

**National Drought Management Authority**  
**MERU COUNTY**  
**DROUGHT EARLY WARNING BULLETIN FOR MAY 2018**



A Vision 2030 Flagship Project



**MAY EW PHASE**

**Early Warning (EW) Phase Classification**



**Drought Situation & EW Phase Classification**

**Biophysical Indicators**

- Rainfall received during the month was of good spatial and temporal distribution. Amounts received were also within the months long-term averages.
- Natural vegetation conditions remained good following good rains received over the last three months.
- Pastures and browse are of good conditions in all livelihood zones.

**Socio Economic Indicators (Impact Indicators)**

**Production indicators**

- Livestock body conditions are largely fair to good in all livelihood zones with complete recovery yet to be attained.
- Pest control especially fall armyworm, weeding and early harvesting of mature legumes were the major farm activities.
- Outbreak of American Bollworm on dolichos, pigeon peas, sorghum, and millet has been reported in Akithi and Athiru Gaiti wards

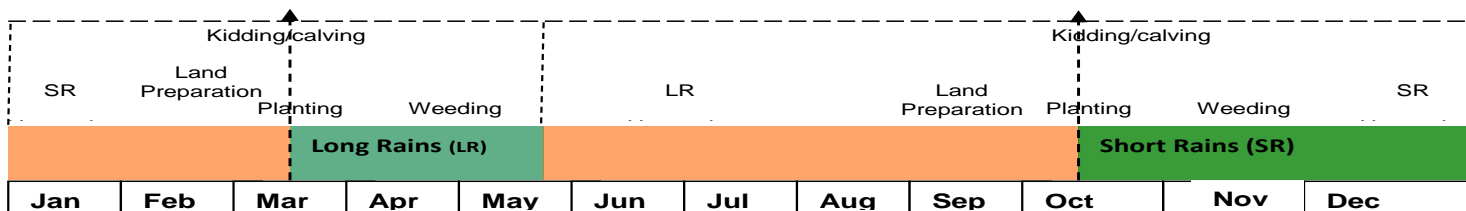
**Access indicators**

- Rivers, boreholes, pans and dams were major sources of water to both households and livestock. Trekking distances have reduced considerably.
- Further improvements in terms of trade have been noted compared to April.

**Utilization Indicators**

- Proportion of children at risk of malnutrition have increased compared to April.

Livelihood Zone	Phase	Trend
Mixed Farming	Normal	Improving
Agro-pastoral	Normal	Improving
Rain-fed Cropping	Normal	Improving
Meru County (Meru North)	Normal	Improving
Biophysical Indicators	Value	Normal Range
VCI-3Month (County)	54.23	>35
Production indicators	Value	Normal
Crop Condition (Maize/legumes)	Tasseling, podding, and early harvesting and consumption	Tasseling, podding, and early harvesting and consumption
Livestock Body Condition	Fair to Good	Good
Milk Production	1.9	1 - 2 Litres
Livestock Migration Pattern	No Migrations	No Migrations
Access Indicators	Value	Normal
Terms of Trade (Goat/cereal price ratio)	124 kg	174 kg
Return distance to water sources	4.9 km	<7 km
Utilization indicators	Value	Normal
Nutrition Status, MUAC (% at risk of malnutrition)	17	<20
Coping Strategy Index	11.43	21.4



# 1. CLIMATIC CONDITIONS

## 1.1 RAINFALL PERFORMANCE

- Rainfall that was of good spatial and temporal distribution was received the entire month. Rainfall totals received have however reduced signaling the end of the season. Current totals are normal for this time of the year.

