

National Drought Management Authority

MERU COUNTY

DROUGHT EARLY WARNING BULLETIN FOR OCTOBER 2017



A Vision 2030 Flagship Project



OCTOBER EW PHASE



Drought Situation & EW Phase Classification

Biophysical Indicators

- Rainfall onset was timely this season during the second dekad. Progression was however poor in the Agro-pastoral livelihood zone with most parts remaining dry throughout the month. Amounts received in other livelihood zones ranged from normal to slightly above normal.
- Vegetation conditions however remained poor with a vegetation condition Index of 38.84 compared to 41.42 last month
- 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 Mixed farming and the Rain-fed cropping livelihood zones.
- Resident livestock that had migrated towards the Meru National Park, Lower Imenti Forest, and lower areas of Igembe South, Tigania East and Tigania west that border Tharaka County began returning back to the normal grazing areas of the Agro-pastoral livelihood zone although insecurity in the areas slowed back-migration. Those from neighboring Isiolo and Laikipia counties have also began migrating back to their respective counties.
- Conflicts between local farmers and herders from Isiolo County continued this month with at least one human death reported in Kangeta ward.
- Crops in the fields are in good conditions except those in Akithi, Kangeta, Muthara, Karama, Ndoleli, Antuambui, and Amwathi wards that are withering. First weeding and spraying is currently ongoing in all areas

Access indicators

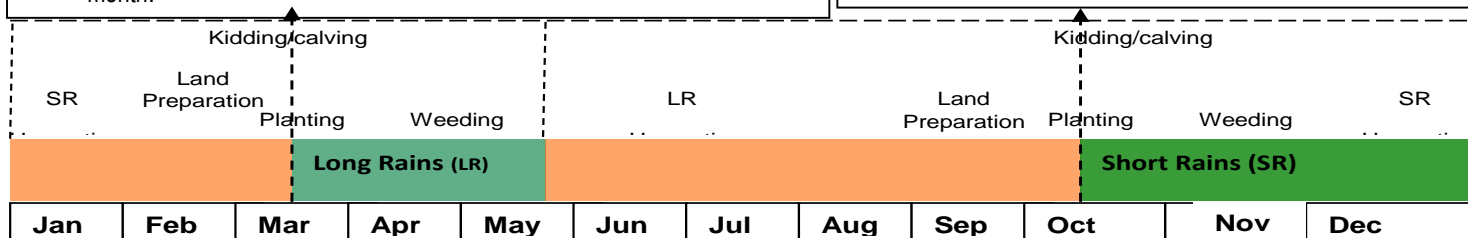
- Watering distances for households was 11 km compared to 17km last month while livestock trekked 18km compared to 32 km last month.

Utilization Indicators

- 25.6 percent of sampled children were at risk of malnutrition similar to last month.

Early Warning (EW) Phase Classification

| Livelihood Zone | Phase | Trend |
|--|------------------------|------------------------|
| Mixed Farming | Normal | Improving |
| Agro-pastoral | Alert | Worsening |
| Rain-fed Cropping | Alert | Improving |
| County | Alert | Improving |
| Biophysical Indicators | Observed Value | Normal Range/LTA |
| SPI-3Month (TAMSAT) | 0.72 | -1.0 to 1.0 |
| VCI-3Month (County) | 38.84 | >35 |
| Igembe Central | 32.74 | >35 |
| Igembe North | 31.6 | >35 |
| Tigania East | 35.85 | >35 |
| Tigania West | 33.53 | >35 |
| Production indicators | Value | Normal |
| Crop Condition (Maize/legumes) | First weeding/spraying | First weeding/spraying |
| Livestock Body Condition | Mainly poor to fair | Normal |
| Milk Production | 7 | 10 - 22 Litres |
| Livestock Migration Pattern | Back-migration | Internal migrations |
| Livestock deaths (from drought) | No deaths | No death |
| Access Indicators | Value | Normal |
| Terms of Trade (Goat/cereal price ratio) | 52 kg | 114 kg |
| Return distance to water sources | Households | 11 km |
| | Livestock | 18 km |
| Cost of water at source (20 litres) | Ksh. 5 | <5Kshs |
| Utilization indicators | Value | Normal |
| Nutrition Status, MUAC (% at risk of malnutrition) | 25.6 | <20 |
| Coping Strategy Index (CSI) | 20.97 | 21.4 |



1. CLIMATIC CONDITIONS

1.1 RAINFALL PERFORMANCE

- Rainfall onset was noted during the second dekad of the month across all livelihood zones which is timely for this season. However, spatial distribution thereafter was poor as most of the lower areas of the Agro-pastoral livelihood zone remained largely dry for the better part of the month. Temporal distribution was fair especially in the Rain-fed cropping and the Mixed farming livelihood zones.
- Amounts received especially during the second dekad ranged from normal to above normal in the Rain-fed cropping and Mixed Farming livelihood zones while those received in the Agro-pastoral livelihood zone were below normal.

