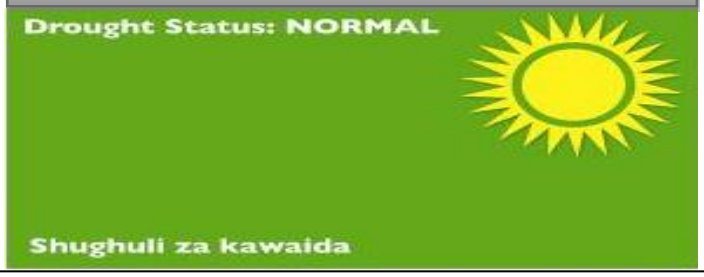
National Drought Management Authority

EMBU (MBEERE) COUNTY

DROUGHT EARLY WARNING BULLETIN FOR JANUARY 2021

A Vision 2030 Flagship Project

JANUARY EARLY WARNING PHASE



Drought Situation & EW Phase Classification

Biophysical Indicators

Rainfall: 28.5 mm of rainfall recorded compare to long term average of 27.5

Vegetation Condition: above normal 3-monthly VCI was recorddd in the month under review. The forage condition in both livelihood zones is however good to fair.

Water sources. Some small earth dams have dried in marginal mixed framing zone, the distances increased marginally in the current bmonth compared to previous month.

Socio Economic Indicators (Impact Indicators)

Production indicators: Harvesting of green grams, beans and cowpeas is complete while the maize is almost ready for harvesting. Expected production is below average for the short rains season. Livestock body condition remain good to fair though milk production reduced by 20% to 1.2 litres per household per day. Thre were no livestock migrations and mortalities in the month under review

Access indicators: The average household return distance to water sources increased by 5 percent compared to previous month to 4.3 Km in January while that of grazing fields to water sources remained stable at 5.1 km. The terms of trade reduced by 3.8 percent however remaine favourable for the households with 160 kilograms of maize accessed for sale of one goat. Milk consumption decreased by 11.3 percent compared to previous month to 1.1 litres per household per day due to reduced production.

Utilization: No children were at risk of malnutrition attributable to improved feeding habits 3-4 meals per day. 80 percent of sampled households had acceptable food consumption while 20 percent were in borderline category. The coping strategy index decreased by 25% compared to previous month to 3.75 in January.

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)	104%	80-120
VCI-3 Month	72.2	>35
Forage condition	Fair/Poor	Fair
Production Indicators	**Value**	**Normal**
Stage and condition of crop (maize)	Drying	Drying/harvesting
Livestock Body Condition	Good/fair	Fair
Milk Production	1.2	1.0
Livestock Migration Pattern	None	None
Livestock deaths	None	None
Access Indicators	**Value**	**Normal**
Terms of Trade	160	76
Households distance to water (km)	4.3	4.6
Livestock return distance to water (km)	5.1	6.2
Milk Consumption	1.1	1.4
Utilization Indicators	Value	Normal
CSI	3.75	<3.5
MUAC (proportion in green band)	100	100
FCS (% Borderline + Poor)	20	29.1

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 month of January was generally dry.
- Poorly distributed off-season rains were received for 2 days in both livelihood zones.
- Most parts of the marginal mixed farming zones never experienced rainfall in the entire period under review.

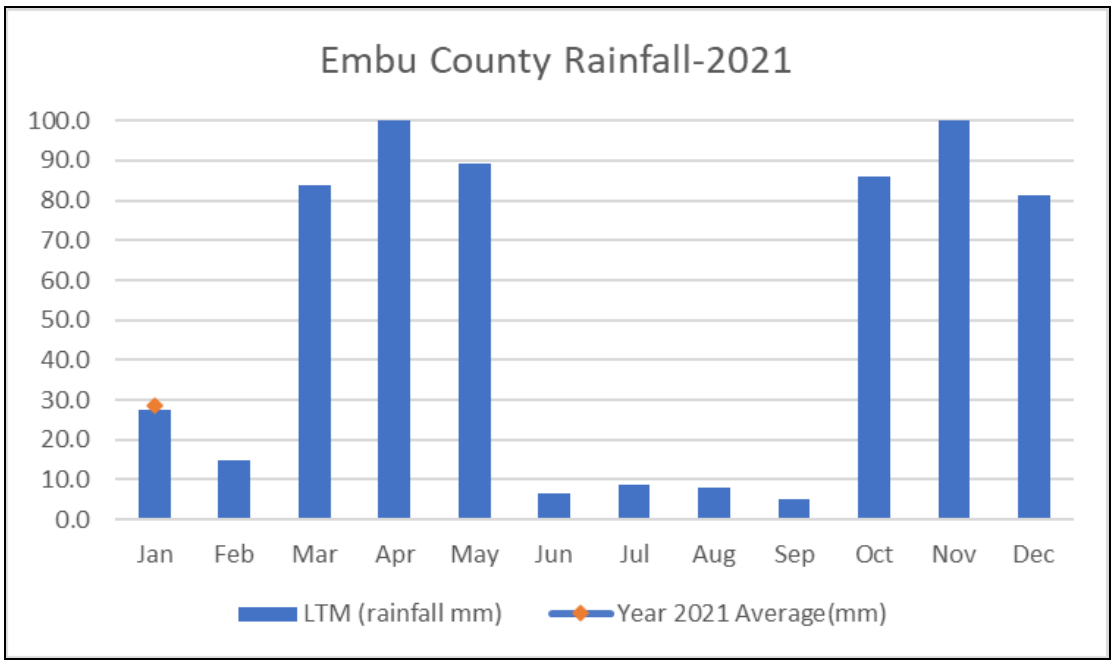


Figure 1: Rainfall performance in Mbeere North and South Sub Counties

1.2 Amount and spatial distribution of rainfall

- Both livelihood zones received average amount of rainfall of 28.5 mm as compared to the long term mean of 27.5 mm
- This was normal at this dry period of the seasonal calendar in Mbeere region
- The mixed farming livelihood zone received an average amount of rainfall of 20.7 mm (recorded in Malkini secondary school station) while the marginal mixed farming livelihood zone recorded an average rainfall amount of 7.8 mm (recorded in Kirathe dispensary station) .
- The average amount recorded were received during the first dejkad of the month while the second and third dekads remained dry.

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 January was 72.2 as compared to 58 in the previous month representing 25 percent increase.
- The increase can be attributable to the rains that were received in the last week of December and the slight rainfall recorded in the first dekad of the current month.
- Mbeere South sub-county recorded a higher 3-monthly VCI of 74.7 as compared to Mbeere North Sub County that recorded 3-monthly VCI of 69.7 (Figure 2a and 2b).

