

# National Drought Management Authority SAMBURU COUNTY



A Vision 2030 Flagship Project



## DROUGHT EARLY WARNING BULLETIN FOR AUGUST 2019

**AUGUST 2019 EW PHASE**

**Drought Status: NORMAL**

Shughuli za kawaida

### Early Warning Phase Classification

LIVELIHOOD ZONE	EW PHASE	TRENDS
Agro-pastoral	Normal	Stable
Pastoral (North)	Normal	Worsening
Pastoral (East)	Alert	Worsening
County	Normal	Worsening

Biophysical Indicators	Value	Normal range/Value	
VCI-3month (County)	45.53	35-50	
VCI-3month -Samburu East	25.02	35-50	
VCI-3month -Samburu North	62.69	35-50	
VCI-3month-Samburu West	70.13	35-50	
Production indicators	Value	Normal ranges	
Livestock Migration Pattern	Migration to dry season areas	No Migrations	
Livestock Body Conditions	Moderate appearance with few having smooth appearance	Good Smooth appearance	
Milk Production	1.3	>1.3	
Livestock deaths due to drought	No death	No death	
Access Indicators	Value	Normal ranges	
Terms of Trade (TOT)	50.2	>52	
Milk Consumption	0.9	>1	
Return distance (km)	Household	7.1	<5.1
	Livestock	14.7	<10.5
Acceptable FCS (percent)	Pastoral	32.4	100
	Agro pastoral	73.3	100
Utilization indicators	Value	Normal ranges	
MUAC (percent)	28.4	<19.19	
rCSI	Pastoral	11.9	<56
	Agro pastoral	8.9	<56

### Drought Situation & EW Phase Classification

#### Biophysical Indicators

- Off season showers were received towards the end of month mostly in Central and Parts of North.
- Normal vegetation greenness prevailed except for East with moderate vegetation deficit.
- Level of surface water sources dwindled considerably in East and North with some drying up.

#### Socio Economic Indicators Details

- Significant increase in trekking distances to water points for both households and livestock.
- Livestock in Samburu north and East are within normal dry season grazing areas though some from East migrated to Isiolo and Laikipia.
- Milk production and consumption decreased compared to July.
- Body condition for all livestock species was to fair to good across the entire livelihood zones.
- Market prices for all livestock species decreased compared to July
- Maize/*posho* prices at market decreased slightly compared to July.
- A medium sized goat exchanged with 50.2 kilograms of cereals.
- Proportion of children less than 5 years at risk of malnutrition decreased marginally compared to July.

- Short rains harvests
- Short dry spell
- Reduced milk yields
- Increased HH Food Stocks
- Land preparation

- Planting/Weeding
- Long rains
- High Calving Rate
- Milk Yields Increase

- Long rains harvests
- A long dry spell
- Land preparation
- Increased HH Food Stocks
- Kidding (Sept)

- Short rains
- Planting/weeding

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
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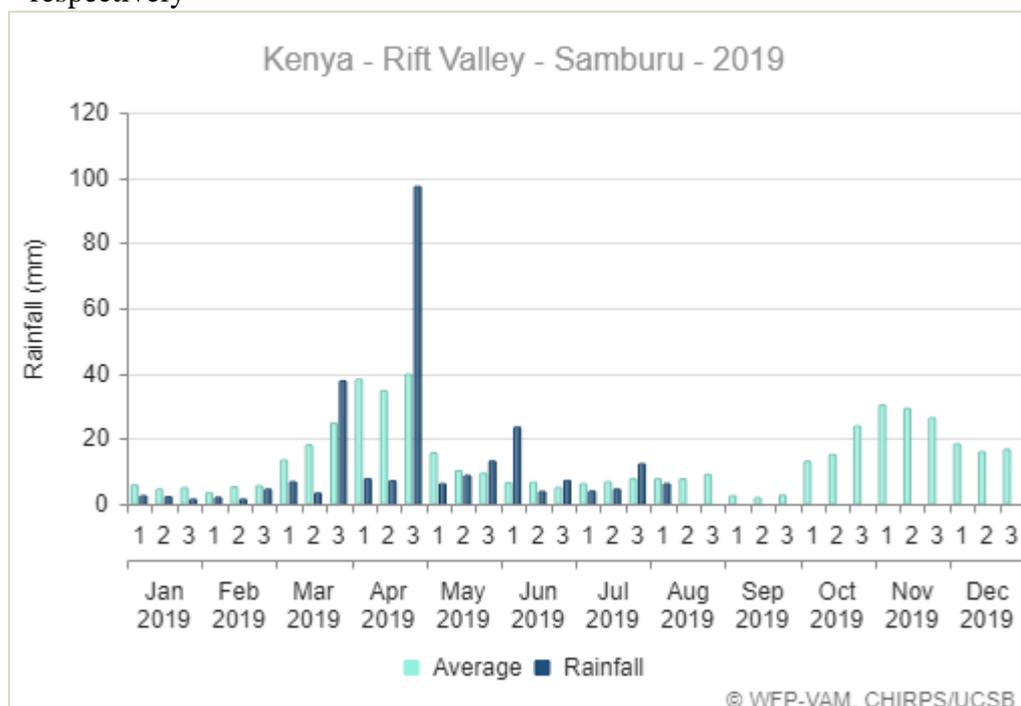
## 1.0 CLIMATIC CONDITIONS

### 1.1 Rainfall Performance

- Hot and dry conditions characterized by ocean blue sky prevailed during the first and second dekad of the reporting month though occasionally, heavy, erratic downpours lasting a few minutes received especially in Samburu central and parts of north. Towards the end of the third dekad, the blue sky suddenly become dark as grey clouds started gathering, temperatures dipped and gushes of strong winds being felt. Heavy downpours characterized by thunder and lightning followed resulting in flash flooding. The rains persisted for about 3 days and continued to September. Some pockets of the county such as Ndoto and parts of Waso Ward remained dry.

### 1.2 Amount of Rainfall and Spatial Distribution

- Rainfall estimates in the 1<sup>st</sup> dekad indicate that rainfall was below the long-term average (LTA) by 19 percent (Figure 1). Rainfall weather station positioned in Maralal by meteorological department recorded cumulative rainfall of 62 mm for the entire month.
- Intensity of the showers also varied with agro pastoral zone of Samburu central receiving heavy downpours. Nachola, Elbarta, Angata Nanyokie and Baawa in Samburu north also received heavy showers. Most wards in Samburu east received light showers though some areas in Wamba west were pounded by heavy downpours. Ndoto ward, Nyiro East and parts of Waso ward remained relatively dry throughout the month. Major parts of Ndoto ward did not receive rainfall for the last two consecutive seasons.
- Generally, temporal and spatial distribution was poor and uneven across the livelihood zones respectively



