

# National Drought Management Authority

## MERU COUNTY

### DROUGHT EARLY WARNING BULLETIN FOR JULY 2017



A Vision 2030 Flagship Project



#### JULY EW PHASE



#### Early Warning (EW) Phase Classification

Livelihood Zone	Phase	Trend	
Mixed Farming	Normal	Improving	
Agro-pastoral	Alert	Worsening	
Rain-fed Cropping	Alert	Worsening	
County	Alert	Worsening	
Biophysical Indicators	Observed Value/Range	Normal Range/LTA	
SPI-3Month (TAMSAT)	-1.66	-1.0 to 1.0	
VCI-3Month (County)	45.16	>35	
Igembe Central	44.18	>35	
Igembe North	28.65	>35	
Tigania East	35.19	>35	
Tigania West	39.86	>35	
Production indicators	Value	Normal	
Crop Condition (Maize/legumes)	Mature/dry (maize, dolichos, P.peas)	Mature/dry (maize, dolichos, P.peas)	
Livestock Body Condition	Fair to poor	Normal	
Milk Production	13	10 - 22 Litres	
Livestock Migration Pattern	Internal migrations/In-migration	Internal migrations	
Livestock deaths (from drought)	No death	No death	
Access Indicators	Value	Normal	
Terms of Trade (ToT)	78 kg maize/sale of one goat	136 kg of maize/sale of one goat	
Return distance to water sources	Households	20 km	<6 km
	Livestock	11.5 km	<11 km
Cost of water at source (20 litres)	Ksh. 5	<5Kshs	
Utilization indicators	Value	Normal	
Nutrition Status, MUAC (% at risk of malnutrition)	23	<20	
Coping Strategy Index (CSI)	20.8	21.4	

#### Drought Situation & EW Phase Classification

##### Biophysical Indicators

- July remained generally cold and dry, a normal situation for this time of the year
- Vegetation conditions were generally poor with a vegetation condition Index of 45.16
- Pasture and browse conditions deteriorated further especially in the Agro-pastoral livelihood zone where significant portions of grazing areas were almost bare.

##### Socio Economic Indicators (Impact Indicators)

##### Production indicators

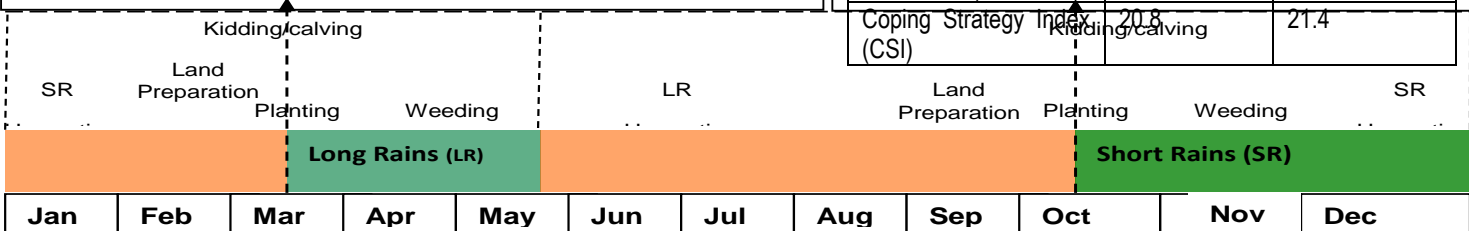
- Livestock body conditions were largely fair to poor in the Agro-pastoral livelihood zone and fair in the Mixed Farming and Rain-fed cropping livelihoods similar to the previous month.
- Livestock have to migrate to areas around the Meru National Park, Lower Imenti Forest, and lower areas of Igembe South, Tigania East and Tigania west that border Tharaka County.
- Conflicts over pastures and water were reported in Kinna Meru area of Igembe Central Sub-county leading to 14 human deaths and displacement of over 800 households
- Harvesting of mature dry maize, dolichos, and pigeon peas reported in few pockets of the Rain-fed cropping and the Mixed Farming livelihood zones

##### Access indicators

- Watering distances for households was 20 km compared to 18km last month while livestock covered 11.5 km similar to last.

##### Utilization Indicators

- 23 percent of sampled children were at risk of malnutrition compared to 24 last month. 25 percent of these were at 'Mid-risk' category.



# 1. CLIMATIC CONDITIONS

## 1.1 RAINFALL PERFORMANCE

- The month was generally dry across all livelihood zones. This is normal for this time of the year. Dry conditions are expected to prevail till the onset of OND rains in October.

