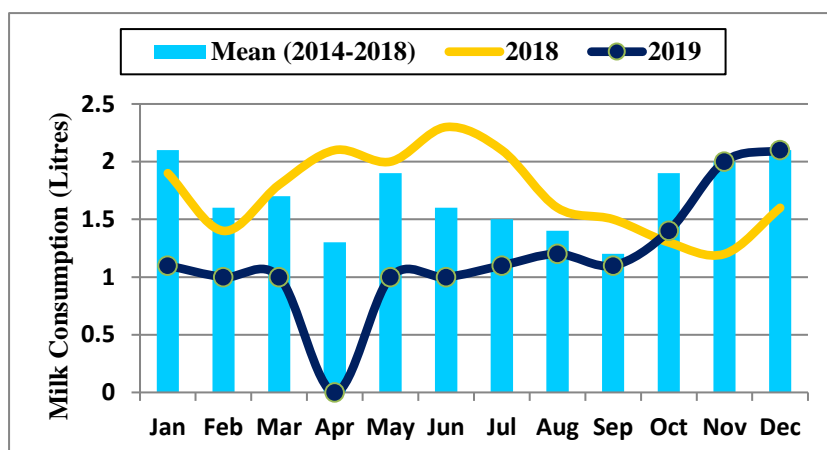


Figure 17: Milk Consumption Pattern in Turkana County

- The proportion reporting to have consumed milk during the month under review constituted thirty two percent of the sampled households. As illustrated in figure 17, stability in the consumption level was observed and it averaged 2.1 litres per day per household.

- The observed stability in milk consumption could be attributed to ease of access to milk occasioned by a

relatively stable yield per animal within a wider household base resulting from pasture/browse and water availability in adequate quantities coupled with the calving taking place during the month of December.

- Consequently, the consumption level for the period under review was at par with the long term average consumption for the month of December but remarkably higher than the one reported for the same month the previous year by 31 percent.

### 5.2 FOOD CONSUMPTION SCORE (FCS)

- Proportion of households classified as having a poor, borderline and acceptable food consumption score during the month of December was 20 percent, 48 percent and 32 percent respectively.
- Compared to the previous month therefore, there was no significant shift in terms of the proportional percentages within the different food consumption score classes.
- Stability in the food consumption pattern was witnessed as evidenced by the overall food consumption score for the county that remained the same as the one posted in November of 33.

- As depicted in figure 18, the Pastoral livelihood zone reported the highest proportion of households with a poor FCS followed by the Fisheries livelihood zone with the Agro Pastoral livelihood zone recording the least during the period under review.

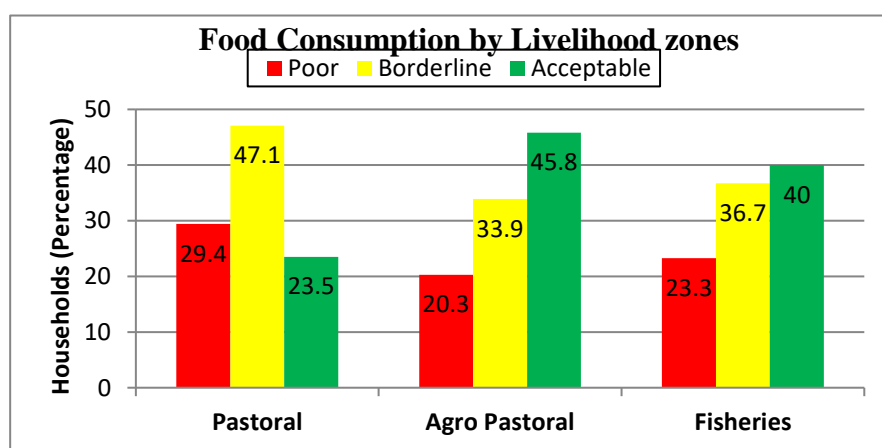


Figure 18: Food Consumption Patterns in Turkana-December 2019

- During the period under analysis, the Agro Pastoral, Fisheries and Pastoral livelihood zones reported a food consumption score of 36, 33 and 28 accordingly.
- Turkana north Sub County recorded the highest proportion of households with a poor food consumption score in December.

## 5.3 HEALTH AND NUTRITION STATUS

### 5.3.1 Nutrition Status

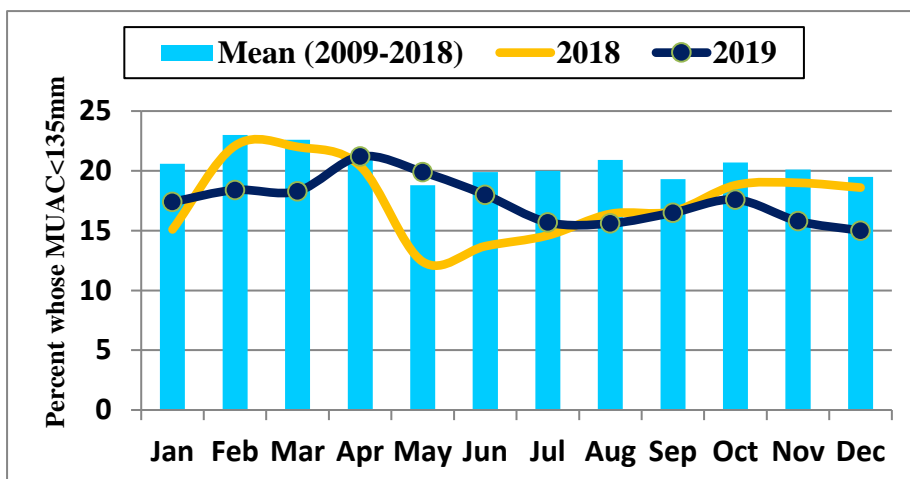


Figure 19: Mid at Risk Children 2019-Turkana, sample size, n=843

shown in figure 19 above.