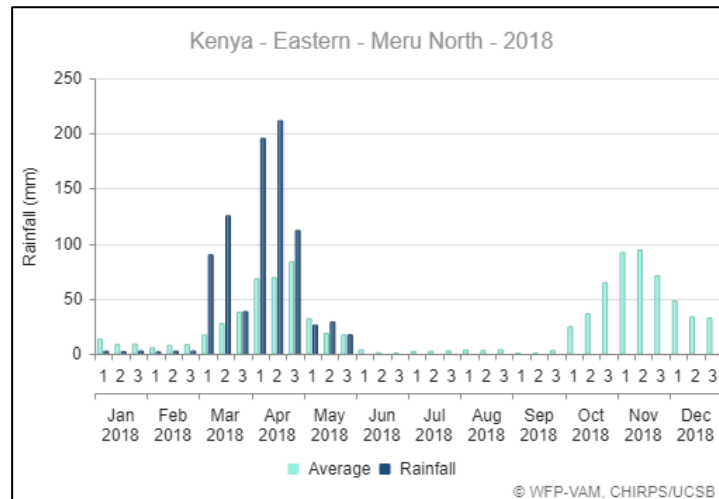


Figure 1a: Meru North: Rainfall totals for May 2018

## 2. IMPACTS ON VEGETATION AND WATER

### 2.1 VEGETATION CONDITION

#### 2.1.1 Vegetation Condition Index (VCI – 3 month)

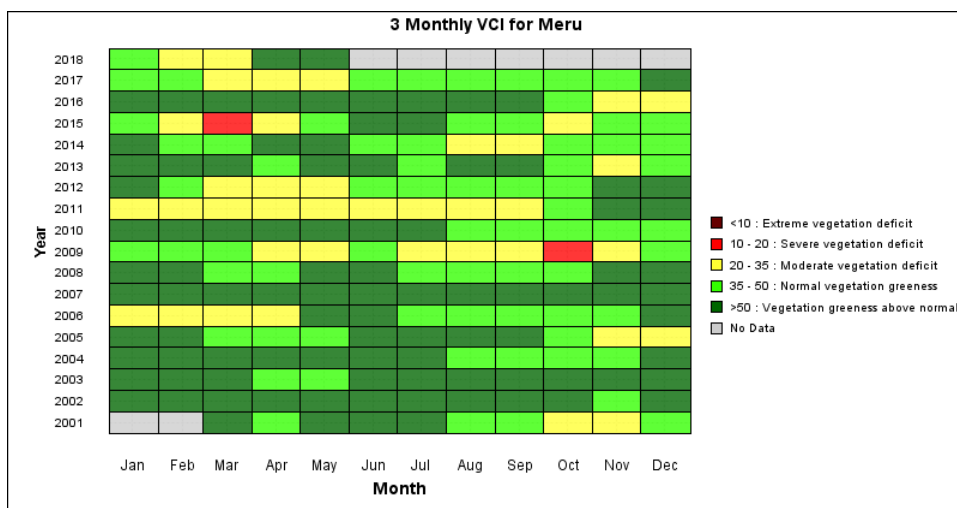


Figure 2a: VCI matrix for Meru County, 2001 – 2018

- Natural vegetation remained good as last month, a cumulative effect of the good rains received over the last three months. VCI (3-month) remained high at 54.23 similar to last month.

#### 2.1.2 Pasture

- Pastures were good across all livelihood zones during the month, which is normal for this time of the year. The quantity of pastures, especially in the grazing areas of the Agro-pastoral livelihood zone, was slightly above normal following good rains received during the months of March and April.
- Current pastures are expected to sustain livestock until September if there will be no immigration from neighbouring Isiolo County.

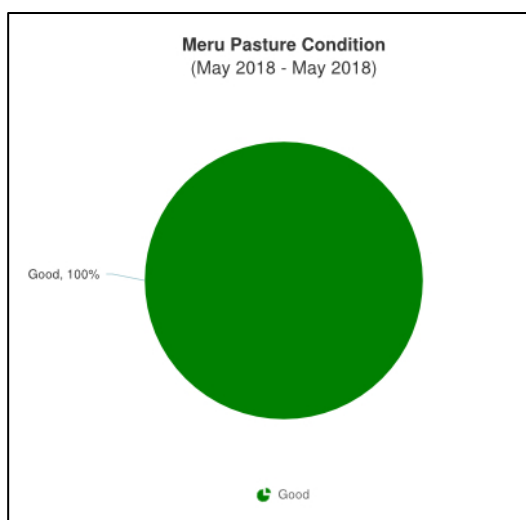


Figure 3: Pasture conditions

### 1.3 Browse

- Browse quality and quantity remained good across all livelihood zones, a situation which is normal for this time of the year. Current pastures are expected to sustain browsers to the next rainy season in October especially if there will be minimal or no in-migration from neighboring counties of Isiolo and Laikipia.

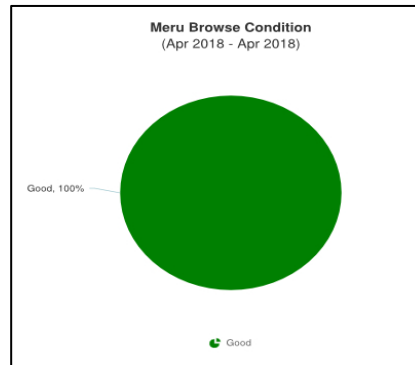


Figure 4: Browse conditions

## 2.2 WATER RESOURCE

### 2.2.1 Sources

- Persistent heavy rainfall that has been witnessed across all livelihood zones since March, has recharged most surface water sources to normal levels. In the month of May, rivers, boreholes, community-based piped water projects, pans, and dams have been the major water sources for both livestock and domestic use. Current sources were also the major sources during the month of March and April.
- Rivers provided water to the largest number of users more than any other source during the month similar to April. The proportion of users that relied on boreholes increased to 23 percent compared to 11 percent in April while those that relied on pans and dams decreased to 7.7 percent compared to 11.1 percent.
- Other important sources noted included roof catchments and seasonal streams. Water vendors were also vital sources in remote areas of the agro-pastoral livelihood zone especially in Kachiuru in Igembe North and in urban areas that experienced frequent water shortages, especially in Maua town. Despite the variation in the number of users, current sources are normal for this time of the year.
- Ndumuru borehole, which is a critical watering point for livestock in the grazing areas, is broken down.

