

**National Drought Management Authority**  
**LAMU COUNTY**  
**DROUGHT EARLY WARNING BULLETIN FOR OCTOBER 2017**



A Vision 2030 Flagship Project



**OCTOBER 2017 EW PHASE**

Drought Status: **NORMAL**



Shughuli za kawaida

**Drought Situation & EW Phase Classification**

**Biophysical Indicators**

- Insignificant rainfall was received during the month of October.
- The vegetation condition Index VCI-3Month) was 62.75 in the month of October showing an increase from 55.01 in September.
- The VCI indicated vegetation condition greenness that was above normal. The overall drought phase in the county was at normal in October.

**Socio Economic Indicators**

**Production indicators**

- The body condition for both cattle and goats was good because of improved pasture and browse.
- Milk production increased from 2.8litres in September to 3.8litres in October.

**Access indicators**

- The average Term of Trade increased for the month of October to 152 compared to 121 in September.
- Average return household watering distance increased from 2.2km in September to 5.2 Km in October due to no rainfall recorded.
- Milk consumption in October was at 1.6 litres lower than the long term Average of 16.26 litres.

**Utilization indicators**

- The proportion of children at risk of malnutrition decreased from 4.9 percent in September to 4.8 percent in October which was slightly lower than the long-term mean of 5.0 percent.
- The average coping strategy Index was 6.66 in October, a slight decrease from 6.72 in September.

**Seasonal calendar**

|  |  |   |  |     |     |     |     |      |     |     |     |
|--|--|---|--|-----|-----|-----|-----|------|-----|-----|-----|
| <ul style="list-style-type: none"> <li>▪ Reduced milk yields</li> <li>▪ Increased HH Food Stocks.</li> <li>▪ Short rains harvests</li> <li>▪ Land preparation</li> </ul> | <ul style="list-style-type: none"> <li>▪ High Calving Rate</li> <li>▪ Milk Yields Increase.</li> <li>▪ Planting/Weeding</li> </ul> | <ul style="list-style-type: none"> <li>▪ Land preparation</li> <li>▪ Increased Coping Strategy Index</li> <li>▪ Stocks</li> <li>▪ Kidding (Sept).</li> <li>▪ Long rains harvests</li> </ul> | <ul style="list-style-type: none"> <li>▪ Planting/weeding</li> <li>▪ Increase Milk</li> <li>▪ Livestock mating</li> <li>▪ kidding</li> </ul> |     |     |     |     |      |     |     |     |
| <b>Short dry spell</b>   | <b>Long rains</b>  | <b>A long dry spell</b>   | <b>Short rains</b>   |     |     |     |     |      |     |     |     |
| Jan  | Feb  | Mar   | April  | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec |

**Early Warning (EW) Phase Classification**

| LIVELIHOOD ZONE               | EW PHASE     | TRENDS               |
|-------------------------------|--------------|----------------------|
| Agro pastoral/Fishing         | Normal       | Stable               |
| Irrigated cropping            | Normal       | Stable               |
| Fisheries /Mangroves          | Normal       | Stable               |
| Farming /Casual Labour        | Normal       | Stable               |
| Agro pastoral                 | Normal       | Stable               |
| County                        | Normal       | Stable               |
| <b>Biophysical Indicators</b> | <b>Value</b> | <b>Normal ranges</b> |
| Rainfall Amount(mm)           | 9.9mm        | 80-120               |
| VCI                           | 62.75        | 35 to 50             |
| Water Distance                | 5.2km        | < 6.2                |
| <b>Production indicators</b>  | <b>Value</b> | <b>Normal ranges</b> |
| Livestock Migration Pattern   | Not Normal   | Normal               |
| Livestock Body Conditions     | Good         | Good                 |
| Livestock Death from Drought  | No death     | No death             |
| Milk Production               | 3.8 Lts      | >12.75Lts            |
| <b>Access Indicators</b>      | <b>Value</b> | <b>Normal ranges</b> |
| Terms of Trade (ToT)          | 152          | >89                  |
| Milk Consumption              | 1.6 Lts      | >15.87Lts            |
| <b>Utilization indicators</b> | <b>Value</b> | <b>Normal ranges</b> |
| Coping strategy index-CSI     | 6.66         | <14.5                |
| MUAC                          | 4.8%         | <5.4%                |

## 1.0 CLIMATE CONDITION

### 1.1 RAINFALL PERFORMANCE

#### 1.1.1 Actual Rainfall

- According to VAM WFP rainfall data, the County received an average rainfall of 9.9mm in the Month of October in the 1<sup>st</sup> and 2<sup>nd</sup> dekads.
- This was lower than the amount of 10.6mm received same period previous year.
- However, the current amount of rainfall received was lower than Long term average of 31.5mm.

#### Rainfall and NDVI satellite data: Rainfall performance for Lamu-October 2017 Vs the long term

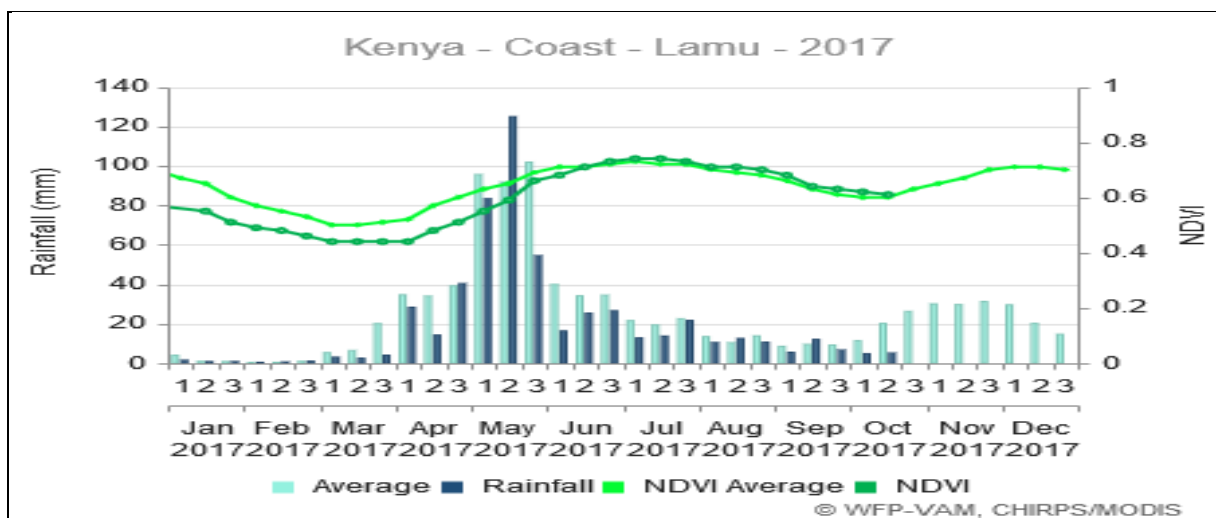


Figure1: Rainfall Performance for Lamu in October 2017. (Source: WFP-VAM)

#### 1.1.2 SPATIAL DISTRIBUTION

- No rainfall was received in the month of October in the County but continue to improve the recovery from negative impacts of recent drought.
- The below normal rainfall was received across some parts of the county.