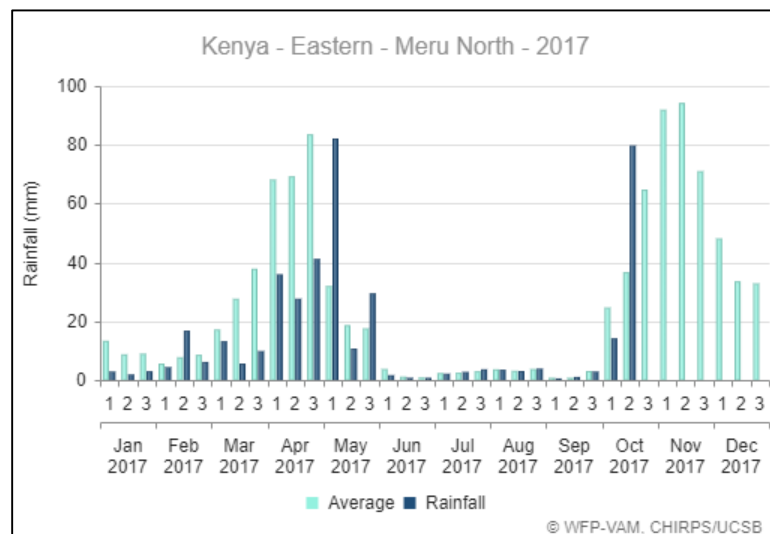


Figure 1a: MERU: Rainfall totals received

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)

- Despite a timely onset of rains this month, vegetation conditions still remained poor across all livelihood zones as indicated in the Vegetation Condition Index matrices below:

