National Drought Management Authority
EMBU (MBEERE) COUNTY
DROUGHT EARLY WARNING BULLETIN FOR OCTOBER 2020

A Vision 2030 Flagship Project

KENYA VISION 2030

OCTOBER EARLY WARNING PHASE

Drought Status: NORMAL

Shughuli za kawaida

Early Warning (EW) Phase Classification

Livelihood Zone	Phase	Trend
Mixed Farming (MF)	Normal	Improving
Marginal Mixed Farming (MMF)	Normal	Improving
County (Mbeere Only)	Normal	Improving
Biophysical Indicators	**Value**	**Normal**
Rainfall (% of Normal)	97.9	80-120
VCI-3 Month	60.8	>35
Forage condition	Fair/Poor	Fair
Production Indicators	**Value**	**Normal**
Stage and condition of crop	Germination/planting	Germination/planting
Livestock Body Condition	Fair/Poor	Fair
Milk Production	0.3	0.92
Livestock Migration Pattern	None	None
Livestock deaths	None	None
Access Indicators	**Value**	**Normal**
Terms of Trade	158	84
Households distance to water (km)	5.9	6.0
Livestock return distance to water (km)	6.5	7.6
Milk Consumption	0.3	0.8
Utilization Indicators	Value	Normal
CSI	3.24	<8.4
MUAC (proportion in green band)	100	99.7
FCS (% Borderline and Poor)	25	36

Drought Situation & EW Phase Classification

Biophysical Indicators
Rainfall: The onset of the short rains was timely in the third and fourth week of October. The distribution was poor in both and time.

Vegetation Condition: The forage condition in both livelihood zones remain poor to fair in both livelihood zones.

Water sources: Rivers, boreholes and traditional river wells were the main water sources. the surface water sources in the marginal mixed farming zone remained dry during the month of October consequently leading to long distances in search of water for both livestock and for household use

Socio Economic Indicators (Impact Indicators)

Production indicators: The body condition for cattle in both livelihood zones remained poor to fair due to long trekking distances in search of pasture and water. This led to reduction in milk production.

Access indicators: The average distance to water sources for both households and livestock increased due to surface water sources remaining dry. The prices of beans and green grams remained stably high as result of need for planting seeds. Terms of Trade remained stable also due to stability in maize and goat price.

Utilization: All the children sampled (n=321) recorded normal MUAC measurements attributable to improved feeding habits. The food consumption score proportions stood at 77 percent acceptable and 23 percent on borderline. The coping strategy index remained stable compared to previous month at 3.21 occasioned by improvement in household purchasing power.

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

- The onset of the short rains season was timely in the third week of October for the mixed farming zones and fourth week for the marginal mixed farming zones.
- During the reporting month, Mbeere sub counties received rains for an average of 9 days only.
- The minmal rains were experienced in the marginal mixed farming livelihood zone in first and second dekads as compared to the mixed farming zone but the rains intensified across both livelihood zones in the third dekad.
- The rains recorded during the period under review were erratic with most parts of the marginal mixed farming zone receiving rains for three to five days.
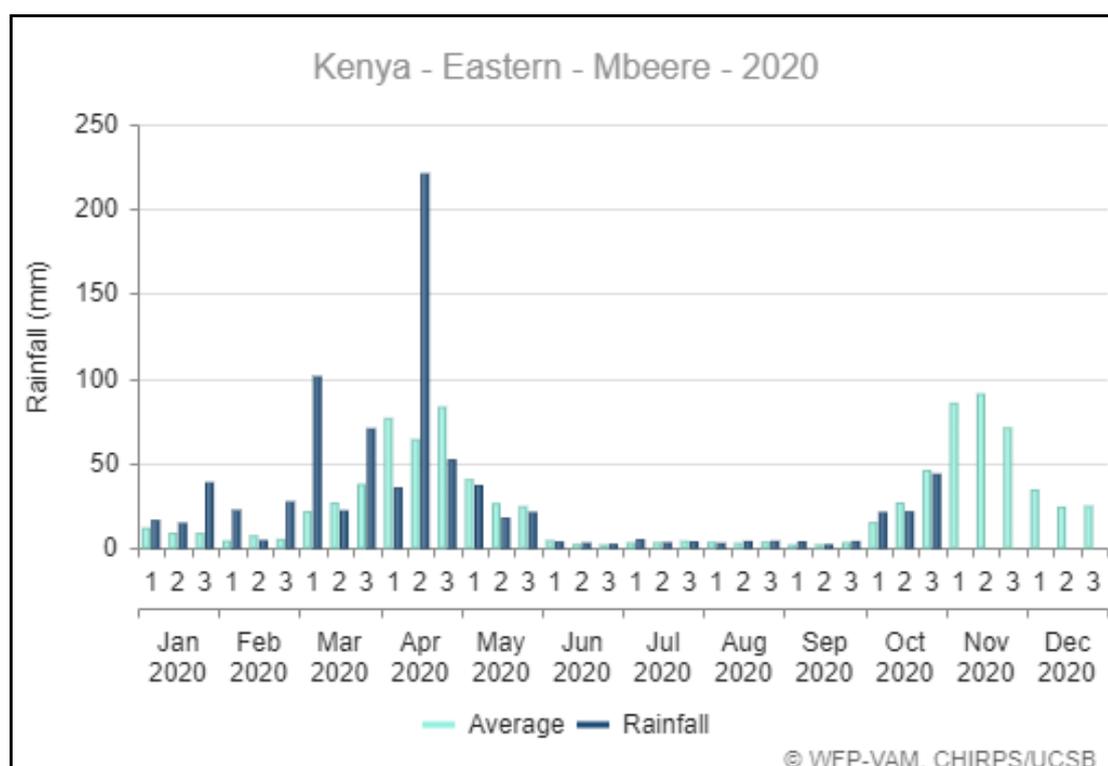

Figure 1: Rainfall performance in Mbeere North and South Sub Counties

1.2 Amount and spatial distribution of rainfall

- During the reporting month, both livelihood zones received an average amount of rainfall of 28.0 mm which was normal at this time of the year.
- Most parts of Mbeere North sub county received significant amounts of rainfall with Kianamu rainfall station in Nthawa ward recording total rainfall amount of 158.4 mm and Gitii rainfall station in Ngura (part of Kanyambora location) recording a total of 119.8 mm of rains.
- Rainfall stations in Mbeere Sourth sub county recorded lower total rainfall amonts in the month of October with Gacabari station recording 89 mm of rainfall, Makima station with 46 mm of rainfall, Kirie and Mayori stations recorded 33.4 mm and 32.2 mm of rainfall respectively.