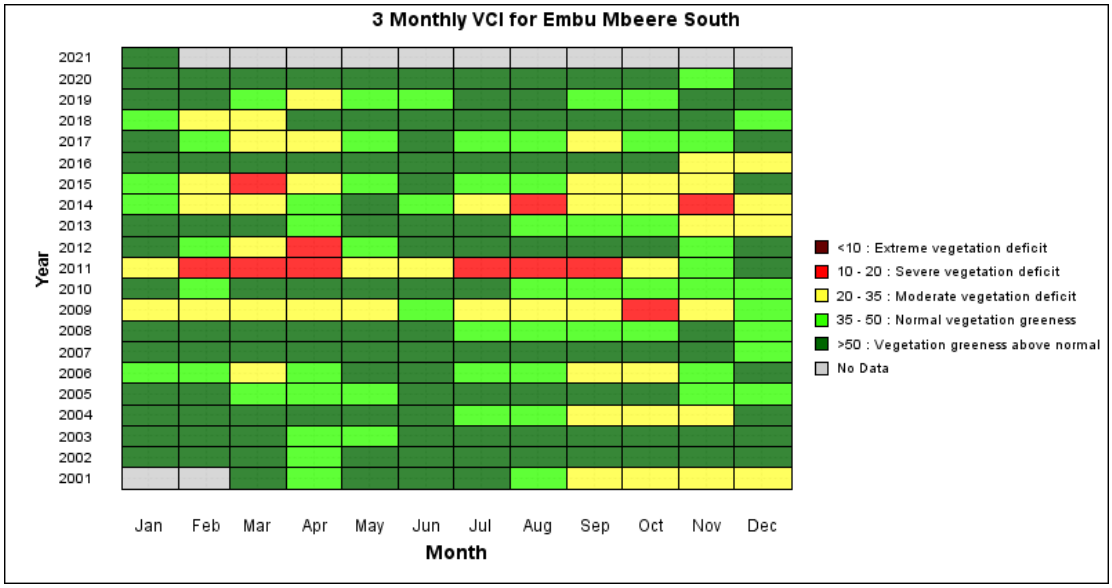


Figure 2a: 3-monthly VCI for Mbeere South sub- county [Source: MODIS]

- The rains were recorded in areas of Mwea ward and Mbeti south ward in Mbeere South sub county

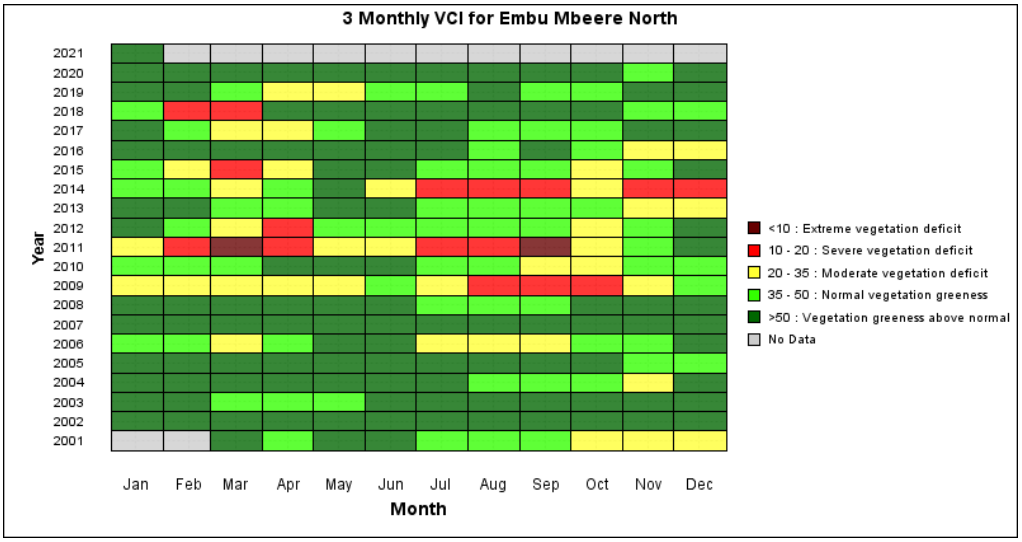


Figure 2b: 3-monthly VCI for Mbeere North sub county [Source: MODIS]

- Rains were recorded in parts around Kanyuombora in Evurore ward and Nthawa ward in Mbeere north sub county

2.1.2 Pasture Condition

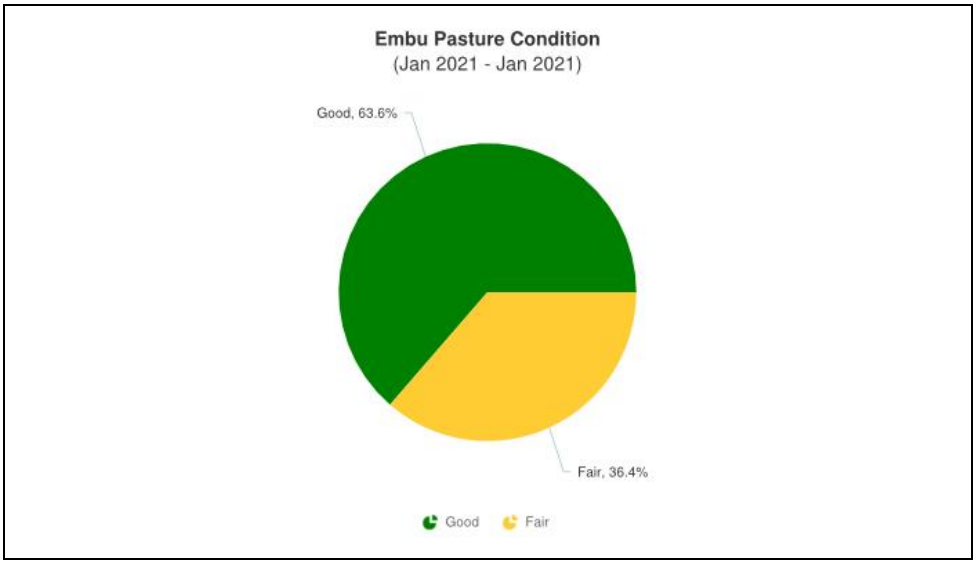


Figure 3: Pasture condition in Mbeere South and North sub counties

- Pasture condition improved slightly due to the rains received in the third dekad of December and the first dekad of the month under review.
- The current pasture condition is fair to Good in the Mixed Farming Livelihood Zone and fair to poor in the Marginal Mixed Farming Livelihood Zone compared to a normal of good at this time of the year in both livelihood zones.
- Areas in Mixed farming zones such as Kanyuambora and Mwea reported good pasture condition while areas in marginal mixed farming zone such as Kiambere and kamarandi reported fair conditions.
- The available pasture is expected to last for 2 to 3 months in mixed farming livelihood zones and 1 to 2 in marginal mixed farming livelihood zones.
- Crop residues continue to supplement available pastures especially in the mixed farming zones and to a very low extent in the marginal mixed farming.
- Areas expected to experience pasture stress include Mugwanjogu, Karerema, Kamarandi,Kyenire and Kigwambiti in Evurore Ward, Kauraciri in Muminji Ward, Kamwiyendie,Nthingini, Wango, Koma in Mwea, Muthiru,Ndune, Mbondoni and Maviani in Makima Ward, Karura in Kiambere Ward, Machanga in Mavuria Ward.

