

# National Drought Management Authority


## EMBU (MBEERE) COUNTY

### DROUGHT EARLY WARNING BULLETIN FOR DECEMBER 2021



A Vision 2030 Flagship Project



DECEMBER DROUGHT EW PHASE		Early Warning (EW) Phase Classification																																																																															
<p><b>Drought Status: ALERT</b></p>  <p><b>Maandalizi ya mapema</b></p>		<b>LIVELIHOOD ZONE</b>	<b>EW PHASE</b>	<b>TRENDS</b>																																																																													
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<p><b>Drought Situation &amp; EW Phase Classification</b></p> <p><b>Biophysical Indicators</b></p> <ul style="list-style-type: none"> <li>The rainfall distribution was even in terms of time and space though given times it was erratic in both livelihood zones in the period under review.</li> <li>The vegetation greenness remains at normal across both livelihoods though this is on non-palatable vegetative cover.</li> <li>Pasture and browse conditions improved to fair due to the OND rainfall.</li> </ul> <p><b>Socio-Economic Indicators (Impact Indicators)</b></p> <p><b>Production Indicators</b></p> <ul style="list-style-type: none"> <li>Crops are at different stages of growth in both livelihoods.</li> <li>Livestock body conditions improved in both livelihoods' zones.</li> <li>Milk production improved due to the availability of pasture and reduced trekking distances.</li> </ul> <p><b>Access Indicators</b></p> <ul style="list-style-type: none"> <li>Terms of trade improved due to reducing prices of maize prices and increasing goat prices.</li> <li>Increment in Milk consumption due to increased production.</li> <li>Distances to water sources for both households and livestock have reduced due to recharge of sources.</li> </ul> <p><b>Utilization Indicators</b></p> <ul style="list-style-type: none"> <li>Out of all sampled households, 26 % had borderline food consumption.</li> <li>Household coping strategy index increased compared to last month.</li> </ul>		<table border="1"> <thead> <tr> <th>Biophysical Indicators</th> <th>Value</th> <th colspan="2">Normal ranges</th> </tr> </thead> <tbody> <tr> <td>Rainfall (% of normal)</td> <td>46</td> <td colspan="2">80-120</td> </tr> <tr> <td>VCI-3 month</td> <td>43.02</td> <td colspan="2">35-50</td> </tr> <tr> <td>VCI-1-month</td> <td>43.39</td> <td colspan="2">35-50</td> </tr> <tr> <td>Forage Condition</td> <td>Fair</td> <td colspan="2">Fair to Good</td> </tr> <tr> <th>Production indicators</th> <th>Value</th> <th colspan="2">Normal ranges</th> </tr> <tr> <td>Crop Condition</td> <td>None</td> <td colspan="2">None</td> </tr> <tr> <td>Livestock Body Condition</td> <td>Moderate</td> <td colspan="2">Fair</td> </tr> <tr> <td>Milk Production (in litres)</td> <td>0.5</td> <td colspan="2">1.05</td> </tr> <tr> <td>Livestock Migration Pattern</td> <td>Nil</td> <td colspan="2">Nil</td> </tr> <tr> <td>Livestock Deaths (from Drought)</td> <td>Nil</td> <td colspan="2">Nil</td> </tr> <tr> <th>Access Indicators</th> <th>Value</th> <th colspan="2">Normal ranges</th> </tr> <tr> <td>Terms of Trade (ToT)</td> <td>119</td> <td colspan="2">169</td> </tr> <tr> <td>Milk Consumption (in litres)</td> <td>0.48</td> <td colspan="2">1.05</td> </tr> <tr> <td>Household Distance to Water Sources (in km)</td> <td>3.2</td> <td colspan="2">2.6</td> </tr> <tr> <td>Livestock Distance to Water Sources (in km)</td> <td>4.3</td> <td colspan="2">3.2</td> </tr> <tr> <th>Utilization indicators</th> <th>Value</th> <th colspan="2">Normal ranges</th> </tr> <tr> <td>Nutrition Status, MUAC (% at risk of malnutrition)</td> <td>0</td> <td colspan="2">0</td> </tr> <tr> <td>Coping Strategy Index (rCSI)</td> <td>9.4</td> <td colspan="2">1-6</td> </tr> </tbody> </table>				Biophysical Indicators	Value	Normal ranges		Rainfall (% of normal)	46	80-120		VCI-3 month	43.02	35-50		VCI-1-month	43.39	35-50		Forage Condition	Fair	Fair to Good		Production indicators	Value	Normal ranges		Crop Condition	None	None		Livestock Body Condition	Moderate	Fair		Milk Production (in litres)	0.5	1.05		Livestock Migration Pattern	Nil	Nil		Livestock Deaths (from Drought)	Nil	Nil		Access Indicators	Value	Normal ranges		Terms of Trade (ToT)	119	169		Milk Consumption (in litres)	0.48	1.05		Household Distance to Water Sources (in km)	3.2	2.6		Livestock Distance to Water Sources (in km)	4.3	3.2		Utilization indicators	Value	Normal ranges		Nutrition Status, MUAC (% at risk of malnutrition)	0	0		Coping Strategy Index (rCSI)	9.4	1-6	
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## 1.0 CLIMATIC CONDITIONS

### 1.1 Rainfall Performance.

- In the month of December, the OND rainfall continued and the performance was above normal compared to previous season and year.
- Rains were recorded for an average of 9 days in the month of December. Rainfall was received for average of 7days in the marginal mixed farming zone and 10 days in the mixed farming zone.

### 1.2 Amount and spatial distribution of rainfall

- The rainfall distribution was even in terms of time and space though given times it was erratic in both livelihood zones in the period under review.
- The marginal mixed farming zone recorded slightly higher rainfall total amount with 443.5mm of rains as compared to the areas in the mixed farming zone with total 117.5 mm of rainfall during the month.

## 2.0 IMPACTS ON VEGETATION AND WATER

### 2.1 VEGETATION CONDITION

#### 2.1.1 Vegetation Condition Index (VCI)

- The vegetation greenness was normal during the month of November and remained stable when compared to the previous month.
- The vegetation condition index decreased from 43.57 in November to 43.02 in December.
- Mbeere South sub-county recorded a lower 3-monthly VCI of 41.91 as compared to Mbeere North Sub County that recorded 3-monthly VCI of 44.07 (Figure 2a and 2b).

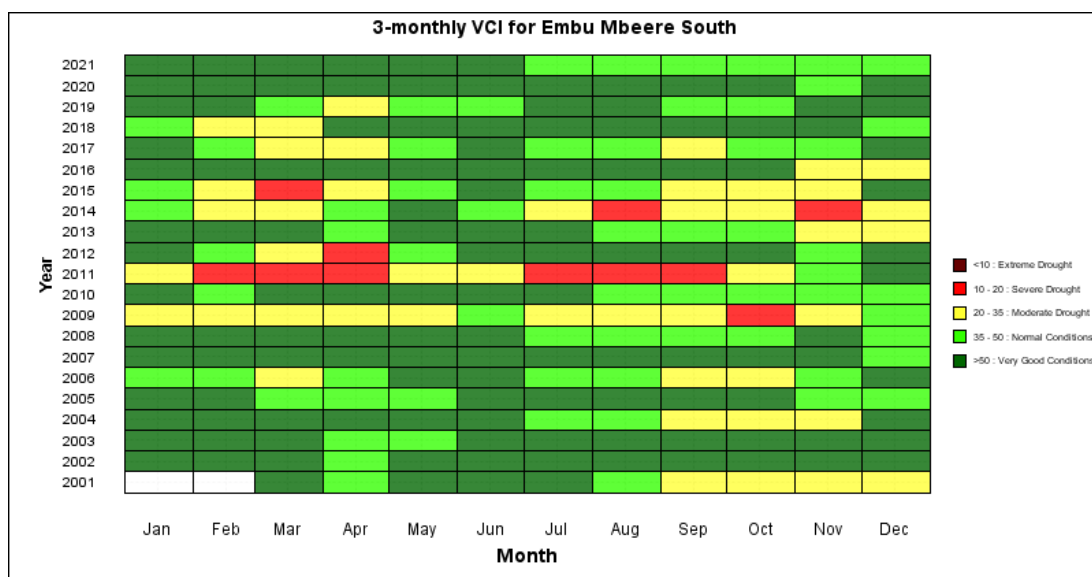


Figure 1: 3-monthly VCI for Mbeere South sub- county [Source: MODIS]