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 but decreased marginally from 65.8 in the month of September to 60.8 in the reporting month.
- The decrease was occasioned by dry weather condition in the first and second dekads of the month of October.
- Mbeere South Sub County recorded a higher three-monthly VCI of 62.0 as compared to Mbeere North Sub County that recorded three-monthly VCI of 59.6 (Figure 2a and 2b).
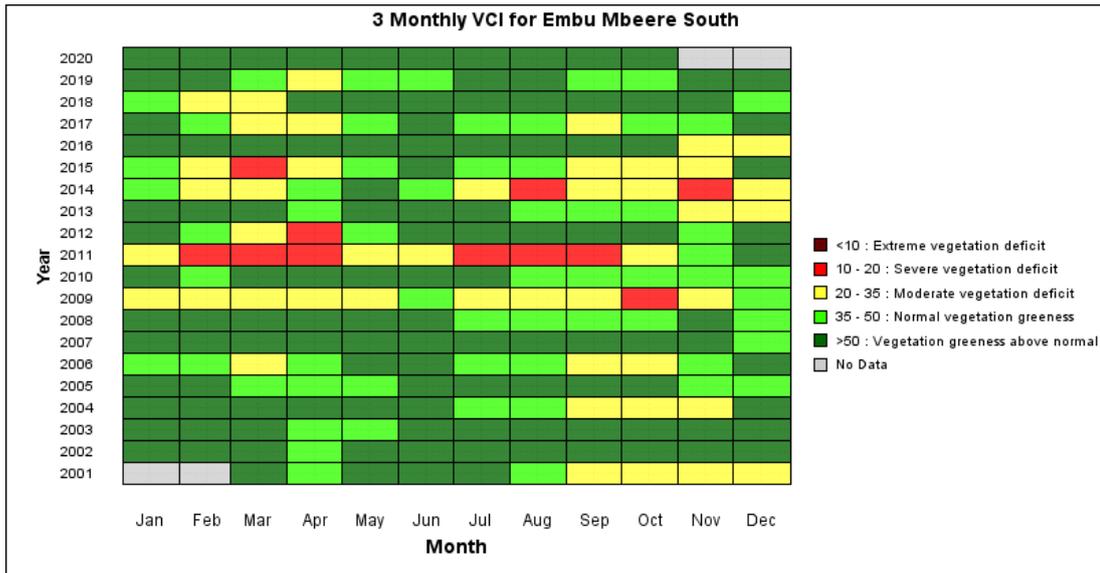
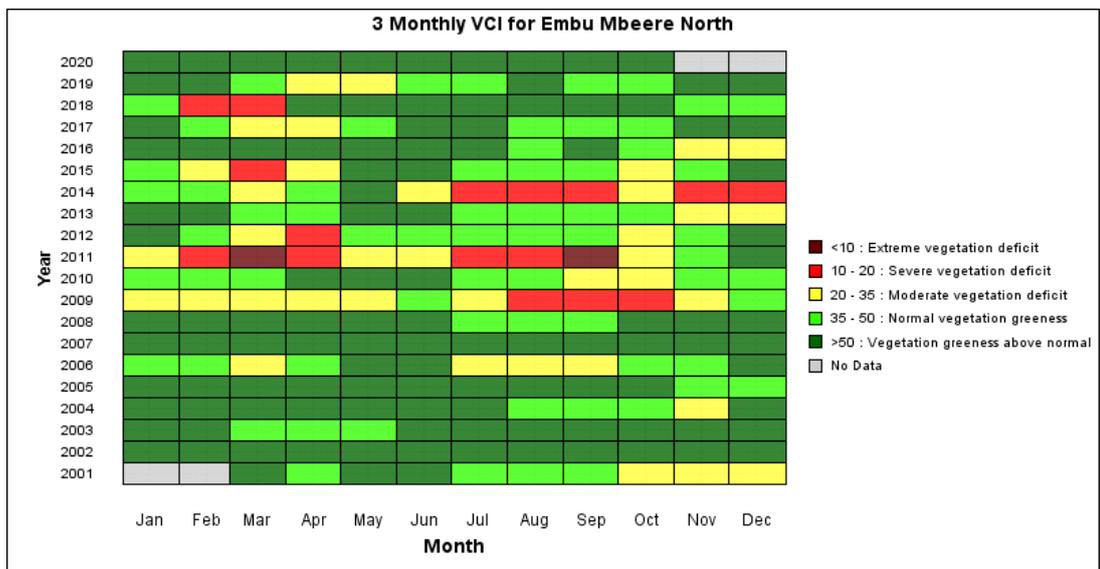*Figure 2a: 3-monthly VCI for Mbeere South sub- county [Source: MODIS]*

Figure 2b: 3-monthly VCI for Mbeere North sub county [Source: MODIS]
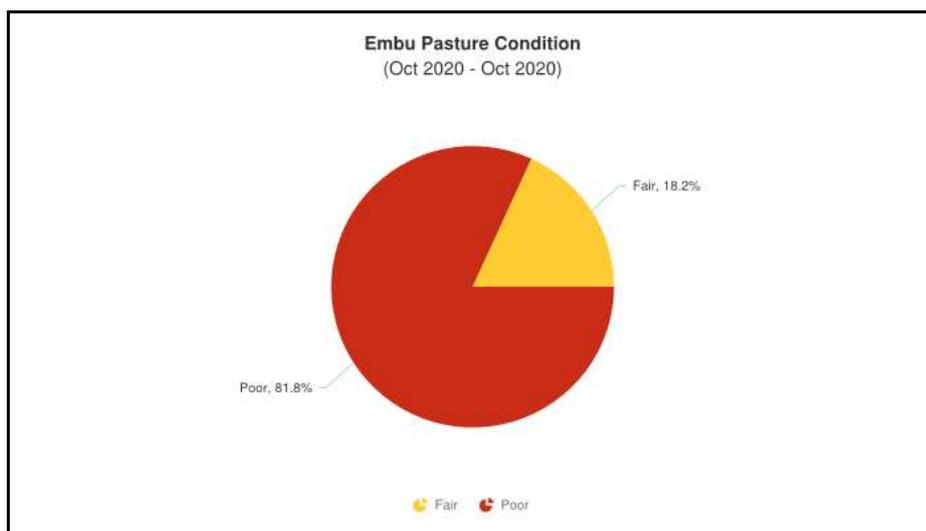
2.1.2 Pasture Condition

