



A Vision 2030 Flagship Project



## NATIONAL DROUGHT MANAGEMENT AUTHORITY Makueni County

### Drought Early Warning Bulletin for February 2020

#### FEBRUARY 2020 EW PHASE

Drought Status: **NORMAL**



Shughuli za kawaida

#### Drought Situation & EW Phase Classification

##### Biophysical Indicators

- The county continued to receive off-season rains which were evenly distributed across the different parts of the county.
- The vegetation greenness for the county was above normal.
- Quantity and quality of pasture and browse remained good across all the three livelihood zones.

##### Socio-Economic Indicators

- Cereals and legumes were at the harvesting stage. There was bumper harvests of maize in the Mixed farming and green grams, cowpeas in the marginal mixed L-zone.
- There were no reports of invasion by desert locust in the county.
- Livestock body condition was good across all the three livelihood zones.
- Milk production was within the normal range.

##### Access Indicators

- Major livestock markets countywide had been closed as a result of LSD and FMD outbreak. Trade in goat, sheep and cattle products had also been banned.
- Milk consumption was within the normal range.
- Terms of trade were below seasonal averages due to high maize prices.

##### Utilization Indicators

- The percentage of children at risk of malnutrition was below the normal range.
- Majority of the Households employed consumption based coping mechanisms less frequently.

Livelihood Zone (LZ)	Phase	Trend
Mixed Farming (Coffee/Dairy)	Normal	Stable
Mixed Farming (Food Crop/Livestock)	Normal	Stable
Marginal Mixed Farming	Normal	Stable
County	Normal	Stable
Biophysical Indicators	Value	Normal Ranges
Rainfall (% of Normal)	235	80-120%
VCI-3Month	92.38	35-50
State of Water Sources	5	5
Production indicators	Value	Normal
Crop Condition	Harvesting	Harvesting
Livestock Body Condition	4-5	4-5 Normal
Milk Production	1.8	1.7 Litres
Livestock Migration Pattern	No migration	No migration
Livestock deaths (from drought)	No death	No death
Access Indicators	Value	Normal
Terms of Trade (TOT)	91.3	102
Milk Consumption	1.2 litres	1.1 litres
Return distance water sources	3.2 Km	4.8 Km
Cost of water at source (20 litres)	KSh 2-5	KSh 2-5
Utilization indicators	Value	Normal
Nutrition Status, MUAC (% at risk of malnutrition)	5.9	7
Coping Strategy Index (CSI)	2.5	<10

<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> </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>								
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec

# 1. CLIMATIC CONDITIONS

## 1.1 RAINFALL PERFORMANCE

- The month of February was characterized by some off-season rains which were fairly distributed across all the three livelihood zones.
- On average the county recorded 30.6mm, 4.3 mm and 56.5 mm of rainfall in first, second and third dekads of February respectively compared to 6mm, 12.3mm and 5.7mm (1994-2013) LTA as illustrated in figure 1.

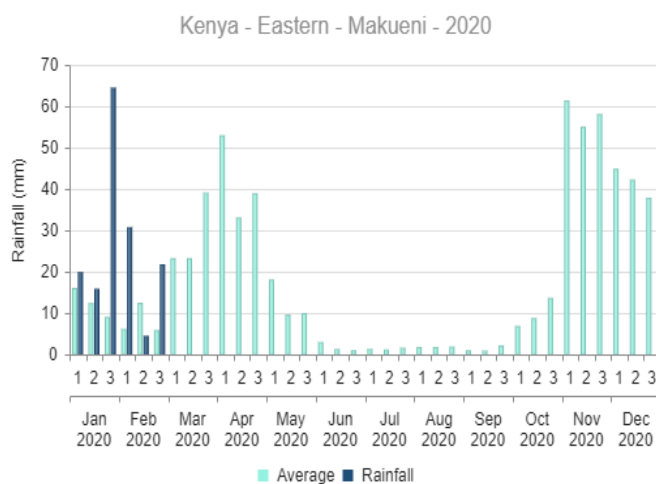


Figure 1: Average rainfall February 2020

# 2. IMPACTS ON VEGETATION AND WATER

## 2.1 VEGETATION CONDITION INDEX

### 2.1.1 The vegetation condition (VCI)

- Above normal vegetation greenness has been experienced across the county. This is as a result of the good rains that have continuously been experienced since the onset of OND season to date. This is evident in the average 3-month VCI of 92.38 for the county.
- Kaiti, Kibwezi East, Kibwezi West, Kilome, Makueni and Mbooni sub-counties each recorded 3-month average indices of 101, 84.74, 90.08, 100.7, 96.3 and 98.26 respectively.

