

National Drought Management Authority

MERU COUNTY

DROUGHT EARLY WARNING BULLETIN FOR AUGUST 2017



A Vision 2030 Flagship Project



AUGUST EW PHASE



Early Warning (EW) Phase Classification

Livelihood Zone	Phase	Trend	
Mixed Farming	Normal	Deteriorating	
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	41.05	>35	
Igembe North	37.66	>35	
Tigania East	38.79	>35	
Tigania West	39.14	>35	
Production indicators	Value	Normal	
Crop Condition (Maize/legumes)	Late harvesting and land preparation	Land preparation	
Livestock Body Condition	Mainly poor	Normal	
Milk Production	11	10 - 22 Litres	
Livestock Migration Pattern	Internal migrations/In-migration	Internal migrations	
Livestock deaths (from drought)	few deaths	No death	
Access Indicators	Value	Normal	
Terms of Trade (ToT)	58 kg maize/sale of one goat	78 kg of maize/sale of one goat	
Return distance to water sources	Households	17 km	<6 km
	Livestock	26 km	<11 km
Cost of water at source (20 litres)	Ksh. 5	<5Kshs	
Utilization indicators	Value	Normal	
Nutrition Status, MUAC (% at risk of malnutrition)	39	<20	
Coping Strategy Index (CSI)	20.8	21.4	

Drought Situation & EW Phase Classification

Biophysical Indicators

- August was generally dry across all livelihood zones. Vegetation conditions worsened with the County registering a vegetation Condition index of 45.03.
- Pasture and browse conditions were poor especially in the grazing areas of the Agro-pastoral livelihood zone.

Socio Economic Indicators (Impact Indicators)

Production indicators

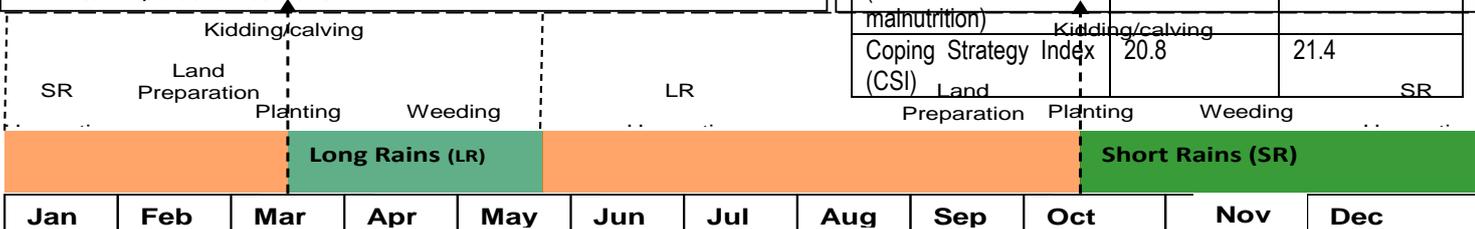
- Livestock body conditions were poor in the Agro-pastoral livelihood zone and fair to poor in the Rain-fed cropping livelihood zone.
- Migration of livestock to areas around the Meru National Park, Lower Imenti Forest, and lower areas of Igembe South, Tigania East and Tigania west that border Tharaka County noted this month.
- In-migration of camels and goats from Isiolo, Laikipia and Garissa counties noted. Conflicts reported over grazing area and water leading to at least three deaths in Igembe Central and closure of five primary schools. Households have relocated to safer areas near markets and towns
- Late harvesting of dry maize, dolichos, and pigeon peas reported in few pockets of the Rain-fed cropping and the Mixed Farming livelihood zones Land preparation is currently ongoing

Access indicators

- Watering distances for households was 17 km compared to 20km last month while livestock trekked 26km compared to 11.5 km last month.

Utilization Indicators

- 39 percent of sampled children were at risk of malnutrition compared to 23 percent last month.



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.

