

**National Drought Management Authority**  
**EMBU (MBEERE) COUNTY**  
**DROUGHT EARLY WARNING BULLETIN FOR JUNE 2017**



A Vision 2030 Flagship Project



**JUNE EW PHASE**

**Drought Status: ALERT**



**Maandalizi ya mapema**

**Drought Situation & EW Phase Classification**

**Biophysical Indicators**

- **Rainfall:** The amount of rainfall received for both sub counties reduced significantly during the month of June to 44% of normal
- **Vegetation condition:** The vegetation condition improved further to normal vegetation greenness for Mbeere South and above normal vegetation greenness for Mbeere North

**Socio Economic Indicators (Impact Indicators)**

- **Production indicators:** The Main food crops were at maturity and harvest stages of development. Minimal harvest is expected from MMF zone  
Livestock body condition ranged from good to fair in the month. There were no abnormal cases of migration, diseases or death cases reported.  
The milk production increased as compare to previous month from 1.2 litres per household per day in May to 1.4 litres per household per day
- **Access indicators:** Average distance to water sources from grazing areas for livestock reduced while average distance to water sources for household increased slightly due to poor quality of ground sources in MMF zones  
The Terms of Trade significantly deteriorated further in the month affecting purchasing power of livestock keepers.
- **Utilization Indicators:** Milk consumption reduced slightly in the month. The proportion of children under 5 years who are at the risk of malnutrition reduced to 5.6% of the total sampled children The Coping strategy index marginally increased by 23 percent to 8.42

**Early Warning (EW) Phase Classification**

Livelihood Zone	Phase	Trend
Mixed Farming (MF)	Normal	Improving
Marginal Mixed Farming (MMF)	Alert	Improving
COUNTY	Alert	Improving
Biophysical Indicators	Value	Normal
Rainfall (% of Normal)	44%	80% -120%
VCI-3Month	51.13	30-50
Forage condition	Fair	Good
Production Indicators	Value	Normal
Crop Condition (maize)	Good/fair	Good
Livestock Body Condition	Fair	Good
Milk Production	1.4	>1.3 Litres
Livestock Migration Pattern	No migration	No migration
Livestock deaths	No death	No death
Access Indicators	Value	Normal
Terms of Trade	57	>86.7
Milk Consumption	1.4	>1 litres
Average Water Distance for Households (Km)	4.8	<2.6 Km
Average Grazing-Water point Distance (Km)	2.7	<3 km
Utilization Indicators	Value	Normal
Nutrition Status, MUAC (% at risk of malnutrition)	5.6	<4.5
Coping Strategy Index (CSI)	8.42	<8.42

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 Increased milk yields								
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec

## 1.0 CLIMATIC CONDITIONS

### 1.1 RAINFALL PERFORMANCE

- The two sub counties continued to experience rainfall although erratic throughout the months.
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### 1.2 AMOUNT OF RAINFALL AND SPATIAL DISTRIBUTION

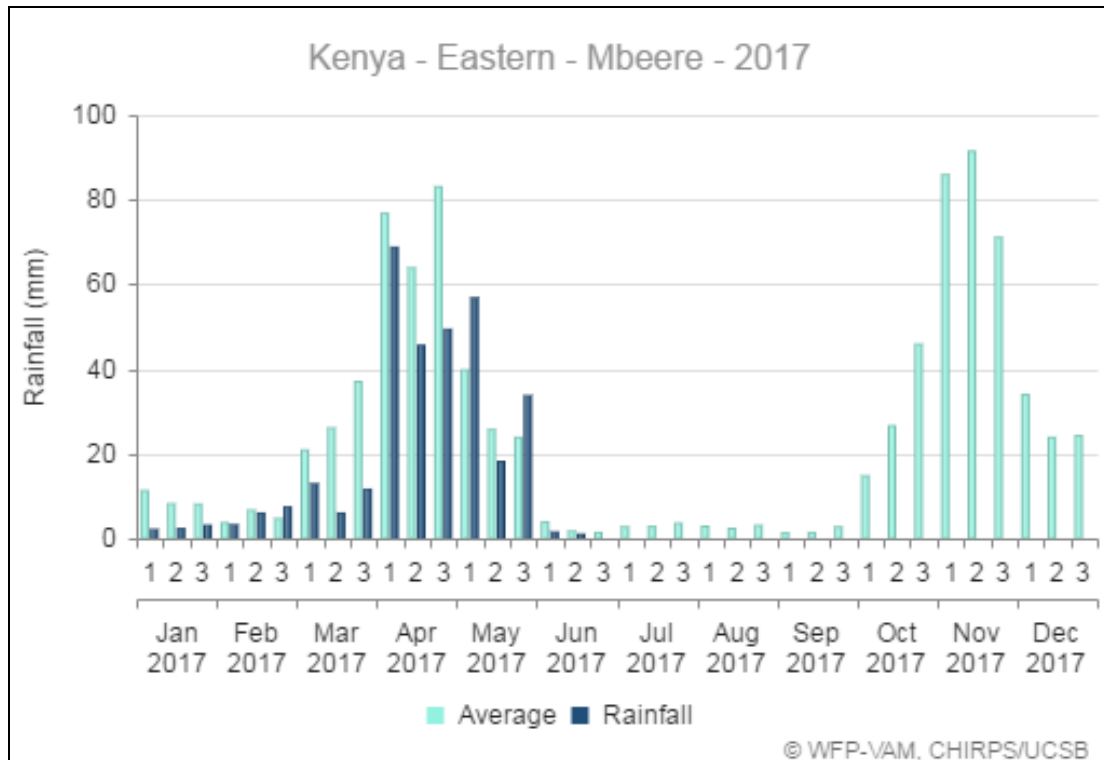


Figure 1: Average amount of rainfall recorded in Mbeere North and South sub counties, Embu County

- Mbeere North and South sub-counties received an average amount of 1.2mm of rainfall in the 1<sup>st</sup> and 2<sup>nd</sup> dekads of June as compared to the normal average of 2.7 mm during the period
- The amount received in the two dekads in June decreased significantly from an average of 37.4 mm recorded the same period last month to the current average of 1.2 mm in a similar period this month
- The rains received were erratic and poorly distributed across the two livelihood zones in the two sub-counties.

## 2.0 IMPACTS ON VEGETATION AND WATER

### 2.1 VEGETATION CONDITION

#### 2.1.1 Vegetation Condition Index (VCI)

- The vegetation condition in Mbeere North improved further from normal vegetation deficit in May to above normal vegetation greenness in the month of June while that of Mbeere south remained normal for the current month.
- The improvement in vegetation condition is due to the rains that were received in the previous two months
- The average 3-month Vegetation Condition Index (VCI) increased from 39.83 in May to 53.13 in the month of June
- The vegetation condition may deteriorate after two months across the two livelihood zones in the region due to the expected short dry spell after the long rains season.

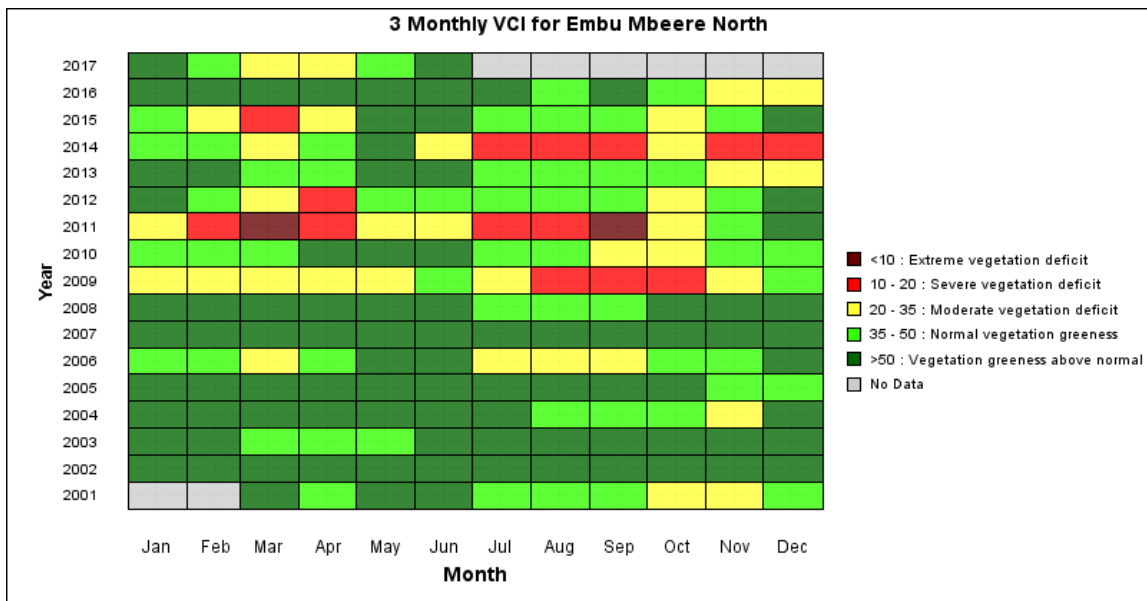


Figure2a: 3-month Vegetation Condition Index for Mbeere North [Source: Boku University -Austria]

