




A Vision 2030 Flagship Project



**National Drought Management Authority**  
**EMBU (MBEERE) COUNTY**  
**DROUGHT EARLY WARNING BULLETIN FOR FEBRUARY 2021**

FEBRUARY EW PHASE	Early Warning Phase Classification		
<b>Drought Status: NORMAL</b>  <b>Shughull za kawaida</b>	LIVELIHOOD ZONE	EW PHASE	TRENDS
	Marginal Mixed Farming	Normal	Stable
	Mixed Farming	Normal	Stable
	<b>County</b>	Normal	Stable

**Drought Situation & EW Phase Classification**

**Biophysical Indicators**

- February was generally dry. However, offseason rains were received for an average of a day in both livelihood zones.
- The vegetation greenness was normal though the VCI reduced from last month.
- Pasture is declining while browse is stable.

**Socio-Economic Indicators (Impact Indicators)**

**Production Indicators**

- Crop harvesting is ongoing across all livelihood zones though yield is poor in MMF zones.
- Livestock body condition was good to fair though on a declining trend.
- Milk production was above normal.

**Access Indicators**

- Terms of trade were favourable.
- Milk consumption was above normal.
- Water distances increased for both households and livestock.
- The cost of water at source was normal.

**Utilization Indicators**

- All sampled children recorded normal MUAC measurements
- 84 percent of sampled households were in acceptable food consumption category.
- Household coping strategy improved from last month.

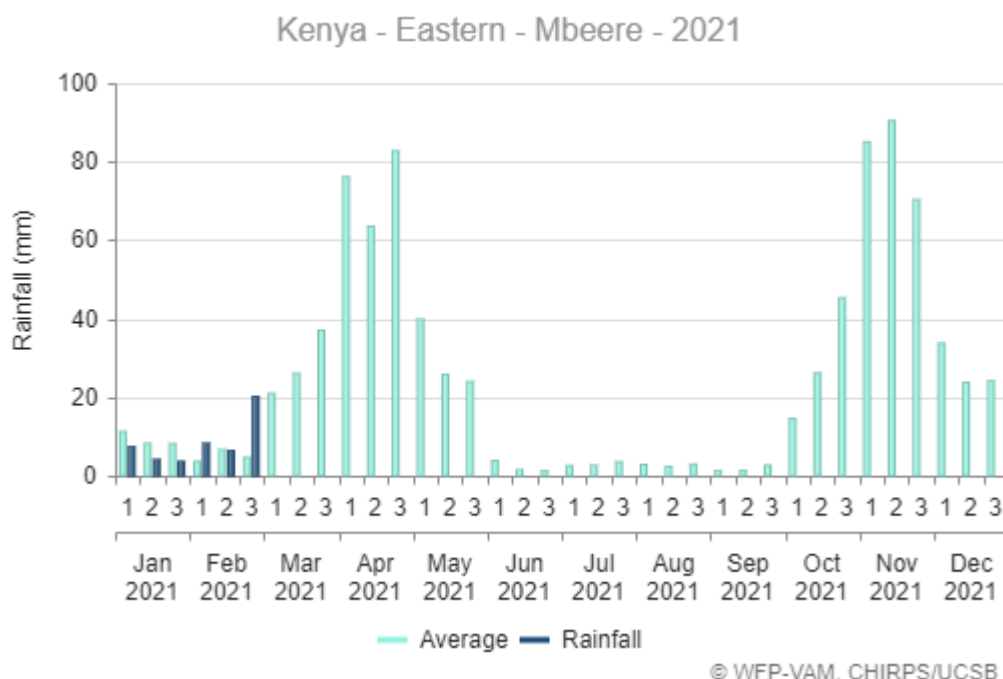
Biophysical Indicators	Value	Normal ranges
Rainfall (% of normal)	82	80-120
VCI-3 month	67.3	35-50
VCI-1-month February	60.56	35-50
Forage Condition	Fair to good	Fair to poor
Production indicators	Value	Normal ranges
Maize Crop Condition	Fair	Good
Livestock Body Condition	Good to fair	Good to fair
Milk Production (in litres)	1.74	≥ 0.9
Livestock Migration Pattern	No	Normal
Livestock Deaths (from Drought)	No death	No death
Access Indicators	Value	Normal ranges
Terms of Trade (ToT)	171	160
Milk Consumption (in litres)	1.55	1.22
Return Distance to Water Sources (in km)	5.1	5.7
Cost of Water at Source (20 litres Jerry can)	2-5	≤ 5Ksh
Utilization indicators	Value	Normal ranges
Nutrition Status, MUAC (% at risk of malnutrition)	100	100
Coping Strategy Index (rCSI)	2.18	≤ 7.3
Food Consumption Score (% at Acceptable)	83	≥ 80

<ul style="list-style-type: none"> <li>Short rains harvests</li> <li>Short dry spell</li> <li>Reduced milk yields</li> <li>Increased HH Food Stocks</li> <li>Land preparation</li> </ul>	<ul style="list-style-type: none"> <li>Planting/Weeding</li> <li>Long rains</li> <li>High Calving Rate</li> <li>Milk Yields Increase</li> </ul>	<ul style="list-style-type: none"> <li>Long rains harvests</li> <li>A long dry spell</li> <li>Land preparation</li> <li>Increased HH Food Stocks</li> <li>Kidding (Sept)</li> </ul>	<ul style="list-style-type: none"> <li>Short rains</li> <li>Planting/weeding</li> </ul>								
<b>Dry Season</b>	<b>Long Rains</b>	<b>Dry Cool Season</b>	<b>Short Rains Season</b>								
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec

## 1.0 CLIMATIC CONDITIONS

### 1.1 Rainfall Performance.

- The month of February was generally dry. However, offseason rains were received for an average of a day in both livelihood zones.
- Figure 1 shows the regions overall rainfall performance during the month under review. The average rainfall received was 11.5 mm. In the first dekad 8.2 mm, second dekad 6.3 and third dekad 20.1 mm. The average amount of rainfall received was higher by 134 percent compared to the normal average of 4.9 mm.
- The average off season amount received increased by 50 percent from 5.7 mm in January to 11.5 mm in February.