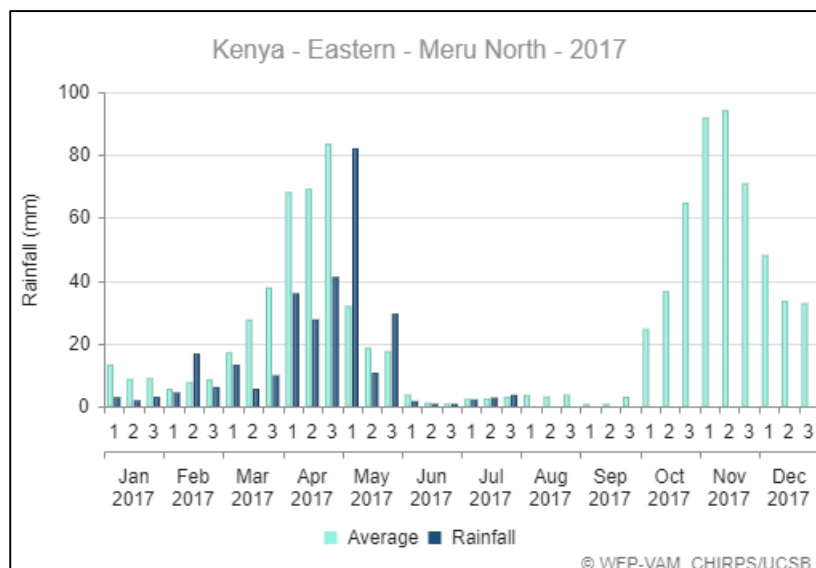


Figure 1a: Rainfall totals received in Meru North (Source: WFP)

# 2. IMPACTS ON VEGETATION AND WATER

## 2.1 VEGETATION CONDITION

### 2.1.1 Vegetation Condition Index (VCI)

- Vegetation conditions remained relatively poor across all livelihood zones. However, some Sub-counties were more affected than others as shown by the Vegetation Condition Index matrices below:

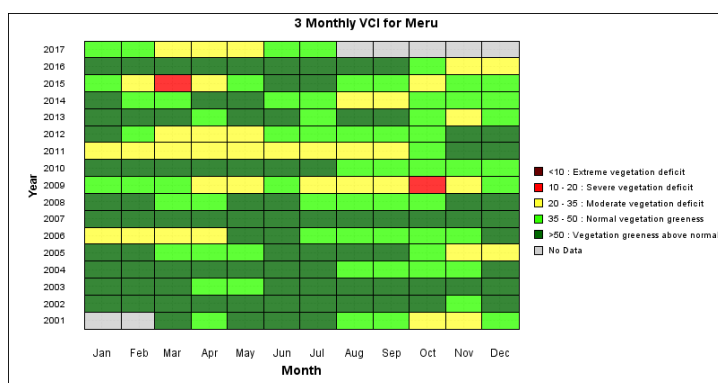


Figure 2a: VCI matrix for Meru County, 2001 – 2017

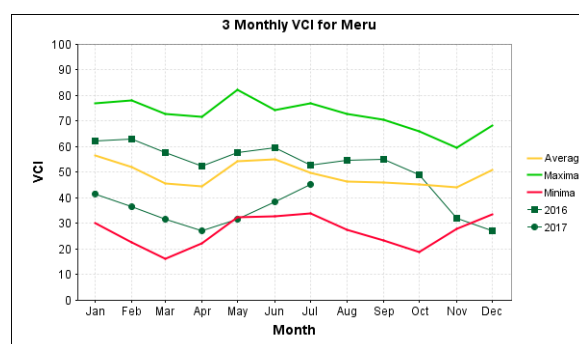


Figure 2b: VCI graph for Meru County, July 2017

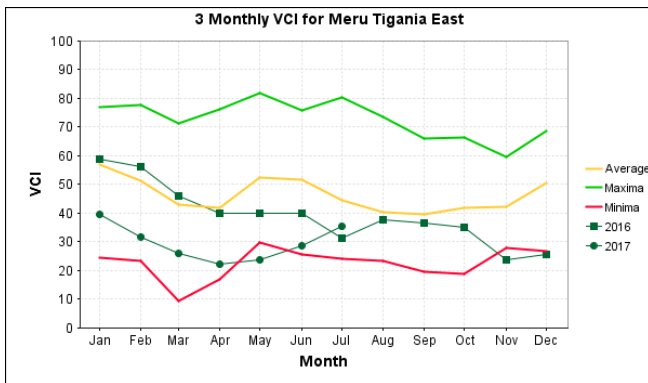


Figure 3a: VCI graph for Tigania East as at July 2017

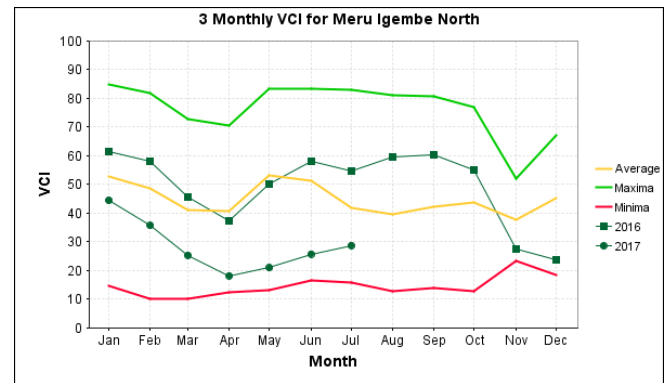


Figure 3b: VCI graph for Igembe North as at July 2017

### 2.1.2 Pasture

- Pastures have depleted further this month compared to last month across all livelihood zones. The Agro-pastoral livelihood zone had the least pastures with most areas almost bare.
- From the interviewed communities this month, 91 percent of them reported pastures being of poor conditions compared to 66 percent of a similar sample last month. The rest of the communities reported pastures being of fair conditions with none reporting good pasture conditions unlike last month.
- Current pasture conditions are not normal for this time of the year and are expected to worsen further until the OND rains in late October.