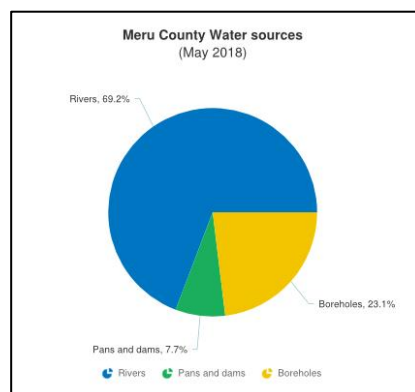


Figure 5: Major water sources

### 2.2.2 Household access and Utilization

- With a variety of water sources available to households during the month of May, average return distances have dropped to 4.9 km compared to 7 km in April. Current distances are below the long-term average for the month across all livelihood zones and are expected to remain low for the next two months.

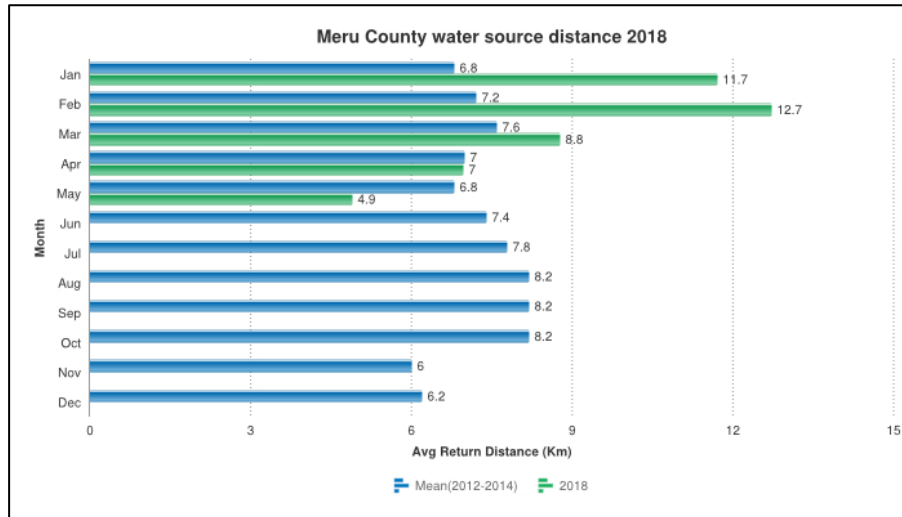


Figure 6: Household return distances to water sources.

### 2.2.3 Livestock access

- With the good rains and pastures, livestock is mainly concentrated in the wet/normal grazing areas of the Northern Grazing Area in the agro-pastoral livelihood zone. This grazing area traverses the lower parts of Igembe North, Igembe Central, Tigania East and Tigania West sub-counties. A wide range of available water sources including natural ponds, seasonal rivers, boreholes, pans, and dams have reduced watering distances to an average of 7.6 km compared to 10.6 km in April and 13.3 km in May.
- Current distances are slightly below the long-term average for the month and are expected to remain low next month.

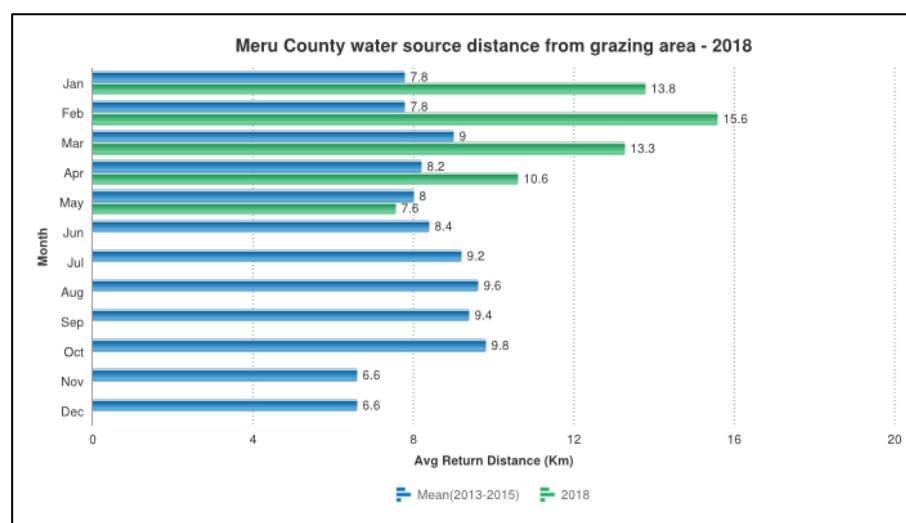


Figure 7: Livestock return watering distances from grazing areas

## 3.0 PRODUCTION INDICATORS

### 3.1 LIVESTOCK PRODUCTION

#### 3.1.1 Livestock Body Condition

- Livestock body conditions are largely fair to good across all species following good pasture regeneration and reduced grazing and watering distances. This is normal for this time of the year.
- Livestock body conditions are expected to improve further in the coming months

#### 3.1.2 Livestock Diseases

- Meru County is often considered a Rift Valley Fever disease hotspot and with the current weather conditions optimal for the disease outbreak, the Veterinary Department of Meru County has issued a Rift Valley Fever alert despite having no reported case so far.
- Foot Rot disease and Lumpy Skin Disease have been reported in Igembe North sub-county.
- Newcastle disease in poultry has been reported across all livelihood zones.

