

National Drought Management Authority

MERU COUNTY

DROUGHT EARLY WARNING BULLETIN FOR SEPTEMBER 2017



A Vision 2030 Flagship Project



SEPTEMBER 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)	41.42	>35	
Igembe Central	39.5	>35	
Igembe North	31.12	>35	
Tigania East	32.04	>35	
Tigania West	35.2	>35	
Production indicators	Value	Normal	
Crop Condition (Maize/legumes)	Land preparation	Land preparation	
Livestock Body Condition	Mainly poor	Normal	
Milk Production	7	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)	52 kg maize/sale of one goat	75 kg of maize/sale of one goat	
Return distance to water sources	Households	27 km	<6 km
	Livestock	32 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

- Dry conditions prevailed across all livelihood zones this month and this lead to a decline in the vegetation condition index from 45.03 to 41.42.
- Pasture and browse conditions were mainly poor especially in the grazing areas of the Agro-pastoral livelihood zone.

Socio Economic Indicators (Impact Indicators)

Production indicators

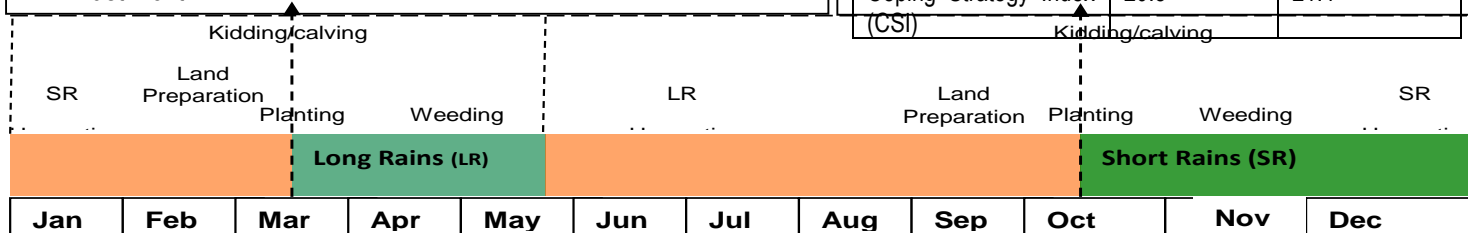
- Livestock body conditions were poor in the Agro-pastoral livelihood zone and fair to poor in the Rain-fed cropping livelihood zone.
- Livestock are still concentrated around the Meru National Park, Lower Imenti Forest, and lower areas of Igembe South, Tigania East and Tigania west that border Tharaka County similar to last month. Those from Isiolo (mostly camels and goats) are still in the lower areas of Tigania East, Tigania West, Igembe North, and Igembe Central. Conflicts between incoming herders and local farmers in these areas escalated further this month. Households have relocated to safer areas near markets and towns
- Land preparation including tilling and clearance of crop residue were the major farm activities this month. Urea under food crops likely to increase compared to previous season

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 similar to last month.



1. CLIMATIC CONDITIONS

1.1 RAINFALL PERFORMANCE

- September remained largely dry across all livelihood zones except for the second dekad that experienced notable off season showers across all livelihood zones.
- Dry conditions that prevailed during the month were normal for this time of the year and are expected to prevail during the first dekad of October before the onset of the short rains.

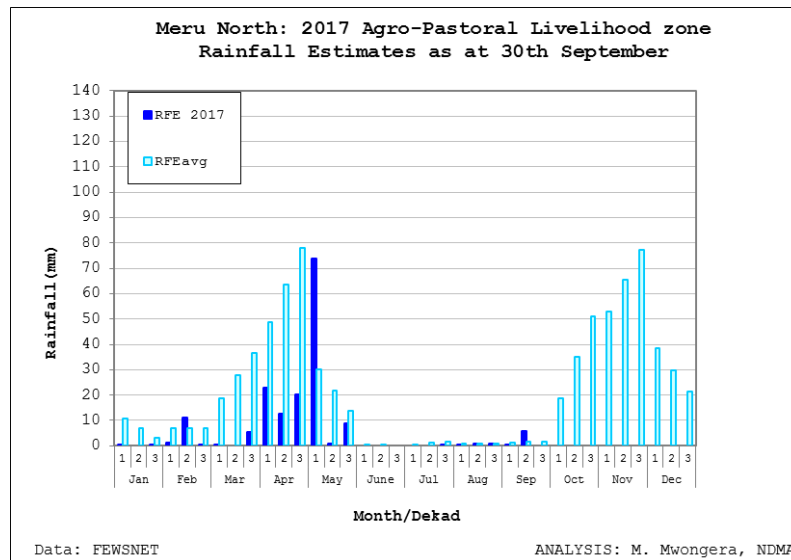


Figure 1a: Rainfall totals received in the Agro-pastoral livelihood zone of Meru North

