

National Drought Management Authority
EMBU (MBEERE) COUNTY
DROUGHT EARLY WARNING BULLETIN FOR JUNE 2019



A Vision 2030 Flagship Project



JUNE EARLY WARNING PHASE

Drought Status: ALERT



Maandalizi ya mapema

Early Warning (EW) Phase Classification		
Livelihood Zone	Phase	Trend
Mixed Farming (MF)	Alert	Stable
Marginal Mixed Farming (MMF)	Alert	Stable
County (Mbeere Only)	Alert	Stable
Biophysical Indicators	Value	Normal
Rainfall (% of Normal)	159	80-120
VCI-3 Month	42.13	30-50
Forage condition	Good to poor	Good
Production Indicators	Value	Normal
Crop Condition (maize)	Poor	Good
Livestock Body Condition	Good/ Fair / poor	Good
Milk Production (litres)	1.1	1.0-2.5
Livestock Migration Pattern	No migration	No migration
Livestock deaths	No death	No death
Access Indicators	Value	Normal
Terms of Trade	74.6	115
Milk Consumption (litres)	1.1	1.0-2.5
Households distance to water (km)	8.4	3.2
Livestock return distance to water (km)	8.8	3.2
Utilization Indicators	Value	Normal
% at risk (MUAC)	3.8	3-6
Coping Strategy Index	5.88	1-5

Drought Situation & EW Phase Classification

Biophysical Indicators

Rainfall: The month of June was characterized by cloudy, cold days/nights weather condition with light showers of rainfall being received in both sub counties.

Vegetation Condition: Normal vegetation greenness condition was recorded in both livelihood zones in the current month. Pasture condition was fair to poor while browse condition ranged from good to fair across both livelihood zones.

Socio Economic Indicators (Impact Indicators)

- **Production indicators:** Rain-fed crops are at grain filling stage in both livelihood zones. Livestock body condition for shoats is good while that of cattle is poor to fair across all the livelihood zones. Milk production remains stably low.
- **Access indicators:** Average return distance to water sources for both households and livestock increased due to drying of water sources and breakdown of strategic boreholes. The Terms of Trade decreased due to low goat prices and hence affecting purchasing power of households.
- **Utilization Indicators:** Milk consumption remains stably low while the proportion of children under five years at the risk of malnutrition remained stable though Mbeere South sub county recorded high proportion of children at risk of malnutrition due to depletion of household stocks and consequently the households coping strategy index increased.

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

- Slight rainfall was recorded in the month under review.
- Above normal rainfall was recorded in the first dekad of June however the second and third dekads remained considerably dry characterized by cloudy and cold weather condition.
- According to the rain gauge station data, rainfall was recorded for an average of 2 days in the month of June.

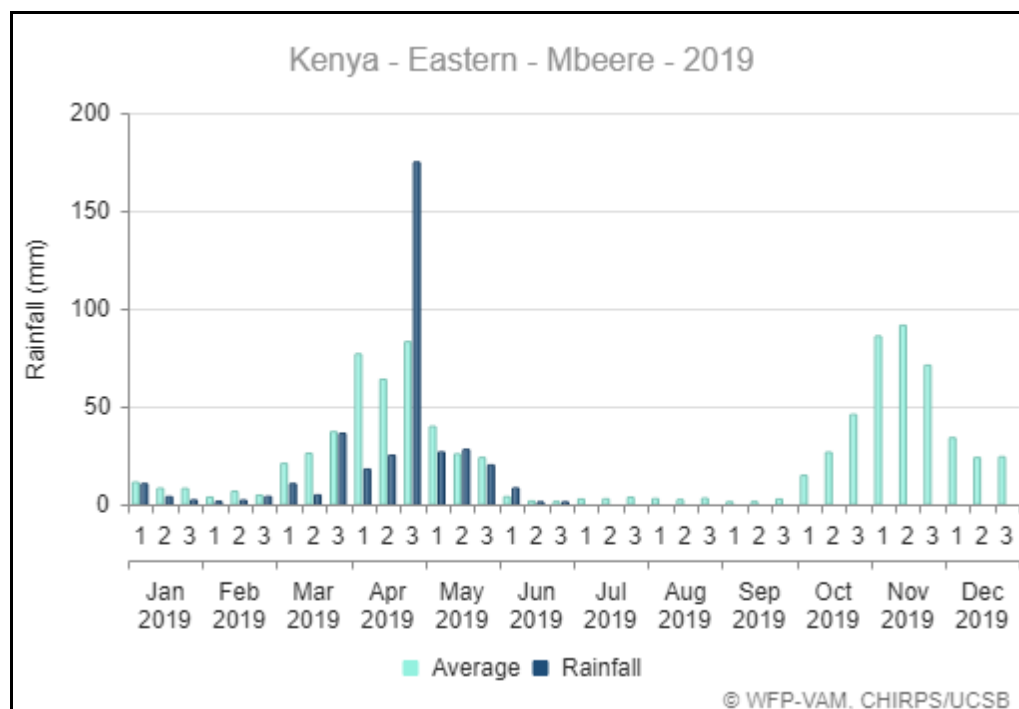


Figure 1: Rainfall estimates in Mbeere North and South Sub Counties

1.2 Amount of Rainfall and Spatial Distribution

- The two sub counties received an average of 3.5 mm of rainfall during the month of June compared to long term average amount of 2.2 mm during the same period.
- The spatial and temporal distribution of the rains was uneven and poor.

2.0 IMPACTS ON VEGETATION AND WATER

2.1 VEGETATION CONDITION

2.1.1 Vegetation Condition Index (VCI)

- Vegetation greenness condition for Mbeere North and Mbeere South sub counties was normal in the month under review.
- The combined 3-month Vegetation Condition Index (VCI) improved slightly from 30.9 recorded previous month to 42.1 in the month under review.
- Vegetation condition index in Mbeere South Sub County increased further from 35.08 to 46.06 while Vegetation Condition Index for Mbeere North sub-county increased from 26.66 to 38.21.

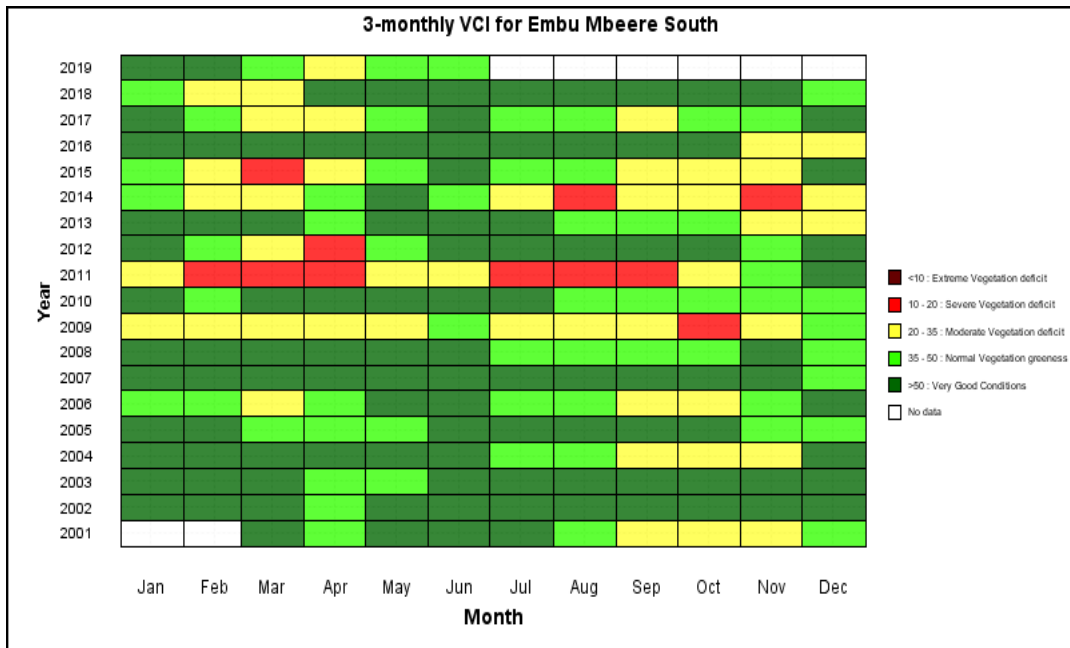


Figure 2b: Three-monthly VCI for Mbeere South sub- county [Source Satellite Imagery]

- Parts of Makima, Kiambere wards in Mbeere South continued to record poor vegetation condition due to little short rains received.

