



A Vision 2030 Flagship Project



National Drought Management Authority

KITUI COUNTY

DROUGHT EARLY WARNING BULLETIN FOR DECEMBER 2021

DECEMBER EW PHASE												Early Warning Phase Classification						
												LIVELIHOOD ZONE		EW PHASE		TRENDS		
												Marginal Mixed Farming		Recovery				
												Mixed Farming		Alert		Improving		
												County		Recovery				
Drought Situation & EW Phase Classification <u>Biophysical Indicators</u> <ul style="list-style-type: none"> The county received enhanced rains in December. Vegetation greenness and forage condition was below normal. VCI forecast for the month of January indicates normal vegetation greenness. <u>Socio-Economic Indicators (Impact Indicators)</u> <u>Production Indicators</u> <ul style="list-style-type: none"> Majority of crops were in germination and knee high stage and in fair to good condition. Livestock body condition was poor to fair with normal cases of livestock deaths and migration patterns. Cases of East Coast Fever and Anaplasmosis in cattle were reported. Milk production was below normal range. <u>Access Indicators</u> <ul style="list-style-type: none"> Terms of trade were unfavourable. Milk consumption was below normal range. Water distances were within normal range. The cost of water at source was normal. <u>Utilization Indicators</u> <ul style="list-style-type: none"> Malnutrition cases were within normal range. About 70.5 percent of households were in acceptable food consumption category. About 21 and 4.5 percent of households employed crisis and emergency food-based coping mechanisms respectively. 												Biophysical Indicators		Value		Normal ranges		
Rainfall (% of normal)		151-200		80-120														
VCI-3 month		19.03		35-50														
VCI-3 month forecast Feb-03		39.9		35-50														
Forage Condition		Poor to good		Fair to good														
Production indicators		Value		Normal ranges														
Maize Crop Condition		Fair to good		Good														
Livestock Body Condition		Poor to fair		Fair to Good														
Milk Production (in litres)		0.6		≥ 1.5														
Livestock Migration Pattern		Normal		Normal														
Livestock Deaths (from Drought)		No death		No death														
Access Indicators		Value		Normal ranges														
Terms of Trade (ToT)		92		≥ 117														
Milk Consumption (in litres)		0.6		≥ 1.0														
Return Distance to Water Sources (Km)		Household		≤ 3.6														
		Livestock		≤ 3.8														
Cost of Water (20 litres Jerry can)		At Source		≤ 5Ksh														
		Vendor		10-20														
Utilization indicators		Value		Normal ranges														
Nutrition Status, MUAC (% at risk of malnutrition)		5.3		≤ 7.4														
Coping Strategy Index (rCSI)		10.5		≤ 7.2														
Food Consumption Score (%)		Acceptable		≥ 80														
		Borderline		≤ 20														
		Poor		0														
<ul style="list-style-type: none"> Short rains harvests Short dry spell Reduced milk yields Increased HH Food Stocks Land preparation 			<ul style="list-style-type: none"> Planting/Weeding Long rains High Calving Rate Milk Yields Increase 			<ul style="list-style-type: none"> Long rains harvests A long dry spell Land preparation Increased HH Food Stocks Kidding (Sept) 			<ul style="list-style-type: none"> Short rains Planting/weeding 									
Dry Season			Long Rains			Dry Cool Season			Short Rains Season									
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec							

1.0 CLIMATIC CONDITIONS

1.1 RAINFALL PERFORMANCE

- The onset of the 2021 October to December (OND) short rains was late in the first dekad of November compared to second dekad of October normally. Moreover, most parts of the county experienced the onset in the third dekad of November.
- In the month of December, the county recorded an average of 17.9 and 34.8 millimetres of rainfall compared to 42.1 and 36.9 millimetres normally in the first and second dekad respectively as shown in figure 1. This was 121 percent of normal rainfall recorded in December.
- The December Normalized Difference Vegetation Index (NDVI) was 89 percent of normal NDVI values.

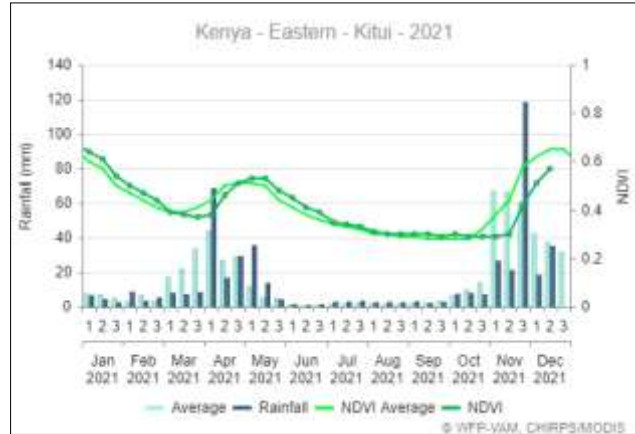


Figure 1: Rainfall and NDVI Distribution

1.2 AMOUNT OF RAINFALL AND SPATIAL DISTRIBUTION

- Based on Kenya Meteorological Department, Kitui County received 151-200 percent of normal rainfall in most parts of the County in the month of December as shown in figure 2.
- Conversely, most parts of the county recorded 76-100 percent of normal OND seasonal rainfall performance.
- The rainfall was characterized by poor temporal and uneven spatial distribution.
- In Mixed Farming livelihood zone, Kitui ATC (451.8mm in 32 wet days), Kiomo (436.7mm in 15 wet days), Waita (402.2mm in 16 wet days), Mui (334mm in 22 wet days), Kaveta (289.9 in 11 wet days) and Kwa Vonza (203.2mm in 16 wet days) stations recorded the stated cummulative OND rainfall amounts in brackets compared to stations in Marginal Mixed Farming livelihood zone which included Tharaka (372.4mm in 16 wet days), Mutomo (364.1mm in 23 wet days), Kanyangi (328mm in 28 wet days), Athi (311.9mm in 14 wet days), Kyamatu (258.3mm in 19 wet days), Endau (226.5mm in 14 wet days) and Mutha (191.5mm in 25 wet days).