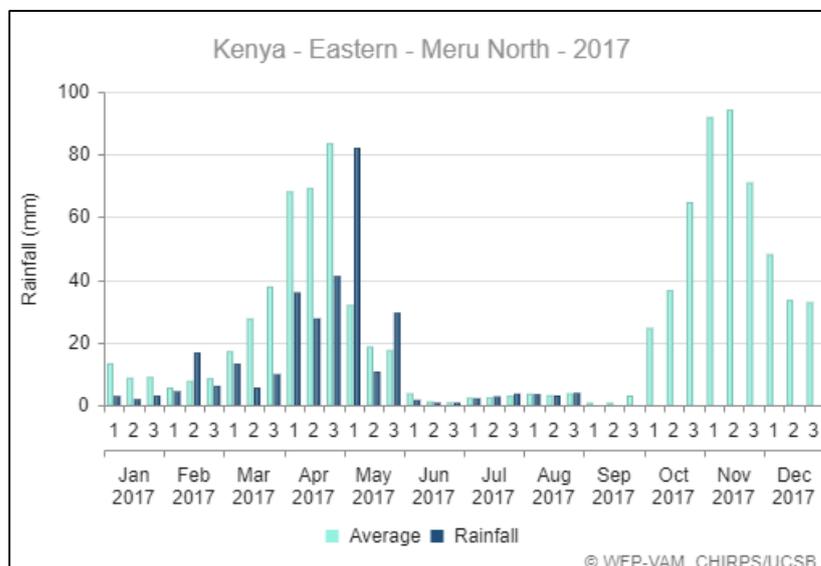


Figure 1a: Rainfall totals received in Meru North (Source: WFP)

2. IMPACTS ON VEGETATION AND WATER

2.1 VEGETATION CONDITION

2.1.1 Vegetation Condition Index (VCI)

- Vegetation conditions deteriorated further this month compared to last month. Deterioration was not uniform as some Sub-counties such as Tigania East, Tigania West and Igembe North noted rapid declines as shown by the Vegetation Condition Index matrices below:

