# National Drought Management Authority
## SAMBURU COUNTY

A Vision 2030 Flagship Project

## DROUGHT EARLY WARNING BULLETIN FOR AUGUST 2017

**AUGUST 2017 EW PHASE**


### Drought Situation & EW Phase Classification

**Biophysical Indicators**

- Enhanced and sporadic rainfall which cumulated to 8.2 mm, 4.8 mm and 12.7 mm in the 1st, 2nd and 3rd dekads respectively which was fair but unevenly distributed.
- Rangeland cover for the county slightly deteriorated from 29.92 in July to 28 as measured by vegetation condition index (VCI).
- In agro pastoral, surface and underground water sources recharged half full while remained partially dry in pastoral livelihood.

**Socio economic indicators details**

- In migration of livestock from Marsabit and inter migration from Samburu East to Suiyan, Kawop, Ngorishe and Marti plain in Samburu North was witnessed. In migration from Laikipia to Suguta and its environs also observed.
- Both livestock and household trekking distances increased.
- Milk production and consumption increased compared to previous month but remained below LTA.
- Browsers and sheep body condition was good to fair while for cattle, it ranged between fair to poor which contributed to low prices for all species.
- Market prices for Posho (milled maize) reduced to Ksh 55 down from Ksh 65 in July.
- Current term of Trade (TOT) was 39 kg of cereals obtained from the income from sale of one goat.
- Proportion of children under-five years at risk of malnutrition decreased from 23.9 percent to 22.3 percent recorded last month.

### Early Warning Phase Classification

| LIVELIHOOD ZONE | EW PHASE | TRENDS |
|---|---|---|
| Agro-pastoral | Normal | Improving |
| Pastoral (North) | Alert | Deteriorating |
| Pastoral (East) | Alarm | Deteriorating |
| County | Alert | Deteriorating |

| Biophysical Indicators | | Value | Normal range/Value |
|---|---|---|---|
| VCI-3month (Samburu County) | | 28 | 35-50 |
| VCI-3month -Samburu East | | 18.46 | 35-50 |
| VCI-3month -Samburu North | | 34.97 | 35-50 |
| VCI-3month-Samburu West | | 42.96 | 35-50 |
| **Production indicators** | | **Value** | **Normal ranges** |
| Livestock Migration Pattern | | In & Inter Migration to Samburu North | No Migration |
| Livestock Body Conditions | | Moderate, neither fat or thin | Fat & Smooth appearance |
| Milk Production | | 1.5 | >1.9 |
| Livestock deaths due to drought | | Minimal Deaths | No death |
| **Access Indicators** | | **Value** | **Normal ranges** |
| Terms of Trade (TOT) | | 39 | >62 |
| Milk Consumption | | 1.2 | >1.7 |
| Return distance | Household | 6.8 | <4.8 |
| | Livestock | 13.4 | <9.5 |
| Poor FCS | Pastoral | 26.2 | <21% |
| | Agro pastoral | 3.6 | <21% |
| **Utilization indicators** | | **Value** | **Normal ranges** |
| MUAC | | 22.3 | <18.18% |
| Mean CSI | Pastoral | 15.6 | <56 |
| | Agro pastoral | 0.3 | <56 |

| | | | |
|---|---|---|---|
| ▪ Short rains harvests<br>▪ Short dry spell<br>▪ Reduced milk yields<br>▪ Increased HH Food Stocks<br>▪ Land preparation | ▪ Planting/Weeding<br>▪ Long rains<br>▪ High Calving Rate<br>▪ Milk Yields Increase | ▪ Long rains harvests<br>▪ A long dry spell<br>▪ Land preparation<br>▪ Increased HH Food Stocks<br>▪ Kidding (Sept) | ▪ Short rains<br>▪ Planting/weeding |

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|

## 1.0 CLIMATIC CONDITIONS

### 1.1 Rainfall Performance

- The agro pastoral areas received enhanced and sporadic precipitation within the period under review. The cumulative amounts recorded were 8.2 mm as compared to LTA of 7.6 in the first dekad and 4.8 mm compared to LTA of 7.6 mm in the second dekad and 12.7 mm compared to 9 mm in the third dekad. (***WFP-VAM, CHIRPS/UCSB***).

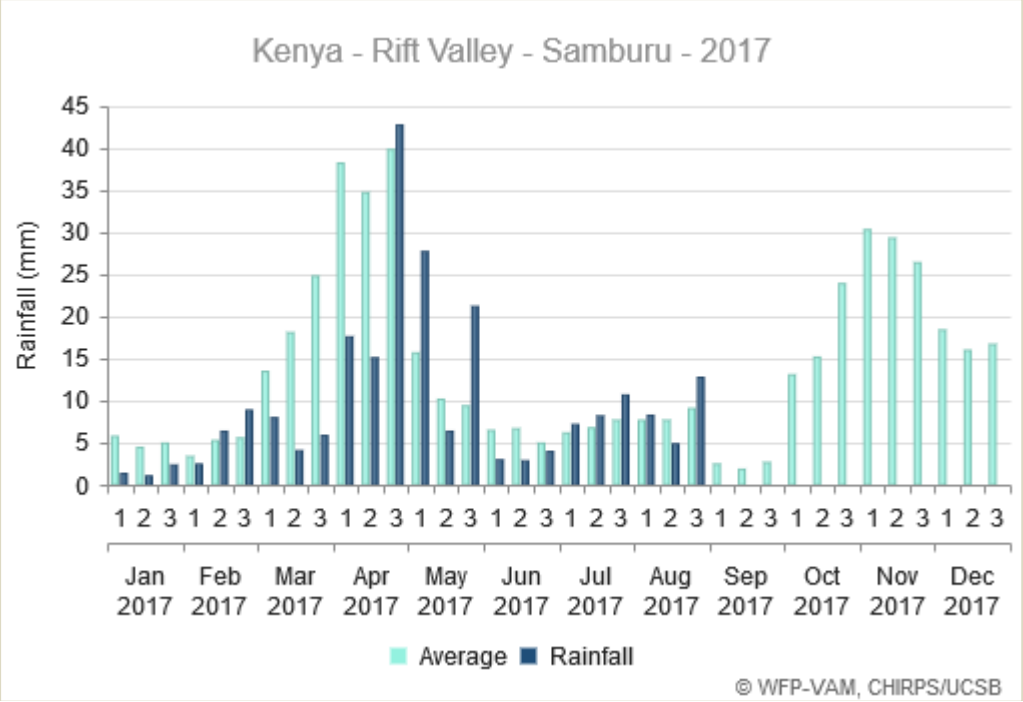



**Figure 1:** Graph Showing Rainfall Trends Rainfall Estimates (RFE)
(**Source:** *WFP-VAM, CHIRPS/UCSB*)

### 1.1.1 Temporal and Spatial Distribution

- Rainfall of varying intensity which lasted for about five and seven days was received in agro pastoral livelihood of Samburu Central and Marginal pockets of pastoral livelihood of Samburu North during the month. Pastoral zone of Samburu East and some pockets of Samburu North received little or no rain.
- Generally temporal and spatial distribution was fair and even in agro pastoral livelihood whereas in pastoral zone, it was poor and uneven respectively.

## 2.0 IMPACTS ON VEGETATION AND WATER

### 2.1 Vegetation Condition Index (VCI)

- Insignificant change was noted in rangeland cover for the entire counting with 3 month VCI standing at 28 compared to 29.92 recorded in last month. The current 3 month VCI for the county indicates a moderate vegetation deficit.
- The decrease was as a result of inadequate rainfall which failed to resuscitate the existing vegetation cover. The current VCI value indicates moderate vegetation condition and is below the LTA but above the minima. (Fig. 2).