#### 1.1.3 TEMPORAL DISTRIBUTION

- The month was characterized by insignificant rains which was unevenly distributed in the in all the livelihood zones.

## 2.0 IMPACTS ON VEGETATION AND WATER

### 2.1 Vegetation Condition

#### 2.1.1 Vegetation Condition Index (VCI)

- The vegetation condition for the month of October was 62.75 for the County which is normal compared to the previous October of the same period last year which indicated **Alarm** phase of the drought.
- The VCI indicated vegetation greenness as above normal both in Lamu East and West Sub-Counties as shown by the VCI table below.

**October 2017 VCI (3M) Table**

| ADMINISTRATIVE UNITS |            | VCI as at 26 <sup>th</sup> September 2017 | VCI as at 30 <sup>th</sup> October 2017 |
|----------------------|------------|---|---|
| County               | Sub County |   |   |
| LAMU                 | County     | 55.01                                     | 62.75                                   |
|                      | Lamu East  | 57.81                                     | 70.05                                   |
|                      | Lamu West  | 53.38                                     | 58.53                                   |

Figures below show three month Vegetation Condition Index (VCI) matrix for Lamu County {Source: Boku University, Austria}

Figure 2: VCI for Lamu

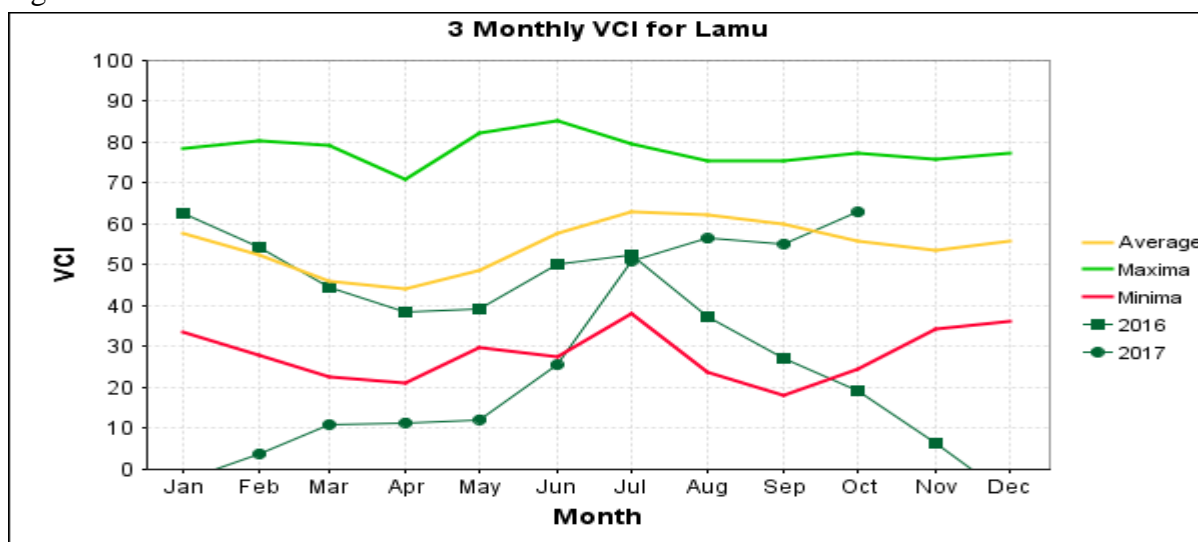
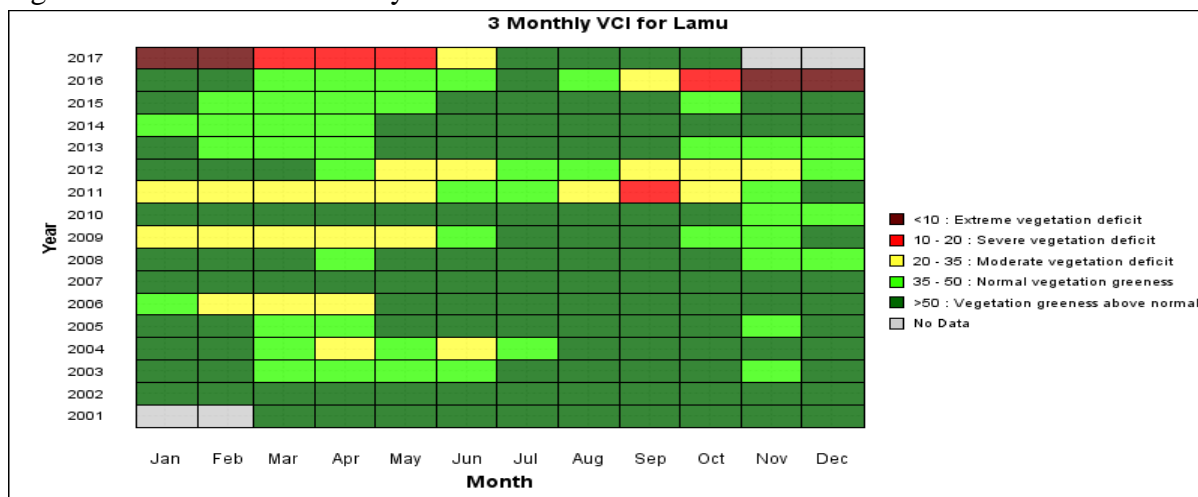


Figure 3: VCI for Lamu County



## OBSERVATIONS

### Pasture and Browse Conditions

#### 2.1.2 Pasture

- Pasture condition was good across all livelihood zones and improved in both quality and quantity.
- The available pasture is expected to last for about two months due to the presence of migrant livestock from neighboring counties.

#### 2.1.3 Browse

- The quantity and quality of browse was good across all livelihood zones for the month of October.
- The available browse quantity is normal compared of atypical normal year .
- The browse is expected to last for one to two months.

## HYDROLOGICAL DROUGHT

### 2.2 Water Sources and Availability

#### 2.2.1 Main water sources

- The state and condition of water sources in the County was fair to poor across most livelihood zones.
- The main water sources in the month of October were: Rivers -11.1 percent, Shallow wells -33.3 percent, Pans and dams -22.2percent, Boreholes -22.2percent.