- Off season showers received during the second dekad were evenly distributed. As such majority of areas received above 80 percent of the normal rains for this month as shown below:

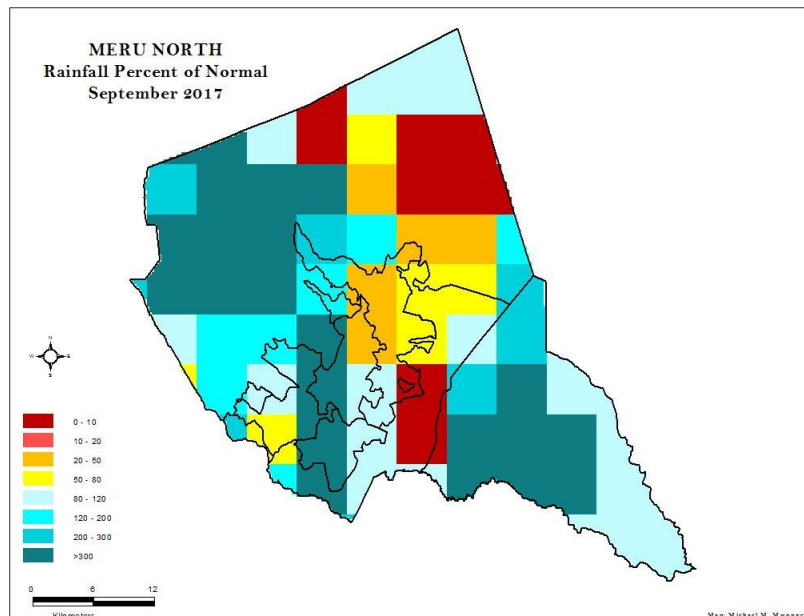


Figure 1b: Rainfall percent of normal for September 2017

2. IMPACTS ON VEGETATION AND WATER

2.1 VEGETATION CONDITION

2.1.1 Vegetation Condition Index (VCI)

- Vegetation conditions across all livelihood zones deteriorated further compared to the previous month. Accelerated decline was mostly noted in Sub-counties within the Agro-pastoral livelihood zone as indicated in the Vegetation Condition Index matrices below:

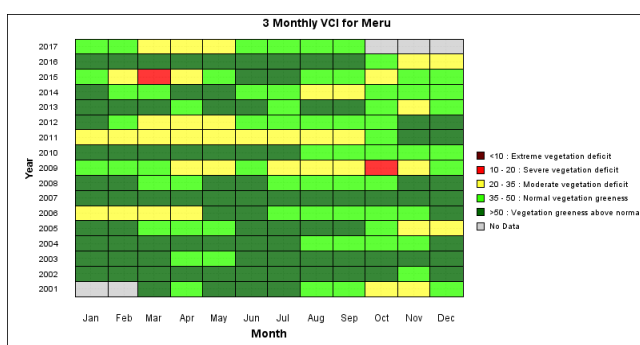


Figure 2a: VCI matrix for Meru County, 2001 – 2017

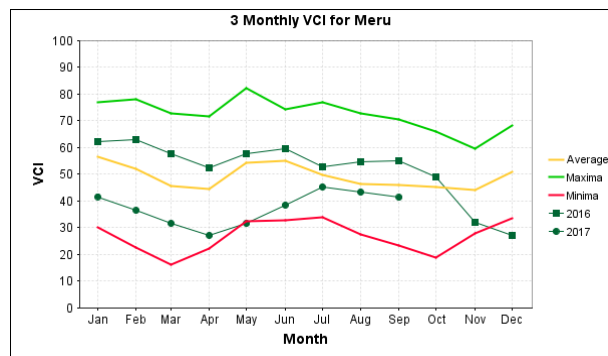


Figure 2b: VCI graph for Meru County, September 2017

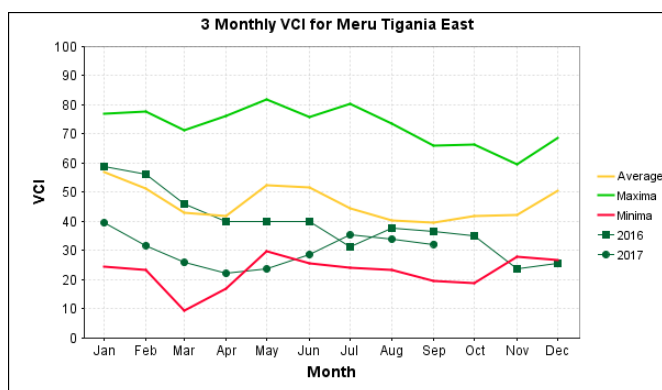


Figure 3a: VCI graph for Tigania East as at September 2017

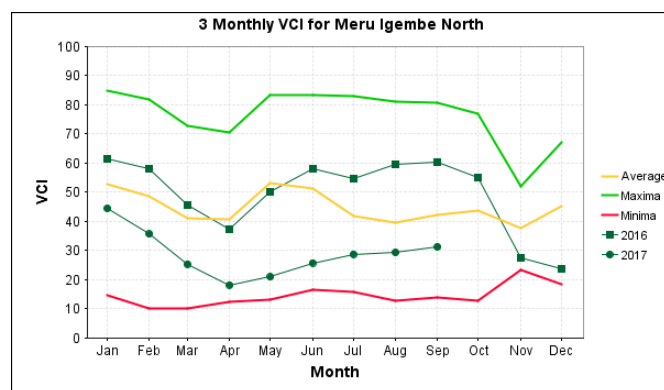


Figure 3b: VCI graph for Igembe North as at September 2017

2.1.2 Pasture

- Continued depletion of pastures was noted this month across all livelihood zones. Interviewed communities across all livelihood zones reported pastures being of poor conditions.
- This is not normal for this time of the year and is expected to last well into the month of October.

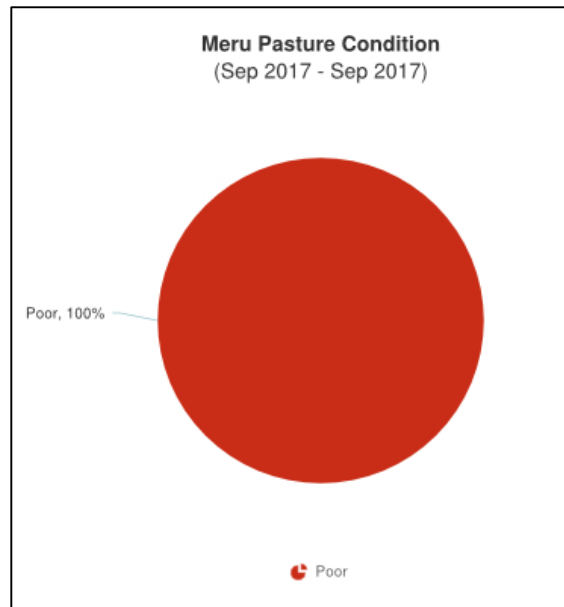


Figure 4: Meru County Pasture conditions. September, 2017

2.1.3 Browse

- Browse conditions deteriorated further this month across all livelihood zones. All communities interviewed reported browse being of poor conditions, a situation which is not normal for this time of the year.

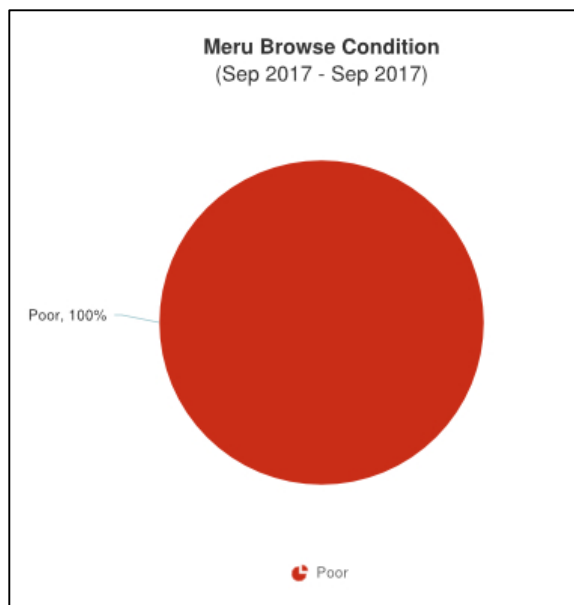


Figure 5: Meru County Browse conditions, September 2017

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 similar to the previous month.
- Water costs at source are currently at Kshs 5 per 20 litre jerry can and Kshs 20 upon delivery. These costs are normal at this time.

- 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

- Return distances to watering points for households increased to an average of 27 km this month compared to 17 km the previous month. This increase is indicative of diminishing sources across all livelihood zones. Comparatively, the Agro-pastoral livelihood zone recorded longest distances while the Mixed farming livelihood zone recorded the shortest distances.
- Current distances are not normal and are expected to prevail for the better part of next month prior to the onset of the short rains later in the month.