2.1.2 Browse Condition

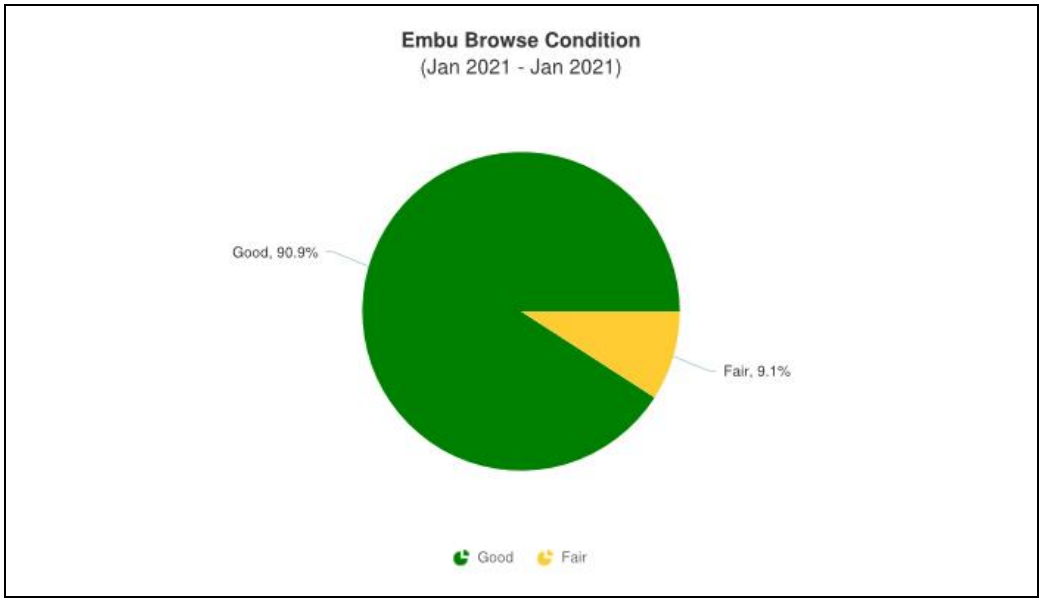


Figure 4: Browse condition in Mbeere North and South sub counties

- Browse condition improved slightly due to the rains received in the third dekad of December and the first dekad of the month under review.
- Browse condition is good across both livelihood zones except in areas such as Kyenire in Evurore and Muthiru in Makima where the red soils drain water faster occasioned by the current dry weather conditions.
- Browse is expected to last for 2-3 months in the mixed farming zones and 1-3 months in the marginal mixed farming zones compared to normal duration of 3-4 and 2-3 months respectively.

2.2 WATER RESOURCE

2.2.1 Water Sources

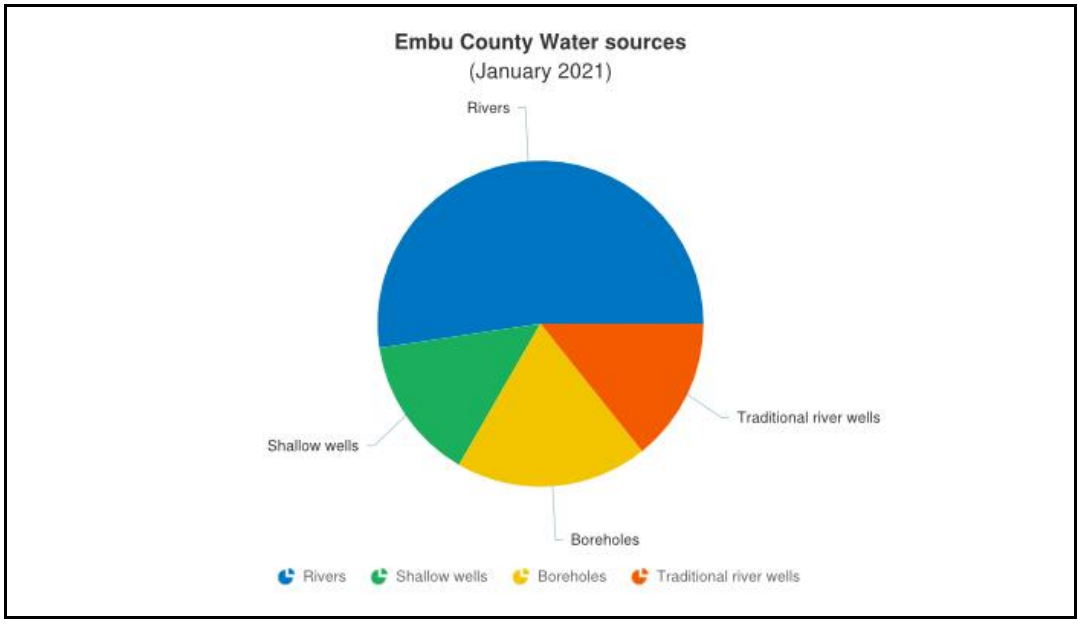


Figure 5: Water sources for Mbeere North and South sub counties

- Rivers, traditional river wells, shallow wells and boreholes continue to be the main sources in Mbeere region.
- There was a decrease in use of rivers and traditional river wells from 64.7 percent and 17.6 percent last month to 52.4 percent and 14.3 percent respectively while the proportion of households using boreholes increased from 12 percent and to 19 percent.
- The drying up of some water pans and seasonal rivers especially in marginal mixed farming zones has led to households' dependence on boreholes and piped water schemes.
- Water sources are expected to last up for 2 months in the marginal mixed farming livelihood zone areas while in the mixed farming livelihood zone areas the sources may last for 3-4 months.

2.2.2 Household Water Access and Utilization

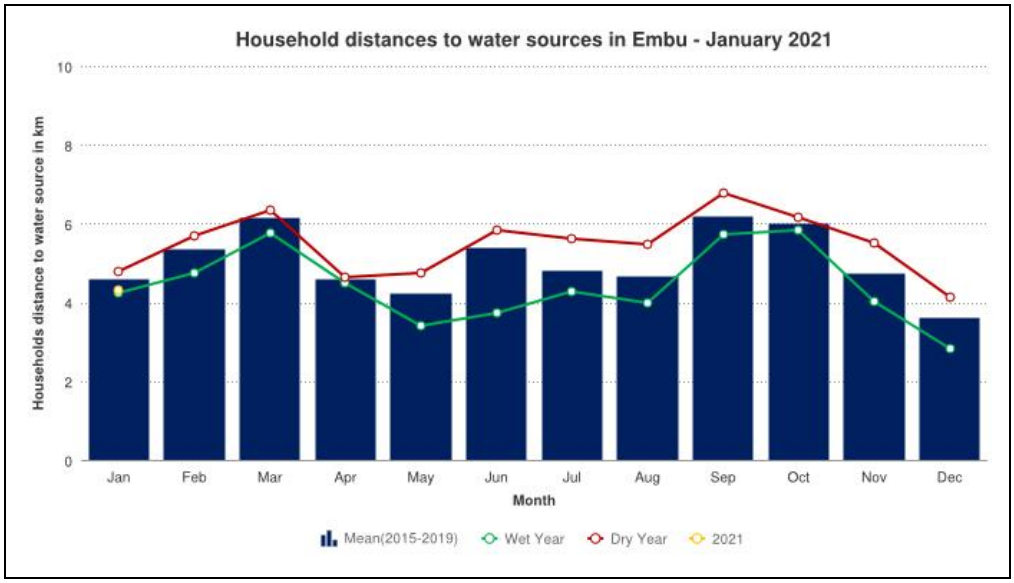


Figure 6: Household average distances to water sources

- The average household return distance to water sources increased slightly from 4.1 Km recorded in December to 4.3 km in the current month.
- The increase in distance can be attributed to drying up of small water pans in Marginal zones and the poor quality of water in surface water sources forcing households to seek alternative sources for potable water.
- The return trekking distance was longer in the marginal mixed livelihood zones with 6.4 km compared to the mixed farming livelihood zones with an average return distance of 2.2 km.
- The current return distance to water sources for households is 7 percent lower than the to the short term average of 4.6 km .