#### Sources of water for Lamu County, October 2017.

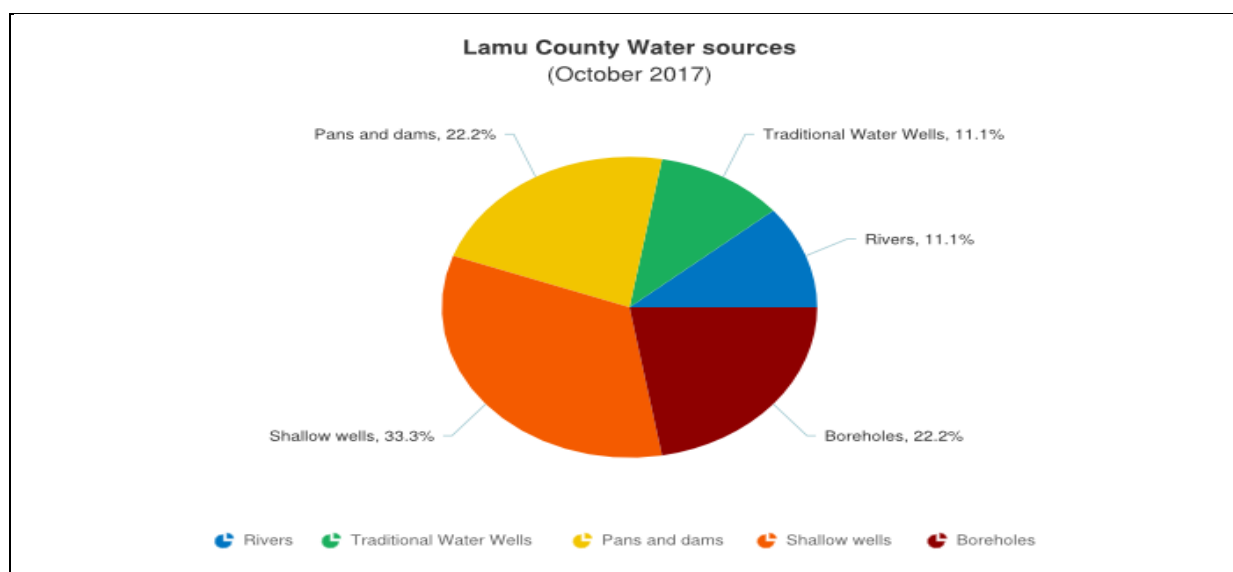


Figure 4: Main sources of water

#### 2.2.2 Availability of water for household consumption

- Average Household watering return distance was 5.2Km in October an increase from 2.2Km in September. This was due to decrease rainfall amount which led to decrease in water levels.
- Household Return Water distances per livelihood zone were as follows: the Agro pastoral - 5.1Km, Fishing & Mangrove Harvesting 3.1Km and for Mixed Farming Zone it was 2.7 Km and irrigated farming 2.9Km respectively.
- The 2012-2016 average household water distances for October was 1.8 Kilometers which was lower than the current average household watering distance for October.

- This shows that the current average household water distance for October was higher the long term average.

**Average House Hold Water Distance October 2017 vs. Long Term 2012-2016**

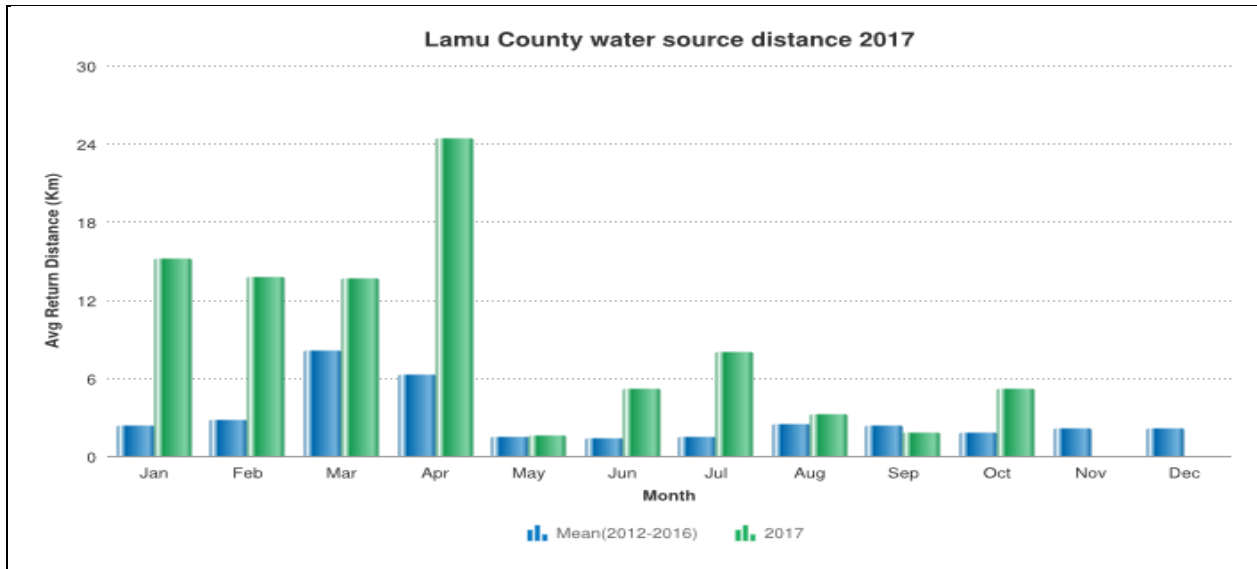


Figure 5: House hold water distance

n=150

**2.2.3 Livestock access to Water**

- Livestock average distance to water source from grazing Area was 9.6 kilometres in the month of October from 3.0 kilometers in the month of September. The increase from last month’s distance was due to decrease rainfall which led to less recharges to major water sources.
- The current average grazing water distance for October of 9.6 Kilometers was higher than the year 2012-2016 long-term average of 4.4 Kilometers.

**Water Source from Grazing Area October 2017 in Kilometers vs. Long Term 2012-2016**

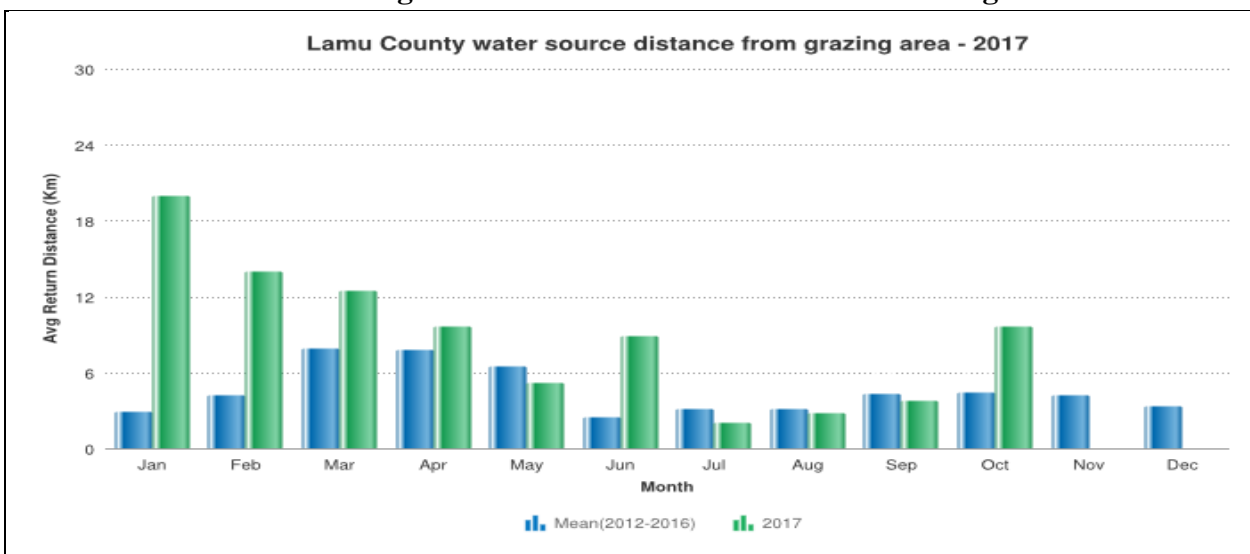


Figure 6: Grazing Distance-Km

n=150

## 2.3 Household Income

The main household income for the month of October was as follows: Employment 17percent, sale of Livestock/Livestock products 8percent, Casual labour 55percent, trade 17percent and sale of crops 3percent respectively.