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

- The pasture condition deteriorated further in both livelihood zones with the areas with poor pasture increasing by 9 percent compared to the previous month to 81.8 % in the reporting month. In the mixed farming livelihood zone pockets in Kanyuambora and Mwea wards recorded fair pasture condition while the entire marginal mixed farming zone and parts of mixed farning zone recorded poor pasture condition.
- The deterioration in pasture condition can be attributed to dry weather conditions in the reporting month.
- Pasture condition is expected to improve due to regeneration caused by the ongoing short rains.
- The available pasture after regeneration is expected to last for four to six months across both livelihood zones.
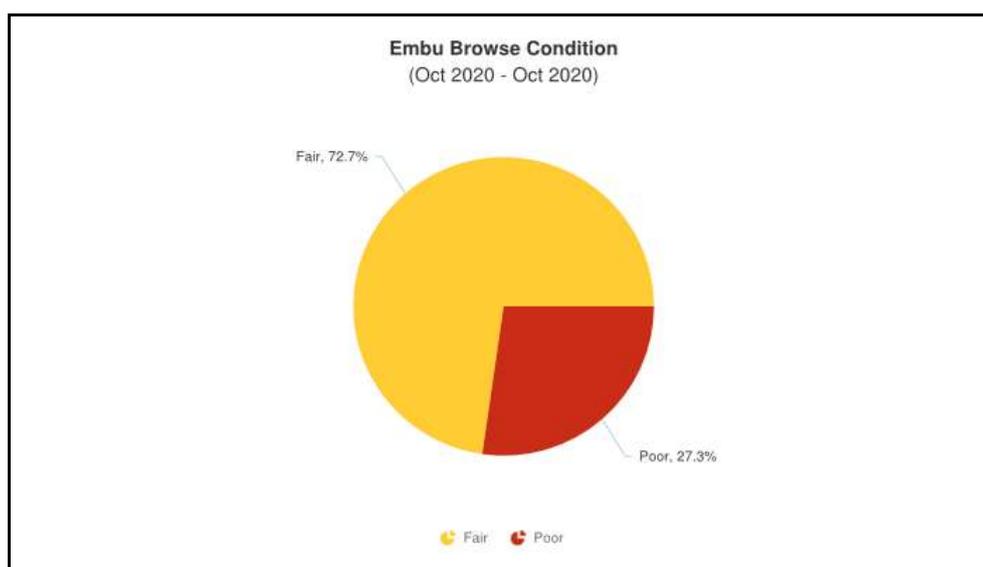
2.1.3 Browse Condition

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

- The browse condition deterioratyed further in the month of October as the dry weather condition prevailed in the better part of the month
- The browse condition is expected to improve as the regeneration sets in occasioned by the short rains.
- The current browse condition is normal at this time of the year.

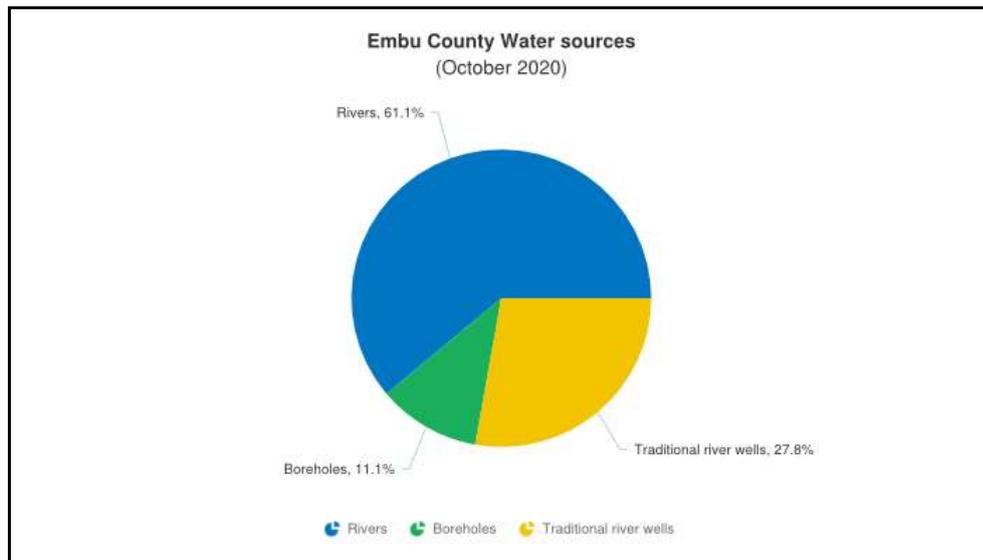## 2.2   WATER RESOURCE
2.2.1 Water Sources

Embu County Water sources
(October 2020)

Rivers, 61.1%

Traditional river wells, 27.8%

Boreholes, 11.1%

● Rivers ● Boreholes ● Traditional river wells

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

- The major water sources for households across both livelihood zones in the month of October were rivers, boreholes, traditional river wells.
- The proportion of households using river water marginally reduced as some households resorted to using water from roof catchment since some rains were experienced across both livelihood zones.
- The proportion of households that used traditional river wells increased by 10 percent as households in the marginal mixed farming zone continued to experience water stress occasioned by minimal rains recorded in the area during the month under review.
- The surface and ground water sources are expected to be recharged as the rains intensify and continue during short rains period.

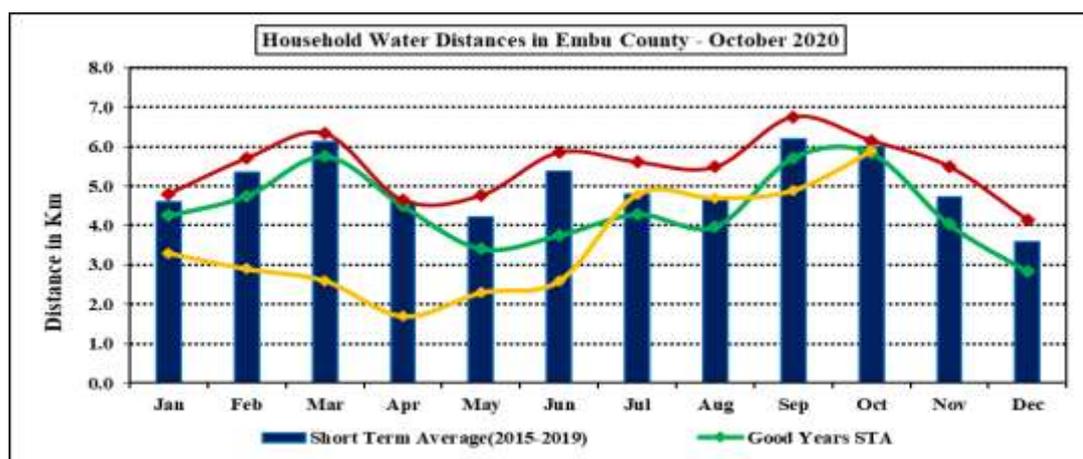### 2.2.2 Household Water Access and Utilization

Household Water Distances in Embu County - October 2020

Distance in Km

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

■ Short Term Average(2015-2019)   ◆ Good Years STA

Figure 6: Household average distances to water sources

- The average household return distance to water sources increased from 4.9 km in recorded the previous month to 5.9 km in the month of October.
- The increase was occasioned by water stress in the marginal mixed farming livelihood zone due to drying of the earth dams and mechanical breakdowns of strategic boreholes
- Marginal mixed livelihood households trekked for longer average distance of at 8.4 compared to the mixed farming livelihoods that trekked for an average of 3.8 km.

- The recorded average return distance to water sources for households was normal at this time of the year compared to the short term average of 6.0 km .