2.2.3 Livestock access to water from grazing areas

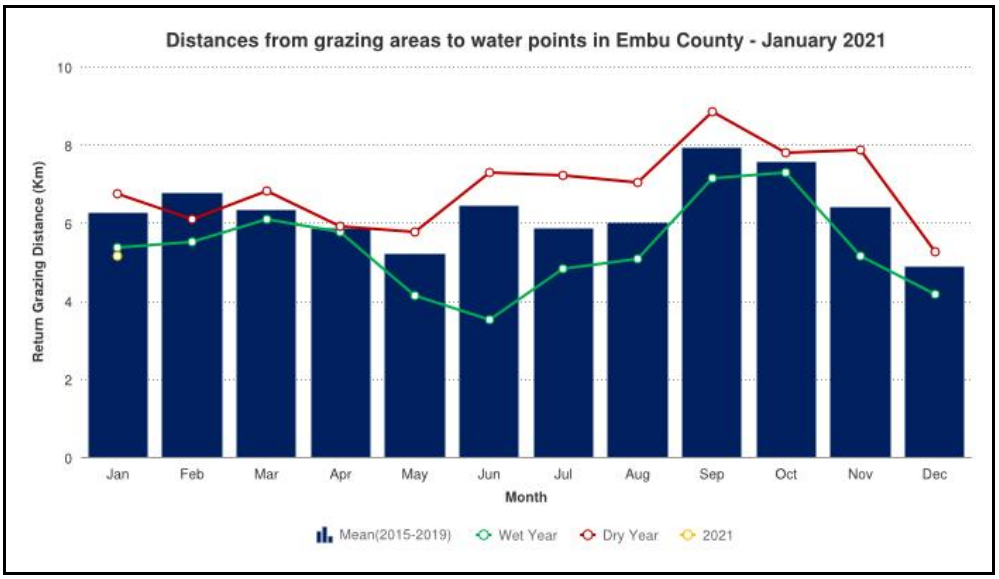


Figure 7: Livestock average return distances to water sources

- The average return distance to water sources from grazing areas remained stable compared to the previous month at 5.1 km.
- The stability can be attributed to rivers remaining as the main source of water for livestock especially in the marginal farming zones.
- The current average return distance is 18 percent lower than the short term average distance of 6.2 km .

3.0 PRODUCTION INDICATORS
3.1 LIVESTOCK PRODUCTION
3.1.1 Livestock Body Condition

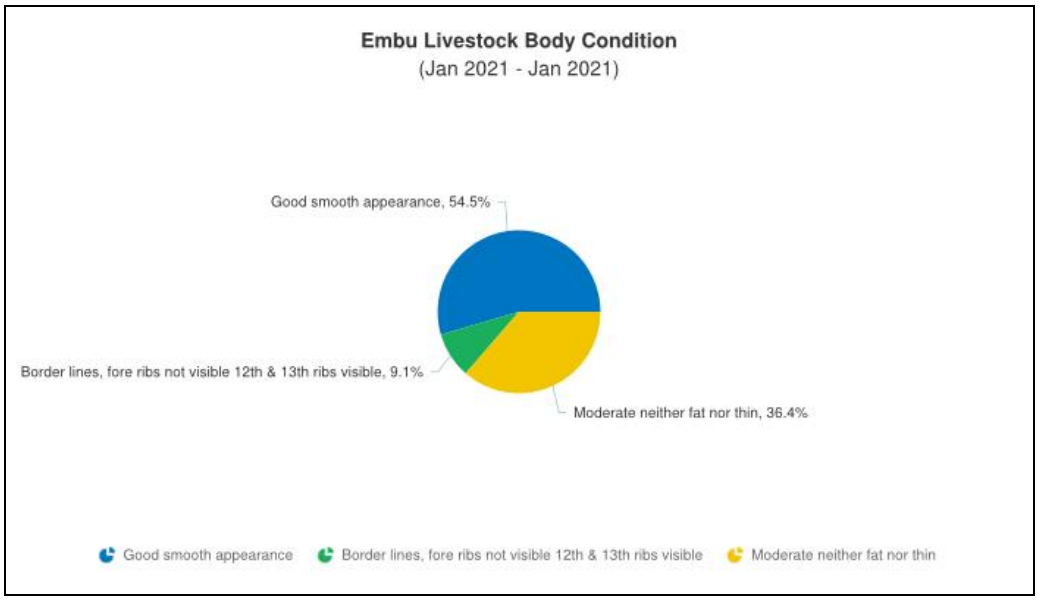


Figure 8: Livestock body condition

- The livestock body condition indicate that 54.5 percent of the animals are in good condition, 36.4 percent of the animals show moderate status while 9.1 percent of them are in borderline status across both livelihood zones.
- The body condition for cattle is good to moderate Mixed Farming Livelihood Zone and moderate to borderline in the Marginal Mixed Farming Livelihood Zone.
- The body condition for goats remains good across the two livelihood zones.
- The body condition for cattle and sheep is expected to deteriorate within the next three months while the body condition for goats is expected to remain stable within the next three months.

3.1.2 Livestock Diseases

- Contagious Caprine Pleuropneumonia (CCPP), Newcastle Disease (NCD) and worm infestation remain endemic across both livelihood zones in the current month.
- FMD was reported in Nthawa ward of Mbeere North sub county while and Lummpy Skin Disease (LSD) was reported in Mwea ward of Mbeere south sub county.
- Vaccination and treatment was done on demand basis.

3.1.3 Milk Production

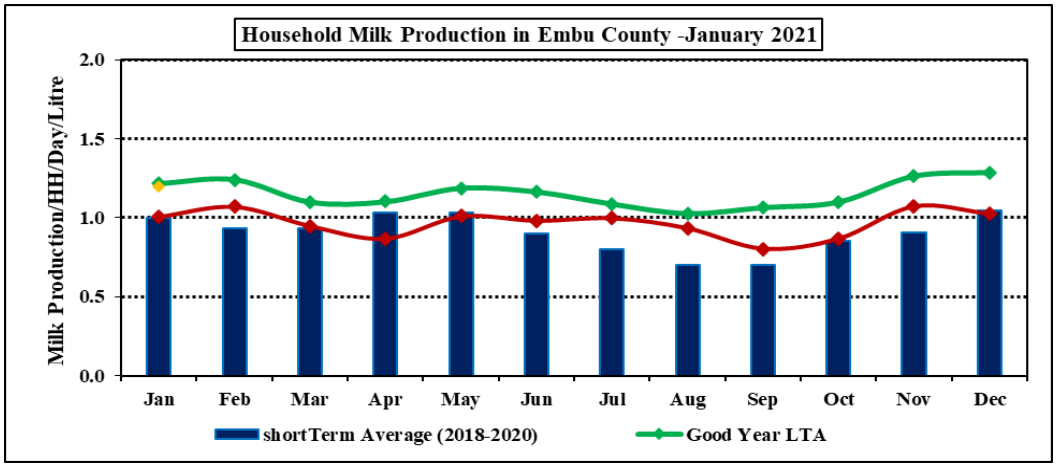


Figure 9: Milk production in Mbeere North and South sub counties

- The average household daily milk production decreased by 20 percent from 1.4 litres in December to 1.2 litres in the current month.
- The reduction in milk production is attributed to increased trekking distances to water sources and pasture fields.
- The milk produced was however 20 percent higher than the short term average of 1.0 litre per household per day .

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

- Main crops planted during short rains season were beans, maize, sorghum ,green grams and cowpeas.
- Cow peas, beans and green grams have been harvested while sorghum, millet and maize are almost ready for harvesting.
- The projected havests may reduce by up to 20-30 percent due to moisture stress suffered by crops at critical stages of development, decrease in area planted this season compared to the normal and poor rainfall distribution across both livelihood zones.