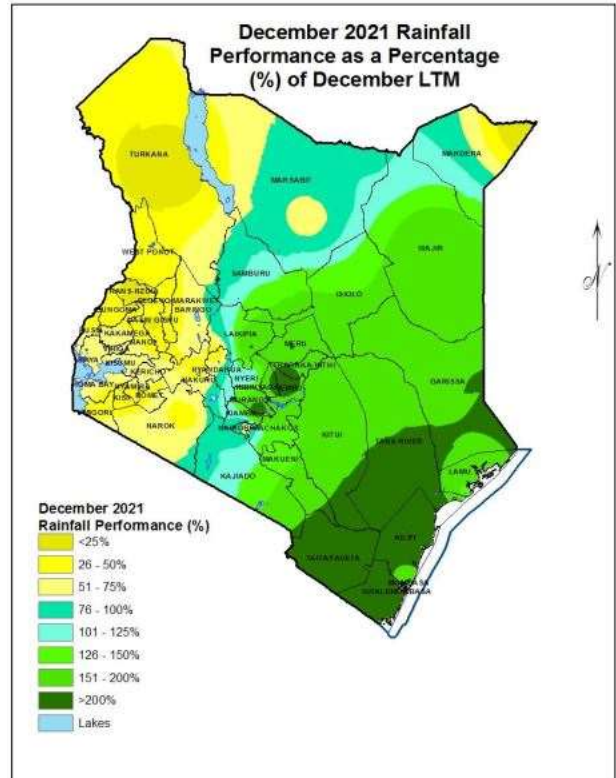


Figure 2: December 2021 Rainfall Performance as a Percentage of Long Term Mean

1.3 OTHER EVENTS

- About 32 people succumbed in Enziu river, Mwingi Central Sub County as the bus they were travelling to was swept off a drift into flooded river.
- A car carrying three passengers was also washed away into flooded river as it tried to cross Thua River along Voo Kyamatu Road in Kitui East Sub County.

2.0 IMPACTS ON VEGETATION AND WATER

2.1 VEGETATION CONDITION

2.1.1 Vegetation Condition Index (VCI)

- The county vegetation greenness declined by 36 percent to stand at a 3 month VCI of 19.03 in December from 29.68 in previous month. This is an indication of severe vegetation greenness.
- Mwingi Central and Mwingi North sub county had extreme vegetation deficit at a 3 month VCI of 8.31 and 8.48 respectively with a declining trend as shown in figure 3.
- Moreover, Kitui Rural and Kitui East sub counties had severe vegetation deficit at a 3 month VCI of 10.17 and 16.15 respectively while Mwingi West, Kitui Central, Kitui West and Kitui South Sub Counties had a moderate vegetation greenness at a 3 month VCI of 21.01, 22.93, 23.75 and 26.99 respectively.
- The county vegetation greenness is below normal as shown in figure 4.