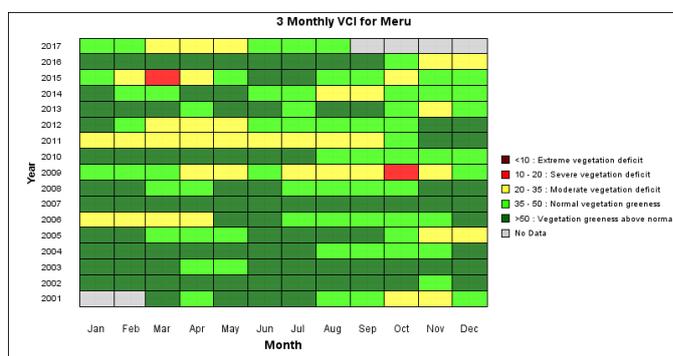


Figure 2a: VCI matrix for Meru County, 2001 – 2017

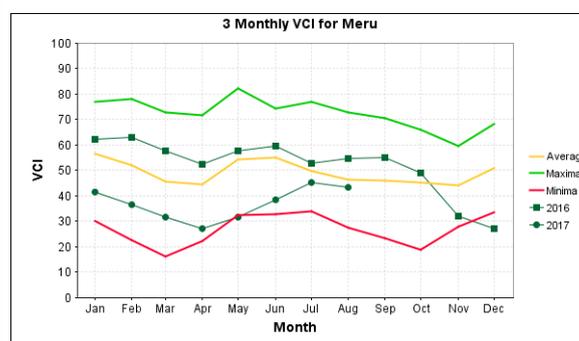


Figure 2b: VCI graph for Meru County, August 2017

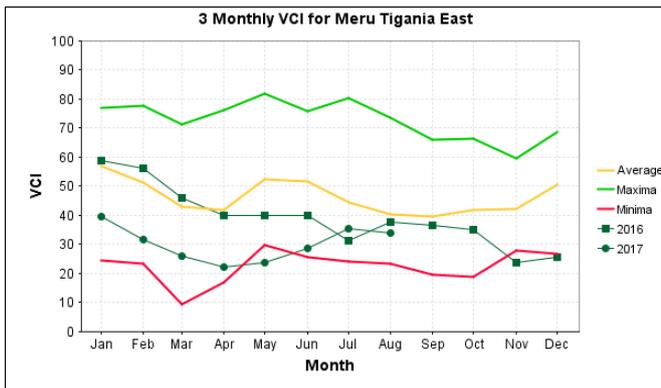


Figure 3a: VCI graph for Tigania East as at August 2017

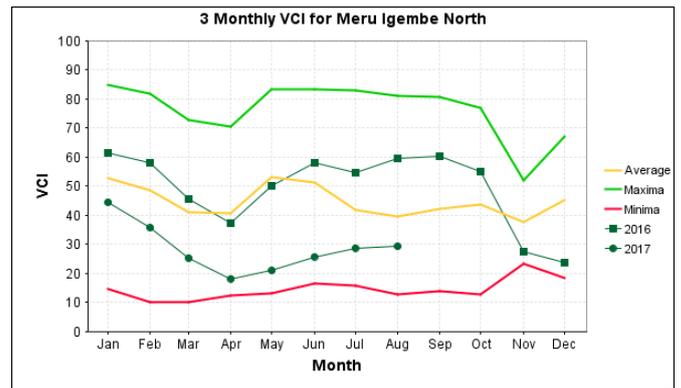


Figure 3b: VCI graph for Igembe North as at August 2017

2.1.2 Pasture

- Pasture depletion was more pronounced this month compared to last month. All interviewed communities noted pastures being poor and depleted across all livelihood zones, a situation that is not normal for this time of the year.
- Current situation is expected to worsen further until the onset of the short rains in October/November.

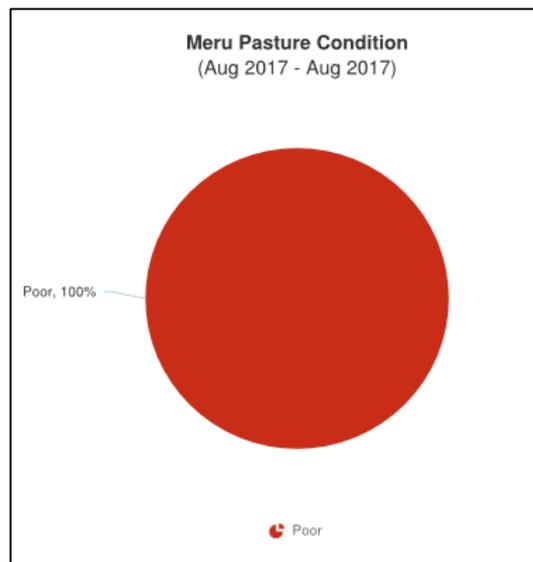


Figure 4: Meru County Pasture conditions. August, 2017

2.1.3 Browse

- Browse conditions deteriorated further with 72 percent of interviewed communities reporting poor browse conditions compared to 67 percent of a similar number the previous month. The rest, 27 percent, reported browse being of fair conditions compared to 16 percent the previous month. Poor browse conditions were primarily reported in the Agro-pastoral livelihood zone while fair conditions were noted in the Rain-fed cropping livelihood zone.
- Current browse conditions are not normal for this time of the year and are expected to deteriorate further over the coming two months.

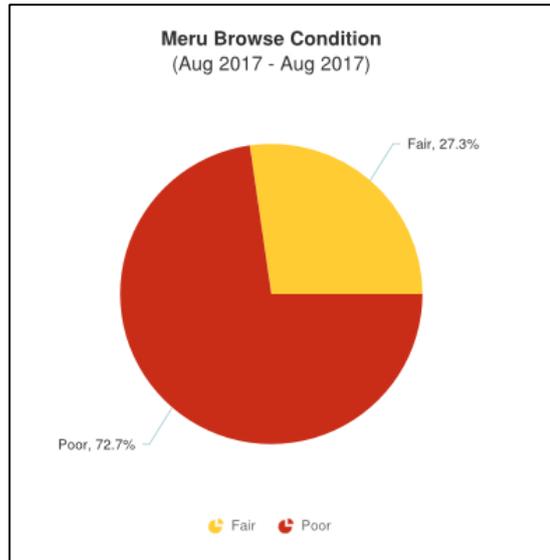


Figure 5: Meru County Browse conditions, August 2017

2.2 WATER RESOURCE

2.2.1 Sources

- Main water sources for both livestock and households were mainly boreholes in the Agro-pastoral livelihood zone and commercial water vendors unlike in normal times where water pans / dams and rivers are also major sources. Water costs at source are currently at Kshs5 per 20 litre jerry can and Kshs20 upon delivery. These costs are normal at this time.
- Rivers, community based water projects and springs were important sources in the Rain-fed cropping and the Mixed farming livelihood zones although the water levels in the rivers has declined significantly leading to water rationing.
- Current water situation especially in the Agro-pastoral livelihood zone is not normal and is likely to slide to critical levels beginning next month.