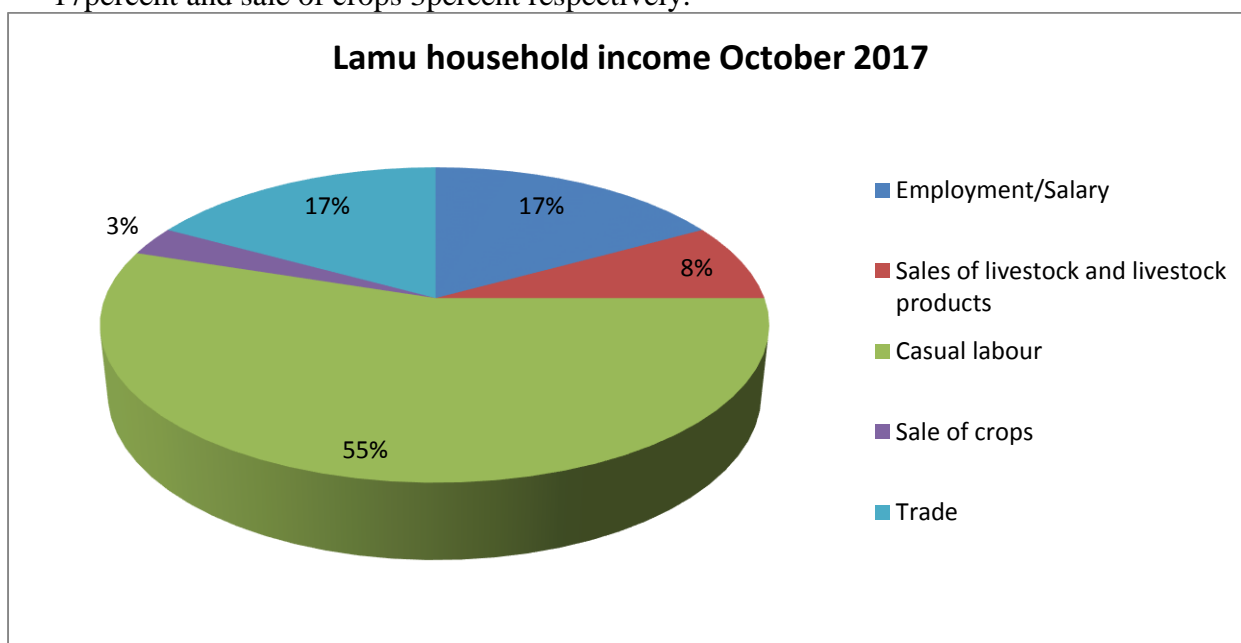


Figure 7: Household source of income

## 2.4 Implication on Food Security

- Insignificant rainfall recorded during the month of October and hence less recharging of major water sources leading to long distance access to water for livestock.
- The long distances to water sources have had a negative impact on the body condition of animals and household hygiene standards.
- Recharged water sources like boreholes, Rivers and Lakes in the Pastoral, Fishing and Mangrove zones which are the main water sources to communities living in the area have reduced especially in Kizingitini, Tchundwa, Mangai and Lake Kenyatta.

### 3.0 PRODUCTION INDICATORS

#### 3.1.0 Livestock Production

##### 3.1.1 Livestock Migration Patterns

- There huge migrants herds of Livestock from neighboring Counties of Tana River and Garissa are still present, since drought conditions still prevail in their respective Counties during the Month under review.

##### 3.1.2 Livestock Body Condition

- Livestock body condition was good to fair for all species of livestock across all the livelihood zones. However, the condition is stable due to pasture and browse availabilities.

##### 3.1.3 Livestock Diseases

- There were some incidences of Livestock diseases reported during the month of October especially in Kiunga. The livestock diseases were CBPP, CCPP and Newcastle.

##### 3.1.4 Milk Production

- Milk production increased from 2.8 litres in September to 3.8 litres in October. This was much lower than the long-term average of 15.55 litres in October.
- Milk productions were distributed as follows: Mixed farming Produced 13.7litres, Fishing 2.3litres, and Irrigated 16.1litres while the Agro pastoral Zone produced average of 2.2litres.

Graph of milk production for the month of October 2017 is shown in the figure below

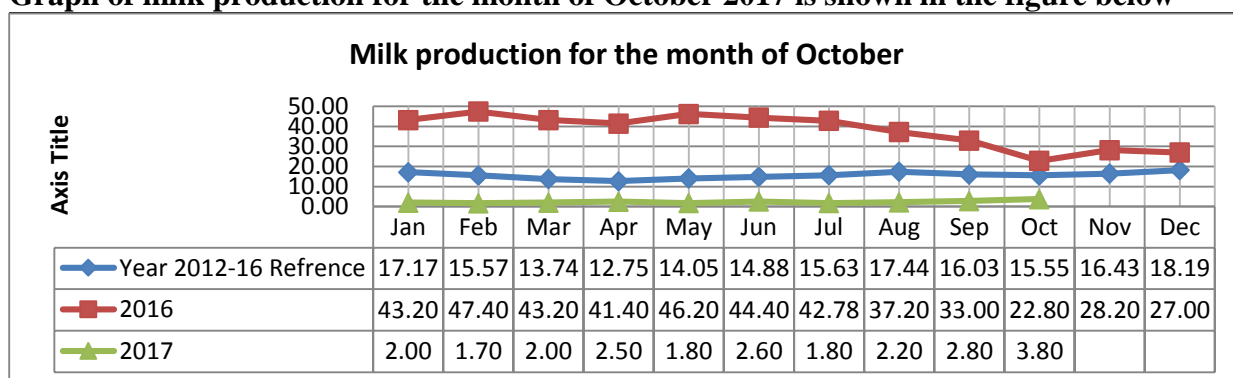


Figure 8: Milk production

n=150

### 3.2 RAIN FED CROP PRODUCTION

#### 3.2.1 Stage and condition of food crop

- The main crops grown are Maize, Cowpeas and Green grams in the County.
- Most farmers are preparing their farms for short rains planting. However few crop farmers have planted.