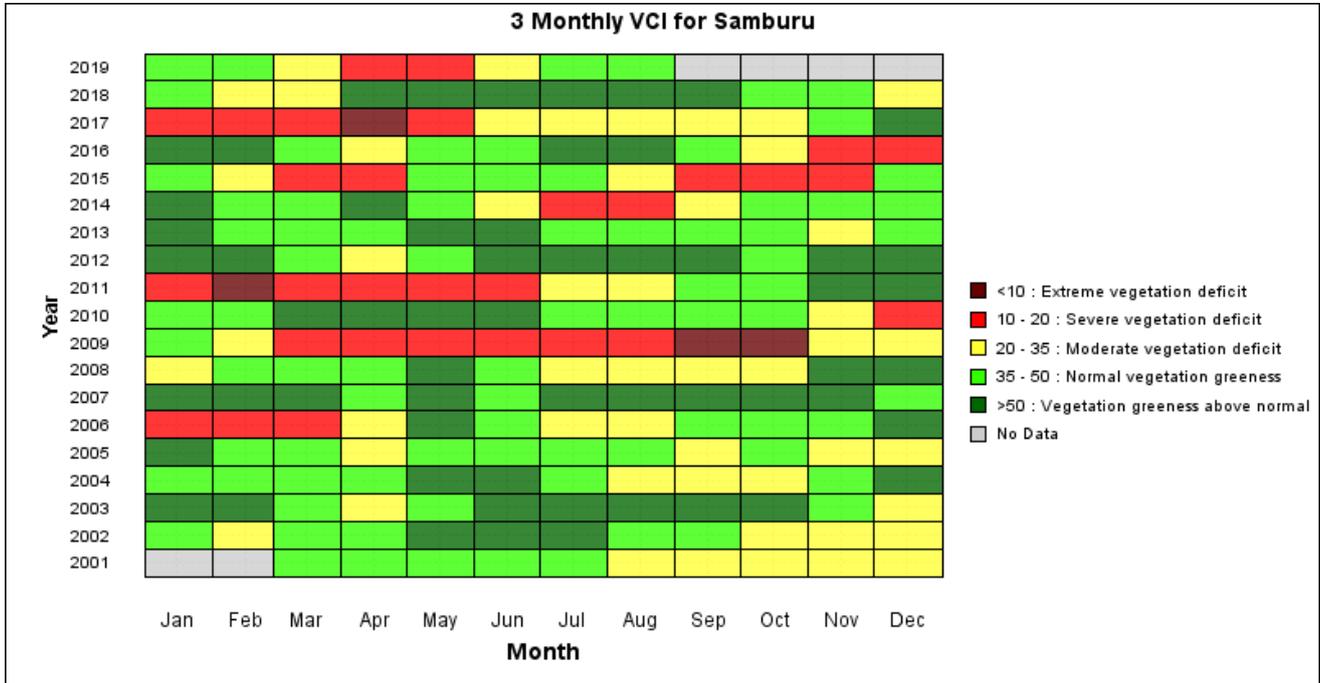
**Figure 1:** Graph Showing Rainfall Estimates (RFE) Trends for Samburu County  
(Source : WFP-VAM, CHIRPS/UCSB)

# IMPACTS ON VEGETATION AND WATER

## 2.0 Vegetation Condition

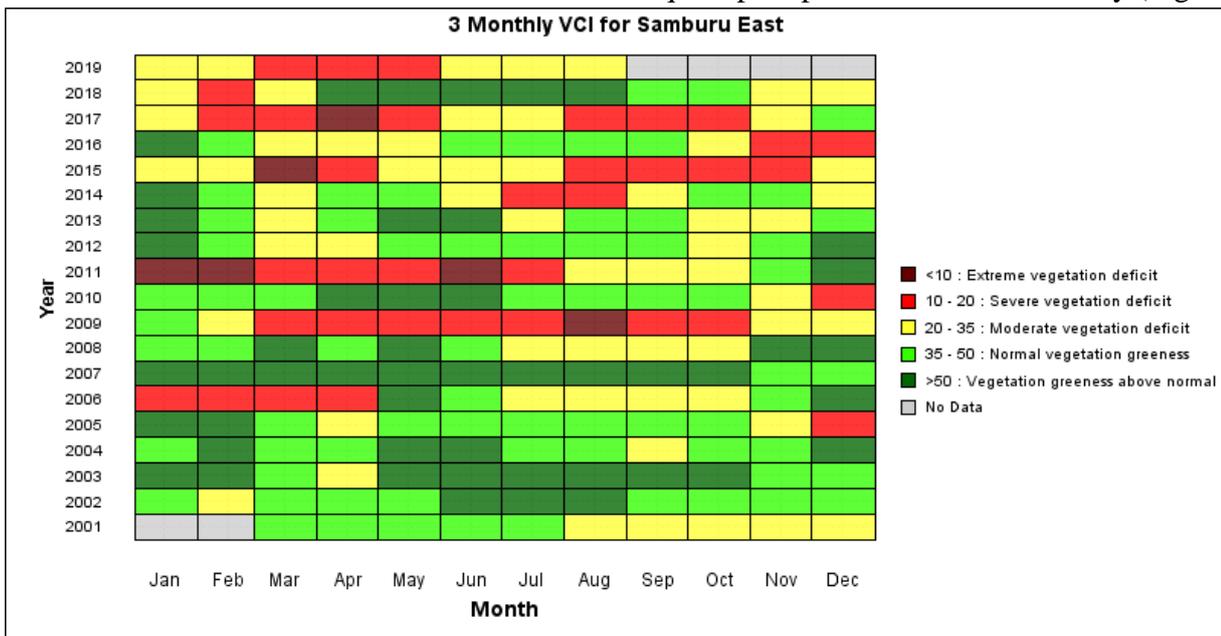
### 2.1.1 Vegetation Condition Index (3 month-VCI)

- Vegetation cover in major parts of Samburu central and Samburu north remained fairly stable compared to July. Average VCI (3 month) value of 45.53 for the county indicated normal vegetation greenness with Samburu West and North indicating vegetation greenness was above normal (Figure 2a). The stable vegetation conditions can be attributed to the rains received during various days in July and August which slightly regenerated the vegetation.



**Figure 2a:** Matrix and Graph Showing VCI Trends for Samburu County  
(Source: Boku University)

- Vegetation greenness in Samburu East depicted moderate vegetation deficit as indicated by 3month VCI value of 25.02. This can be attributed to inadequate precipitation in the sub county (Figure 2b).



**Figure 3b:** Matrix and Graph Showing VCI Trends for Samburu County  
(Source: Boku University)

## 2.1.2 Field Observations (Pasture and Browse Conditions)

### Quality and Quantity

- Pasture in pastoral zone of Samburu East is depleted though little dry grass of poor quality exists in Mathew ranges for the small stock to nibble supplementing browse and acacia ponds. Browse on the other hand is fair.
- In agro pastoral zone of Samburu central, pasture regeneration stagnated due to extensive use by huge number of doper sheep. The grass here is short and very green giving the landscape beautiful scenery however it's not sufficient for cattle to feed on. Browse on the other hand is good as the trees and plants are leafy.
- In pastoral North, dry standing hay dominates the grassland especially in Nachola ward from Marti all the way to Baragoi including Angata Sikira, Ngorishe and towards Kawop. However large herds especially from Marsabit County are rapidly depleting the pastures. Browse is generally fair to good however remained poor in Ndoto ward and eastern side of Nyiro ward due to prolonged dry spell with residents forced to loop on trees for forage for the few stocks left at home.
- Out of the sampled key informants, 58.8 percent responded that pasture was poor, 23.5 percent said it was fair and 17.6 percent said it was fair. For browse, 47.1 percent responded it was fair, 35.3 said it was fair and 17.6 responded it was poor (Figure 3).