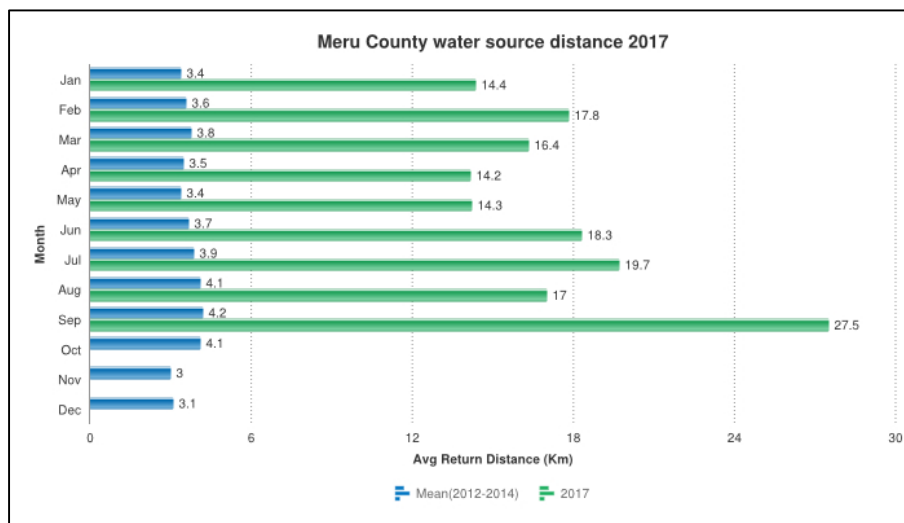


Figure 6: Meru County Household distances to water sources. September, 2017

2.2.3 Livestock access

- Majority of watering points in the grazing areas of the Agro-pastoral livelihood zone
- Return distances to watering points from grazing areas increased significantly this month to 32 km compared to 26 km the previous month due to lack of pastures and insecurity in the normal grazing areas. Current distances are not normal for this time of the year and likely to remain high next month.

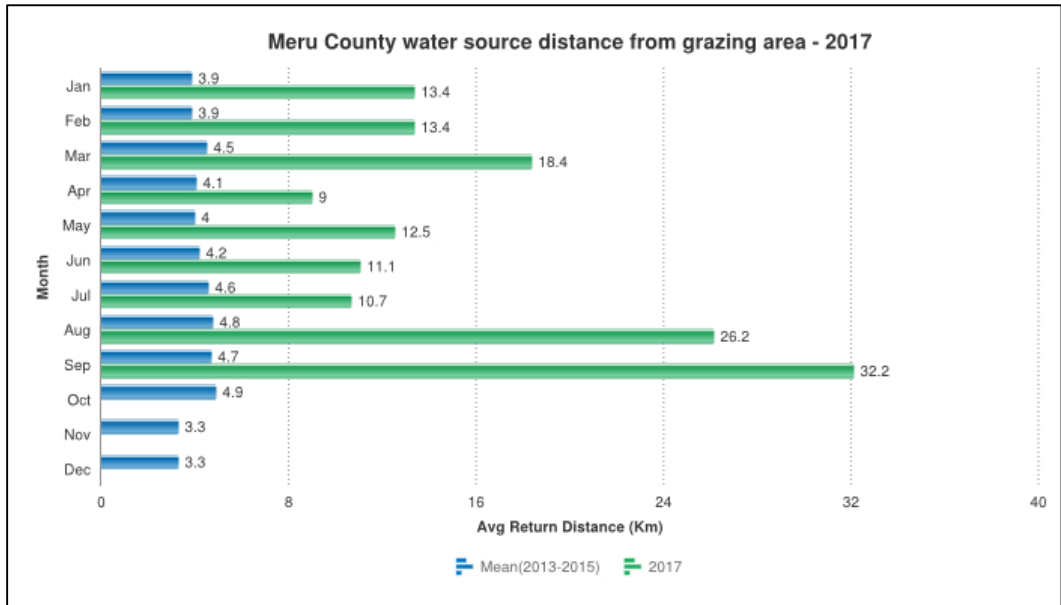


Figure 7: Meru County Livestock watering distances from grazing areas, September 2017

3.0 PRODUCTION INDICATORS

3.1 LIVESTOCK PRODUCTION

3.1.1 Livestock Body Condition

- Diminished pastures and water in the grazing areas coupled by the long watering distances and reduced watering frequencies led to further declines in livestock body conditions.
- Livestock in the Agro-pastoral livelihood zone, especially cattle, which were unable to migrate have deteriorated significantly especially in lower areas of Igembe North and Igembe Central Sub-counties. Those that were able to migrate to the Rain-fed cropping and the Mixed Farming livelihood zones are of fair to poor conditions.
- Current livestock body conditions are not normal at this time of the year and are likely to prevail throughout the month of October