**Figure 1: Rainfall performance in Mbeere North and South Sub Counties**

### 1.2 Amount and spatial distribution of rainfall

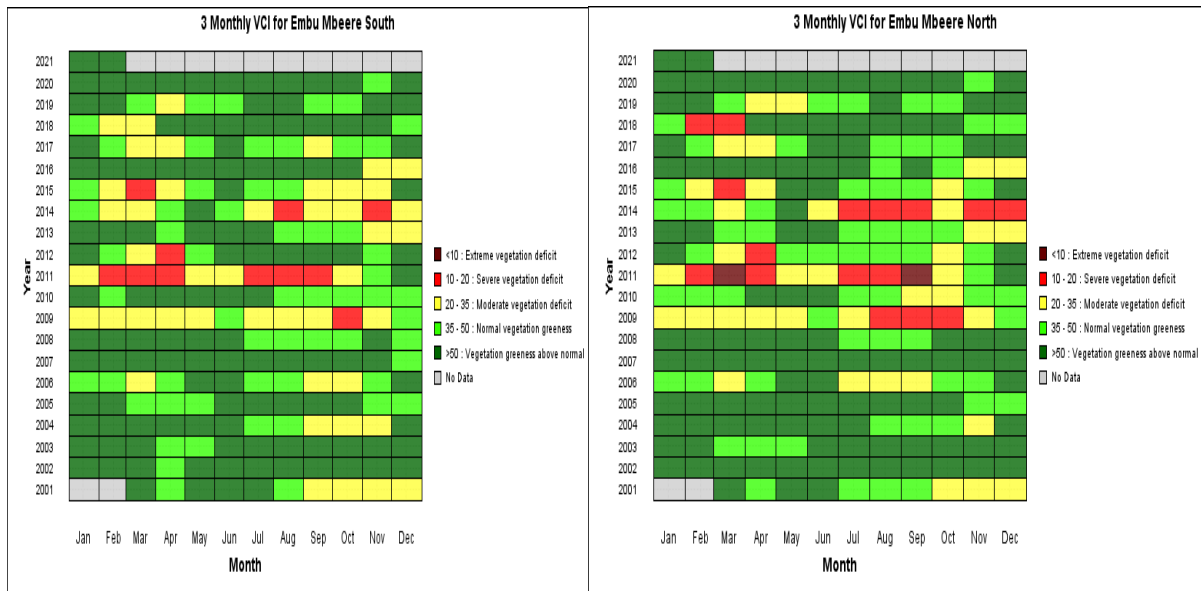
- During the month under review, the rainfall was unevenly distributed and sporadic in both livelihood zones, the average amount of rainfall recorded was 8.4 mm. The rainfall amount was low since it was off season rainfall.
- The highest amount recorded was 17.5 mm in Kirathe dispensary station, while the lowest amount recorded was in Muthanthara dispensary at 2.7 mm, Malkini secondary school recorded 5 mm.

## 2.0 IMPACTS ON VEGETATION AND WATER

### 2.1 VEGETATION CONDITION

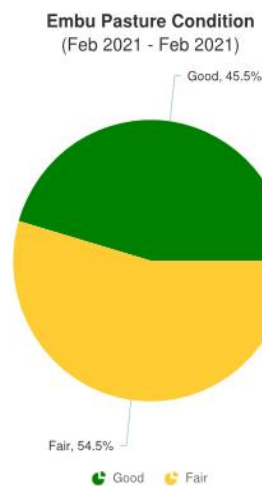
#### 2.1.1 Vegetation Condition Index (VCI)

- The vegetation greenness remained above normal in the month under review
- The VCI for February was 67.3 as compared 72 in the previous month representing 6.5 percent decrease.
- The decrease can be attributable to the harsh condition prevailing causing vegetative cover to dry up which is normal in the month of February.
- Mbeere South sub-county recorded a higher 3-monthly VCI by 9.8 percent of 70.77 as compared to Mbeere North Sub County that recorded 3-monthly VCI of 63.82 (Figure 2a and 2b).



**Figure 2a and 2b: 3-monthly VCI for Mbeere South and North sub- county [Source: MODIS]**

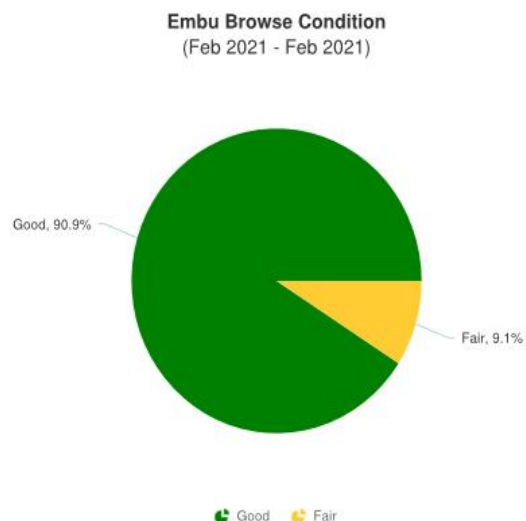
### 2.1.2 Pasture Condition



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

- Pasture conditions ranged from fair to good in both livelihood zones with a declining trend.
- Pasture conditions stood at 45.5 percent good and 54.5 percent fair across all livelihoods. This was a decline from 63.6 percent good and 36.4 in the month of January. The amount of off-season rainfall received was little to have an impact on pasture conditions.
- The current pasture condition is fair to Good in the Mixed Farming Livelihood Zone and fair in the Marginal Mixed Farming Livelihood Zone.
- Areas experiencing pasture stress are Evurore Ward, Muminji Ward, Mwea ward, Machanga in Mavuria Ward and Maviani in Makima Ward.
- The available pasture is expected to last for 2 months in mixed farming livelihood zones and 1 month in the marginal mixed farming livelihood zones.
- Crop residues are expected to supplement available pastures especially in the mixed farming zones and to a very low extent in the marginal mixed farming due to the poor distribution of rains and subsequent poor crop performance.

### 2.1.3 Browse Condition

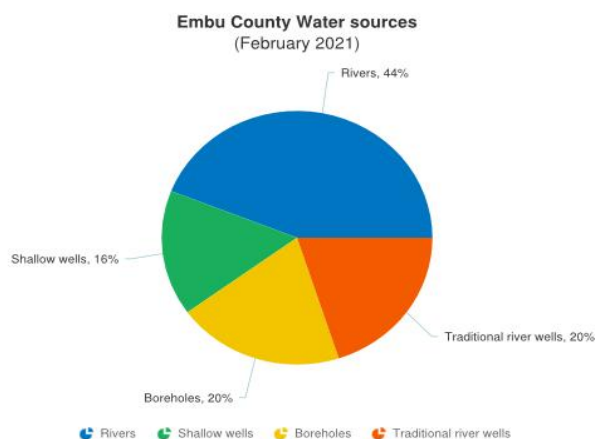


**Figure 4: Browse condition in Mbeere North and South sub counties**

- The browse conditions ranged from good to fair across all livelihoods.
- The browse remained the same as January at 90.9 percent good and 9.1 percent fair across all livelihood as the month of January. The off-season rainfall had an impact on browse condition thus remaining stable.
- Browse is expected to last for 2-3 months in the Mixed Farming Zone and 2 months in the Marginal Mixed Farming Zone when compared to normal duration of 3 and 2 months respectively.

## 2.2 WATER RESOURCE

### 2.2.1 Water Sources



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

- The major water sources for households across both livelihood zones was rivers. Water sources usage for both households and livestock in the month of January stood at rivers 44percent, shallow wells at 16 percent, boreholes 20 percent and traditional river wells 20 percent.

- The proportion of households using the others water sources increased while there was a decreased percentage on the reliance on rivers from 52.4 percent in January to 44 percent in December.  
In the marginal mixed farming livelihoods water sources are expected to last up for 2 months while in the mixed farming livelihood zones are expected to last for 3 months.

