

# National Drought Management Authority

## EMBU (MBEERE) COUNTY

### DROUGHT EARLY WARNING BULLETIN FOR APRIL 2018



A Vision 2030 Flagship Project



**APRIL EARLY WARNING PHASE**

**Drought Status: NORMAL**

**Shughuli za kawaida**

Early Warning (EW) Phase Classification		
Livelihood Zone	Phase	Trend
Mixed Farming (MF)	Normal	Stable
Marginal Mixed Farming (MMF)	Normal	Stable
County	Normal	Stable
Biophysical Indicators	Value	Normal
Rainfall (% of Normal)	137%	80% -120%
VCI-3Month	59.35	30-50
Forage condition	good	good
Production Indicators	Value	Normal
Crop Condition (Maize)	good	good
Livestock Body Condition	good	fair -good
Milk Production	1.4 litres	1.0-1.5 litres
Livestock Migration Pattern	No migration	No migration
Livestock deaths	No death	No death
Access Indicators	Value	Normal
Terms of Trade	117	116
Milk Consumption	1.3	1.0-1.5
Average Water Distance for Households (Km)	4.9 Km	2.6 Km
Average Grazing-Water point Distance (Km)	5.4 Km	2.6 Km
Utilization Indicators	Value	Normal
% of children at risk (MUAC)	5.9	4
Coping Strategy Index (CSI)	11.88	7-14

**Drought Situation & EW Phase Classification**

**Biophysical Indicators**

- **Rainfall:** There was early onset of the long rains which was in the first dekad of the month of March. Above normal rainfall was received in the region during the reporting month.
- **Vegetation Condition:** The pasture and browse condition is good in both livelihood zones occasioned by regeneration due to the ongoing rains.

**Socio Economic Indicators (Impact Indicators)**

- **Production indicators:** Weeding is the main activity in the farms. Maize is at the tussling/ knee height stage of development while legumes are at podding/flowering stages of development. The condition of crops is good. Livestock body condition ranged from fair to good during the month. There is no abnormal cases of migration, diseases or death cases reported. The milk production improved slightly as compared to the previous month occasioned by good pasture and browse.
- **Access indicators:** Average distance to water sources for both households and livestock decreased further during the month due to recharge from the ongoing rains. The Terms of Trade in the month of April remain normal and favourable.
- **Utilization Indicators:** Milk consumption improved slightly as compared to the previous month since there was improved productivity.
- The proportion of children under five years at the risk of malnutrition remain stable as compared to the previous month. The Coping strategy index remained stable indicating that households continued to struggle to get food.

### County Seasonality Calendar

Short rains harvests Short dry spell Reduced milk yields Increased HH Food Stocks Land preparation			Planting/Weeding Long rains High Calving Rate Increased milk production			Long rains harvests A long dry spell Land preparation Increased HH Food Stocks Kidding (Sept)			Short rains Planting/weeding Increased milk production		
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec

## 1.0 CLIMATIC CONDITIONS

### 1.1 RAINFALL PERFORMANCE

- There was an early onset of the long season rains season in the first dekad of March as compared to the normal onset in the third dekad of March.
- Good and evenly distributed rains were recorded in both livelihood zones during the month April.
- Continuous rains were received in both livelihood zones for an average of 8 days per dekad during the month of April.
- The rains received were above normal rains during the period under review.

### 1.2 Amount of Rainfall and Spatial Distribution

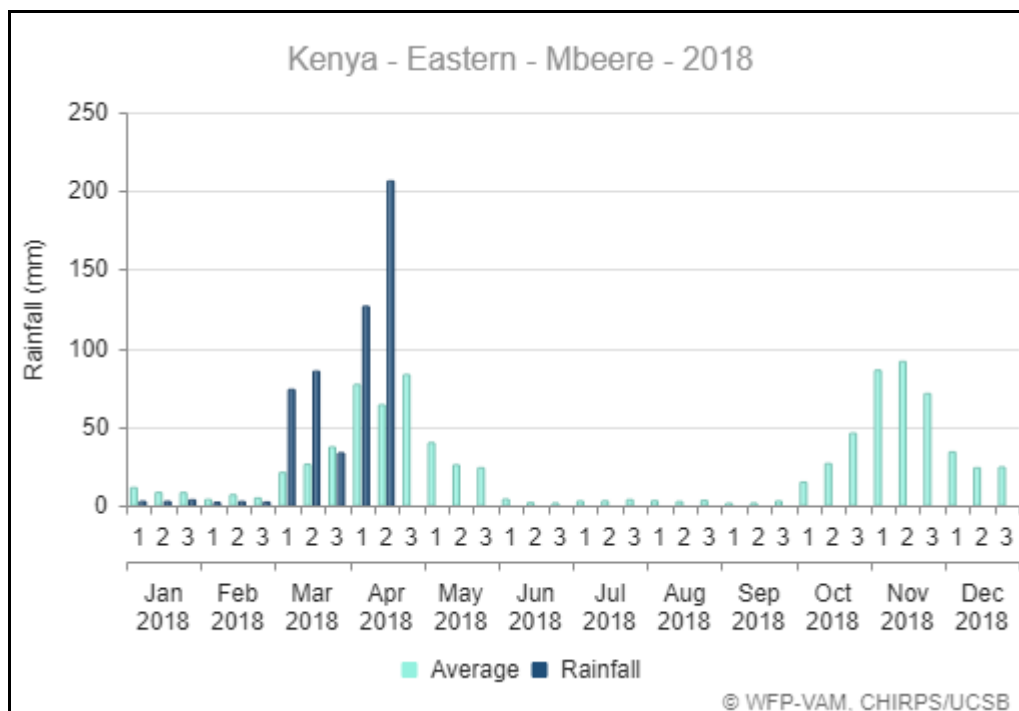


Figure 1: Average amount of rainfall recorded in Mbeere Sub Counties, Embu County

- The two sub counties received an average amount of 166 mm of rainfall compared to long term average amount of 70 mm for the 1<sup>st</sup> and 2<sup>nd</sup> dekads of April.
- The amount recorded in the month under review was above normal for the period under consideration.

### 1.3 Other Events

#### 1.3.1 Flooding

- Flooding was reported in areas of Makima and Mwea wards.
- Traditional mud houses and market stalls were destroyed due to enhanced rainfall accompanied with strong winds.

## 2.0 IMPACTS ON VEGETATION AND WATER

### 2.1 VEGETATION CONDITION

#### 2.1.1 Vegetation Condition Index (VCI)

- Vegetation condition for Mbeere North and Mbeere South sub counties improved significantly in April compared to previous month to above normal condition.
- The combined 3-month Vegetation Condition Index (VCI) is 59.35 compared to 21.4 recorded in the previous month.
- Mbeere South Sub County recorded a higher 3-month Vegetation Condition Index of 59.74 as compared to Mbeere North Sub County with Index of 58.95.