2.2.2 Household access and Utilization

- Average return distances to watering points for households remained high at 17km compared LTA of 4.1 km. Distances last month were equally high at 20km. Comparatively, Agro-pastoral livelihood zone recorded longest distances given the massive distances between the operational boreholes in this zone.
- Current distances are not normal for this time of the year and are expected to remain abnormally high until the onset of the short rains in October.

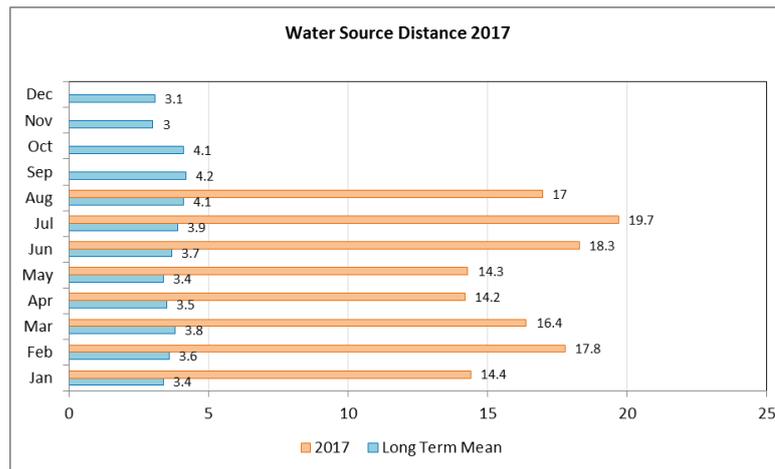


Figure 6: Meru County Household distances to water sources. August, 2017

2.2.3 Livestock access

- Depletion of pastures in the normal dry season grazing areas forced livestock to graze further away from operation watering points. As such, distances to watering points from these grazing areas almost doubled to an average of 26 km compared to 11 km the previous month. Agro-pastoral livelihood zone recorded the longest distances compared to other livelihood zones. Watering frequencies also decreased significantly in this zone with livestock watering after every three days.
- Current distances are not normal and are expected to remain abnormally high until the onset of OND rains in October.

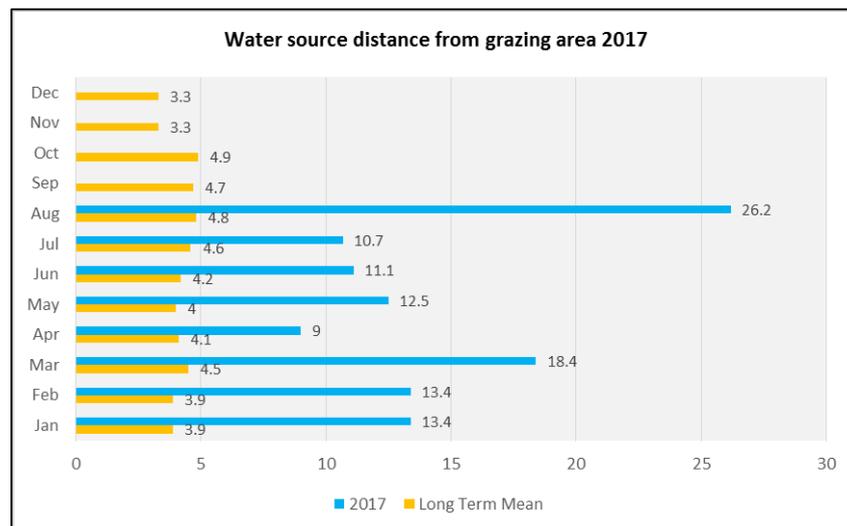


Figure 7: Meru County Livestock watering distances from grazing areas, August 2017

3.0 PRODUCTION INDICATORS

3.1 LIVESTOCK PRODUCTION

3.1.1 Livestock Body Condition

- Depleted pastures, long distances to grazing and watering points, reduced watering frequencies chiefly in the Agro-pastoral livelihood zone lead to conspicuous deterioration of livestock body conditions in this zone compared to last month. Grazers, mostly cattle were most affected with majority displaying poor body conditions. Several livestock deaths have already been reported in Igembe Central, Igembe North and Tigania West Sub-counties. Browsers were largely of fair to poor conditions.
- Livestock in the Mixed farming and the Rain-fed cropping livelihood zones were largely of fair conditions.
- Current conditions are not normal for this time of the year and with at least two more months remaining in this lean season, they are likely to deteriorate further especially in the Agro-pastoral livelihood zone.