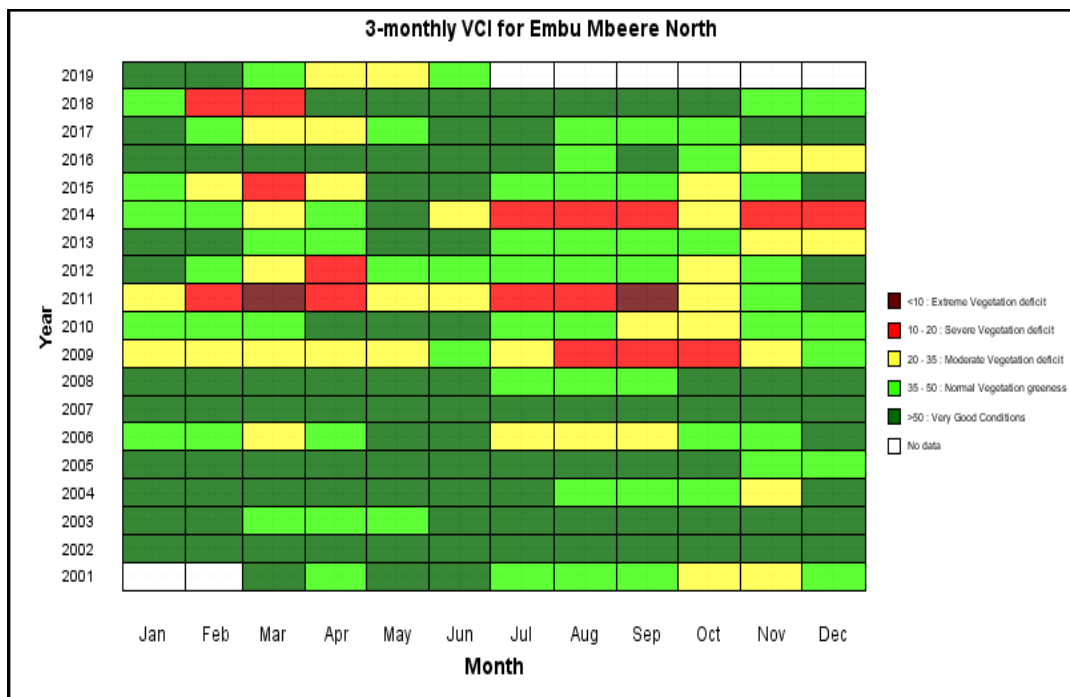


Figure 3a: Three-monthly VCI for Mbeere North sub county [Source Satellite Imagery]

- The Vegetation Condition Index (VCI) for Mbeere North improved slightly as a result of the the little shows received in the period spanning from third dekad of May to first dekad of June.
- Parts of Evurore and Muminji wards in Mbeere North however continued to record poor vegetation condition due to little of no rains recorded in those areas in the months of May and June.

2.1.2 Pasture Condition

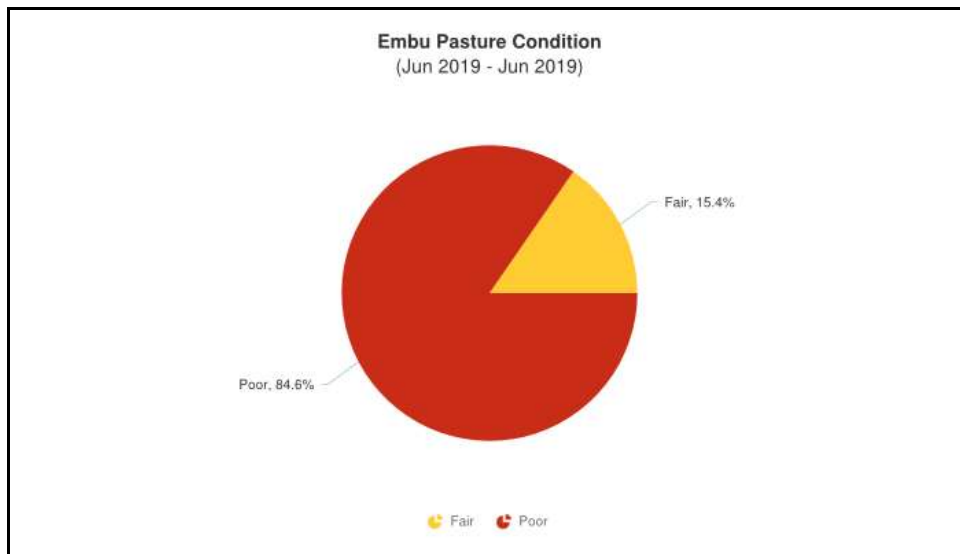


Figure 4: Pasture condition in Mbeere South and North sub counties

- The pasture condition across both livelihood zones range from fair to poor.
- The quantity and quality of pasture is low due to faster depletion in the marginal mixed farming zone due to the poor performance of the long rains and the large number of cattle kept by households.
- The areas with poor pasture include Kamarandi, lower Kiambere, Mutuobale, Ngiire, Kirie and parts of Ndurumori locations.
- The pasture condition remains below normal at this time of the year occasioned by the poor regeneration during the long rains period.

2.1.3 Browse Condition

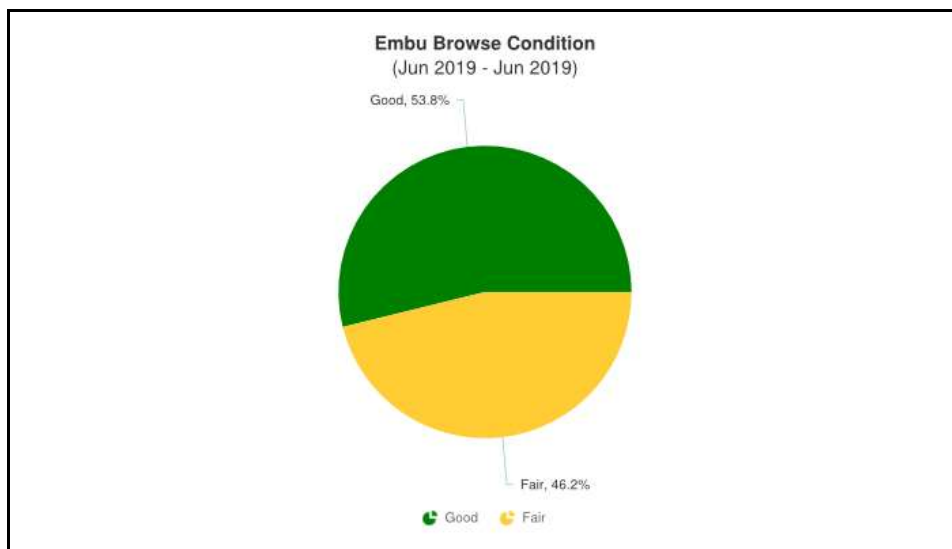


Figure 5: Browse condition in Mbeere North and South sub counties

- The browse condition across both livelihood zones range from good to fair in the reporting month
- Parts of Iriaitune, Ndurumori and Kamarandi locations in Mbeere North continue to record fair browse condition occasioned by the poor regeneration during the long rains season.
- Parts of Kilia, Maviani, Mutuobale, Kiambere and Kamwiyendei in Mbeere South continue to record fair browse condition occasioned by the poor regeneration during the long rains season.
- The browse condition is below normal at this time of the year occasioned by the reduced regeneration and pressure from the shoats.