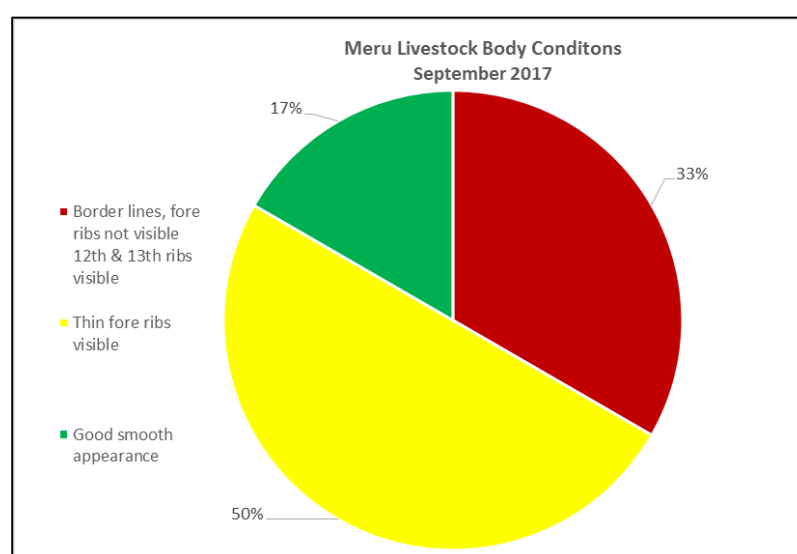


Figure 8: Meru County livestock body conditions, September 2017

3.1.2 Livestock Diseases

- Suspected cases of Foot and Mouth disease were reported around the Meru National park boundary and lower areas of Igembe South, Tigania East and Tigania West that border Tharaka Nithi County where majority of livestock have migrated to.

3.1.3 Milk Production

- Milk production declined further this month to an average of 7 litres compared to 11 litres the previous month. This decline resulted from prevailing poor livestock body conditions. Production declines were noted across all livelihood zones.
- Further declines are expected in October and early November.

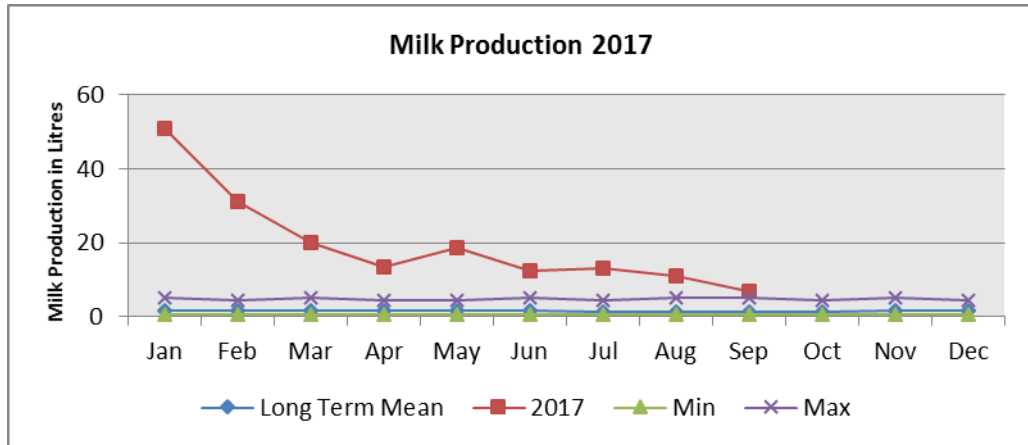


Figure 9: Meru County Milk production, September 2017.

3.2 RAIN-FED CROP PRODUCTION

3.2.1 Stage and Condition of food Crops

- Clearing of previous season's crop residues, tilling and other land preparation related activities were the major farm activities during the month. Given that this is the most relied upon season, area under food crop production is likely to increase compared to last season.
- Planting is expected to commence fully early next month. Current farm activities are normal for this time of the year.

4.0 MARKET PERFORMANCE

4.1 LIVESTOCK MARKETING

4.1.1 Cattle Prices

- Average cattle prices declined by 5.5 percent this month to settle at Kshs 14,525 compared to Kshs 15,363 the previous month following poor body conditions coupled with an increase in supply in the markets. Current prices are 13.5 percent below the LTA for the month.
- Prices are not normal for this time of the year and are expected to remain relatively low next month and later improve from November.