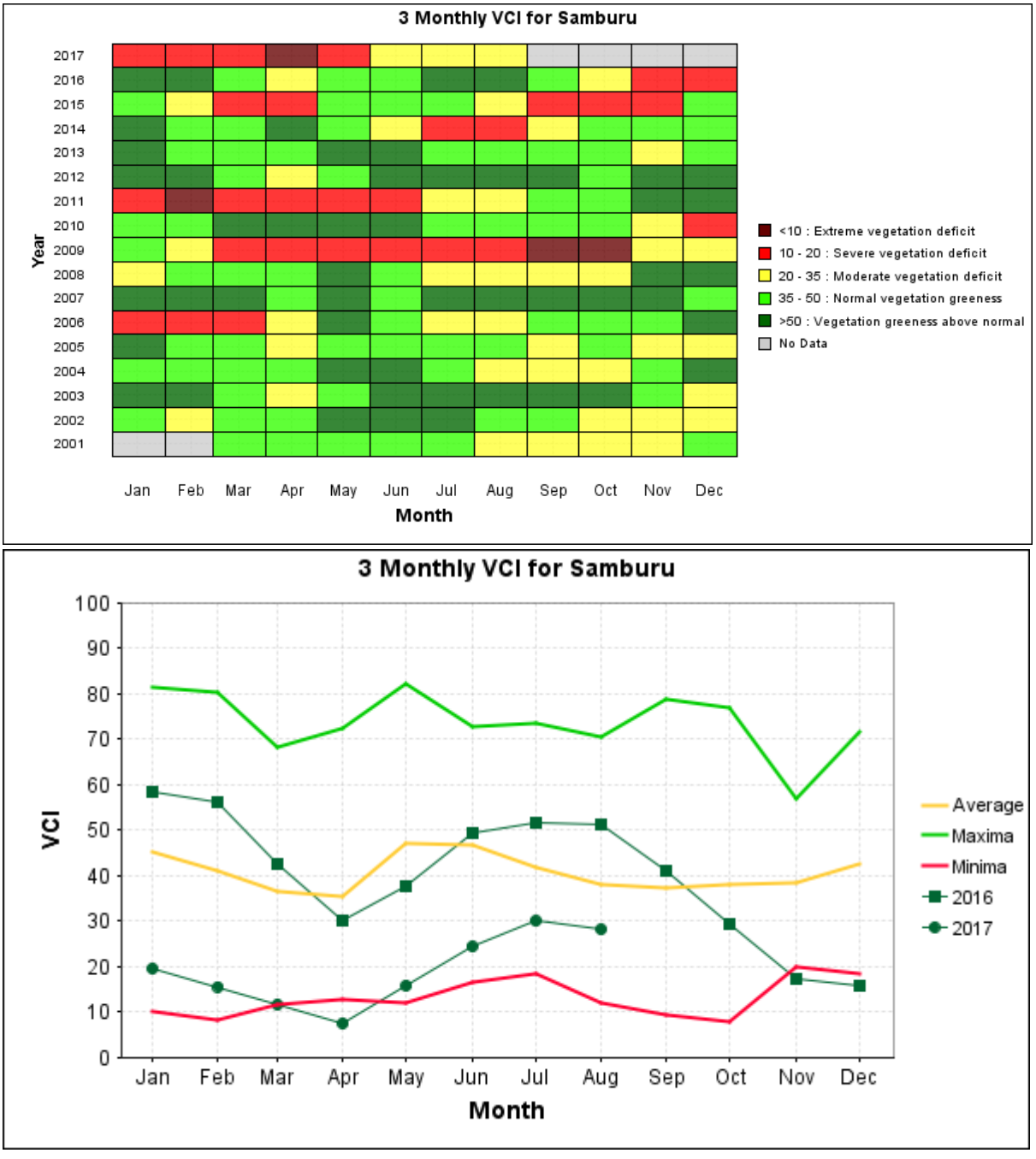



**Figure 2:** Matrix and Graph Showing VCI trends for Samburu County
(**Source**: Boku University)

- Vegetation condition in Samburu East however deteriorated further with the VCI decreasing to 18.46 down from 22.82, an indication of severe vegetation deficit. The

current 3 month average VCI remained below the long term value but slighly above the minimum value at this time of the year (Fig 3).

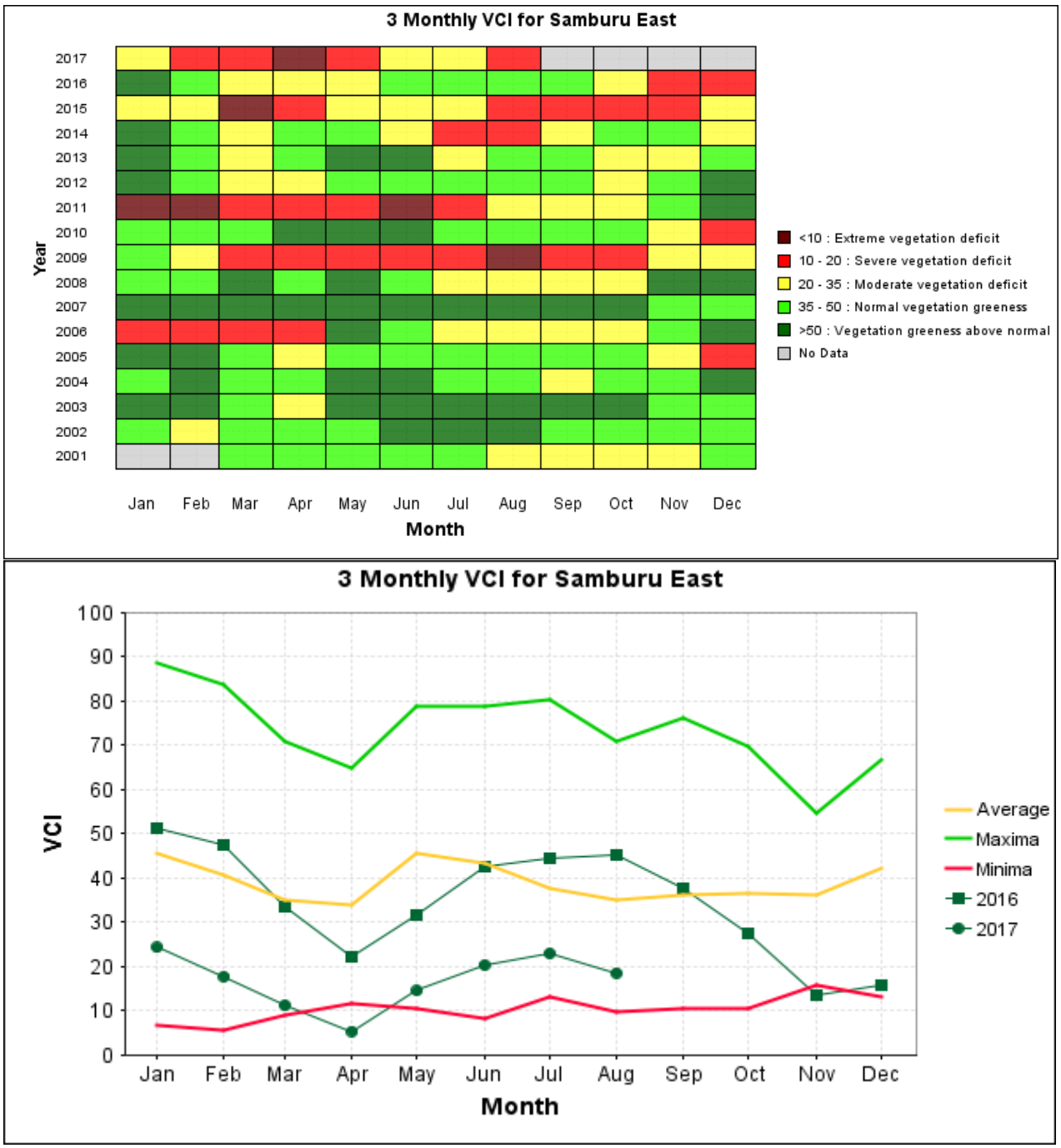



**Figure 3:** Graph Showing Historical VCI trends for Samburu East sub county
(**Source**: Boku University)

- Rangeland condition in Samburu central however improved with the 3 month VCI increasing to 42.96 up from 37.52 attributed to rainfall being more pronounced there.