2.2 WATER RESOURCE

2.2.1 Water Sources

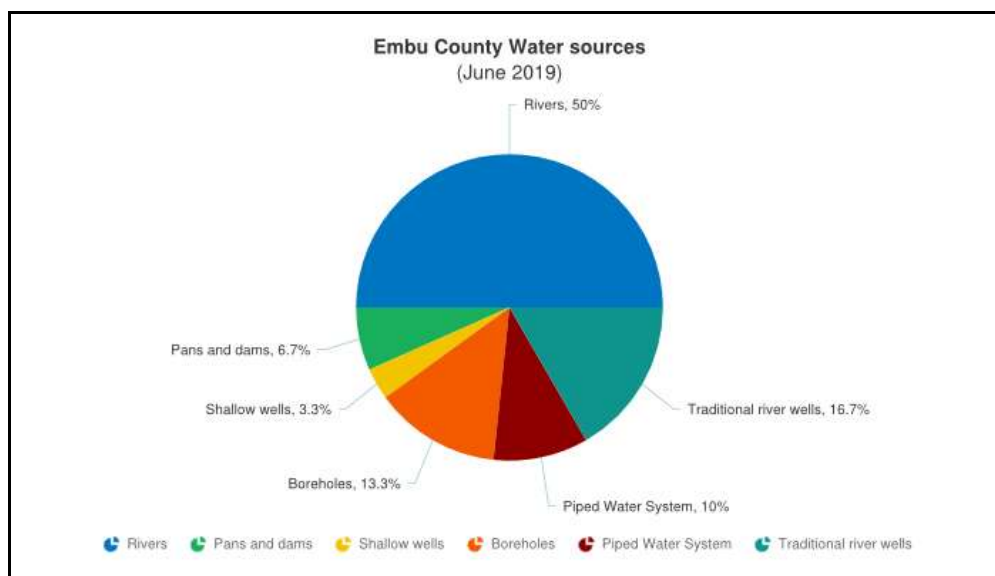


Figure 6: Water sources for Mbeere North and South sub counties

- The three main water sources across both livelihood zones in the month under review remain normal; rivers, traditional river wells and boreholes.
- The proportion of households that relied on traditional river wells increased owing to fast drying of rivers and breakdown of strategic boreholes such as Ntharawe borehole, Muiru borehole in Kiambere Mbeere South.
- The water quality from the boreholes piped system and traditional river wells remain good while the water from pans and earth dams was low in quality occasioned by movement of livestock into the water to access water (for those that have no separate water troughs for animals).

2.2.2 Household Water Access and Utilization

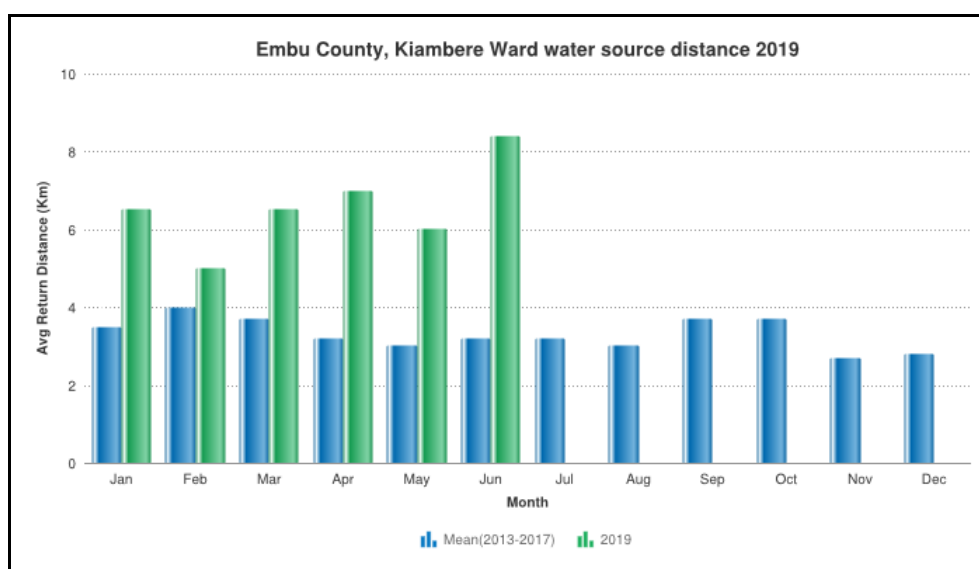


Figure 7: Household average distances to water sources

- The average household return distances to water sources significantly increased from 6 km recorded previous month to 8.4 km in the reporting month.
- The increase is attributed to drying of water pans and dams, broken boreholes and water rationing for the piped water sources.
- Households in the marginal mixed farming zone livelihood zone trekked for average distance of 6 km compared to 3.5 km for households in mixed farming zone in order to access water sources.

- The current average return distance to water sources for households is above five-year average at this time of the year.
- Forty nine percent of the sampled households reported treatment of drinking water by use of chemicals.

2.2.3 Livestock access to water from grazing areas

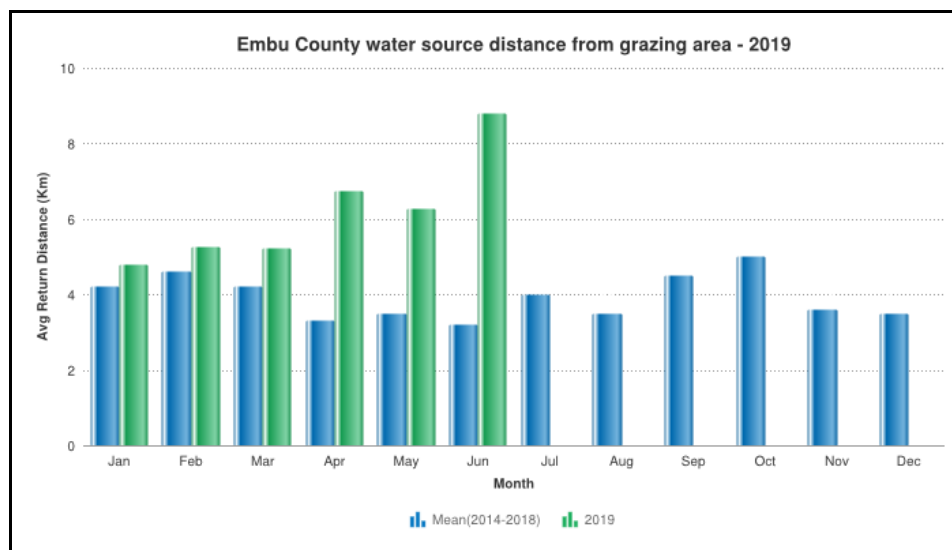


Figure 8: Livestock average return distances to water sources

- The average return distance to water sources from grazing areas significantly increased by 40 percent compared to previous month to 8.8 km.
- The increase is attributable to increased distances trekked by animals to pasture fields and drying up of some water pans relied upon by livestock water.
- Livestock in the marginal mixed farming livelihood zone trekked for an average distance of 9 km compared to those in mixed farming livelihood zone at 6 km.
- The watering frequency for livestock in both livelihood zones is on alternate basis due to increase in distances to water sources.
- The current average distances to water sources for livestock is significantly higher than the five-year average at this time of the year.