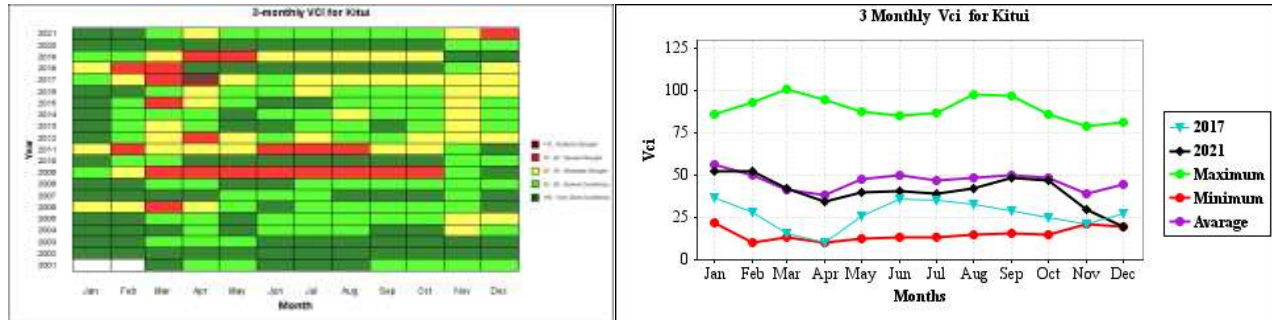


Figure 4: Kitui County 3 Month VCI Matrix and Trends

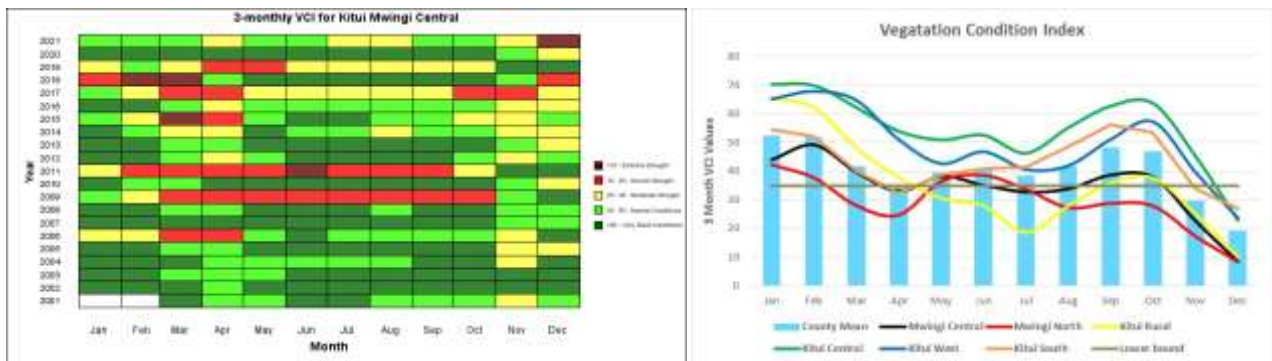


Figure 3: Mwingi Central 3 Month VCI Matrix and Trends in Different Sub Counties

2.1.2 Vegetation Condition Index Forecast

- Based on Sussex Vegetation Outlook for the month of January and February 2022, the 3-month VCI forecast indicates normal to above normal vegetation greenness across the county with an improving trend (figure 5). This condition is likely to boost on availability and accessibility of livestock feeds.

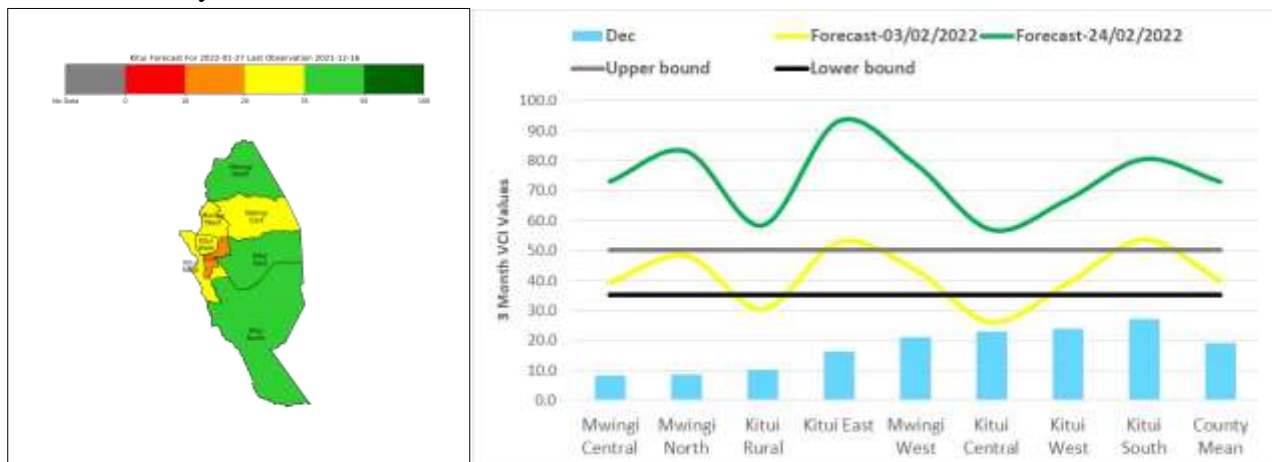


Figure 5: Kitui County 3 Month VCI Forecast

2.1.3 Pasture

- Pasture condition was poor to good with an improving trend across the livelihood zones as shown in figure 6. This was due to progression of the short rains.
- On average, 39 percent of pasture was poor in both quality and quantity in December compared to 100 percent in previous month. The remaining 39 and 21 percent of pasture was fair and good respectively.
- The available pasture is likely to last for 1-3 months compared to 3-4 months normally.
- Pasture condition was better in year 2020 compared to similar period in year 2021.

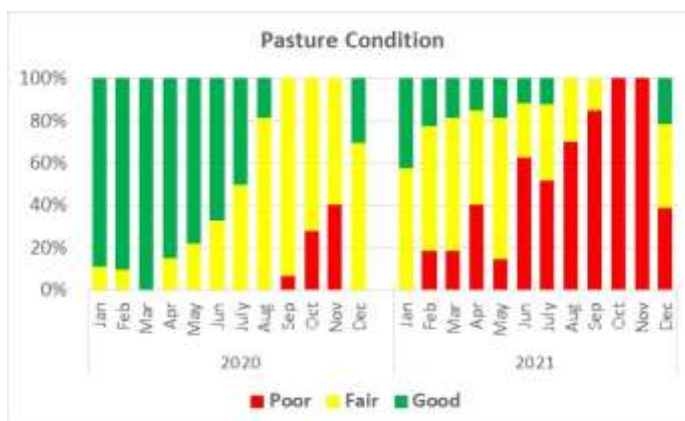


Figure 6: Kitui County Pasture Condition

2.1.4 Browse

- Browse condition ranged from poor to good across the livelihood zones with an improving trend as shown in figure 7.
- On average, about 25 percent of browse was poor in both quality and quantity in December compared to 85 percent in previous month. The remaining 36 and 39 percent of browse was regarded as fair and good respectively.
- The available browse is likely to last for 1-4 months compared to 3-4 months normally across the livelihood zones.
- Browse condition was better in year 2020 compared to similar period in year 2021.