#### 3.3 Implications on Food Security

- The improving body condition of both cattle and goats across the livelihood zones has improved the prices resulting to increased income from livestock sales.
- The influxes of livestock from neighboring Counties of Garissa and Tana River can lead to increased diseases, reduction of water level and depleted pasture and browse.

## 4.0 MARKET PERFORMANCE

### 4.1 LIVESTOCK MARKETING

#### 4.1.1 Cattle Prices

- Average cattle market price in the month of October was Kshs22,333 from Kshs 18,500 Kshs in September. This was increase from that of the previous month of September.
- This increase in price could be attributed to high demand and good body condition with few supplies in the markets.
- The cattle average market prices were distributed as follows: Faza Kshs35,000, Witu Kshs 15,500, Kiunga 26,000 and Mokowe Kshs 22,250 respectively.
- The average market cattle price for the month of October was, however higher than the 2012-2016 long-term average price of Ksh.13,758.

#### Lamu County Cattle prices October 2017 Vs Long term Average 2012-2016

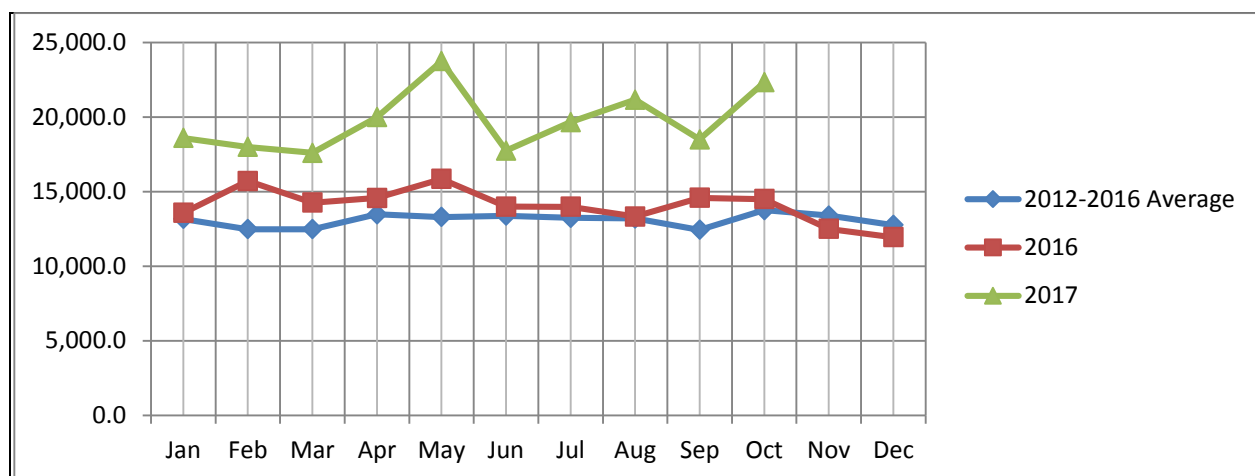


Figure 9: Cattle prices

#### 4.1.2 Small Ruminants Prices

#### 4.1.3 Goat Prices

- Goat prices for medium size remained the same as from last month which is Kshs 4,250 in October. This stable in price of goats could be attributed to improve body condition and high market demand.
- The goat average market prices were distributed as follows: Mpeketoni Kshs 3,000, Witu Kshs 3,625, Kiunga Kshs 5,000 and Mokowe Kshs 5,250 respectively.
- The long-term average goat price for the month of October was Kshs. 3,110 which was lower than the current average price for the month of September.

#### Lamu County Goat prices October 2016 Vs. Long term Average 2012-2016

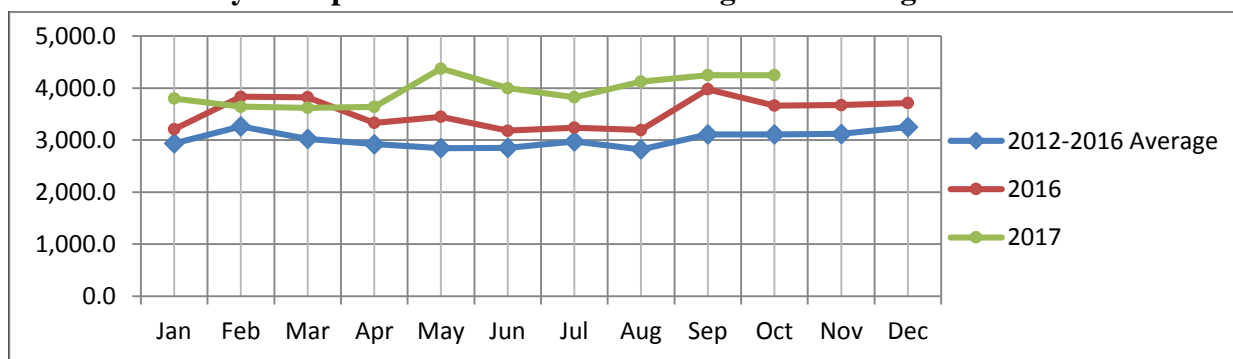


Figure 10: Goats prices

n=150



## 4.2 CROP PRICES

### 4.2.1 Maize price

- Average price of a Kg of maize in the Month of October was Kshs 28.0/Kg a decrease from Kshs.35/Kg in September. The decreased average maize price was attributed to low demand and high supply for the product leading to lower prices.
- The prices were distributed as follows: Mswakini centre Kshs 20, Patte Kshs 30, Witu Kshs 35, Mpeketoni and Kiunga Kshs 40 respectively
- The average price of maize in October was stable when compared with the long term-average price of Kshs 28.