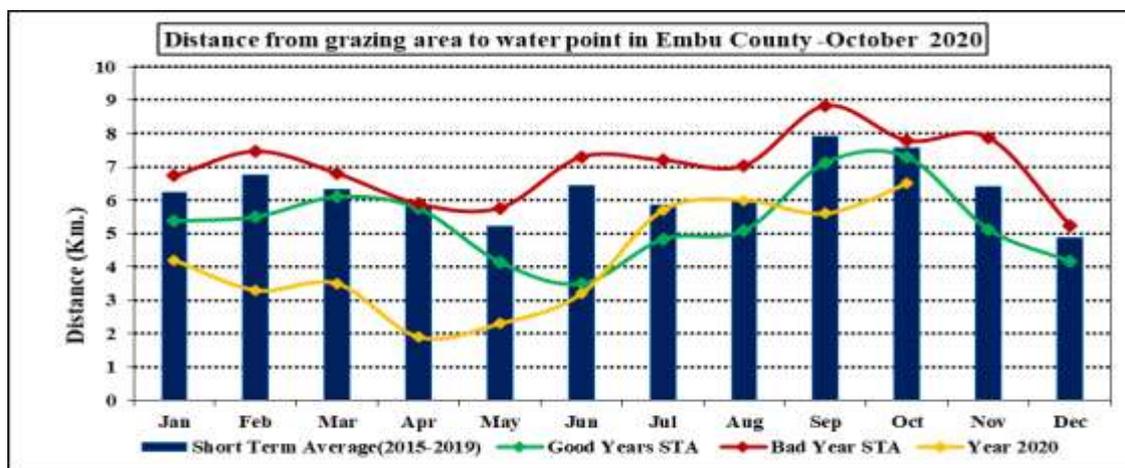**2.2.3 Livestock access to water from grazing areas**

Figure 7: Livestock average return distances to water sources

- The average return distance to water sources from grazing areas increased by 14 percent from 5.6 km in September to 6.5 km in the month of October
- The increase was attributed to drying of surface water sources in many parts of the marginal mixed farming zone and depletion of pasture leading to livestock moving to areas of wetlands and along rivers.
- Average livestock trekking distance in the marginal mixed livelihood was higher at 9.6 Km compared to the mixed farming livelihood zone at 4.0 km.
- The current average return distance was 14 percent lower compared to the short term average distance of 7.6 km.

3.0 PRODUCTION INDICATORS
3.1 LIVESTOCK PRODUCTION
3.1.1 Livestock Body Condition

- The body condition for cattle remained fair to poor in both livelihood zones during the month under review .
- Cattle in marginal mixed zones were classified under streseed body condition level with the 12th and 13th ribs visible while in mixed farming livelihood zone cattle were in moderate classification level. This can be attributed to long distances trekked in search of pasture and water in the marginal areas as compared to the mixed farming areas.
- The body condition for goats remained fair in mixed farming livelihood zone due to the availability of browse while in the marginal mixed marginal zones it ranged from fair to poor due to the deteriorating conditions of browse.
- The body condition for both large and small stock is expected to improve during this rainy season occasioned by availability of pasture and water.

3.1.2 Livestock Diseases

- New castle disease (NCD) remains an endemic poultry disease across both livelihood zones.
- The county department of veterinary services continues with routine disease surveillance.
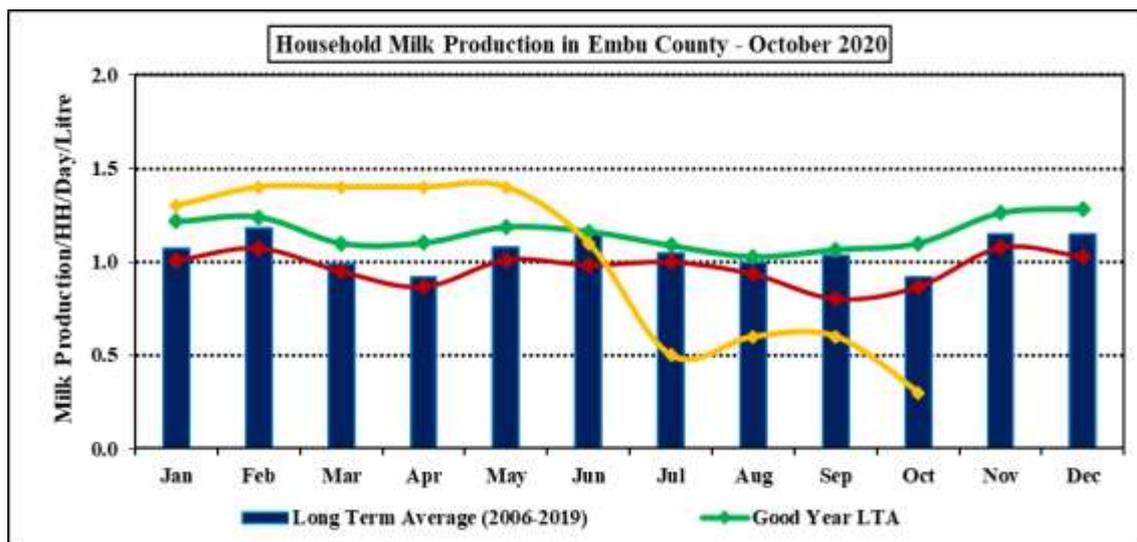
3.1.3 Milk Production

Household Milk Production in Embu County - October 2020

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

- The average household daily milk production decreased further to 0.3 litres.
- The decerase was attributed to long distances to water and to pasture fields and the poor condition of pasture across both livelihood zones.
- The milk produced was significantly below the short term average of 0.9 litres per household per day.

3.2 Rain-Fed Crop Production
3.2.1 Stage and Condition of food Crops

- Early planted maize, beans and millet in both sub counties are in the germination stage of development.
- Some farmers across Nthawa ward and part of Kanyombora in Evurore ward were condutcing first weeding for early planted beans
- Planting was on going during the month under review in both livelihood zones.