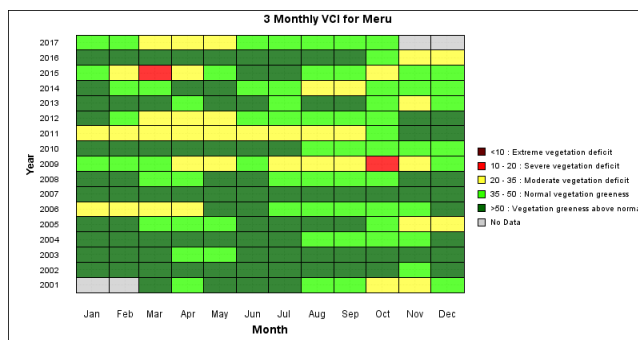


Figure 2a: VCI matrix for Meru County, 2001 – 2017

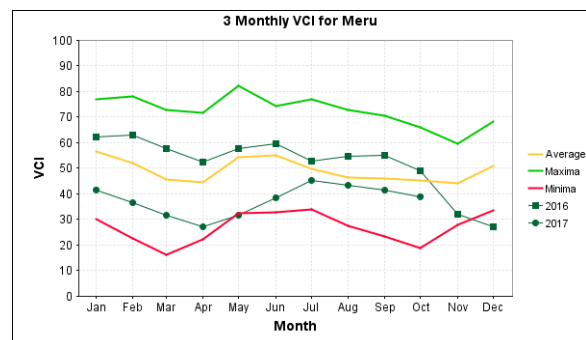


Figure 2b: VCI graph for Meru County, October 2017

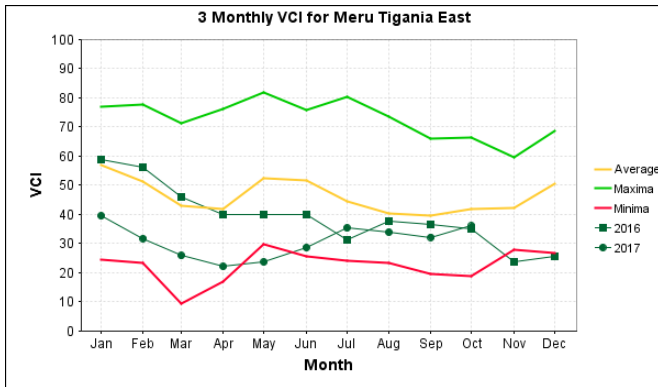


Figure 3a: VCI graph for Tigania East as at October 2017

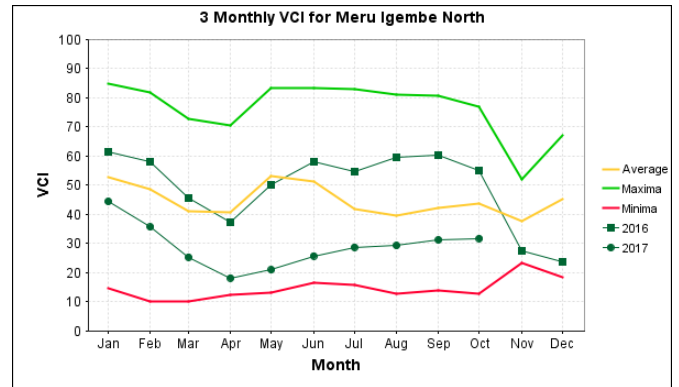


Figure 3b: VCI graph for Igembe North as at October 2017

2.1.2 Pasture

- Pasture conditions remained poor in the grazing areas of the Agro-pastoral livelihood zone this month as rains received were not yet adequate to rejuvenate the already depleted pastures. These grazing areas include the lower parts of Igembe North, Igembe Central, Tigania East, and Tigania West Sub-counties which border Isiolo County.
- Notable improvements were noted in the Rain-fed cropping and Mixed Farming livelihood zones by the end of the month.
- Overall, pasture conditions are expected to improve in the month of November across all livelihood zones.

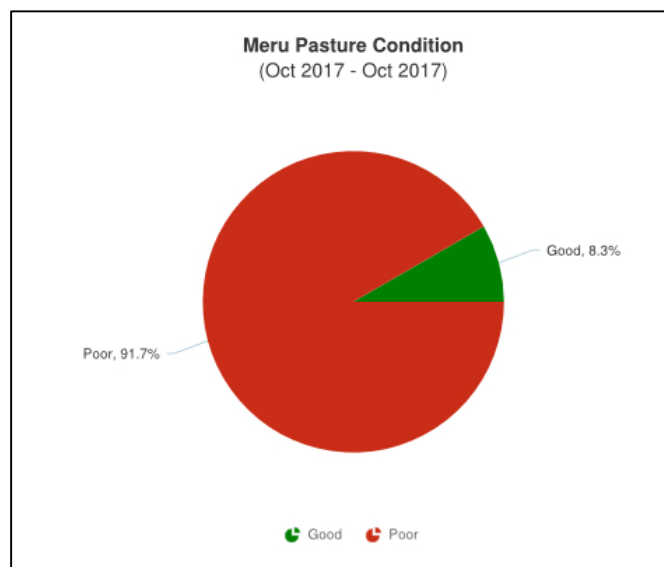


Figure 4: Meru County Pasture conditions. October, 2017

2.1.3 Browse

- Browse conditions were largely poor in the Agro-pastoral livelihood zone as rains received were inadequate. Slight improvements however noted in the Rain-fed cropping and the Mixed Farming livelihood zones.
- Browse conditions are expected to improve in the month of November if good rains are received.