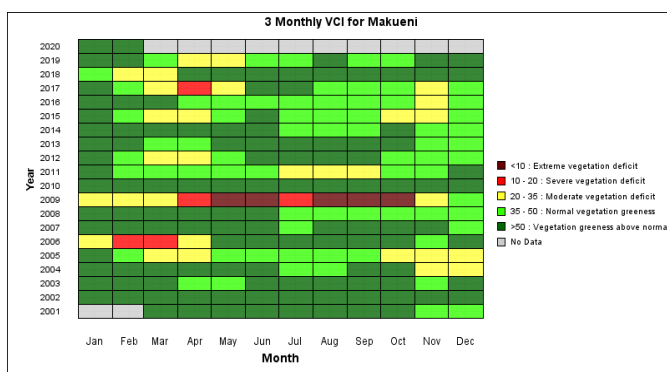


Figure 2.1a: Makueni 3 month VCI Matrix, February 2020.

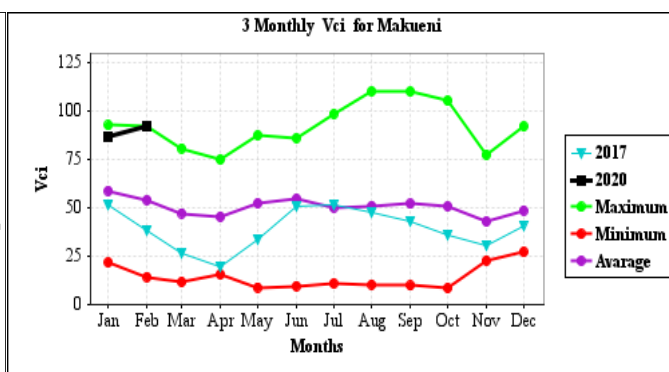


Figure 2.1b: Makueni County 3 month VCI Graph, February 2020.

### 2.1.2 Pasture and Browse

- The forage condition (browse and pasture) was good in all the three livelihood zones which was much better than the long term average. However, in some parts of Kilungu and Mbooni in the Mixed farming (coffee/dairy) zone the cold, damp, water-logging conditions resulted in poor performance. In Kibwezi East and West invasive weeds covered grazing lands though the acreage was limited.
- The available pasture is expected to last up to the onset of the MAM long rains. The pasture and fodder available is well above normal due to prolonged supply of moisture by both the off-season rains and the 2019 OND Short rains season.
- Crop residues from the ongoing harvests will also contribute significantly as a source of fodder for livestock since a bumper harvest is expected in all zones.

- Below is an illustration of the state of pasture and browse condition during the month of February.