### 2.1.1 Field Observations (Pasture and Browse Conditions)

**Quality**

- Forage in Agro pastoral livelihood of Samburu Central and pockets of pastoral livelihood of Samburu North such as Suyan,Kawop and Tuum is good to fair but poor in pastoral areas of

Samburu East and parts of Samburu North which include Seren, Illaut, Loonjorin and Nachola. In agro pastoral livelihood zone, pasture quality is fair while browse is fair to good.

**Quantity**

- Quantity of pasture is fair whereas browse is good in Agro pastoral livelihood of Samburu Central and pockets of Samburu North which received rains thereby rejuvenating the existing forage conditions. Hotspots of Suyan, Marti and Kawop plains also contain significant amount of pasture attributed to limited access brought about by conflicts.
- Pasture and browse in pastoral livelihood of Samburu East and some parts of Samburu North is poor and depleted.

## 2.2. WATER RESOURCE

### 2.2.1 Sources

- There was a significant shift from the conventional surface water sources such as pans and dams to boreholes which contributed 38.7% of the commonly used water source. This shift was a result of drying up of surface water sources due to inadequate rainfall especially in Samburu East and Samburu North.
- Other sources of water used by the community were shallow wells and rivers which both contributed 16.1%. These were followed by pans and dams, springs and traditional wells at 9.3 respectively (Fig 4).

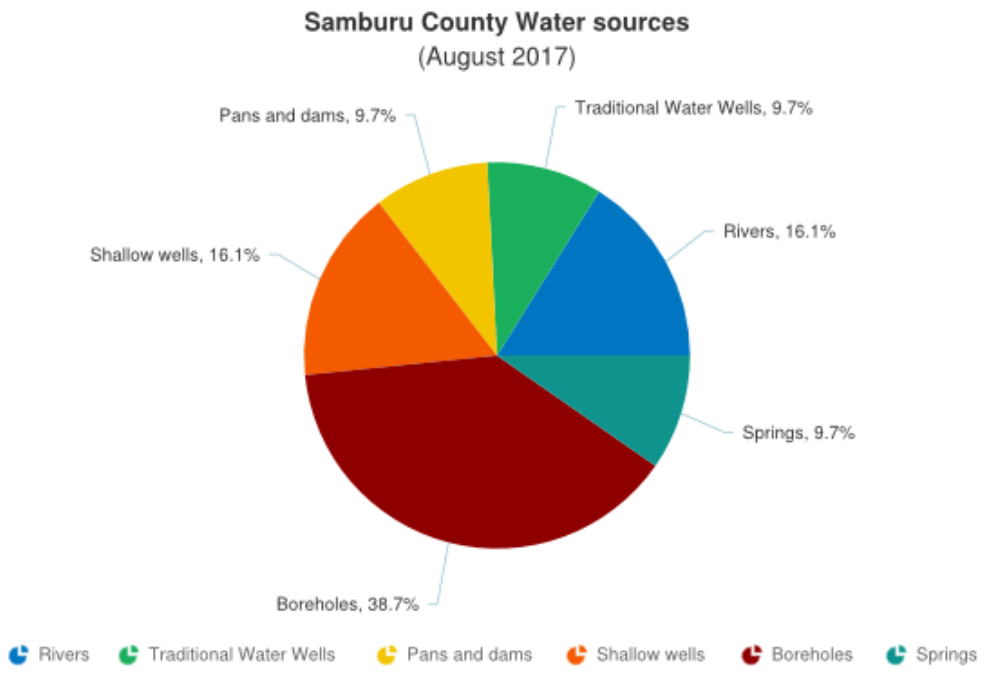
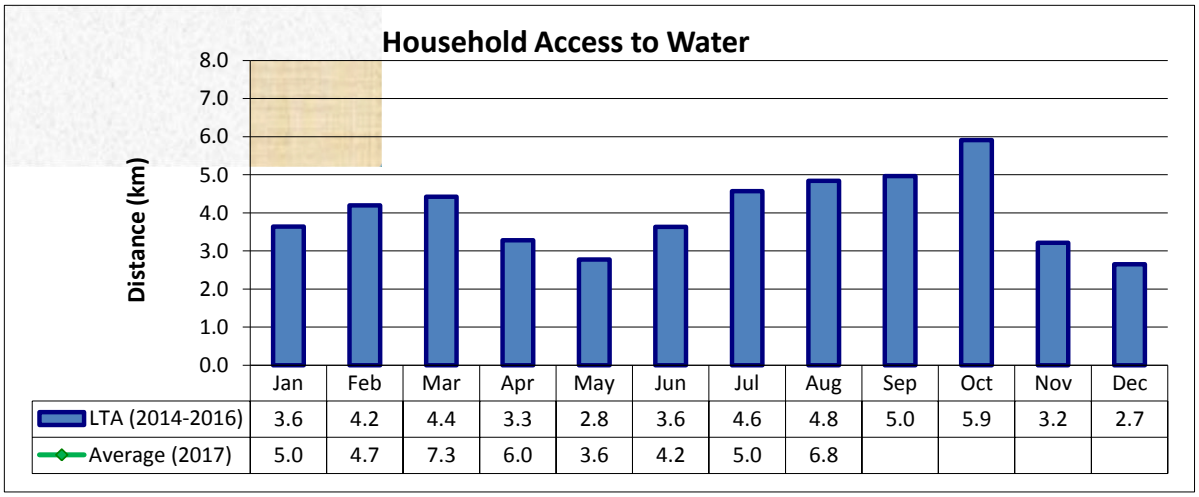



**Figure 4**: Common water sources

### 2.2.2 Household Access and Utilization

- Households trekking distance to water sources increased to 6.8 km from 5 km recorded in the previous month. The increase can be attributed to drying up of water sources especially in Samburu East and Samburu North thus forcing households to trek further to access water.
- Households in agro pastoral trekked 3.6 km whereas those in pastoral trekked 5.4 km. The variation can be attributed to rainfall received in agro pastoral zone as compared to pastoral zone.

- Longest trekking was recorded in Kiltamany at 8 km followed by Nairimirimo at 5.5 km and Baragoi at 5 km. Arsim in Ndoto still remained with the shortest distance at 1 km due to availability of springs within the area. Insecurity in Kiltamany forced many households to move to secure locations which have no access to water and thus are forced to trek for longer to access water for domestic and livestock use.
- The current average households return trekking distance remained above the long term value by 29 percent at this time of the year (Fig. 5).