- Mbeere North Sub County recorded a 3-month Vegetation Condition Index of 53.46

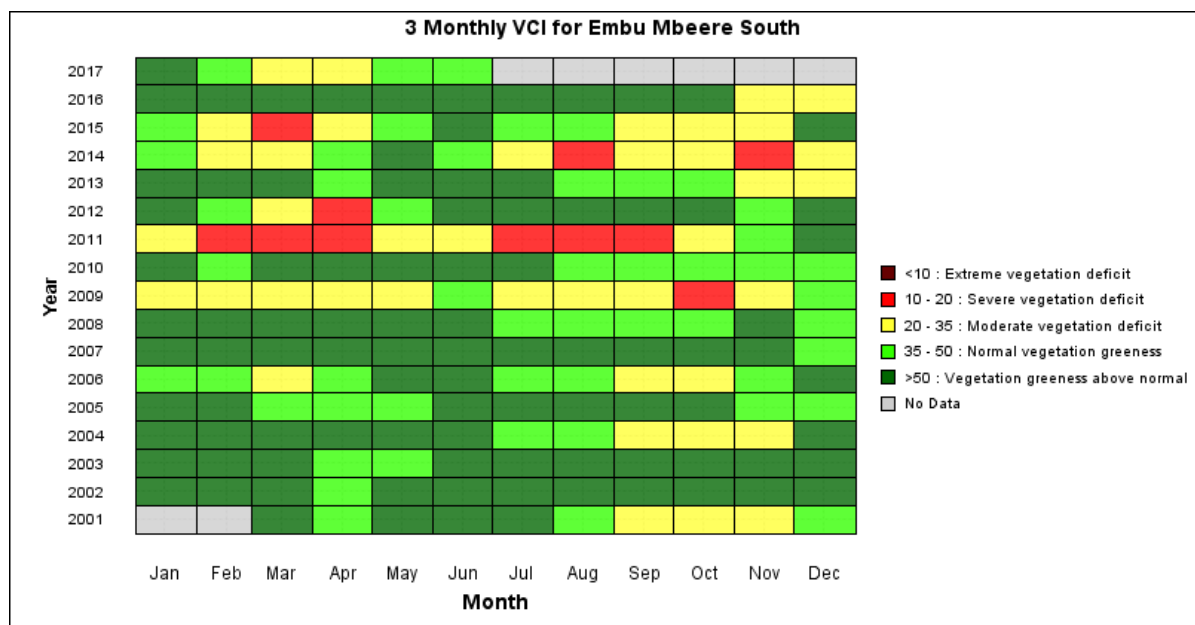


Figure2b: 3-month Vegetation Condition Index for Mbeere South [Source: Boku University -Austria]

- Mbeere South Sub County recorded a 3-month Vegetation Condition Index of 52.79

### 2.1.2 Pasture Condition

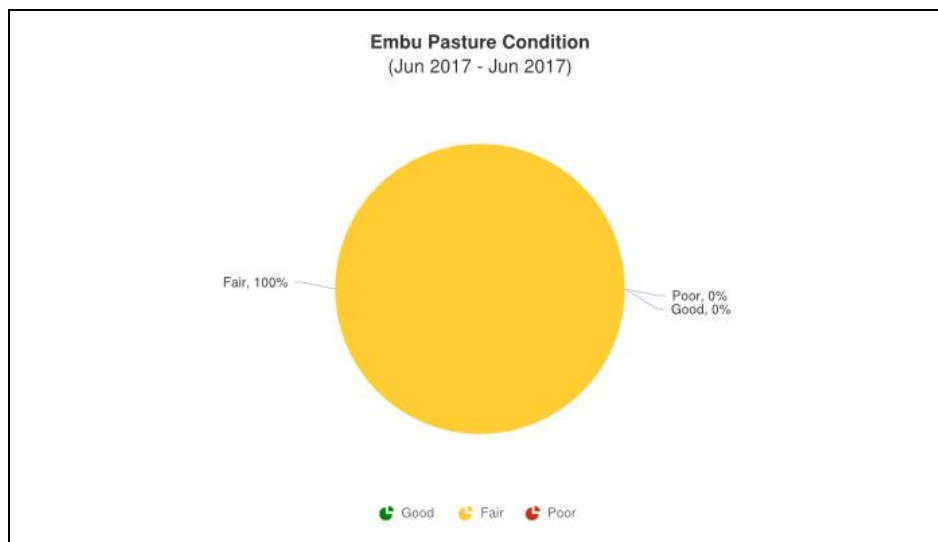


Figure3a: Pasture Condition for Mbeere North and South sub counties, Embu County

- The pastures quality condition is fair across the two livelihood zones in Mbeere North and Mbeere South.
- The quantity of pasture available is expected to last for 2-3 months in the mixed farming zone and less than one month in the marginal mixed farming zone
- The pasture condition was below normal at this time of the year.

### 2.1.3 Browse Condition

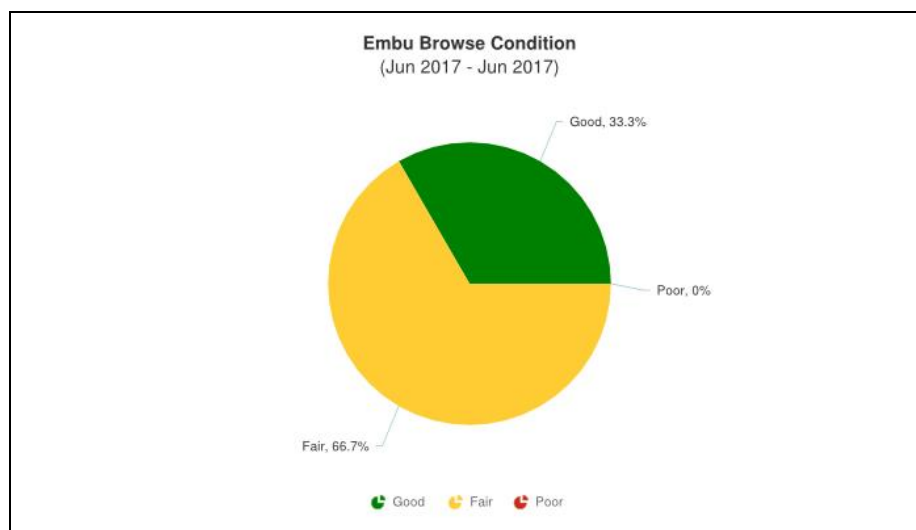


Figure3b: Browse Condition for Mbeere North and South sub counties, Embu County

- The browse condition was fair to good in the current month compared to the previous month this is attributed to the dry spell which has began
- The condition of browse improved as compared to the previous month when 25% of the browse was poor
- On average, 66.7% of the browse available was fair, while the remaining 33.3% of the browse was good across the two livelihood zones in Mbeere North and Mbeere South.
- The browse condition in the Mixed Farming Livelihood Zone was good while in the Marginal mixed livelihood zone the condition was poor to fair.
- The available browse is projected to sustain the small stocks for on average 5-6 months in the mixed farming zone and 3-5 months in the marginal mixed farming zone.
- The browse condition was below normal at this time of the year and is expected to deteriorate with the dry spell.