- Not only was the recorded proportion above lower than the long term average proportion of under-fives categorized as being ‘at risk’ for the period under review approximately by 23 percent but also considerably below the one reported for the same period during the previous year by 20 percent.
- The recorded drop in proportion of under-fives considered as being ‘at risk’ albeit marginal could be attributed to the stable milk consumption pattern and availability of nutritious food commodities at household level accessed through markets that were well provisioned with the purchasing power not compromised due to the relatively better terms of trade.

- Out of the sampled under-fives across all the sentinel sites whose MUAC measurements were taken during the period under review, 54 percent were males while the females constituted 46 percent.

- Proportion of the under-fives rated as being ‘at risk’ of malnutrition dropped slightly to 15 percent as

## 5.4 COPING STRATEGY

### 5.4.1 Coping Strategy Index (rCSI)

- There was no noticeable shift in the coping strategy index during the period under analysis and hence it remained unchanged at 16.2.
- Therefore, coping strategies in application during the month of December were typically similar to those in use during the previous month of November across the three major livelihood zones in the county.
- As illustrated in figure 20, households residing along the Pastoral livelihood zone faced much difficulty in accessing food or money to buy food compared to the ones residing in the Fisheries and the Agro Pastoral livelihood zones.
- The most commonly applied coping strategies during the month under review among a majority of households that were coping across the three livelihood zones included reliance on less preferred/less expensive food and reduced number of meals eaten per day with a small proportion also resorting to borrowing.

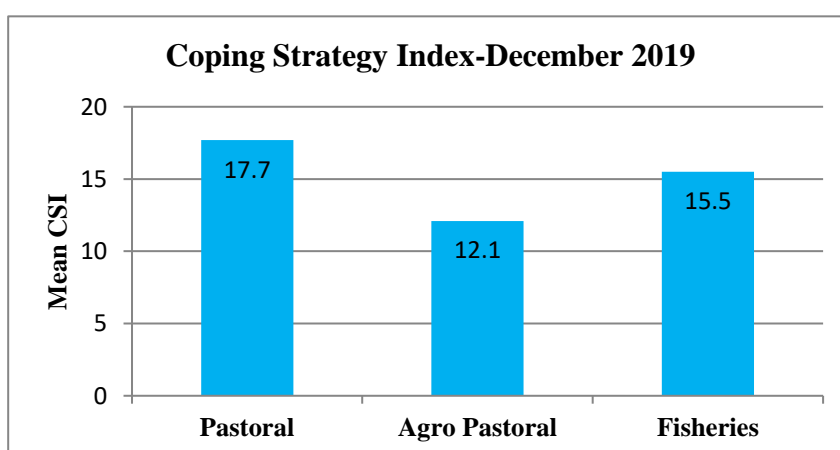


Figure 20: Reduced Coping Strategy Index-Turkana

## 6.0 CURRENT INTERVENTION MEASURES (ACTION)

### 6.1 FOOD

- There was no relief food distributed during the month under review.

### 6.2 NON-FOOD

- During the period under analysis, there was no significant non-food intervention reported.

## 7.0 EMERGING ISSUES

### 7.1 INSECURITY/CONFLICT/HUMAN DISPLACEMENT

- Despite no cases of insecurity being reported, a number of households were displaced as a result of the flooding that was experienced in some sites in the county such as Katilu.

### 7.2 MIGRATION

- No significant livestock migration was taking place during the period under review.

### 7.3 FOOD SECURITY PROGNOSIS

- Forage quality and quantity is anticipated to remain within a desirable level over the next one month, therefore, stability in production indicators (body condition of livestock and milk production) will be the most likely outcome over that period.
- No significant shift in the purchasing power is anticipated as a consequence of the terms of trade most likely stabilizing over the next one month but pastoral households will remain well positioned in terms of meeting basic food requirements.
- During that period, the level of malnutrition is equally anticipated to remain stable and within the normal range. However, existence of peace and security especially in the hotspots will play a critical role in facilitating access to essential foodstuffs through market.
- Generally, save for a few households in the Pastoral livelihood zone that are expected to be stressed, majority of the households will most likely be within the minimal phase of food insecurity over the next one month.

## 8.0 RECOMMENDED INTERVENTIONS

- **Water:** Enhance water availability for humans and livestock during scarcities through drilling, excavating and equipping climate proofed strategic/contingency boreholes and water pans.
- **Veterinary:** Improve animal health by conducting mass vaccination in cross border sites where incidents of Mange, CCPP and CBPP have been reported while up scaling disease surveillance efforts to cover other areas within the county that are disease prone.
- **Health and Nutrition:** Provision of health education to communities on water quality management while expanding the reach of health and nutrition interventions to cover sites that have reported high malnutrition levels.
- **Livestock:** Intensify efforts towards strategic hay reserves stock piling so as to promote availability of livestock feeds for utilization during periods of stress.