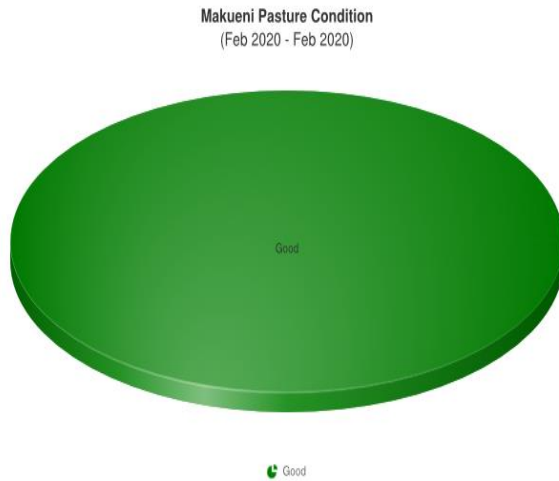


Figure 4: Makueni County Pasture Condition, February 2020

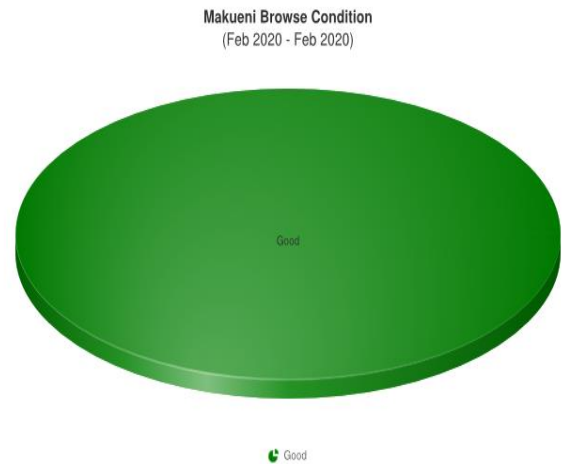


Figure 5: Makueni County Browse Condition, February 2020

## WATER RESOURCE

### 2.2.1 Sources

- The main water sources for both human and livestock consumption were: Rivers at 29.7%, Traditional river-wells at 24.3%, Shallow wells 18.9%, Boreholes 10.8% as illustrated in figure 6 alongside.
- Surface water reservoirs in both mixed farming and marginal mixed farming livelihood zone had a recharge level of more than 80 percent and were expected to last until July.

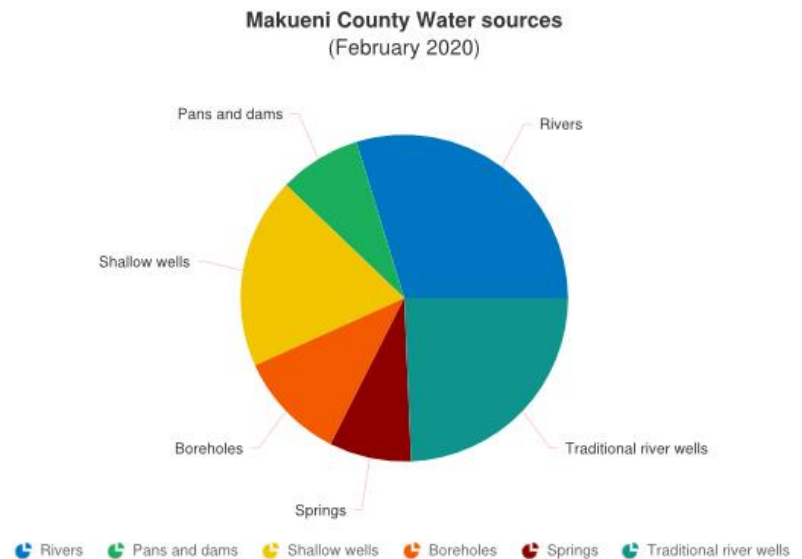
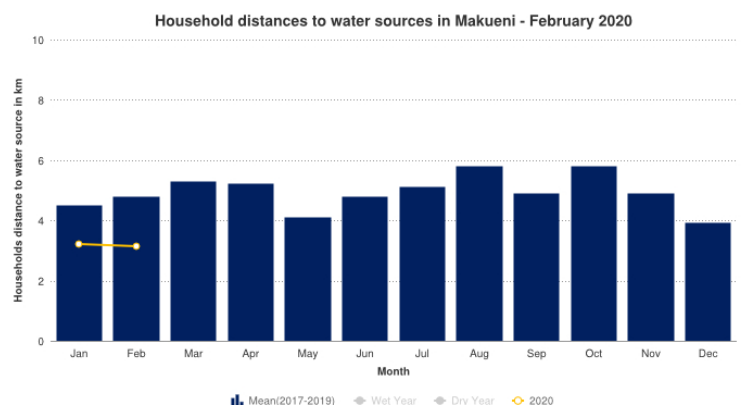


Figure 6: Makueni County Water Sources for February 2020

### 2.2.2 Household access and Utilization of water

#### Distances to water sources for household consumption

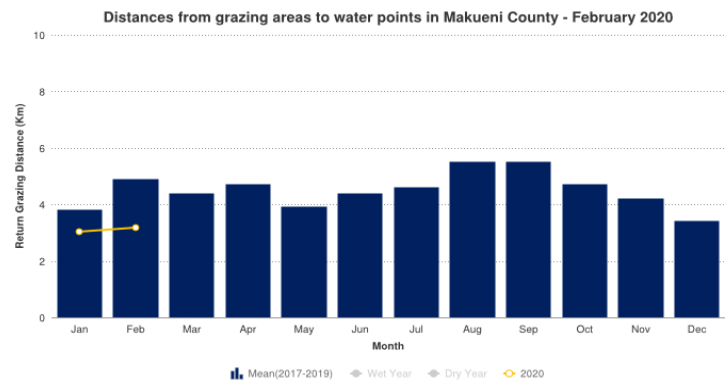
- The average return distance from the household to water sources remained stable at 3.1 km.
- The distances are expected to remain low across all the livelihood zones attributed to recharge by the ongoing off- season rains and the expected MAM long rains.
- The average water consumption per day in the marginal mixed farming zone was 20 litres while in the Mixed farming livelihood zones was 40 litres.