### Maize prices October 2017 Vs. Long term Average 2012-2016

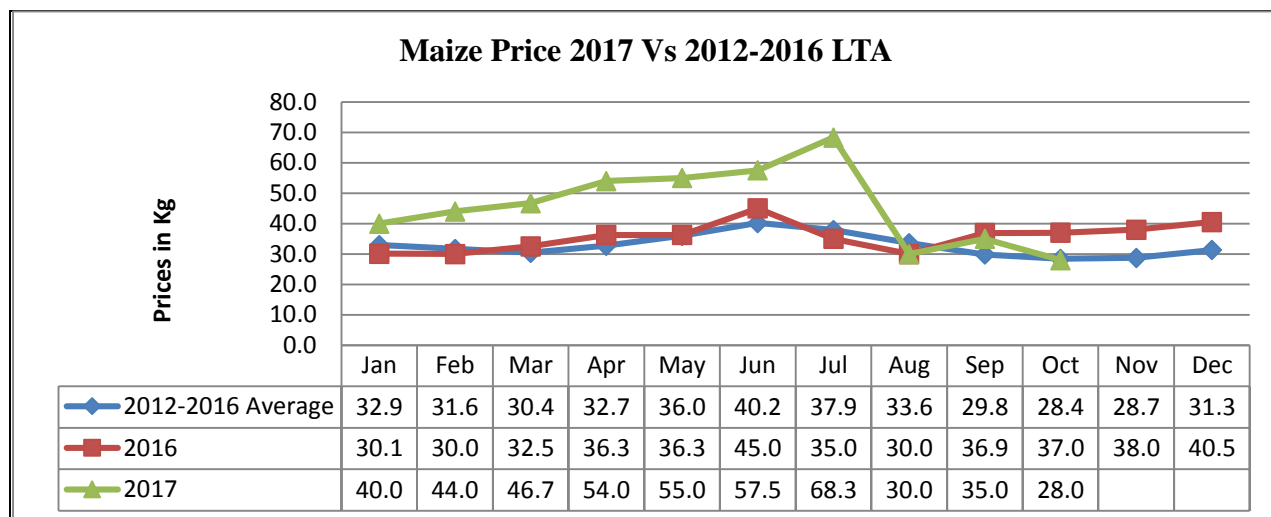


Figure 11: Maize prices

### 4.2.2 Beans

- Average price of Kg of beans slightly increased from Kshs.102 in September to Kshs.106 in October. This increase in price was due to low supply of the product.
- The beans price was distributed as follows: Mswakini centre, Patte and Witu Kshs 100, Mpeketoni Kshs 90 and Kiunga 130 Kshs respectively
- The long-term average price of beans was Kshs. 85 which was lower than the current average beans price for the month of October.

### Average Beans prices October 2017 by Markets vs. Long Term 2012-2016

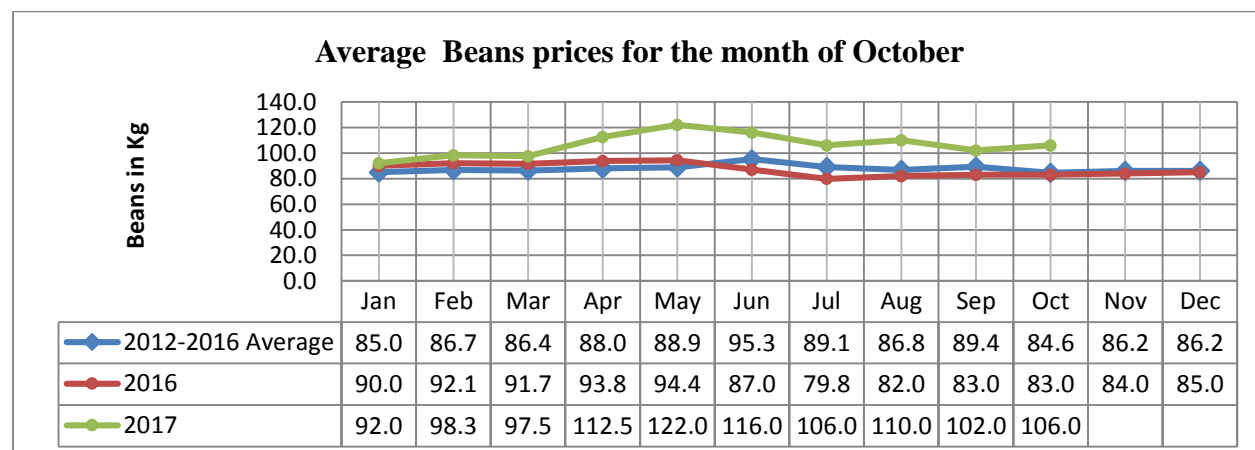


Figure 12: Beans prices

### Livestock Price ratio/Terms of Trade

- The average Term of Trade (ToT) for the month of October was 152kg, an increase from 121kg in the month of September.
- Sale of a goat in October would cost a household about 152 kg of maize. This showed the exchange ratio increased in favour of goat sellers to crop farmers.
- Improvement is forecasted over the next two months with the onset of the short rains as the price of goat is expected to rise further with that of maize declining.
- The ToT was 125 in Lamu West and 168 in Lamu East. The ToT for October was higher than the 2012-2016 LTA of 109.57.

### Term of Trade in October 2017 vs. Long term Average

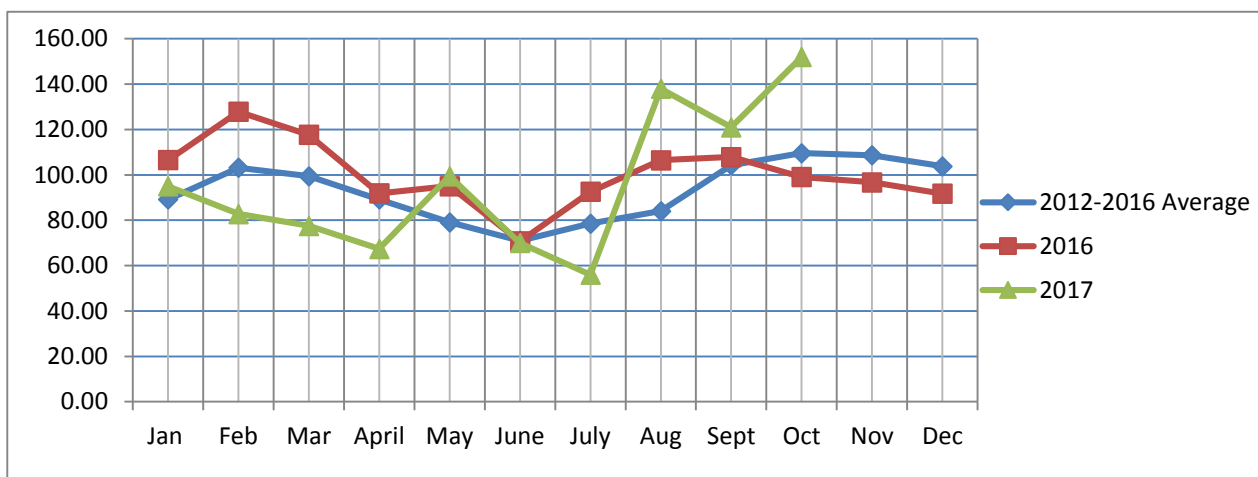


Figure13: Terms of Trade

### 4.4 IMPLICATION ON FOOD SECURITY

- The improving body condition of livestock have improved livestock prices especially for goats, therefore livestock keepers are able to get better value for their livestock contributing to food security in Agro pastoral zones.
- Maize prices are unstable with the sudden maize price decrease in October due to high supply of the product in the markets.
- Now that farmers are able to sell livestock (especially goat and cattle) at good prices, food security will improve because they will buy adequate food at household level.
- The terms of trade favors livestock sellers than crop farmers during the month under review.

## 5.0 FOOD CONSUMPTION AND NUTRITION STATUS

### 5.1 Milk for Household Consumption

- Milk Consumption was 1.6litres in the month of October which was increase compared to 0.9litres during the previous month. This increase was due to increase in milk production in the County.
- October long term average milk consumption of 16.26 litres was much higher than the current average of milk consumption.