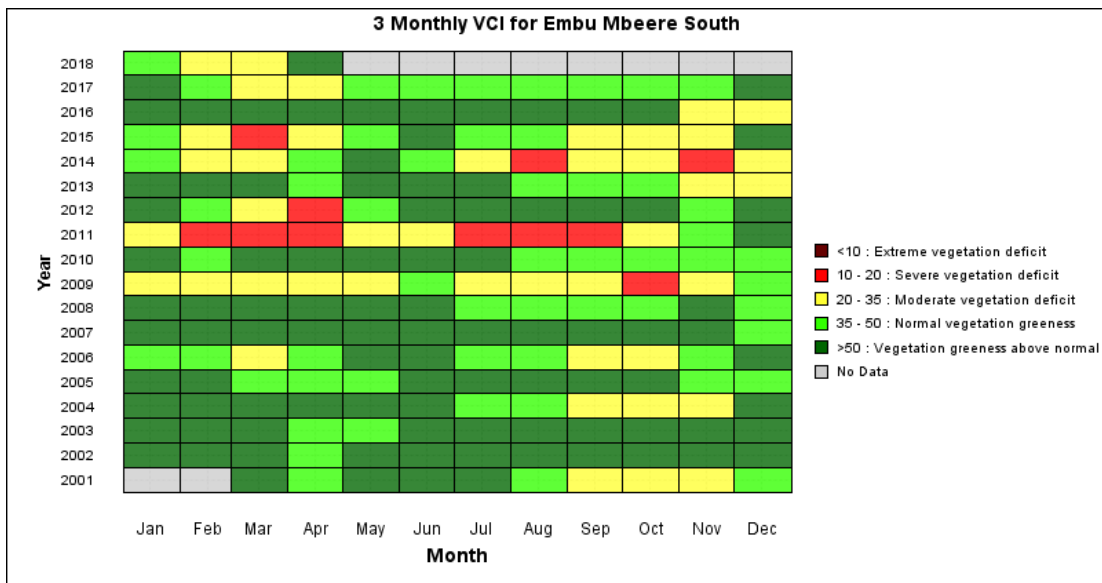


Figure 2: 3-Month VCI for Mbeere South Sub County [Source: Bokku University -Austria]

- The vegetation condition for Mbeere North Sub County deteriorated further during the month.

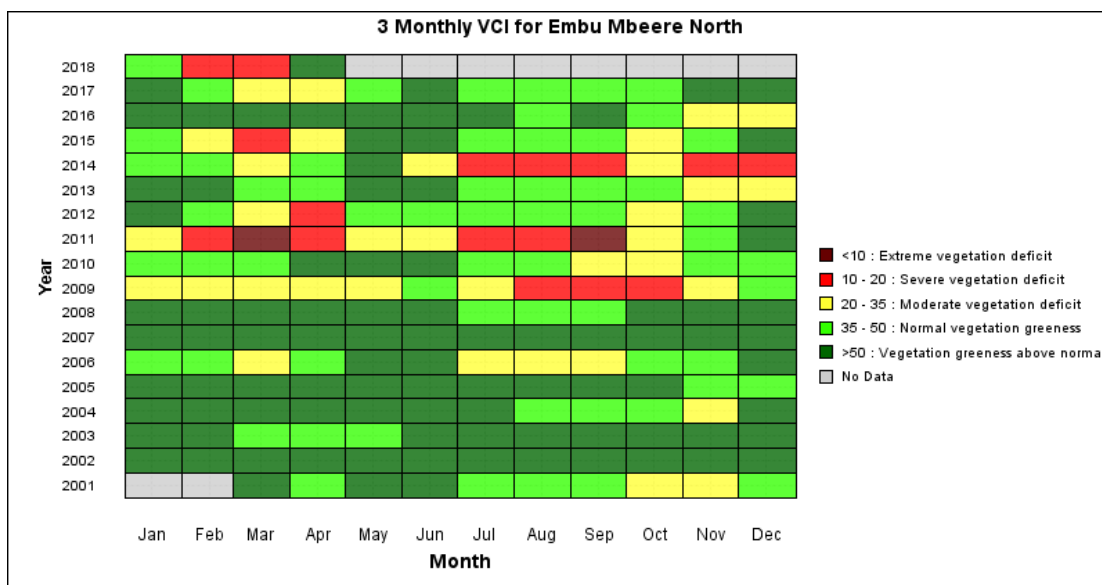


Figure 2: 3-Month VCI for Mbeere North Sub County [Source: Bokku University -Austria]

### 2.1.2 Pasture Condition

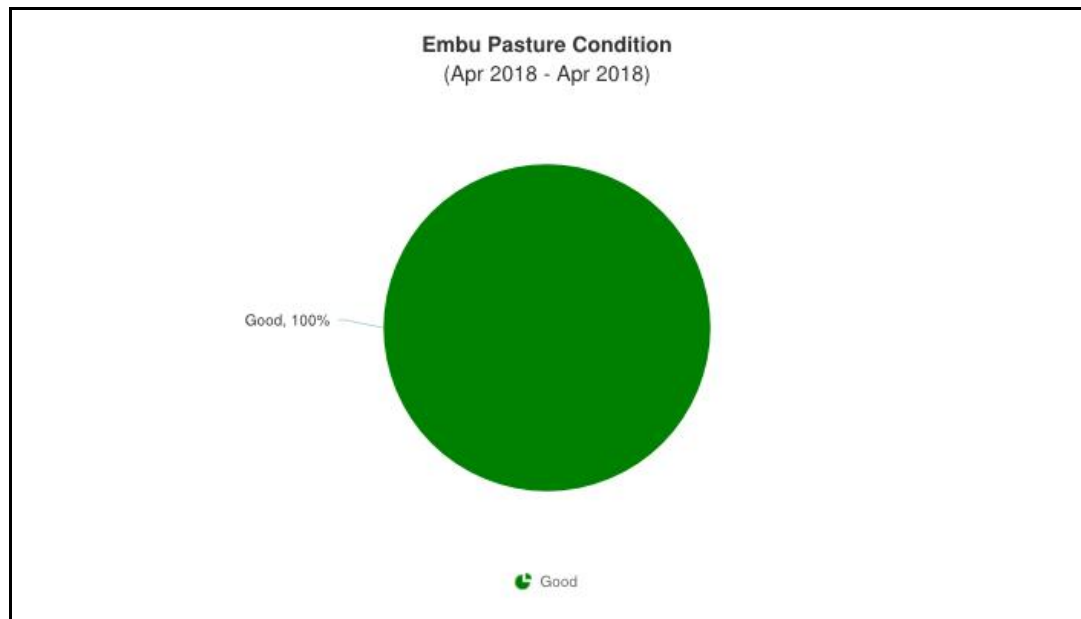


Figure 3a: Pasture Condition for Livelihood Zones in Mbeere sub counties, Embu County

- The pasture condition across both livelihood zones is good.
- All the pasture fields are fully regenerated due to the above normal rains recorded during the month.
- The pasture condition is expected to remain good during the entire long rains season.
- The pasture condition is above normal at this time of the year.