**Figure 7: Household Access to Water, February 2020**

### 2.2.3 Livestock access to water

- The average return distance from the grazing areas to watering points remained relatively stable at 3.2km
- The stability in distances for the last three months is attributed to the available water sources as a result the ongoing off-season rains and the 2019 OND short rains season.
- The situation is expected to remain stable for the next two months.



**Figure 8: Average grazing Distances, February 2020**

### 2.3 Implication of the above indicators to Food Security

- The improved forage condition and the decreased distances to water sources impacted positively on livestock body condition resulting to better market prices, increased milk production and consumption mostly by the under-fives hence a decrease in malnutrition cases.
- The stability in water distances and its availability has cushioned both households and livestock from water stress.

## 3.0 PRODUCTION INDICATORS

### 3.1 LIVESTOCK PRODUCTION

#### 3.1.1 Livestock Body Condition

- Livestock body condition remained good for all species across all the three livelihood zones.
- The cattle body condition in both Mixed farming and marginal mixed farming livelihood zone was at the optimum (moderate to good smooth appearance, a score of 4-5). This is expected to remain stable for the next 2-3 months with the availability of pasture and water for livestock. The current situation can be attributed to the favourable conditions due to the off-season rains and the expected early onset of the MAM rains.

#### 3.1.2 Livestock Diseases

- In the Marginal Mixed Livelihood zone, disease outbreak was reported in several wards as follows: Kibwezi East sub-county (All wards) Lumpy Skin Disease (LSD) reported, Ivingoni/Nzambani; Foot and Mouth Disease (FMD), tick-borne babesiosis (red water), Kibwezi West sub-county: LSD and FMD reported in all wards while Mbooni sub county: Kalawa- LSD, Makueni Sub county; FMD in Wote/Nziu Ward, Kibwezi west: FMD in Emali/Mulala.
- In the mixed farming (coffee /dairy) zone, there were no cases reported. Chicken were also affected in Kibwezi East, Kibwezi West and Makueni by suspected infectious coryza.
- LSD vaccinations were conducted in Kibwezi West (Kikumbulu North) and FMD in Kibwezi West (Thange, Ivingoni/Nzambani, Nguu/Masumba). However, the coverage was very low.
- A quarantine notice was issued in mid-February by the County Government of Makueni restricting movement of cattle, goats and sheep in the county. Transportation of their products were equally banned.
- These disease outbreaks could have a negative impact on animal health and productivity at household level and even death if not contained.

### 3.1.2 Milk Production

- The average Milk production per household per day for the month of February increased by 12.5 percent to 1.8 litres. This is attributed to the availability of fodder and water for the cattle which has impacted positively on them.
- Compared to a normal wet season the current production was slightly low.
- Compared to the 2016-2019 short term average, the current milk production was slightly above by 5.9 percent.