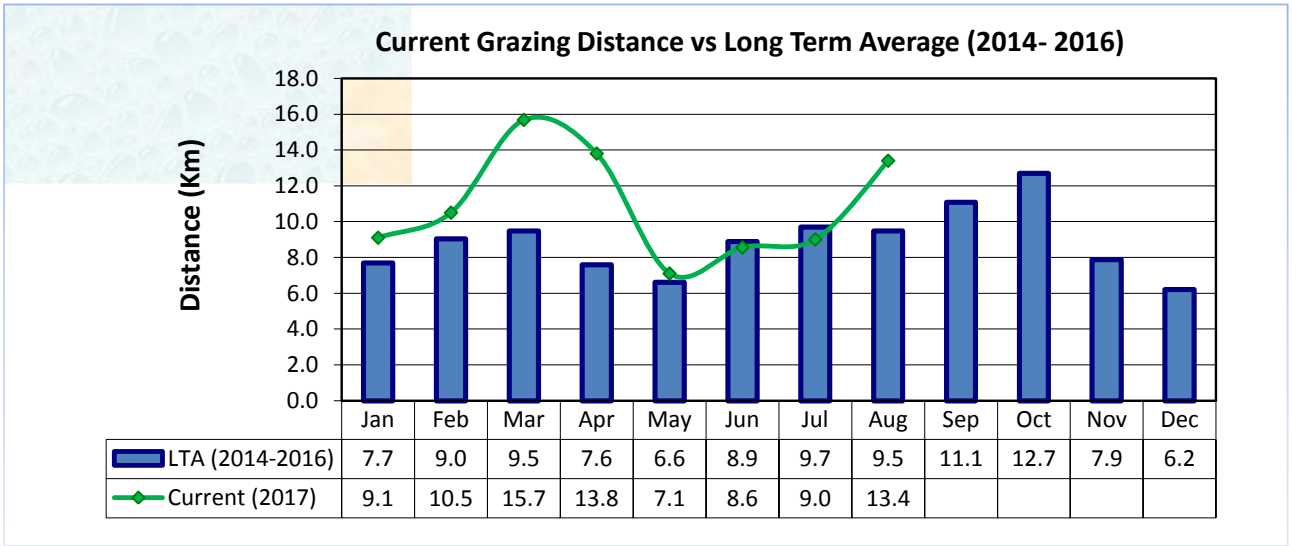



| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LTA (2014-2016) | 3.6 | 4.2 | 4.4 | 3.3 | 2.8 | 3.6 | 4.6 | 4.8 | 5.0 | 5.9 | 3.2 | 2.7 |
| Average (2017) | 5.0 | 4.7 | 7.3 | 6.0 | 3.6 | 4.2 | 5.0 | 6.8 | | | | |

**Figure 5:** Average Distance Travelled by Households in Search of Water

### 2.2.3 Grazing Distances to Water Points

- There was an increase in livestock return average trekking distances from watering points to grazing fields from 9 km last month to 13.4 km. The increase can be attributed to drying up of surface water points and depletion of forage in pastoral areas forcing the livestock to trek for longer distances.
- Long trekking distances was reported in pastoral areas of Kiltamany and Lodungokwe in Samburu East at 13 km and 10 km respectively. Insecurity in Westgate also contributed to the longer trekking distances by making pastoralists move to secure locations which are far from their watering points.
- Compared to long term average, the current average return grazing distance of 9 km remained above LTA by 29 percent at this time of the year (Fig. 6).




| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LTA (2014-2016) | 7.7 | 9.0 | 9.5 | 7.6 | 6.6 | 8.9 | 9.7 | 9.5 | 11.1 | 12.7 | 7.9 | 6.2 |
| Current (2017) | 9.1 | 10.5 | 15.7 | 13.8 | 7.1 | 8.6 | 9.0 | 13.4 | | | | |

**Figure 6:** Distance Travelled to Water Points from Grazing Areas

# PRODUCTION INDICATORS

## 3.1 LIVESTOCK PRODUCTION

### 3.1.1 Livestock Migration Patterns

- In-migration of livestock from Marsabit has been observed in Suiyan and Kawop where there is already a high concentration of livestock from Samburu North and Samburu East piling pressure on the existing limited resources. Other livestock from Samburu North are concentrated in Ngorishe and its environs and others are in Marti plains
- Cattle from agro pastoral are grazing close to their homesteads following enhanced rainfall received in agro pastoral livelihood.
- In-migration of cattle from Laikipia County was noted towards Longese attributed to armed forces operation in Laikipia County to get rid of herders that invaded the private ranches.

### 3.1.2 Livestock Body Condition

- Cattle body condition in Samburu East remained between alert worsening/alarm (thin fore ribs visible) and emergency (very thin no fat, bones visible] whereas in the rest of the sub county, the body condition was moderate, neither thin nor fat. The current body condition of cattle can be attributed to long trekking distances in search of pasture and water.
- Body condition of small stocks ranged between moderate i.e neither fat nor thin and smooth good appearance having being favoured by the showers received which slightly improved the vegetation cover. (***Refer to table 1 in annex***).

### 3.1.3 Livestock Diseases

- There were no notifiable disease outbreaks reported across the livelihood zones. However, cases of endemic diseases such Contagious Caprine Pleuropneumonia (CCPP) and Anasplasmosis have been reported across the livelihood zones.

### 3.1.4 Milk Production

- Average milk production per household slightly increased from 1.4 litres in July to 1.5 litres. The low milk production at household level can be attributed to disrupted calving and kidding season by the long dry spell and in some cases still births due to poor body condition particularly for cattle.
- Average milk production remained below the long term value by 21 percent at this time of the year (Fig. 7).

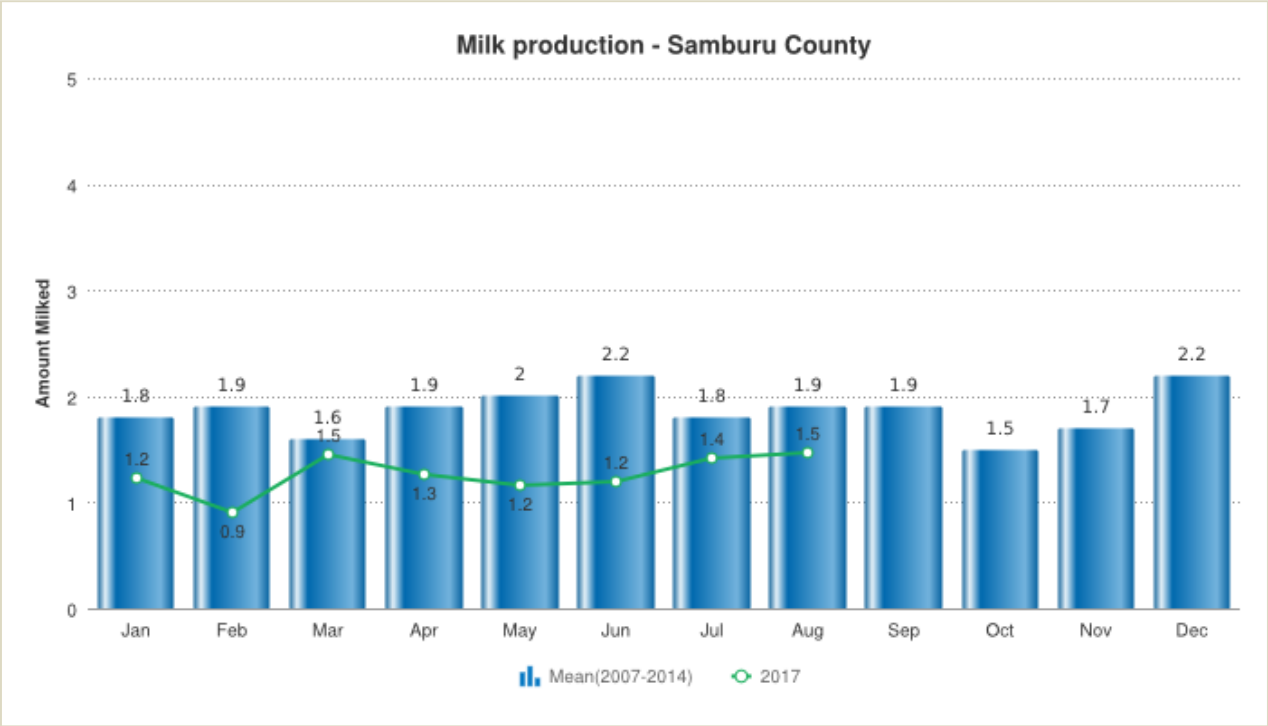



**Figure 7:** Trends in Milk Production per Household

- Current milk consumption also increased to 1.2 litres per household from 0.9 litres per household recorded in last month.