3.0 PRODUCTION INDICATORS

3.1 LIVESTOCK PRODUCTION

3.1.1 Livestock Body Condition

- The body condition for shoats remains good to fair occasioned by the availability of dry browse which is preferred by shoats.
- The body condition of cattle is poor to fair across both the livelihood zones occasioned by the fast depletion coupled with current non-regeneration of pasture due to the lack of rain and also the longer distances to water sources.
- The body condition for shoats is expected to remain stable while that of cattle is expected to deteriorate further due to diminishing pasture condition and increased distances to grazing and water sources.

3.1.2 Livestock Diseases

- There are no reported cases of livestock disease outbreaks during the month under review.
- Surveillance measures by the county department of veterinary services continued in the reporting month.

3.1.3 Milk Production

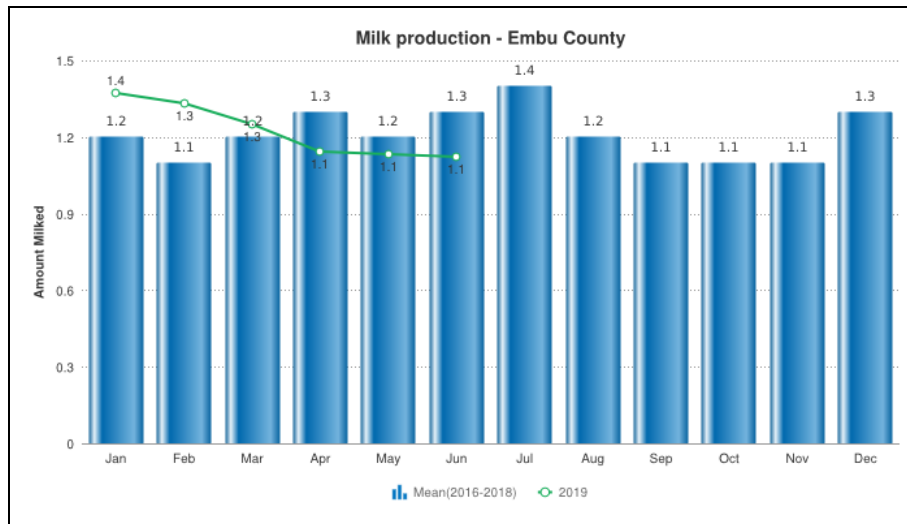


Figure 9: Household milk production in Mbeere sub counties

- The average daily household milk production across the two livelihoods remained stably low compared to previous month at 1.1 litres.
- The low production is attributable to poor pasture condition and increased average distances to grazing and watering points.
- Households in MF livelihood zone produced an average of 1.2 litres of milk per day while those in the MMF livelihood zone produced 1.0 litre of milk per day.
- The variation of milk production across the livelihood zones is prompted by differentiation in breed.

3.2 Rain-Fed Crop Production

3.2.1 Stage and Condition of food Crops

- Few farmers in the mixed farming livelihood zone have crop sin the farms
- The rainfed crops that are in the farms are of poor condition and no much harvest is expected from such crops
- armyworms and other pests were observed in maize crop and crops such as cowpeas and green grams across both livelihood zones.

4.0 MARKET PERFORMANCE

4.1 LIVESTOCK MARKETING

4.1.1 Cattle Prices

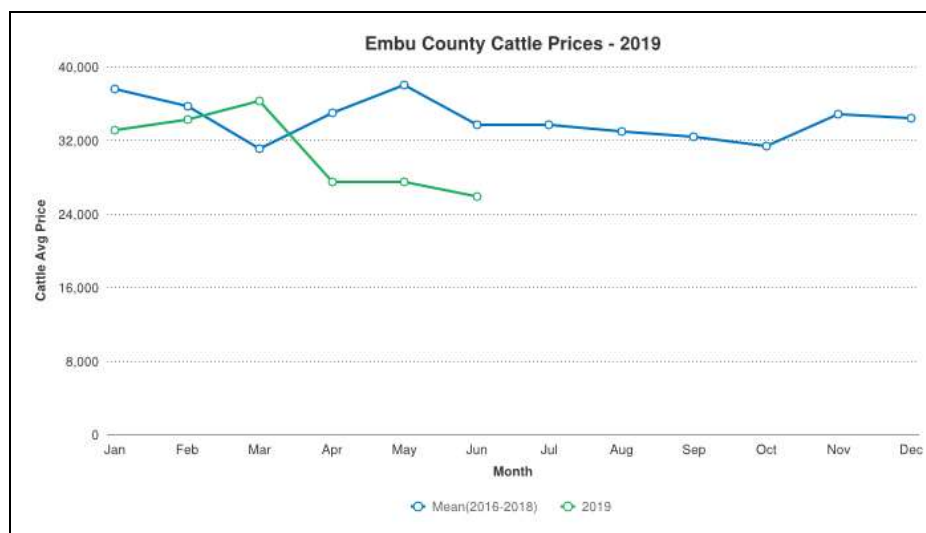


Figure 10: Average Market prices for cattle in Mbeere sub counties

- The average price of mature 3-year old bull decreased further from Ksh.27,400 recorded previous month to Ksh. 25,800 in the month under review.
- The decrease is attributable to destocking efforts by farmers due to poor pasture condition so as to avoid losses as the dry spell progress. The prices are also affected by and the influx of stock with good body condition from outside the county into the markets.
- Makutano livestock market recorded the highest average price for cattle of Ksh. 30,000, while Ishiara and Kiritiri livestock markets recorded average price of Ksh.27,800 and Ksh. 21,000 and respectively.
- The average price recorded during the month under review was 23 percent lower than the 3-year average price.