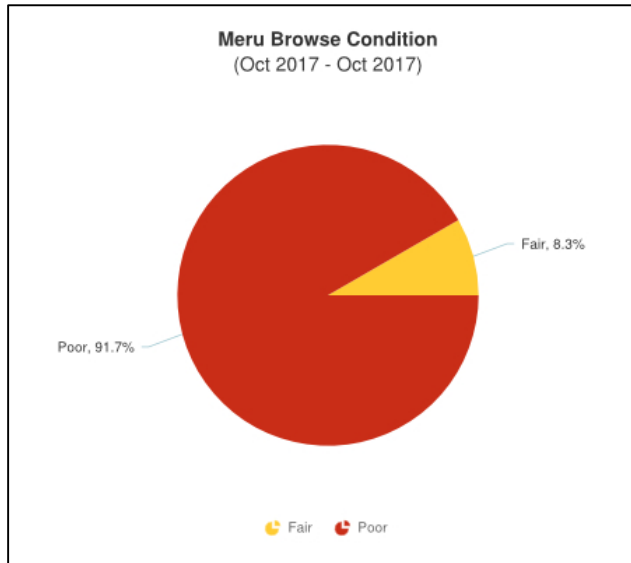


Figure 5: Meru County Browse conditions, October 2017

2.2 WATER RESOURCE

2.2.1 Sources

- Boreholes, rivers, roof catchments and commercial water vendors were the major sources of water this month similar to last month. Boreholes and water vendors were important sources in the Agro-pastoral livelihood zone. Cost of water at the boreholes was Kshs 5 and Kshs 20 upon delivery by the commercial vendors. Rains received in this zone during the month were not able to improve river flows into this livelihood zone.
- Rivers were main sources for households and livestock in the Rain-fed cropping and the Mixed farming livelihood zones this month similar to last month.
- Roof catchment was noted across all livelihood zones.
- Current water situation especially in the Agro-pastoral livelihood zone is not normal but is most likely to improve next month as rains intensify.

2.2.2 Household access and Utilization

- Distances to water sources for households declined to an average of 11 km this month. Use of roof catchment across all livelihood zones and the improvement of river flows in the Rain-fed cropping and Mixed Farming livelihood zones contributed to the noted decline in distances.
- However, the Agro-pastoral livelihood zone still recorded longest distances given the vast distances between operational boreholes and poor rains received during the last two weeks of the month.
- Overall, distances are likely to decrease further next month.

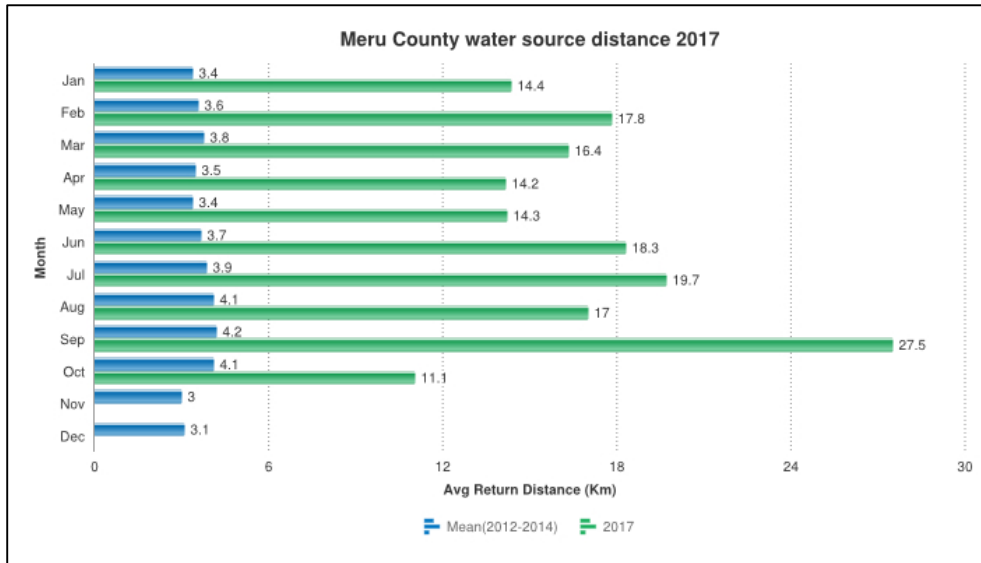


Figure 6: Meru County Household distances to water sources. October, 2017

2.2.3 Livestock access

- Distances to watering points from grazing areas declined to an average of 18 km compared to 32 km last month. Current distances are above normal for this time of the month. They are however expected to decline further next month as water pans and natural ponds are expected to recharge with the ongoing rains.