4.0 MARKET PERFORMANCE
4.1 LIVESTOCK MARKETING
4.1.1 Market Prices for Cattle

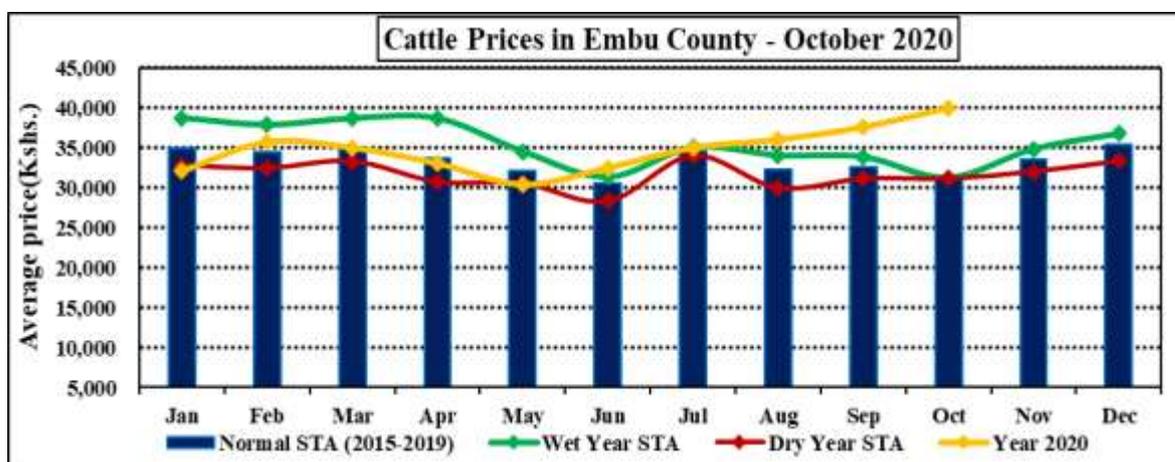**Cattle Prices in Embu County - October 2020**

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

- The average price of a medium size mature bull increased marginally from Ksh 37,600 recored in the month of September to Ksh 40,000 in the month of October .

- The slight increase in average cattle price is attributed to reduced market supply occasioned by farmer speculation for higher prices during the short rains period when body conditions will improve significantly.
- Makutano livestock market recorded the highest average price for cattle of Ksh. 51,300 followed by Ishiara livestock market at Ksh 37,700 while Kiritiri livestock market recorded the lowest average cattle price of Ksh 30,000.
- The average price recorded in October was 28% higher than the normal short term average price of Ksh 31,200 by and significantly above the average price recorded in the bad seasons.
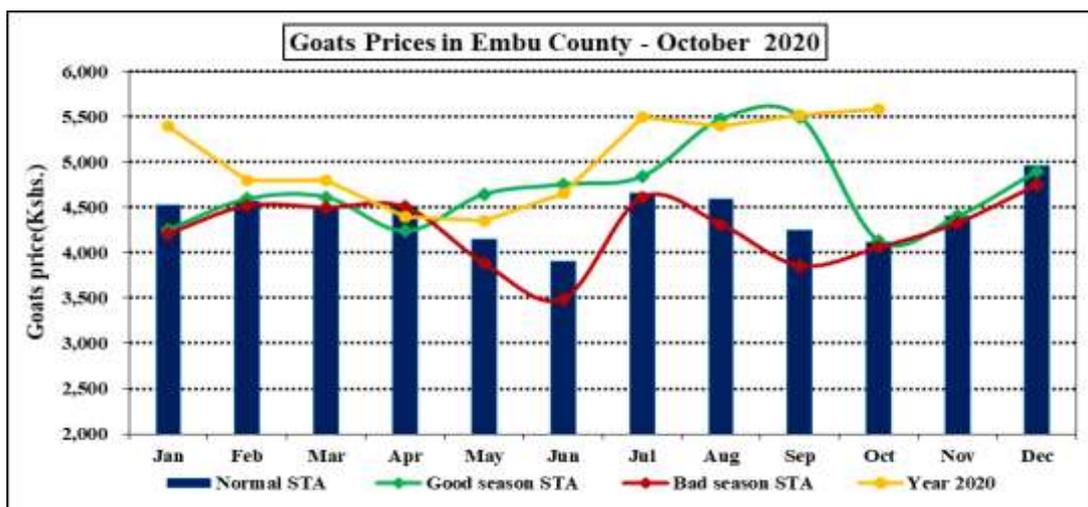
4.1.2 Goats Prices

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

- The average market price for a medium sized two-year goat remained stable as compared to the previous month at Ksh 5,600 in the month of October.
- The stability is attributed to stable fair body conditions in both livelihood zones.
- Makutano livestock market in recorded average price of Ksh 5,800, Kiritiri and Ishiara livestock markets recorded an average price of Ksh. 5,500 and Ksh. 5,520 respectively.
- The average price in October was 36 % above the normal short term average of Ksh 4,100.
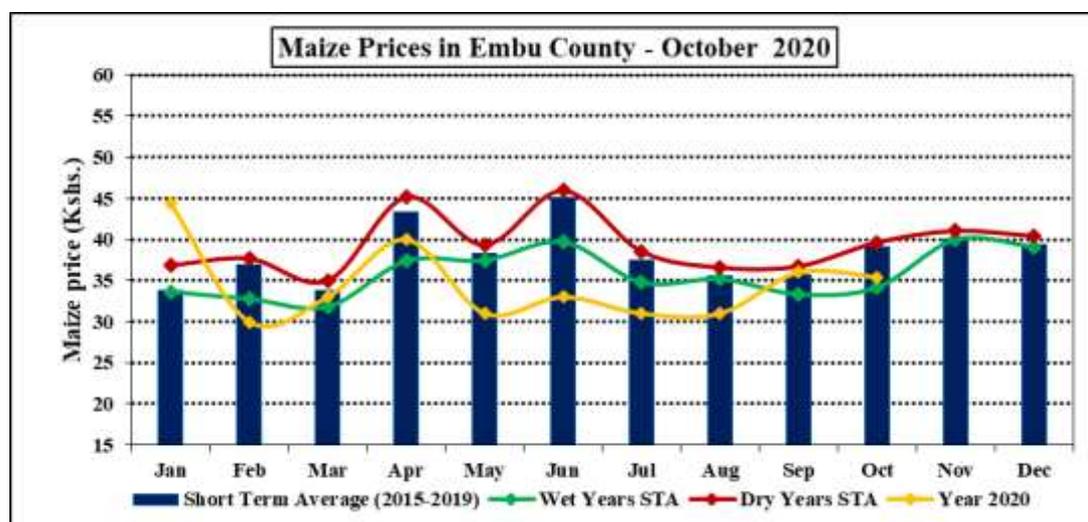
4.2 FOOD PRICES
4.2.1 Maize Prices

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

- The average market price for maize remained stable at Ksh 35 per kilogram.