4.1.2 Goats Prices

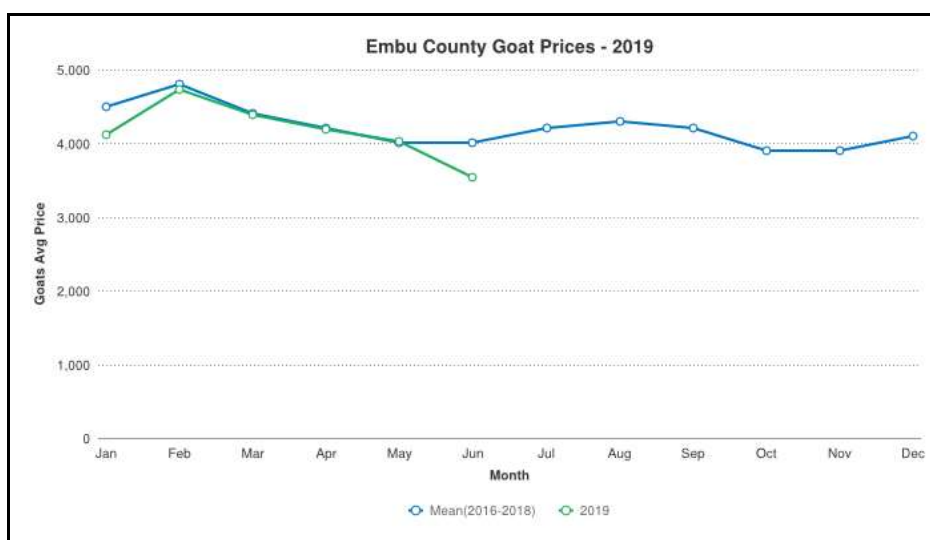


Figure 11: Average market prices for goats in Mbeere sub counties

- The average market price for a 2-year goat reduced further from Ksh.4,000 recorded in the previous month to Ksh. 3,500 in the month under review.
- The decrease is attributed to high supply at the market due to distress sales by households in order to meet food and non-food needs.
- Makutano livestock market in MF zone recorded average price of Ksh. 4,500, while Isiara and Kiritiri livestock markets in MMF zone recorded Ksh. 3,600 and Ksh. 3,000 respectively.
- This variation in prices across the markets is of differentiation in breed and the market trader numbers.
- The current price is below normal compared to three-year average price at this particular time of the year.

4.2 FOOD PRICES

4.2.1 Maize Prices

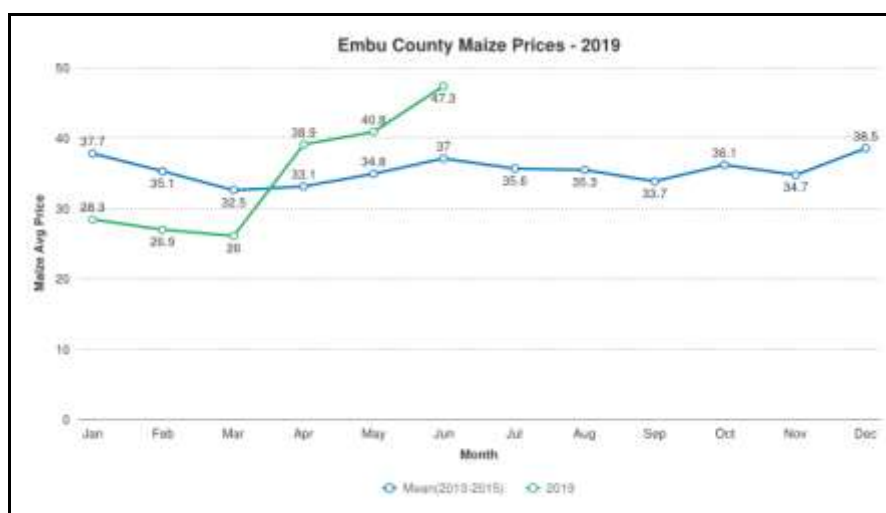


Figure 12: Average market prices for maize in Mbeere sub counties

- The average market price for maize across the two livelihood zones increased from Ksh. 40 recorded in the month of May to Ksh. 47 in the month under review.
- The increase is attributable to diminished household stocks and high demand at the local markets.
- One kilogram of maize retailed at Ksh. 50 in Kiritiri while in Ishiara and Makutano cereal markets the average price stood at Ksh. 47 and Ksh. 38 respectively.
- The average maize price for the current month is 28 percent higher than the 3-year average in both livelihood zones.

4.2.2 Posho (Local Maize Meal)

- The average price of ‘posho’ remained stably high at Ksh. 55 compared to previous months across the two livelihood zones.
- The high posho price may be attributable to increase of maize prices.
- The marginal mixed farming zone recorded high average price for ‘posho’ at Ksh. 60 compared to the mixed farming zone that recorded an average ‘posho’ price of Ksh. 50.

4.2.3 Beans Prices

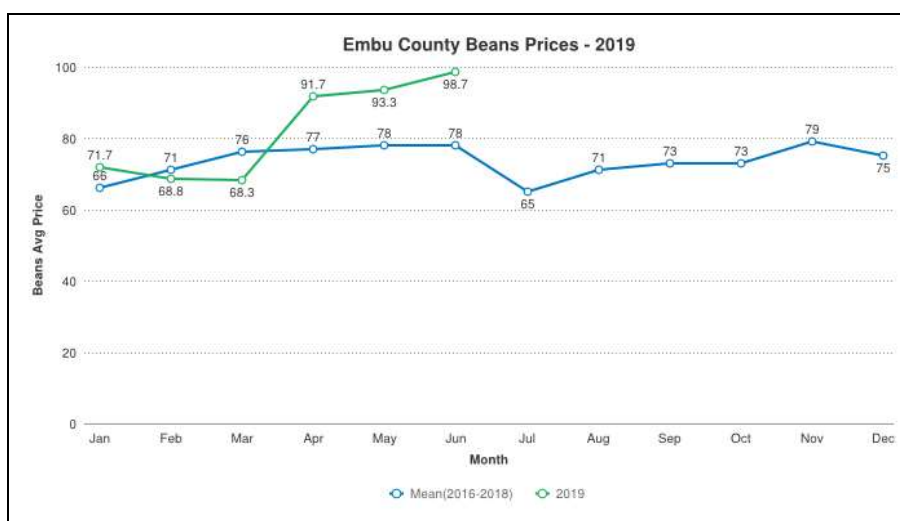


Figure 13: Average market prices for beans in Mbeere sub counties

- The average price of one kilogram of beans increased marginally to Ksh. 99 as compared to Ksh.93 recorded in the previous month.
- The high price is attributable to diminished household stocks and high demand at the local markets.
- One kilogram of beans retailed at Ksh.100 in Makutano and Kiritiri cereals market while the price stood at Ksh. 98 in Ishiara cereals market.
- The average price for kilogram of beans in the current month is 27 percent higher than the long-term average price.

4.2.4 Green Grams Prices

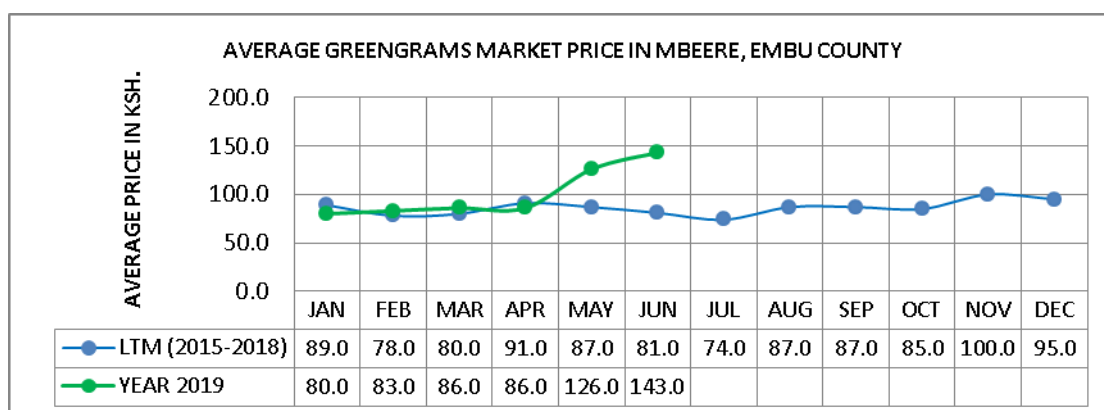


Figure 14: Average market prices for green grams in Mbeere sub counties

- The average price per kilogram of green grams across the two livelihood zones significantly increased from Ksh. 126 recorded in the month of May to Ksh. 143 in the month under review.
- The increase is attributed to diminished household stock, poor long rains harvest and high demand at local retail market.
- The recorded average price is 45 percent higher than the three-year average.