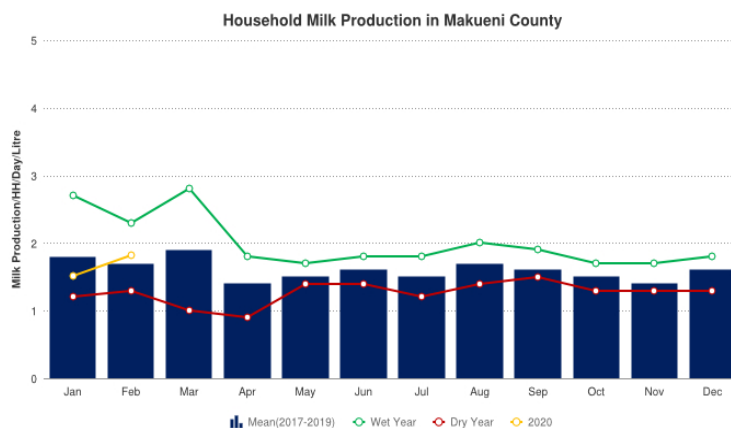


Figure 9: Makueni county milk production, February 202

## 3.2 RAIN-FED CROP PRODUCTION

### 3.2.1 Stage and Condition of food Crops

- Main crops grown under rain-fed production in the County were; maize, green grams, cowpeas, beans, pigeon peas, millet and Sorghum.
- Crops in both Mixed farming (Coffee, Dairy and Irrigation) and Mixed farming (Food crops and Livestock) livelihood zone had attained the maturity stage and was at the harvesting stage.
- Stocks held at all levels was higher than the long term average occasioned by enhanced rains which resulted to higher production, hence availability of food stocks from farms and from markets as a result of enhanced farm incomes.
- Most of the stocks held by traders were from outside the county (mainly western Kenya and north rift valley). Current stocks held by the households is expected to last for 3 months which is normal at this time of the year. Cases of post-harvest losses were reported in the Marginal Mixed Farming zone and was as a result of the extended rainy season which delayed harvest of the crop leading to rotting in some areas. Crops affected were green grams, maize and cowpeas.

## 4.0 MARKET PERFORMANCE

### 4.1 LIVESTOCK MARKETING

#### 4.1.1 Cattle Prices

- The average market price for the cattle increased by 12.5 percent to an average of Ksh25, 200.
- Compared to the 2016-2019 long term average, the recorded price was above by 31 percent.
- The increase in price is attributed to the closure of major livestock markets and the current favourable conditions for livestock rearing which have encouraged farmers to retain their stock.

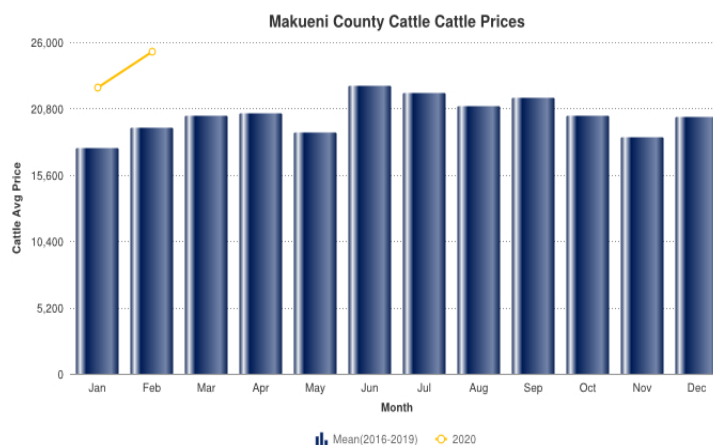


Figure 10: Makueni County Cattle Prices, February 2020

### 4.1.2 Goat Prices

- The average market price for the goat for the month under review increased slightly by 3 percent to Ksh3,900.
- Compared to the (2015-2019) long term mean, this month's price was 8 percent above the LTA.
- The good prices are attributed to the prevailing good body condition and the availability of pasture and browse for the shoats.



Figure 11: Makueni County Goat Prices, February 2020

## 4.2 CROP PRICES

### 4.2.1 Maize

- The average market price for maize per kilogram remained stable at Ksh45.
- The current maize market price is 16 percent higher than (2016-2019) long-term average of Ksh37.
- The price of maize is expected to go down in the next one month given that the maize crop is being harvested and is expected to infiltrate the local market.

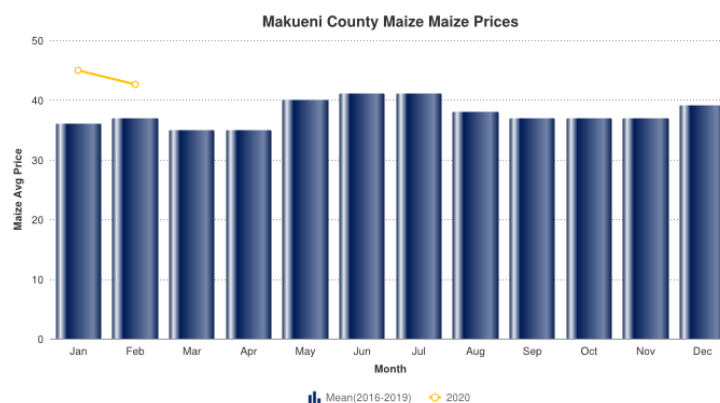


Figure 12: Makueni County Maize Prices, February 2020

### 4.2.2 Beans

- The average market price for beans was Ksh80.
- Compared to (2016-2019) long-term average of Ksh80, the current price was normal.
- Markets in the Marginal Mixed Farming livelihood zone recorded high prices of around KSh 100 to KSh120.
- This was as a result of the poor performance of the crop in this zone.