### 2.1.3 Browse Condition

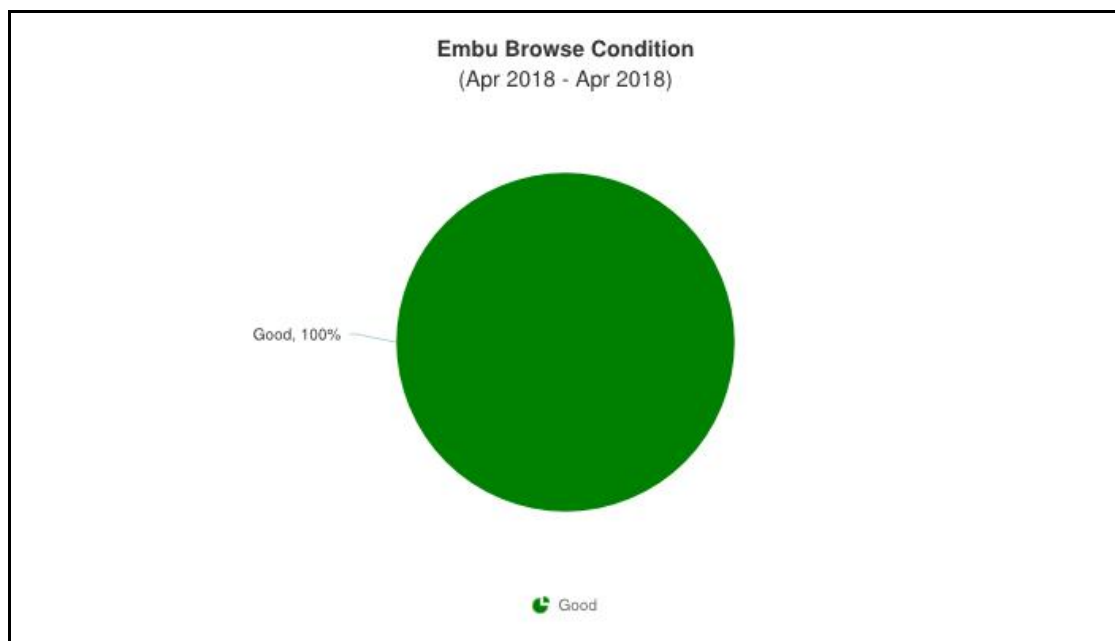


Figure 3b: Browse Condition for Livelihood Zones in Mbeere sub counties, Embu County

- The browse condition is good in both livelihood zones during the month of April.
- The browse condition has improved significantly compared to the previous month due to the ongoing long rains recorded across both livelihood zones during the month.
- The browse is expected to remain good for the entire long rains season due to regeneration.
- The browse condition is above normal at this time of the year

## 2.2 WATER RESOURCE

### 2.2.1 Water Sources

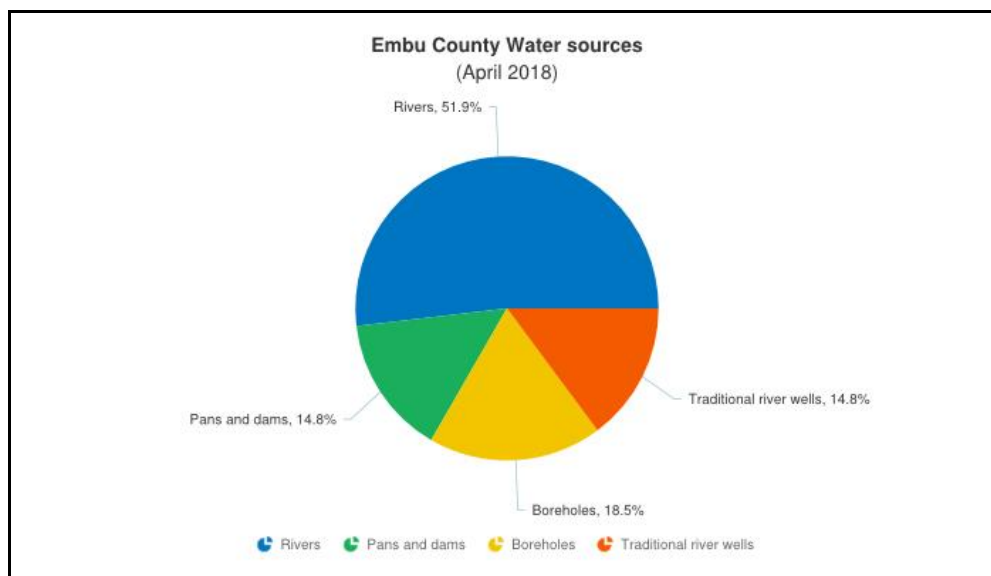


Figure 4: Water Sources for Mbeere North and South sub counties, Embu County

- The main water sources in the month under review for both livestock and domestic use across the two livelihood zones are; rivers, boreholes and pans/dams.
- Households also reported using roof catchment and pipeline water during the reporting period.
- The ground water sources recharge is 90 percent as a result of the rains recorded.
- The water quality is poor as a result of the siltation of the open ground water sourced.

### 2.2.2 Household Water Access and Utilization

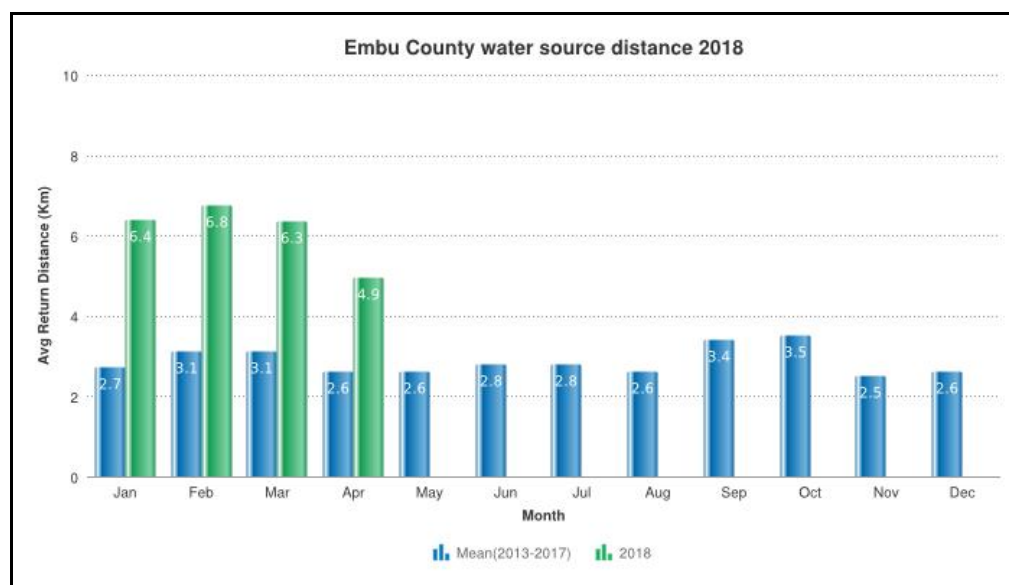


Figure 5: Water Access for Households in both sub counties

- The average distances from the households to water sources decreased further in April to 4.9 Km.
- The decrease is attributed to the ongoing rains received hence recharge of nearby water sources and continued reliance of households on roof catchment water.
- The current distance is above five-year average however the distances are expected to reduce further during the long rains season.
- Households in the MF Livelihood Zone trek for longer average distance of 7.5 km compared to those in MMF Livelihood Zone at 2.5 km in search for water.

- Water consumption for households is normal in both livelihood zones at 40 litres per person per day.
- Ten percent of all the sampled households reported buying water from the pipeline kiosks during the month at an average price of Ksh. 10 per 20 litre jerrycan.
- Small proportion of sampled households (about 5 percent) treat drinking water either by boiling or use of treatment chemicals.