4.3 Household Income

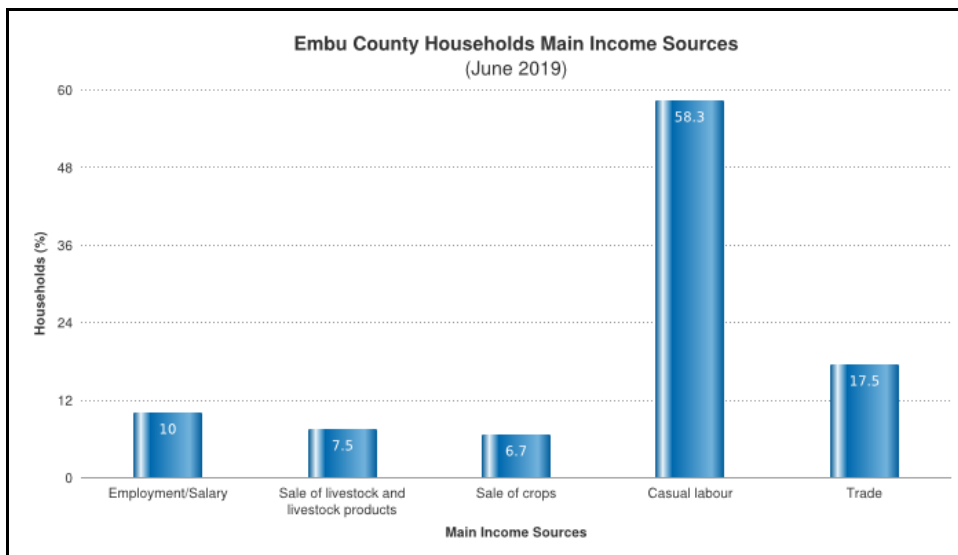


Figure 15: Sources of household income in Mbeere sub counties

- Households continue drawing their income from casual labour, petty trade and employment among others in the month under review.
- The proportion of households that engaged in casual labour decreased due to decreased agricultural activities while proportion of household selling livestock and livestock products increased in an effort to purchase food and meet other basic needs. Many other households depend on sale of *Muguka* which is now considered as a major cash crop mainly in Mbeere South sub-county.
- The main sources of income for households remain normal at this time of the year.

4.4 Terms of Trade (ToT)

Terms of trade determine the purchasing power of the households by providing an estimate of the number of kilograms of maize that can be purchased by sale of one goat.

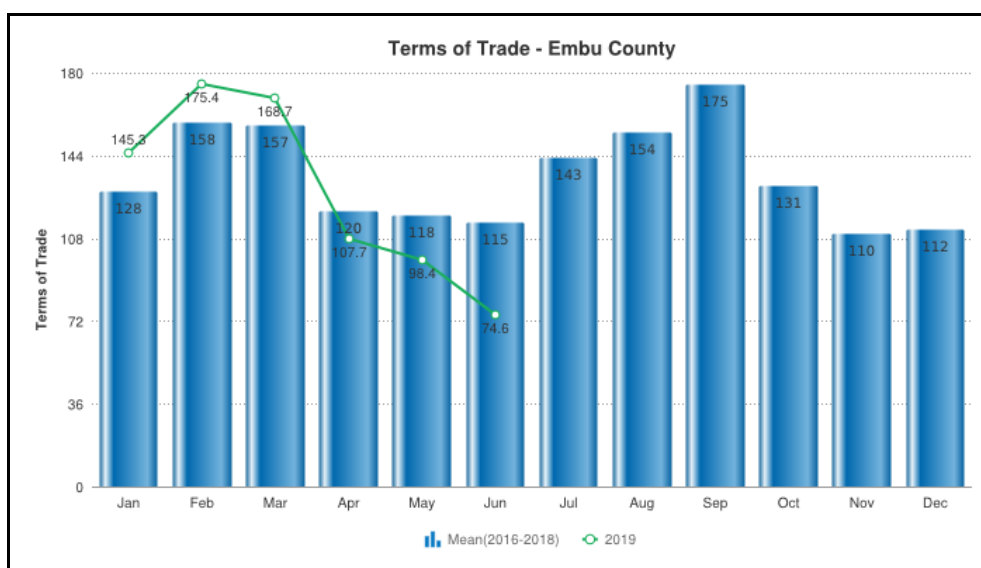


Figure 16: Terms of trade in Mbeere sub counties

- The Terms of Trade (goat versus maize) decreased further during the month under review from 98.4 kg of maize for sale of one goat recorded in the month of May to 74.6 kg of maize for sale of one goat in the month under review.
- The decrease is attributed to decrease of goat prices while maize prices significantly increased.
- The decrease of terms of trade significantly lowered the purchasing power of livestock keepers during the month.
- The current recorded terms of trade were 35 percent lower than the long-term mean.

5.0 FOOD CONSUMPTION AND NUTRITION STATUS

5.1 Milk Consumption

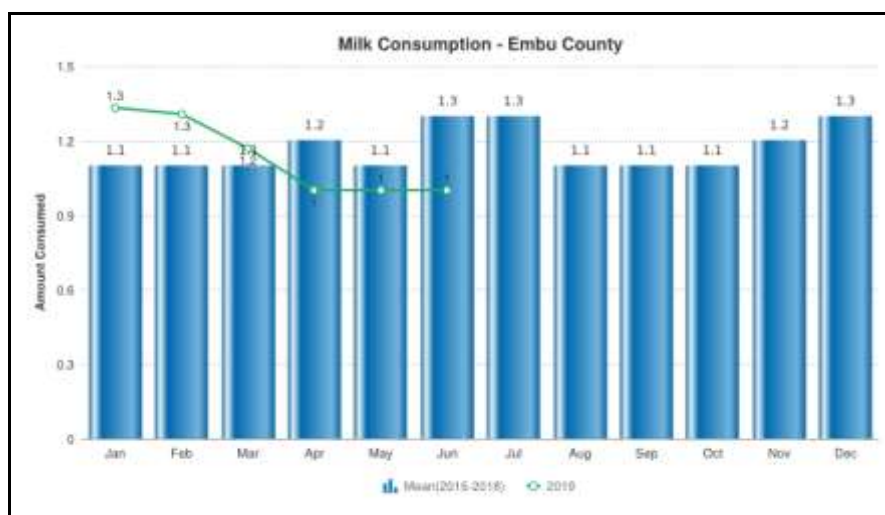


Figure 17: Average household milk consumption (l/hh/day)

- Milk consumption remained stably low at one litre compared to previous month.
- The low consumption is attributable to reduced milk production occasioned by poor cattle body condition due to increased distances to grazing and watering points.
- Households in the mixed farming zone consumed 1 litre per household per day as compared to half a litre per household per day consumed by households in the marginal mixed farming zone.
- The milk consumption was below normal for this particular time of the year.

5.2 Food Consumption Score

The Food Consumption Score (FCS) is a composite score based on dietary diversity, food frequency, and the relative nutritional importance of different food groups. In this case, FCS has been calculated using the frequency of consumption of different food groups consumed by a household over a period of 7 days.