4.0 MARKET PERFORMANCE
4.1 LIVESTOCK MARKETING
4.1.1 Market Prices for Cattle

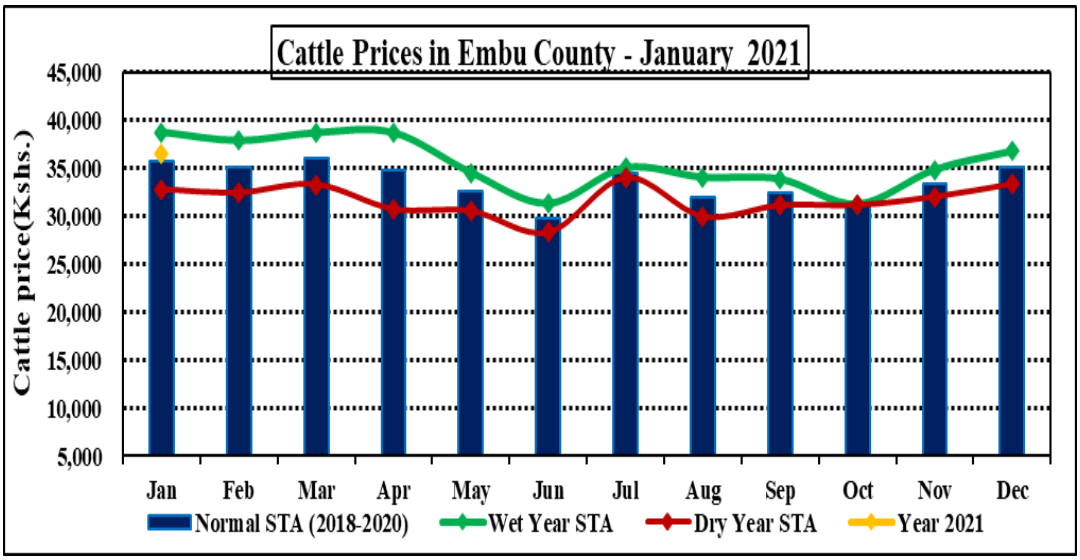


Figure 10: Average Market prices for cattle in Mbeere sub counties

- The average price of a medium size mature bull reduced by 7.6 percent from Ksh 39,300 in December to Ksh 36,500.
- The price reduction can be attributed to low demand occasioned by reduced trader numbers in all major markets and reluctance of farmers to sell at low prices since they don't currently have any food shortage.
- Karaba market recorded the highest prices at Ksh 48,300, Ishiara livestock market recorded average price of Ksh 32,800 while Kiritiri recorded the lowest price of Ksh 30,000.
- The average price recorded in January was slightly higher than the normal short term price of Ksh 35,750.

4.1.2 Goats Prices

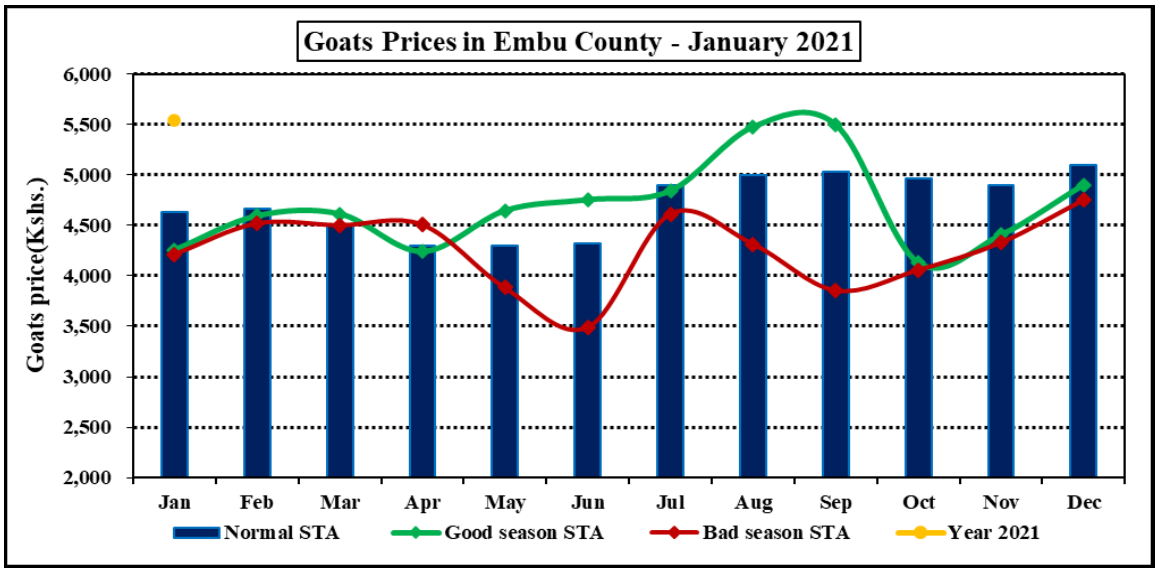


Figure 11: Average market prices for medium sized two-year goat in Mbeere sub counties

- The average market price for a goat slightly decreased from Ksh 5,700 in the month of December to Ksh 5,500 in the current month.
- The price reduction can be attributed to low demand occasioned by reduced trader numbers in all major markets and reluctance of farmers to sell at low prices since they don't currently have any food shortage.
- Karaba livestock market in recorded the highest average price of Ksh 6,200, Ishiara livestock market recorded average price of 5,800 while Kiritiri recorded the lowest at Ksh 4,000.
- The variation in market prices is due to the variation in trader numbers occasioned by the catchment served by the specifi markets.
- The current average price is 20 percent higher than the normal short term average of Ksh. 4,600.

4.2 FOOD PRICES

4.2.1 Maize Prices

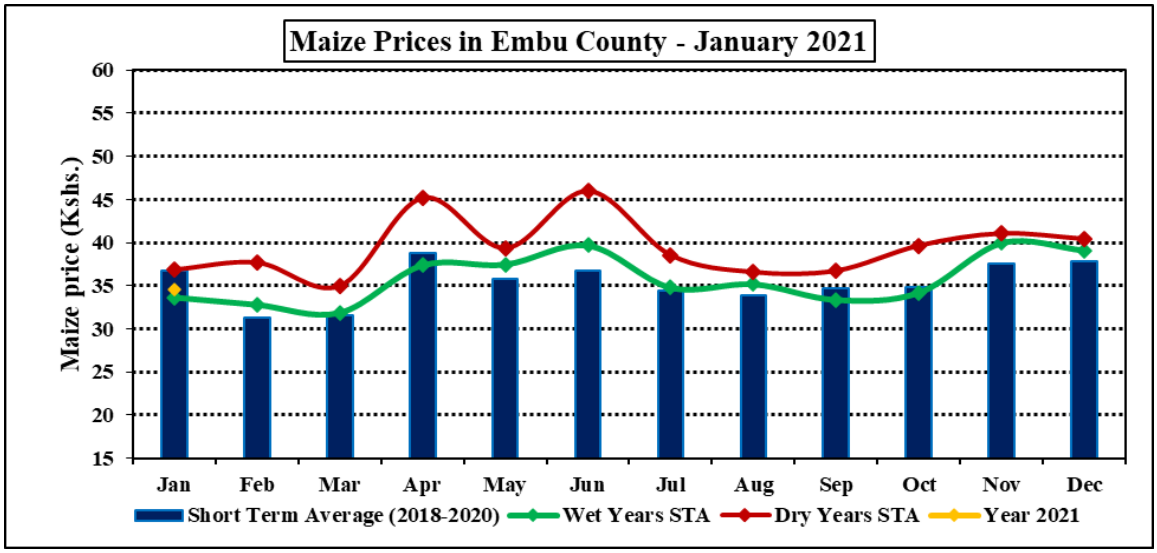


Figure 12: Average market prices for maize in Mbeere sub counties

- The average price for maize remain stable at Ksh 35 per kilogram.
- The stability in maize prices is attributable to current replenishing of household stocks from the short rains season harvest.