## 2.2 WATER RESOURCE

### 2.2.1 Water Sources

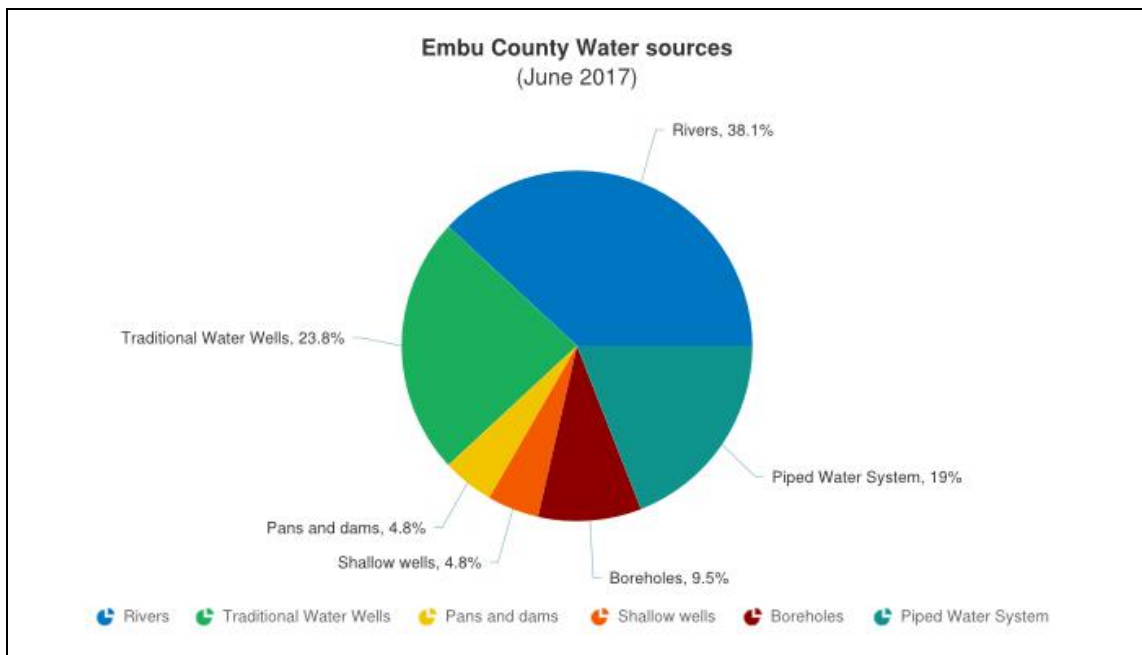


Figure 4: Water Sources for Mbeere North and South sub counties, Embu County

- The main water sources in the month under review for both livestock and domestic use across the two livelihood zones in the two sub-counties were; rivers 38.1%, wells 23.8%, piped water 19%, 9.5% boreholes pans and dams, shallow wells, at 4.8% each respectively.
- The water quality at the sources was good (clear water) and waiting time slightly increased at the available sources for both households and livestock.
- Small proportion of households treated drinking water using treatment chemicals and by boiling.
- The main sources and quality of water was normal at this particular time of the year.

### 2.2.2 Household Water Access and Utilization

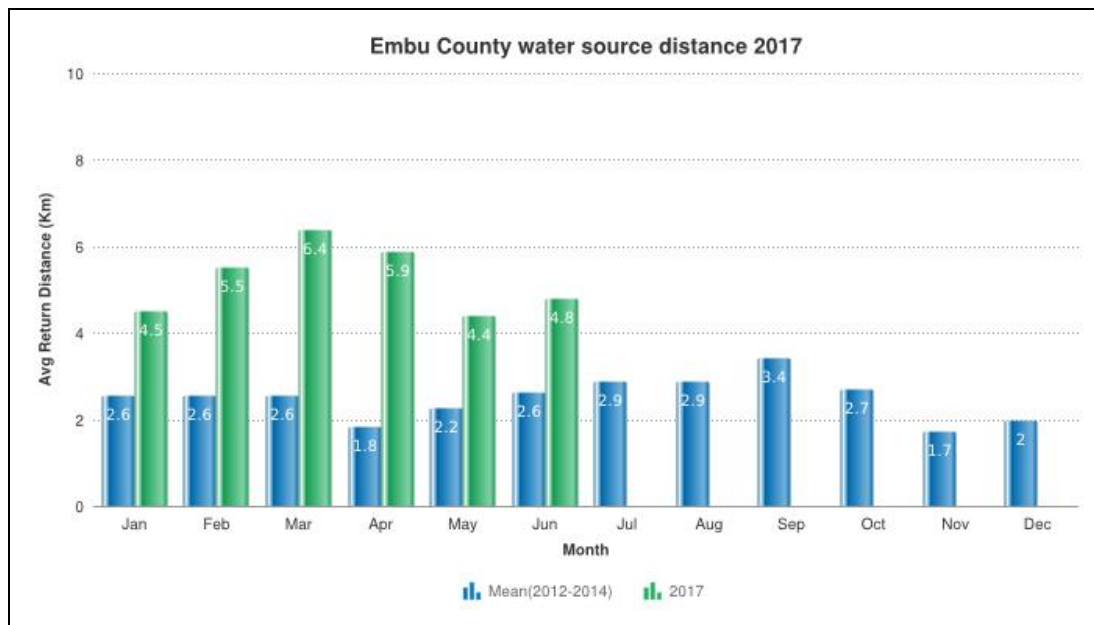


Figure 5: Water Access for Households in Mbeere North and South sub counties, Embu County

- The average return distances from the households to water sources increased by 9 percent from 4.4 km in the previous month to 4.8 km in the in the month under review.
- The increase in average distance to water sources is attributed to drying up or poor quality of some water pans and major seasonal rivers in the Marginal Mixed farming zone.
- Households in the MMF Livelihood Zone trekked for longer average distance at 4.8 km compared to those in MF Livelihood Zone at 4.0 km in search for water.
- The variation in average distance covered across livelihood zones was occasioned by less water sources and drying up sources in the MMF livelihood zone prompting households to rely on sources of water in other far areas.
- The current average distance for the current month was significantly higher than the long term average distance.

### 2.2.3 Livestock access to water from grazing areas

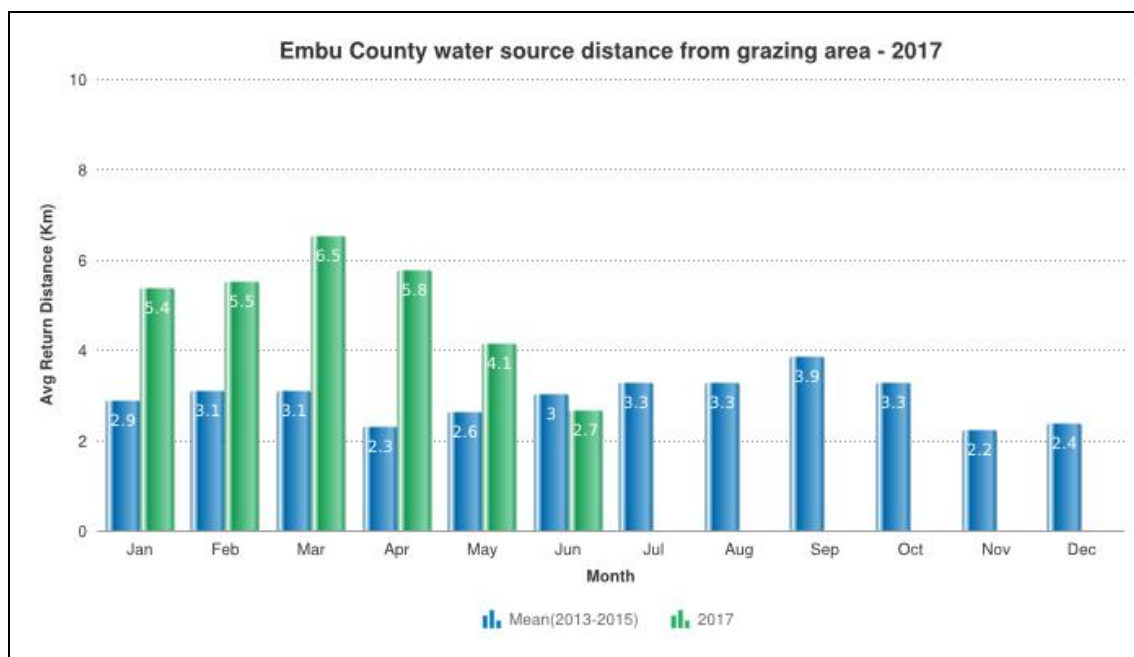


Figure 6: Water Access for Livestock for Mbeere North and South sub counties, Embu County

- The average distances to water sources from grazing areas reduced further in the month under review by 52 percent from 4.1 km recorded previous month to 2.7 km in June
- The average distance trekked by livestock from grazing point to water source was longer in the MMF livelihood Zone at 4.3 km compared to the average distance trekked in the MF livelihood Zone with an average of 2.0 km from grazing point to water sources.
- The decrease was attributed to availability livestock water sources closer to the pasture pastures/ browses fields across the livelihood zones. The livestock were able to use water from surface sources that were not considered fit for household use.
- The frequency of watering livestock remains daily in the mixed farming zone but in the marginal mixed farming zone alternate watering applied.
- The current average distance was 10 percent lower than the long term mean distance at this time of the year.