### 2.2.3 Livestock access to water from grazing areas

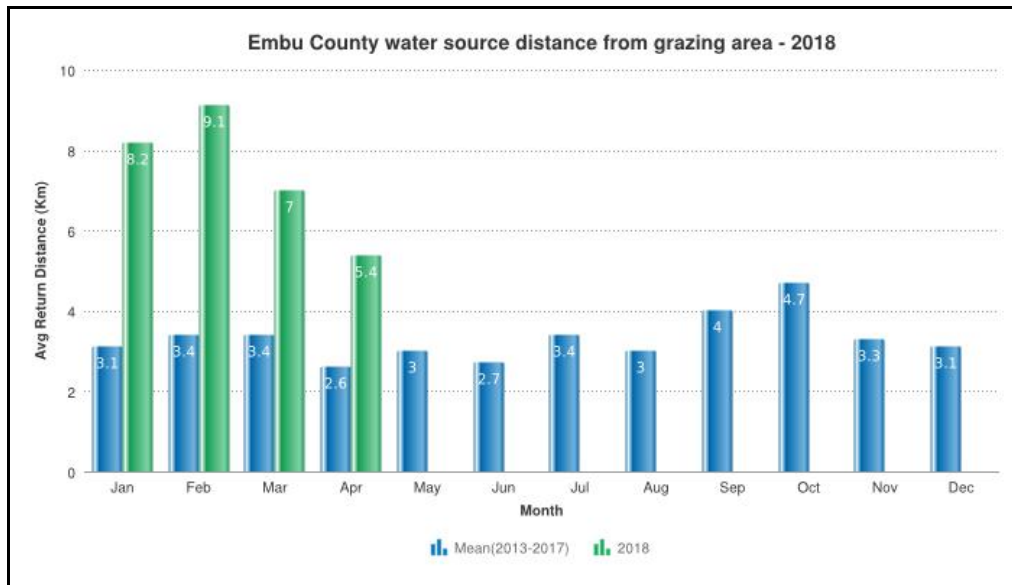


Figure 6: Water Access for Livestock in both sub counties

- The current average distances to water sources from grazing areas decreased further by 23 percent compared to the previous month to 5.4 km.
- The decrease is due to ongoing rains in both livelihood zones that recharged ground water sources for livestock and enhanced pasture regeneration.
- Watering of cattle is on daily basis in both livelihood zones as water is readily available
- The average distances trekked during the month under review is significantly higher than the five-year average distance at this time of the year though the distances are expected to reduce further into the long rains season.

### 3.0 PRODUCTION INDICATORS

#### 3.1 LIVESTOCK PRODUCTION

##### 3.1.1 Livestock Body Condition

- The body condition for small stock (sheep and goats) remain good (EW classification 1: normal) across the livelihood zones while that of cattle is moderate (EW classification 2)
- The condition has improved compared to previous month and is expected to improve further for both small and large stock as a result of forage regeneration during the long rains season.
- This trend is considered normal in this region at this time of the year

##### 3.1.2 Livestock Diseases

- No livestock diseases reported in both livelihood zones during the reporting period

##### 3.1.3 Milk Production

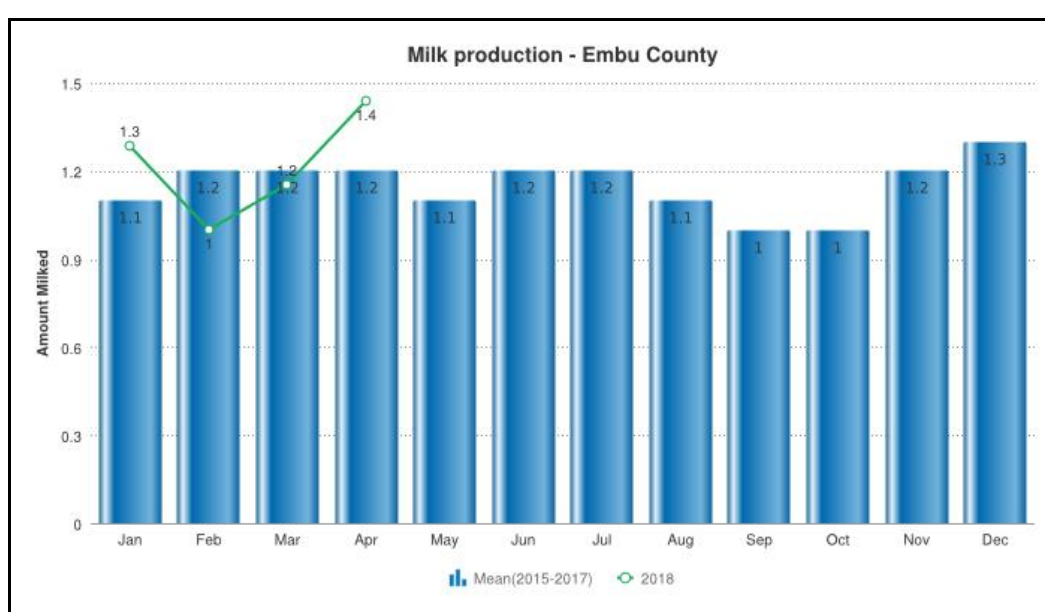


Figure 7: Milk Production in Mbeere North and South sub counties

- The average household milk production across the two livelihood zones increased compared to previous month to 1.4 litres per household per day.
- The increase is due to the availability of water and pasture across both livelihood zones.
- Households in MF livelihood zone produced an average of 1.9 litres of milk per day while those in the MMF livelihood zone produced 1 litres of milk per day.
- The variation of milk production across the livelihood zones was occasioned by differentiation in breed.

### 3.2 Rain-Fed Crop Production

#### 3.2.1 Stage and Condition of food Crops

- Weeding is the main agricultural activity in both livelihood zones
- Maize crop is in tussling/knee height stage of development while legumes are at flowering/podding stage of development.
- The crops are at different stages since the rains came early and some farmers planted while others waited to see the progress of the rains.

## 4.0 MARKET PERFORMANCE

### 4.1 LIVESTOCK MARKETING

#### 4.1.1 Cattle Prices

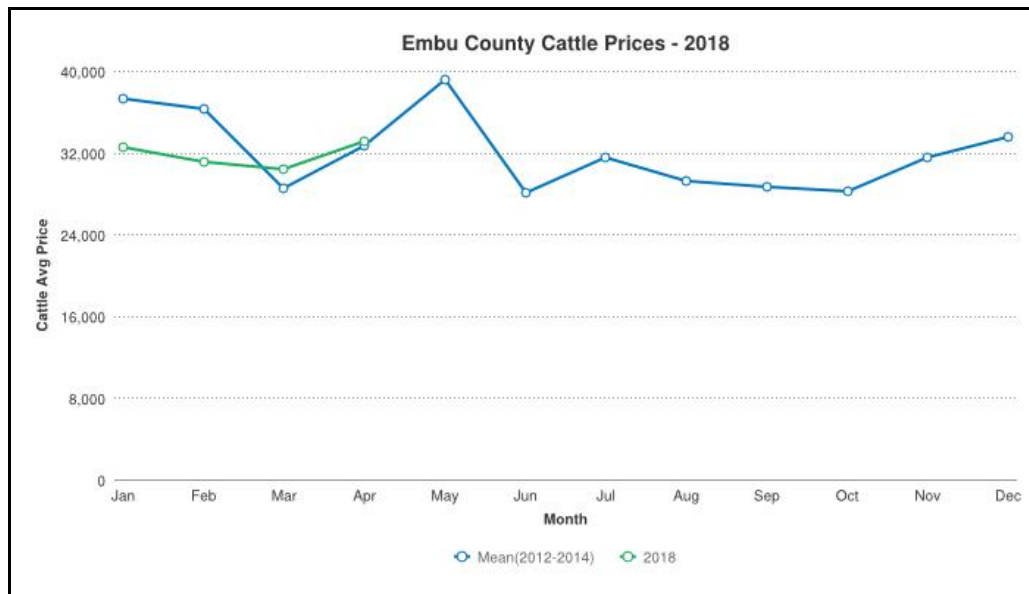


Figure 8: Market Cattle Prices in Mbeere North and South sub counties, Embu County

- The average price of mature 3-year old bull increased slightly by 10 percent from Ksh. 30,300 recorded in the previous month to Ksh. 33, 100 in the month of April.
- The increase is attributed to good body conditions for cattle across both livelihood zones occasioned by plenty of pasture and availability of water at reduced distances.
- Makutano livestock market recorded the highest average price for cattle of Ksh. 36,000, while both Kiritiri and Ishiara livestock markets recorded average price of Ksh. 32,000.
- The average price recorded during the month is slightly higher than the 3-year average price.