### 2.2.2 Household Water Access and Utilization

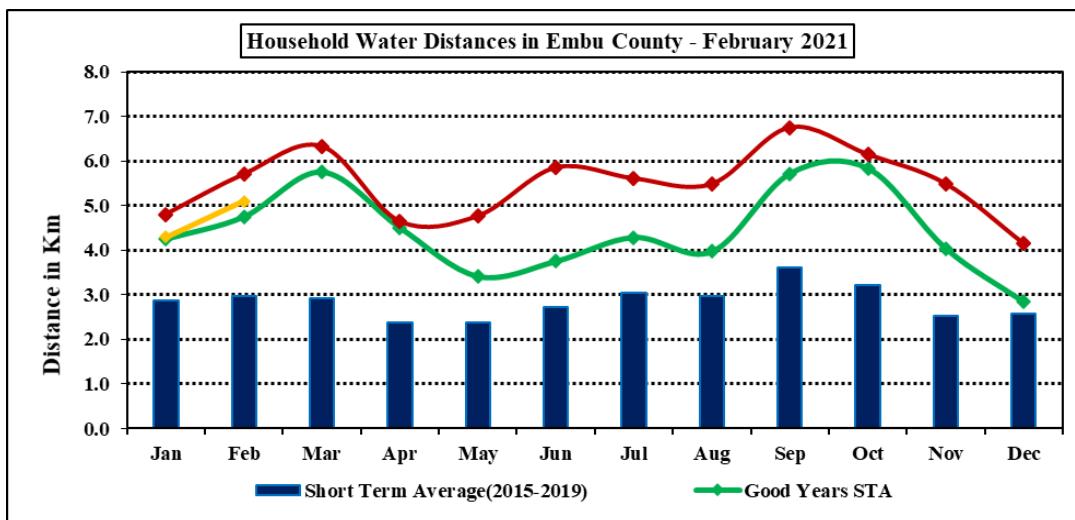


Figure 6: Household average distances to water sources

- The average household return distance to water sources increased by 18.6 percent from 4.3 Km in January to 5.1 km in February.
- The increase in distance can be attributed to affected water sources recharge due to reduced rainfall amount in the month thus increased trekking distances by households. Households have started to seek alternative water sources.
- The recorded average return distance to water sources for households lower by 10.5 percent compared to the bad year short-term average of 5.7 km.

### 2.2.3 Livestock access to water from grazing areas

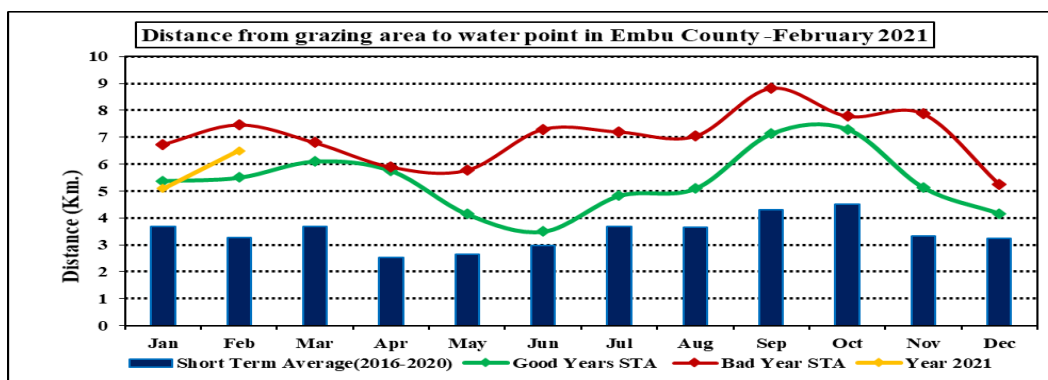


Figure 7: Livestock average return distances to water sources

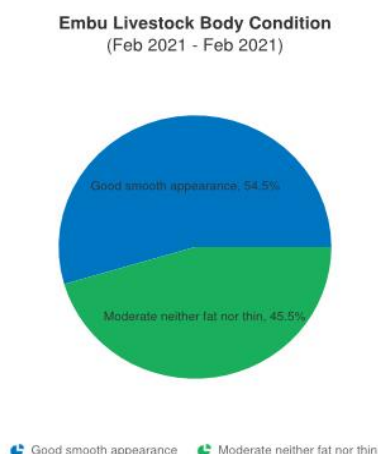
- The average return distances from livestock grazing areas to watering points increased by 27 percent to stand at 6.5 km in February from 5.1 km in January.
- The increase can be attributed drying up of various sources of water viable for livestock and pasture leading to livestock moving to areas of wetlands and areas closer to water sources.

- The current average return distance was 38.5 percent higher compared to the short-term average distance of 3.68 km.

### 3.0 PRODUCTION INDICATORS

#### 3.1 LIVESTOCK PRODUCTION

##### 3.1.1 Livestock Body Condition



- Livestock body condition during the month of February stood at 54.5 percent good smooth appearance, 45.5 percent, moderate neither fat nor thin across all livelihood zones.
- In Mwea livestock body condition stood at 100 percent moderate neither fat nor thin, Kanyuambora 100 percent good smooth appearance, Kamarandi 66.7 percent moderate neither fat nor thin and 33.3 percent good smooth appearance. Kiambere at 100 percent good smooth appearance.
- The body condition is expected to deteriorate in cattle and sheep from fair to poor while the goats are expected to maintain a good to fair body condition in both livelihood zones in the next one and a half months.

##### 3.1.2 Livestock Diseases

- Livestock disease surveillance ongoing
- Vaccination and treatment were only done on demand.
- Poultry mortalities significantly reduced household income across the livelihood zones.