### 3.0 PRODUCTION INDICATORS

#### 3.1 LIVESTOCK PRODUCTION

##### 3.1.1 Livestock Body Condition

- The livestock body conditions ranged from fair to good across the two livelihood zones in the two sub-counties in the month.
- The small stock (sheep and goats) had good body condition with smooth appearance in both livelihood zones.
- Most areas in the mixed farming zone cattle had good body condition while in vast areas in the marginal mixed farming zone the body condition for cattle remained fair. The body condition may deteriorate further in the next 2-3 months when the dry spell sets in.
- The average body condition was below normal at this time of the year occasioned by long dry spell which negatively affected the pasture and browse condition

##### 3.1.2 Livestock Diseases

- No notifiable livestock diseases were reported in the period under review though routine surveillance measures were put in place
- Farmers carried routine deworming and vaccination at the household level

##### 3.1.3 Milk Production

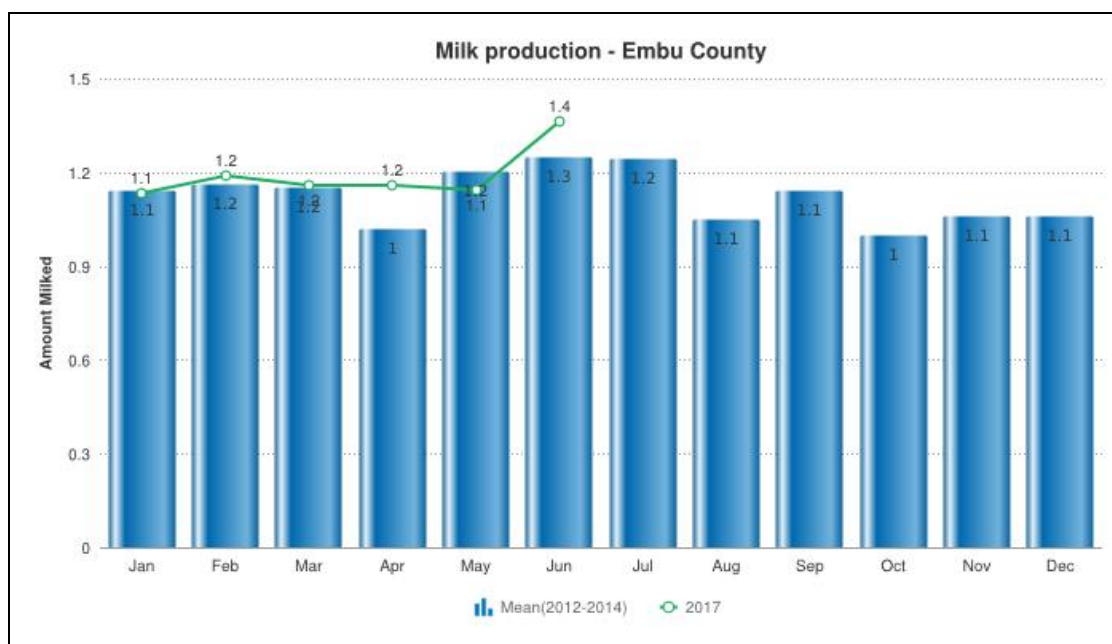


Figure 7: Milk Production in Mbeere North and South sub counties, Embu County

- The average daily household milk production per household improved from 1.2 litres per household per day recorded the previous month to 1.4 litres per household per day in the current month across the two livelihood zones in the two sub-counties.
- On average, 2.4 litres of milk was produced daily per household in the Mixed farming Livelihood Zone compared to 1.8 litres of milk produced daily per household in Marginal Mixed farming Livelihood Zone.
- The variation in milk production across the two livelihood zones was as a result differentiation in breed and the availability of water and pasture
- The milk production may start showing a downward trend as the dry spell sets in leading to poor forage and longer distances to water sources

## **3.2 Rain-Fed Crop Production**

### **3.2.1 Stage and Condition of food Crops**

- The main food crops planted in both livelihood zones are maize, millet, sorghum, cowpeas and green grams
- Harvesting of maize, cowpeas and green grams was ongoing across both the marginal mixed farming and mixed farming livelihood zones.
- There was very minimal maize harvest in the marginal mixed farming zone as compared to the mixed farming zone. The actual/projected harvest will last for only up to one month in the marginal farming livelihood while in the mixed farming zone the stocks are expected to last for 2-3 months
- The condition of pulses was good in both livelihood zones and ready for harvesting or already harvested



#### 4.0 MARKET PERFORMANCE

##### 4.1 Livestock Marketing

###### 4.1.1 Cattle Prices

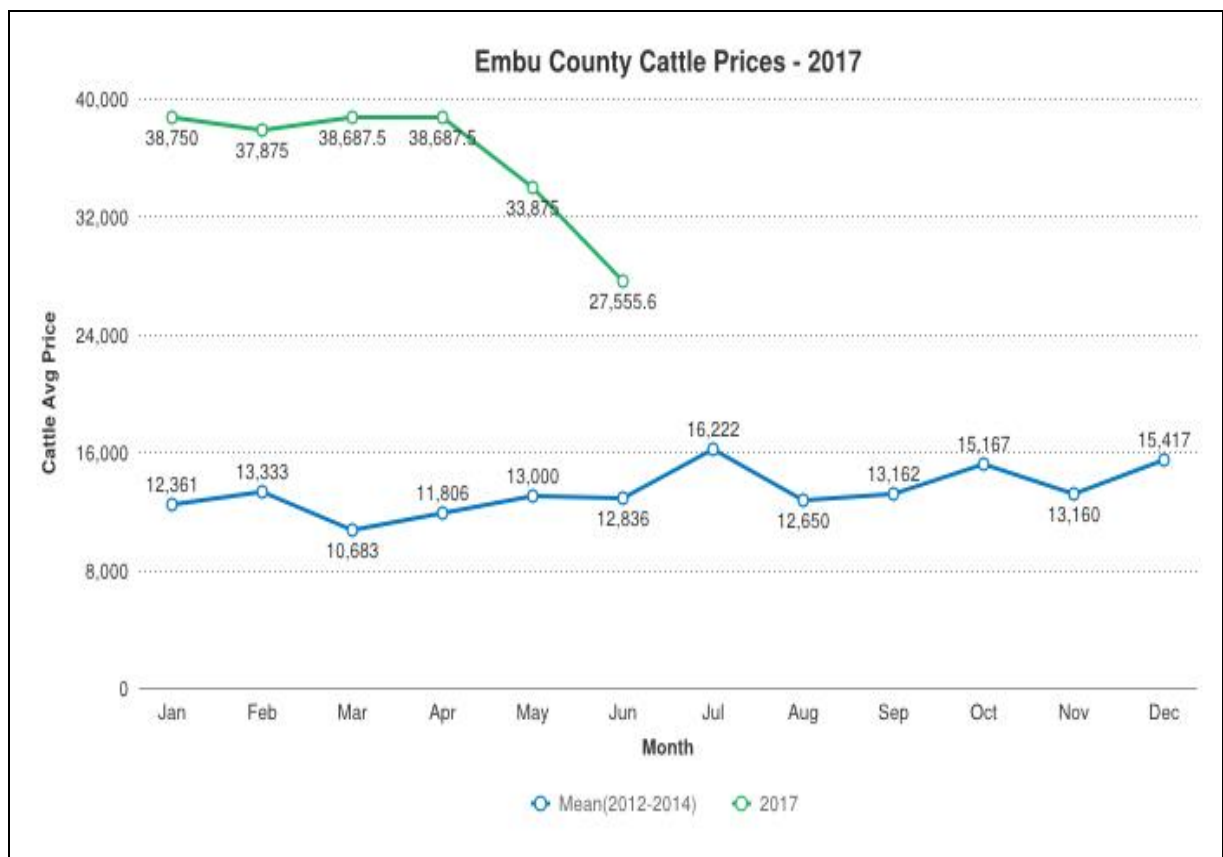


Figure 8: Market Cattle Prices in Mbeere North and South sub counties, Embu County

- The market price of a medium sized bull decreased further by 19 percent from KES 33,875 recorded in May to KES 27,555 recorded in the month under review.
- The decrease in market prices can be attributed to many farmers selling in order to cover food and non-food expenses
- Makutano livestock market recorded the highest average price of KES 30,000, while Kiritiri livestock market and Ishiara Livestock market recorded average price of KES 28,700, and KES 25,500 respectively. This variation was attributed to increased food stress in households for the marginal mixed farming zone as compared to households in the mixed farming zone
- The price recorded in the month under review was significantly higher than the long term mean price at this time of the year.