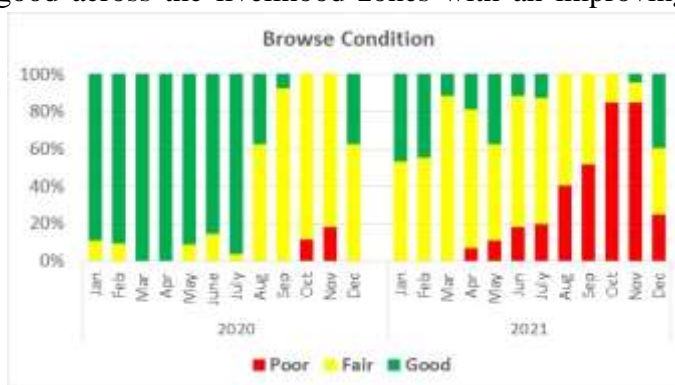


Figure 7: Kitui County Browse Condition

2.2 WATER RESOURCE

2.2.1 Sources

- The main water sources for both human and livestock consumption in December were roof catchments, water pans, earth dams and traditional river wells as shown in figure 8.
- This situation is normal at this time of the year.
- The on-going short rains has led to recharge of water facilities at about 60-90 percent of their capacity across the livelihood zones.
- Water at open water facilities is likely to last for 2-3 months compared to 3-4 months normally.

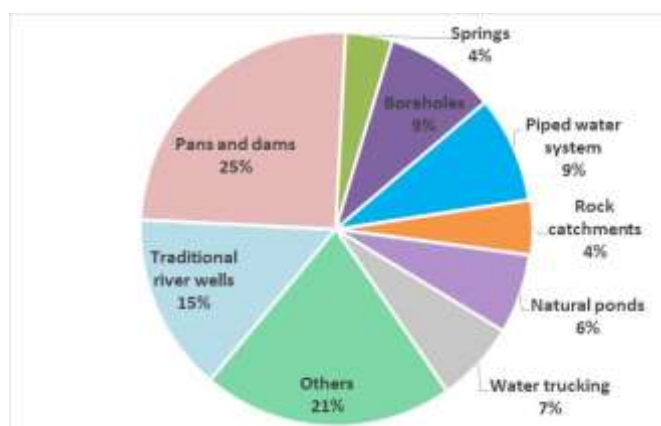


Figure 8: Major Water Sources in Kitui County

2.2.2 Household Access and Utilization

- The average return distances from the households to water sources declined by 67 percent to stand at 2.4km in December from 7.2km in previous month. This was mainly due to on-going short rains which has led to recharge of nearby water sources.
- Households in Marginal Mixed Farming livelihood zone trekked an average of 2.5km compared to 2.3km in Mixed Farming livelihood zone.
- The current water distance is 34 percent lower than the long-term mean as shown in figure 9.
- Water consumption per person per day remained stable at 17 litres in December as it was in previous month.
- The proportion of households treating water before consuming stood at nine percent in December compared to 6.3 percent in previous month. Water treatment chemicals was the most preferred treatment method.
- The proportion of households buying water stood at 21 percent in December compared to 50 percent in previous month.
- The price of water per 20-litre Jerry can at source was normal at 2-2.5 shillings. However, water retailed at 5-10 shillings from vendors.

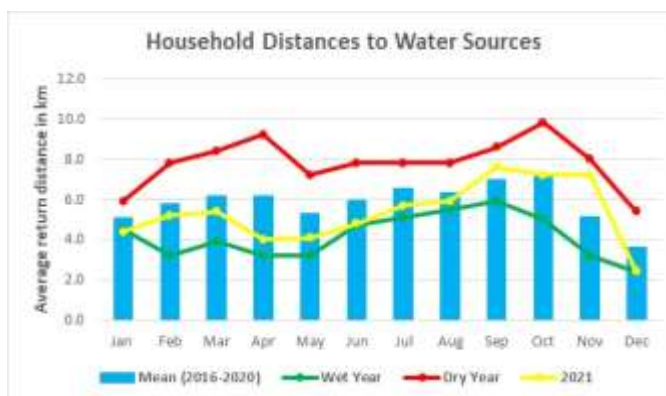


Figure 9: Household Access to Water

2.2.3 Livestock Access

- The average return distances from livestock grazing areas to watering points declined by 49 percent to stand at 3.7km in December from 7.3km in previous month.
- Livestock in Marginal Mixed Farming livelihood zones trekked a distance of 3.5km compared to 3.6km in Mixed Farming livelihood zone.
- Livestock watering frequency was daily across the livelihood zones and this is normal.
- The current average distance from livestock grazing areas to watering points is normal as shown in figure 10.

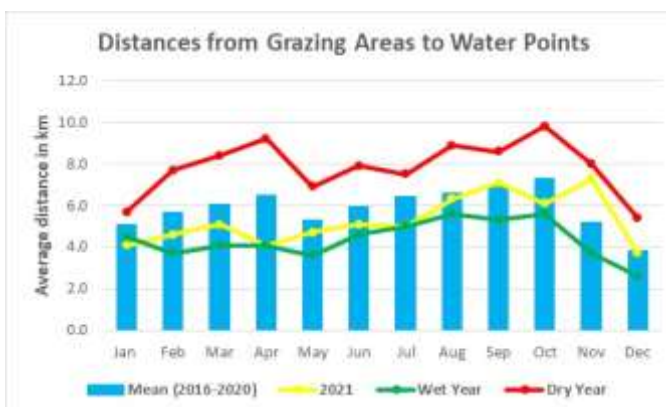


Figure 10: Distances from Grazing Areas to Water Points

2.3 Implication of the Above Indicators to Food Security

- Regeneration of livestock feeds and improvement of water access and availability will impact positively on livestock productivity and household purchasing power.