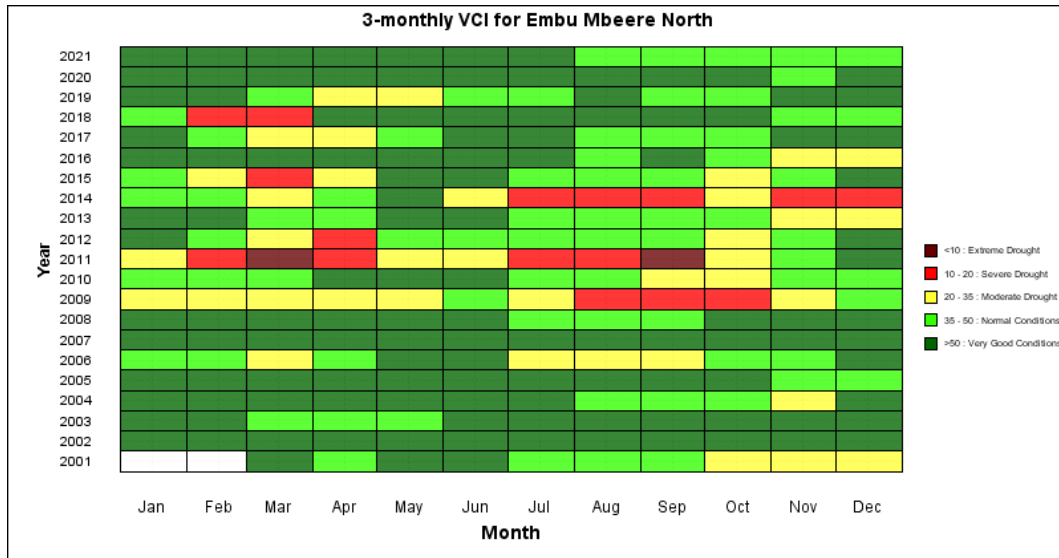


Figure 2: 3-monthly VCI for North sub- county [Source: MODIS]

### 2.1.2 Pasture Condition

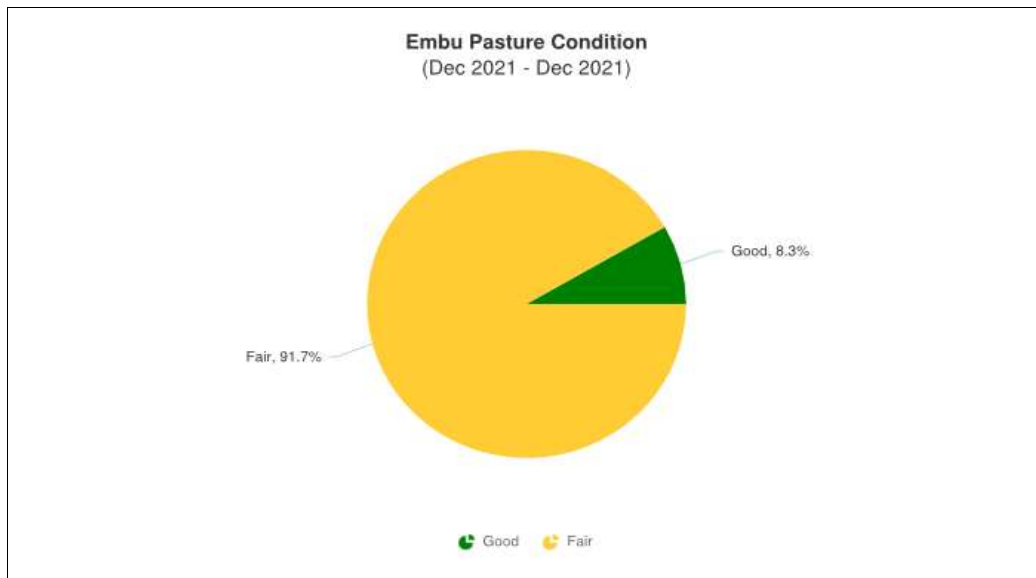


Figure 3: Pasture condition in Mbeere South and North sub counties.

- Pasture conditions were fair to good across both livelihood zones during the month under review.
- The pasture conditions stood at 91.7 percent fair and 8.3 percent good, in which the good was reported in upper Evurore ward which is a mixed farming zone.
- The proportion of the areas with poor pasture condition improved from 100 percent in November to 91.7 % fair in December.
- The improvement of the pasture condition can be attributed to the continued OND rainfall which has helped in regeneration of the pasture.
- The available pasture is expected to last for 2 months in the marginal mixed zones and 3 months in the mixed farming zones.

### 2.1.3 Browse Condition

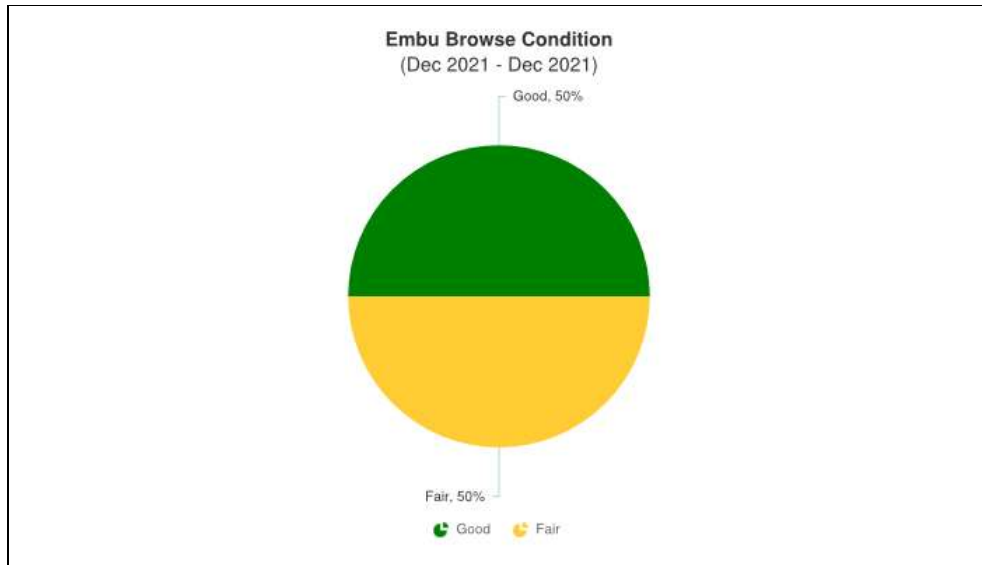


Figure 4: Browse condition in Mbeere North and South sub counties

- The browse condition was fair to good across all livelihood zones during the month of December. The good was reported in the mixed farming zones.
- The browse condition reported was above normal compared to previous season.
- The improvement in browse condition can be attributed to the continued OND rainfall which has helped in regeneration of the pasture.
- The available pasture is expected to last for 3 months in the marginal mixed zones and 4 months in the mixed farming zones.