### 4.1.2 Market Goats Prices

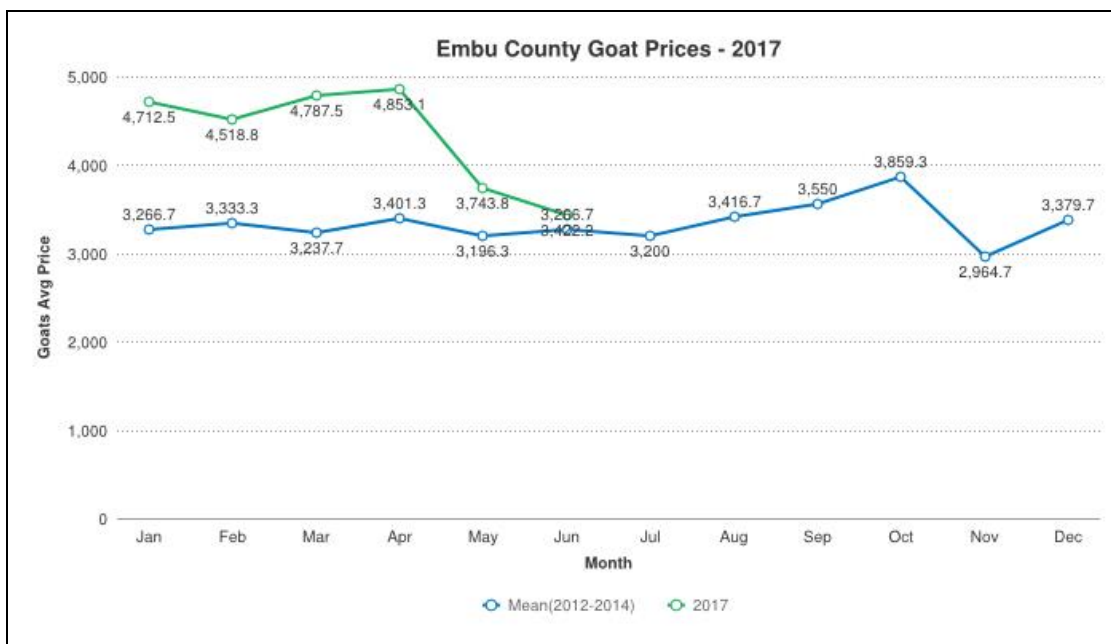


Figure 9: Average Goat Prices in Mbeere North and South sub counties, Embu County

- The average price for a medium sized goat decreased further in the current month by 24 percent from KES 3,743 recorded in the month of May in the markets across the two livelihood zones in the two sub-counties to KES 3,206 in the month of June
- The decrease in prices was attributed to more supply of goats in the market occasioned by the food and non-food expenses by the households
- Makutano livestock market (MF) recorded the highest average price of KES 5,000, while both Ishiara and Kiritiri Livestock markets (MMF) recorded average price of KES 3,000,
- This variation in prices across the markets was as a result of differentiation in breed and the supply and demand forces
- The price recorded in the month under review was 3 percent higher than the long term mean price at this time of the year.

## 4.2 FOOD PRICES

### 4.2.1 Maize Prices

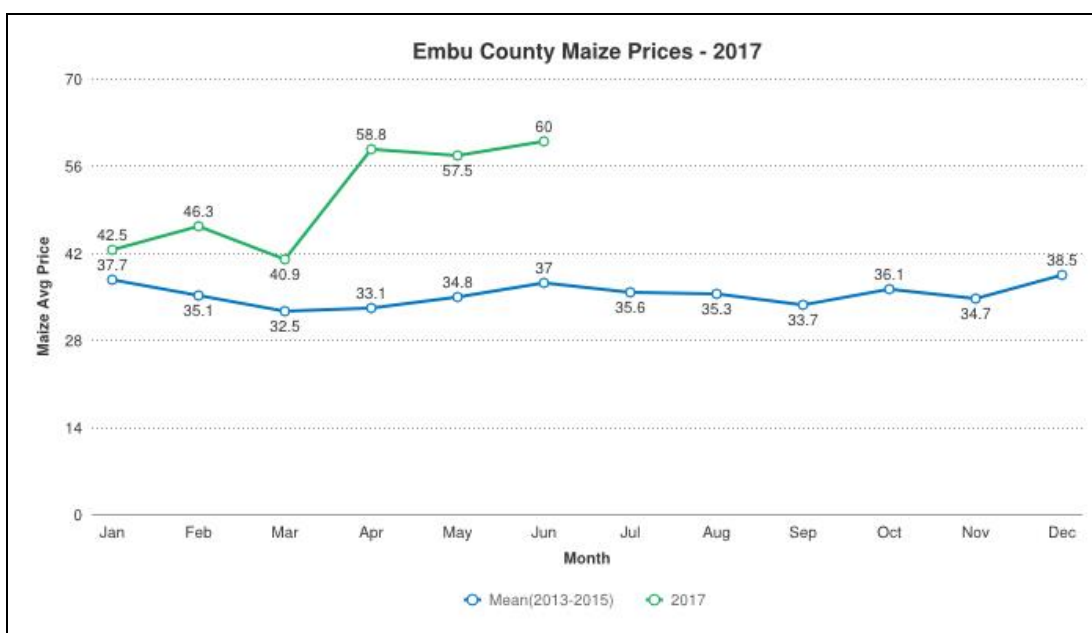


Figure 10: Average Maize Price in Mbeere North and South sub counties, Embu County

- The average market maize price increased by 3 percent as compared to the average price recorded in previous month across the two livelihood zones in the two sub-counties to KES 60 in the month under review.
- Across the major markets, one kilogram of maize was retailing at KES 65 in Kiritiri cereals market, KES 60 in Ishiara cereals market, and KES 55 in Makutano cereals market,
- This price differences was attributed to the high demand of Maize in the local markets in the marginal mixed farming zone due to depletion of household stock and long rains harvest coupled with unfavourable market dynamics for sellers thereby making them to pass the costs to the consumer.
- The average maize price recorded in the current month was 62 percent higher than the long term mean price at this time of the year and is expected to remain high due to low expected long rain production

#### 4.2.2 Posho (Local Maize Meal)

- The average price of posho significantly increased remained stably high as compared to the previous month at KES 75 per kilogram in the current month across the two livelihood zones in the two sub counties in the current month.
- The marginal mixed farming zone recorded highest average price of one kilogram of posho at KES 75 compared to KES 68 recorded in the mixed farming zone.
- This price difference was attributed to high demand of the commodity in the Marginal mixed farming zone compared to the mixed farming zone.
- The average price of local maize meal was above normal in the month of June and is expected to remain high for the households that may not get harvest and thereby will continue depending on the market

#### 4.2.3 Beans Prices

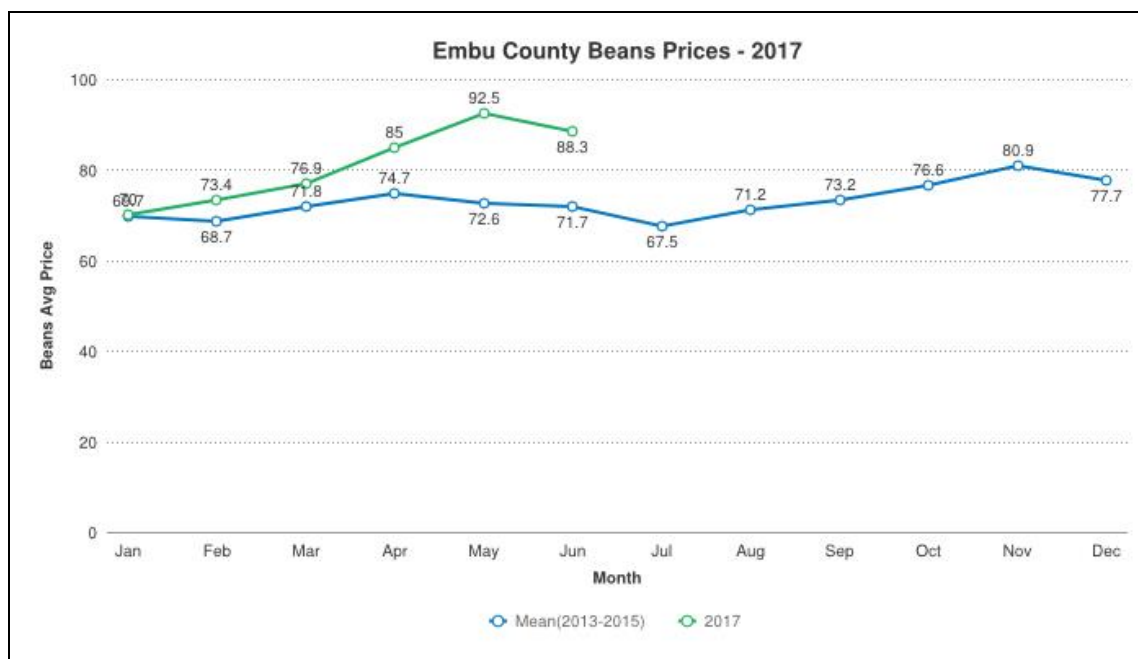


Figure 11: Average Beans Price in Mbeere North and South sub counties, Embu County

- The average market beans price decreased by 5 percent across the two livelihood zones from to KES 92 per kilogram recorded last month to KES 88 per kilogram in the month under review.
- The decrease was occasioned by the harvest of cowpeas and green grams which are largely considered as alternatives to beans in terms of household usage

- One kilogram of beans retailed at KES 100 in Kiritiri cereals markets, KES 90 in Makutano cereals market and at KES 80 in Ishiara cereals market.
- The average price recorded was 22 percent higher than the long term mean price for one kilogram of beans at this time of the year and it is expected that the may decrease further due to the long rain season harvest of other pulses.