#### 4.1.2 Goats Prices

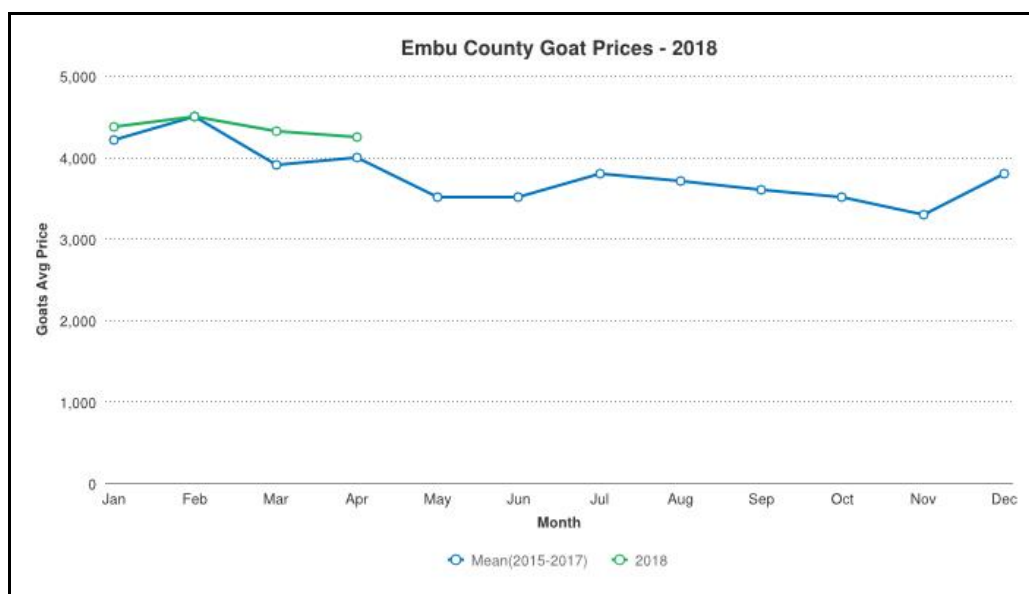


Figure 9: Average Goat Prices in Mbeere sub counties, Embu County

- The average market price for a 2-year goat remained stable in April as compared to the previous month at Ksh. 4,200.
- The stably high average price is attributed to improved body conditions occasioned by availability of good quality browse in both livelihood zones.



- Makutano livestock market in MF zone recorded the highest average price of Ksh. 5,500, Ishiara livestock market in MMF zone recorded average price of Ksh. 4,200 while Kiritiri livestock market recorded average price of Ksh. 3,100.
- This variation in prices across the markets was as a result of differentiation in breed and the market supply-demand forces.
- The current price is slightly above normal at this particular time of the year and the prices are expected remain high for the next 3-4 months.

## 4.2 FOOD PRICES

### 4.2.1 Maize Prices

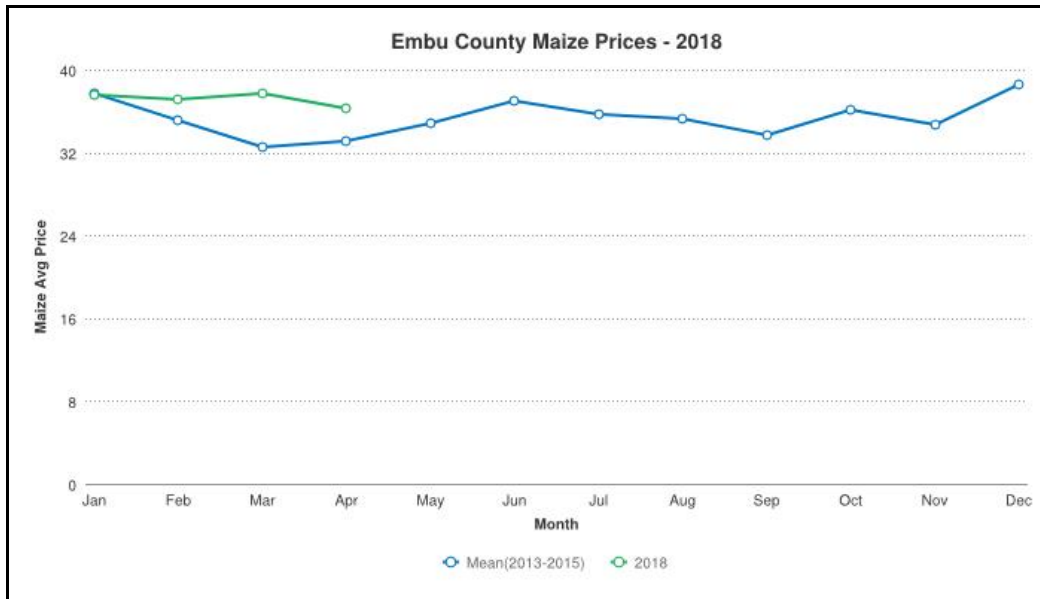


Figure 10: Average Maize Price in Mbeere North and South sub counties

- The average market price for kilogram of maize remained stable compared to the previous month at Ksh. 36.
- The stable price of maize is occasioned by depleted household stocks thus a larger proportion of households depend on markets for maize needs.
- One kilogram of maize was retailing at Ksh.40 in Makutano and Kiritiri cereal markets while Ishiara cereal markets recorded an average price of Ksh.32.
- The average price recorded in the current month is slightly above the 3-year average for both livelihood zones.

### 4.2.2 Posho (Local Maize Meal)

- The average price per kilogram of 'posho' across the two livelihood zones remained stable as compared to the previous month at Ksh. 50
- The stability is attributed to continued demand of the commodity from the households far away from major markets.
- The marginal mixed farming zone recorded high average price for 'posho' at Ksh. 60 as compared to the mixed farming zone that recorded an average 'posho' price of Ksh50

### 4.2.3 Beans Prices

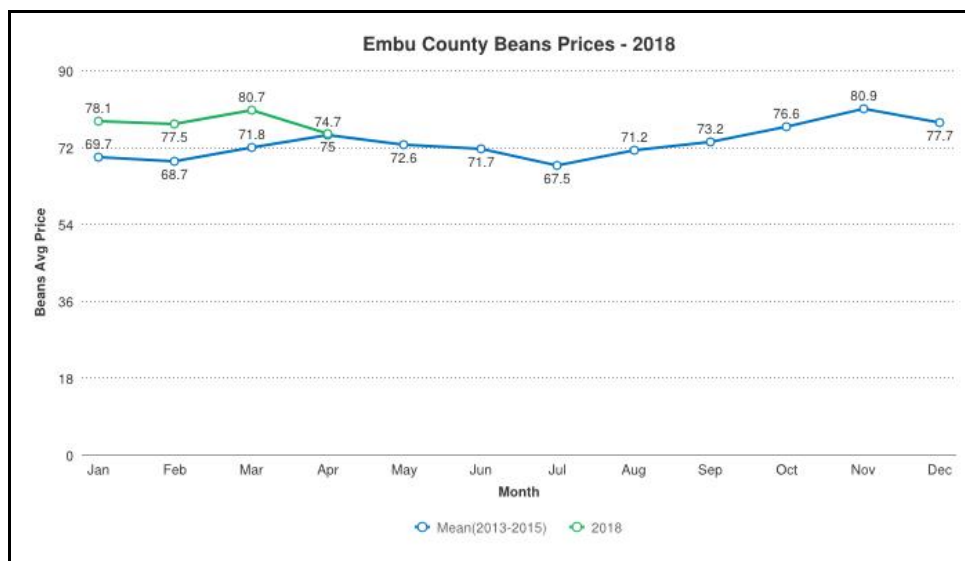


Figure 11: Average Beans Price in Mbeere North and South sub counties

- The average price per kilogram of beans across the two livelihood zones reduced by 7 percent compared to the previous month to Ksh. 75.
- One kilogram of beans retailed at Ksh. 100 in Makutano cereal market, Ksh. 75 in Kiritiri cereals market, and Ksh. 63 in Ishiara cereal market.
- The variation of price across various markets is as a result of the market demand and supply
- The current price is normal at this time of the year.