## 2.2 WATER RESOURCE

### 2.2.1 Water Sources

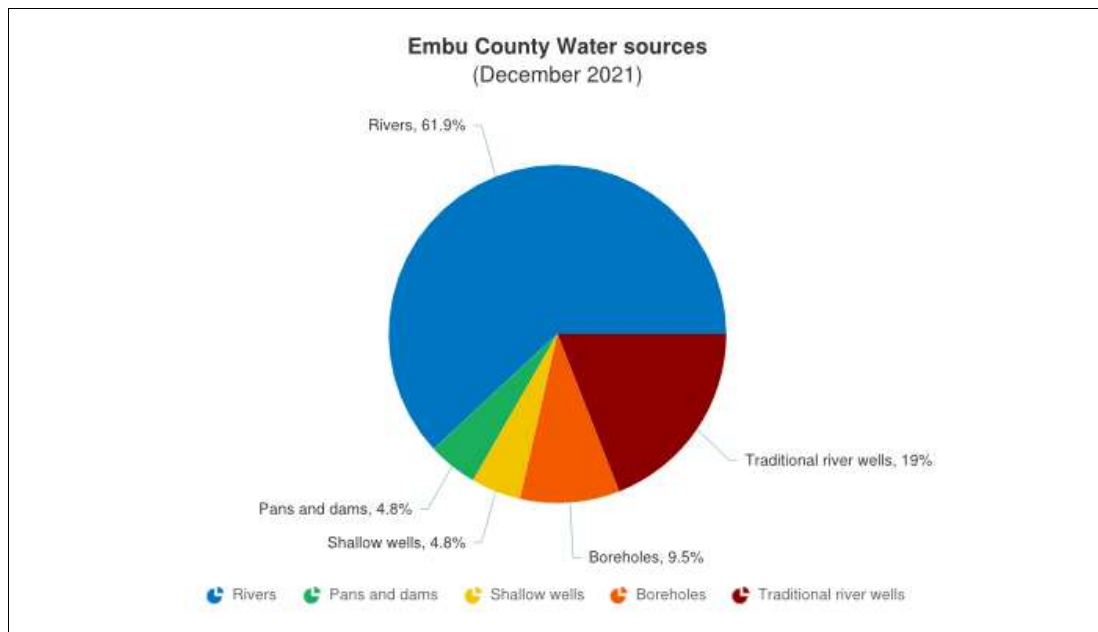


Figure 5: Water sources for Mbeere North and South sub counties

- Water sources for both households and livestock in both livelihood zones remained to be rivers, traditional river wells, boreholes shallow wells, pans and dams during the month under review.

- The OND rains helped in recharging water sources, rivers were flowing at 100% while the earth dams and pans were at 80 percent capacity.
- The reliance on rivers and traditional river wells increased from 58.8 % to 61.9 % and 17.6 % to 19 % meanwhile the percentage relying on boreholes has dropped. This can be attributed to the recharge of water sources which has offered multiple alternatives to households.
- The current capacity of surface water sources is expected to last for 4 -6 months across both livelihood zones.

### 2.2.2 Household Water Access and Utilization

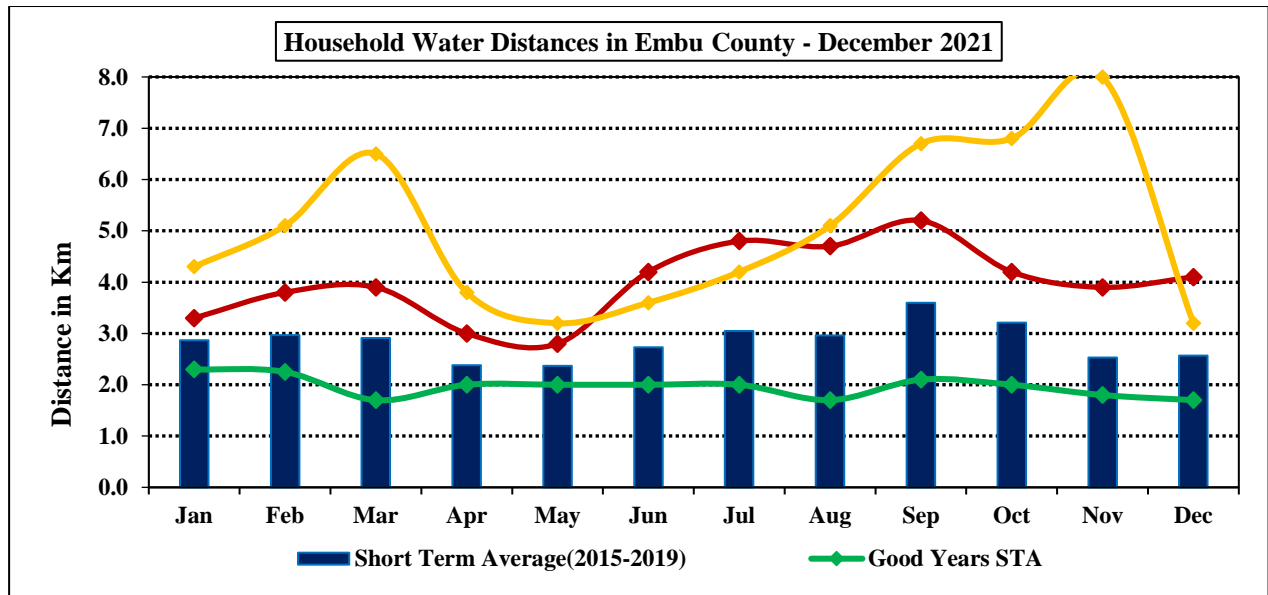


Figure 6: Household average distances to water sources

- The average household return distance to water sources decreased from 8 Km in November to 3.1 km in December.
- The decrease in the distance can be attributed to recharge of various water sources thus households have multiple alternatives of water sources.
- The current average return distance to water sources was 19 % above the bad-year short-term average of 2.6 km.

### 2.2.3 Livestock access to water from grazing areas

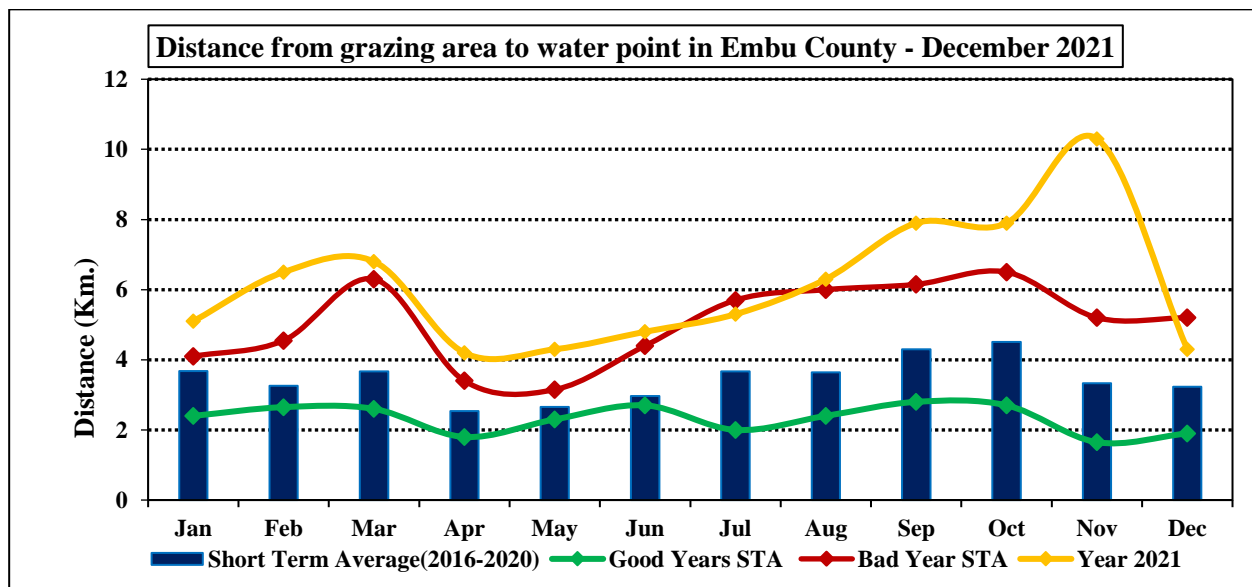


Figure 7: Livestock average return distances to water sources from grazing areas

- The average livestock return distance to water sources from grazing areas reduced from 10.3 in November to 4.3 in December.
- The reduced long trekking distances may be attributed to recharge of water sourced around grazing fields.
- The current average return distance is 34 % higher compared to the bad year short-term average distance of 3.2 km.