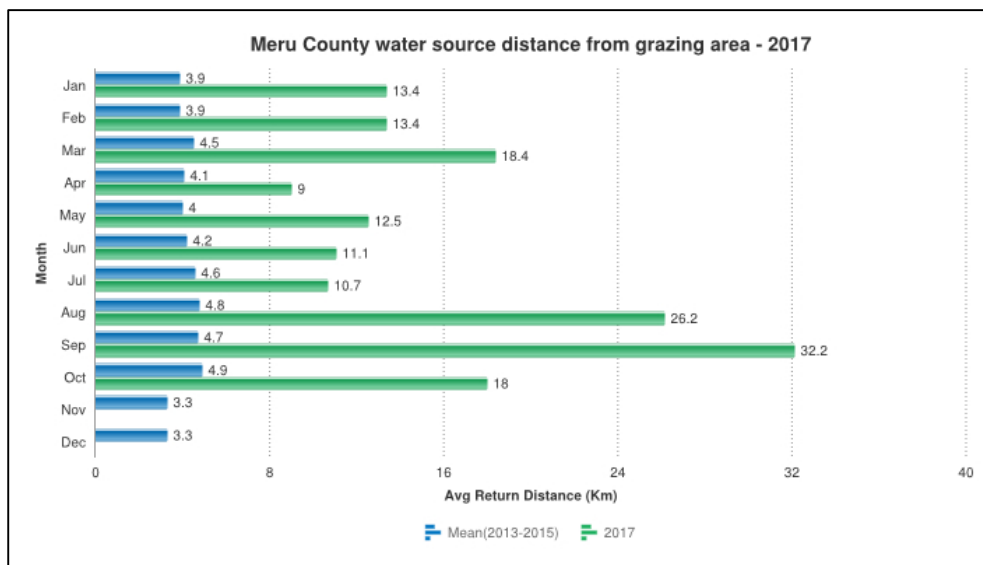


Figure 7: Meru County Livestock watering distances from grazing areas, October 2017

3.0 PRODUCTION INDICATORS

3.1 LIVESTOCK PRODUCTION

3.1.1 Livestock Body Condition

- Majority of livestock in the Agro-pastoral livelihood zone displayed poor body conditions due to diminished pastures and water in the grazing areas with the latter leading to decreased watering frequencies over the last five months.
- Fair body conditions across all species were noted in the Rain-fed cropping and the Mixed farming livelihood zones.
- Current livestock body conditions are not normal for this time of the year but are expected to improve from next month.

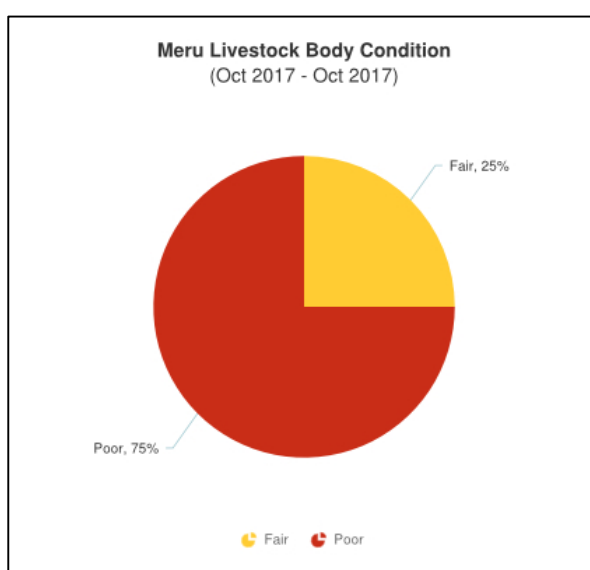


Figure 8: Meru County livestock body conditions, October 2017

3.1.2 Livestock Diseases

- Suspected cases of Lumpy skin disease and Contagious Caprine Pleuro-pneumonia were reported in Kangeta ward of Igembe Central Sub-county.

3.1.3 Milk Production

- Milk production remained fairly low this month similar to last month due to poor livestock body conditions in majority of the grazing areas. Current production averaged at 7 litres similar to the previous month.
- Production is likely to pick beginning late next month once livestock body conditions improve.

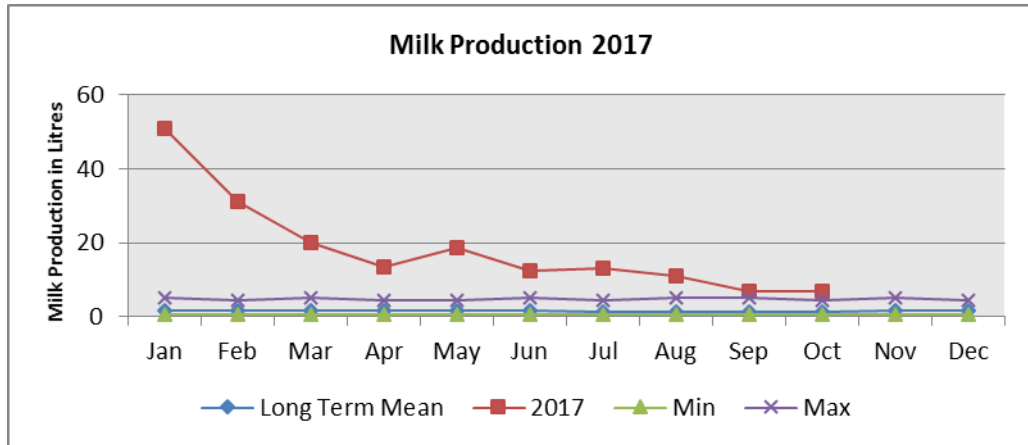


Figure 9: Meru County Milk production, October 2017.