3.0 PRODUCTION INDICATORS

3.1 LIVESTOCK PRODUCTION

3.1.1 Livestock Body Condition

- Livestock body condition ranged from poor to fair for all species across the livelihood zones with an improving trend. This was due to an improvement in forage and water availability and accessibility.
- On average, 39 percent of cattle had moderate (neither fat nor thin) body condition in December compared to 22 percent in previous month.
- The remaining 21 and 39 percent of cattle had borderline (fore ribs not visible, 12th & 13th ribs visible) and thin fore ribs visible body conditions respectively as shown in figure 11.
- None of the cattle had good smooth appearance body condition in December.
- Livestock body condition was better in year 2020 compared to similar period in year 2021.

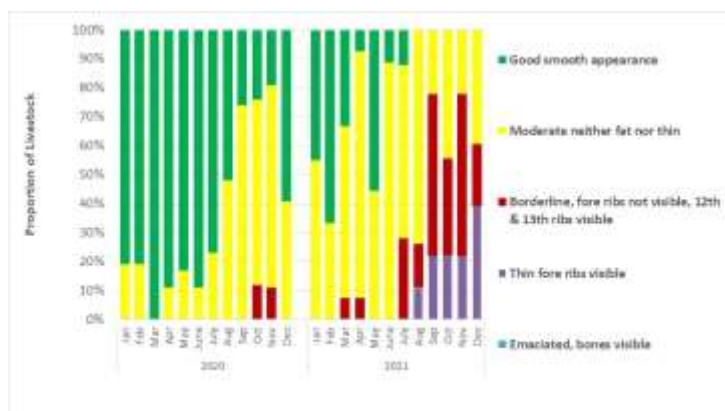


Figure 11: Cattle Body Condition

3.1.2 Livestock Diseases

- Six cattle in Nzambani and Zombe wards died as a result of East Coast Fever (ECF). Moreover, four cases of Anaplasmosis in cattle were reported in Kanyangi ward.

3.1.3 Milk Production

- The average daily milk production per household rose by 13 percent to stand at 0.6 litres in December from 0.5 litres in previous month.
- There was no major variation across the livelihood zones.
- The current milk production is 61 percent lower than the long-term mean as shown in figure 12. This is attributed to poor livestock body condition.

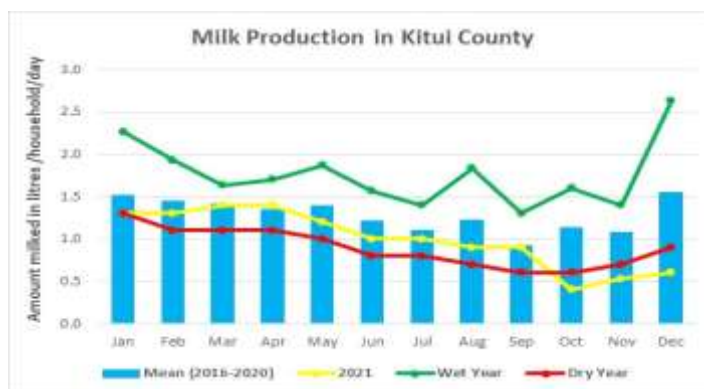


Figure 12: Milk Production

3.2 RAIN-FED CROP PRODUCTION

3.2.1 Stage and Condition of Food Crops

- The major crops planted in Marginal Mixed Farming livelihood zone were green grams, millet, sorghum, cowpeas and maize. Moreover, maize, beans, pigeon peas, green grams and cowpeas were planted in Mixed Farming livelihood zone.
- Area planted was lower than the long-term average due to late onset of the short rains. However, land preparation and planting for the season was still on-going across the livelihood zones.
- Majority of crops were in germination and knee-high stage and in fair to good condition.
- Weeding was also on-going across the county.
- In addition to rain-fed cropping, farmers along main rivers (Athi, Tana, Tiva and Thua) had horticultural crops that were at various stages of development.

3.3 Implication of the Above Indicators to Food Security

- Households are likely to start harvesting cow peas leaves and this will boost households' food consumption patterns.
- Livestock productivity is expected to improve following regeneration of livestock feeds and an improvement in both water access and availability.

4.0 MARKET PERFORMANCE

4.1 LIVESTOCK MARKETING

4.1.1 Cattle Prices

- The average market price of cattle declined by 12 percent to stand at Ksh.23,866 in December from Ksh.27,028 in previous month. This was due to poor cattle body condition.
- Cattle prices were higher in Mixed Farming livelihood zone at Ksh.21,925 compared to Ksh.21,222 in Marginal Mixed Farming livelihood zone.
- In Nuu, Tiva and Tseikuru markets, cattle price averaged at Ksh.16,000, Ksh.17,500 and Ksh.17,667 respectively.
- The current market price of cattle is 17 percent below the long term mean as shown in figure 13.