## 3.0 PRODUCTION INDICATORS

### 3.1 LIVESTOCK PRODUCTION

#### 3.1.1 Livestock Body Condition

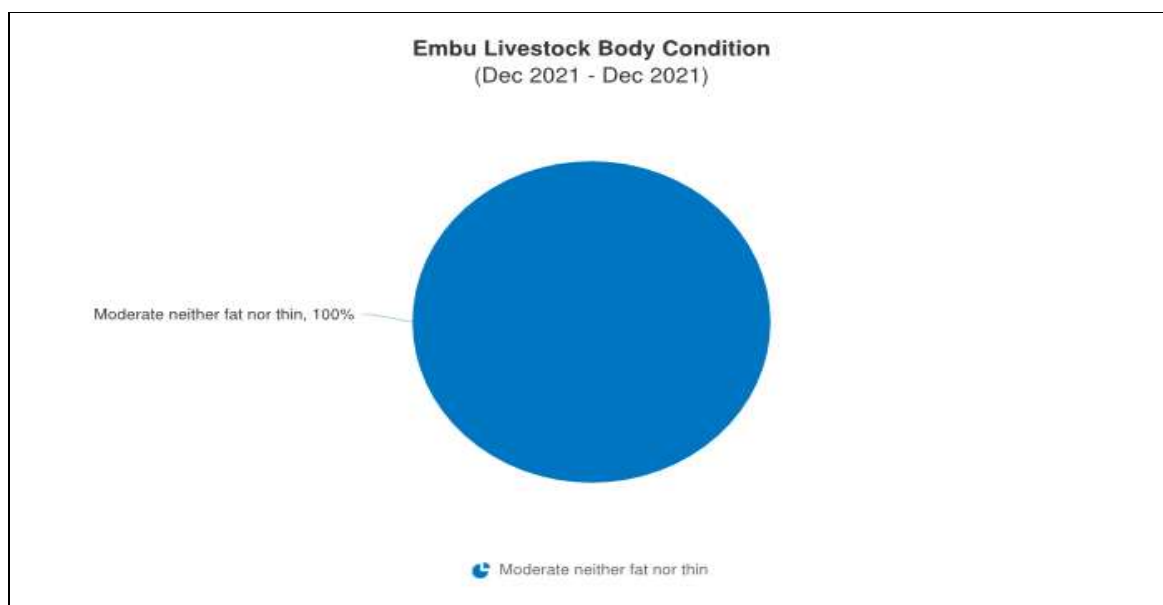


Figure 8: Livestock body condition in Mbeere sub counties

- The livestock body condition was moderate either fat or thin across all zone during the month under review.

- The livestock body conditioned improved compared to November from the 20 percent of livestock that were at borderline. The improvement of the livestock conditions can be attributed to the reduced water distances, improved pasture and browse conditions due to the OND rainfall.
- The body condition for small stock was good compared to that of cattle was fair.

### 3.1.2 Livestock Diseases

- Cattle exhibited diarrhoea related to the green lash sprouting.
- Vaccination and treatment were done on demand by farmers within the both livelihoods.
- In the mixed farming zones farmers vaccinated dairy cattle and poultry while in the marginal mixed zones farmers vaccinated shoats.

### 3.1.3 Milk Production

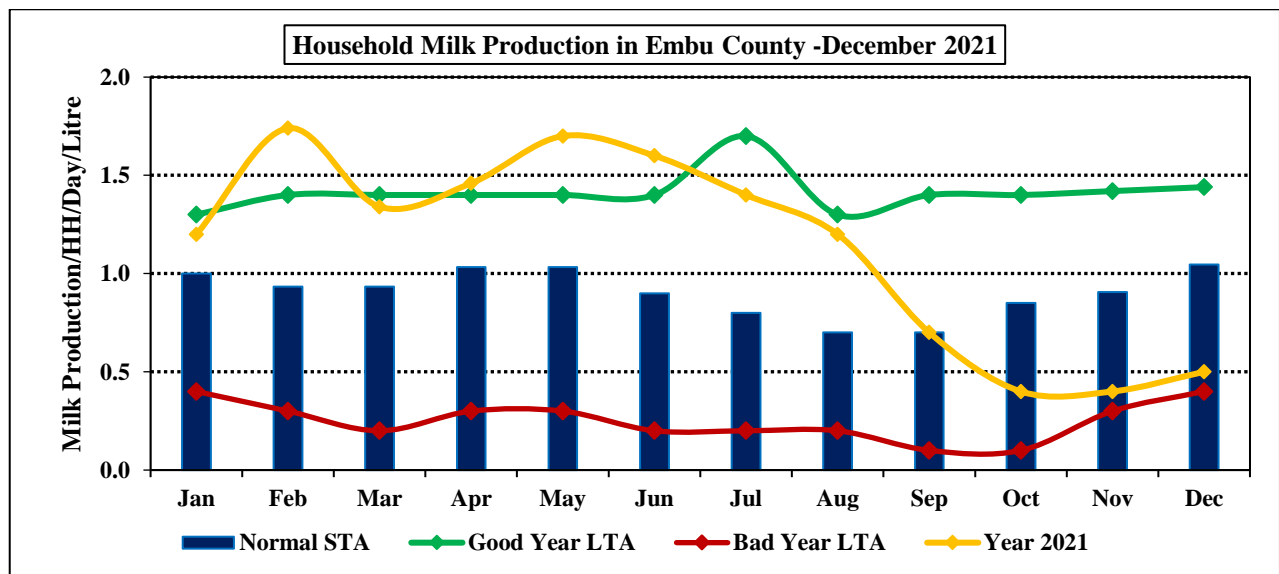


Figure 9: Milk production in Mbeere North and South sub counties

- The average household daily milk production increased by 20 percent from at 0.4 litres in November to 0.5 litres in December.
- The increase in amount of production can be attributed to the improved body conditions of livestock due to the regenerating forage.
- The current milk production is 52% lower than the short-term mean of 1.05 litres.

## 3.2 Rain-Fed Crop Production

### 3.2.1 Stage and Condition of food Crops

- Main crops planted during the season are beans, maize, sorghum, green grams and cowpeas.
- In the mixed farming zones, the highly grown crops are maize, beans and green grams. The stage of development for the following crops is at; maize is tussling while beans and green grams are podding stage.
- In the marginal mixed farming zones, the highly grown crops are sorghum, cowpeas and green grams. The stage of development for the following crops is at; sorghum at above knee length while cow peas and green grams are flowering stage.