#### 3.1.3 Milk Production

- Milk production remained low similar to April as livestock body conditions are yet to recover fully. An average of 1.9 liters per household per day obtained from cattle was realized in May similar to April.
- Milk production is, however, likely to increase from June onwards.

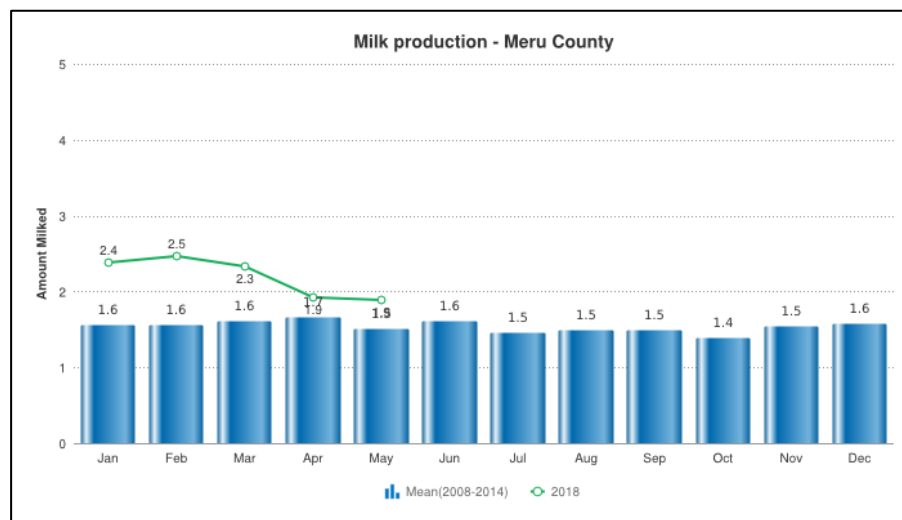


Figure 8: Milk production per household per day.

### 3.2 RAIN-FED CROP PRODUCTION

#### 3.2.1 Stage and Condition of Food Crops

- Cereals, particularly maize crop has performed fairly well in all areas in spite of the Fall Armyworm (FAW) infestation that has been reported across all livelihood zones. As at the end of the month, maize crop is at tussling and cob formation across all livelihood zones.
- An expected good legume performance especially of beans, green grams, and *dolichos* was hindered by heavy rains. Currently, they are at pod filling stages to early maturity for the early planted crop across all livelihood zones. Consumption of green mature beans has been noted especially in the Rain-fed cropping and the agro-pastoral livelihood zones. Pigeon peas are at good vegetative stages with the majority at flowering and early pod formation.

- Rotting of beans in farms due to the excessive wetness has been noted across all livelihood zones. This is likely to lower expected harvests by a significant proportion especially if rains continue well into the month of June.
- Of concern is the outbreak of the American Bollworm that is mainly feeding on the flowers and pods of *dolichos*, millet, sorghum, and pigeon peas. This pest has been reported in Akithi ward of Tigania West sub-county and Athiru Gaiti wards in Igembe South sub-county. This pest is also likely to lower production this season if not adequately controlled.

## 4.0 MARKET PERFORMANCE

### 4.1 LIVESTOCK MARKETING

#### 4.1.1 Cattle Prices

- Cattle prices have declined this month from those recorded in April due to the ongoing *Ramadhan* period despite supply being at near-normal levels. The average price of a mature 4-year old bull has reduced to Kshs 18,133 in May from Kshs 19,153 recorded in the month of April.
- Current prices are 16.99 percent above the long-term prices for the month.
- Comparatively, Ngundune livestock market has recorded highest prices at Kshs 28,267 followed by Mikinduri market at Kshs 18,000.