### 4.2.4 Green Grams Prices

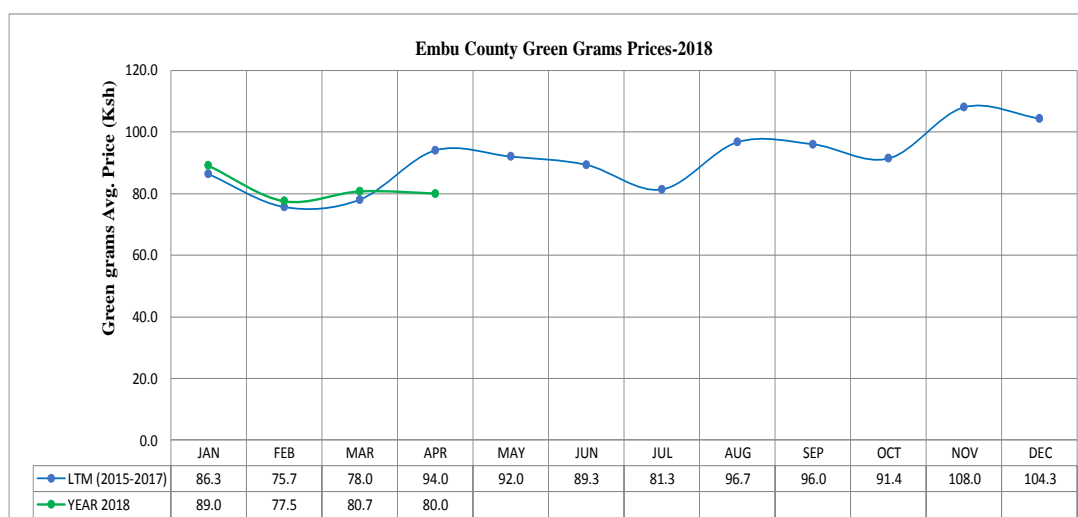


Figure 12: Average Price per kilogram of Green Grams in Mbeere North and South sub counties

- The current average price per kilogram of green grams across the two livelihood zones remain stable as compared to the previous month at Ksh. 80.
- The stability in average price is occasioned by increased dependence on markets for green grams need since household stocks are already depleted.
- The current average price is Ksh. 14 lower than the three-year average for the region in a similar month, however, the prices are projected to decrease as the early harvests of pulses are expected.

### 4.3 Household Income

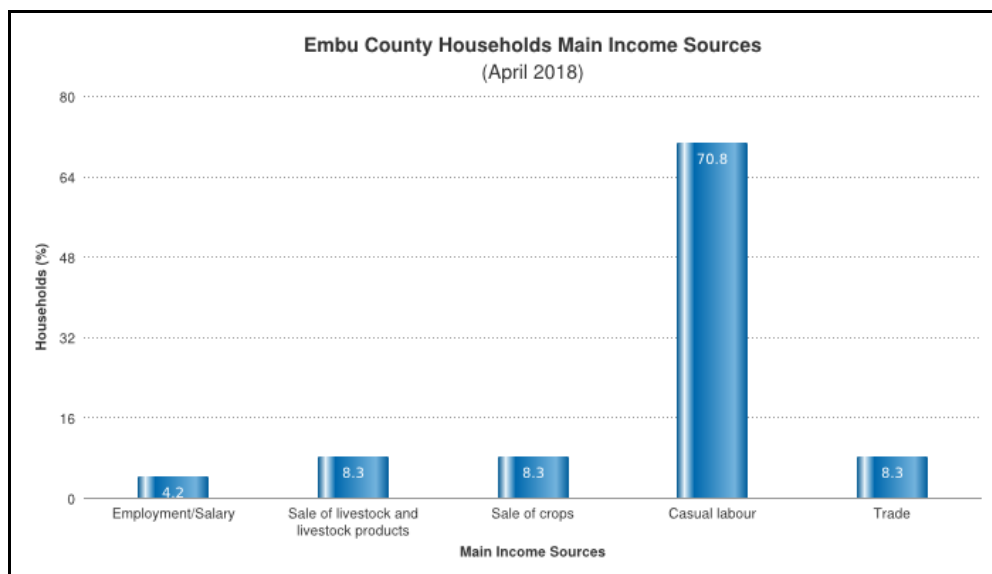


Figure 13: Income sources for households in Mbeere North and South sub counties

- During the month, households in both livelihood zones drew their income from casual labour, salaries/ wages, sale of livestock and livestock products and petty trade.
- The proportion of households that relied on sale of livestock products and casual labour increased slightly as weeding continued in most farms and livestock production increased.
- The change in various sources employed and proportions of households in various income generation activities is normal as households constantly embrace new and readily available ways of earning income.
- The main sources of income for households remained normal at this time of the year.

### 4.4 Terms of Trade (ToT)

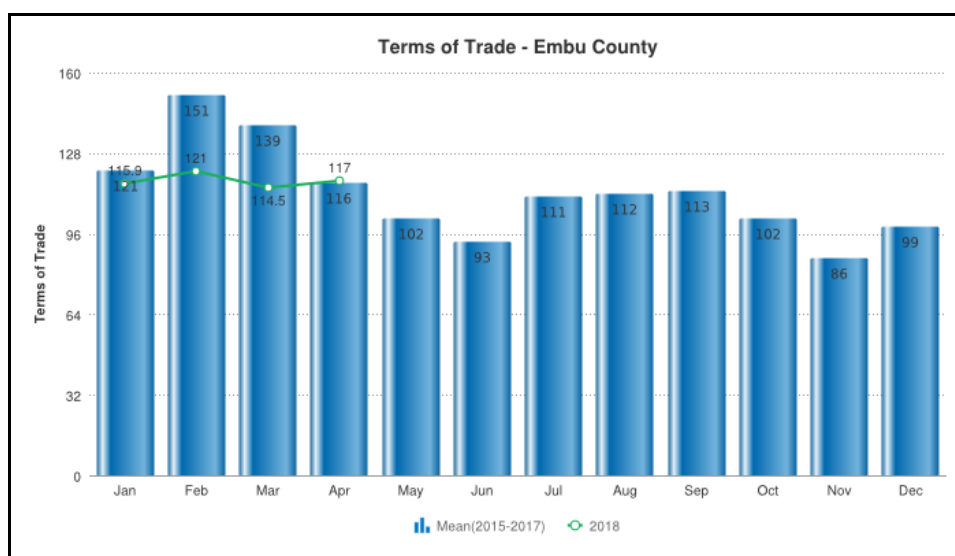


Figure 14: Terms of Trade in Mbeere North and South Sub Counties

- The Terms of Trade (goat versus maize) remain stable and favourable during the month of April.
- The stability is occasioned by stability in goat and maize prices during the reporting month.
- The observed terms of trade are normal for the two livelihood zones at this time of the year.