- Karaba cereals market recorded highest price of Ksh.37 per kilogram of maize, both Gategi and Kiritiri cetreal markets recorded average price of Ksh 35 while Ishiara crereals market recorded the lowest average price of Ksh.33 per kilogram.
- The market variation of prices is due to the costs of transportataion and variation in buyer numbers.
- The current average price is 8 percent lower compared to the short term average of Ksh 38.

4.2.2 Posho (Local Maize Meal)

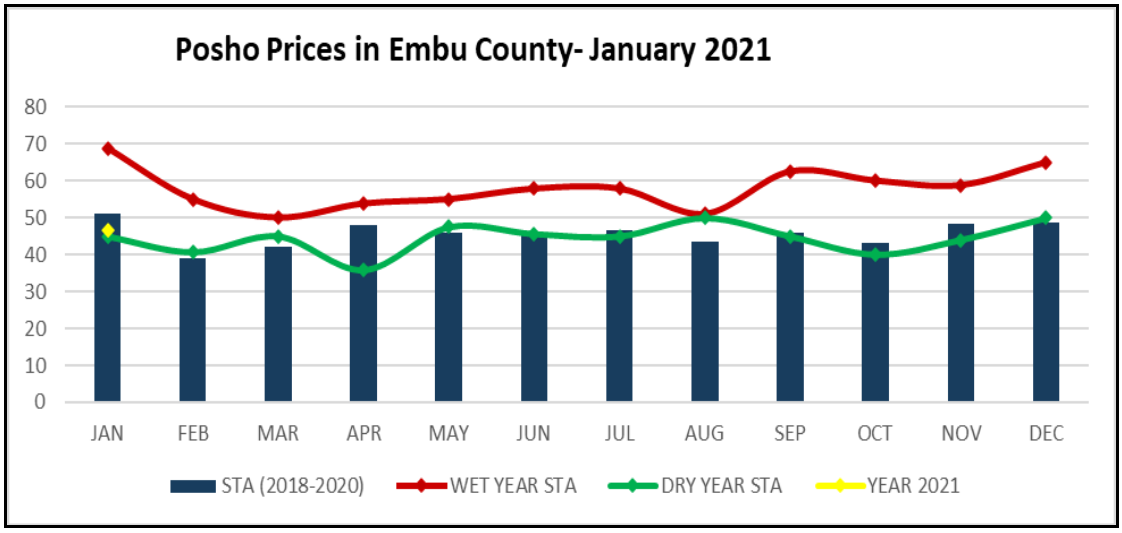


Figure 13: Average market prices for Posho in Mbeere sub counties

- The average price of *posho* decreased by 4 percent from Ksh 49 in December to Ksh 47 in the month of January .
- The decrease in price can be attributed to availability of the maize in the local village markets thus eliminating the transportataion costs.
- The recorded average price is however slightly above normal 8.8 percent lower compared to the short term average price of Ksh 51 per kilogram.

4.2.3 Beans Prices

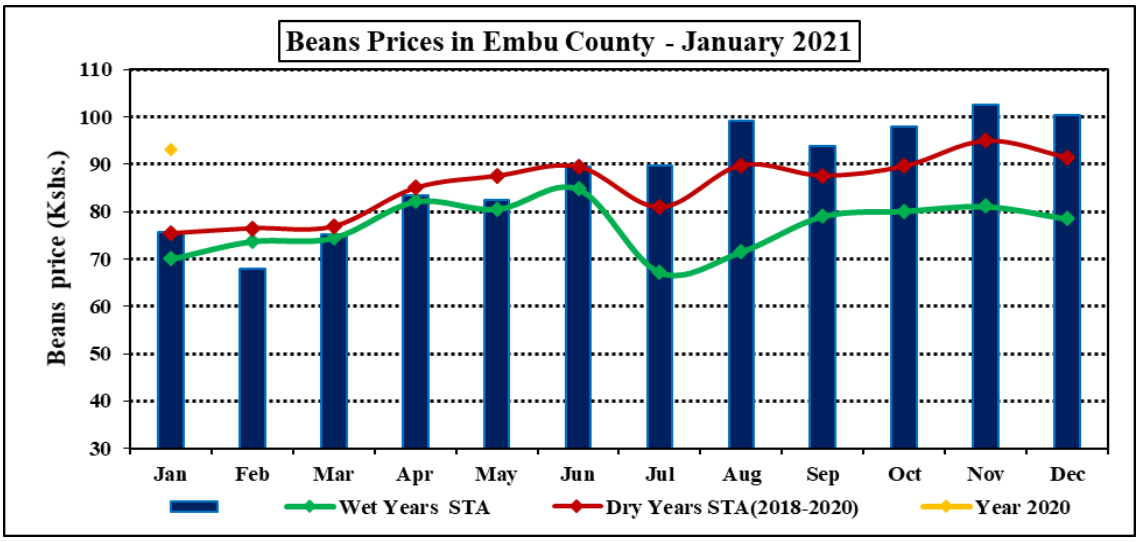
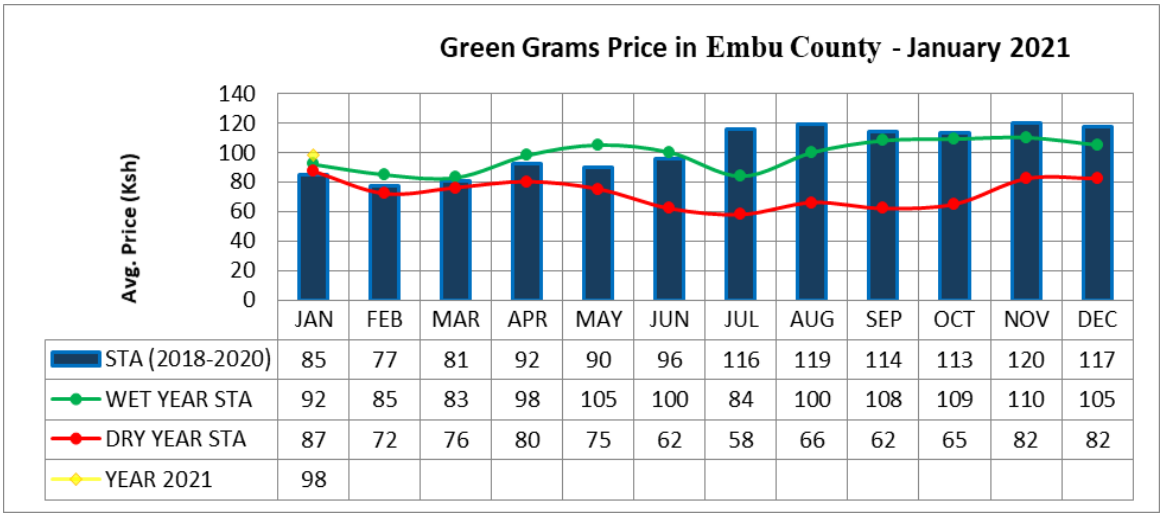


Figure 14: Average market prices for beans in Mbeere sub counties

- The average price of beans decreased by 14.5 percent from Ksh 118 per kg in December to Ksh 103 in the month of January .
- The decrease in beans prices can be attributed to replenishment of household stock from recent harvest of beans, cowpeas and green grams thus reducing reliance on markets.