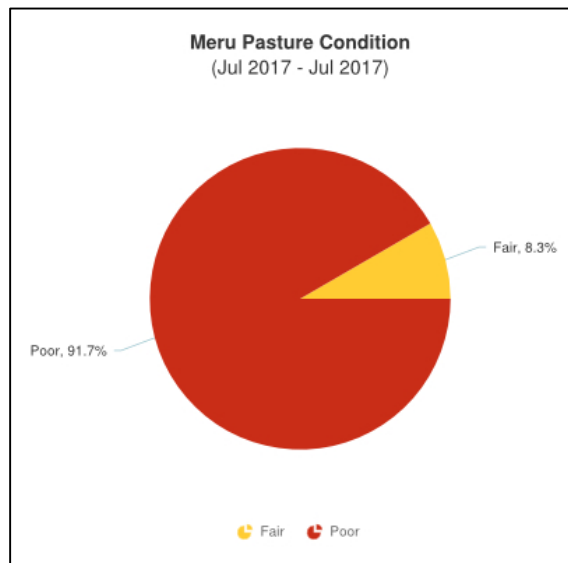


Figure 4: Meru County Pasture conditions. July, 2017

### 2.1.3 Browse

- Browse conditions remained poor this month similar to last month, a situation which is not normal for this time of the year. Of interviewed communities across all livelihood zones, 67 percent of them, mainly in the Agro-pastoral livelihood zone, reported browse being of poor conditions while 16 percent of them, mainly in the Rain-fed Cropping livelihood zone, reported browse being of fair and good conditions respectively.
- Browse quantities and quality is expected to continue deteriorating over the coming two months.

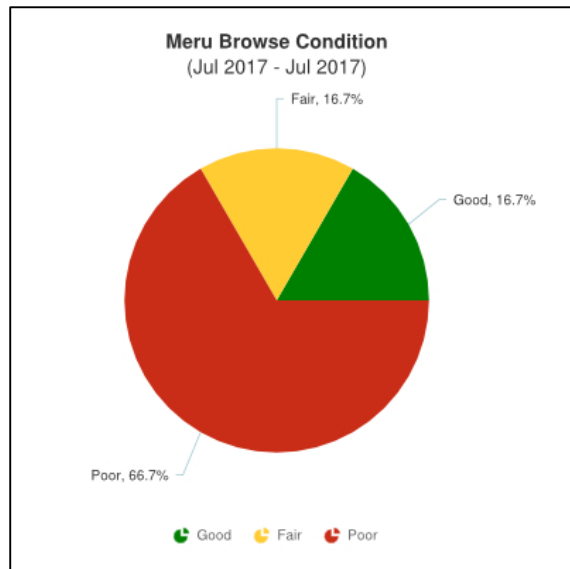


Figure 5: Meru County Browse conditions, July 2017

## 2.2 WATER RESOURCE

### 2.2.1 Sources

- Similar to the previous month, rivers, boreholes, and community based piped water projects were the main sources of water for both livestock and domestic use.
- River volumes declined significantly across all livelihood zones with the few that flow into the Agro-pastoral livelihood zone drying up completely. As a result, the proportion of users declined to 29 percent from 33 percent the previous month. The decline was more pronounced in the agro-pastoral livelihood zone. This led to increased reliance on boreholes in this zone with users increasing to 47 percent from 42 percent the previous month.
- Community water projects were mostly in the Rain-fed cropping and Mixed Farming livelihood zones. Proportion of users remained the same as the previous month although water rationing was reported in several projects.
- Current water situation especially in the Agro-pastoral livelihood zone is not normal and is expected to worsen further next month.

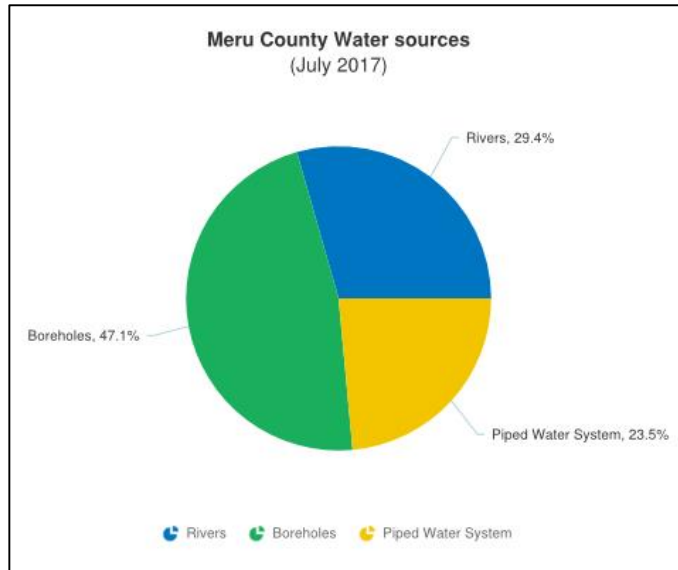


Figure 6: Meru County sources of water, July 2017.