#### 4.2.4 Green Grams Prices

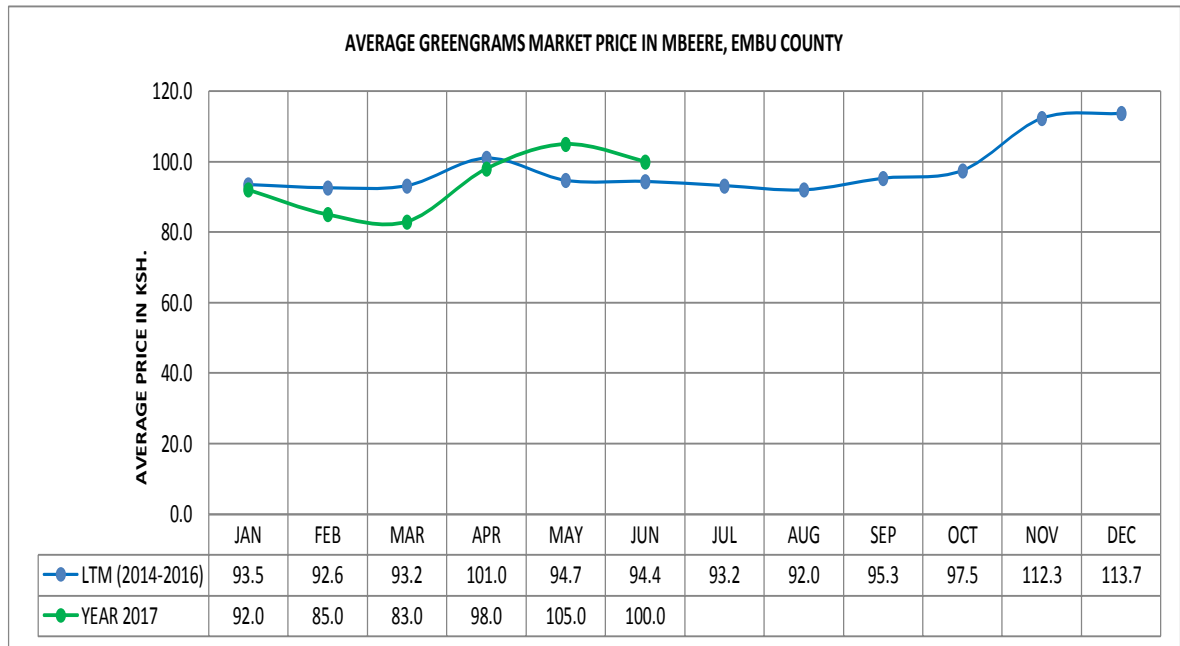


Figure 12: Average Green Grams Prices in Mbeere North and South sub counties, Embu County

- The average market price for green grams significantly decreased by 5 percent from KES 105 recorded in the previous month to KES 100 per kilogram across the markets in the two livelihood zones in the two sub-counties in the month under review.
- One kilogram of the crop was KES 100 in the Marginal mixed farming livelihood zone compared to KES 90 in the Mixed farming livelihood zone.
- The green grams were expensive in the Marginal mixed farming livelihood zone due to high demand at household level occasioned by lack of vegetables.
- The trend was normal and though slightly above the long term average price of green grams at this time of the year.

### 4.3 Household Income

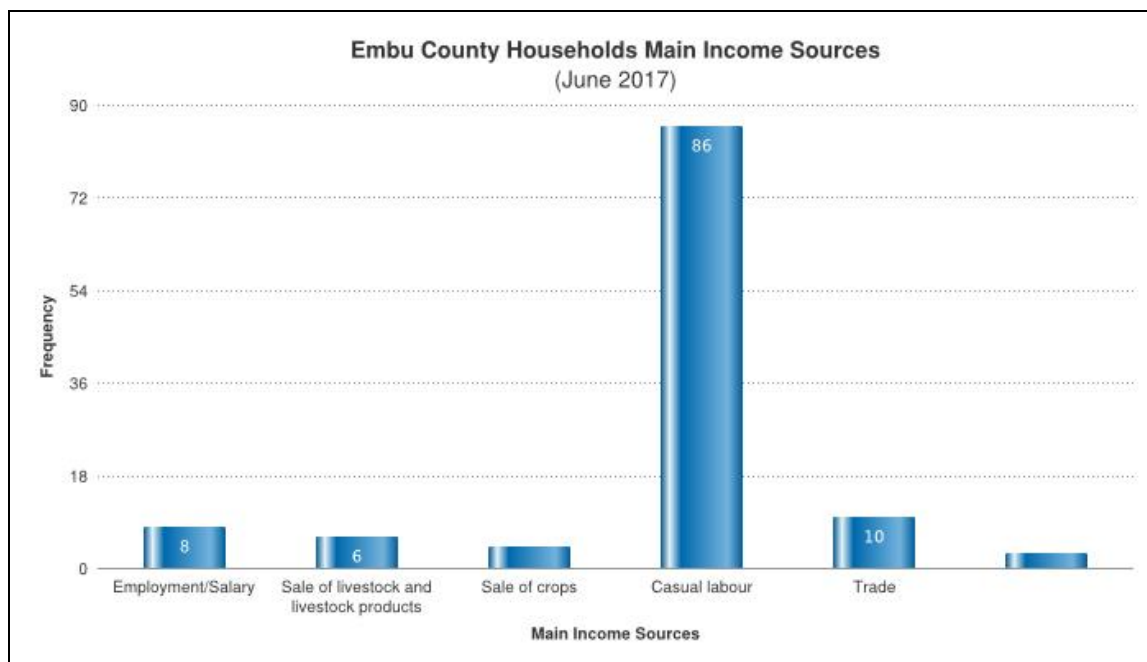


Figure 13: Main Incomes sources for households in Mbeere North and South sub counties, Embu County

- Households in the region drew their income from casual labour, sale of charcoal, formal employment, trade, sale of livestock and livestock products during the month.
- On average, 86% of the sampled households earned their income through casual labour, 10% of them earned their income through trade, 8% through formal employment, while 6% of them sold livestock and livestock products to earn income for their households.
- There was a small proportion of the households that relied on sale of crops and remittance for income during the month under review
- The main sources of income remained normal at this time of the year

### 4.4 Terms of Trade (ToT)

The terms of trade determines the purchasing power of livestock keepers.

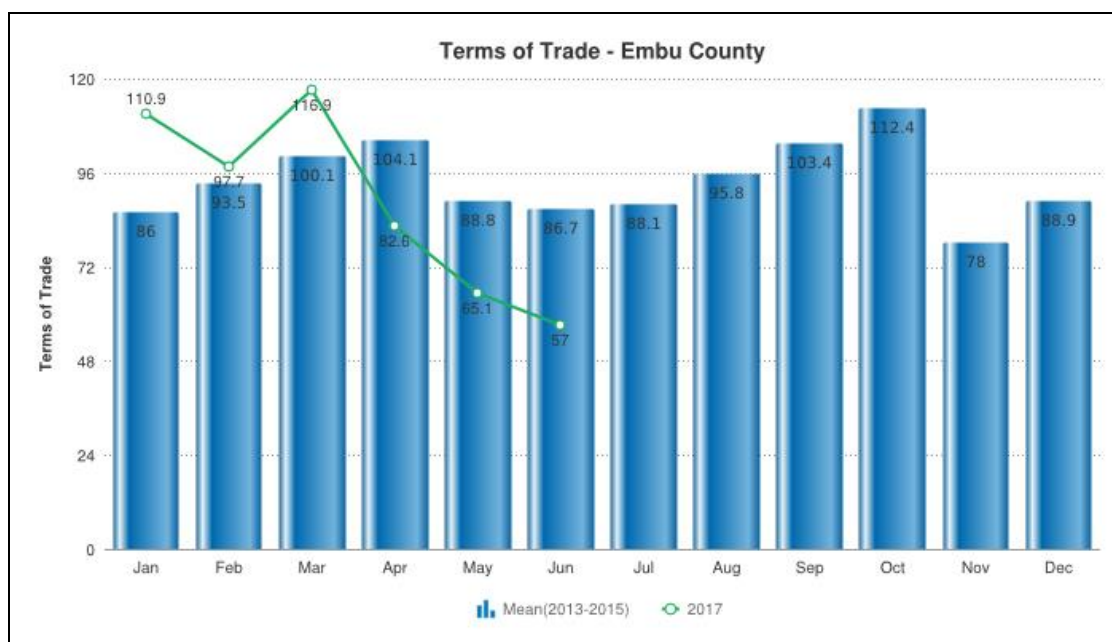


Figure 14: Terms of Trade in Mbeere North and South Sub Counties, Embu County

- The Terms of Trade (goat versus maize) decreased further by 12 percent from 85 kilograms of maize for sale of one goat in the month of May to 57 kilograms of maize for sale of one goat in the month under review across the two livelihood zones in the two sub-counties.
- The sale of one goat helped a household in the MMF livelihood zone to purchase 90 kilograms of maize compared to 50 kilograms in the MF livelihood zone.
- The variation in terms of trade across both livelihood zones was occasioned by varying average prices of maize and goats in the month under review.
- The terms of trade are expected to remain unfavourable for the livestock keepers as the goat and maize prices continue to vary inversely.
- The current ToT recorded across the two livelihood zones was 52 percent lower than the long term mean ToT at this particular time of the year.