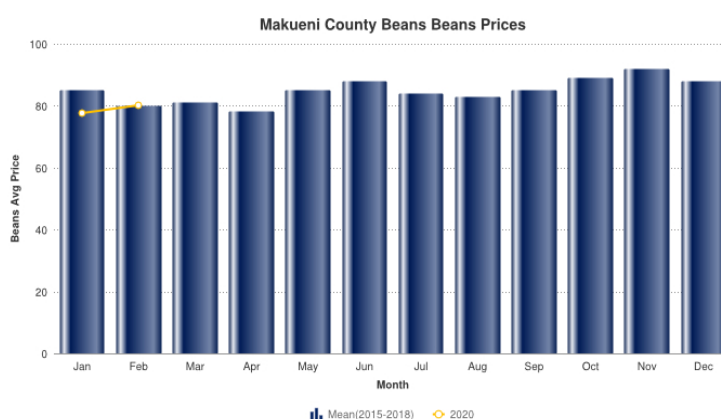


Figure 13: Makueni County Beans prices, February 2020

### 4.3 Livestock Price Ratio/Terms of Trade

- The current terms of trade was 91.3, compared to last month this was a 8.8 percent increase from that recorded last month
- Compared to the (2016-2019) short term average the current TOT was slightly below by 11.7 percent.
- This implies that from the sale of one goat, a farmer could purchase 91.3 kg of maize.
- This difference with last year's price is as a result of the high maize prices as the harvests have not been fully realized while the goat price remains stable
- Terms of trade and household purchasing power is expected to improve as the goats body condition continue to improve, resulting to improved prices while that of maize steadily decreases.

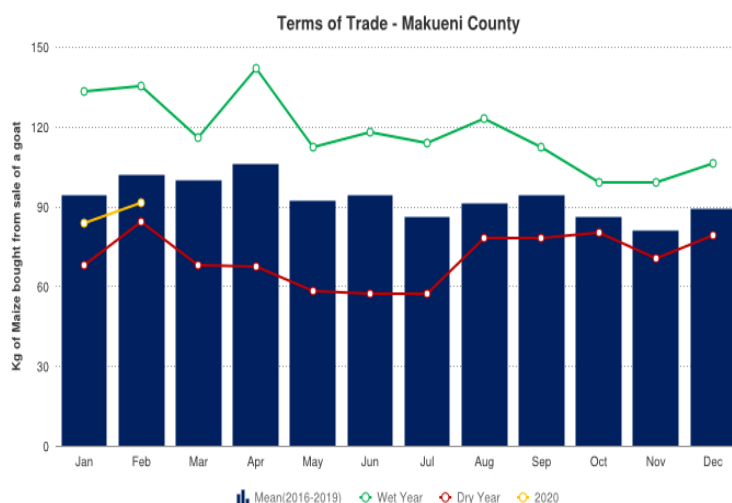


Figure 14: Makueni County Terms of Trade, February 2020

#### 4.3.3. Implications of the above indicators on Food security.

- Livestock prices are likely to remain high due the current favourable conditions for livestock rearing. The demand for cattle for restocking is high since farmers sold off their livestock during the dry phase preceding the OND season. Those with cattle are holding on to their stock. The price of major local staples is likely to go down given that a high percentage of the crops was being harvested, this will impact positively on the household purchasing power.

## 5.0 FOOD CONSUMPTION AND NUTRITION STATUS

### 5.1 MILK CONSUMPTION

- The average daily milk consumption per household remained stable at 1.2 litres
- Compared to the (2017-2019) Short Term Average of 1.1 litres. Compared to the Short-term average, the current milk consumption was slightly above.
- Compared to the good year the current milk consumption was within the normal range.