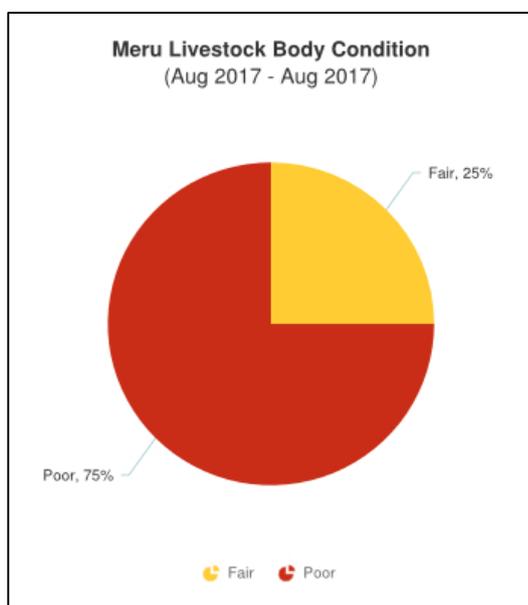


Figure 8: Meru County livestock body conditions, August 2017

3.1.2 Livestock Diseases

- Similar to the previous month, suspected cases of Foot and Mouth disease have been reported in the Agro-pastoral livelihood zone during the month. With increased in-migrations and internal migrations, the disease is likely to spread widely within the County.

3.1.3 Milk Production

- Milk production continued to decline this month as it has been witnessed over the last three months as pastures and water availability diminished. Current production averaged at 11 litres compared to 13 litres the previous month.
- Production is likely to maintain a downward trend over the coming months as pastures deplete further.

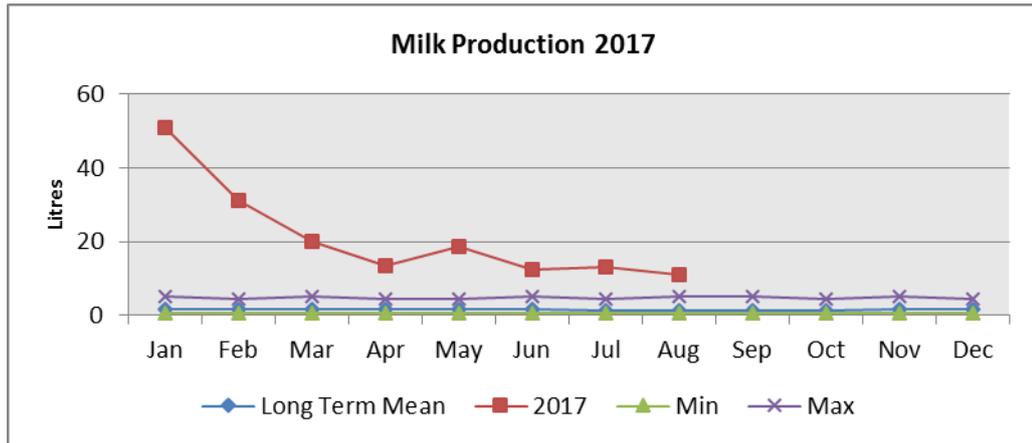


Figure 9: Meru County Milk production, August 2017.

3.2 RAIN-FED CROP PRODUCTION

3.2.1 Stage and Condition of food Crops

- In general, poor crop performance this season, especially for the major staple foods, that was noted across all livelihood zone affected overall production. As such, only 30 percent of LTA for maize was realized while beans and sorghum declined by 52 and 65 percent of the LTA.
- Late harvesting, especially for maize, dolichos and pigeon peas, and land preparation for the early planters were the major farm activities. Late harvesting was only noted in the Mixed Farming and the Rain-fed cropping livelihood zones.
- Land preparation is expected to intensify next month across all livelihood zones noting that the upcoming season is the major crop production season for the region. The major challenge likely to be faced by farmers is the lack of capital to purchase certified seeds and other inputs in light of the poor performance of the last four consecutive seasons.