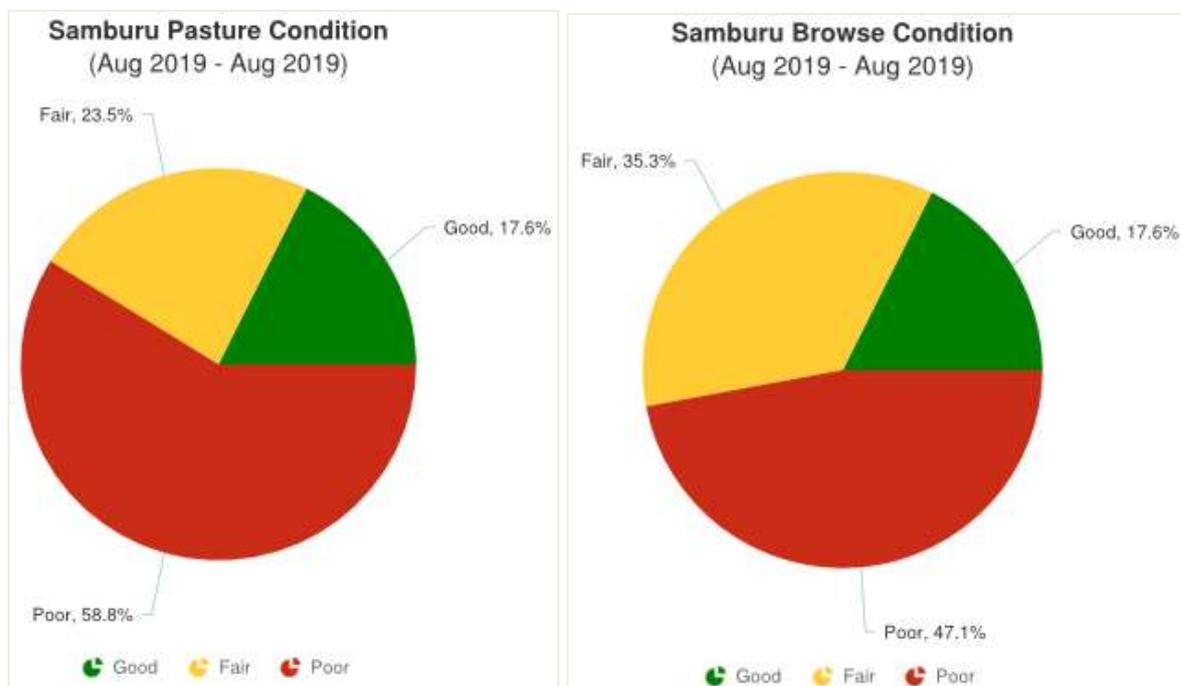
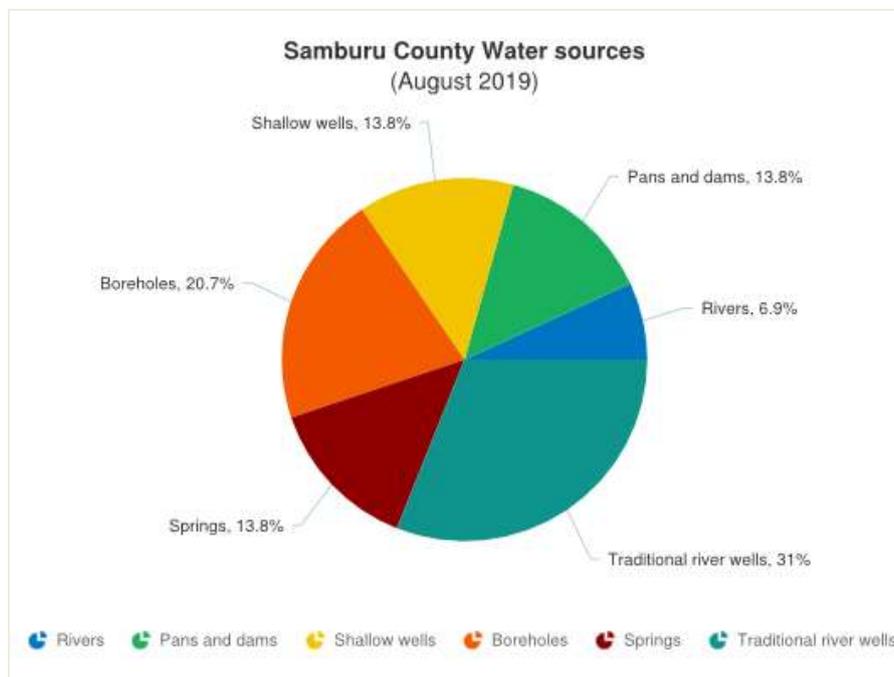


Figure 3: Pasture and Browse Condition

## 2.2. Water Resource

### 2.2.1 Sources

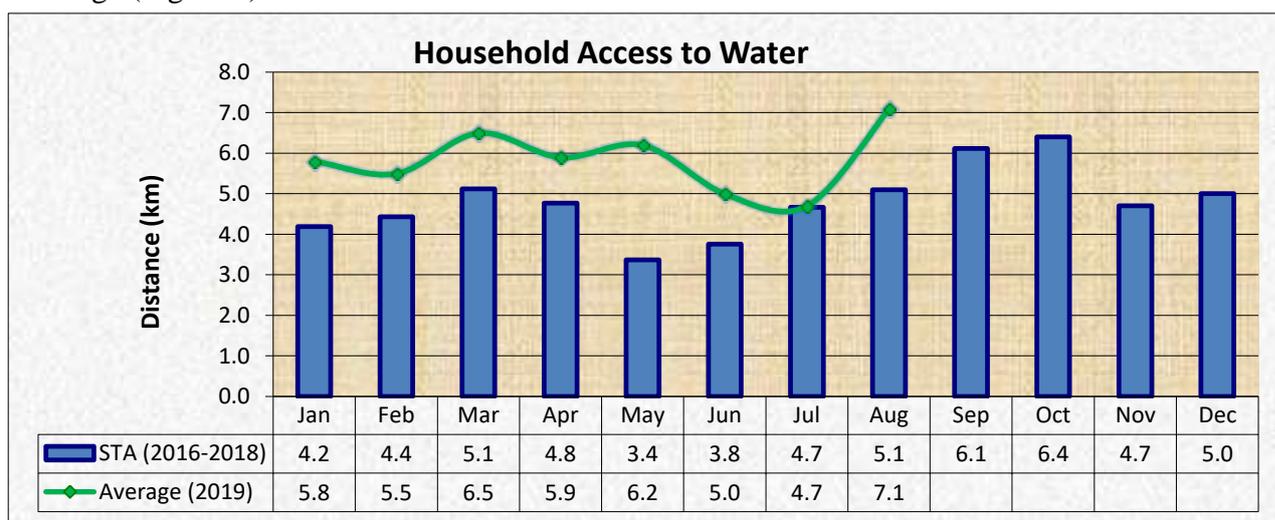
- As the dry spell persisted in pastoral areas, there was a shift in reliance of water sources from borehole to traditional river wells attributed to run off from the highlands to the downstream supporting riverbed/streams recharge. Surface water sources such as pans/dams have also dried up especially in Samburu East whereas the ones still holding water are dirty and are being shared by both livestock and humans. This further exacerbated use of traditional river wells which generally have clean and fresh water.
- Out of the households sampled during the month, 31 percent responded they relied on traditional river wells while 20.7 percent relied on boreholes. Pans/dams, shallow wells and springs were used by 13.8 percent respectively while a small majority of about 6.9 percent relied on rivers (Figure 4).