### 2.2.2 Household access and Utilization

- Households trekked an average of 20 km to watering points this month compared to 18 km the previous month. Current distances are not normal for this time of the year and result from diminishing water sources and long distances to the available watering points. Agro-pastoral livelihood zone recorded longest distances at in some areas households had to rely on water vendors.
- Distances are expected to remain unusually high over the coming two months.

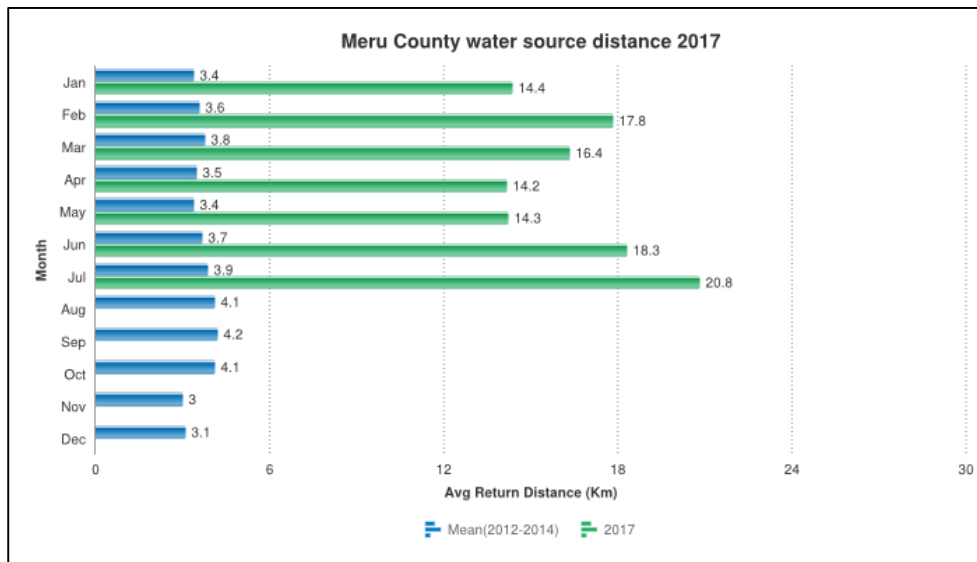


Figure 7: Meru County Household distances to water sources. July, 2017

### 2.2.3 Livestock access

- While distances to grazing areas remained the same as the previous month, they were unusually high for this time of the year. Current trekking distances averaged at 11 km similar to last month. However, livestock in the Agro-pastoral livelihood zone recorded longest distances forcing majority to migrate to areas around the Meru National Park,

Lower Imenti Forest, and lower areas of Igembe South, Tigania East and Tigania west that border Tharaka County.

- Distances are likely to remain high over the coming three months.

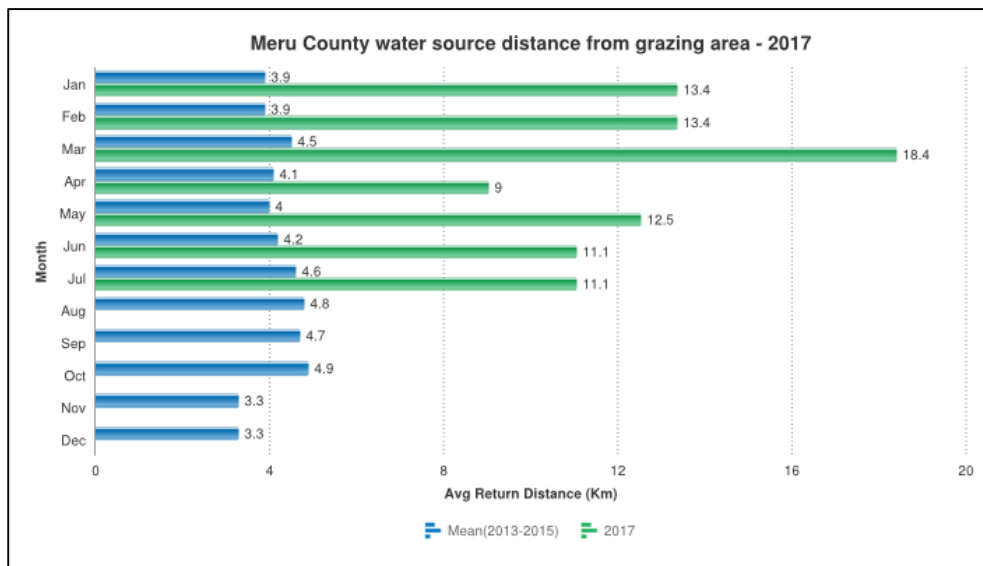


Figure 8: Meru County Livestock watering distances from grazing areas, July 2017

### 3.0 PRODUCTION INDICATORS

#### 3.1 LIVESTOCK PRODUCTION

##### 3.1.1 Livestock Body Condition

- Majority of livestock were of fair to poor body conditions especially in the Agro-pastoral livelihood zone due to increased grazing distances and reduced watering frequencies.
- Current body conditions are not normal for this time of the year.