3.2 RAIN-FED CROP PRODUCTION

3.2.1 Stage and Condition of food Crops

- The October-November-December season is the most reliable season in Meru North. As such acreage under food crops (rain-fed) is normally higher than that of the March-April-May season. Major crops planted this season included maize, beans, sorghum, green grams, pigeon peas, dolichos, and cowpeas.
- Planting of the short rains crop intensified at the beginning of the month. After rainfall onset, germination was noted across all livelihood zones. First weeding began towards the end of the month across all livelihood zones. However, crops in the lower areas of the Agro-pastoral livelihood zone especially Akithi, Kangeta, Muthara, Karama, Ndoleli, Antuambui, and Amwathi wards have begun withering due to lack of adequate rains immediately after germination. This is not normal for this season.
- With the exception of the mentioned areas, crops in the rest of the county are in good conditions.

4.0 MARKET PERFORMANCE

4.1 LIVESTOCK MARKETING

4.1.1 Cattle Prices

- Cattle prices declined further this month to an average of Kshs 13,800 compared to Kshs 14,525 the previous month. This five percent decline resulted from poor body conditions and an increased supply to the markets as farmers sought cash to procure seeds and other inputs in addition to funding land preparation and planting activities.
- Current prices are slightly below the long term average for the month. They are however expected to increase from November once body conditions improve.

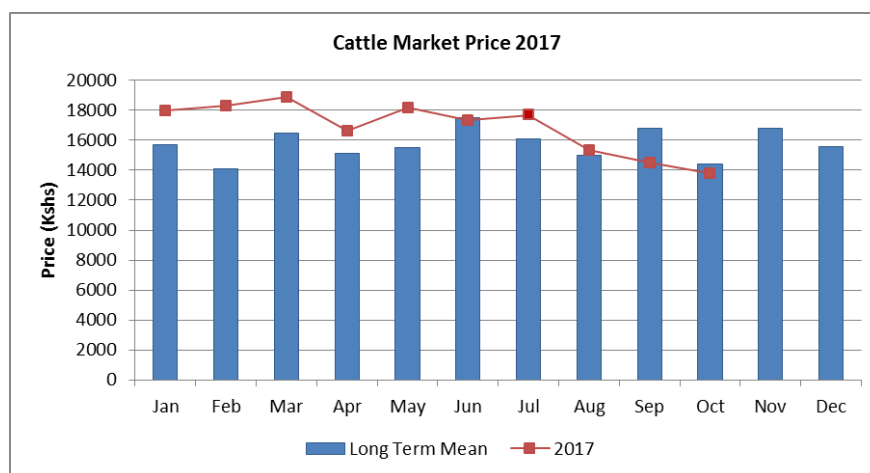


Figure 10: Meru County average cattle market prices, October 2017.

4.1.2 Goat Prices

- A slight decline in market supply of goats as herders preferred to hold on to their stocks led to increased prices this month. The price of a mature goat increased by 25.9 percent to an average of Kshs 2,900 this month compared to Kshs 2,303 last month. Current prices are 19 percent lower than the long term average for the month.
- Prices are expected to increase over the coming months as body conditions improve.

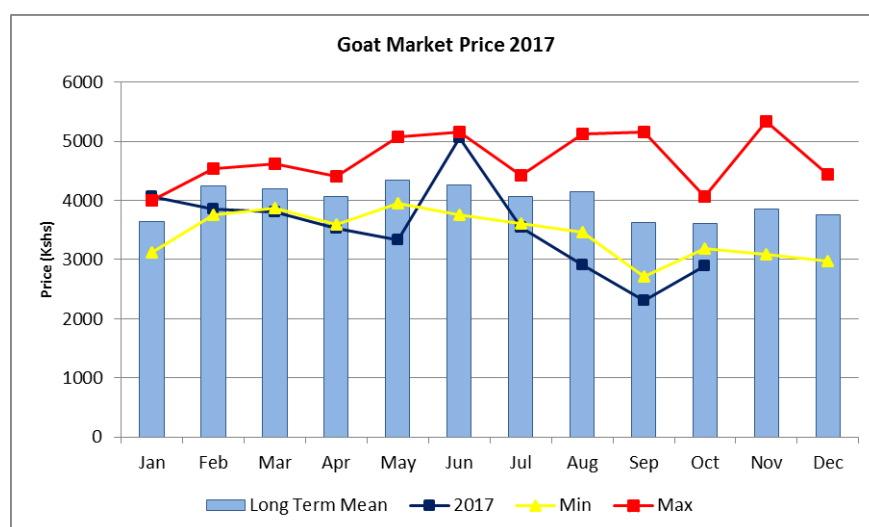


Figure 11: Meru County average goat market prices, October 2017.