## 5.0 FOOD CONSUMPTION AND NUTRITION STATUS

### 5.1 Milk Consumption

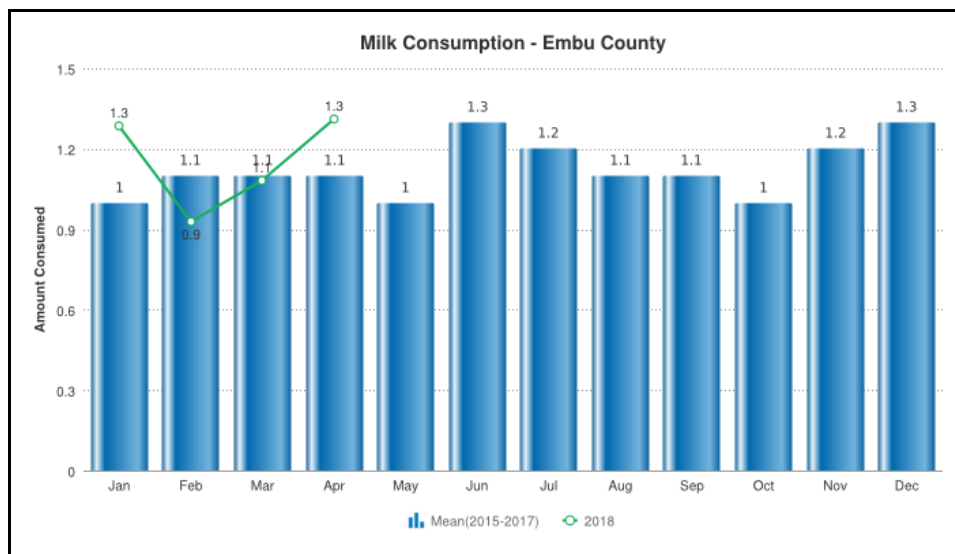


Figure 15: Milk Consumption in Mbeere North and South sub counties

- The average daily household milk consumption increased slightly as compared to the previous month to 1.3 litres per household per day.
- The increase is due to improved milk production during the reporting month.
- Households in the mixed farming zone consumed 1.4 litres per day as compared to 1. litre per household per day consumed by households in the marginal mixed farming zone.
- This trend is considered normal and within the expected range in this region at this particular time of the year.

### 5.2 Food Consumption Score

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

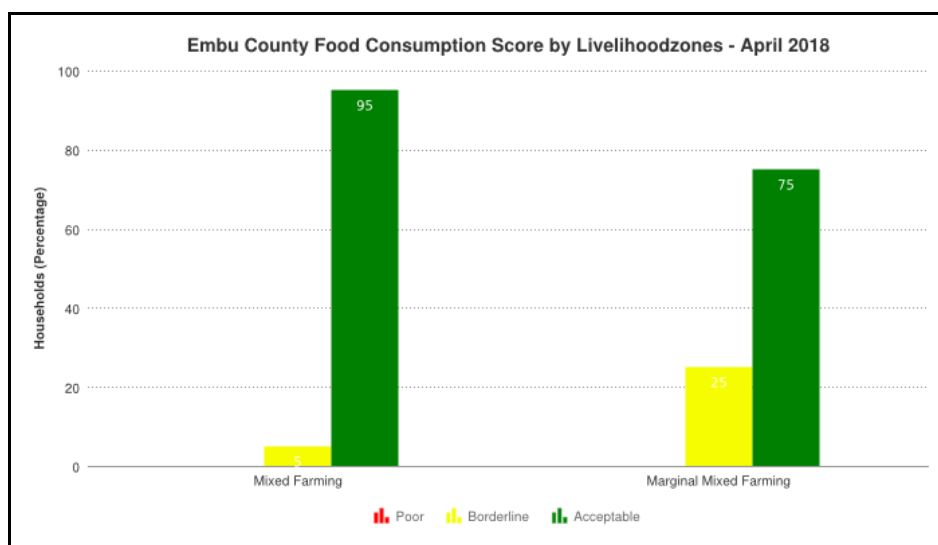


Figure 17: FCS for Households in livelihood zones in Mbeere [n=120 hh]

- During the month, 85 percent of the households from both livelihood zones were classified in acceptable food consumption category while only 15 percent were classified in the borderline food consumption category.

- Marginal mixed farming livelihood zone contributes 25 percent of the sampled households to the borderline consumption category compared to only 5 percent from the mixed farming zone.
- Even though many households rely on market for daily food needs, their meals are diversified and consist of various food groups.

### 5.3 Health and Nutritional Status

#### 5.3.1 Nutritional Status of Children

The Mid Upper Arm Circumference (MUAC) of children below five years of age sampled from the selected households is monitored monthly to detect those at risk of malnutrition.

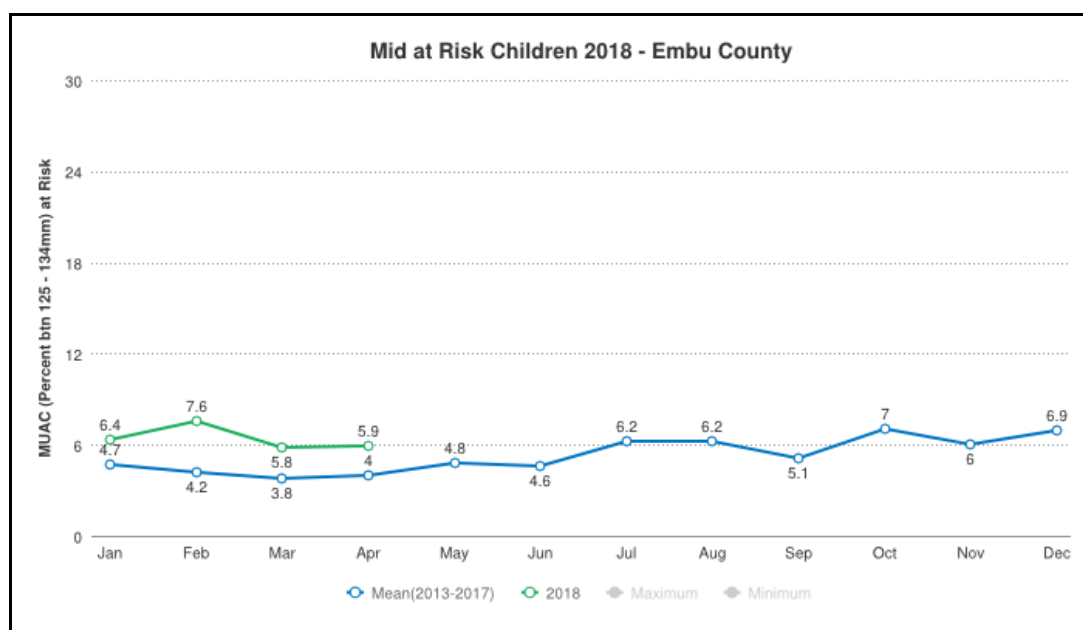


Figure 16: Children at Risk of Malnutrition in Mbeere Sub Counties [n=568]

- The proportion of the sampled children at risk of malnutrition during the reporting month remained stable compared to the previous month at 5.9 percent.
- The decrease is attributable to improved purchasing power of households due to income from casual labour and improved terms of trade coupled with increased awareness of children proper feeding habits.
- Some households reported children consumption of goat milk which positively impacted on their health and nutrition.
- The proportion of children at risk of malnutrition in the month under review is 32 percent higher than the five-year average at this time of the year and is expected to remain high until the long rains harvests.