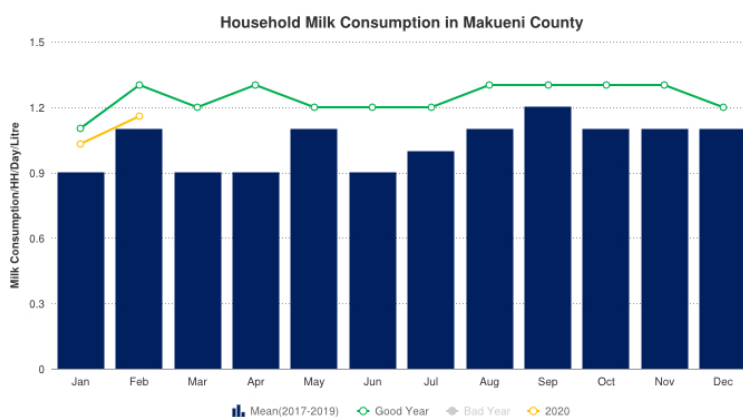


Figure 15: Makueni County milk consumption, February 2020

## 5.2 FOOD CONSUMPTION SCORE

- The county average acceptable FCS was 85.3 percent and 14.7 at the borderline
- Most households were consuming at least three meals a day with the meal composition being of diverse food groups.

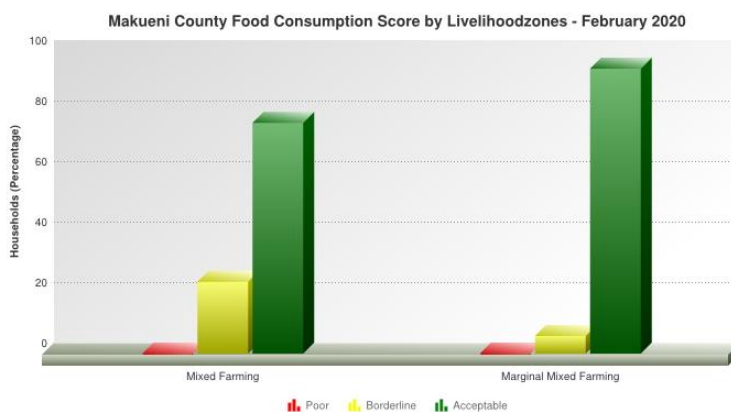


Figure 16: Makueni County FCS, February 2020

## 5.3 HEALTH AND NUTRITION STATUS

### 5.3.1 Nutrition Status

- Majority of households were consuming at least 3 meals in a day of diverse food groups
- The proportion of children (under-fives) at risk of malnutrition for the month of February was 5.9 percent of the 510 sampled children
- Compared to the 2015-2019 average, the current MUAC was below the normal range by 16 percent. It's expected that the MUAC will improve more with the availability of milk and Citrus fruits mostly for the under-fives.

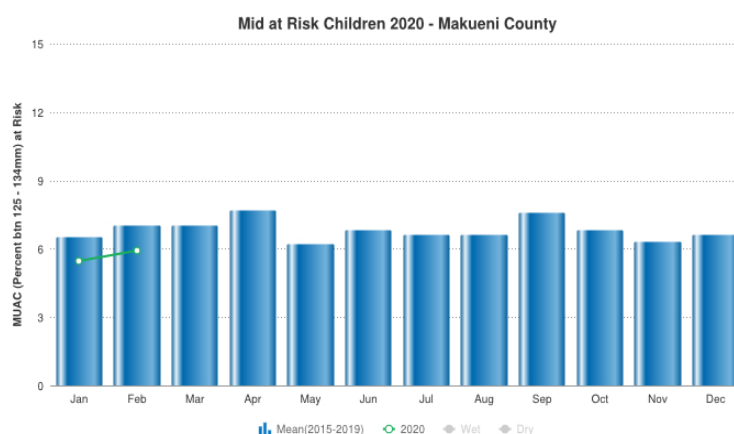


Figure 17: Makueni County Mid at Risk Children, February 2020

## 5.4 COPING STRATEGIES

- Average mean CSI for the county increased from 1.9 to an average of 2.5
- The coping strategy index (CSI) in Mixed farming livelihood zone was 2.9, while in the marginal mixed farming zone it was 2
- Compared to last month the current CSI had slightly increased this implies that Households were employing less coping strategies to cope with lack of food or money to buy food. There is stability in food consumption harvests as compared to other times of the year as a result of availability of food at the household level. This is attributed to the continuing harvests