## 4.0 MARKET PERFORMANCE

### 4.1 LIVESTOCK MARKETING

#### 4.1.1 Market Prices for Cattle

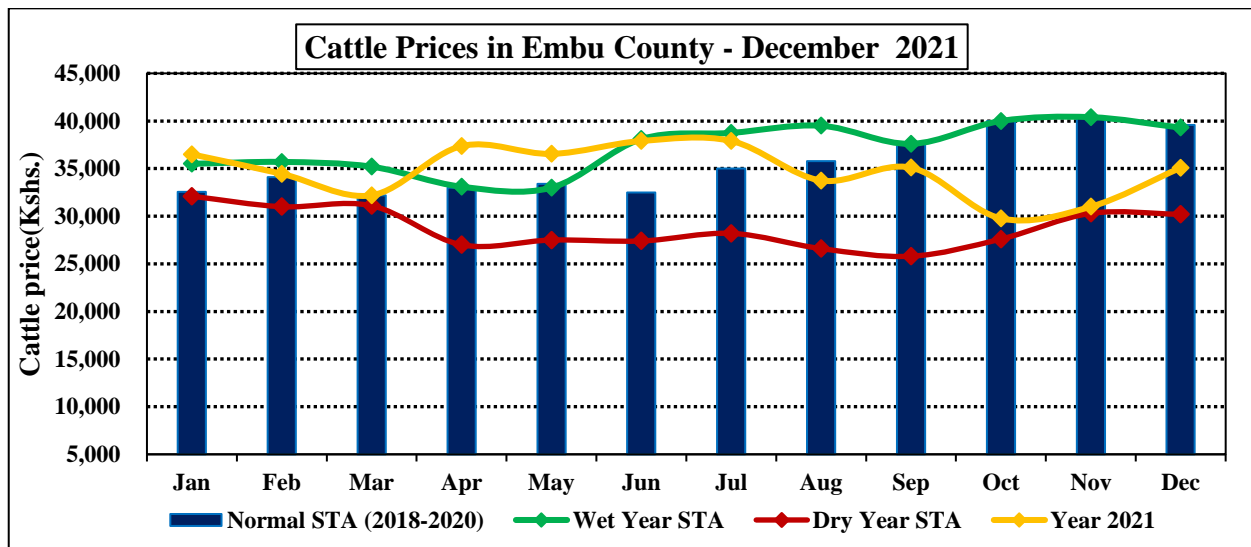


Figure 10: Average Market prices for cattle in Mbeere sub counties

- The average price of a medium size mature bull increased by 16.5 percent from Ksh 31,000 in November to Ksh 35,100.
- The increase in average price across all markets can be attributed to the improved body conditions and festive periods.
- Ishiara, Kiritiri and Ciangera livestock markets in the marginal mixed farming livelihood zone recorded higher average prices of Ksh. 30,000 Ksh 32,000 and Ksh 31,000 respectively while Kanyumbora and Karaba livestock markets in the mixed farming zones recorded average prices of Ksh 24,750 and Ksh. 37,600 respectively.
- The current average price is 11% lower than the short-term average price of Ksh. 39,600.

#### 4.1.2 Goats Prices

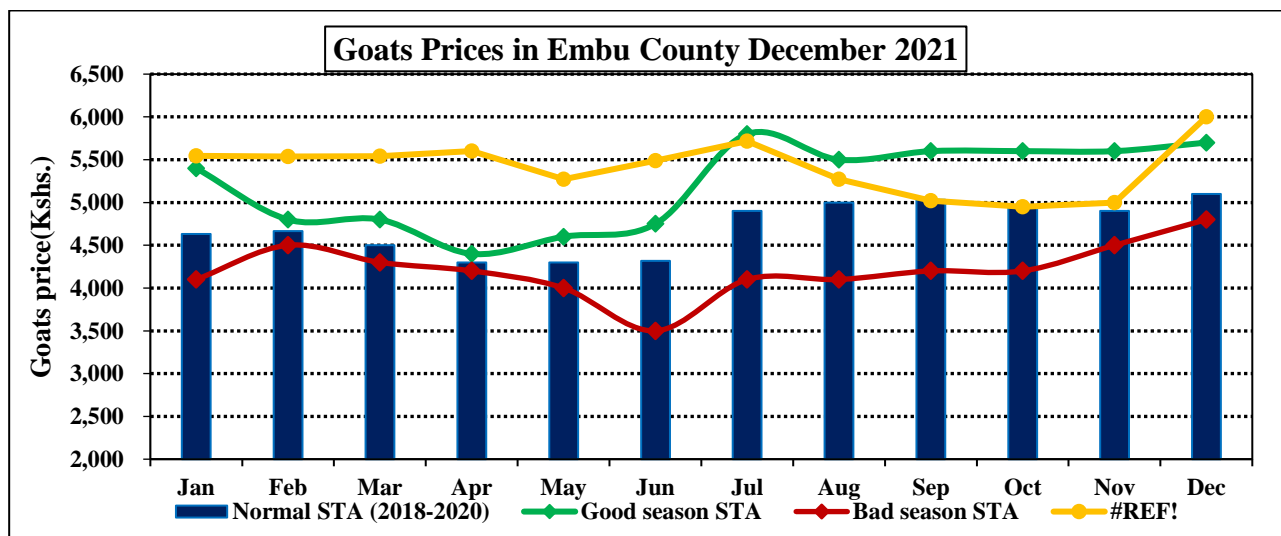


Figure 11: Average market prices for goats in Mbeere sub counties

- The average goat price increased by 20 percent from Ksh. 5000 in November to Ksh 6,000 in December.



- The increase in average price across all markets can be attributed to the improved body conditions and festive periods.
- Ishiara, Kiritiri and Ciangera livestock markets in the marginal mixed farming livelihood zone recorded higher average prices of Ksh. 7,500 Ksh 5,000 and Ksh 5,000 respectively while Kanyuambora and Karaba livestock markets in the mixed farming zones recorded average prices of Ksh 4,500 and Ksh. 5,800 respectively.
- The variation in average prices across the different markets is attributable to the variation in body condition and volumes traded in the respective markets.
- The recorded price was higher by 17.6 percent compared to the short-term average price of Ksh 5,100.

## 4.2 FOOD PRICES

### 4.2.1 Maize Prices

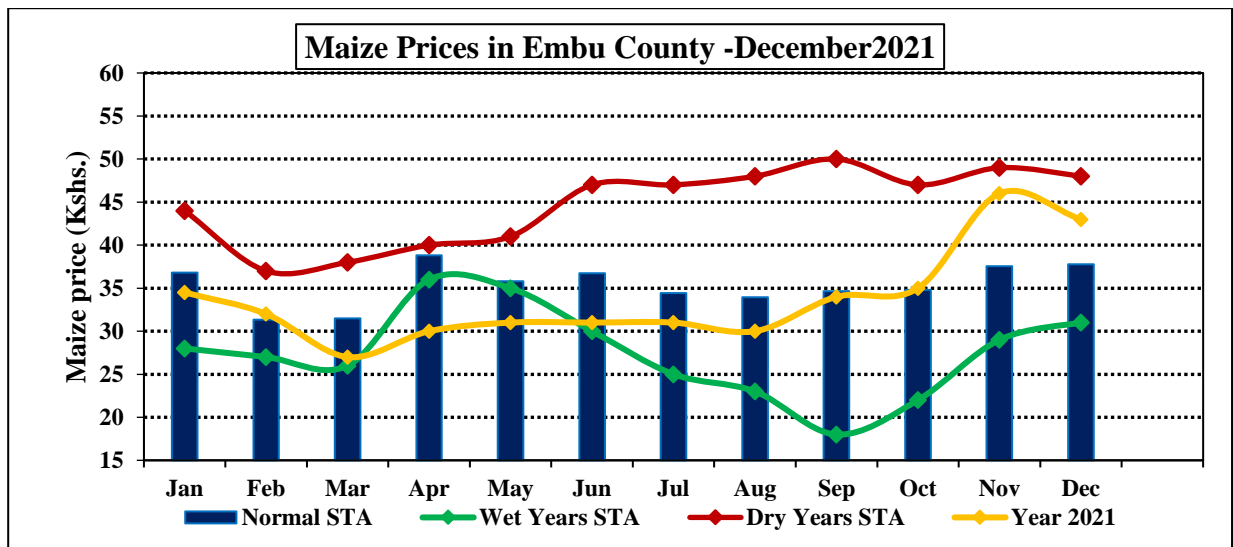


Figure 12: Average market prices for maize in Mbeere sub counties

- The average market price for maize decreased by 6 percent from Ksh 46 in November to Ksh 42 in December.
- The price decrease is attributed to the presence of irrigation maize from various farms and neighbouring counties in the market
- Ishiara, Kiritiri and Ciangera cereal markets in the marginal mixed farming livelihood zone recorded average prices of Ksh. 38 Ksh 45 and Ksh. 40 respectively while Kanyuambora and Karaba livestock markets in the mixed farming zones recorded average prices of Ksh 40 and Ksh. 43 respectively.
- The variation in average price across the different markets is attributable to the higher proportion of households depending on markets in the marginal zones as compared to the mixed farming zones.
- The average maize price was higher by 11 percent compared to the short-term average of Ksh 38.