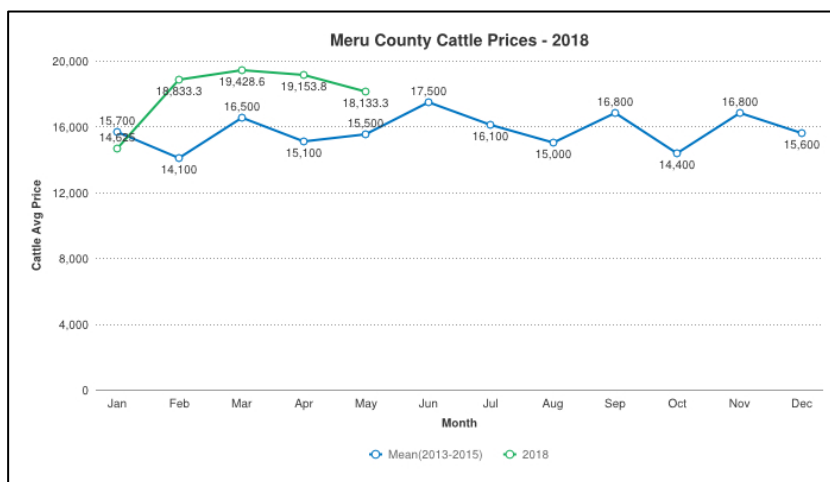


Figure 9: Average cattle market prices.

#### 4.1.2 Goat Prices

- Goat prices have declined this month in spite of a near-normal supply in the markets and good body conditions in most areas. Current prices average at Kshs 3,625 which was lower than those recorded in March and April.
- The ongoing *Ramadhan* period has reduced demand in all livestock markets.
- Mutuati livestock market in Igembe North sub-county has recorded highest prices at Kshs 4,500 while Mulika and Mikinduri markets in Tigania East sub-county have reported lowest prices of Kshs 3,200 respectively.

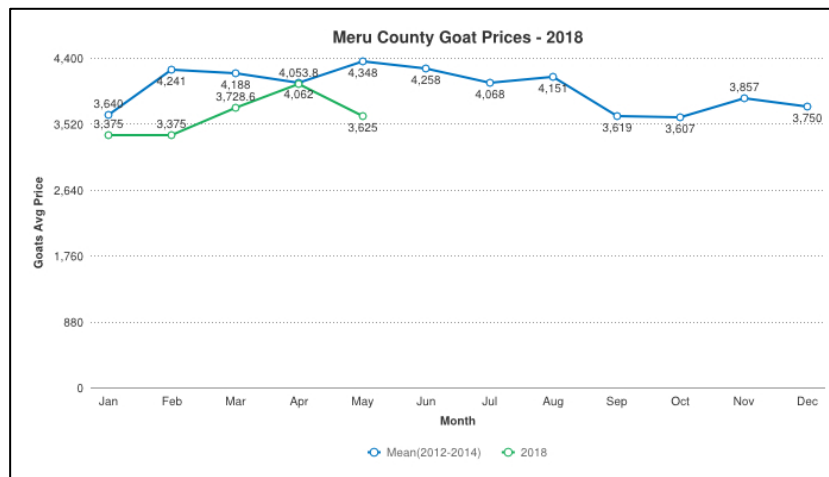


Figure 10: Average goat market prices.



## 4.2 CROP PRICES

### 4.2.1 Maize

- The prices of maize have maintained a downward trend from March through to May following increased imports by local traders from cheaper sources in western Kenya and Uganda. Current prices average at Kshs 29 per kilogram down from Kshs 37.50 in April.
- In spite of the general decrease, prices over the last three months are still above the long-term averages for the same period.
- With continued inflows from Uganda and the maize belts of the North Rift and Western Kenya and prospects of a good harvest this season, prices are likely to tumble further over the coming two months.

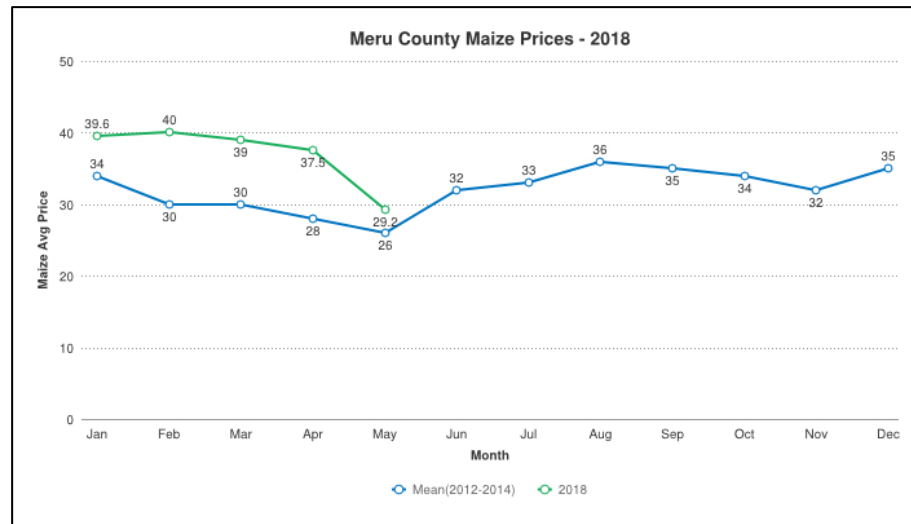


Figure 11: Average maize market prices.