**Figure 4: Common Water Sources**

### 2.2.2 Household Access and Utilization

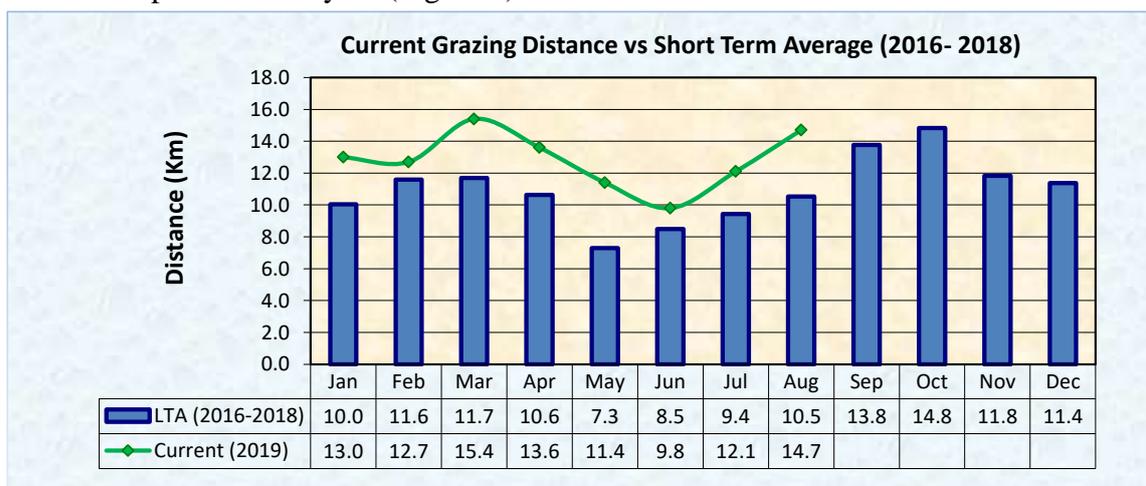
- The month of August was characterized by hot temperatures which resulted in most surface water sources drying up and underground sources yield output reducing especially in the pastoral areas. Furthermore, there was no rainfall received save for the last day of that month resulting into water stress amongst pastoral households as they were forced to trek for longer distances in search of water. Trekking distance increased by 73 percent from 4.7 km in July to 7.1 km in August.
- Majority of the sentinel sites reported average return distance ranging between 4 to 6 km except parts of Ndoto, eastern parts of Nyiro ward and Waso ward which reported return trekking distances of close to 10 km due to prolonged dry spell.
- The current households trekking distance to water points was 39 percent above the short-term average (Figure 5).



**Figure 4: Average Distance Travelled by Households in Search of Water**

### 2.2.3 Livestock Access (Grazing Distances to Water Points)

- Available pasture and browse continued to diminish each passing day attributed to massive herds of livestock with the situation compounded further by lack of rainfall to replenish existing vegetation, thus livestock were forced to graze further away from water sources. This situation was further exacerbated by migrating livestock from Marsabit County which led to increased competition for pasture and water.
- Trekking distance increased by 21 percent from 12.1 km in July to 14.7 km in August. Sentinel sites of Waso, Wamba North and Nachola recorded highest return distances ranging between 9 km to 12 km whereas the rest of sampled communities recorded return distances ranging between 4 km to 7 km.
- Watering interval for cattle was daily in agro pastoral livelihood and after one day in pastoral livelihood zone whereas for small stock it was after every two to three days.
- Current livestock trekking distance remained above short term average by 40 percent compared to a similar period of the year (Figure 6).



**Figure 5:** Distance Travelled from Grazing Areas to Water Points

### 3.0 PRODUCTION INDICATORS

#### 3.1 Livestock Production

##### 3.1.1 Livestock Body Condition

- Body condition of cattle generally was good to fair despite the long trekking distances covered in search of pasture and water. Majority of cattle were observed to have good smooth appearance and were neither fat nor thin except livestock in Waso and Ndoto where body condition has started to deteriorate.
- Body condition for small stock is good as they are favored by existing forage conditions coupled with nutritious acacia ponds. Body condition for such livestock is characterized by good smooth appearance. (*Refer to table 1 in annex*).

##### 3.1.2 Livestock Diseases and Deaths

- Quarantine that was imposed in July by veterinary department in Samburu North to control foot and mouth disease (FMD) is still active. Clinical signs of FMD still continued to be reported within the county.
- Camels in Samburu East and North were reported to suffer from Orf disease. Other endemic diseases such as Contagious Caprine Pleuropneumonia (CCPP) and tick-borne diseases such as East Coast Fever (ECF) were reported.

##### 3.1.3 Milk Production

- Natural weaning coupled with dry conditions also affected milk production at household since forage become scarce resulting to livestock not feeding properly which resulted in decreased production. Production decreased by 13 percent from 1.5 litres per day in July to 1.3 litres per day in August.
- The current production per household stabilized compared to the short-term average at the same period of the year (Figure 7).

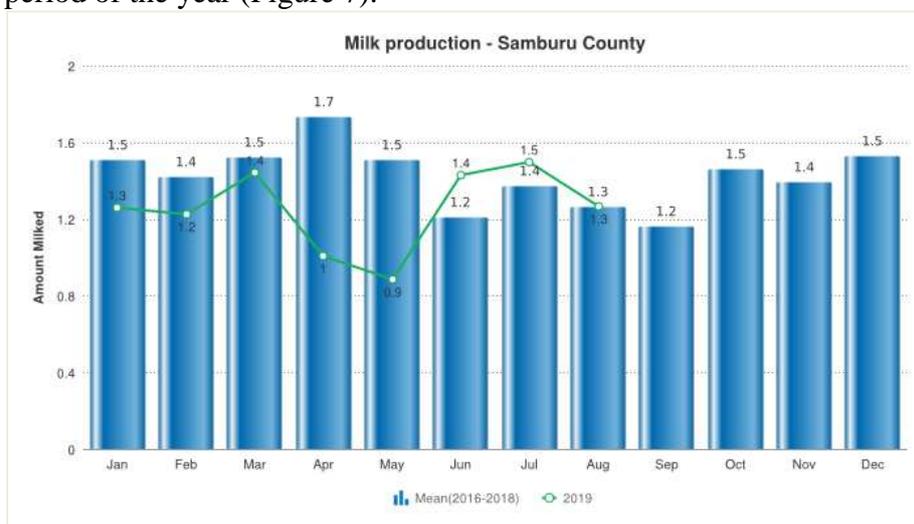


Figure 6: Trends in Milk Production per Household

#### 3.2 Rain Fed Crop Production

##### 3.2.1 Stage and Condition of Food Crops

- Maize crop in lowlands of agro pastoral is currently progressing well and majority is at tussling stage while bean crop is at harvesting stage. However, there are reports of fall army worm's infestation from farmers within Maralal ward. The expected yields are likely to be below normal as many farmers did not plough due to delayed rainfall.