#### 4.2.2 Posho (Local Maize Meal)

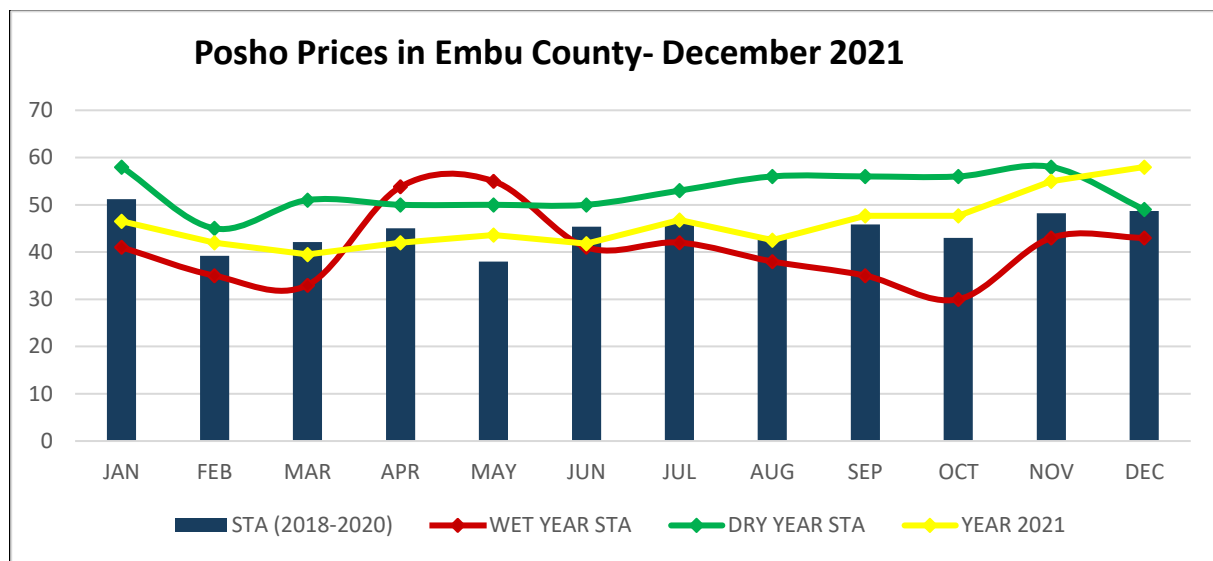


Figure 13: Average market prices for Posho in Mbeere sub counties

- The average price of *posho* increased by 5 percent from Ksh 55 in November to Ksh. 58 in December.
- The increase in posho prices could be attributed to the fuel prices.
- Ishiara, Kiritiri and Ciangera cereal markets in the marginal mixed farming livelihood zone recorded average prices of Ksh. 68 Ksh 50 and Ksh. 50 respectively while Kanyumbora and Karaba livestock markets in the mixed farming zones recorded average prices of Ksh 60 and Ksh. 60 respectively.
- The current average price is higher by 18 percent compared to the short-term average price of Ksh. 49 per kilogram.

#### 4.2.3 Beans Prices

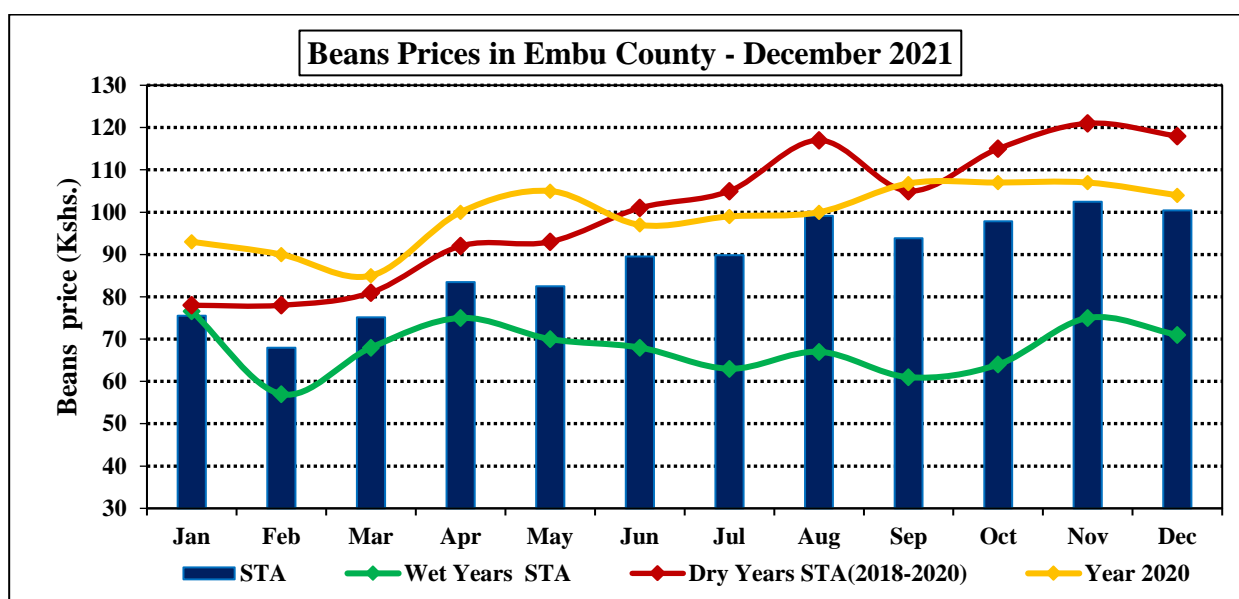


Figure 14: Average market prices for beans in Mbeere sub counties

- The average price of beans reduced from Ksh 107 in November to Ksh 104 in December.

- The price decrease is attributed to the presence of irrigation maize from various farms and neighbouring counties in the market
- Ishiara, Kiritiri and Ciangera cereal markets in the marginal mixed farming livelihood zone recorded average prices of Ksh. 105, Ksh 100 and Ksh. 130 respectively while Kanyuambora and Karaba livestock markets in the mixed farming zones recorded average prices of Ksh 90 and Ksh. 108 respectively.
- The recorded price of beans higher than the short-term average price of Ksh 100 per kilogram.

#### 4.2.4 Green Grams Prices

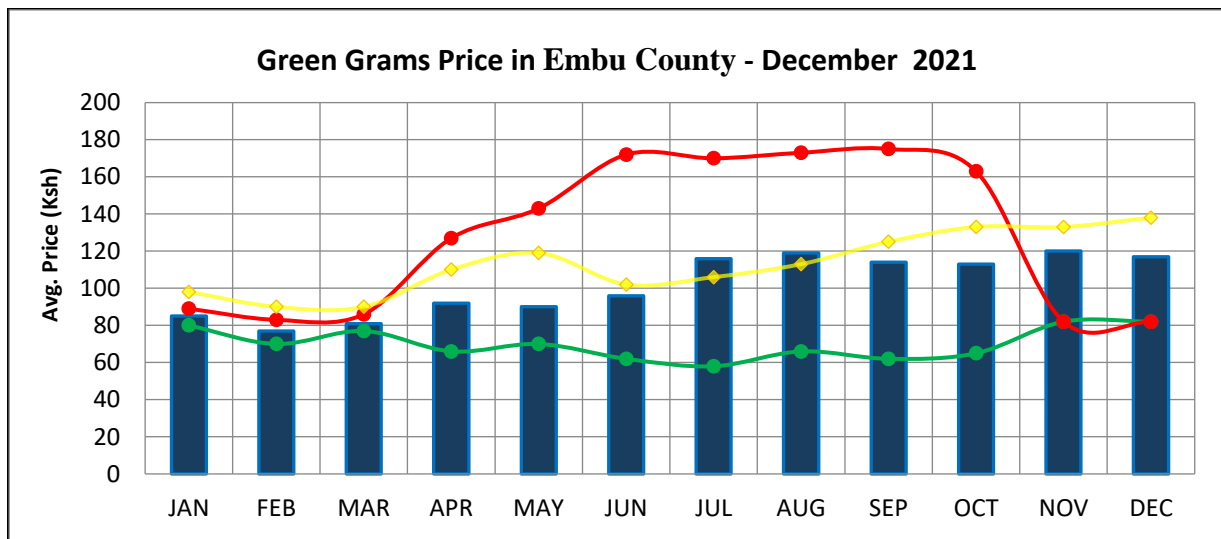


Figure 15: Average market prices for green grams in Mbeere sub counties

- The average price of green grams increased from Ksh 133 in November to 138 December.
- The high price could be attributed to diminishing household stocks.
- The markets in the marginal mixed farming livelihood zone recorded higher average price of Ksh. 150 per kilogram while those in the mixed farming livelihood zone recorded an average price of 130 per kilogram.
- The average price recorded was 17 percent higher than the short-term average of Ksh 117.