##### 3.1.3 Milk Production

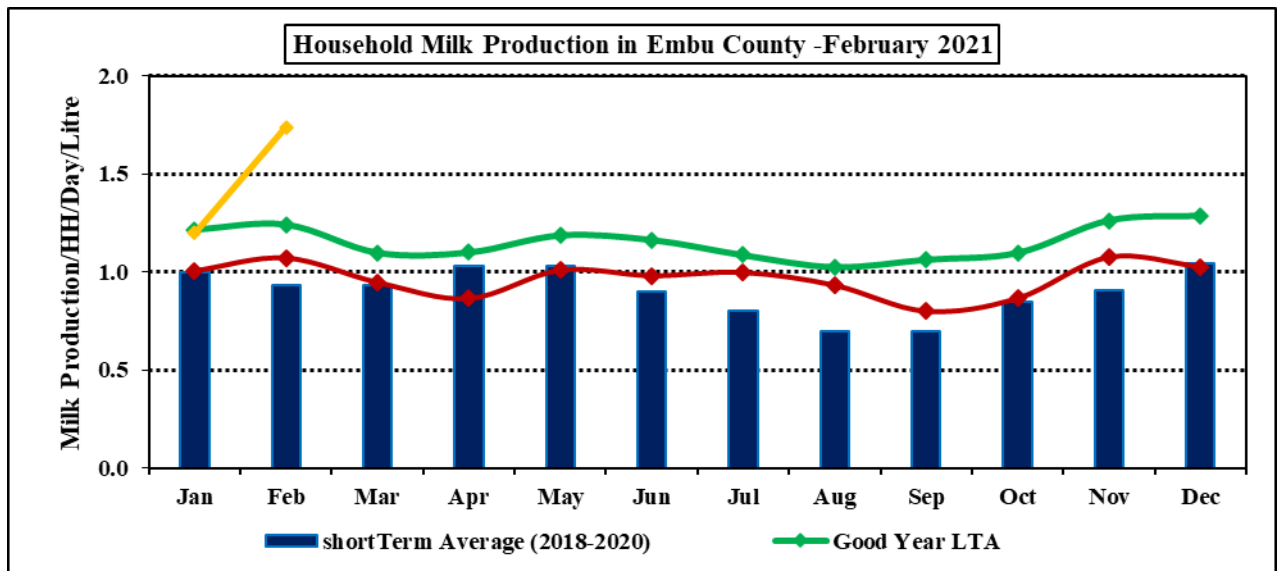


Figure 8: Milk production in Mbeere North and South sub counties

- The average household daily milk production increased by 31 percent from 1.2 litres in January to 1.74 litres in February.
- Households in Marginal Mixed Farming livelihood zone produced an average of 1.32 litres per day compared to 2.15 litres in Mixed Farming livelihood zone.
- The increase in milk production can be attributed to the increase in livestock birth rate.
- The current milk production is higher than the good year and dry year by 40 and 62.6 percent respectively.

### 3.2 Rain-Fed Crop Production

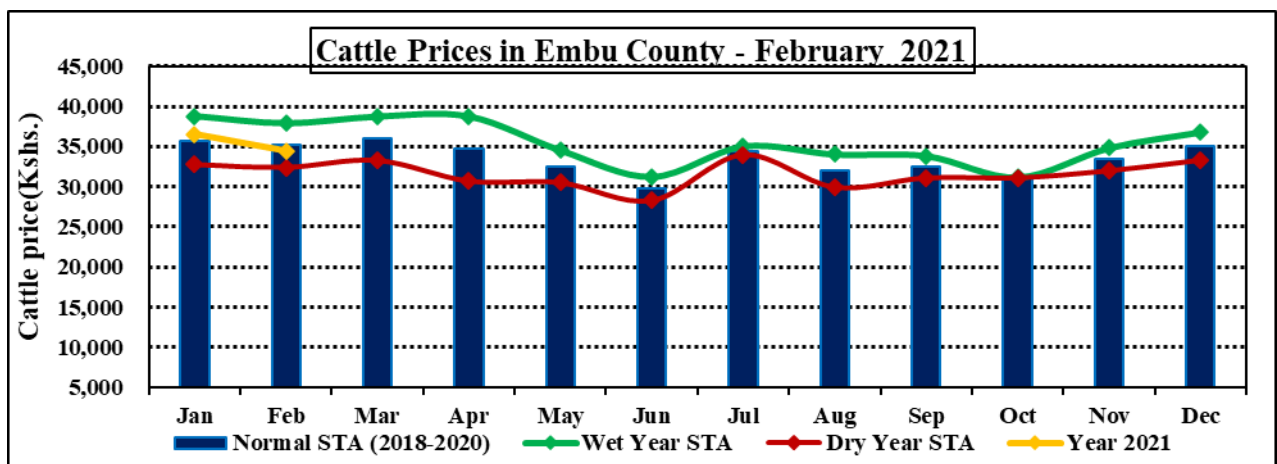
#### 3.2.1 Stage and Condition of food Crops

- Main crops planted during this season include beans, maize, sorghum, green grams and cowpeas.
- Harvesting has been ongoing in all livelihood zones. The marginal mixed farming livelihoods experienced poor harvest. This can be attributed to moisture stress suffered during germination stage.

## 4.0 MARKET PERFORMANCE

### 4.1 LIVESTOCK MARKETING

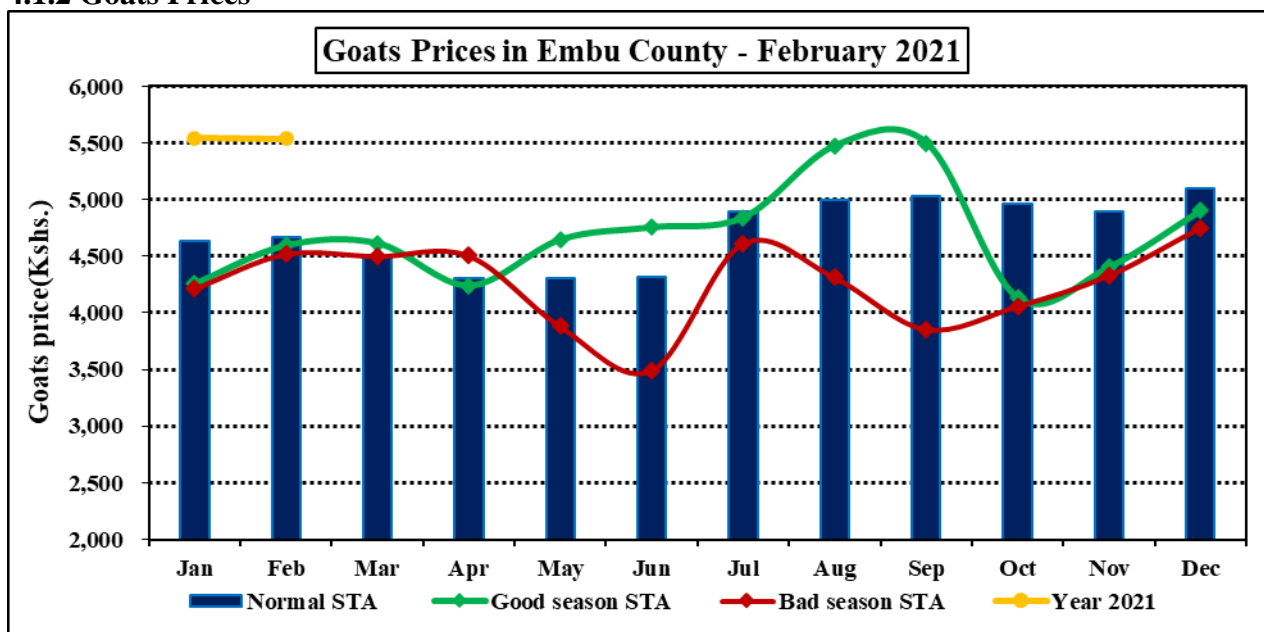
#### 4.1.1 Market Prices for Cattle



**Figure 9: Average Market prices for cattle in Mbeere sub counties**

- The average price of a medium size mature bull reduced by 5.8 percent from Ksh 36,500 in January to Ksh 34,454.
- Price reduction can be noted in all markets and this can be attributed to low demands and declining cattle body condition.
- Karaba market recorded the highest prices at Ksh 41,667 while Ishiara recorded the lowest at Ksh 31,333. Kiritiri livestock market recorded Ksh 33,800 respectively.
- The average price recorded in February was lower by 2 percent compared to the normal short term average price of Ksh 35,143.