## 5.0 FOOD CONSUMPTION AND NUTRITION STATUS

### 5.1 Milk Consumption

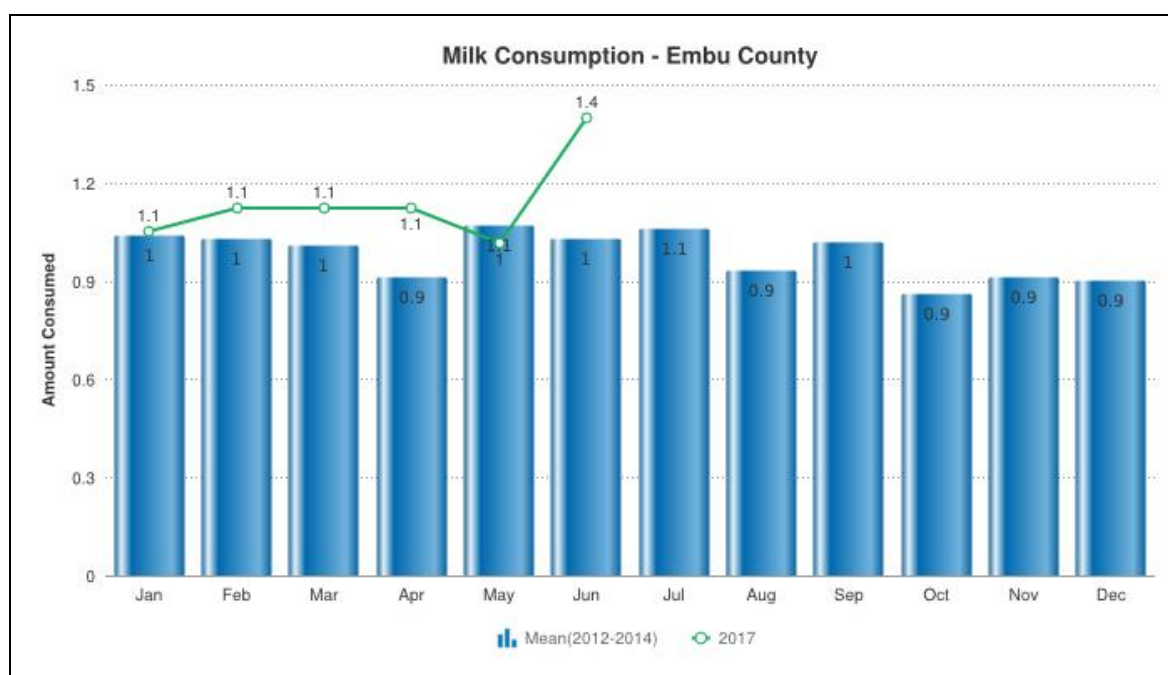


Figure 15: Milk Consumption in Mbeere North and South sub counties, Embu County

- The average daily household milk consumption increased slightly from 1.1 litres per household per day in May to 1.4 litres per household per day in the month under review across the two livelihood zones.
- Households in the MF livelihood zone consumed average 1.8 litres per household daily compared to 1.0 litre per household consumed in the MMF livelihood zone.
- The variation between the livelihood zones can be attributed to more amount of milk produced in the MF livelihood zone compared to the MMF livelihood zone.
- The amount of milk consumed at household level is expected to remain stable due to expected increase in production due to improved pasture and browse condition and availability of water at relatively closer average distance

## 5.2 Health and Nutrition Status

### 5.2.1 Nutrition Status

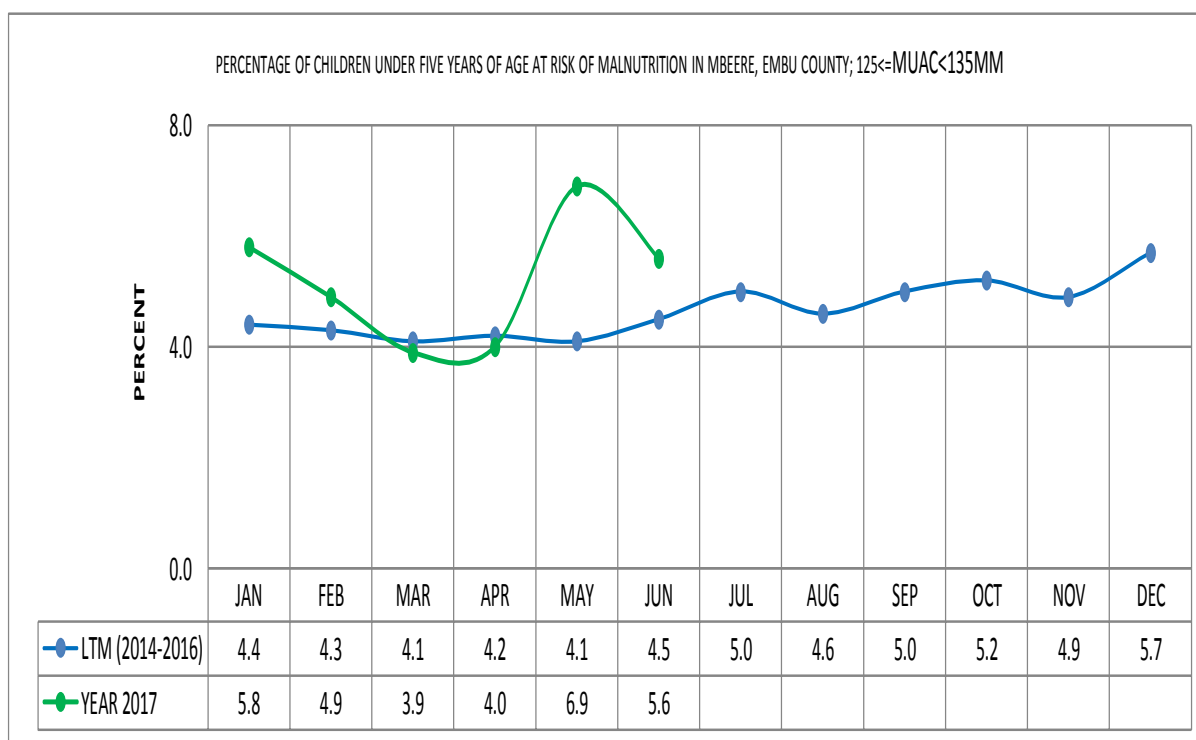


Figure 15: Children at Risk of Malnutrition in Mbeere North and South sub counties, Embu County [n=692]

- The proportion of children who were at risk of malnutrition decreased by 19 percent from 6.9% out of the sampled children in the previous month to 5.6% out of all the sampled children across the two sub counties in the month under review.
- The decrease of the proportion of the children at risk can be attributed to the replenishment of the household stocks in the mixed farming zone from the long rain season harvest
- The marginal mixed farming zone reported the highest number of children who were at risk of malnutrition in the month under review.
- The proportion of children at risk of malnutrition in the month under review was however 24 percent higher than the long term mean in the region at this particular time.

### 5.2.2 Health

- There were no cases of cholera and measles outbreaks reported in the two sub counties in the month under review.
- Few cases of diarrhoea, Upper Respiratory Tract Infections were identified and treated in the health facilities across the two sub-counties in the month.

### 5.3 Food Consumption Score

The food consumption score gives the dietary diversity of the meals consumed by the sampled households

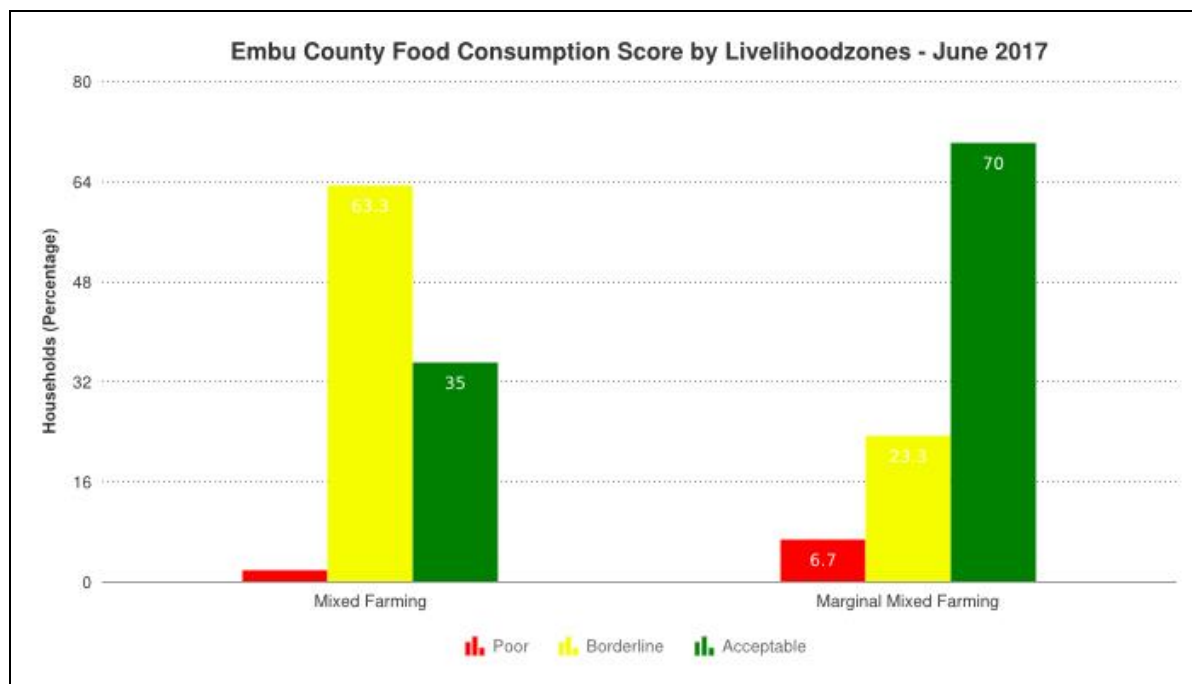


Figure 16: FCS for Sampled Households in Mbeere North and South sub counties, Embu County [n=120 hh]