##### 3.2.2 Harvest of Crop

- Farmers in lowlands are harvesting green beans.

## 4.0 MARKET PERFORMANCE

### 4.1 Livestock Prices

#### 4.1.1 Cattle Prices

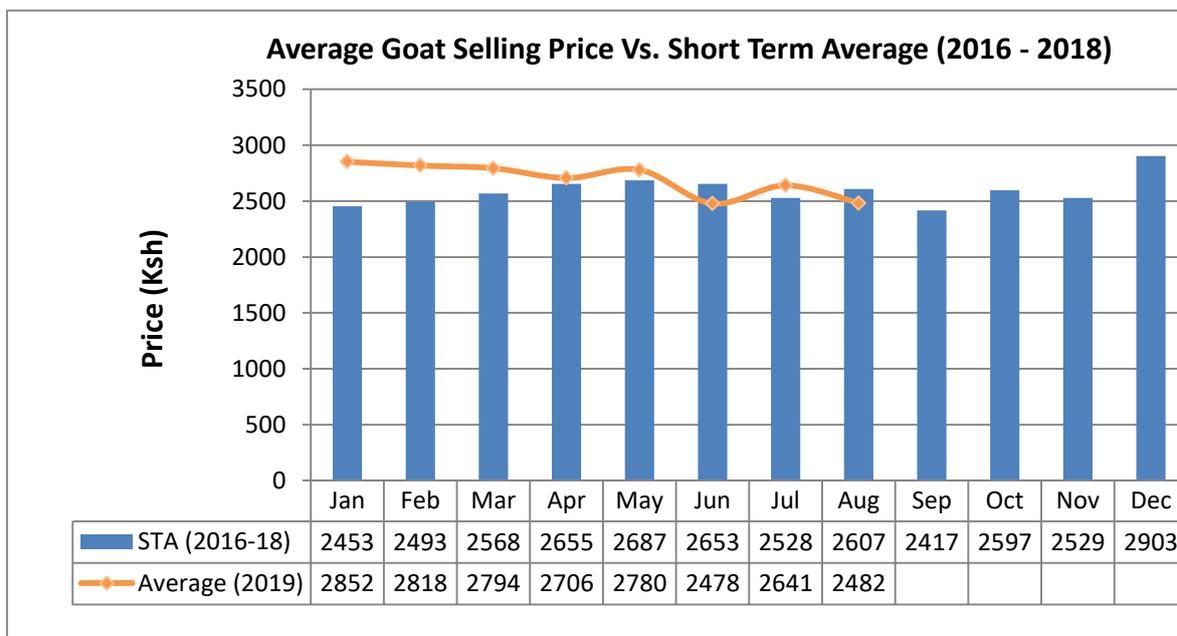
- Market prices for all livestock species dropped though cattle witnessed a tremendous drop compared to the other species. Despite cattle boasting of good to fair body condition, average market price for cattle decreased by 19 percent from Ksh 18,321 fetched in July to Ksh 14,714 in August. Harsh economic period as households struggled to feed children on holidays and also raise school fees in preparation for schools re-opening resulted in influx of cattle at the markets which led to drop in cattle prices.
- Markets sampled were asking between Kshs 16,000 to Ksh 18,000 for a young but mature cattle except Illaut market where a similar animal was being sold for an average of Ksh 8,000 to Ksh 10000. Markets within Samburu North have been affected by influx of livestock from Marsabit county which are being sold at lower prices since their owners are desperate for money to purchase essential commodities such as food.
- The current average price was 12 percent below the Short Term Average (STA) of a similar period of the year (Figure 8).



**Figure 7:** Graph Showing Cattle Selling Price Trends at Market Level

#### 4.1.2 Goat Prices

- Goat prices just like cattle also witnessed a reduction in market price despite good body condition. Average price decreased by 6 percent from Ksh 2,641 in July to Ksh 2,482 in August. The decrease was attributed to influx of livestock at the market as households sought to look for money to purchase food and school fees.
- Majority of markets recorded average ranging between Ksh 2,000 to Ksh 3,000 for a mature goat except for Archers post and Illaut markets. A similar goat in Archers post fetched around Ksh 3,500 attributed to availability of external traders from Marsabit and Isiolo counties whereas Illaut market fetched the least at Ksh 1,500 having been affected by competition from livestock from Marsabit County which are being sold at lower prices by their owners so as to purchase foodstuff.
- The current average price was 6 percent above the short-term average of similar period of the year (Figure 9).



**Figure 8:** Graph Showing Goats’ Selling Price Trends at market Level

### 4.1.3 Sheep Prices

- Sheep markets prices also decreased by 10 percent from Ksh 2,323 in July to Ksh 2,070 in August. The decrease was attributed to influx of livestock at the market as households sought to look for money to purchase food and school fees.
- Influx of migrating livestock from Marsabit County occasioned oversupply to the local markets affecting negatively on market prices particularly in Samburu North where for instance, a sheep was sold for Ksh 1,300 unlike other markets within the county whereby a similar animal fetched between Ksh 2,000 and Ksh 3,000.
- The current average market price was below the three-year average by 7 percent compared to similar period of the year (Figure 10).