### 4.3 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 bought from sale of one goat.

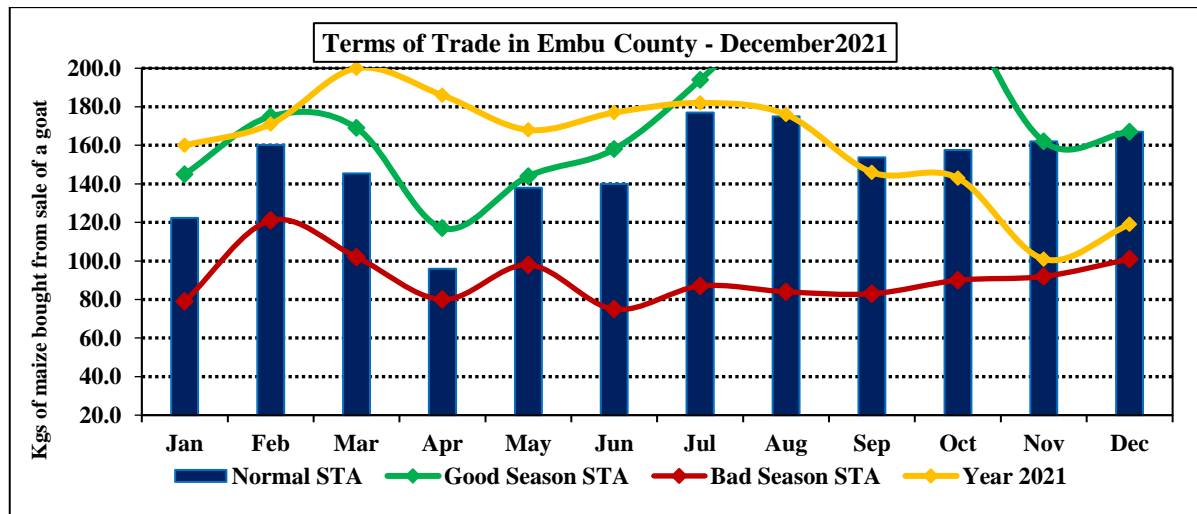


Figure 16: Terms of trade in Mbeere sub counties

- The Terms of trade increased by 42 percent from 101 in November to 119 in December for kilograms of maize bought from sale of goat.
- The increase is attributed to the increase in prices of goat and decrease in maize prices in the reporting month.
- The current terms of trade are by 32 percent lower compared to the than the short-term average of 169.

## 5.0 FOOD CONSUMPTION AND NUTRITION STATUS

### 5.1 Milk Consumption

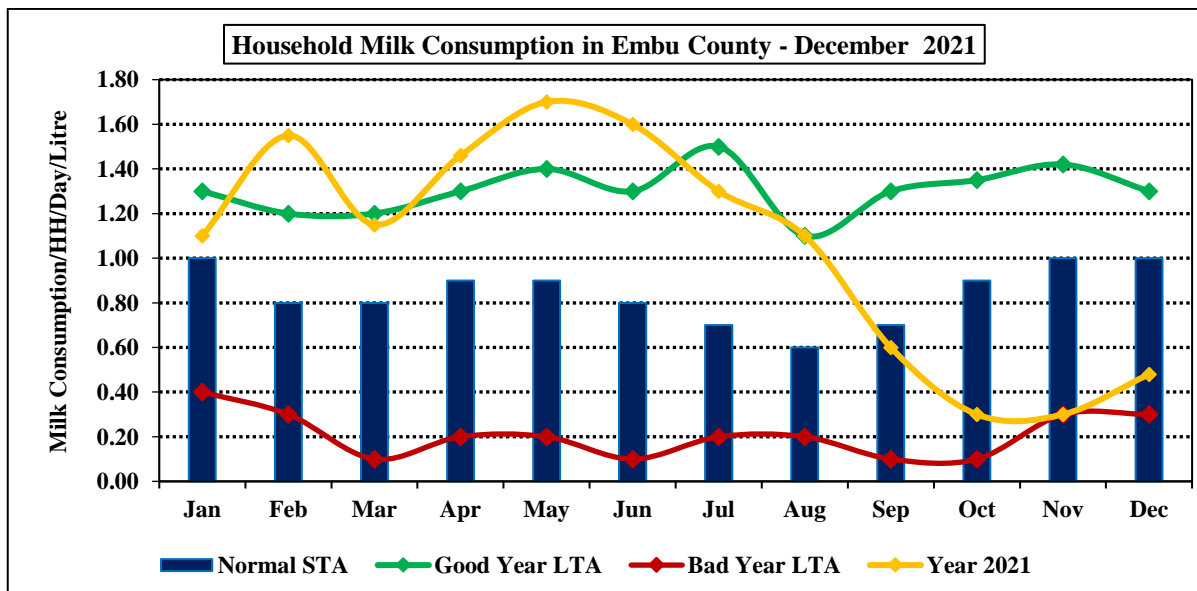


Figure 17: Household milk consumption in Mbeere North and South sub counties

- During the month under review, average household daily milk consumption increased by 37.5 percent from 0.3 litres per household per day recorded in October to 0.48 litres in December.

- The amount of milk consumed during the month can be attributed to decreased production during the month under review occasioned by stress in access to pasture and water.
- The current milk consumption is 52 percent lower than the short-term average of 1 litres per household per day.

## 5.2 Nutritional Status of Children

The Mid Upper Arm Circumference (MUAC) is a pointer indicator for malnutrition among children under five years.

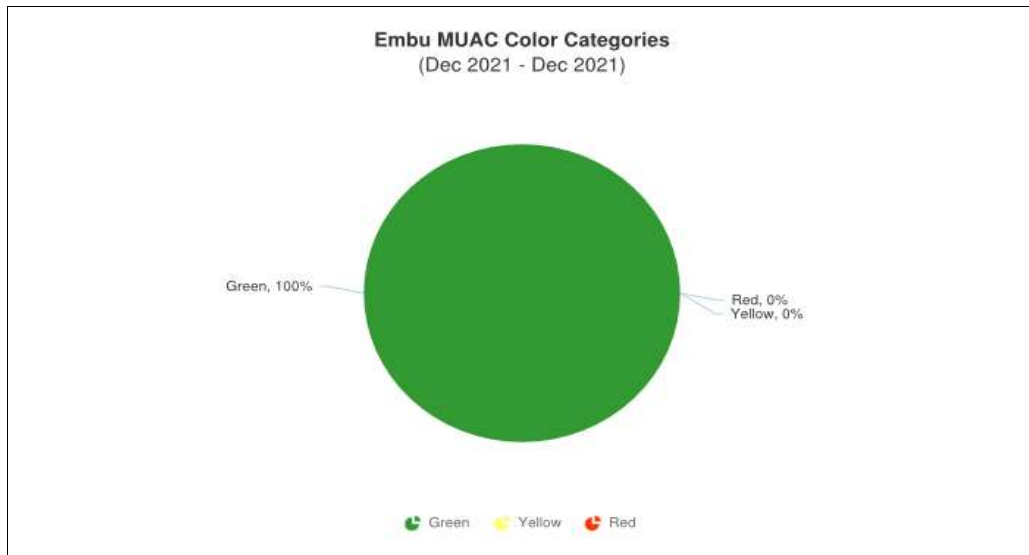


Figure 18: Nutritional status of sampled children in Mbeere sub counties (n=306)

- During the month under review 100 percent of sampled children recorded normal MUAC measurements (measurements at the green band)
- This may be attributed to the adults skipping meals to ensure that the children get enough portions and number of meals.
- In the reporting month, adults in the marginal mixed farming zone reported to consume one meal per day while the children are getting 2-3 meals per day. Adults in mixed farming livelihood zone on the other hand are consuming 2 meals per day but their children are consuming 3-4 meals per day.

### 5.3 Food Consumption Score

The Food Consumption Score (FCS) gives the dietary diversity and the relative nutritional importance of different food groups consumed by households over a period of 7 days.