- The stability in maize prices is attributable maize stocks held by households especially in the mixed farming zone and millet stock held by majority of the households in the marginal mixed farming zone thus less dependence on market supply.
- Kiritiri cereals market recorded highest price of Ksh. 40 per kilogram of maize while Ishiara market recorded an average price of Ksh.34 per kilogram and Makutano cereals market recorded least average price of Ksh. 36 per kilogram of maize.
- The average maize price was 10 percent lower than the short term average of Ksh 39.
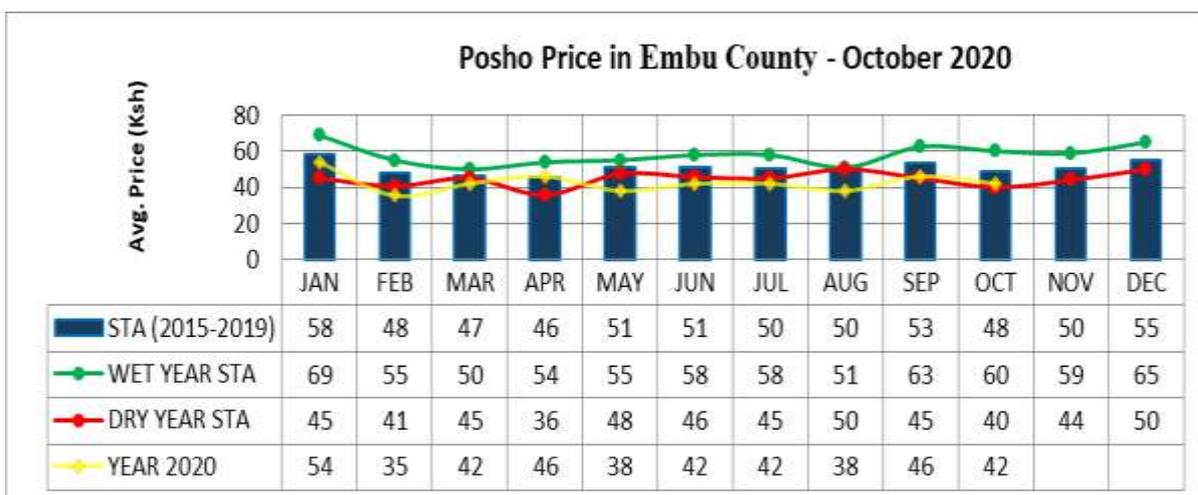
4.2.2 Posho (Local Maize Meal)

Posho Price in Embu County - October 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
STA (2015-2019)	58	48	47	46	51	51	50	50	53	48	50	55
WET YEAR STA	69	55	50	54	55	58	58	51	63	60	59	65
DRY YEAR STA	45	41	45	36	48	46	45	50	45	40	44	50
YEAR 2020	54	35	42	46	38	42	42	38	46	42		

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

- The average price of *posho* remained stable in the month under review at Ksh 42 per kilogram.
- The stability can be attributed to the stability in maize prices in the major markets within Mbeere sub counties
- The recorded '*posho'* price was 12.5% lower than the short term average price of Ksh 48 per kilogram.

4.2.3 Beans Prices

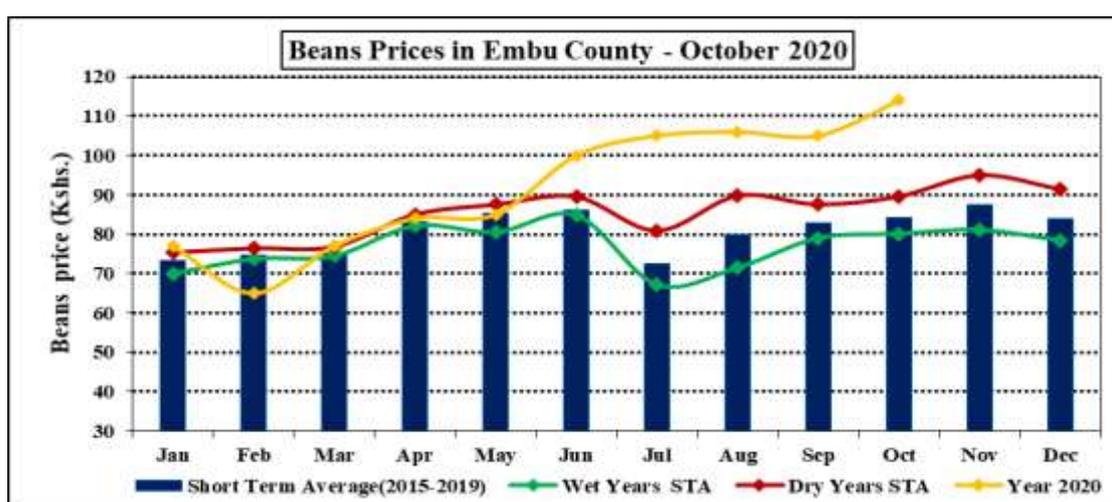**Beans Prices in Embu County - October 2020**

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

- The average price of beans increased by 9 percent from Ksh 105 in September to Ksh 114 per kilogram in trhe month of October .
- The increase in beans price was due to increased demand occasioned by increased household need for beans during this planting season.

- Kiritiri market recorded the highest beans price at 125 per kilogram while Kiritiri and Makutano markets recorded average price of Ksh. 123 and Ksh. 90 respectively for one kilogram of beans.
- The recorded average price of beans 36 % higher than the short term average price of Ksh 84 per kilogram.
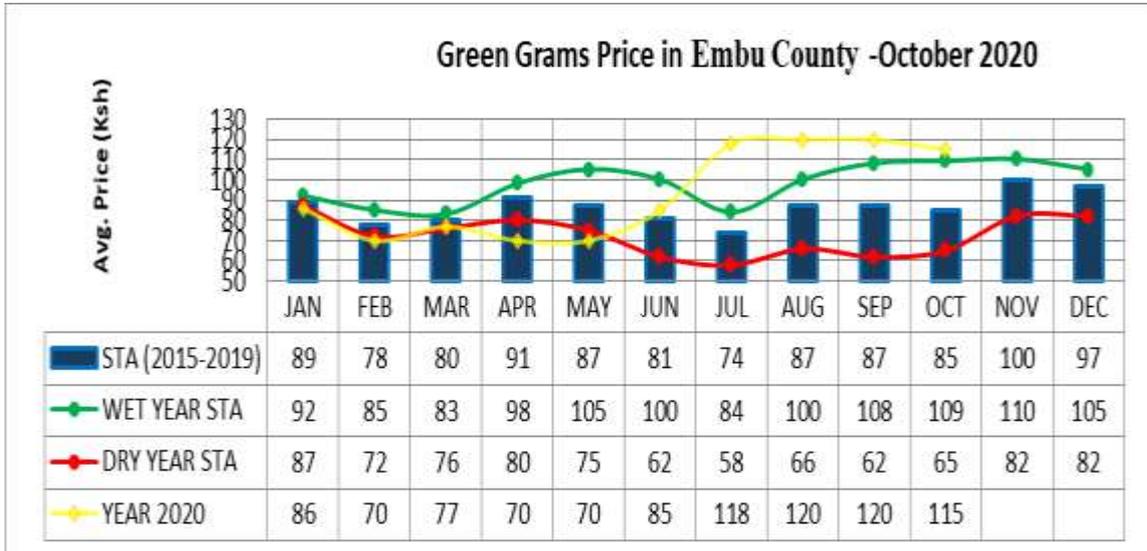
4.2.4 Green Grams Prices

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

- The average price of green grams remained stable in the month of October as compared to the previous month at Ksh 115 per kilogram.
- The stably high price is attributable to high household demand for green gams at this planting season.
- The average price recorded was 18% above the short-term average price of Ksh 85 per kilogram.