**Figure 9:** Graph Showing Sheep Selling Price Trends at Market Level

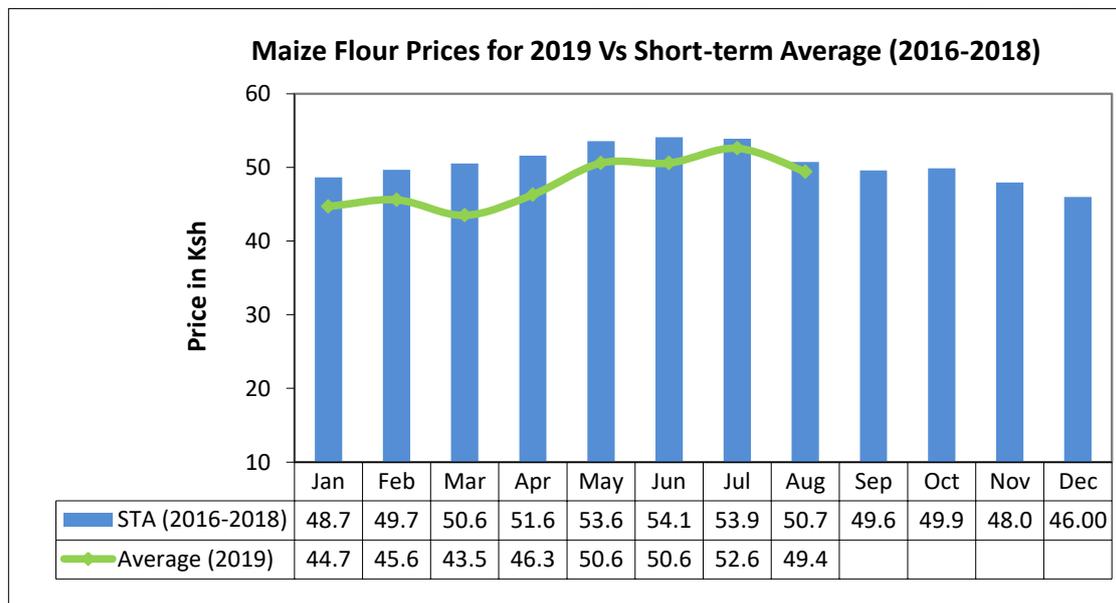
## 4.2 Crop Prices

### 4.2.1 Posho (Milled Maize)

- Markets were vibrant as price of foodstuff especially cereals remained relatively stable. Price of maize slightly reduced by 6 percent from 52.6 percent in July to 49.4 percent in August. Though

stocks at households are dwindling, traders managed to source maize from outside the county which may have contributed to the decline.

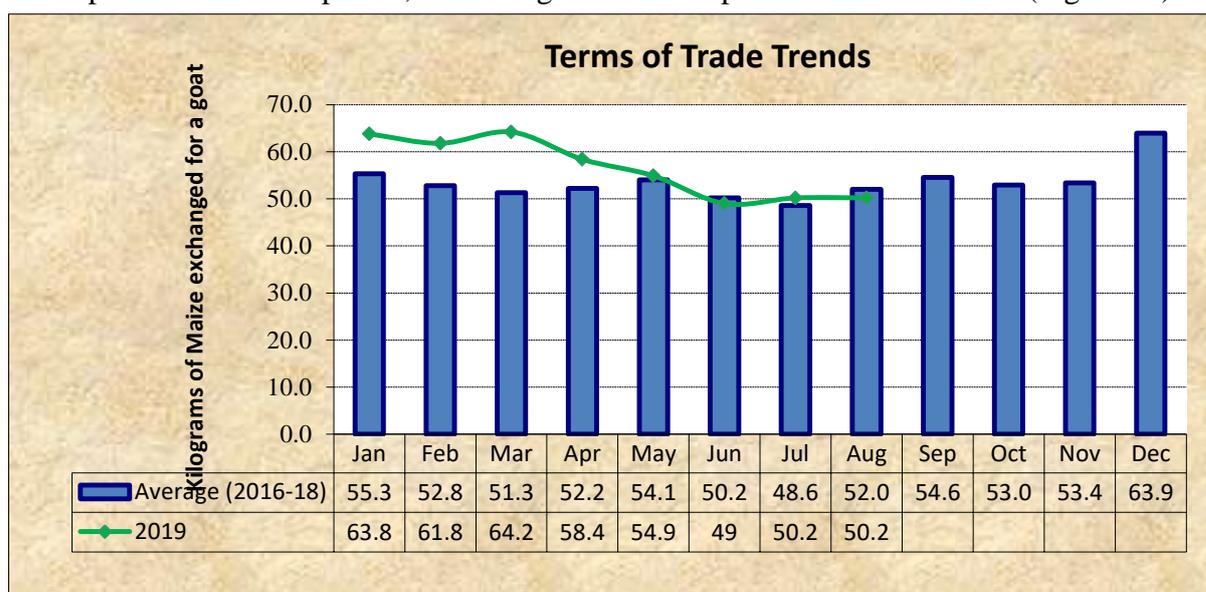
- Sampled markets recorded average prices of between Ksh 40 to Ksh 50 per kilogram except Nairimirimo market recording an average of Ksh 60 which can be attributed to added transportation cost.
- The current prices remained below the LTA by 2 percent at this time of the year (Figure 11).



**Figure 10:** Graph Showing Maize Meal Price Trends

#### 4.3 Livestock Price Ratio/Terms of Trade (TOT)

- The current ToT remained stable compared to average ToT in July. A pastoralist was able to purchase 50.2 kg of cereals from the sale of a goat similar to July.
- Pastoral livelihood of Samburu North recorded lowest ToT of 45.6 attributed to low market prices due to influx of animals from Marsabit County. Pastoral livelihood of Samburu East recorded average ToT of 49.8 and agro-pastoral livelihood recorded average ToT of 60 attributed to availability of cereals.
- In comparison to similar period, the average ToT was 3 percent below the STA (Figure 12).