### 4.2.3 Beans

- Bean prices have declined steadily since March through to May with the highest prices for the year so far recorded in February. A kilogram of beans is currently retailing at Kshs 54 down from Kshs 61 in April. The drop in prices is mainly due to the ongoing early harvesting and consumption of green beans, especially among the early planters.
- The harvesting of mature dry beans that is expected to commence in June will likely lower prices further.

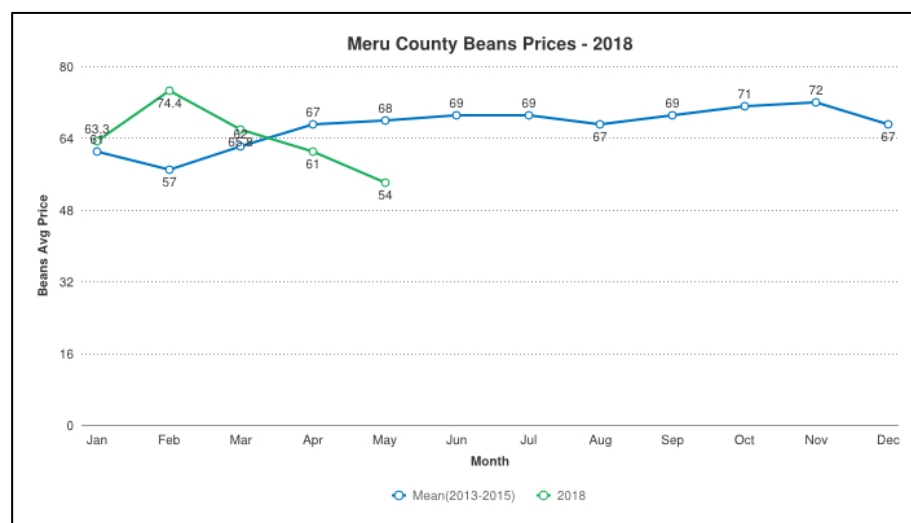


Figure 12: Average bean market prices

### 4.3 Terms of Trade (Goat/cereal price ratio)

- A steady improvement in the terms of trade has been witnessed between February and April following a sustained fall in maize grain prices and a continuous increase in goat prices.
- In May, however, terms of trade have improved further compared to April due to the unexpected decline in average goat prices and a sharp drop in maize grain prices. Proceeds from a sale of a mature goat could afford a household 124 kgs of maize grain compared to 108 kgs of maize grain in April.
- With the prices of maize grain expected to decrease further, terms of trade are likely to remain favorable in the near short-term.

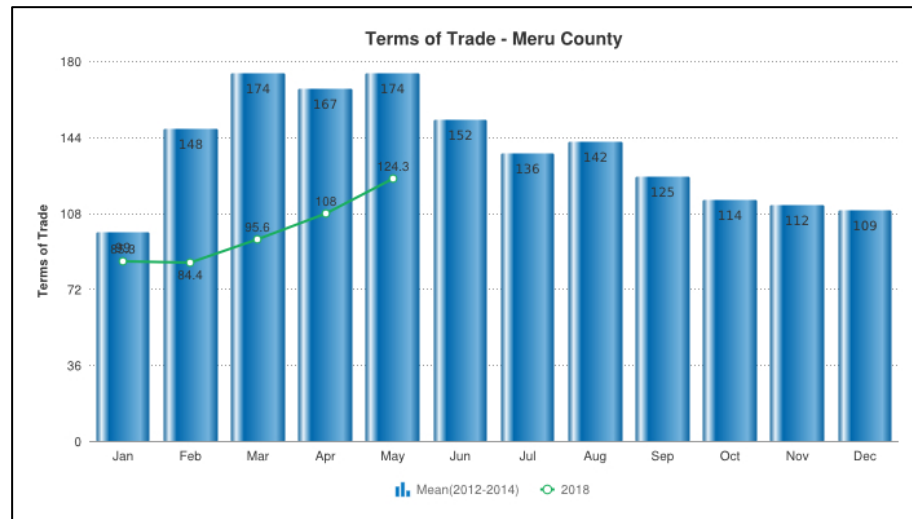


Figure 13: Terms of trade

## 5.0 FOOD CONSUMPTION AND NUTRITION STATUS

### 5.1 FOOD CONSUMPTION SCORE

- The proportion of households with poor food consumption scores have reduced to 6.7 percent in May compared to 9.2 percent that was reported in April. In spite of the decline, these households have only been reported in the agro-pastoral livelihood zone indicating that there still are households who are not consuming staples and vegetables every day and rarely consumed animal protein in this zone. Igembe North sub-county has the highest number while Tigania West has the least.
- Households with borderline food consumption scores have increased to 50.8 percent compared to 47.1 percent in April while those with acceptable food consumption scores have declined marginally to 42.5 percent from 43.7 percent in April. Households in this category are in all livelihood zones although the proportion of those in the borderline category has increased slightly in the Rain-fed cropping livelihood zone.