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.
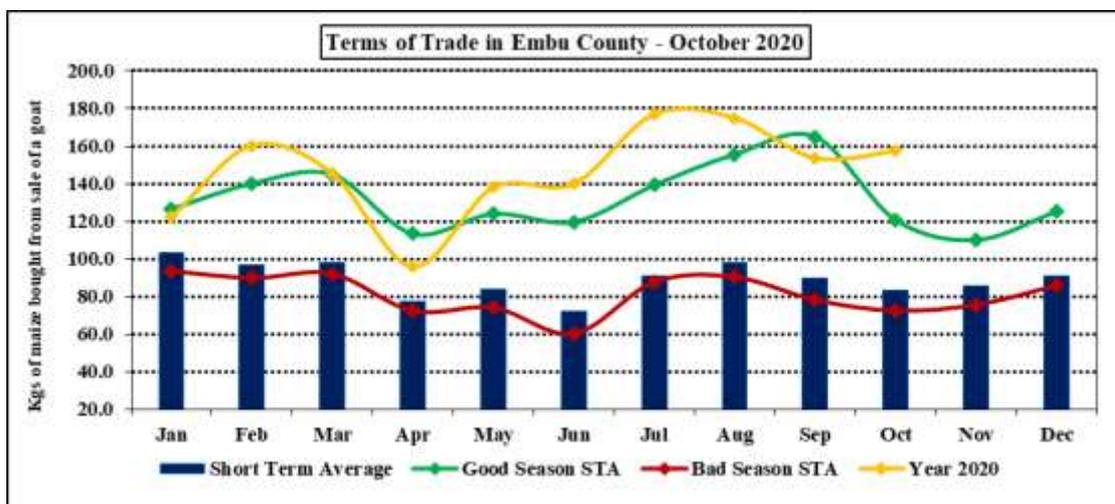

Figure 15: Terms of trade in Mbeere sub counties

- The Terms of Trade remained stable compared to the previous month at 158 kilograms of maize bought from sale of one goat in the month October.

- The stability can be attributed to stability in both goat and maize prices during the month under review.
- The Terms of Trade recorded in the month was 87 percent above the short term average of 84.

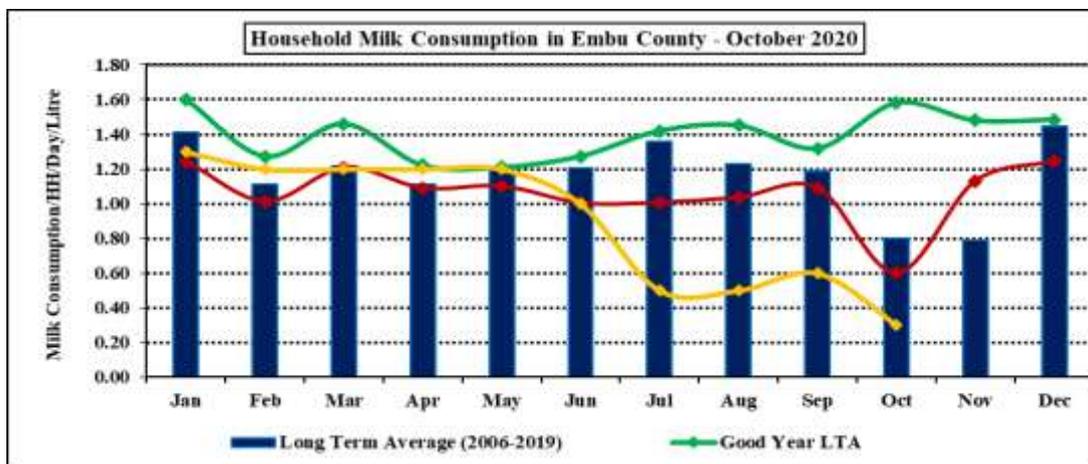## 5.0 FOOD CONSUMPTION AND NUTRITION STATUS
5.1 Milk Consumption

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

- Household milk consumption decreased from 0.6 litres per day in September to 0.3 litres in the month of October.
- The decreased in milk consumption is attributable to reduction in milk production during the month under review as the dry conditions continued.
- The current average household milk consumption is significantly lower than the long term average consumption.

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.
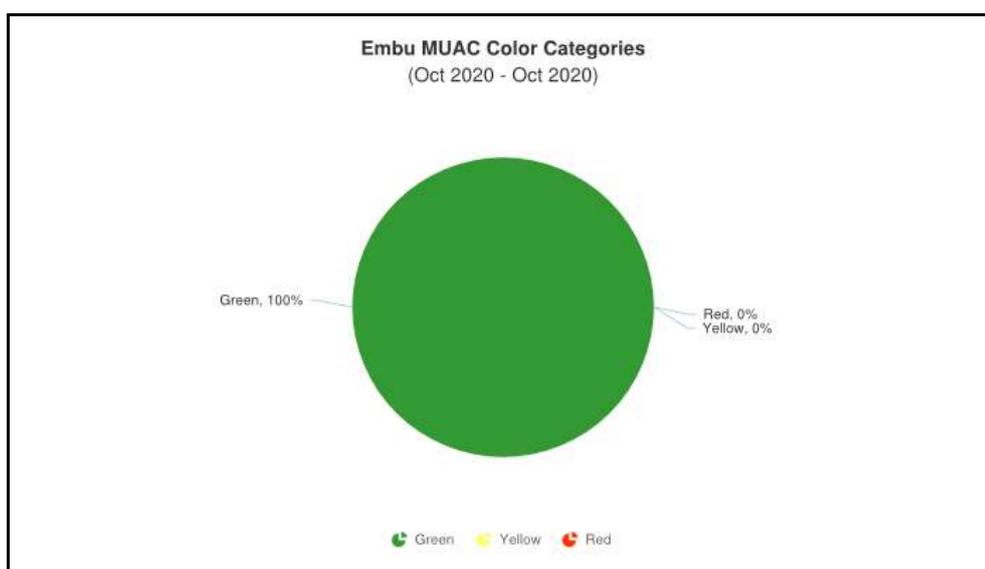

Figure 17: Nutritional status of sampled children in Mbeere sub counties(n=325)