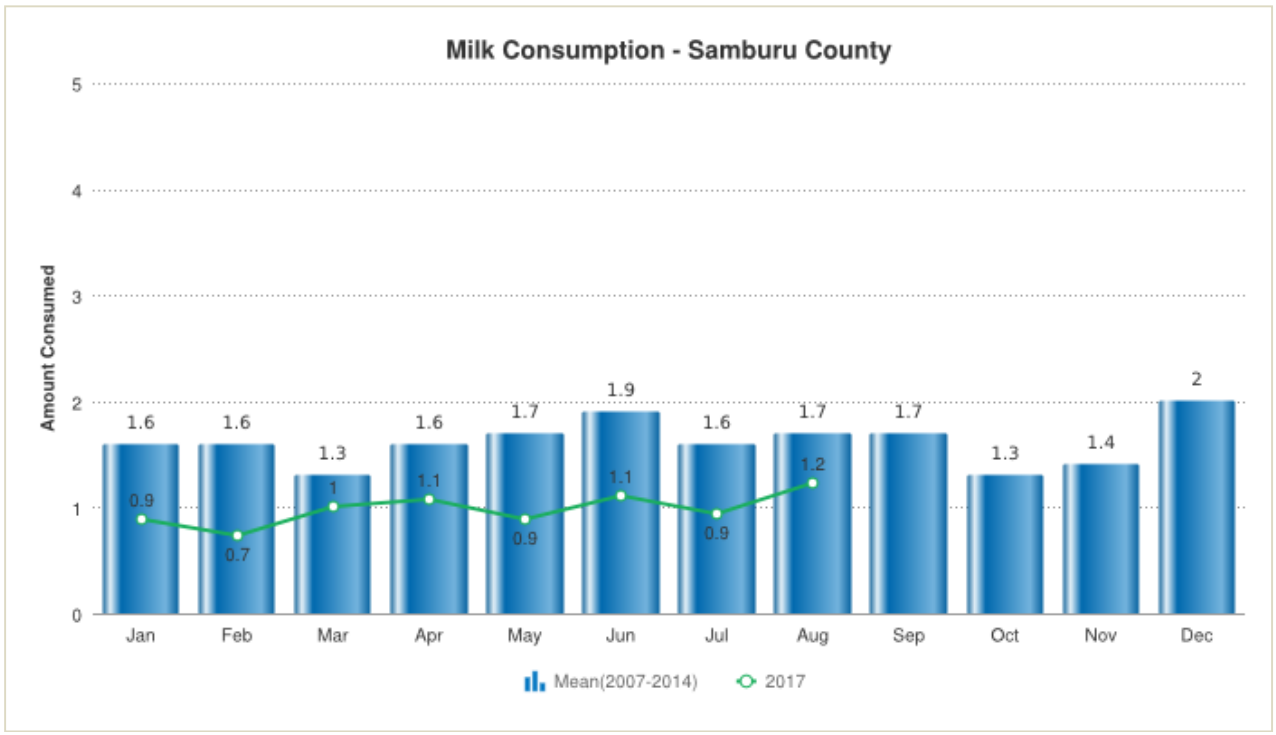



**Figure 8:** Trends in Milk Consumption per Household

### 3.1.5 Livestock Deaths

- A few cases of livestock death have been reported in Waso and in particular Kiltamany area as a result of starvation. However cases of deaths reported were as a result of predation by wild animals and diseases.

### 3.2 RAIN FED CROP PRODUCTION

#### 3.2.1 Stage and Condition of Food Crops

- The rains have revived most of the maize crop which were almost stunted. Some crops are at Grain feeling stage whereas others are at tussling stage depending on the time the crop was planted.
- Bean crop in the plateau is at harvesting stage

#### 3.2.2 Harvest of Crop

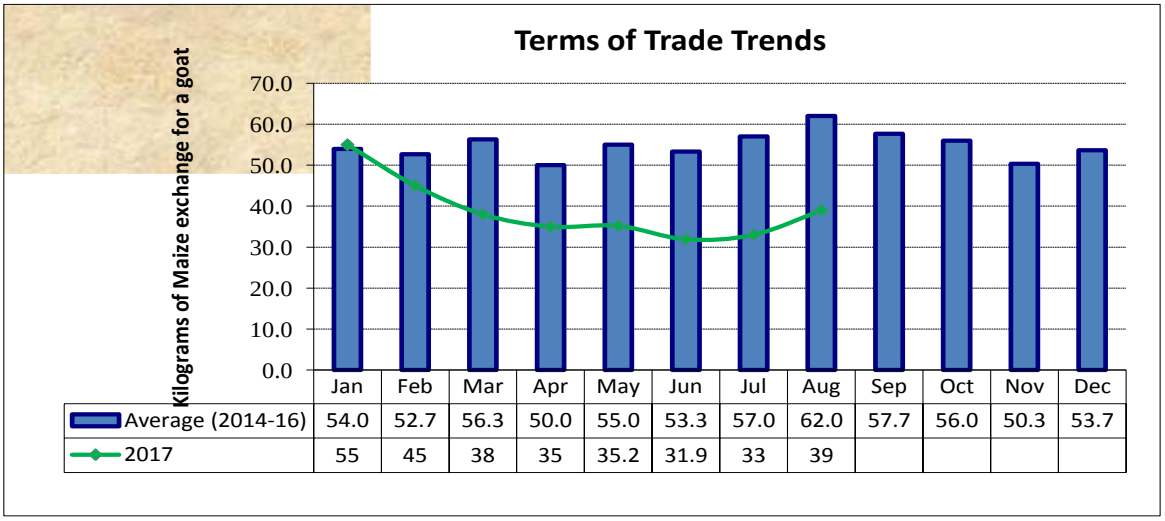
- Most farmers in the highland plateau of Suguta, Loosuk and Poro wards have harvested the beans, however the yields were below normal due to dry spell experienced during germination of the crops.

# 4.0 MARKET PERFORMANCE

## 4.1 Livestock Prices

### 4.1.1 Livestock Terms of Trade (TOT)

- The TOT for August improved as compared to the previous month but remained below the LTA by 37 percent.
- The current TOT implies that a pastoralist will fetch 39 kg of maize from a sale of a goat as compared to 33 kg recorded last month which was still unfavourable compared to LTA of 62 kg. This increase was attributed to reduced maize prices.
- Low ToT was noticed in Samburu East at 41.4 kg of cereal fetched fro a sale of one goat compared to 47.6 kg and 46.7 kg in Samburu North and Central respectively.

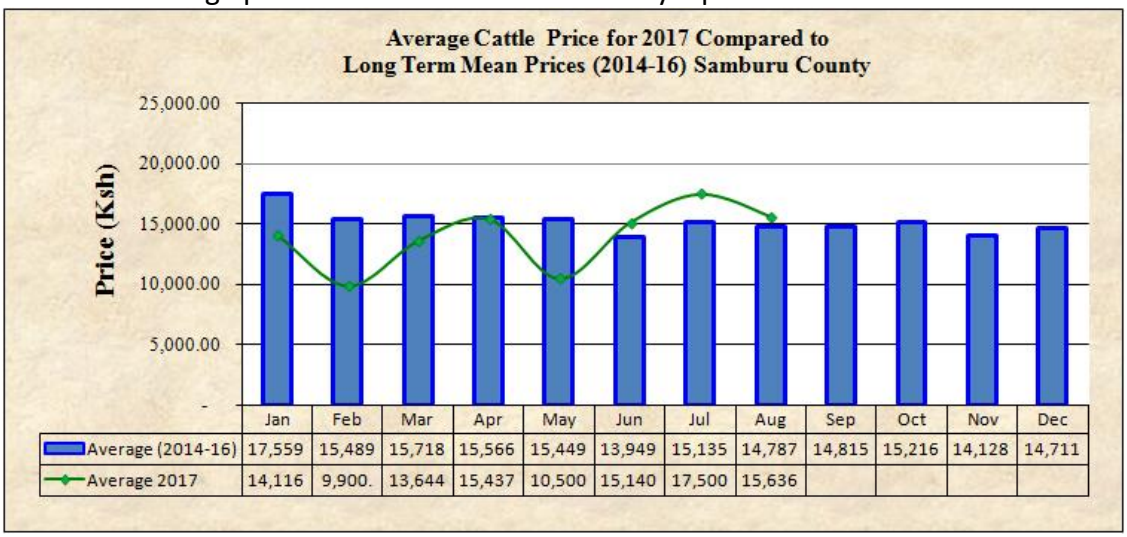



| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average (2014-16) | 54.0 | 52.7 | 56.3 | 50.0 | 55.0 | 53.3 | 57.0 | 62.0 | 57.7 | 56.0 | 50.3 | 53.7 |
| 2017 | 55 | 45 | 38 | 35 | 35.2 | 31.9 | 33 | 39 | | | | |

**Figure 9**: Trends in Terms of Trade (TOT)

### 4.1.2 Cattle Prices

- Current cattle average market price decreased from Ksh 17,500 recorded in July to Ksh 15,636. The decrease was attributed to poor market prices caused by influx of livestock to markets as households sought to raise money to pay school fees. Inaccessibility of Rumuruti market due to the ongoing security operation in Laikipia also pushed prices down. Poor to fair body condition of cattle especially in Samburu East also contributed to decline in livestock prices.
- The current average price remained above the LTA by 5 percent.