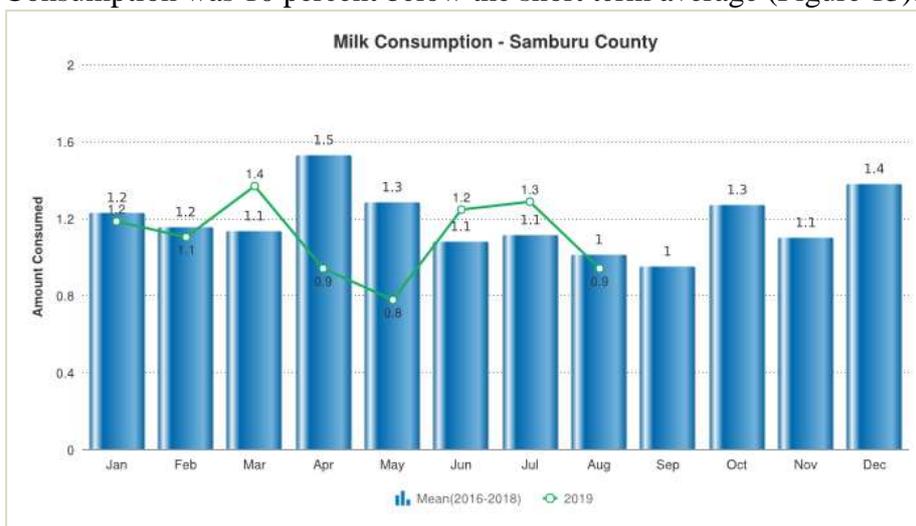


**Figure 11:** Trends in Terms of Trade (TOT)

## 5.0 FOOD CONSUMPTION AND NUTRITION STATUS

### 5.1 Milk Consumption

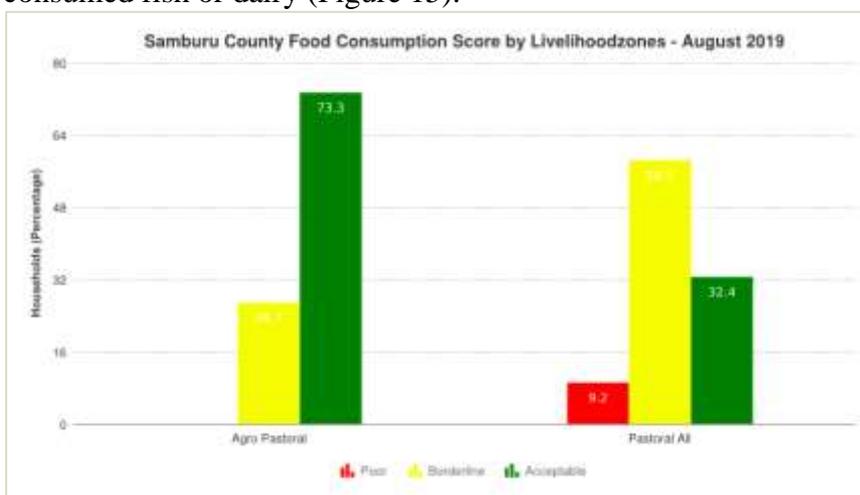
- Households entirely rely on milk from their livestock and seldom from markets. With production having declined so did consumption at the household. Milk consumption decreased by 30 percent from 1.3 litres per day in July to 0.9 litres a day in August. The milk was mainly produced by lactating goats and camels and was used for making tea rather than being consumed as whole.
- Some households would forego consuming the milk so as to purchase maize flour and other food commodities. The milk retailed for between Ksh 30 to Ksh 60 per litre for cow's milk and up to Ksh 150 for camels' milk.
- Consumption was 10 percent below the short term average (Figure 13).



**Figure 12:** Trends in Milk Consumption per Household

### 5.2 Food Consumption Score (FCS)

- During the reporting period, 73.3 percent and 32.4 percent of households in agro pastoral and pastoral livelihood respectively had acceptable FCS which implies they consumed staples and vegetables everyday accompanied with meat or dairy products. 26.7 percent and 58.5 percent of the households in agro-pastoral and pastoral livelihood had borderline FCS an indication that their diet consisted of staples and vegetables but lacked milk or dairy. None of the household in agro pastoral had poor FCS. However, 9.2 percent of pastoral households had poor FCS implying households were not consuming staples and vegetables every day and seldom consumed fish or dairy (Figure 15).

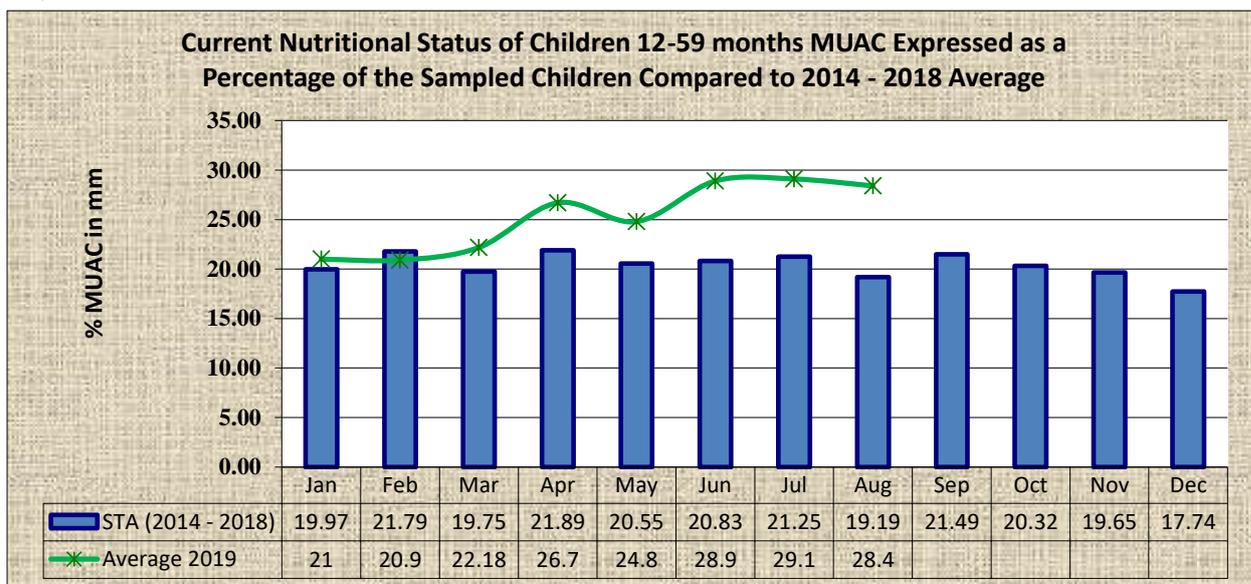


**Figure 13:** Bar chart showing FCS per livelihood zone

### 5.3 Health and Nutrition Status

#### 5.3.1 Mid Upper-Arm Circumference (MUAC 125-134 mm)

- Proportion of sampled children below 5 years at risk of being malnourished remained high despite a marginal decrease of 2 percent from 29.1 percent in July to 28.4 percent in August. Unavailability of milk due to dry spell, inadequate food intake due to high poverty rates, high diseases prevalence and poor maternal practices such poor breastfeeding practices contributed to high malnutrition rates.
- Suguta Ward recorded had highest proportion of children at risk of malnutrition at 34.4 percent followed by Ndoto at 34 percent, Wamba West at 32.7 percent, Wamba North at 27.9 percent, Nachola at 22.6 percent and Waso at 15.4 percent.
- The current proportion of under-five at risk of malnutrition was 47 percent above LTA (Figure 15).



**Figure 14:** Graph showing average Nutritional status (MUAC)

#### 5.3.2 Health

- Upper Respiratory Tract Infections (URTI), diarrhoea and Malaria respectively were the most prevalent disease as captured by the DHIS. High URTI can be attributed to the dusty and chilly conditions being felt across the county. Cases of diarrhoea can be associated to poor personal and environmental hygiene as well as poor water and sanitation practices across the county. Household sought treatment in public health centres, private clinics and some opted to use local herbs for treatment.

#### 5.4 Reduced Coping Strategies Index (rCSI)

- Households employed various strategies to cater for lack of food or money to buy the food (rCSI). The rCSI for agro-pastoral livelihood was 8.9 as compared to 11.9 for pastoral livelihood. The common strategy employed for across both livelihoods was reduction of meal portions and consumption of less preferred/cheaper food.