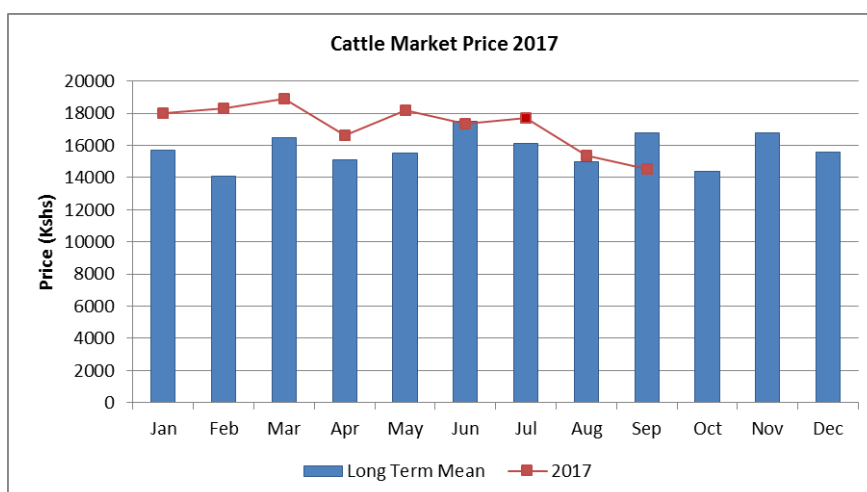


Figure 10: Meru County average cattle market prices, September 2017.

4.1.2 Goat Prices

- Goat prices have maintained a downward trend since June which can be attributed to poor body conditions and an increased supply in the markets. Prices this month decreased by 20.83 percent to an average of Kshs 2,303 compared to Kshs 2,909 the previous month. Current prices were 23.79 percent below the LTA for the month.
- The plunge in prices noted over the last three months is not normal for this period. Prices are likely to remain low in October.

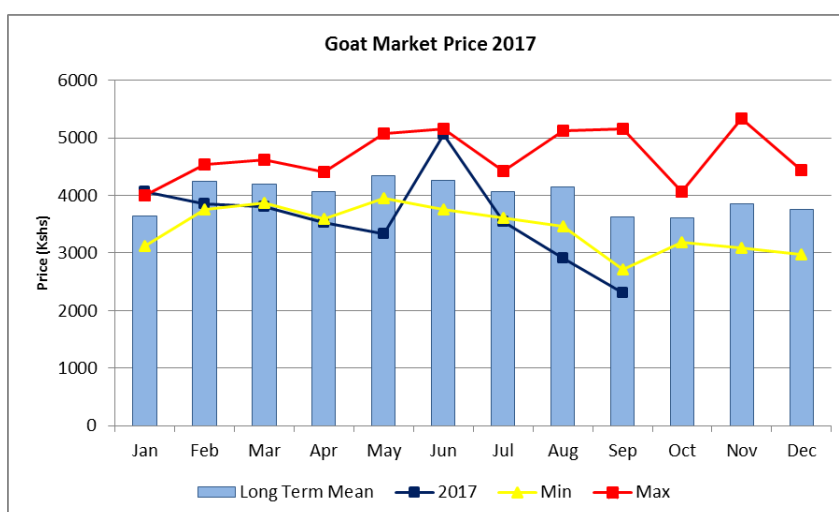


Figure 11: Meru County average goat market prices, September 2017.

4.2 CROP PRICES

4.2.1 Maize

- Maize prices decreased by 10 percent this month to average at Kshs 45 compared to Kshs 50 the previous month following slight harvests noted in the Mixed Farming and Rain-fed cropping livelihood zones. Maize imports by traders also contributed to the noted decline.
- Current prices are however 22 percent above the LTA for the month and are expected to remain fairly high over the coming three months.

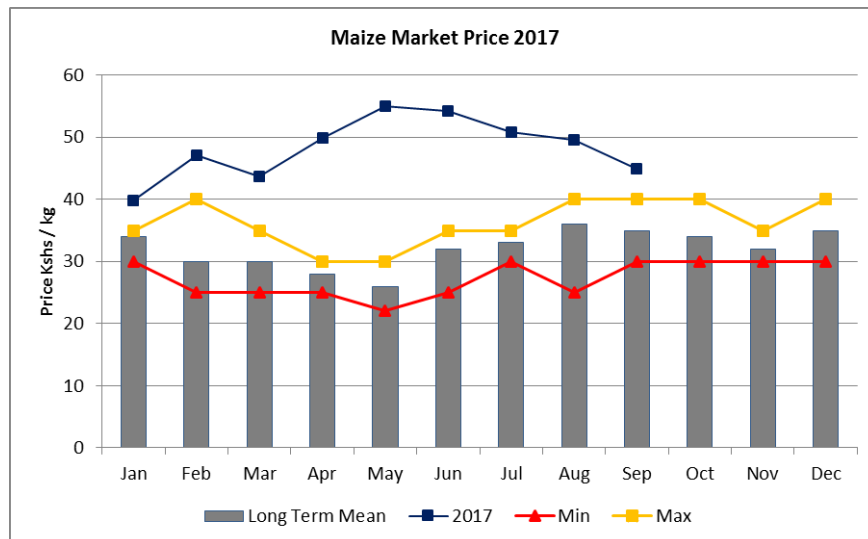


Figure 12: Meru County average maize market prices. September, 2017

4.2.3 Beans

- Bean prices remained high this month at an average of Kshs 100 per kilo similar to the previous month following poor harvests last season and depleted household stocks. Current prices are 44.9 percent above the LTA for the month.
- Prices are expected to remain high over the next three months until the next harvest in early January 2018.