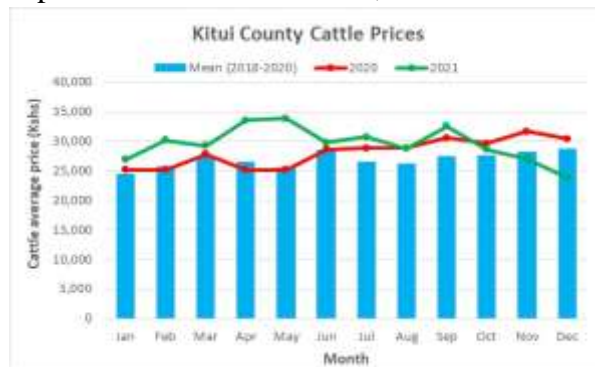


Figure 13: Cattle Prices

4.1.2 Small Ruminants Prices (Goat price)

- The average market price of goat remained stable to stand at Ksh.3,477 in December from Ksh.3,674 in previous month.
- Marginal Mixed Farming livelihood zone recorded a higher price of Ksh.3,444 compared to Ksh.3,298 in Mixed Farming livelihood zone.
- Low average goat prices of Ksh.2,000 were recorded in Nuu and Kithyoko markets.
- The current market price of goat is 12 percent lower than the long term mean as shown in figure 14.



Figure 14: Goat Prices

4.2 CROP PRICES

4.2.1 Maize

- Maize prices have been on an increasing trend since July 2021 due to a rise in demand of the commodity from the market because of depletion of household stocks.
- The average market price of maize per kilogram remained stable to stand at Ksh.38 in December from Ksh. 37 in previous month.
- Maize price averaged at Ksh. 39 in Marginal Mixed Farming compared to Ksh.38 in Mixed Farming livelihood zones.
- The current market price of maize is eight percent above the long term mean as shown in figure 15.

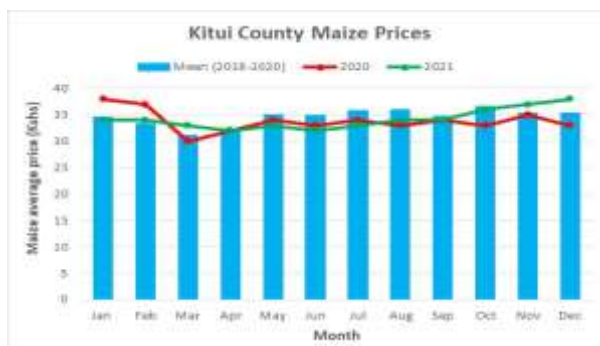


Figure 15: Maize Prices

4.2.2 Beans

- The average market price of beans per kilogram remained stable to stand at Ksh.94 in December from Ksh.100 in previous month.
- Beans price was higher in Marginal Mixed Farming livelihood zone at Ksh.103 compared to Ksh.83 in Mixed Farming livelihood zone.
- The current beans price is 13 percent higher than the long-term mean as shown in figure 16.
- Beans were mainly obtained from outside the county.

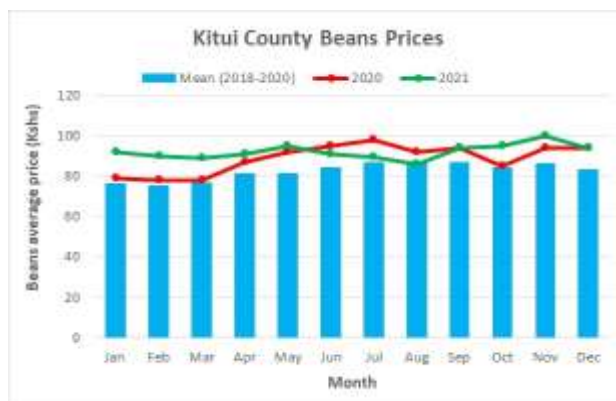


Figure 16: Beans Prices

4.3 Livestock Price Ratio/Terms of Trade

- The household purchasing power has been on a deteriorating trend since May 2021 and this is due to depletion of food stocks at household level and deteriorating livestock body condition.
- Terms of trade declined by eight percent to stand at 92 in December from 99 in previous month. This implies that, households were able to purchase 92 kilograms of maize from exchange of a goat in December compared to 99 kilograms in previous month.
- There was no major variation across the livelihood zones.
- The current terms of trade is 22 percent lower than the long-term mean as shown in figure 17.

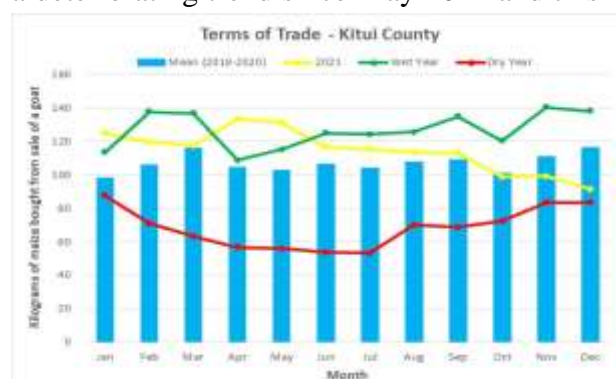


Figure 17: Terms of Trade

4.4 Implication of the Above Indicators to Food Security

- Prices of staple food commodities are likely to continue rising following depletion of household food stocks and dependence on markets for food commodities. This will impact negatively on household food consumption patterns.
- However, the expected harvest of cow peas leaves and an improvement of livestock feeds and water availability and accessibility will boost livestock productivity and household terms of trade.

5.0 FOOD CONSUMPTION AND NUTRITION STATUS

5.1 MILK CONSUMPTION

- The average daily milk consumption per household remained stable at 0.6 litres in December from 0.5 litres in previous month.
- There was no major variation across the livelihood zones.
- The current milk consumption is 37 percent lower than the long-term average as shown in figure 18 and this is due to a decline in production.