4.0 MARKET PERFORMANCE

4.1 LIVESTOCK MARKETING

4.1.1 Cattle Prices

- Cattle prices averaged at Ksh15,100 this month compared to Ksh17,700 last month. Current prices are 0.67 percent above the LTA for the month.
- The noted decline resulted from the poor body conditions and an increased supply in the markets as herders try to offload excess stocks.
- Prices are expected to decrease further over the next two months.

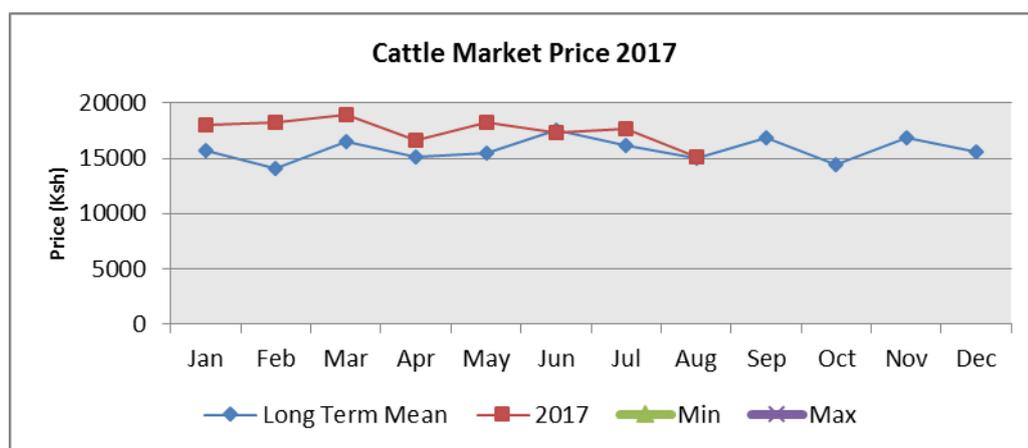


Figure 10: Meru County average cattle market prices, August 2017.

4.1.2 Goat Prices

- Prices of goats maintained a decline this month just as it has been witnessed since the beginning of the year due to poor browse and an oversupply in the markets. Current prices averaged at Kshs2,909 compared to Kshs3,538 last month and are 29 percent below the LTA for the month.
- This decline is not normal for this time of the year and is likely to continue for the next two months.



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

4.2 CROP PRICES

4.2.1 Maize

- Maize prices remained high this month similar to last month due to the prevailing shortages from cumulative poor harvests over the last four seasons. Current prices averaged at Ksh50 similar to last month and are 38.9 percent above the LTA for the month.
- Depleted household stocks especially in the Agro-pastoral livelihood zone have forced majority of households to rely on markets for their supply. Prices are expected to remain high over the coming months until the next harvest in February 2018.

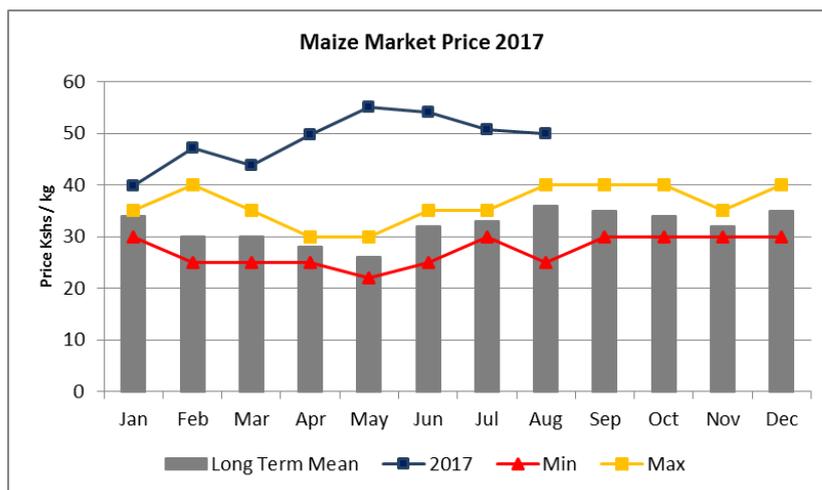


Figure 12: Meru County average maize market prices. August, 2017

4.2.3 Beans

- Poor harvests over the last four consecutive seasons that has led to depletion of household stocks also pushed prices higher this month to an average of Ksh100 a kilo from Ksh83 last month. Current prices are 49 percent above the LTA for the month.
- Current prices are not normal for the month and are expected to maintain an upward trend over the next three months.