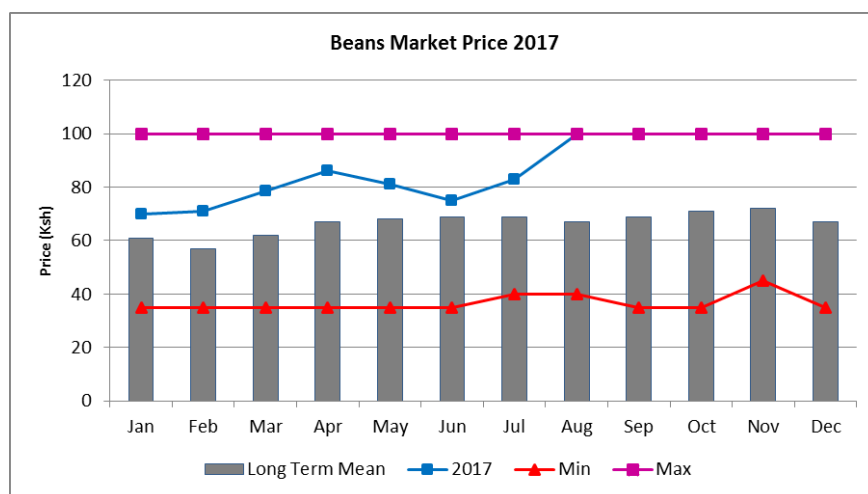


Figure 13: Meru County average bean market prices. September, 2017

4.3 Casual Labour Price Ratio/Terms of Trade

- Terms of trade remained poor this month following the high cost of food and the low prices of livestock in the markets. The sale of a mature goat could only purchase 52 kgs of maize this month compared to 59 kgs the previous month, which is 58.4 percent below the LTA for the month.
- Current terms of trade are not normal for this time of the year and are expected to remain so for the better part of the year until harvests commence in January 2018.

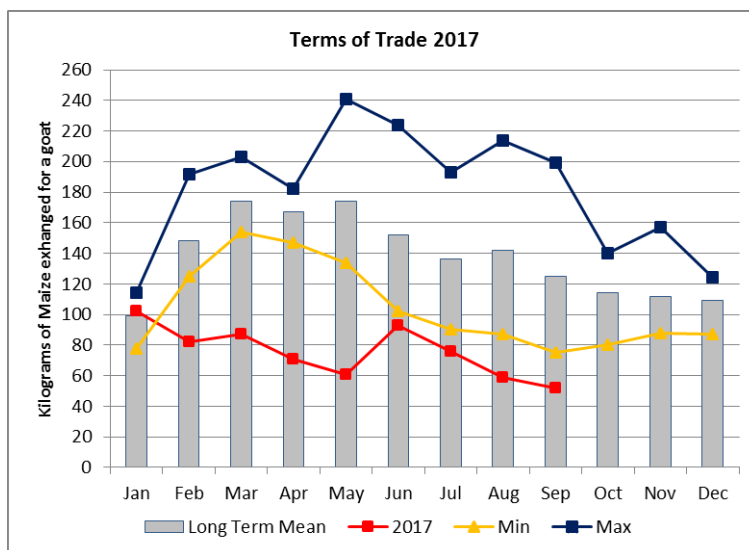


Figure 14: Meru County terms of trade. September, 2017

5.0 FOOD CONSUMPTION AND NUTRITION STATUS

5.1 FOOD CONSUMPTION SCORE

- Food consumption in households declined this month possibly due to limited availability and access with the later mainly resulting from the high prices and low incomes. From sampled households, 55 percent of them had poor food consumption scores compared to 51 percent of a similar sample the previous month. Majority of these were consuming one meal a day that contained mainly starch within little or no proteins and vegetables.
- Households that fell into the 'borderline' food consumption category decreased to 19 percent compared to 23 percent the previous month. Those that had acceptable food consumption scores remained at 26 percent similar to last 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.