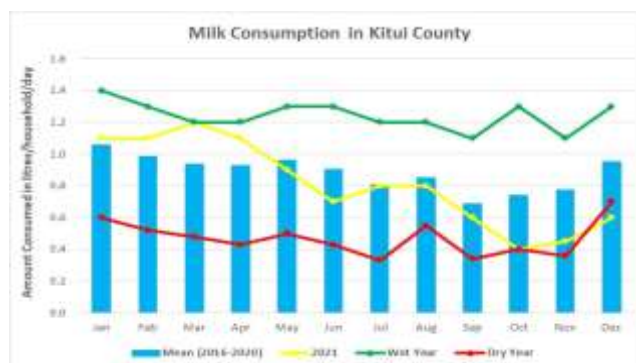


Figure 18: Milk Consumption

5.2 FOOD CONSUMPTION SCORE

- The proportion of households in acceptable food consumption category rose to 70.5 percent in December from 64.2 percent in previous month.
- The remaining 27.8 and 1.8 percent of the households were in borderline and poor food consumption category respectively as shown in figure 19.
- About 2.7 percent of the households in Marginal Mixed Farming livelihood zone were in poor food consumption category compared to 0.7 percent in Mixed Farming livelihood zone.
- On average, households consumed cereals six days per week; pulses and oils five days per week; sugars and sugary products four days per week; vegetables three days per week; meat, eggs or fish, milk and fruits once per week as shown in table 1.



Figure 19: Food Consumption Score (FCS)

Table 1: Meals Eaten per Day in the Last One Week (Recall Period)

	Cereals	Pulses	Vegetables	Meat, Eggs or Fish	Milk	Oil	Sugars	Fruits
County	6	5	3	1	1	5	4	1
Marginal Mixed Farming	6	4	2	1	1	4	2	1
Mixed Farming	7	5	4	1	2	6	6	1

5.3 HEALTH AND NUTRITION STATUS

5.3.1 Nutrition Status

- Trend analysis for children at risk of malnutrition indicates an increasing trend since July 2021 and this is due to diminishing household purchasing power and reduced food stocks at household level due to low production.
- The proportion of children at risk of malnutrition remained stable to stand at 5.3 percent in December from 5.8 percent in previous month.
- The current level of children at risk of malnutrition is 2.1 percent lower than the long-term mean as shown in figure 20.

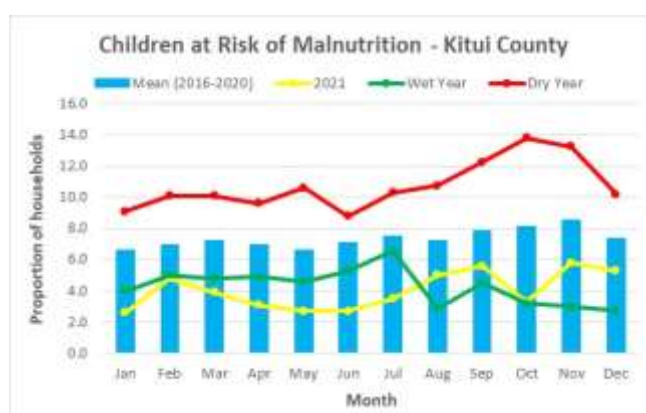


Figure 20: Children at Risk of Malnutrition

5.3.2 Health

- In December 2021, the proportion of children suspected to have fever with chills like malaria, fever with breathing difficulties and diarrhoea cases stood at 3.1, 0.8 and 0.5 percent compared to 5.8, 0.6 and 0.6 percent in previous month respectively.

5.4 COPING STRATEGIES

- The mean of reduced coping strategy index (rCSI) declined by 12 percent to stand at 10.5 in December from 12.0 in previous month.
- The rCSI has remained similar to dry year between July to December 2021.
- Households in Marginal Mixed Farming livelihood zone had a high rCSI of 13.5 compared to 7.2 in Mixed Farming livelihood zone.
- Reliance on less preferred or less expensive food, reduced portion size of meals and reduced number of meals eaten per day were the most frequent coping mechanisms adopted across the livelihood zones.
- The current rCSI is 46 percent higher than the long-term mean as shown in figure 21.
- About 39, 21 and 4.5 percent of households were employing stressed, crisis and emergency food-based coping mechanisms in December compared to 39.1, 20.3 and 6.3 percent respectively in previous month as shown in figure 22.
- In Marginal Mixed Farming livelihood zone, 30.6, 27.2 and 8.2 percent of households employed stressed, crisis and emergency food-based coping mechanisms compared to 49.2, 13.3 and 0.0 percent in Mixed Farming livelihood zone respectively.
- Moreover, 8.2, 2.6 and 2.6 percent of the households employed stressed, crisis and emergency livelihood coping mechanisms respectively to cope with lack of food or money to buy food.