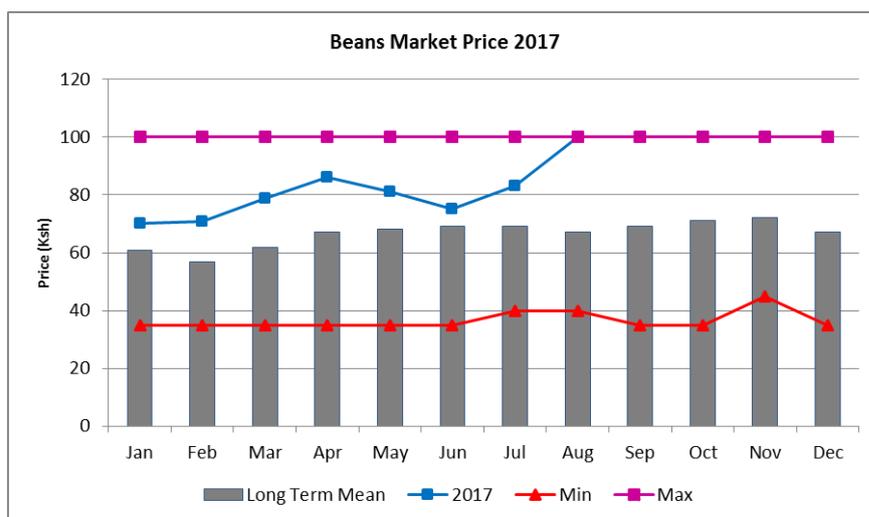


Figure 13: Meru County average bean market prices. August, 2017

4.3 Casual Labour Price Ratio/Terms of Trade

- Terms of trade have been depressed since the month of February this year as a result of low livestock prices and high cereal prices. This month, proceeds from the sale of one goat could only purchase 58kg of maize compared to 78kg the previous month, which is 59 percent lower than the LTA for the month.
- This is not normal for the month and with the expectation that livestock prices will remain low while that of cereals high over the next three months, terms of trade are going to remain unfavourable for most of the remaining months of 2017.

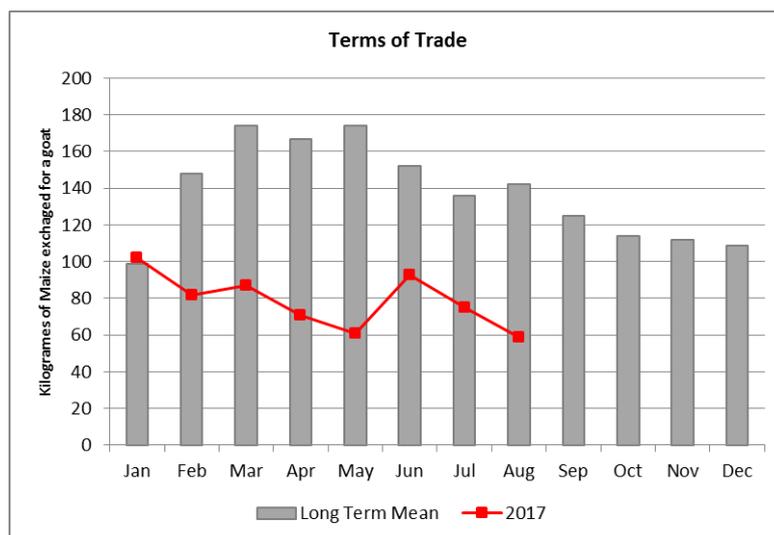


Figure 14: Meru County terms of trade. August, 2017

5.0 FOOD CONSUMPTION AND NUTRITION STATUS

5.1 FOOD CONSUMPTION SCORE

- Food consumption among majority of households deteriorated further this month. This month, 51.04 percent of sampled households fell under the 'poor' food consumption category compared to 37.84 percent the previous month while those under the 'acceptable' category declined to 26.04 percent from 34.23 percent the previous month. Equally, those that fell under the 'borderline' category declined to 22.91 percent from 27.93 percent the previous month.
- Igembe North, Tigania West and Igembe Central, all in the Agro-pastoral livelihood zone, had the highest number of households with poor food consumption scores compared to Mixed Farming and Rain-fed cropping livelihood zones.