- Kiritiri cereals market recorded the highest average price of Ksh 112 per kilogram, Ishiara market recorded average price of Ksh. 109 Ksh while Karaba cereals market recorded average price of Ksh. 90 for one kilogram of beans. Gategi market recorded the lowest beans price at Ksh 80 per kilogram of beans
- The current average price of beans is 36 percent higher than the short term average price of Ksh 76 per kilogram.

4.2.4 Green Grams Prices



	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
STA (2018-2020)	85	77	81	92	90	96	116	119	114	113	120	117
WET YEAR STA	92	85	83	98	105	100	84	100	108	109	110	105
DRY YEAR STA	87	72	76	80	75	62	58	66	62	65	82	82
YEAR 2021	98											

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

- The average price of green grams decreased by 7 percent from Ksh 105 per kilogram in the month of December to Ksh 98 per kilogram in the month of January.
- The reduction in price can be attributed to the recent harvest of green grams and other pulses therefore reducing reliance on markets by households.
- The current price is 15 percent higher than the short term average of Ksh 85 .

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.

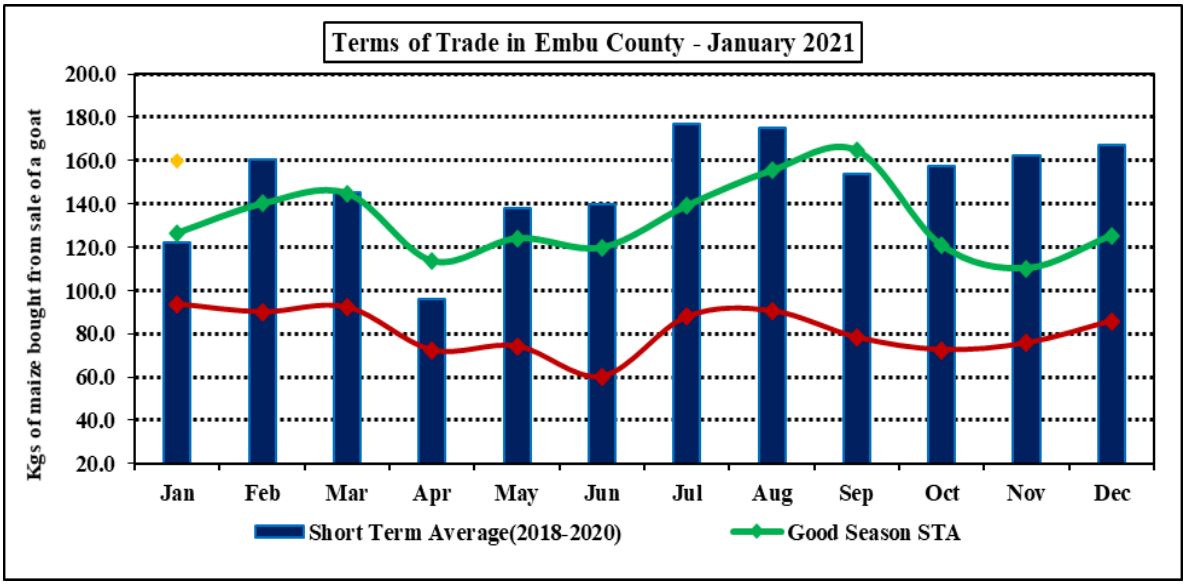


Figure 16: Terms of trade in Mbeere sub counties

- The Terms of trade decreased by 3.8 percent compared to the previous month to 160 kilograms of maize bought from sale of one goat in January.
- The decrease in the terms of trade can be attributed to a reduction in goat prices and stability of maize prices during the month under review.
- The Terms of Trade recorded in the month is 31 percent higher compared to the short term average of 122 .

5.0 FOOD CONSUMPTION AND NUTRITION STATUS

5.1 Milk Consumption

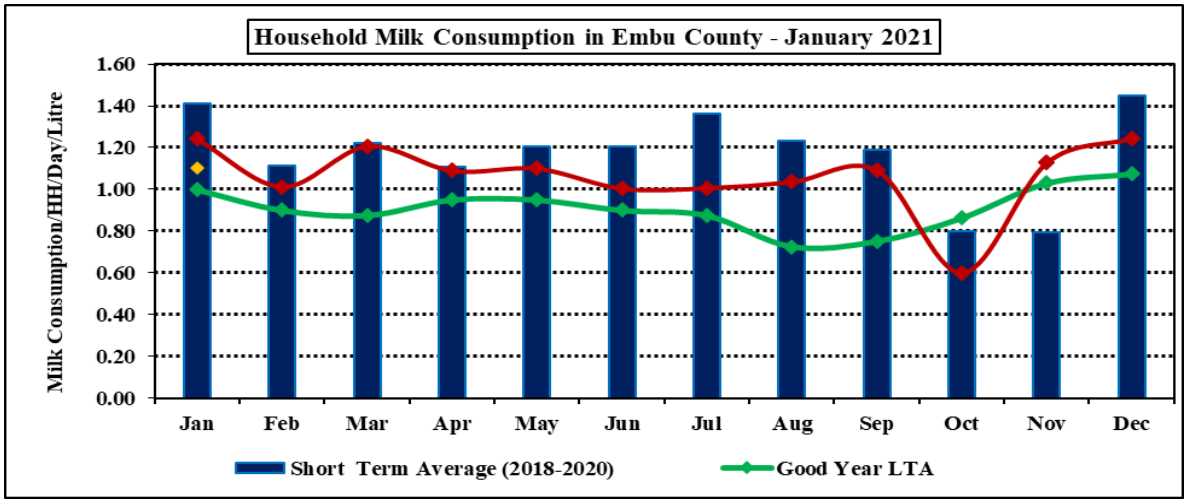


Figure 17: Household milk consumption in Mbeere North and South sub counties

- The average household daily milk consumption decreased by 11.3 percent from 1.24 litres in December to 1.1 litres in the month of January.
- The decrease in household milk consumption can be attributed to the decrease in milk produced in the households.
- The milk consumed was 21 percent lower than the short term average of 1.4 litres per household per day.

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.

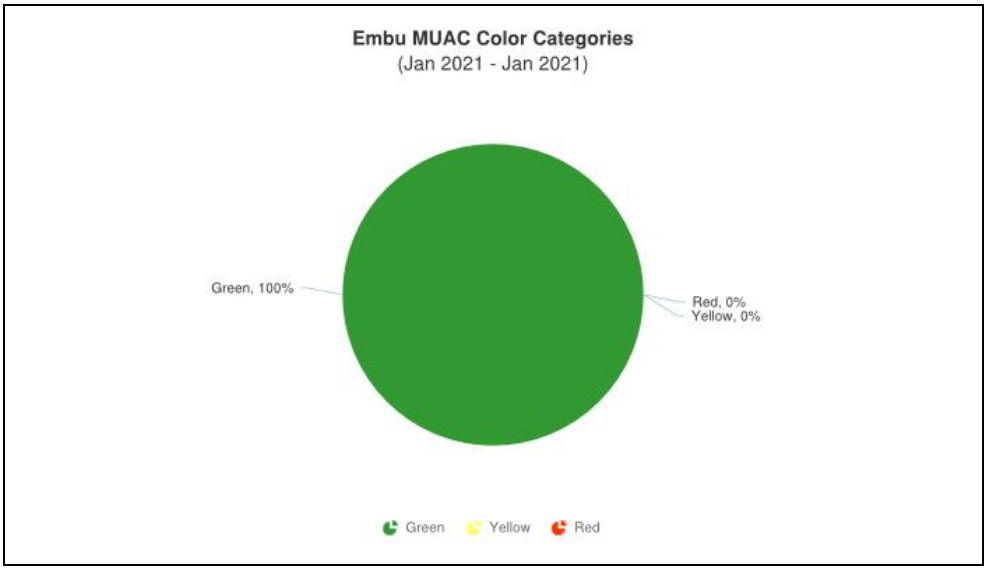


Figure 18: Nutritional status of sampled children in Mbeere sub counties(n=317)

- All sampled children recorded normal MUAC measurements (green color band).
- This may be as a result of improved feeding habits for children at household level whereby children to took 3-4 meals per day.
- This can be attributed to the replenished household stocks across boh livelihood zones.