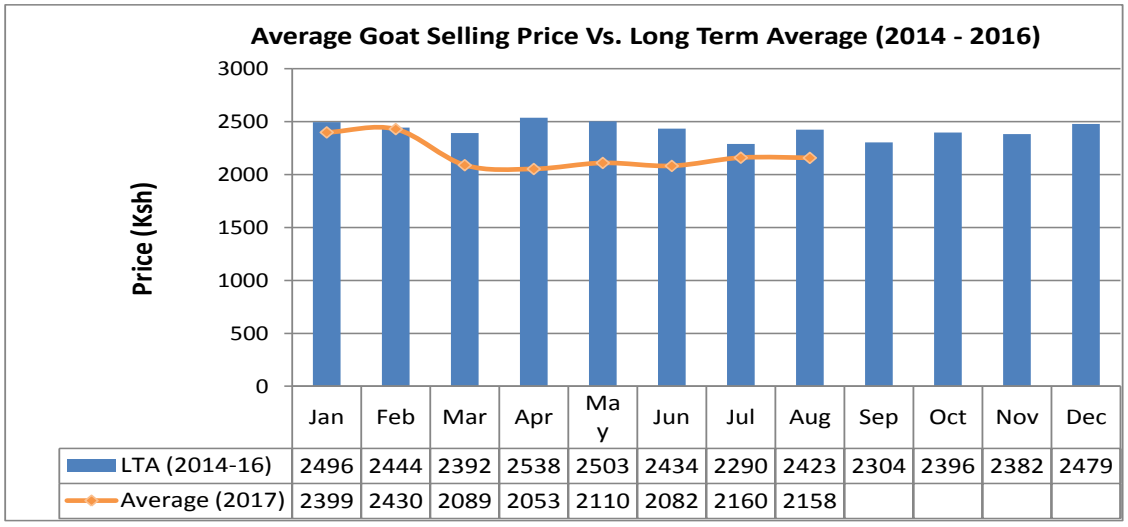



| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average (2014-16) | 17,559 | 15,489 | 15,718 | 15,566 | 15,449 | 13,949 | 15,135 | 14,787 | 14,815 | 15,216 | 14,128 | 14,711 |
| Average 2017 | 14,116 | 9,900. | 13,644 | 15,437 | 10,500 | 15,140 | 17,500 | 15,636 | | | | |

**Figure 10:** Graph Showing Cattle Selling Price Trends at Farm Gate and Market Level

### 4.1.3 Goat Prices

- Goat prices stabilized at 2158 compared to 2,160 recorded last month which was still below the LTA. The low market prices are attributed to unfavourable market condition caused by influx of goats to the market as households sought to raise money for school fees. In addition, drought in Samburu East negatively affected the body condition consequently pushing the prices down which has not yet recovered. Lack of buyers from outside also contributed to low prices.
- The current average price remained below the LTA by 10 percent.

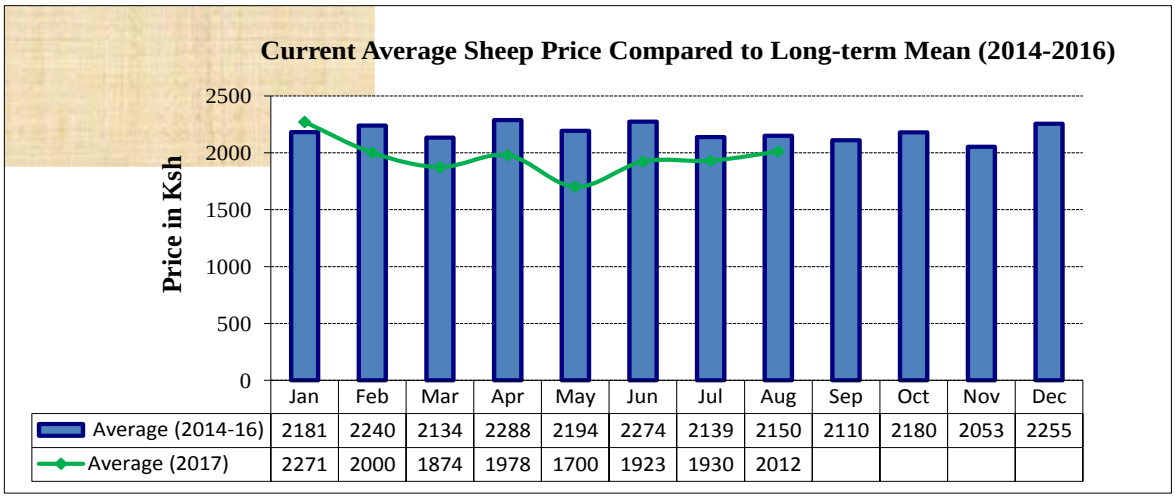



| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LTA (2014-16) | 2496 | 2444 | 2392 | 2538 | 2503 | 2434 | 2290 | 2423 | 2304 | 2396 | 2382 | 2479 |
| Average (2017) | 2399 | 2430 | 2089 | 2053 | 2110 | 2082 | 2160 | 2158 | | | | |

**Figure 11:** Graph Showing Goats' Selling Price Trends at Farm Gate and market Level

### 4.1.4 Sheep Prices

- Sheep average market price increased to Ksh 2012 up from Ksh 1930 recorded in July. The increase was attributed to fair and good body condition of the sheep especially in the agro pastoral zone which contained considerable amount of resuscitated vegetation as a result of the showers received.
- The current average price is 6 percent below the long term value at the same time of the year (Fig. 12).



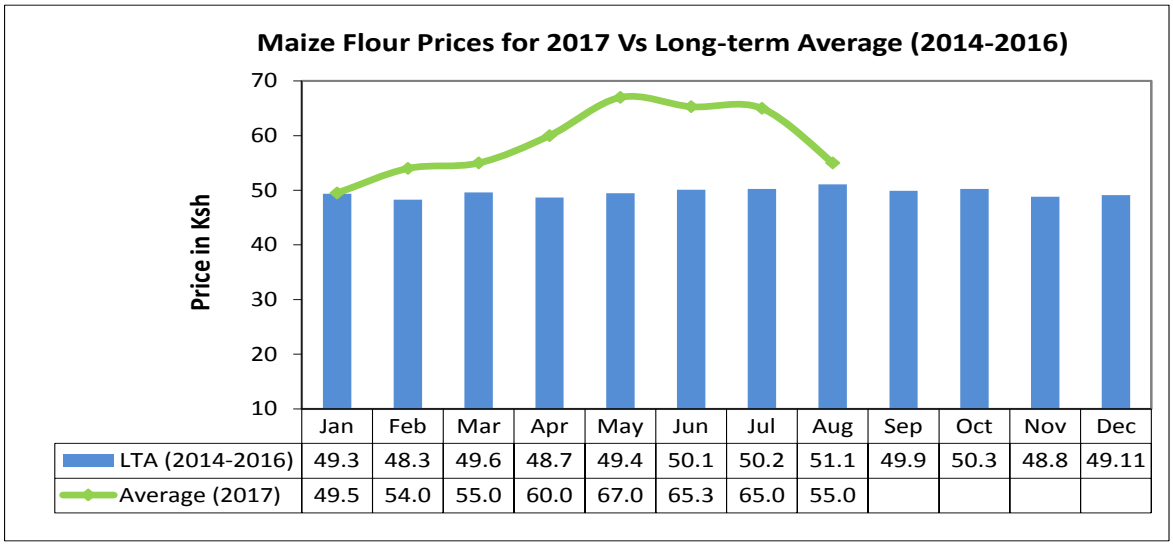

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average (2014-16) | 2181 | 2240 | 2134 | 2288 | 2194 | 2274 | 2139 | 2150 | 2110 | 2180 | 2053 | 2255 |
| Average (2017) | 2271 | 2000 | 1874 | 1978 | 1700 | 1923 | 1930 | 2012 | | | | |