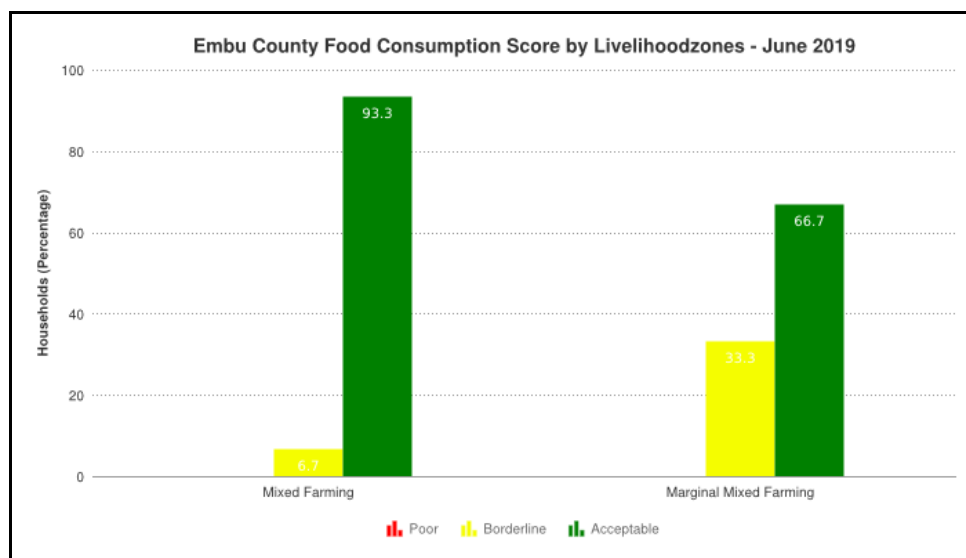


Figure 18: Household food consumption score

- Out of 120 households sampled from both sub counties, 80 percent were classified in acceptable food consumption category while 20 percent were in the borderline food consumption category.
- Compared to previous month, household in acceptable food consumption score have declined and those in borderline have increased, this is due to depletion of household food stocks and increased food commodity prices at local retail markets.
- The sampled households consumed grains and pulses for an average of 6 days, vegetables for an average of 2 day and an average of 1 day for fruits, milk and meat were consumed by very few households.

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.

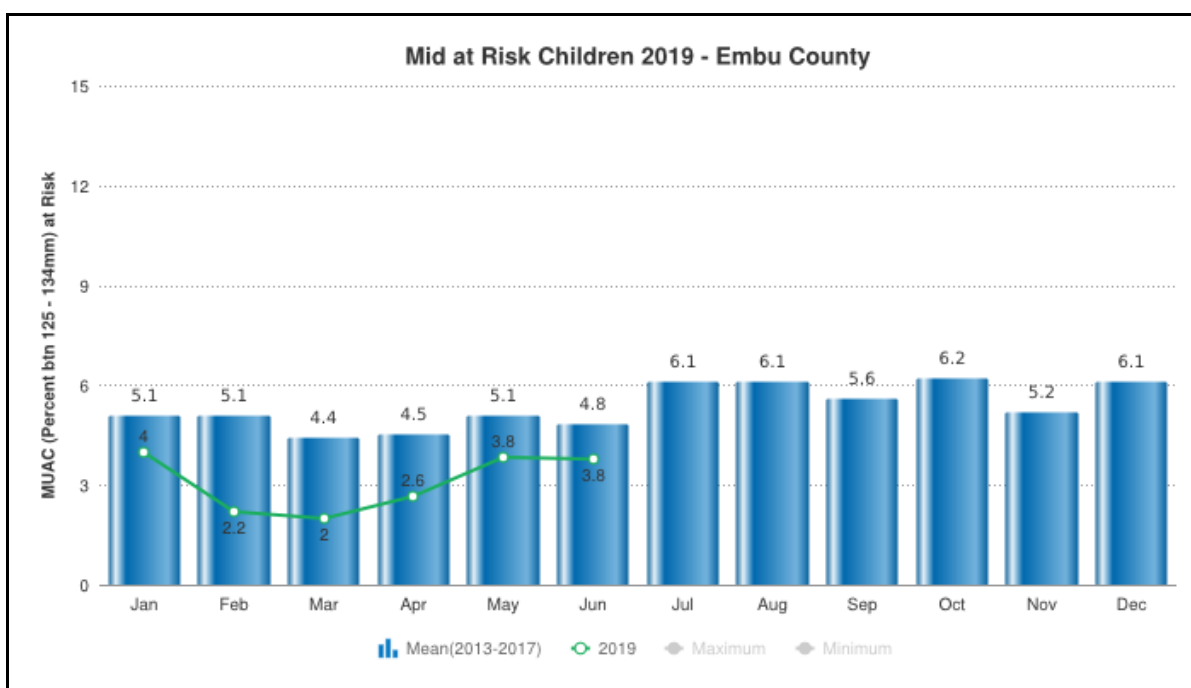


Figure 19: Children under five at risk of malnutrition in Mbeere sub counties

- The proportion of the sampled children at risk of malnutrition remained stable at 3.8 percent compared to the previous month.
- Mbeere South sub-county reported highest proportion of children at risk of malnutrition at 8.4 percent compared to a proportion of 0.4 for Mbeere North.
- The households Kiambere ward (in Mbeere South sub-county) recorded high proportion of children at risk of malnutrition at 11.1 percent. This may be attributable to depletion of household stocks and the low purchasing power of the households.

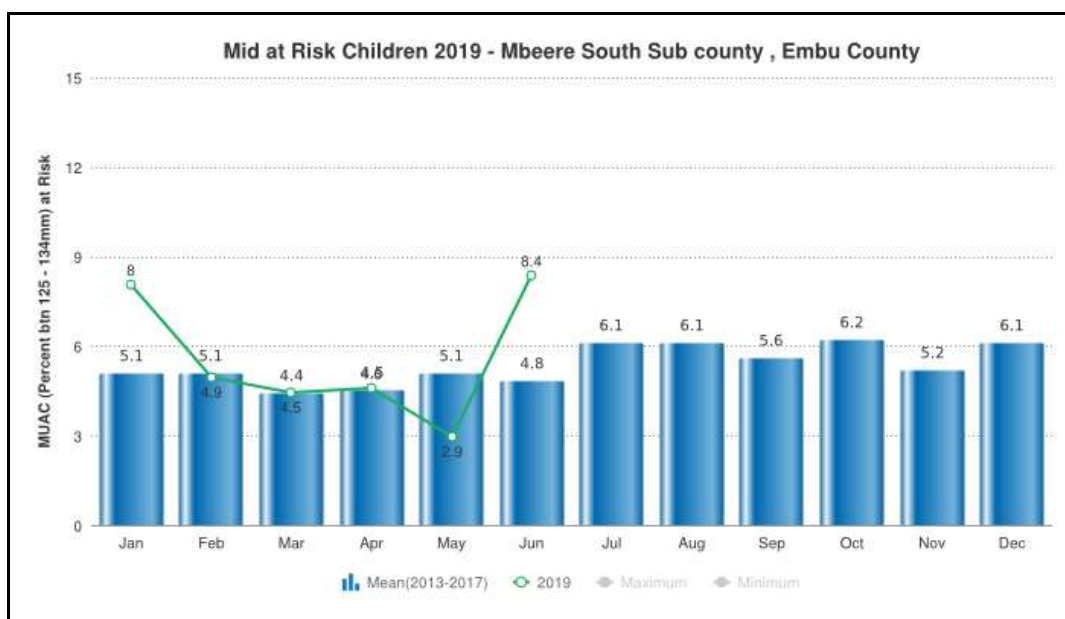


Fig 20: proportion of children at risk of malnutrition (MUAC between 125 and 134mm)

- The proportion of children at risk of malnutrition in the month under review was however 21 percent lower than the long-term mean at this time of the year.