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.

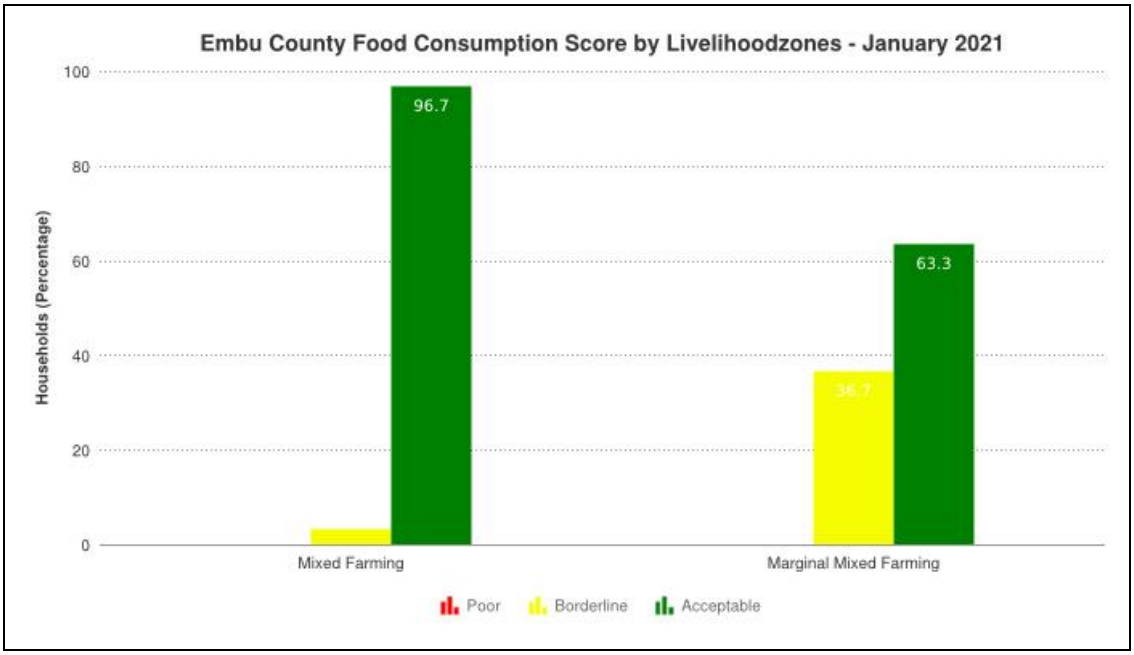


Figure 19: Household food consumption

- Household food consumption remained stable compared to the previous month.
- Out of all the sampled households, 80 percent had acceptable food consumption while 20 percent were classified under borderline food consumption.
- Households in the mixed farming livelihood zones had a better food consumption score at 96.7% acceptable and 3.3 percent borderline compared to households in marginal mixed farming livelihood zones with 63.3% acceptable and 36.7% borderline food consumtion.
- The variation in between the two livelihood zones can be attributed to the current household 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.

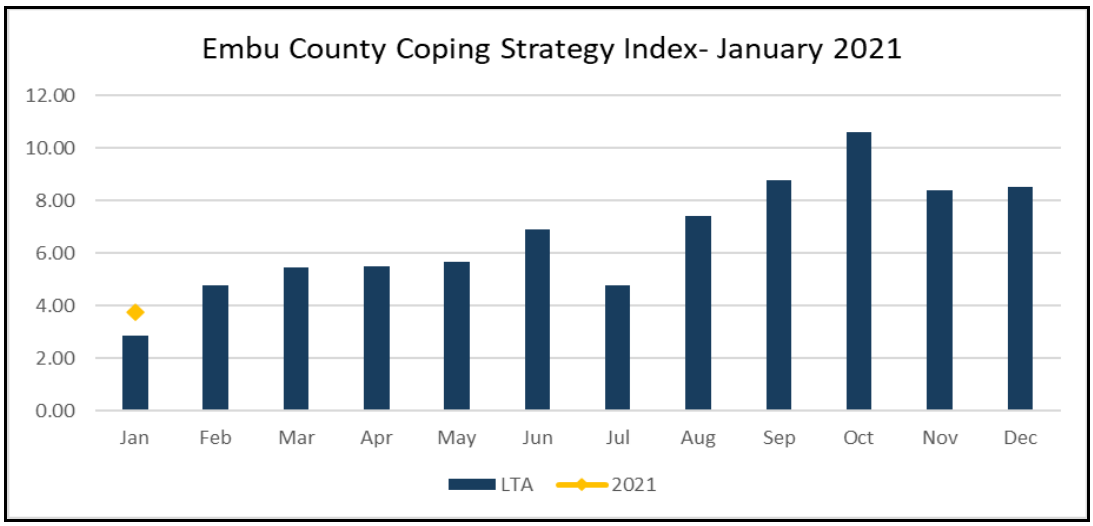


Figure 20: Coping Startegy Index

- The mean coping strategy index decreased by 25 percent from 4.7 in the month of December to 3.75 in the month of January.
- The drop in CSI index of the households coping can be attributable to availability of green maize and harvested legumes.
- Households in marginal mixed farming livelihood zone recorded higher coping strategy index of 5.7 compared to those in mixed farming livelihood zone with 1.8 .

5.5 Implication of the above Indicators to Food Security

- The improvement of pasture and browse condition has led to the improvement on the body condition of livestock.
- 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 reprive to those households that may be depending on markets access food.
- The favourable terms of trade has improved the purchasing power of households and hence ability to meet their basic needs.
- The households are currently applying less severe food consumption based comping strategies.

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
• 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
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 consumtion 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
AGRICULTURE	• Capacity building of farmers on post harvest management • Provision of storage sacks, drying equipment and aflatoxin testing kits • Support to common interest groups for aggregation of produce and linkage to markets	Farmer groups in both sub counties	County Department of Agriculture Hand in Hand Eartern Africa NGO KCEP-CRAL project Other stakeholders
LIVESTOCK AND VETERINARY	• Pasture conservation. • Feed formulation and supplemnetataion • Mass De-worming of livestock and Vaccination	Both sub counties	County Department of Livestock Production and Veterinary services Other stakeholders
PUBLIC HEALTH AND NUTRITION	• Procurement and distribution of water treatment chemicals. • Nutritional outreaches for hard to reach areas. • Conduct the SMART survey	Both sub counties	County Department of Health services NDMA Nutrition International Other stakeholders
WATER	• Rehabilitataion of strategic boreholes • Desilting of earth dams • Sensitization on water resources management • Supply of water to needy schools	Marginal mixed farming areas	County Department of water Ministry of Education (MOE) Other stakeholders