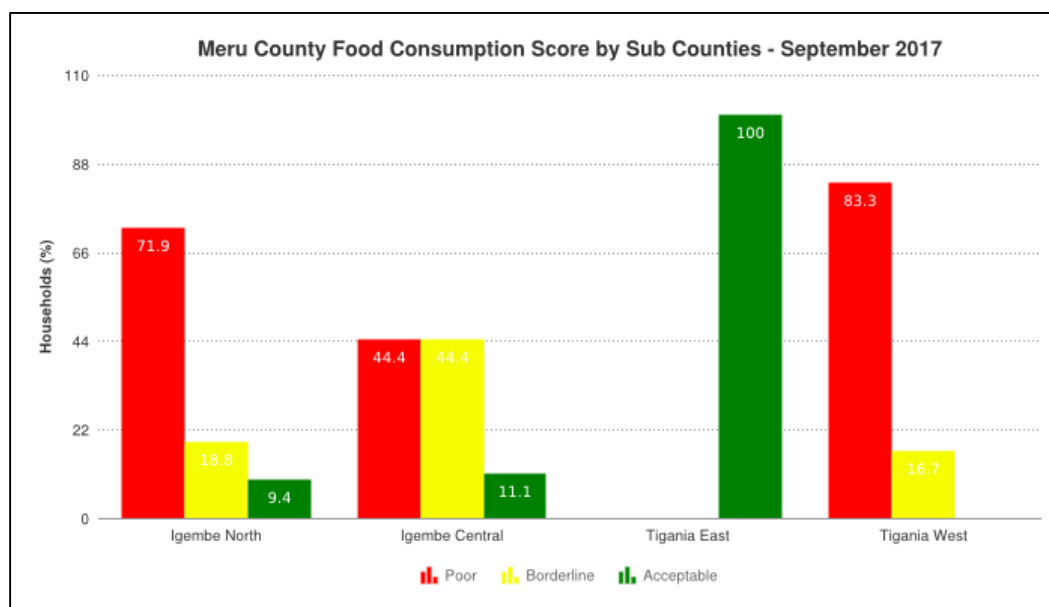


Figure 15: Meru County food consumption, September, 2017

5.2 HEALTH AND NUTRITION STATUS

5.2.1 Nutrition Status

- A slight decline in the numbers of children at risk of malnutrition was noted this month compared to last month. From a sample of 235 children under the age of five years, 108 of them were at risk of malnutrition having MUAC<135mm. Of these 90 percent of them 'mid at risk' (MUAC 124 – 125mm), 8.3 percent were 'moderately at risk' (MUAC 115 – 124mm), while 0.9 percent were severely malnourished (MUAC<115mm).

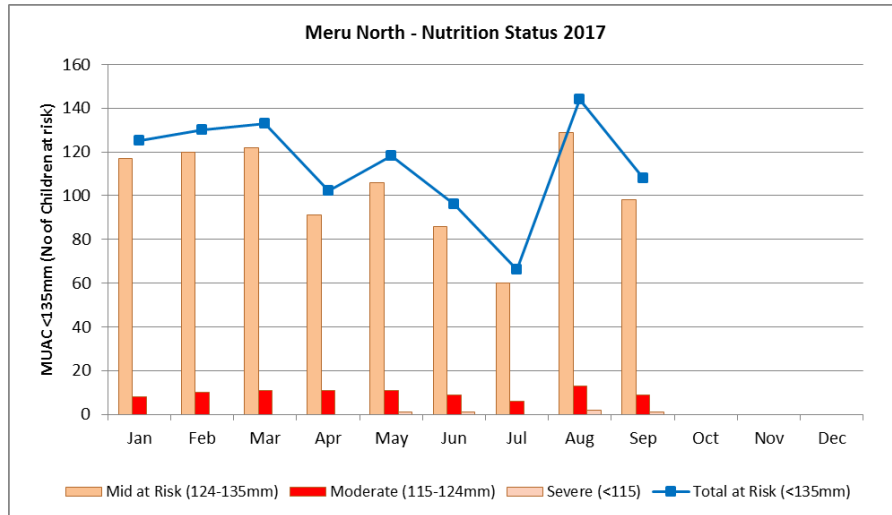


Figure 16: Meru County MUAC status, September, 2017

5.2.2 Health

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

CURRENT INTERVENTION MEASURES (ACTION)

6.1 NON-FOOD INTERVENTIONS

- Finalization of works and operationalization 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. Official launch and full operations expected to commence within the month of October.
- Joint preparation and dissemination of the advisories for the Oct-Nov-Dec rainfall by ASDSP, KFS, NEMA, MoAlf, KMD, and CES (Centre for Environment Stewardship) was done during the month.

6.2 FOOD AID

- No food aid distribution was reported during the month.

7. EMERGING ISSUES

7.1 Insecurity/Conflict/Human Displacement

- Livestock from Isiolo County, particularly camels and goats that had in-migrated into the Agro-pastoral livelihood zone since June are still within the County.
- Majority of resident 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.
- Conflicts between local farmers and herders from neighbouring Isiolo county who have migrated into the farming areas of the Agro-pastoral livelihood zone escalated further this month leading to relocation of many households. Most affected areas are farms in the lower parts of Tigania East, Igembe Central and Igembe North Sub-counties.

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	Meteorological 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.