4.2 CROP PRICES

4.2.1 Maize

- Maize prices increased by 8.8 percent this month to an average of Kshs 49 per kilogram compared to Kshs 45 last month. This rather expected increase resulted from an increased demand for seed against a backdrop of prevailing shortages following successive poor harvests. Majority of households relied maize purchases from the markets as household stocks were already depleted.
- Current prices are 44.11 percent above the long term average prices for the month and are expected to maintain an upward trend over the coming three months.

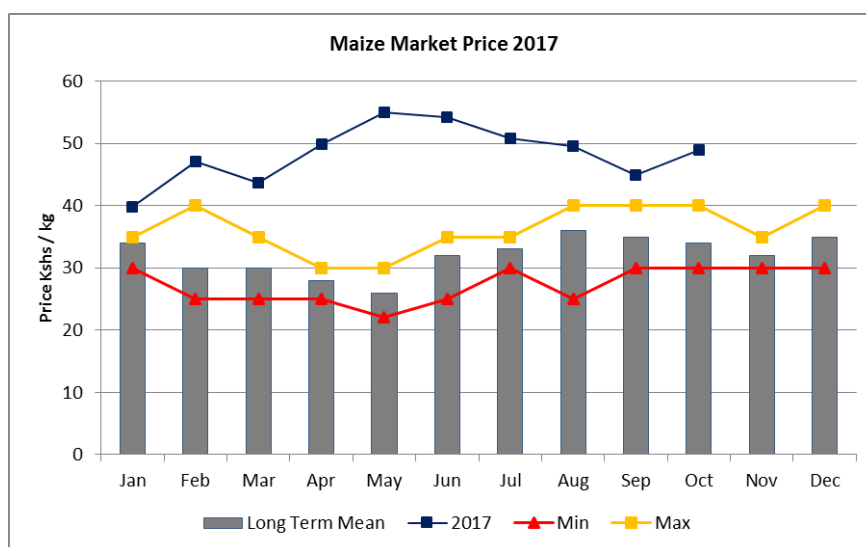


Figure 12: Meru County average maize market prices. October, 2017

4.2.3 Beans

- Marginal decreases in bean prices were noted this month with current prices averaging at Kshs 96 per kilogram compared to Kshs 100 the previous month. Current prices are still abnormally high following successive poor harvests that have also led to depleted household stocks.
- Prices are expected to remain high over the next two months until the next harvest in January 2018.

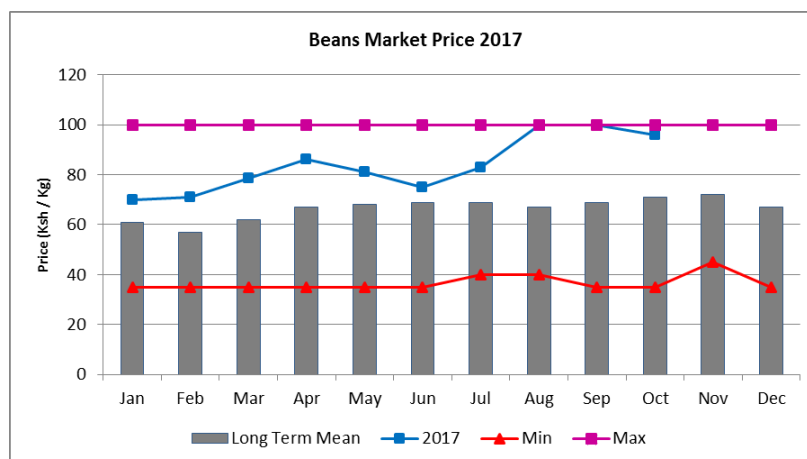


Figure 13: Meru County average bean market prices. October, 2017

4.3 Terms of Trade (Goat/cereal price ratio)

- Proceeds from the sale of a mature goat could purchase 60kgs of maize this month compared to 52kgs the previous month. This slight improvement was as a result of the noted increase on goat prices this month. However, despite the noted increase, terms of trade this month still remained below the long term average for the month. An expected increase in goat prices over the coming months is likely to improve terms of trade.