#### 4.1.2 Goats Prices



**Figure 10: Average market prices for goats in Mbeere sub counties**

- The average market price for a medium sized two-year goat experienced remained stable at Ksh 5536 in February.
- The stability in price can be attributed to goat's body condition being good even though demand has declined.
- Price reduction can be noted in the Karaba livestock market.
- Ishiara livestock market in recorded the highest average price of Ksh 5817, while Kiritiri recorded the lowest at Ksh 4,500. Karaba market the following price Ksh. 5667 respectively. The difference in the prices is due to the market proximity to a larger population.
- The average price in February was 18.6 percent higher compared to the normal short-term average at of Ksh 4,667.

## 4.2 FOOD PRICES

### 4.2.1 Maize Prices



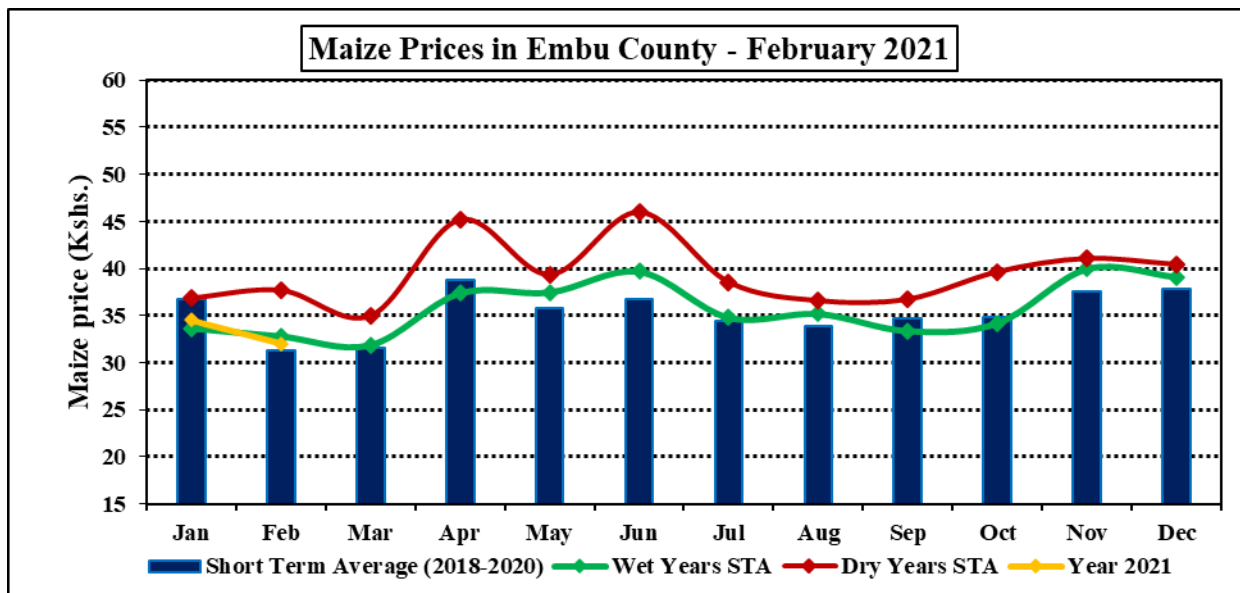


Figure 11: Average market prices for maize in Mbeere sub counties

- The average market price for a kg of maize reduced by 9 percent from Ksh 35 per kilogram in January to Ksh 32 per kg in February.
- The decline in maize prices is attributable to maize harvest experienced by households thus less dependence on market supply, we expect the prices to lower.
- Kiritiri cereals market recorded highest price of Ksh.36 per kilogram of maize while Ishiara and Gategi market recorded the lowest average price of Ksh.33 per kilogram. The other 2markets recorded the following prices Karaba Ksh 35 and Musingini Ksh 35. per kilogram of maize. The prices difference is due to the population size served by the market.
- The average maize price was 3 percent lower compared to the short-term average of Ksh 31.

#### 4.2.2 Posho (Local Maize Meal)

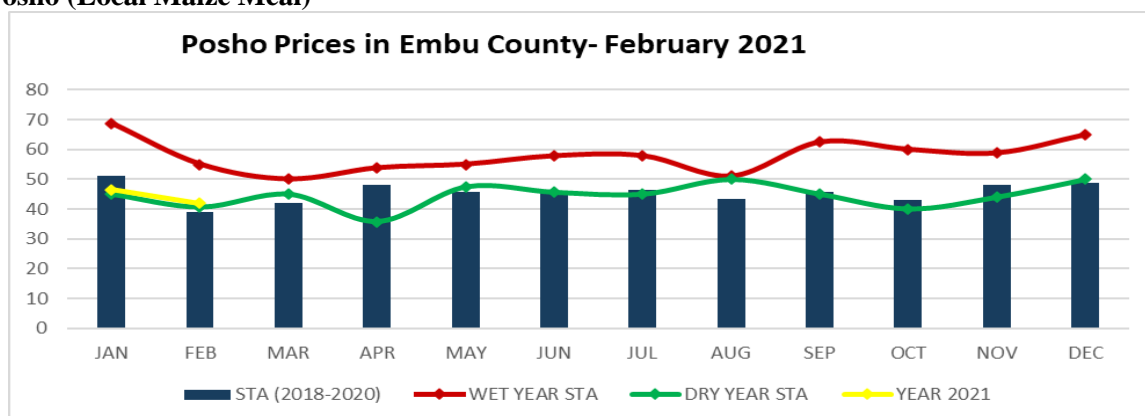


Figure 12: Average market prices for Posho in Mbeere sub counties

- The average price of *posho* decreased by 10 percent from Ksh 46.5 in January to Ksh 42 in February.
- The decrease in price can be attributed to maize harvest experienced, thus the reducing the price of 1 kg of maize.
- The recorded '*posho*' price was 7.6 percent higher compared to the short-term average price of Ksh 39 per kilogram.