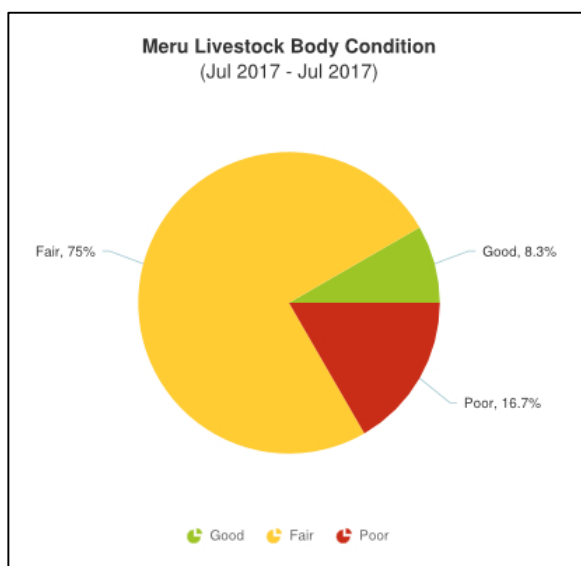


Figure 9: Meru County livestock body conditions, July 2017

##### 3.1.2 Livestock Diseases

- Suspected cases of Foot and Mouth disease have been reported in the Agro-pastoral livelihood zone during the month

##### 3.1.3 Milk Production

- Milk production has been declining for the better part of this year starting at an average of 50 litres in January gradually dropping to an average of 13 litres this month. This trend is not normal and has resulted from a prolonged pasture deficit, water scarcity and long distances to both watering and grazing areas.
- This downward trend is likely to prevail over the next three months.

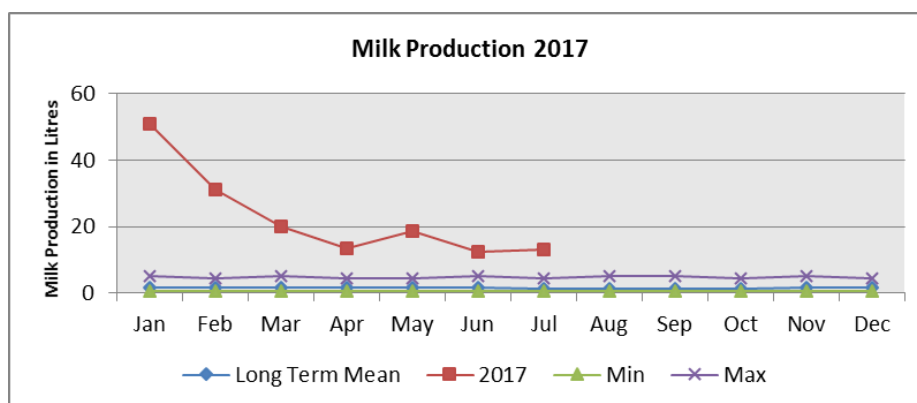


Figure 10: Meru County Milk production, July 2017.

## **3.2 RAIN-FED CROP PRODUCTION**

### **3.2.1 Stage and Condition of food Crops**

- Main crops that remaining in the field currently are maize, dolichos and pigeon peas. Maize performance has been poor overall with premature drying noted in the lower areas of the Agro-pastoral livelihood zone earlier in the season. Those in the Mixed Farming and Rain-fed cropping livelihood zones are currently at mature drying and harvesting. Below normal harvests are expected this season.
- Consumption and harvesting of mature dolichos and pigeon peas was only noted in isolated pockets of the Rain-fed cropping livelihood zone. Production was equally low this season unlike a normal season.



## 4.0 MARKET PERFORMANCE

### 4.1 LIVESTOCK MARKETING

#### 4.1.1 Cattle Prices

- Prices of cattle dropped a marginal 3 percent this month compared to those recorded the previous month. Average price of a three year old bull was Kshs 16,800 compared to Kshs 17,300 the previous month. This decline is mainly due to an increased supply in the markets as herders offload stocks coupled by poor body conditions.
- Prices are expected to decrease further over the coming two months as supply is expected to increase.

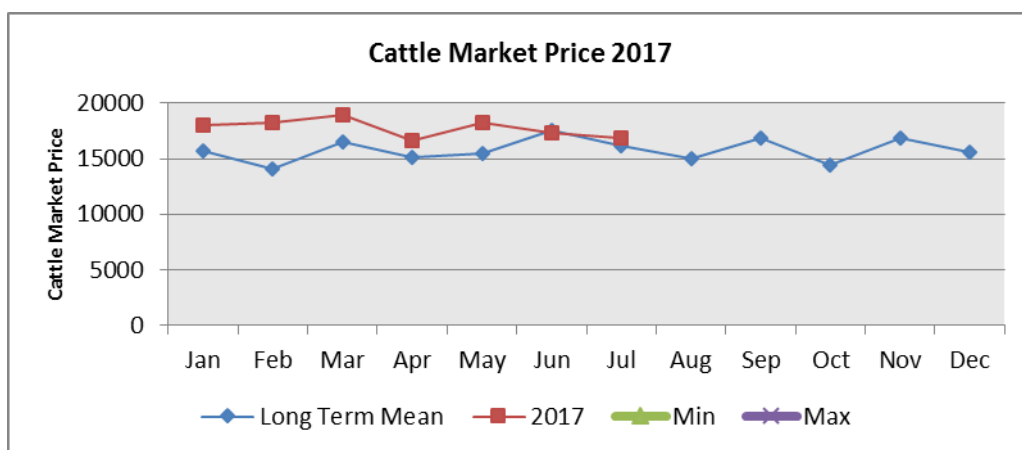


Figure 11: Meru County average cattle market prices, July 2017.