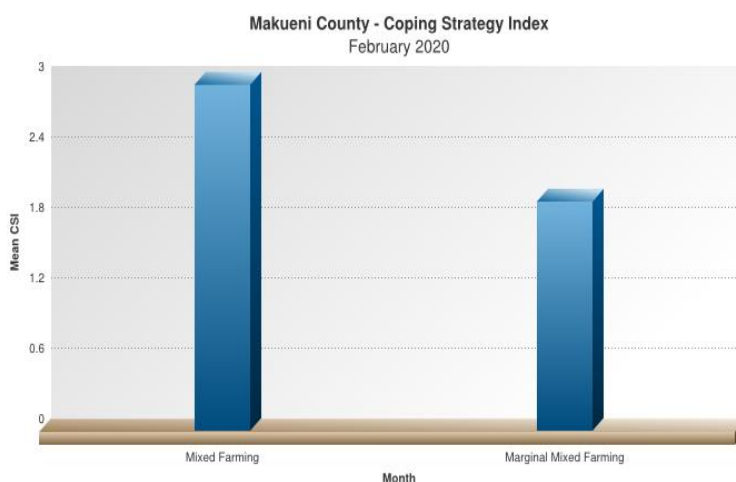


Figure 18: Makueni County Coping Strategy Index, February 2020

## 6.0 CURRENT INTERVENTION MEASURES (ACTION)

### 6.1 NON-FOOD INTERVENTIONS

- LSD, FMD and CCPV vaccination by the DOALF



- Inputs subsidy (seeds, fertilizer, hermetic bags, pesticides) by KCEP-CRAL
- Capacity building farmers on climate smart agriculture and post-harvest management by DOALF and partners
- Promotion of drought tolerant crop production by DOALF and partners such as ASDSP, KCEP-CRAL, AVCD, KCDMS, NCPB, NARIGP

## 6.2 FOOD AID

- No food aid was received during the month under review.

## 7.0 EMERGING ISSUES

### 7.1 Insecurity/Conflict/Human Displacement/Human-Wildlife conflict/Floods

- No abnormal incidences of insecurity, human displacement or conflict over resources during the period under review since the season performed well both within the county and the neighboring counties.

### 7.2 Migration.

- No migration of livestock was reported in any of the three livelihood zones, Neither is it expected in the next three months

### 7.3 Food Security Prognosis

Forecast from the department of meteorology has indicated a normal to above normal (March-April-May) season with onset expected from the second to third week of March and cessation from the third to fourth week of May. Given that the OND season performance was good with some off-season rains being experienced in January and February, water sources (both surface and underground) are expected to remain well recharged for the next six months. Maize prices are likely to come down as supply from local production infiltrates the markets. Local crop production is expected to flourish and this is expected to have a positive impact on the local food security situation. Livestock body condition is expected to remain good due to the expected availability of quality forage and water and this in effect will accord the farmers good market prices and as a result, an increase in purchasing power.

However, livestock Markets and sale of livestock products has been restricted countywide following the quarantine order. It is not certain when normal operations are likely to resume. This is likely to affect household disposable income since farmers will not be able to trade.

However, livestock body conditions remain good across all three livelihood zones and are expected to remain so until well into the March to May season as there is adequate pasture and water to last until then. Access to markets for cereals and non-food items is expected to remain unhampered and operational which is good for consumption at household level. Milk production will also remain stable maintaining a stable nutrition status especially for children under five years of age. Food consumption will remain acceptable for the majority of the population.

## 8. RECOMMENDATIONS

### Immediate/Short term

#### Agriculture

- Construction of Water harvesting structures e.g. farm ponds (lined), Insitu Technologies, Conservation Agriculture.
- Promoting, production and utilization of drought tolerant crop varieties.
- Pests and diseases management interventions in vegetables
- Capacity building on Viable Value Chains, postharvest handling and market linkages

- Establishment of a Strategic Grain Reserves for the County

### **Livestock**

- Vaccination against LSD, FMD, CCPP, NCD, PPR, RVF
- Pasture and fodder conservation (mechanized and manual)
- Livestock upgrading (AI, shoats and chicken)

### **Water**

- Rehabilitation of existing Earth Dams including Desilting and protection of spillways from erosion
- Shift focus from small projects to mega projects with significant impacts
- Construction of more weirs to protect spring
- Rehabilitation of un-operational boreholes
- Rehabilitation of sand dams/sumps installations destroyed by the rains