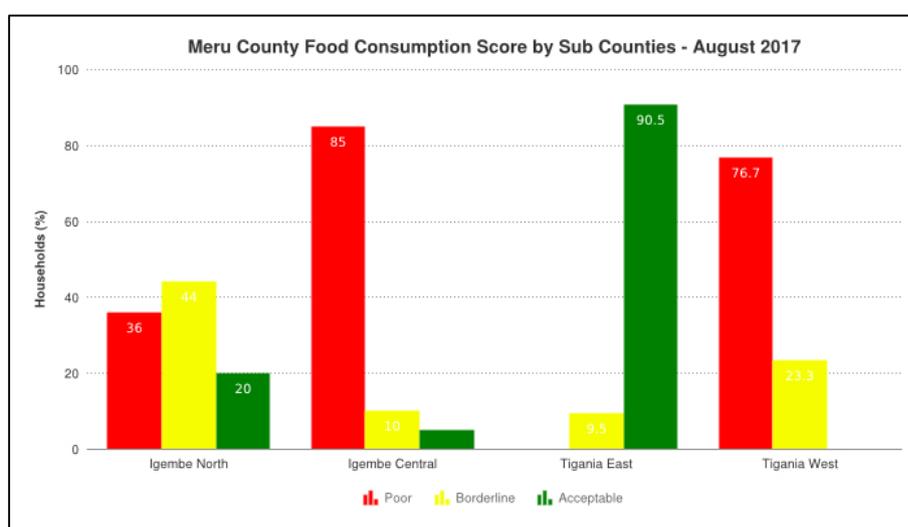


Figure 15: Meru County food consumption, August, 2017

5.2 HEALTH AND NUTRITION STATUS

5.2.1 Nutrition Status

- Proportion of children at risk of malnutrition increased ominously this month compared to last month. From a total of 325 children sampled this month, a total of 129 children were at risk, representing 39 percent of the sample. Of these children at risk, 117 were mid-at risk (MUAC 134 – 125mm) compared to 60 last month, 10 were moderately malnourished (MUAC 124 – 115mm) compared to 6, and two were severely malnourished (MUAC <115mm) compared to none last month.
- Current levels are not normal for this time of the month and are likely to worsen over the coming two months.

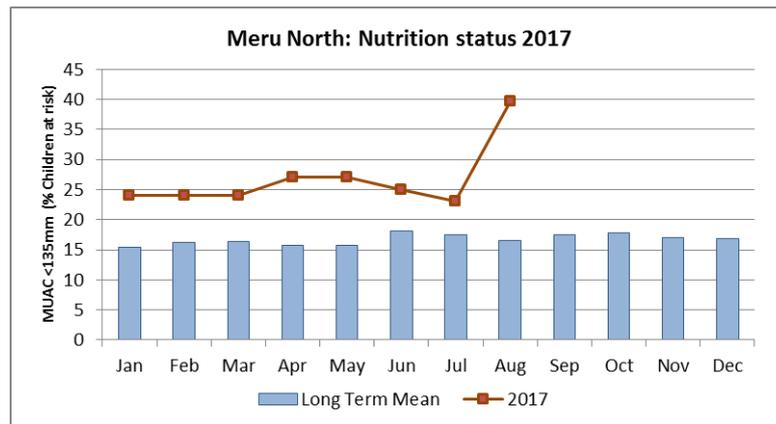


Figure 16: Meru County MUAC status, August, 2017

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 in Kinna, Malaene and Gambella in Igembe Central and Igembe North Sub-Counties, mainly over pastures and water, led to the loss of 14 lives and displacement of almost 800 households during the month of July. In August, three persons were shot dead in Igembe Central by foreign camel herders over grazing. Five schools have since been closed in the same Sub-County. The last three months have also seen major relocation of households from the conflict hotspots seeking temporary accommodation from relatives and friends. 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. Among proposed activities include:
 - Peace and conflict resolution in the grazing areas of the Agro-pastoral livelihood zone
 - Nutrition screening/nutrition (SMART) survey in the entire Meru North and Buuri Sub-county,
 - Supplementary/therapeutic feeding for malnourished children under five years
 - Livestock vaccination and disease surveillance
 - Livestock offtake
 - Unconditional Cash Transfers (UCT) to vulnerable persons
 - Provision of livestock feeds in the Agro-pastoral livelihood zone

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.
Recovery: 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.