5.2.2 Health

- No disease outbreaks reported in both livelihood zones during the month under review.
- 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.

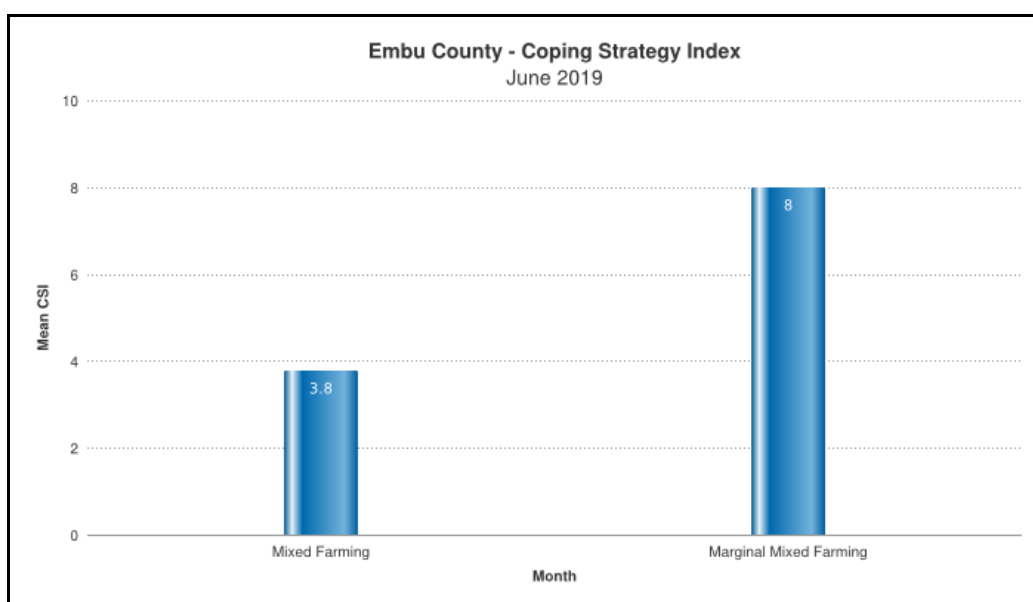


Figure 21: Household coping in Mbeere sub counties

- The mean coping strategy index increased from 3.07 recorded in the month of May to 5.88 in the month under review.
- The increase is attributed to depleted household food stocks, increased food prices, and decreased purchasing power for livestock keepers leading to application of consumption and livelihood-based coping strategies.

- Household reported engaging in reduction of meal number and size (on average of 2 days in week) and reduction of non-food expenses coupled with spending savings and borrowing money.
- Marginal mixed farming livelihood zone recorded a higher coping strategy index of 8 while mixed farming livelihood zone recorded a coping strategy index 3.8.
- The coping strategy index was slightly above normal range during the month under review.

5.4.1 Implication of the above Indicators to Food Security

- The deteriorating pasture conditions across both livelihood zones has negatively affected livestock body condition and decreased livestock productivity hence low milk production and consumption.
- Poor performance of the long rains season and invasion of armyworms and other pests for maize crop, cowpeas and green grams has negatively affected growth of the rain fed crops and farmers is likely to significantly reduce production
- Depletion of household stocks has led to increase in food commodity prices and hence households reported selling off their productive assets to meet food needs.
- Reduced terms of trade have lowered the purchasing power for the households and hence affecting the ease of food commodity access from the markets.
- The coping strategy index increased implying that some of households continued facing food insecurity and applied both consumption-based and livelihood-based coping strategies.

6.0 CURRENT INTERVENTION MEASURES

6.1. Non-Food Interventions

Intervention	Implementer	Beneficiaries
<ul style="list-style-type: none"> Routine Promotion of good animal husbandry practices Routine livestock diseases surveillance 	County Department of Livestock Production and Veterinary Services	Livestock farmers from both sub counties
<ul style="list-style-type: none"> Routine Disease Surveillance Routine screening and management of malnutrition at health facility level Routine Vitamin A and Zinc Supplementation and deworming at health facility level Iron Folate Supplementation for pregnant women at health facilities Community MUAC monitoring for the acute and moderate malnutrition 	County Department of Health Services NDMA	Mothers and children who visited health facilities in both sub counties Households and health facilities in targeted community areas
<ul style="list-style-type: none"> Pipeline extension: Gachoka to Kangeta, around Kirie market to Itira, Siakago Excavation of dams in Mbeere North and South (Kiambere, Mavuria, Nthawa and Muminji wards) Procurement of water storage tank(100m³) 	Embu County Government Upper Tana Natural Resource Management Project EMBEWASCO EWASCO Tana Water Services Board	Households in Mbeere North and South sub counties

7.0 Food Security Prognosis (Three months)

- Due to depletion of household stocks, households in both mixed and marginal mixed farming zone will continue to face severe food shortages for the next three months.
- Pasture condition is expected to deteriorate further in both livelihood zones occasioned by the ongoing dry season.
- Milk production is expected to decline further due to deteriorating pasture conditions and increased distances to water sources.
- Food commodity prices are expected to remain high due to increased demand occasioned by depleted household stocks and poor long rains crop harvest.
- The proportion of children at risk of malnutrition is likely to increase due to diminished household stocks and decreased milk production.

8.0 SECTOR RECOMMENDATIONS

Sector	Recommended Activities	Proposed Implementers	Expected Outcome
AGRICULTURE	<ul style="list-style-type: none"> • General food distribution • Procurement for planting seed and targeting farmers to be supported 	County government The National Government Other Stakeholders	<ul style="list-style-type: none"> • Cushion the vulnerable households • Early planting during long rains season
LIVESTOCK	<ul style="list-style-type: none"> • Destocking campaigns • Promotion of goat rearing and upgrading of local breed. • Deworming of large and small stock • Prepositioning for fodder establishment 	County government Other stakeholders	<ul style="list-style-type: none"> • Reduced mortality rate • Diversification of income • Reduced outbreak of diseases • Increased feed availability
WATER AND SANITATION	<ul style="list-style-type: none"> • Connecting solar and storage tanks at strategic boreholes • Capacity building of water user committees • Pipeline extension to cover unreached areas in the mixed and marginal mixed farming zones. • Repairs of broken-down strategic boreholes • Desilting of earth dams/and pans 	County government, Upper Tana Natural Resource Management Project, Other Stakeholders	<ul style="list-style-type: none"> • Improved potable water accessibility for households and livestock • Increased water holding capacity during long rains season
HEALTH AND NUTRITION	<ul style="list-style-type: none"> • Close monitoring of moderate and severe malnutrition in Mbeere South sub-county. • Sensitization on use and provision of water treatment chemicals to households that rely on rivers and surface water sources. 	County government NDMA Nutrition international	<ul style="list-style-type: none"> • Management of malnutrition amongst under five children • Reduced cases of water borne diseases
EDUCATION	<ul style="list-style-type: none"> • Out scale home grown school meals programme • Support feeding in ECD centres in the hotspots 	County government National government Other stakeholders	<ul style="list-style-type: none"> • Improved school attendance