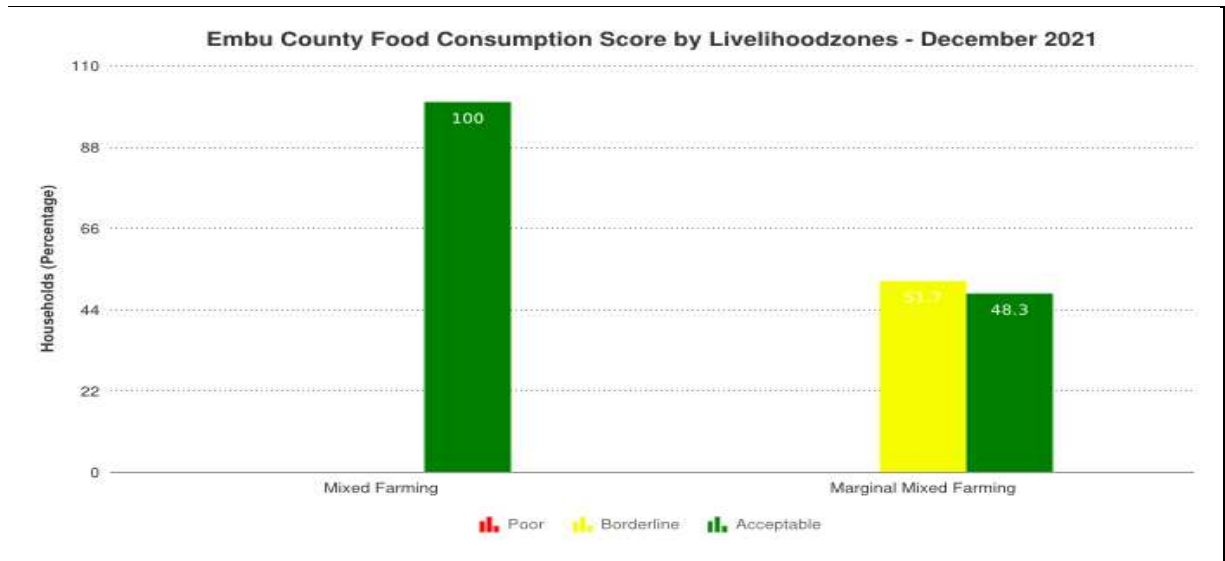


Figure 19: Household food consumption (120 households)

- During the month under review, 76% of the sampled households recorded acceptable food consumption while 24 % of the households fell in borderline food consumption category.
- The households in the borderline food consumption category increased from 24 % in the month of November to 26% in the month of December. This could be attributed to the relief food given by the National government.
- The variation across livelihood zones may be attributed to the current level of household stocks and availability of irrigation schemes supporting household access to vegetables and fruits.

## 5.4 Coping Strategy Index

The Coping Strategy Index is a derivative of the strategies that households adopt when they lack food or money to buy food.

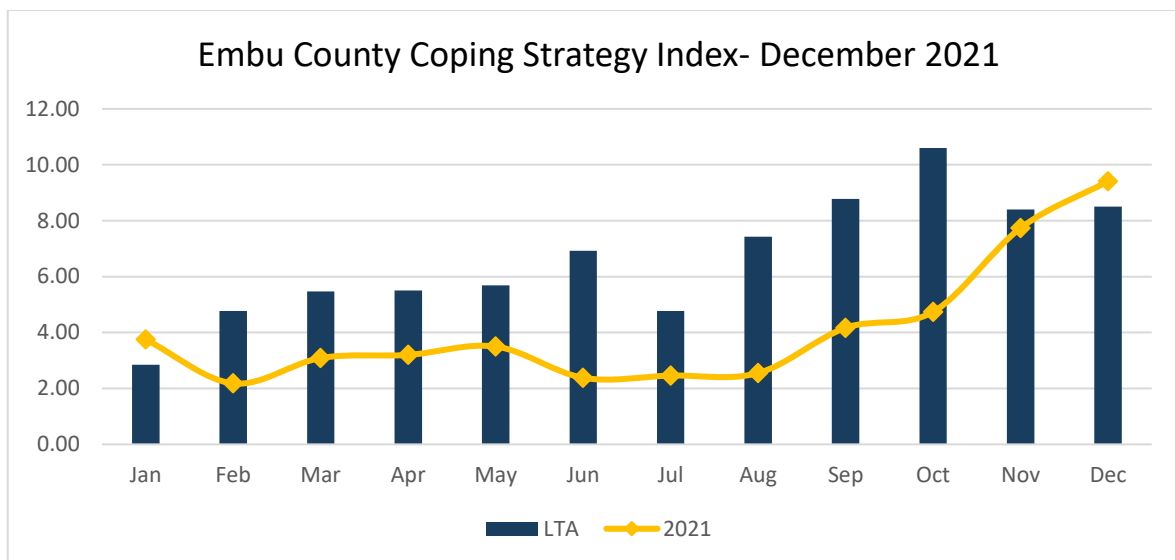


Figure 20: Coping Strategy Index for households in Mbeere sub counties

- The mean coping strategy index increased from 4.74 in the month of November to 9.41 in December.
- The increase can be attributed to reduced purchasing power and the increased food commodity prices.
- The coping strategy index for households in the marginal mixed farming livelihood zones increased from 11.7 recorded the previous month to 14.5 in the month of December while in coping strategy index for households in the mixed farming livelihood zones decreased from 3.8 to 4.3.

## 5.5 Implication of the above Indicators to Food Security

- Reduced distances to grazing fields and water points will improve on the livestock body condition and consequently on milk production.
- The increased distances to water sources occasioned spending of more time in search of water instead of engaging in productive agricultural and income generating activities.
- The diminishing household food stock and prepositioning for planting season led to reliance on the markets and therefore increased the household expenditure on food commodities.
- The increased in terms of trade positively affected the livestock keepers through increased purchasing power.

## 6.0 CURRENT INTERVENTION MEASURES

### 6.1 Food Interventions

None.

### 6.2. Non-Food Interventions

Intervention	Implementer	Status of implementation	Beneficiaries
Cash transfer program	National Government	Ongoing	2450 households affected by drought.
Targeting and registration for universal child benefit beneficiaries in the drought prone hotspots	Department of children services	Ongoing	Children under three years in Mbeere North sub county
Community MUAC monitoring and referral	NDMA	Routine	Targeted households in both sub counties
Routine agricultural extension	Embu County government	Routine	Farmers in Mbeere North and South sub counties
Routine livestock production extension and support to farmers	Embu County government	Routine	Farmers in Mbeere North and South sub counties

### 7.0 Food Security Prognosis (Three months)

- Food prices in the market will likely remain high until the harvest are released at the end of the short rains this will likely lead to increased coping.
- The forage regeneration has the positively impacted of the short rains on vegetation, this will in turn lead to improved production in terms of milk and market prices.
- The distance to water sources is likely to reduce for both households and livestock since the short rains are expected to recharge the open surface water sources and increased roof rain water harvesting.
- The purchasing power of households will likely improve in the next three months occasioned by the availability of casual labour and increased prices of animals occasioned by the improved body conditions for livestock.



## 8.0 SECTOR RECOMMENDATIONS

SECTOR	RECOMMENDED ACTIVITIES	TARGET AREA	RESPONSIBLE
<b>Agriculture</b>	<ul style="list-style-type: none"> <li>• Procurement and distribution of relief food/cash transfer for needy households to purchase food</li> </ul>	Food insecure households (42,000 people)	Embu County government  GOK- Ministry of interior
<b>Livestock Production and Veterinary Services</b>	<ul style="list-style-type: none"> <li>• Treatment of livestock diseases</li> <li>• Voluntary destocking</li> <li>• Livestock feed supplementation</li> </ul>	Evurore, Makima, Mavuria Muminji and Kiambere wards	Embu County Government, NDMA
<b>Health and Nutrition</b>	<ul style="list-style-type: none"> <li>• Surge kit activation</li> <li>• Purchase and distribution of water treatment chemicals</li> </ul>	Both sub counties	County Department of Health