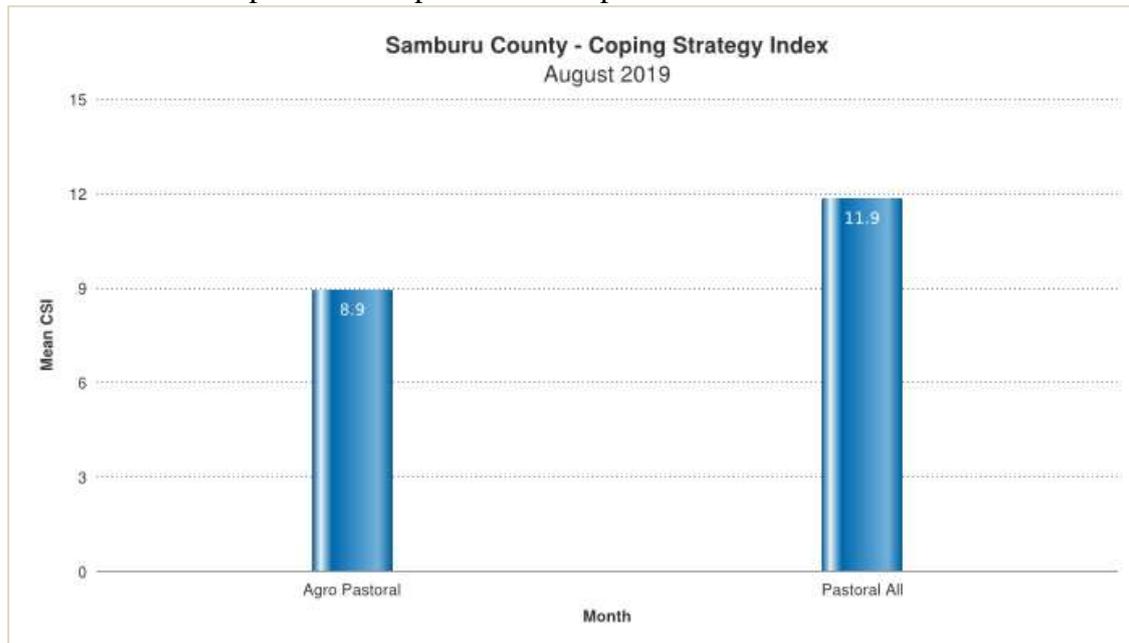


Figure 15: Bar chart showing CSI per livelihood zone

## 6.0 CURRENT INTERVENTIONS AND RECOMMENDATIONS

### 6.1 Non-Food On-going Interventions

**Table 1:** Non-food On-going Interventions

SECTOR	INTERVENTION	IMPLEMENTERS
Water	<ul style="list-style-type: none"><li>• Routine maintenance of broken-down boreholes</li></ul>	Water department
	<ul style="list-style-type: none"><li>• Water trucking</li></ul>	NDMA
Health	<ul style="list-style-type: none"><li>• Integrated outreaches across the county</li></ul>	MOH through Transforming health system for universal coverage program supported by world bank, NDMA

## 7.0 EMERGING ISSUES

### 7.1 Insecurity/Conflict/Human Displacement

- A case of livestock banditry was reported in Samburu North which left one person dead.

### 7.2 Migration

- In-migration of livestock en-masse from Laisamis in Marsabit County from as far as from Mt. Kulal have invaded areas in Samburu north which received rainfall and in particular areas around Lesepe, Naisisho, Ngorishe, Lesirkan, Ngilai, Masikita . Others from Laisamis were spotted heading towards Suiyan.
- Out-migration of livestock from Samburu east particularly from Waso ward to Isiolo County has also been witnessed. Pasture in Naishamunye, Losesia and Laesororo has been depleted forcing livestock to migrate to Kipsing, Oldonyiro and Louwa Nyiro. Others have migrated to agro-pastoral areas with other moving towards Kirimun plains in Laikipia County.
- In Samburu central, majority of livestock are grazing close to their homesteads due to minimal replenishment of rangeland resources.

### 7.3 Food Security Prognosis

- Majority of households especially in Samburu North and East are currently food insecure which explains the high malnutrition rates. This is due to unfavourable ToT caused by low livestock prices. Moreover, productivity of most livestock is low due to long trekking distances in search of pasture and water thus households cannot access milk. However, if the off-season showers persist to September, pasture and browse may become easily accessible which in turn result to improved productivity. But the same conditions also have to prevail in Marsabit County for their livestock to return back home so that local markets can stabilize otherwise status quo remains.
- For farmers in Samburu central, the off-season showers may help in growth developments of their maize crop which may lead to bumper harvests. Furthermore, the rains may assist regenerate existing pasture and browse which may lead to improved body condition for livestock and consequently improved milk productivity and ToT.
- For areas that have not received rainfall such as Ndoto and parts of Waso, communities will continue suffering trekking for longer distance to access water. Their livestock productivity will deteriorate further resulting to increased malnutrition levels and low purchasing power for most households. Quarantine imposed in Samburu North following an outbreak of FMD that is likely to make buyers shy away from these markets thus affecting household purchasing power.

## 8.0 RECOMMENDATIONS

**Table 2:** Proposed Interventions per Sector

<b>SECTOR</b>	<b>INTERVENTION</b>	<b>Areas</b>
<b>Livestock</b>	<ul style="list-style-type: none"> <li>• Treatment and vaccination against FMD, CCPP and other reported diseases</li> <li>• Provision of livestock feeds in Samburu East</li> <li>• Promote pasture and water resource sharing in dry season grazing areas</li> </ul>	<ul style="list-style-type: none"> <li>• Samburu North</li> <li>• Ndoto ward, Entire Samburu East</li> <li>• Samburu North</li> </ul>
<b>Health</b>	<ul style="list-style-type: none"> <li>• Up scaling of integrated outreaches, CLTS and WASH</li> </ul>	<ul style="list-style-type: none"> <li>• County wide</li> </ul>
<b>Water</b>	<ul style="list-style-type: none"> <li>• Water trucking</li> <li>• Repair of broken-down boreholes</li> <li>• Fuel subsidy to strategic boreholes serving large livestock populations and those supporting water trucking</li> <li>• Sensitization on water harvesting</li> </ul>	<ul style="list-style-type: none"> <li>• Ndoto Ward, Parts of Samburu East</li> <li>• Tangar borehole, Barsilinga borehole</li> <li>• Lesirkan, Loijuk, Mbukoi, Marti, Kiltamany</li> <li>• All institutions</li> </ul>
<b>Agriculture</b>	<ul style="list-style-type: none"> <li>• Sensitize communities on prevention of Fall army worm.</li> <li>• Capacity building on top-dressing fertilizers</li> </ul>	<ul style="list-style-type: none"> <li>• Maralal, Suguta and Loosuk wards</li> </ul>
<b>Peace</b>	<ul style="list-style-type: none"> <li>• Peace building initiatives to advocate for peaceful coexistence and sharing of resources</li> </ul>	<ul style="list-style-type: none"> <li>• Samburu North and central</li> </ul>

## Annexes

**Table 3:** Livestock Body Condition Scoring Chart

Score	Body Condition	Warning Stage
1	Emaciated, little muscle left	Emergency
2	Very thin no fat, bones visible	
3	Thin fore ribs visible	Alert Worsening/Alarm
4	Borderline fore-ribs not visible. 12th & 13th ribs visible	Alert
5	Moderate. neither fat nor thin	Normal/Alert
6	Good smooth appearance	
7	Very Good Smooth with fat over back and tail head	Normal
8	Fat, Blocky. Bone over back not visible	
9	Very Fat Tail buried and in fat	