#### 4.1.2 Goat Prices

- Prices of goats declined significantly this month due to an increased supply in the markets both from within Meru North and neighbouring Isiolo County. On average, a goat was selling at Kshs 3,600 this month compared to Kshs 5,000 last month, a 28 percent decrease.
- Current prices are below the three-year average for the month and lowest recorded over the same period. This is not normal for the month and given that supply is likely to increase further, prices are expected to maintain a downward trend in the coming three months.

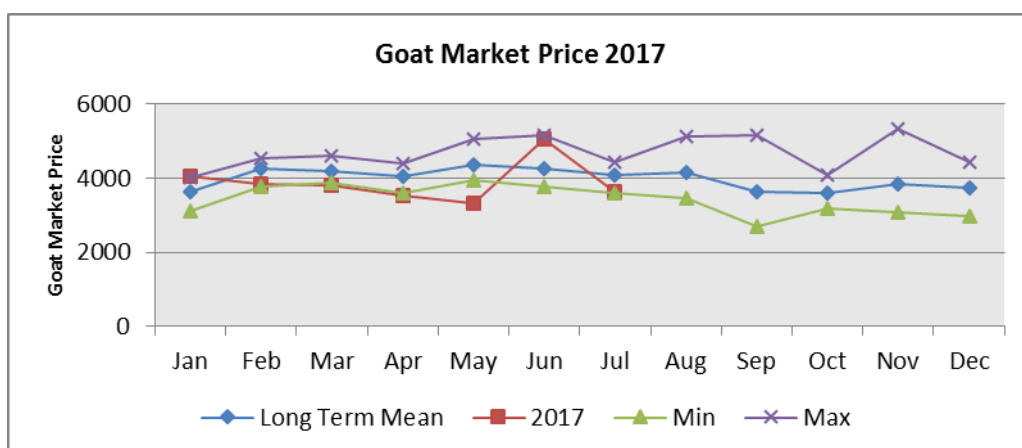


Figure 11: Meru County average goat market prices, July 2017.

## 4.2 CROP PRICES

### 4.2.1 Maize

- A slight decline in maize prices was noted during the month due to the ongoing harvests in parts of the Rain-fed cropping and the Mixed Farming livelihood zones, and imports by traders. Current prices averaged at Kshs 51 compared to Kshs 55 the previous month.
- Despite the slight decrease in prices, current prices are significantly higher than those recorded for the month over the last three years.
- Maize shortages especially in the Agro-pastoral livelihood zone have forced households to rely entirely on markets, an abnormal situation at this time of the year.
- Prices are expected to remain high over the coming months until the next harvest in February 2018.

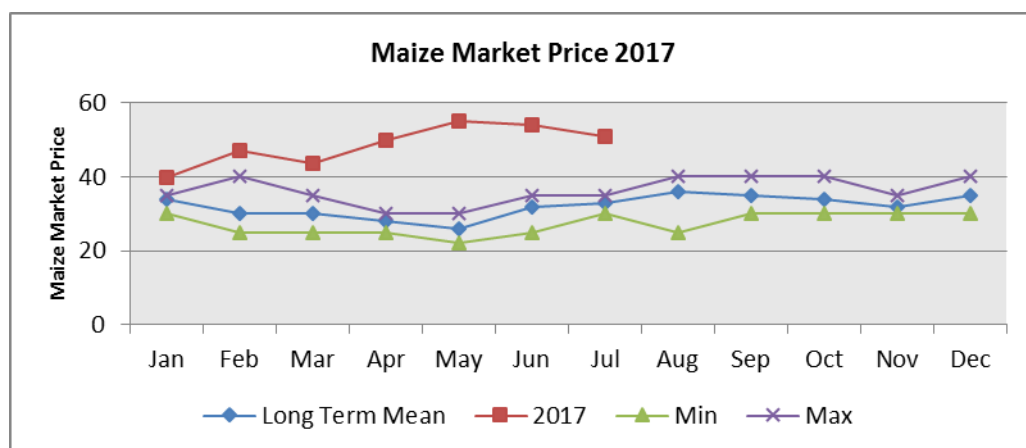


Figure 12: Meru County average maize market prices. July, 2017

### 4.2.3 Beans

- Prices of beans increased by Kshs 10 this month to settle at an average of Kshs 85 per kilo compared to Kshs 75 the previous month. A poor harvest realised across the County this season has led to a decreased supply in the markets forcing prices to increase.
- High prices are expected to prevail over the coming months till the next harvest in January 2018.