#### 4.2.3 Beans Prices

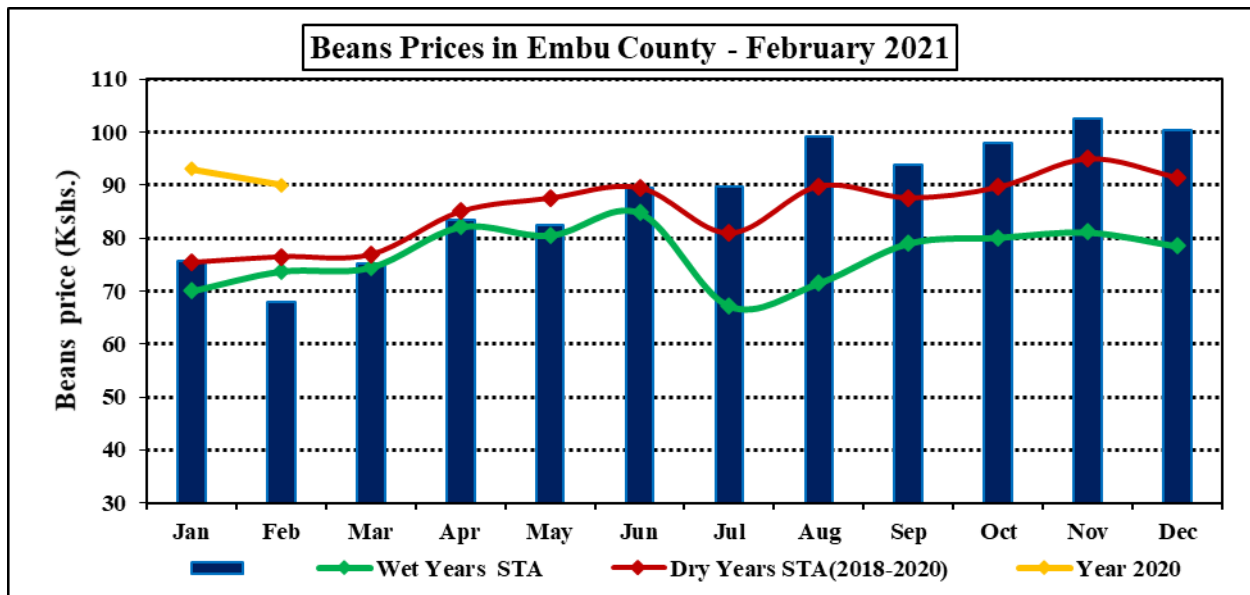


Figure 13: Average market prices for beans in Mbeere sub counties

- The average price of beans decreased by 3 percent from Ksh 93 in the month of January to Ksh 90 in January.
- The decrease in beans prices can be attributed to harvest experience thus households are relying less on the market.
- The recorded average price of beans was 18 percent higher than the dry year short-term average price of Ksh 77 per kilogram.

#### 4.2.4 Green Grams Prices

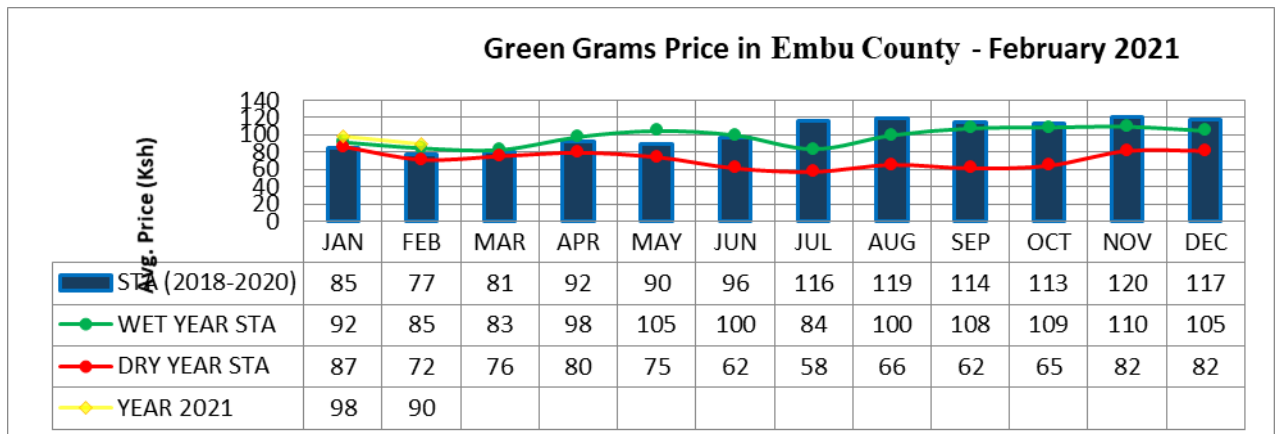


Figure 14: Average market prices for green grams in Mbeere sub counties

- The average price of green grams decreased by 7.7 percent from Ksh 98 per kg in the month of January to Ksh 90 per kg.
- The drop in green grams prices can be attributed to the harvesting that is ongoing thus households are relying less on the markets.
- The average price recorded was higher by 16.8 percent compared the short-term average though 8 percent higher than the short-term average of Ksh 77.

#### 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.

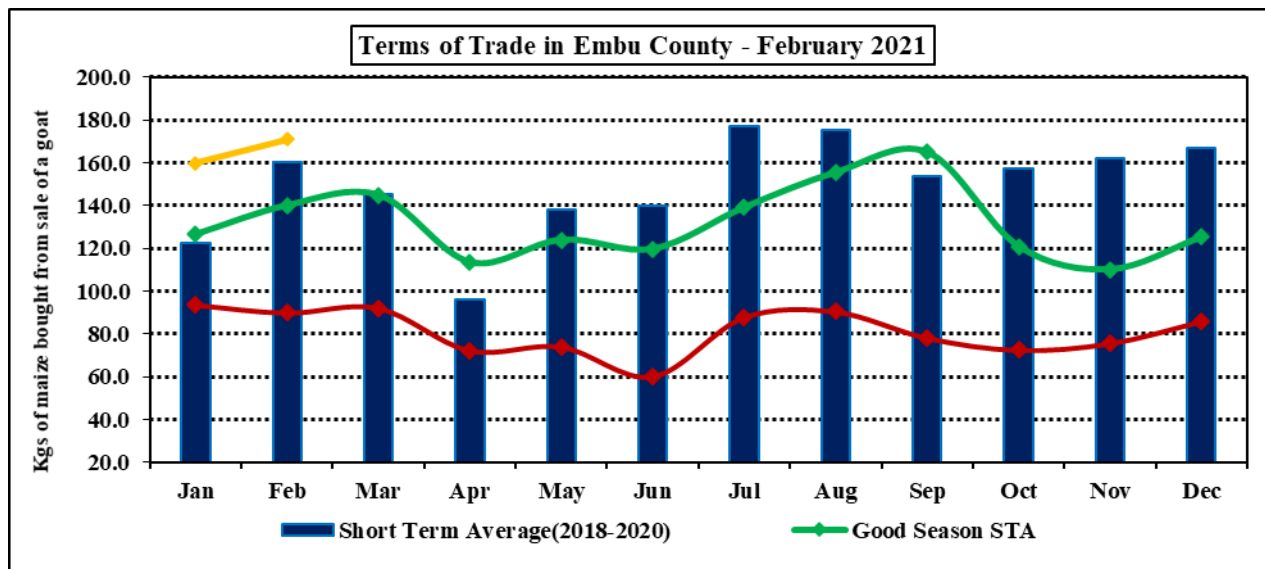


Figure 15: Terms of trade in Mbeere sub counties

- The Terms of trade increased by 7 percent from 160 kilograms of maize bought from sale of one goat in the month January to 172 in February.
- The decrease in the TOT can be attributed to stable goat prices and drop of maize prices during the month under review.
- The Terms of Trade recorded in the month was 7 percent higher compared to the good year short term average of 160.