- 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.
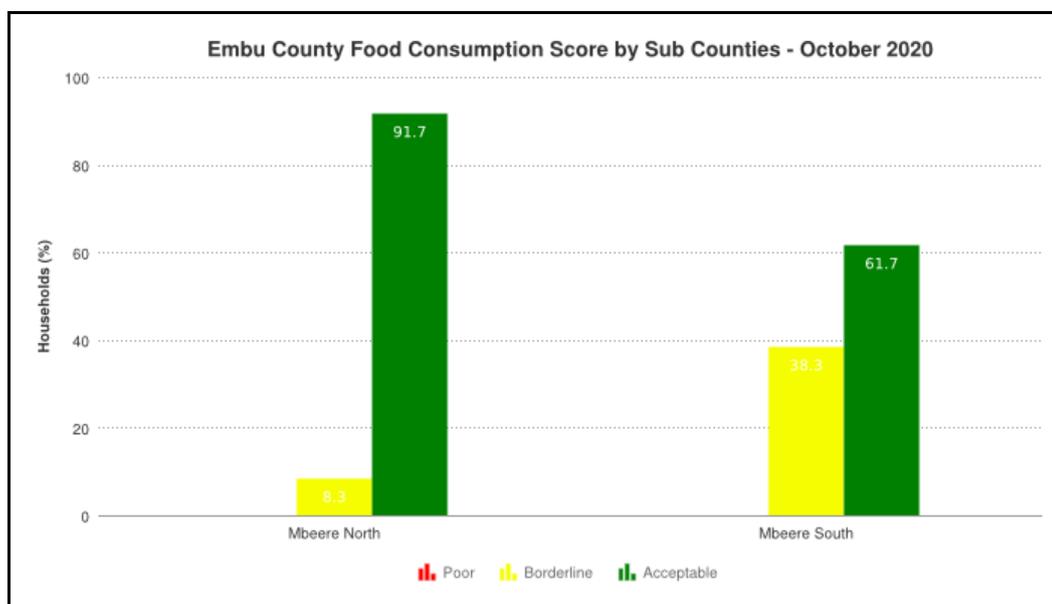

Figure 18: Household food consumption

- The proportion of households in acceptable food consumption category increased by two percent compared to the previous month to stand at 77% in the month of October while the proportion in the borderline food consumtion category reduced from 25% in September to 23% in the month of October.
- This could be attributable to the reprieve brought about by the availability of agricultural casual labour and other income generating activities thus households that were previously in borderline food consumption were able to afford a variety of food commodities.
- Households in the mixed farming zones had a better food consumption at 90 percent acceptable and 10 percent borderline score compared to those in marginal mixed farming zones at 63.3 percent acceptable and 36.7 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.
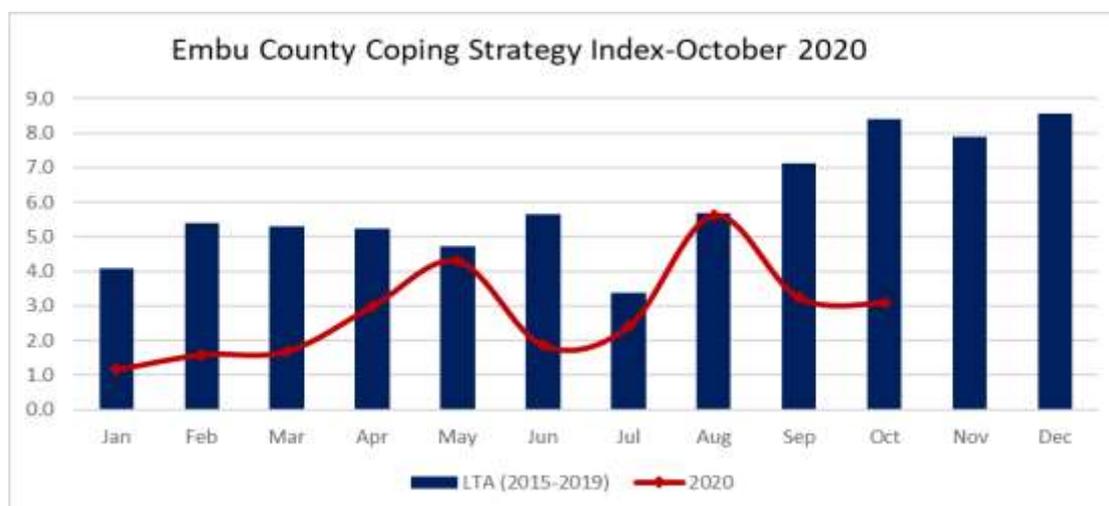

Figure 19: Coping Startegy Index

- The mean coping strategy index remained stable at 3.21 in the month of October compared to 3.24 recorded in the month of September .
- The stability in household coping is attributable to improved household purchasing power due to availability of agricultural casual labour as farmers continued with land preparation and season planting.
- Households in the mixed farming livelihood zone had a lower coping index of 2.5 compared to the households in the marginal mixed farming livelihood zone at 3.7.
- The recorded coping stategy index was significantly lower than the long term average of 8.24.

5.5 Implication of the above Indicators to Food Security
- The dry conditions during the first and second dekads of the month led to increased distances to water sources for both households and livestock across both livelihood zones.
- The deterioration in pasture and browse condition continued to impact negatively on the body condition of livestock.
- The further reduction in milk production led to reduced household milk consumption and income from the sale of milk.
- The stability in maize and goat prices led to stable terms of trade for households hence the improved purchasing power.
- The increase in demand for pulses for planting led to increased demand and hence increased market prices.
- The availability of agricultural labour provided the income for the households to purchase food and non-food items thereby impacting positively on household food security.

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
Livestock disease surveillance	Embu County government	Routine	Both sub counties
• Routine Human Disease Surveillance • Routine health and nutrition interventions to children, pregnant and lactating mothers • Community MUAC monitoring and referral	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 Mbeer 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

Supply of water tanks to support rain water harvesting in schools (10,000 litre capacity)	NDMA	Completed	St. Rita Ngunyumu, Kianjoya and Ceria Primary schools in Mbeere North sub county Igumori secondary school in Mbeere South sub county

7.0 Food Security Prognosis (Three months)

- The prices of pulses are likely to remain high until next month as the households seek to get planting seed from the market but the prices may start decreasing when the early harvests are realised as from early December.
- Th ongoing rains will likely recharge the surface and ground water sources thereby leading to reduced distances to water sources for households and livestock. The distance is expected to remain low during the entire OND period.
- The ongoing rains will likely lead to availability of vegetables for households within one month thereby affecting positively on household nutrition for the entire OND period. .
- The regeneration of pasture is likely to impact positively on body conditions for livestock and consequently improve milk production and livestock market prices for the entire OND period.
- Due to depletion of household stocks, households in marginal mixed farming zone will likely continue to depend on markets for food supplies until early short rains harvests are realised.

8.0   SECTOR RECOMMENDATIONS

Sector	Recommended Activities	Target area	Proposed Implementer
AGRICULTURE	• Extension to farmers on Pest management • Capacity building of farmers on good agronomical practices for the vegetative stages of crop develoment	On demand basis	County Department of Agriculture
LIVESTOCK AND VETERINARY	• Pasture re-seeding. • Mass De-worming of livestock.	Both sub counties	County Department of Livestock Production and Veterinary services Other stakeholders
PUBLIC HEALTH AND NUTRITION	Procurement and distribution of water treatment chemicals.	Both sub counties	County Department of Health services Other stakeholders
INFRASTRUCTURE	• Construction of classrooms to facilitate social distancing when schools re-open • Setting up hand washing facilities in public schools in schools	Both sub counties	County Department of Early Education Ministry of Education (MOE) Other stakeholders