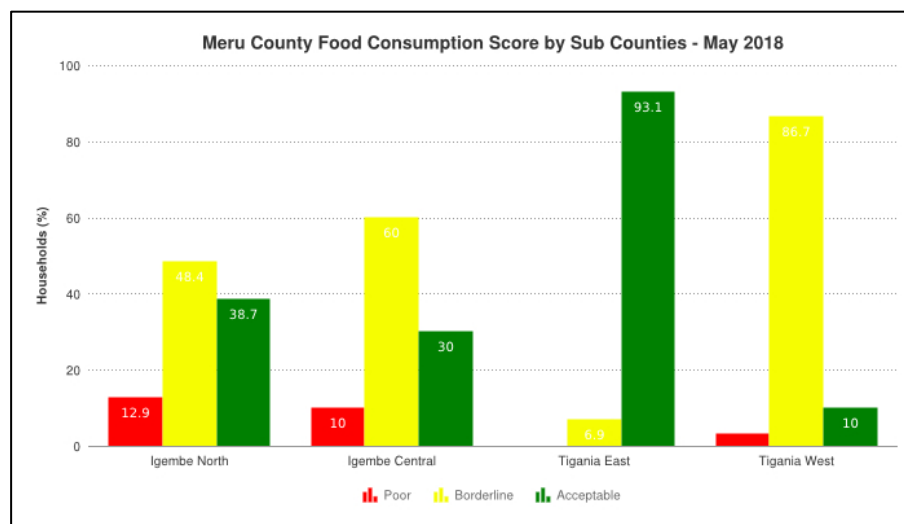


Figure 14: Food consumption scores per sub-county

## 5.2 HEALTH AND NUTRITION STATUS

### 5.2.1 Nutrition Status

- The proportion of children under the age of five years at risk of malnutrition has increased to 17 percent from 12.6 percent in April. This increase could be a result of poor child feeding practices as the majority of caregivers have been largely involved in farm activities. Poor milk production and hence low availability for consumption has also been a possible reason for the decline. In addition, an increase in the incidences of diseases such as upper respiratory tract infections, intestinal worms, and malaria which are typical during such wet seasons could also have contributed to decline in nutrition levels.
- Agro-pastoral livelihood zone has recorded the highest numbers of those at risk compared to other livelihood ones.

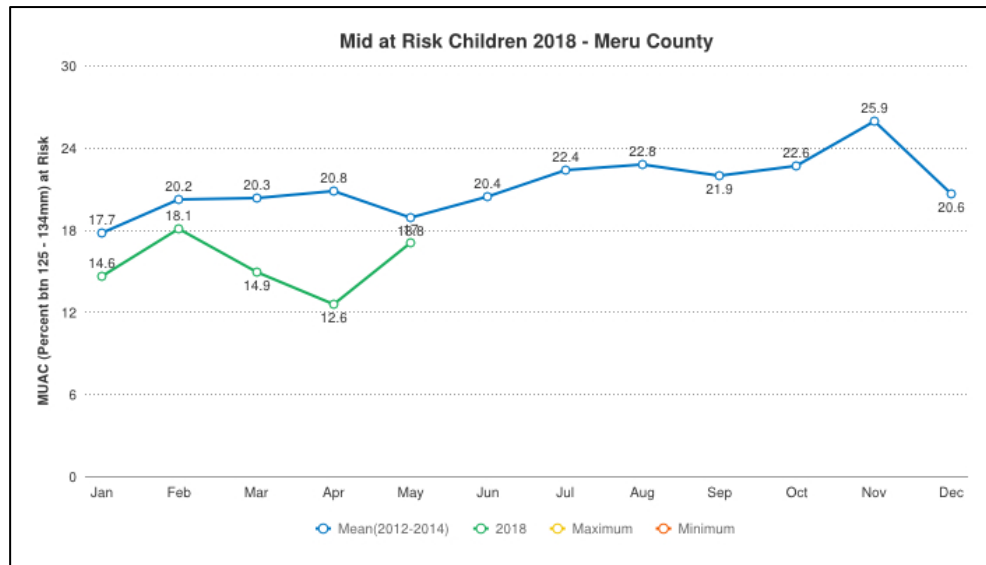


Figure 15: Percentage of children at risk of malnutrition

### 5.2.2 Health

- An increase in cases of malaria has been reported across all livelihood zones.

## **CURRENT INTERVENTION MEASURES (ACTION)**

### **6.1 NON-FOOD INTERVENTIONS**

- There have been no non-food interventions reported during the month.

### **6.2 FOOD AID**

- There has been no food aid intervention reported this month.

## **7. EMERGING ISSUES**

### **7.1 Insecurity/Conflict/Human Displacement**

- Incidences of livestock theft/banditry were still reported this month similar to April. Out of 124 head of cattle that were stolen at Kalimbene and Kamweline areas in Igembe Central and Igembe North sub-counties respectively, 73 of them have been recovered and returned to their owners.