## 5.0 FOOD CONSUMPTION AND NUTRITION STATUS

### 5.1 Milk Consumption

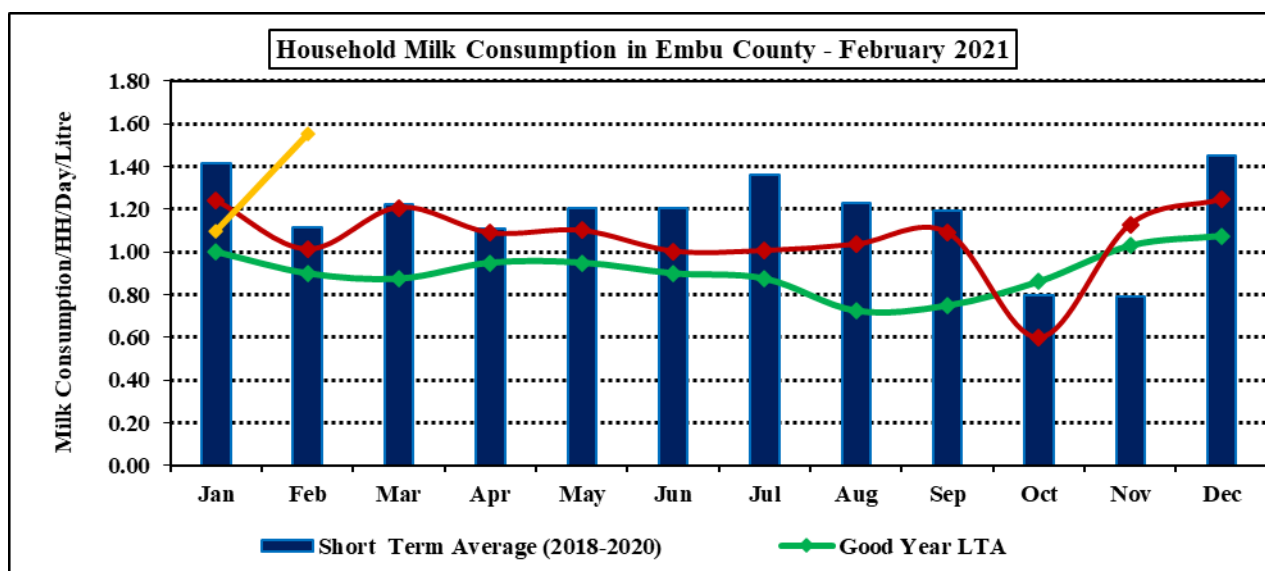


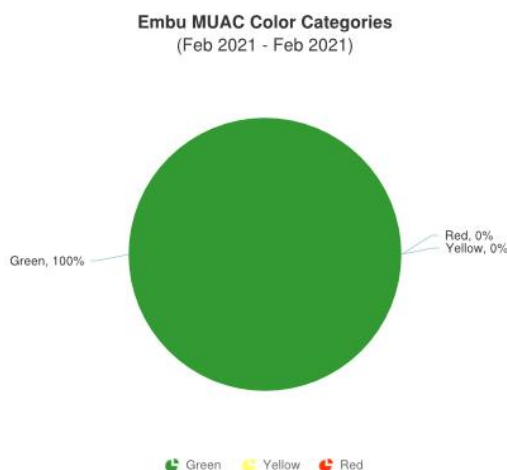
Figure 16: Household milk consumption in Mbeere North and South sub counties

- The average household daily milk consumption increased by 29 percent from 1.1 litres in January to 1.55 litres in February.
- Households in Marginal Mixed Farming livelihood zone produced an average of 1.32 litres per day compared to 1.9 litres in Mixed Farming livelihood zone.
- The increase in milk consumption can be attributed to increased milk production and reduced number of household members as children have gone back to school.

- The current milk production is higher than the short-term average and dry year by 39.6 and 53.5 percent respectively.

## 5.2 Nutritional Status of Children

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



**Figure 17: Nutritional status of sampled children in Mbeere sub counties(n=317)**

- All sampled children recorded normal MUAC measurements (measurements at the green band).
- This can be attributed to the improved feeding habits for children at household level whereby children to took three 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.

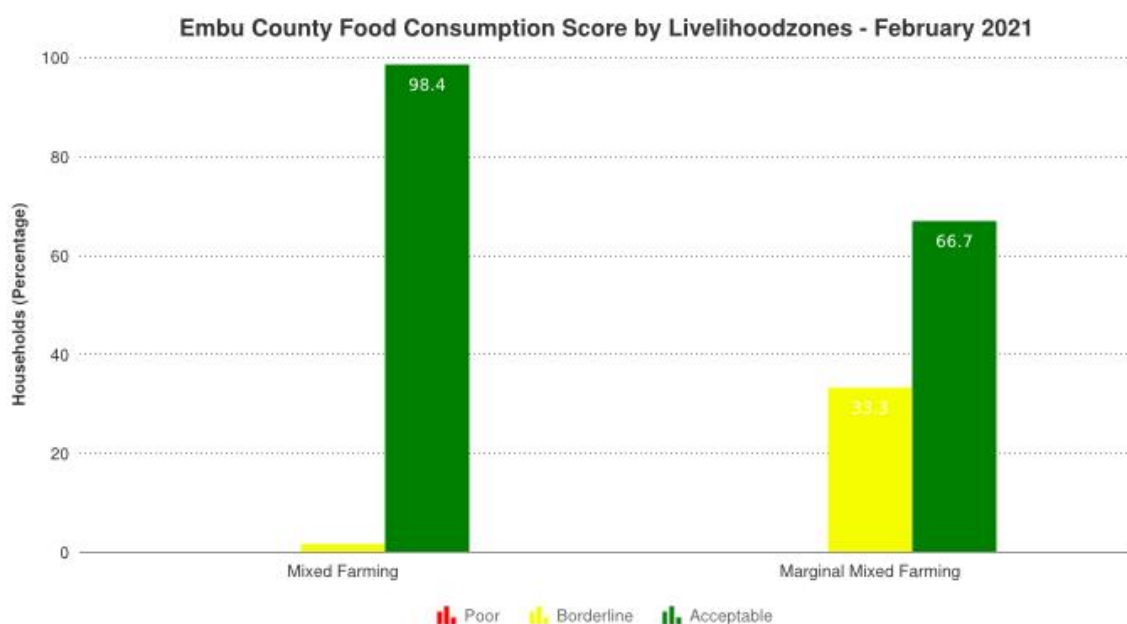


Figure 18: Household food consumption

- Out of the households sampled in the month of February, 83 percent had acceptable and 17 at borderline. There was an improvement in consumption as compared to last month in the sampled households at 80 percent acceptable and 20 percent at borderline.
- Mixed farming livelihood zones households had a better food consumption score at 98.4 percent acceptable and 2.6 percent borderline while households in marginal mixed farming livelihood zones scored 66.7 percent acceptable and 3.6 percent borderline due to the variation in food stocks.