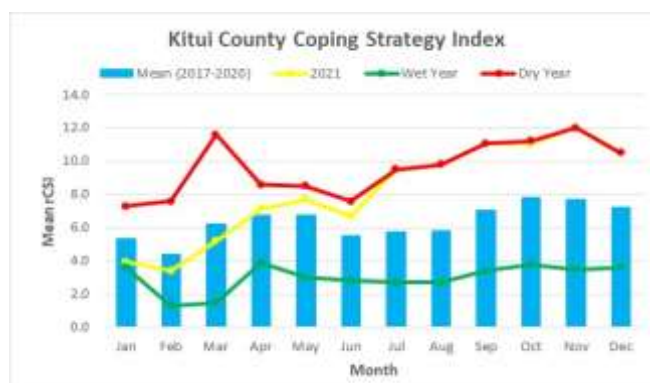


Figure 21: Reduced Coping Strategy Index (rCSI)

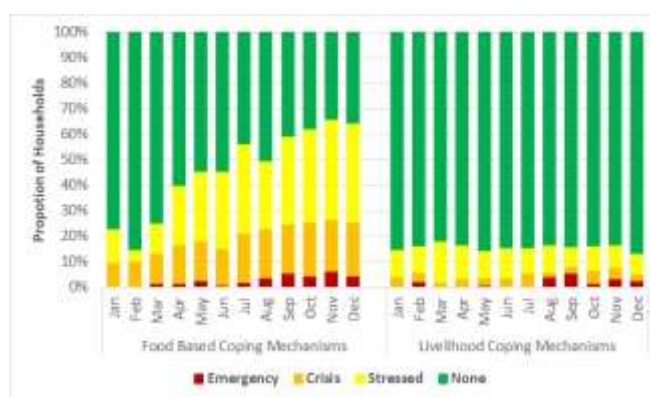


Figure 22: Households Employing Food Based and Livelihood Coping Mechanisms

6.0 CURRENT INTERVENTION MEASURES

6.1 NON-FOOD INTERVENTIONS

SECTOR	INTERVENTION	TARGET AREA	Actor/Organization
Agriculture	Capacity building of producer organizations on micro-projects targeting 8,550 farmers	20 wards in Kitui East, Kitui Rural, Kitui Central, Mwingi North and Mwingi Central sub counties	Under NARIGP Programme
Water	Distribution of 63 water tanks (3,000litres) and assorted seedlings to vulnerable households	Endau/Malalani, Voo/Kyamatu, Mutha and Kanziku/Simisi wards	JICA and County IFNA team
Livestock	Ring and mass vaccination against FMD, LSD and NCD targeting 87,669 cattle and 156,300 chicken	Kitui East, Kitui Rural, Kitui South and Mwingi Central sub counties	County Department of Livestock
	Commercial livestock offtake targeting 2,300 households	25 wards in 4 sub counties	Kenya Meat Commission, County Government of Kitui

SECTOR	INTERVENTION	TARGET AREA	Actor/Organization
Health and Nutrition	Covid-19 screening and vaccinations	County wide	County Government of Kitui and Ministry of Health
Cross-cutting	Dissemination of climate and agro-weather advisories	County wide	Kenya Meteorological Department, Kenya Red Cross, NDMA and County Government of Kitui
	Mapping of vulnerable and at-risk households, to be targeted for cash transfer programme	County wide	Ministry of Interior & Coordination of National Government, NDMA & Kenya Red cross

6.2 FOOD INTERVENTIONS

- Therapeutic integrated management of acute malnutrition for the under-fives, pregnant and lactating mothers [supplementary feeding program (SFP)], outpatient therapeutic program (OTP) and stabilization centres by Ministry of Health supported by several partners.
- Livestock off-take ground slaughter of 3,526 weak cattle and distribution of relief meat to vulnerable households targeting 113,600 vulnerable populations across the county. Implemented by Kenya Meat Commission, Kenya Red Cross Society, State Department of Livestock in collaboration with County Steering Group, Sub County Steering Groups and Sub County Relief Committees.

7.0 EMERGING ISSUES

7.1 Insecurity/Conflict/Human Displacement

- No abnormal incidences of insecurity, conflict or human displacement were reported in the county.

7.2 Migration

- No unusual livestock migration patterns were reported.

7.3 FOOD SECURITY PROGNOSIS

- The weather outlook for January 2022 issued by Kenya Meteorological Department on 28th December 2021 indicates that; the county is likely to experience generally dry conditions for most of the month. However, occasional light to moderate rainfall is expected to occur over few areas during the first half of the month and total rainfall amounts are likely to be near to above the January long term mean. This condition might be suitable for harvesting, drying and storage of grains.
- The Sussex Vegetation Outlook for the month of January and February 2022 indicates that, there is a higher chance that the county will experience normal to above normal vegetation greenness. These conditions might boost accessibility and availability of livestock feeds.
- Generally, food security situation in the county is expected to improve from January 2022 following improved water situation and regeneration of livestock feeds. Harvesting of horticultural crops and cow peas leaves will also boost household food consumption patterns. Availability of farm casual labour opportunities will also boost households' income and terms of trade.

8.0 RECOMMENDATIONS

Immediate/Short term

National Government, County Government and Development partners to collaborate on:

SECTOR	INTERVENTION	TARGET AREA
Agriculture	Provision of solar water pumps for cluster irrigation schemes.	39 wards in the county for 200 clusters
	Promotion of appropriate post-harvest management practices	County wide
Livestock	Intensive disease control for endemic notifiable diseases	County wide
	Promote pasture conservation and management practices	County wide
	Rehabilitation of strategic grazing areas	County wide
Water	Water infrastructure development and maintenance	County wide
	Promotion of water harvesting and storage practices	County wide
	Capacity building of water management committees and pump attendants	County wide
Health and Nutrition	Promoting home-based water treatment and conservation measures	County wide
	Promotion of sanitation and hygiene practices	County wide
	Community awareness creation on COVID-19 preventive measures	County wide
Education	Installation of hand washing facilities and supply of water, thermo guns and masks for students/pupils	County wide
	Provision of school feeding programmes	County wide
Peace and Security	Support community-based conflict early warning and enhance surveillance	Tseikuru, Ngomeni, Nguni, Endau/Malalani and Mutha wards