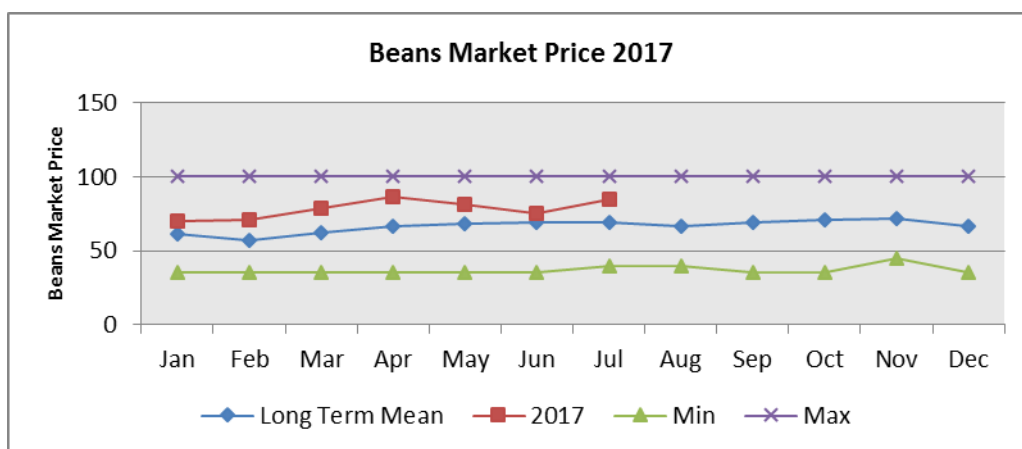


Figure 13: Meru County average bean market prices. July, 2017

### 4.3 Casual Labour Price Ratio/Terms of Trade

- Low goat prices witnessed and the high maize prices negatively affected terms of trade this month. A household could only afford 78 kgs of maize from the sale of one goat compared to 93 kgs the previous month.
- Expected declines in livestock prices and the high maize prices are likely to lower terms of trade further next month.

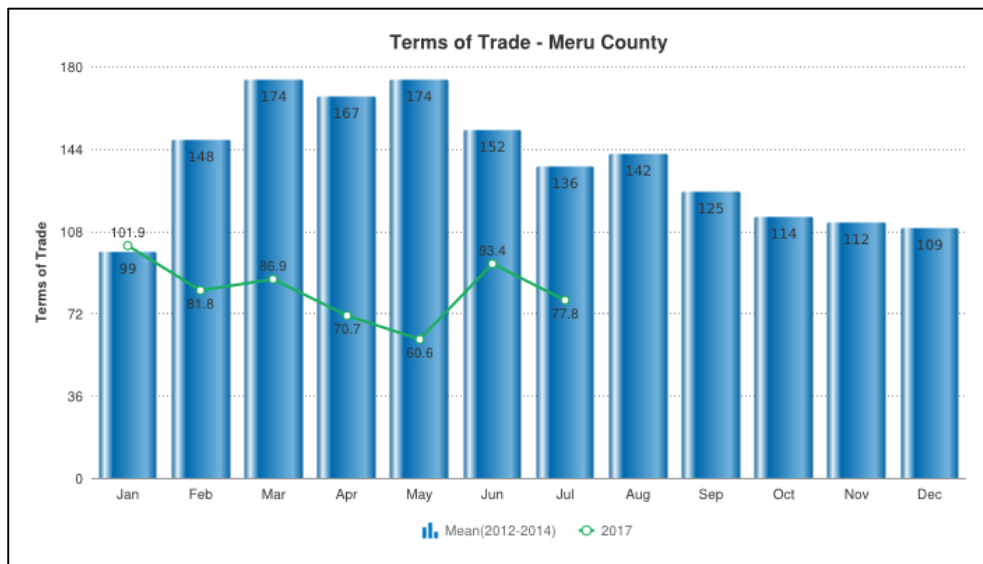


Figure 14: Meru County terms of trade. July, 2017

## 5.0 FOOD CONSUMPTION AND NUTRITION STATUS

### 5.1 FOOD CONSUMPTION SCORE

- Food consumption in households deteriorated this month as indicated by an increase in number of households falling under the 'poor' category this month compared to last month. For instance, 40 percent of sampled households in Igembe North Sub-County were in the 'poor' category this month compared to 30 percent of a similar sample the previous month. Similarly, a reduction of households at 'acceptable' category decreased across all the Sub-Counties. 10 percent of households were in 'acceptable' category last month in Igembe Central Sub-county compared to 4 percent this month.