#### 5.2.2 Health

- No disease outbreaks reported in both livelihood zones during the month under review.
- Few cases of diarrhoea among the general population were reported and treated at local health facilities.
- Cases of diarrhoea can be attributed to drinking of water from open ground sources.
- County Department of Public Health and Sanitation continue with routine disease surveillance.

## 5.4 Coping Strategy Index

The Coping Strategy Index is derived from the coping mechanisms that households engage in when they lack food or money to buy food.

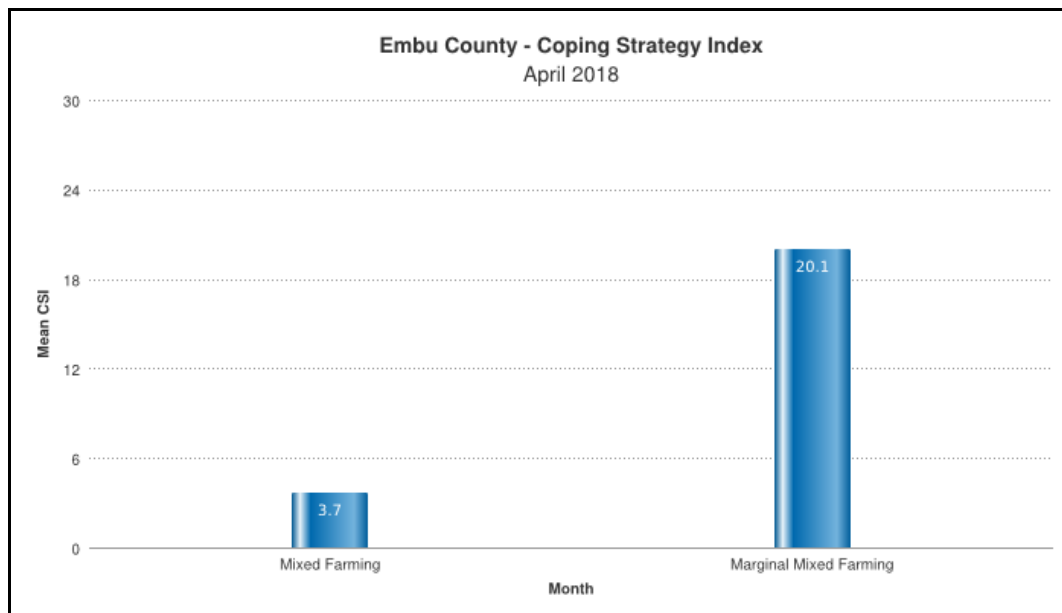


Figure 18: CSI for Sampled Households in Mbeere Sub Counties [n=120]

- The mean Coping Strategies Index decreased slightly from 12.83 recorded in the previous month to 11.88 in the month of April.
- The decrease is attributable to improved purchasing power due to favourable terms of trade and increased income from agricultural activity.
- The marginal mixed farming livelihood zone recorded a higher coping strategy index 20.1 while mixed farming livelihood zone recorded coping strategy index 3.7
- Households in marginal mixed farming zone are engaging in severe coping mechanisms such as reducing size of the meals and adults skipping of meals to allow children to feed since few sources of income exist.

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

- The pasture and browse conditions is good across both livelihood zones hence improved livestock productivity.
- Livestock prices remained above normal during the month and are expected to go up due to good body condition occasioned by availability of pasture, browse and water.
- Milk consumption at household level during the month improved due to increased productivity. The increasing trend impacted positively on children health and nutrition.
- Terms of Trade remain normal and favourable thus improving the purchasing power for the households.
- Casual labour from agricultural activities remain the main source of income for the households thus improving the purchasing power of households.

## 6.0 CURRENT INTERVENTION MEASURES

### 6.1. Non-Food Interventions

Intervention	Implementer	Beneficiaries
<ul style="list-style-type: none"> <li>• Routine Promotion of good animal husbandry practices</li> <li>• Routine livestock diseases surveillance</li> </ul>	County Department of Livestock Production and Veterinary Services	Livestock farmers from both sub counties
<ul style="list-style-type: none"> <li>• Routine Disease Surveillance</li> <li>• Routine screening and management of malnutrition at health facility level</li> <li>• Routine Vitamin A and Zinc Supplementation and deworming at health facility level</li> <li>• Iron Folate Supplementation among Pregnant Women</li> <li>• Community MUAC monitoring for the acute and moderate malnutrition</li> </ul>	County Department of Health Services  NDMA /CHVs/health facilities	Mothers and children who visited health facilities in both sub counties  Households and health facilities in targeted community areas

### 6.2. Food Interventions

- Distribution of relief rice to targeted households from both sub counties by the National Government through the office of the county commissioner.

## 7.0 EMERGING ISSUES

- Flooding of schools and farms across both livelihoods
- Toilets for over 80 schools rendered unusable and cropland affected in parts of Mwea and Makima wards.

### 7.1 Food Security Prognosis (Three months)

- Livestock production is expected to improve further as a result of pasture and browse regeneration and reduced distances to water sources.
- Households will likely benefit from the early harvests from the long rain season as farmers are expected to start using pulses and maize in the next two months.
- The proportion of children at risk of malnutrition will likely reduce as the households expect to benefit from long rain season harvests and livestock productivity.
- Food commodity prices are expected to remain lower due to increased market supply occasioned by the harvest from within the county and also from other neighbouring counties

## 8.0 RECOMMENDATIONS

Sector	Recommended Activities	Implementers	Expected Outcome/Impact
AGRICULTURE	<ul style="list-style-type: none"> <li>• Sensitization on proper pest management methods (fall army worm)</li> <li>• Promotion of small-scale irrigation on high value crops for areas that receive minimal rainfall</li> </ul>	County government  National government  Other Stakeholders	Curb invasion of fall army worm  Diversify of household incomes and diet.
LIVESTOCK	<ul style="list-style-type: none"> <li>• Routine disease surveillance and husbandry practices</li> <li>• Promotion of goat rearing and improvement of local breed.</li> </ul>	County government  Other Stakeholders	Increased productivity and Diversification of income
WATER AND SANITATION	<ul style="list-style-type: none"> <li>• Pipeline extension to cover unreached areas.</li> <li>• Purchase and provision of water treatment chemicals to households that rely on rivers, boreholes and water pans.</li> <li>• Repair of spillways and embankment for earth dams</li> </ul>	County government  Upper Tana Natural Resource Management Project  Other Stakeholders	Improved potable water accessibility and consumption
HEALTH AND NUTRITION	<ul style="list-style-type: none"> <li>• Provision of commodities for management of various types of malnutrition at health facilities.</li> <li>• Conduct nutritional survey covering both sub counties to establish health and nutrition indicators baselines.</li> <li>• Community outreaches to sensitize the community on proper feeding practices and early detection of children at risk of malnutrition.</li> <li>• Sensitization on use of water treatment chemicals for households that depend on pans and rivers.</li> </ul>	County department of health  NDMA  Other Development partners (WFP, UNICEF, KRCS)	Management of malnutrition amongst under five children
EDUCATION	<ul style="list-style-type: none"> <li>• Expansion of School Meals Program to cover all schools in need from both sub counties.</li> <li>• Repair of toilets and roofs destroyed by floods and strong winds</li> <li>• Supply of water harvesting tanks to needy schools</li> </ul>	County government  National government  Other Stakeholders	Improved school attendance  Improved school sanitation