#### Household Milk Consumption October 2017Average vs. Long Term Average 2012-2016

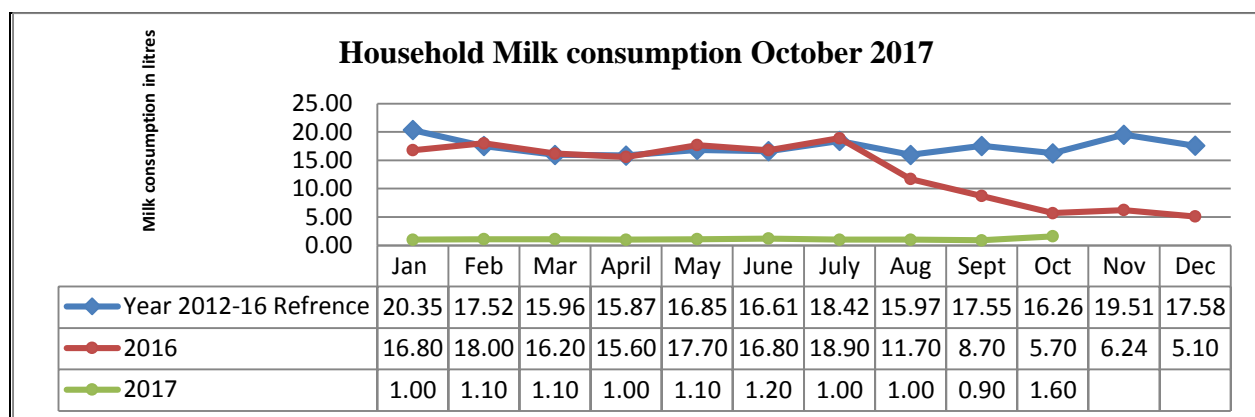


Figure 14: Milk Consumption

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## 5.2 HEALTH AND NUTRITION STATUS

### 5.2.1 MUAC

- The percentage of children aged between 6 months and 5yrs in the County with mid upper arm circumference of less than 135 mm decreased from 4.9 percent in September to 4.8 percent in October. This decrease in MUAC percentage for children could be attributed to increased interventions such as cash transfers programs and provision of CBS by Red cross which have increased access to food hence decreasing the rate of malnutrition levels amongst the children.
- This figure of 4.8 percent MUAC for October decreased compared to the year 2012-2016 long term average of 5.4 percent.

#### MUAC<135 mm % October 2017 vs. 2012- 2016 Long Term Average

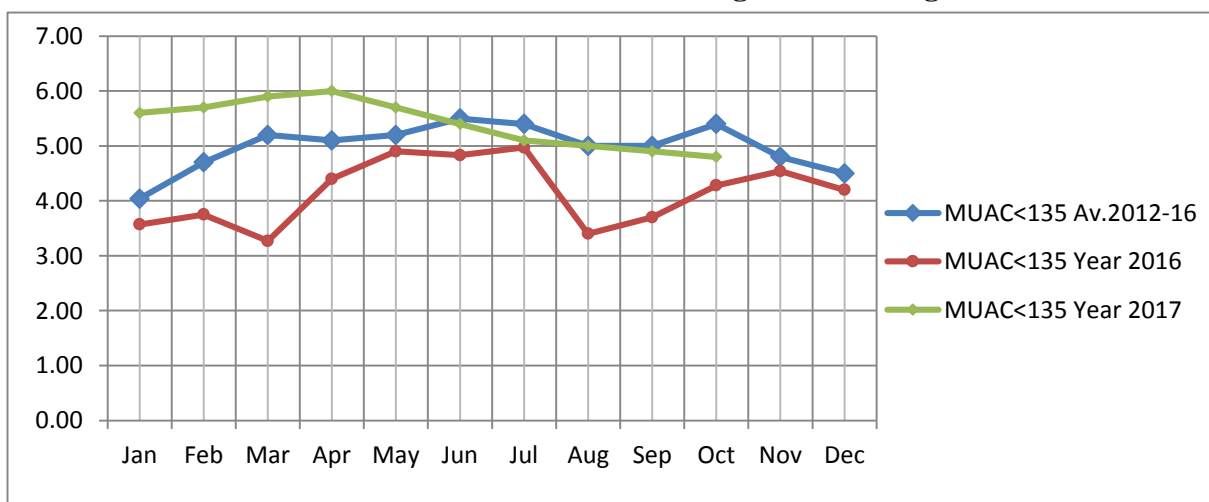


Figure 15: MUAC

n=150

### 5.2.2 Health

- There were no cases of major disease outbreak both for children and general population in the County.
- However, the rates of Malnutrition cases are improving in the Agro pastoral Zones of Witu and Basuba ward.

### 5.3 FOOD CONSUMPTION SCORE (FCS)

- Agro pastoral and Mixed Farming livelihood zone had the highest number of Households with poor dietary diversity at 15 and 2 percent and 15 and 35 percent borderline for Month of October but shows improvement for the Month of October for fishing livelihood zone.
- Households' percentage with poor FCS decreased significantly from 27 in September at Agro pastoral Zone to 15 in October.

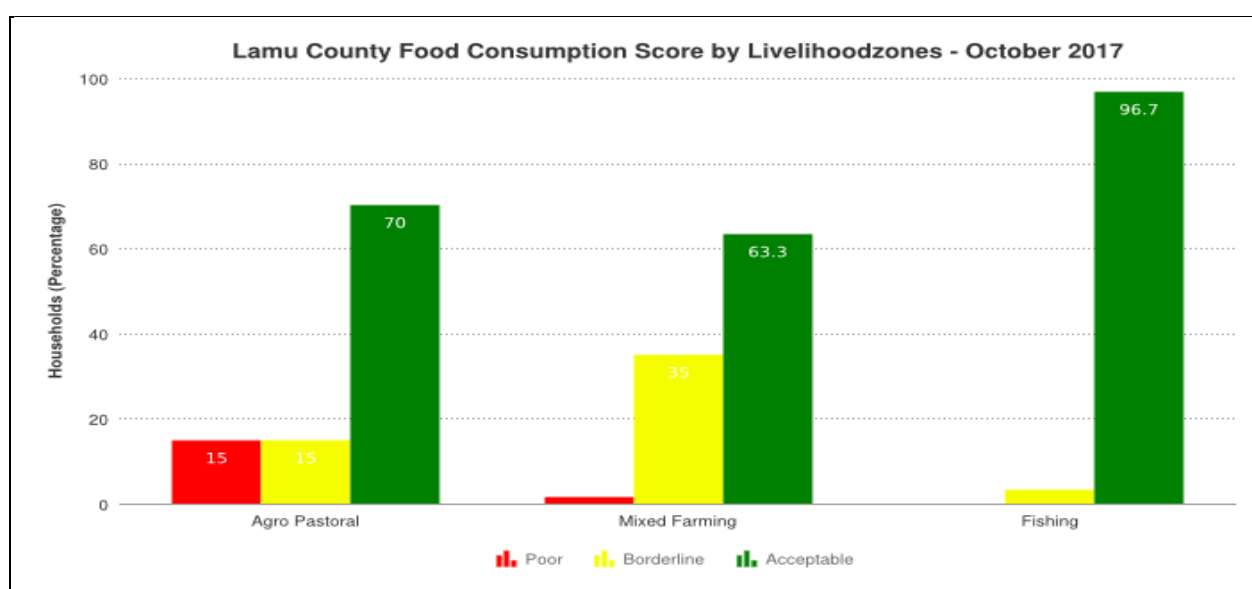


Figure 16: Food Consumption Score (FCS)