### **7.2 Food Security Prognosis**

- Pastures and browse are of good conditions are likely to last until the onset of the OND season as there are no livestock in-migrations expected within the two months. Water sources are recharged to capacity and most catchments are at normal to above-normal levels. Current water levels in dams and pans in the grazing areas are expected to last the next two months maintaining the current low pressure on functioning boreholes. Current sources for households are expected to remain unchanged over the next two months. Thus, distances to watering points for both households and livestock are also expected to remain relatively low during the same period.
- Livestock body conditions are expected to recover fully by end of next month improving milk production and subsequent availability. With the *Ramadhan* period expected to end mid next month, livestock prices are expected to increase bringing enhanced incomes to households. The ongoing consumption of green beans, expected bean harvest next month, and a prospect of good maize, dolichos, and pigeon pea harvest is likely to lead lower food prices and improve availability and access. Low food prices and high livestock prices will most likely lead to better terms of trade over the coming two months.
- Expected improvements in food availability and access will likely lead to improved nutrition especially to children under the age of five years.

## **8. RECOMMENDATIONS**

- A good harvest is expected this season. The Department of Agriculture needs to sensitize farmers on proper post-harvest management to avoid crop losses.
- With the likely outbreak of Rift Valley Fever in the agro-pastoral livelihood zone, the Department of Livestock and Veterinary needs to sensitize herders and meat handlers on the disease and employ appropriate measures to control the disease in the event of an actual outbreak.

## REFERENCE TABLES

**Table 1: Drought Phase Classification**

Normal	Alert	Alarm	Emergency
All environmental Agricultural and pastoral indicators are within the seasonal ranges	Meteorological drought indicators move outside seasonal ranges	Environmental and at least two production indicators are outside Long term seasonal ranges	All Environmental, Metrological and Production indicators are outside normal ranges.
<b>Recovery:</b> The drought phase must have reached at least Alarm stage. Recovery starts after the end of drought as signalled by the environmental indicators returning to seasonal norms; local economies starting to recover			

**Table 2: Standardized Precipitation Index (SPI)**

Color	SPI Values	Metrological Drought Category
	> +1.5 or more	Wet Conditions
	0 to +1.5	No drought
	-0.1 to -0.99	Mild drought
	-1 to -1.99	Severe drought
	<-2 and less	Extreme drought

**Table 3: Vegetation Condition Index Values (VCI)**

Color	VCI values 3-monthly average	Agricultural Drought Category
	≥50	Wet
	35 to 50	No agricultural drought
	21 to 34	Moderate agricultural drought
	10 to 20	Severe agricultural drought
	<10	Extreme agricultural drought

**Table 4: Livestock Body Condition**

Level	Classification	Characteristics (this describes majority of the herd and not individual isolated Stock)
1	Normal	Very Fat Tail buried and in fat
		Fat, Blocky. Bone over back not visible
		Very Good Smooth with fat over back and tail head
		Good smooth appearance
2	Moderate	Moderate. neither fat nor thin
3	Stressed	Borderline fore-ribs not visible. 12th & 13th ribs visible
4	Critical	Thin fore ribs visible
5	Emaciated	Very thin no fat, bones visible
		Emaciated, little muscle left

### **Definition of Early Warning Phases**

The EW phases are defined as follow:

**NORMAL:** The normal phase occurs when **biophysical drought indicators ( VCI and SPI) show no unusual fluctuations** hence remain within the expected ranges for the time of the year in a given livelihood zone, division or county

**ALERT:** The alert phase is when either the **vegetation condition index or the standard precipitation index (biophysical indicators) show unusual fluctuations below expected seasonal ranges** within the whole county/sub-county or livelihood zones.

**ALARM:** The alarm phase occurs when both **biophysical and at least three production indicators fluctuate outside expected seasonal ranges** affecting the local economy. The production indicators to be considered are livestock body condition, crop condition, milk production, livestock migration and livestock mortality rate.

If **access indicators** (impact on market, access to food and water) move outside the normal range, the status remains at “alarm” but with a worsening trend. Proposed access indicators include ToT, price of cereals, availability of cereals and legumes, and milk consumption. The trend will be further worsening when also welfare indicators (MUAC and CSI) start moving outside the normal ranges.

**EMERGENCY:** In the emergency phase, **all indicators are outside of normal ranges**, local production systems have collapsed within the dominant economy. The emergency phase affects asset status and purchasing power to extent that seriously threatens food security. As a result, coping strategy index, malnutrition (MUAC) and livestock mortality rates move above emergency thresholds

**RECOVERY:** **Environmental indicators returning to seasonal norms.** The drought phase must have reached at least Alarm stage. Recovery starts after the end of drought as signalled by the environmental indicators returning to seasonal norms while production indicators are still outside the normal seasonal range but local economies start to recover. The status changes to normal once the bio physical and production indicators are back to normal range.