- Out 120 sampled households across the two livelihood zones, 4.2% of the households were classified under the poor food consumption category, 43.3% of them under borderline food consumption category while the remaining 52.5% of the households were classified under acceptable food consumption category.
- The mixed farming zone had many households that were classified under the borderline food consumption bandwidth while the marginal mixed farming zone had many households that were classified under the poor food consumption bandwidth.

### 5.4 Coping Strategy Index

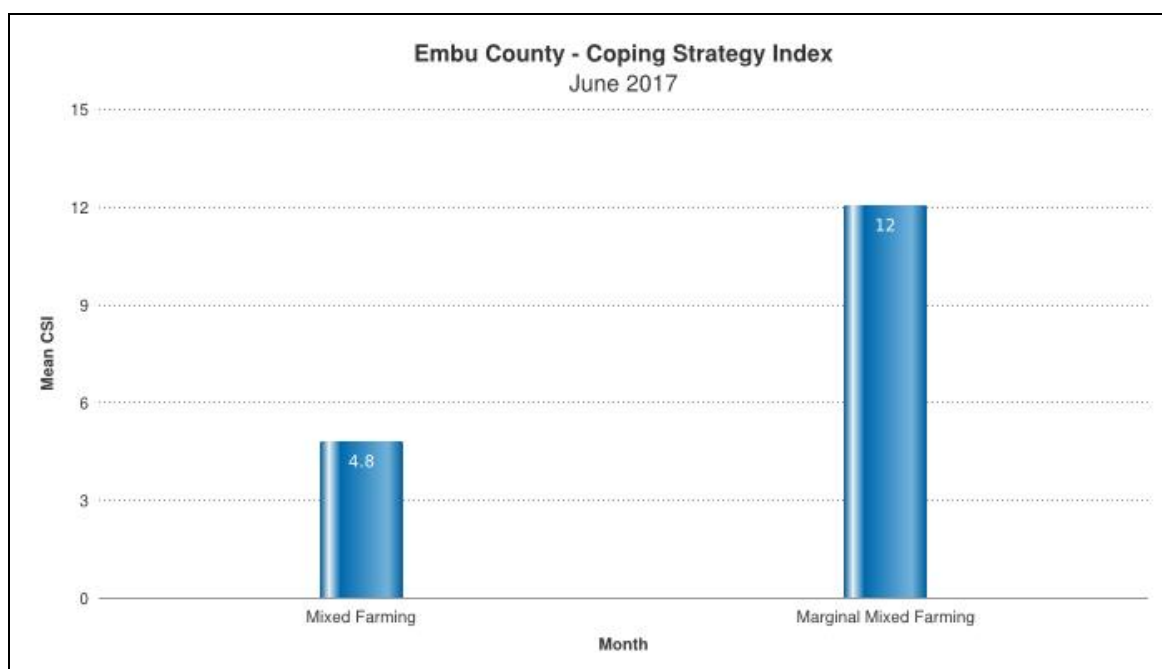


Figure 17: CS Index for Sampled Households in Mbeere North and South sub counties, Embu County [n=120]



- The mean Coping Strategies Index increased further by 29 from 6.51 recorded the previous month to 8.42 across the two livelihood zone in the two sub-counties in the month under review.
- The increase can be attributed to most households in the marginal mixed farming zone engaging in severe coping strategies such as reducing the number of meals consumed for adults to allow children have enough for consumption
- Households in MMF livelihood zone posted the highest mean coping strategy index of 12 compared to households in MF livelihood zone that posted coping strategy index of 4.8 in the month under review.
- This implied that the households in the MMF livelihood zones faced more food shortage in the month under review compared to those in the MF livelihood zone.

#### **5.4.1 Implication of the above Indicators to Food Security**

- The fair to good condition of cowpeas, green grams and beans in both livelihood zones is expected to bring reprieve for the households as they will start using produce from their farms for consumption
- The pasture and browse condition remain fair to good across both sub counties but the condition may start deteriorating in the marginal farming livelihood zone occasioned by the dry spell. This may in turn affect the body conditions, milk production and livestock market prices negatively.
- There was a significant reduction in the amounts of rainfall recorded across both livelihood zones which negatively affected the recharge of surface water sources and hence led to increased household distances to clean water points
- Terms of Trade remained unfavourable for livestock keepers in the month occasioned by higher prices of maize and low livestock prices across the major livestock markets
- Casual labour remained the dominant means the households used to earn income to supports the HH livelihoods.
- The number of children below 5 years old who were at risk of malnutrition slightly reduced occasioned by household harvest of pulses and maize across both livelihood zones
- The households in the marginal mixed farming zone continued to employ severe coping strategies due to food shortage

## **6.0 CURRENT INTERVENTION MEASURES**

### **6.1. Non-Food Interventions**

#### **6.1.1. Livestock Sector:** By County Department of Livestock Production and Veterinary Services

- Promotion of good animal husbandry practices in all wards
- Routine disease outbreak surveillance-County Department of Veterinary services

#### **6.1.2. Health and Nutrition Sector:** By County Department of Health Services

- Integrated Management of Acute Malnutrition (IMAM) in all health facilities
- Vitamin A and Zinc Supplementation
- Iron Folate Supplementation among Pregnant Women
- Routine disease surveillance-County public health Office
- Community MUAC monitoring for the acute and moderate malnutrition by the County Department of Health and NDMA

### **6.1.3: Agriculture Sector: By County Department of Agriculture**

- Trainings on post-harvest handling of grains, collective marketing and value addition of grains (sorting, grading packaging and dehuling)

### **6.2. Food Interventions: By the National Government**

- Distribution of food in both Mbeere South and Mbere North sub counties

## **7.0 EMERGING ISSUES**

### **7.1 Migration**

- No cases of migration and conflicts were reported in the month under review

### **7.2 Food Security Prognosis**

- Most households in the marginal mixed farming zone faced severe food shortages thus making many adult members to skip meals entirely or take one meal per day. This condition may continue in the month of July as the households are expecting minimal own farm harvest
- Maize harvesting was ongoing during the month under review and is expected to continue into the next month. The harvested stock will replenish the household stocks and thus improve on household food security especially in the mixed farming zone.
- The nutritional status of the children under five will likely remain higher than normal in the next 6 months occasioned by the below normal production from the long rain season occasioned by lack of food stocks at household level.

## **8.0 RECOMMENDATIONS**

### **8.1 Livestock Sector**

- Livestock restocking sensitization campaigns
- Promotion of goat rearing, bee-keeping and local chicken.
- Community capacity building on fodder conservation
- Livestock diseases surveillance

### **8.2 Water and Sanitation Sector**

- Desilting of major strategic water pans in the marginal mixed farming zone for livestock and household use
- Extension of pipeline to uncovered areas in the marginal mixed farming zone
- Provision and installation of water harvesting structures in schools and health facilities
- Rehabilitation of strategic boreholes

### **8.3 Health and Nutrition Sector**

- Purchase and distribution of water treatment chemicals to households and schools using pans and rivers
- Health outreaches to sensitize the community on proper feeding and health seeking practices
- Routine community monitoring for cases of children at risk of malnutrition

### **8.4 Education Sector**

- Upscaling the school feeding programme to cover needy schools in the marginal mixed farming zone
- Monitoring of school-going age children engagement in sand harvesting
- Monitoring the school drop-out cases and putting measures to increase school attendance

### **8.5 Agriculture Sector**

- Promotion of small-scale irrigation on high value crops in order contribute to household incomes and diversified household diet.
- Community capacity building on post-harvest handling to minimize losses in the expected harvest
- Relief seeds distribution of traditional high value seed