**Figure 12:** Graph Showing Sheep Selling Price Trends at Farm Gate and Market Level

## 4.2 CROP PRICES

### 4.2.1 Posho (Milled Maize)

- Average posho/Milled maize market price fell to Ksh 55 down from Ksh 65 per kilogram despite the end of Government subsidized maize. Traders managed to import maize from outside the county leading to reduction in prices. Moreover the price drop was also triggered by anticipation of bumpy harvest from maize producing counties which made traders to want to dispose off the existing stocks.
- Lolkuniani, Archers and Lpus markets which are all in pastoral zone recorded the highest prices at Ksh 60 compared to Lekuru market which lies in agro pastoral zone. The variation can be attributed to added transport charges owing to poor condition of access roads in pastoral.




| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LTA (2014-2016) | 49.3 | 48.3 | 49.6 | 48.7 | 49.4 | 50.1 | 50.2 | 51.1 | 49.9 | 50.3 | 48.8 | 49.11 |
| Average (2017) | 49.5 | 54.0 | 55.0 | 60.0 | 67.0 | 65.3 | 65.0 | 55.0 | | | | |

**Figure 13:** Graph Showing Maize meal Price Trends

### 4.3 Source of Income

- Sale of livestock and livestock products contributed to 67 percent of income for households. This was followed by trade at 12 percent and casual labour at 9 percent.
- Employment/Salary and sale of crops came last at 9 percent and 2 percent respectively.

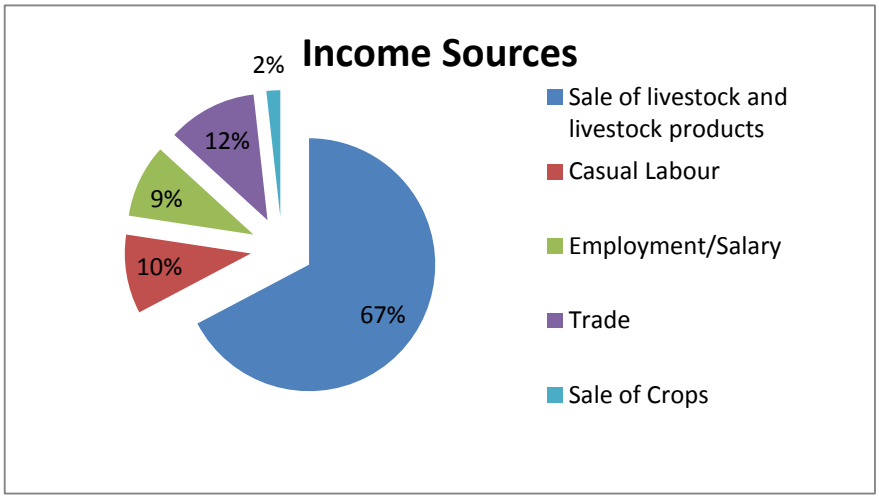


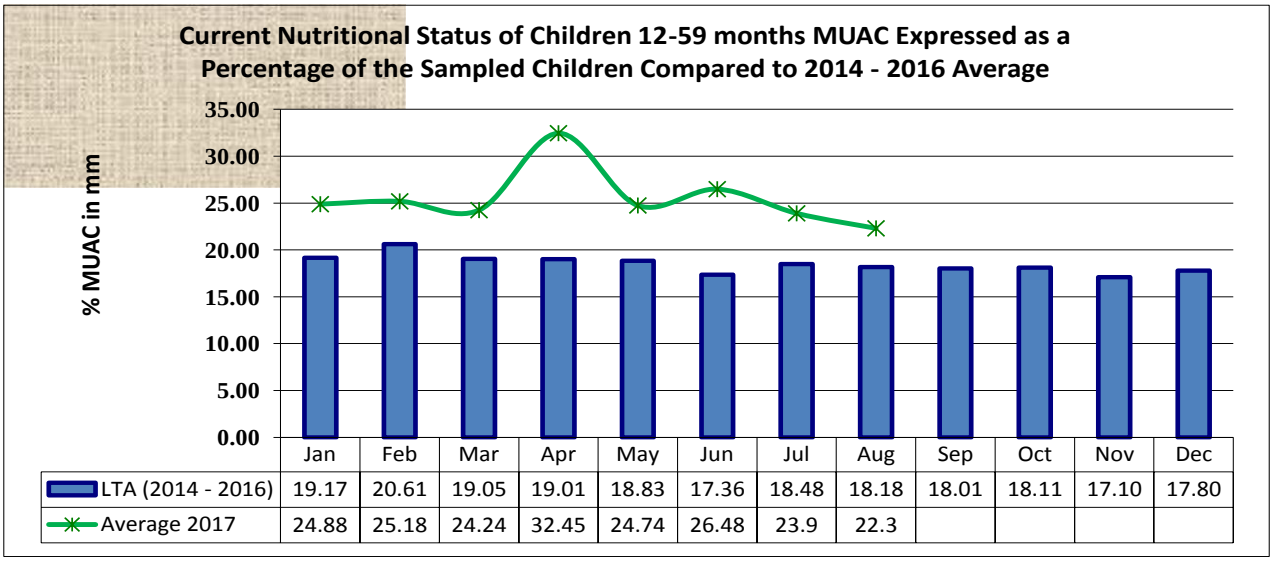

**Figure 14**: Households Common Sources of Income

# 5.0 UTILIZATION INDICATORS

## 5.1 Health and Nutrition Status

### 5.1.1 MUAC (125-135 mm)

- The proportion of children under five years at risk of malnutrition improved compared to July but still remained above the LTA. Based on mid upper arm circumference (MUAC 125 - 134 mm), the percentage of children at risk of malnourished decreased from 23.9 percent in July to 22.3 percent. The improvement can be attributed to availability of traditional green vegetables and beans in agro pastoral areas and advocacy for good child cares practices by nutrition department and partners.
- Malnutrition rates were low in agro pastoral livelihood averaging at 3.7 percent while in pastoral livelihood of Samburu East and North, the malnutrition rates were 21.4 and 29.9 respectively. The variation could be attributed to limited food types in pastoral livelihood due to poor feeder roads hindering accessibility to markets by suppliers whereas their agro pastoral livelihood are able to access vegetables and fruits.




| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LTA (2014 - 2016) | 19.17 | 20.61 | 19.05 | 19.01 | 18.83 | 17.36 | 18.48 | 18.18 | 18.01 | 18.11 | 17.10 | 17.80 |
| Average 2017 | 24.88 | 25.18 | 24.24 | 32.45 | 24.74 | 26.48 | 23.9 | 22.3 | | | | |

**Figure 15**: Graph showing average Nutritional status (MUAC)

### 5.1.2 Food Consumption Score(FCS)

- All households in agro pastoral zone received adequate nutritious meal as indicated by the score of 100% by the FCS.
- In the pastoral livelihood, 39.5 percent of households received adequate and nutritious food. However 40.1 percent and 20.4 percent of the remaining proportion of households had poor and borderline food consumption scores was respectively an indication they were neither consuming nutritious food nor adequate food and vice versa. The food consumption gaps in pastoral areas indicated that households are frequently engaging on consumption based coping strategies.
- The low food consumption especially in pastoral areas can be attributed to high cost of food stocks which is not accessible with the majority of households due to poverty and lack of knowledge on importance of eating a balanced diet and also unavailability of livestock's products at household level due livestock migrations.