#### 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.

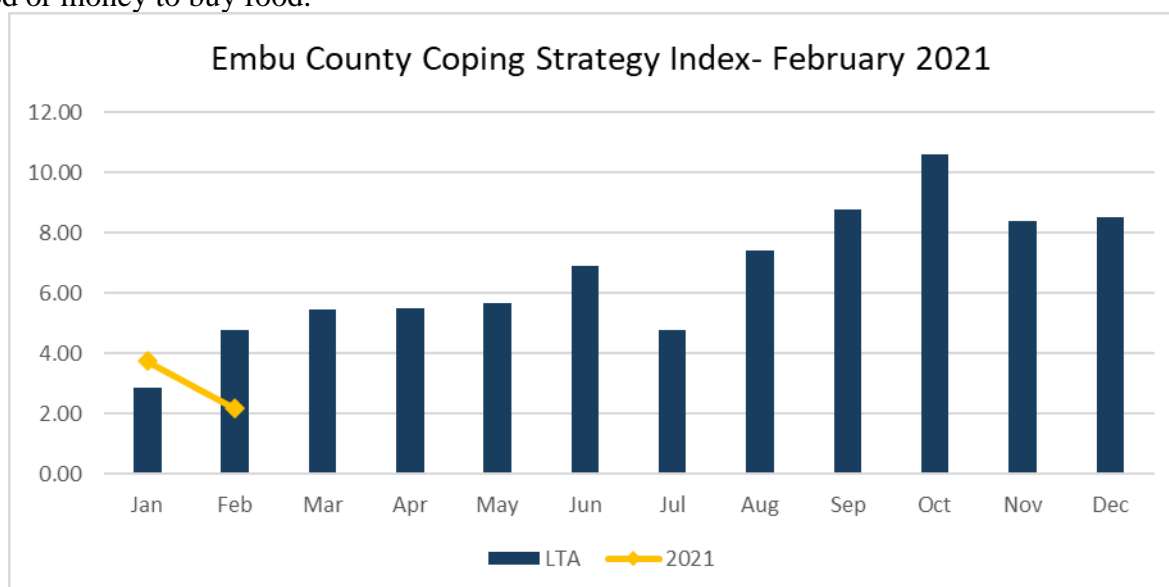


Figure 19: Coping Strategy Index

- The mean coping strategy index decreased by 24.8 percent from 3.75 in the month of January to 2.18 in the month of February.
- The drop in CSI index of the households coping can be attributable to the households improved coping strategy since there is availability of food stock and increased purchasing power after the harvest.
- Mixed farming livelihood zone houses maintained a stable coping strategy index of 1.8 compared the marginal mixed farming livelihood zones houses which was 5.7.

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

- The pasture conditions fair to good across both livelihood zones hence increased distances across the two sub counties. This has impacted negatively on cattle body condition. Crop residues from the maize stalks are being used a supplement feeds.
- The ongoing harvest has replenished the household stocks significantly and reduced reliance on markets for food needs.
- The reduction of food prices is a great reprieve to those households that may be depending on markets access food.
- The favourable terms of trade have improved the purchasing power of households and hence ability to meet their basic needs.

- The households are currently applying less severe food consumption based coping strategies.
- Milk production and consumption at household level during the month is high thus a positive impact on children health and nutrition.

## 6.0 CURRENT INTERVENTION MEASURES

### 6.1 Food Interventions

No food interventions were reported in the month under review across both sub counties.

### 6.2. Non-Food Interventions

Intervention	Implementer	Status of implementation	Beneficiaries
<ul style="list-style-type: none"> <li>• Routine Human Disease Surveillance</li> <li>• Routine health and nutrition interventions to children, pregnant and lactating mothers</li> <li>• Community MUAC monitoring and referral</li> </ul>	Embu County government  NDMA	Routine	Targeted groups in both sub counties  Targeted households in both sub counties
Construction of water harvesting structures at household level (ponds with cemented interiors)	Order of St. Augustine Ishiara Parish	ongoing	53 households in Kamarandi Ndurumori and Iriatune locations in Mbeere North sub county
Small holder solar irrigation project-using wter from River Muthonga	Order of st Augustine Ishiara Parish	Ongoing	120 households in Kamarandi and Muthanthara sub locations in Mbeere North sub county
Capacity building on agro-ecological farming practices-focused on reduced use of pesticides	Order of St. Augustine, Ishiara Parish	Ongoing	3,000 farmers in Kamarandi Ndurumori and Iriatune locations in Mbeere North sub county
Capacity building of farmers on natural resource management and climate change adaptation	NDMA	ongoing	Targeted community members in Makima, Kiambere, Muminji, Evurore, Kyeni South and Kagaari South

## 7.0 Food Security Prognosis (Three months)

- The market prices of food commodities may reduce further as the replenishing of household stocks continue in both sub counties.
- The body conditions of animals may deteriorate within the three dry months ahead as pasture and water availability may be low
- The distances to water sources for both households and livestock may increase further as the surface water sources continue to dry coupled with congestion at many borehole sources.
- The household food consumption is likely to remain acceptable to borderline as the household stocks may sustain households for 2-3 months.

## 8.0 SECTOR RECOMMENDATIONS

Sector	Recommended Activities	Target area	Proposed Implementer
<b>AGRICULTURE</b>	<ul style="list-style-type: none"> <li>• Capacity building of farmers on post harvest management</li> <li>• Provision of storage sacks, drying equipment and aflatoxin testing kits</li> <li>• Support to common interest groups for aggregation of produce and linkage to markets</li> </ul>	Farmer groups in both sub counties	County Department of Agriculture  Hand in Hand Eastern Africa NGO  KCEP-CRAL project  Other stakeholders
<b>LIVESTOCK AND VETERINARY</b>	<ul style="list-style-type: none"> <li>• Pasture conservation.</li> <li>• Feed formulation and supplementataion</li> <li>• Mass De-worming of livestock and Vaccination</li> </ul>	Both sub counties	County Department of Livestock Production and Veterinary services  Other stakeholders
<b>PUBLIC HEALTH AND NUTRITION</b>	<ul style="list-style-type: none"> <li>• Procurement and distribution of water treatment chemicals.</li> <li>• Nutritional outreaches for hard to reach areas.</li> <li>• Conduct the SMART survey</li> </ul>	Both sub counties	County Department of Health services  NDMA Nutrition International Other stakeholders
<b>WATER</b>	<ul style="list-style-type: none"> <li>• Rehabilitataion of strategic boreholes</li> <li>• Desilting of earth dams</li> <li>• Sensitization on water resources management</li> <li>• Supply of water to needy schools</li> </ul>	Marginal mixed farming areas	County Department of water  Ministry of Education (MOE)  Other stakeholders