### 5.4 COPING STRATEGY INDEX

- The mean coping strategy Index in the Month of October decreased to 6.66 from 6.72 in September, indicating decreased coping strategies at household level.
- Agro pastoral Zone had CSI of 8.6; Mixed Farming livelihood zone had 4.5 while Fishing Livelihood zone had a copying strategy index of 7.
- Common coping strategies employed by food insecure households in the month of October were:
  - ✓ Opting for less preferred or cheaper meals.
  - ✓ Reduction in the number of meals.
  - ✓ Purchase on credit/remittances from relatives.
  - ✓ Borrow food from friends or relatives.

**Lamu County Coping Strategies Index for October 2017 vs. the Month of September 2017**

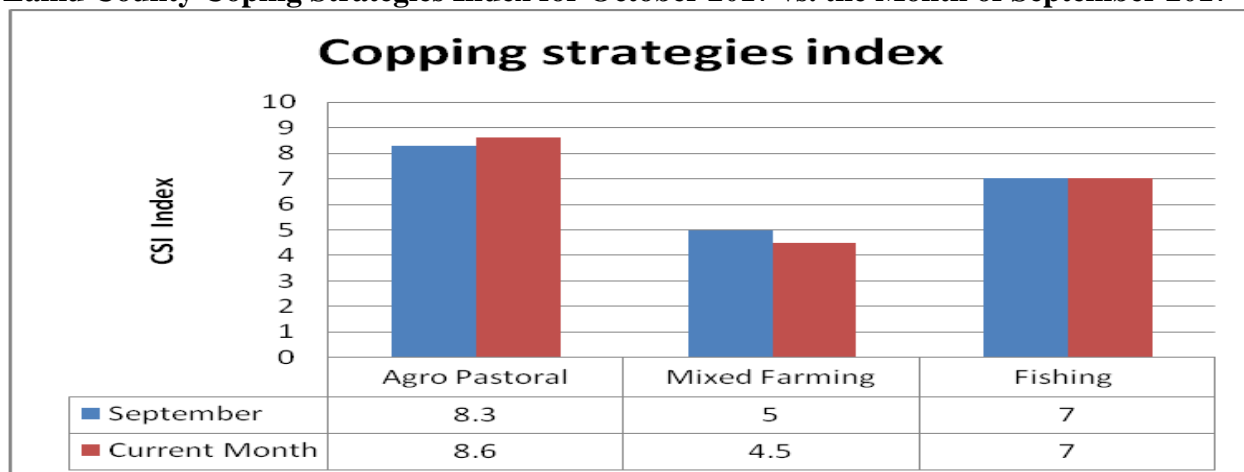


Figure 17: Coping strategies Index

**5.5 Implication on Food Security**

- Low milk consumption at household levels across all the Livelihood zones could lead to decreased dietary diversification and thereafter a negative impact on food security.
- The decrease in the percentage of children under five, who are both at risk of malnutrition, have been improving from August to October in areas of Agro pastoral Zones of Witu areas resulted of increased interventions such as cash transfers programs.

## **6.0 CURRENT INTERVENTION MEASURES (ACTION)**

### **6.1 NON-FOOD INTERVENTIONS**

#### **6.2 Drought Response Interventions**

- Cash transfer by the Social Development department to 1600 households and 120 households for older persons and people with severe disabilities respectively.
- Water trucking is ongoing in Witu and Hindi wards being implemented by County Government in areas of Lamu West sub-county.

## **7.0 EMERGING ISSUES**

### **7.1 Insecurity**

- Tension is still high in Lamu County after the previous attacks by Al shabab, however, the condition is under control.

### **7.2 Migration**

- No Livestock migration is currently taking place during the Month of September.
- There were no abnormal cases of human migration during the month under review.

### **7.3 FOOD SECURITY PROGNOSIS**

- Water availability and accessibility situation is declining for households due to insignificant rainfall hence poor recharge of the open water sources and Djabias.
- Availability of browse and pasture improve livestock body condition and hence stabilize livestock prices.
- The October 3-Month Vegetation Condition Index indicating greenness above normal for the entire County.
- The current good condition of forage, will keep livestock in good body condition hence improve food security as there will be livestock products at the household level.
- The improving livestock body condition will enable farmers to access good market prices and also enable them buy relatively enough food. This will improve food security in the county.

## **8.0 RECOMMENDATIONS**

### **Water**

- Promotion of rain water harvesting, repair of Djabias, roof catchment areas, installation of gutters and tanks in Villages and Institutions.
- Constructions of boreholes, water pans and dams for preparedness.

### **Livestock and Agriculture**

- Accelerate completion of Nagele Livestock market or Linkage to Livestock markets to enable accelerated destocking at alarm and emergency phases.
- Livestock disease surveillance and control to curb spread of livestock diseases as in-migration from neighboring County of Tana River and Garissa.
- Provision of Veterinary and Livestock services extension staff in the County.
- Build Capacity of crop farmers to plant drought resistance food crops.
- Provision of relief seeds, fertilizers and subsidized tractor services for crop farmers.

### **Health and Nutrition**

- Strengthen malnutrition screening and active case search as well as strengthen integrated management of acute malnutrition in the community.
- Enhance disease and nutritional surveillance.

### **Education**

- Support to schools feeding programmes for the most vulnerable communities focusing on the most vulnerable areas in the county.
- Provide Food for fees for students hailing from Vulnerable and poor families.
- Provision of boarding facilities to vulnerable communities within the County.

### **Peace and Security Sector**

- Peace and security meetings should be enhanced in the County and her neighboring counties of Tana River and Garissa to avert future livestock and Crop farmers conflicts.

### **Information Communication Technology**

- Promote use of ICT on Drought information sharing and development programmes.

## REFERENCE TABLES

**Table 1: 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. |
| <b>Recovery:</b> The drought phase must have reached at least Alarm stage. Recovery starts after the end of drought as signalled by the environmental indicators returning to seasonal norms; local economies starting to recover |  |  |  |

**Table 2: Standardized Precipitation Index (SPI)**

| Color | SPI Values     | Metrological Drought Category |
|-------|----------------|-------------------------------|
|       | > +1.5 or more | Wet Conditions                |
|       | 0 to +1.5      | No drought                    |
|       | -0.1 to -0.99  | Mild drought                  |
|       | -1 to -1.99    | Severe drought                |
|       | <-2 and less   | Extreme drought               |

**Table 3: 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 4: 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, 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 signalled 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.