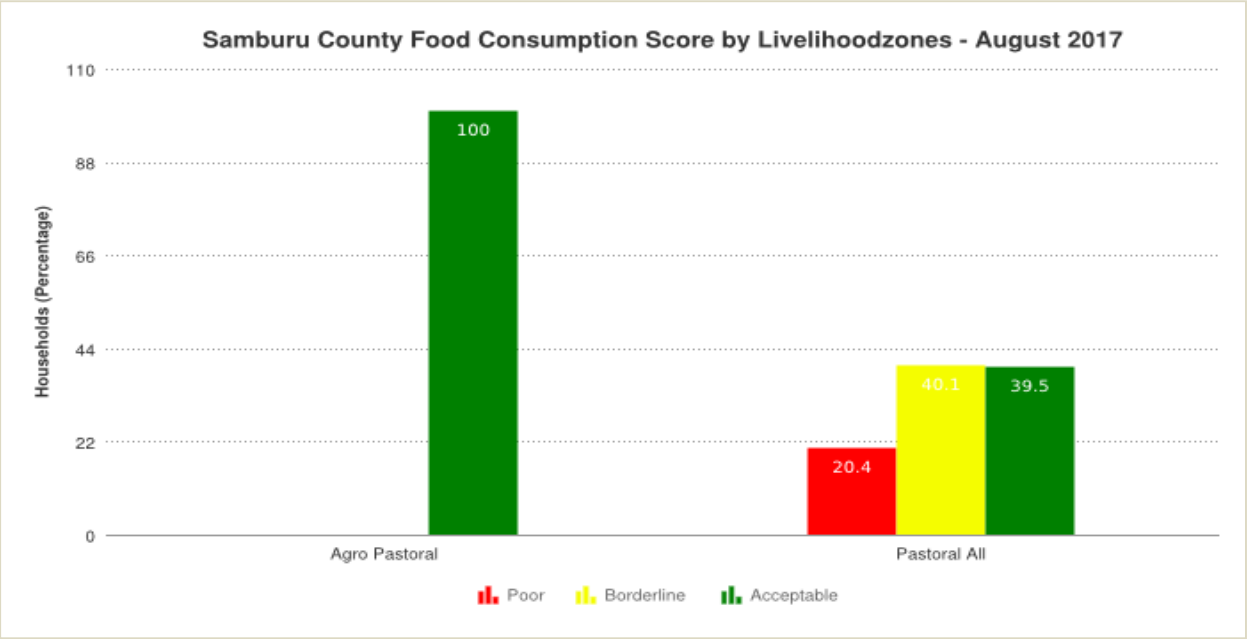



**Figure 16**: Bar chart showing FCS per Sub County

### 5.1.3 Health

- No epidemic disease outbreak was reported although normal cases of malaria, coughing, URTI and diarrhoea continued to be reported across the livelihoods.
- Most of the households pursued assistance for the aliments from public health centres/ dispensaries, private clinics and others used local herbs for treatment.

### 5.1.4 Coping Strategies Index(CSI)

- Significant decline in CSI from 8.2 in July to 0.3 in August in agro pastoral zone indicated significant reduction in frequency and number of coping mechanisms employed at household level.
- CSI in pastoral zone remained similar to July at 15.7.
- The most commonly utilized consumption based coping strategies remained reduction in the number of meals eaten per day, reduction in the portion size of meals and relying on less preferred and/or less expensive food.

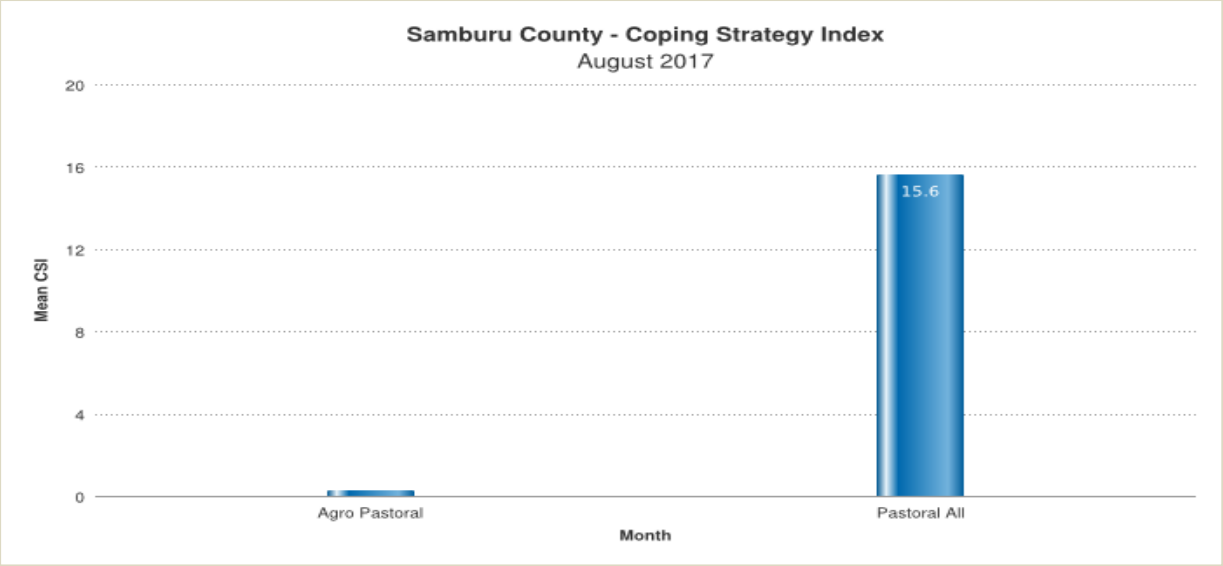



**Figure 17**: Bar chart showing CSI

# 6. CURRENT INTERVENTIONS AND RECOMMENDATIONS

### 6.1 Non-food On-going interventions

| SECTOR | INTERVENTION | IMPLEMENTERS |
|---|---|---|
| **LIVESTOCK** | Vaccination against CCPP in Samburu East and Central | Livestock department with support from Redcross ,FAO and RPLRP |
| | Slaughter destocking of cattle and small stock in Samburu East | Redcross in partnership with FAO and Livestock department |
| **Health** | On-going High Impact Nutritional Interventions (HINI) implemented by partners in collaboration with MOH in 47 health facilities across the County | MOH,IMC,NHP Plus and UNICEF |

### 6.2 Food Aid

- Provision of relief meat to vulnerable households in Samburu East by Kenya Red Cross.

# 7.0 EMERGING ISSUES

### 7.1 Insecurity/Conflict/Human Displacement

- The county remained fairly calm with no cases of insecurity was reported.

### 7.2 Food Security Prognosis

- The on-going showers in agro pastoral livelihood are most likely to revive the maize crops in the farms although the projection production will probably be below normal.
- The experienced rains will likely lead to rejuvenation of pasture and browse which will consequently lead to improved body condition hence high livestock prices and also improved productivity in terms of milk and meat production.

# 8.0 RECOMMENDATIONS

**Nutrition and Health**

- Alternative methods to ensure malnourished children are able to access supplements and other treatment be identified considering health facilities are closed due to the ongoing strike.
- Mass screening in Samburu North and East should be carried out.
- Nutrition intervention programs in Arsim and Kawop to reduce the high level of malnutrition for under-five.

**Livestock**

- Slaughter destocking exercise in Samburu East to reduce loss of livestock
- Provision of livestock feeds such as UMMB and Range pellets should be considered.
- Awareness creation on proper rangeland management practices such as paddocking to conserve pasture for dry periods.
- Disease surveillance to be enhanced confirm especially in convergence zones of livestock from Marsabit and Samburu.

**Agriculture**

- Promotion of early maturity crops to take advantage of the rains being received.

**Water**

- Water trucking in Samburu East to institutions.
- Fuel subsidy to boreholes in Samburu East also should be considered.
- Promotion of roof water harvesting in schools, dispensaries and at household level

## Annexes

**Table 1**: 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 | |