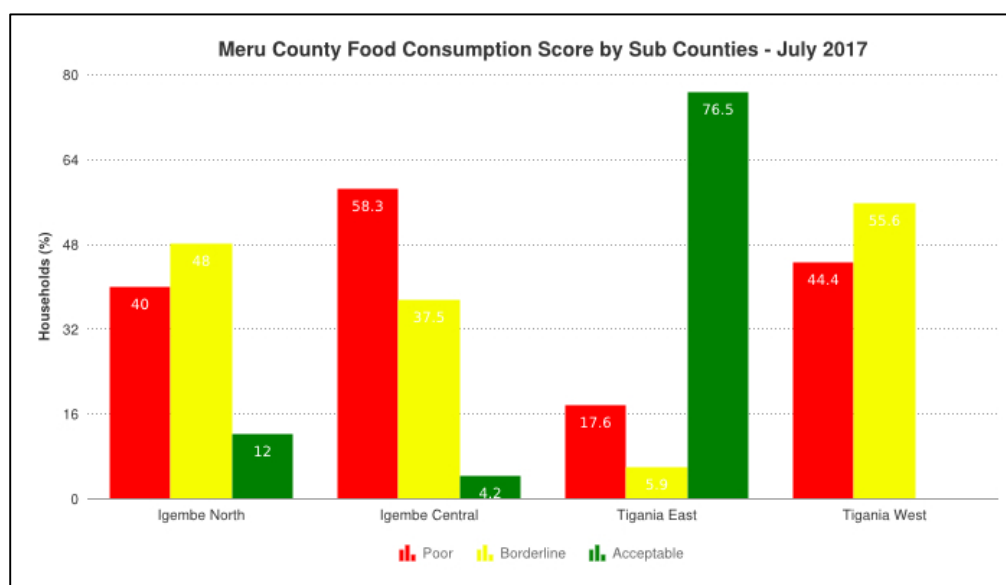


Figure 15: Meru County food consumption, July, 2017

## 5.2 HEALTH AND NUTRITION STATUS

### 5.2.1 Nutrition Status

- Malnutrition levels among children under the age of five years remained high this month at 23 percent similar to last month. This is indicative of diminished food stocks at household levels in addition to poor child care practices especially during this period of scarcity.

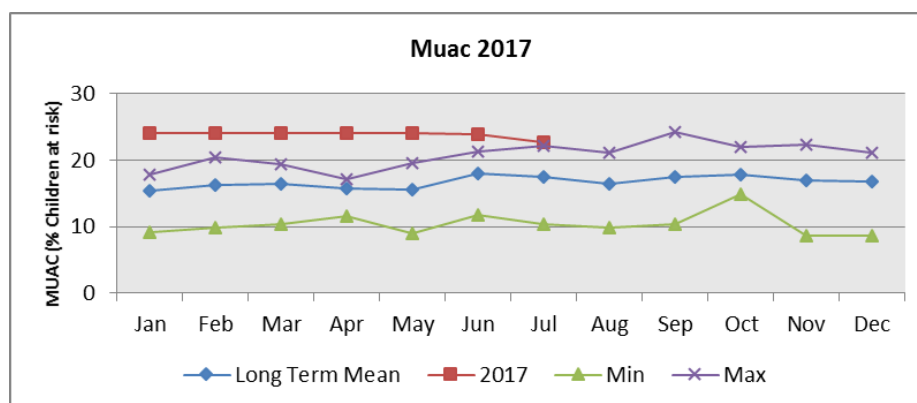


Figure 16: Meru County MUAC status, July, 2017

- Of the 23 percent at risk this month, 25 percent of them were 'Mid at Risk' (MUAC 125 – 134mm) while none was at 'Severe' category.

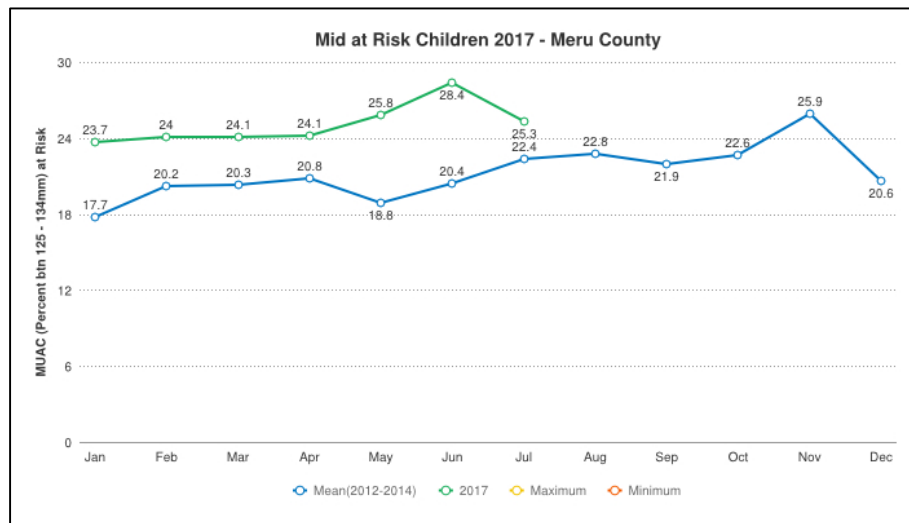


Figure 17: Meru County MUAC 124 – 134mm. July, 2017

### 5.2.2 Health

- There were no major diseases among the sampled children this month.

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

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

- Trial runs of the Sweet Potato Value Addition plant by Meru Friends SACCO with support from, National Drought Management Authority, Meru County Government and the European Union through Kenya Rural Development Project were carried out during the month. Full operations are expected to begin within two months.

### **6.2 FOOD AID**

- No food aid distribution was reported during the month.

## **7. EMERGING ISSUES**

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

- Conflicts over pastures and water were reported in Kinna Meru area of Igembe Central Sub-county leading to 14 human deaths and displacement of over 800 households
- Internal livestock migrations were noted during the month. Majority of livestock in the Agro-pastoral livelihood zone have migrated to Imenti forest and into the Rain-fed cropping livelihood zone around the Meru National park. This migration is not normal. In migration of livestock, mostly camels and goats, from neighbouring Isiolo County have been reported in the Agro-pastoral livelihood zone.

## **8. RECOMMENDATIONS**

- There is an urgent need to activate the drought contingency planned activities to minimise and shield communities from the possible effects of the ongoing drought.

## 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.