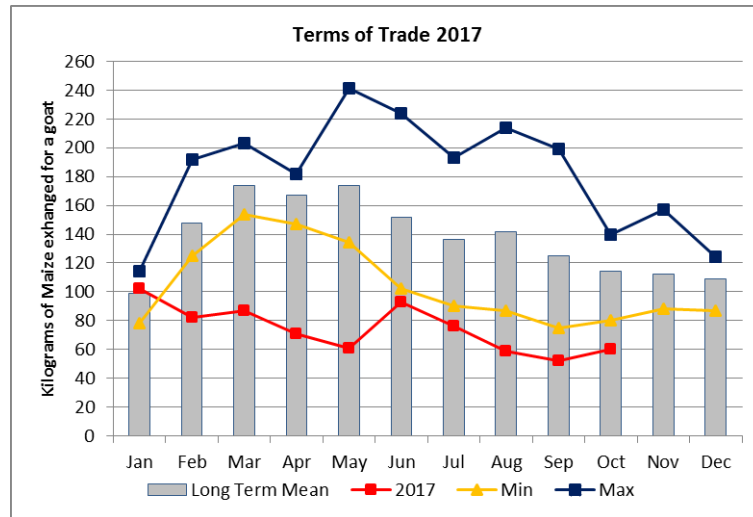


Figure 14: Meru County terms of trade. October, 2017

5.0 FOOD CONSUMPTION AND NUTRITION STATUS

5.1 FOOD CONSUMPTION SCORE

- Household food consumption declined further this month as majority of households had exhausted their food reserves and did not have adequate cash to purchase appropriate foods. Proportion of those that recorded poor food consumption scores increase to 65.09 percent compared to 55 percent the previous month. Those that fell into the borderline category were 6.98 percent compared to 19 percent the previous month while 26 percent had acceptable food consumption scores similar to last month.
- All households that had poor consumption scores were in the Agro-pastoral livelihood zone while majority of households that had acceptable consumption scores were in the Rain-fed cropping and the Mixed Farming livelihood zones.

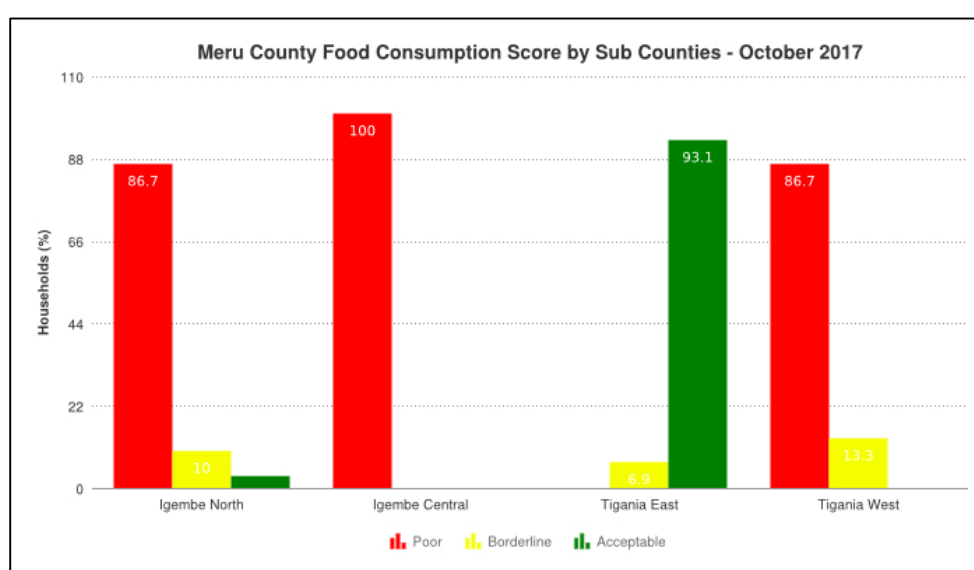


Figure 15: Meru County food consumption, October, 2017

5.2 HEALTH AND NUTRITION STATUS

5.2.1 Nutrition Status

- Nutrition status of children under the age of five years remained poor this month similar to last month. Of the 410 children sampled, 25.6 percent of them were at risk of malnutrition similar to last month. These high figures result mainly from the fact that majority of households having poor food consumption patterns due to depleted reserves and lack of cash to purchase appropriate food items.
- Nutrition status is likely to improve beginning next month once milk production improves.

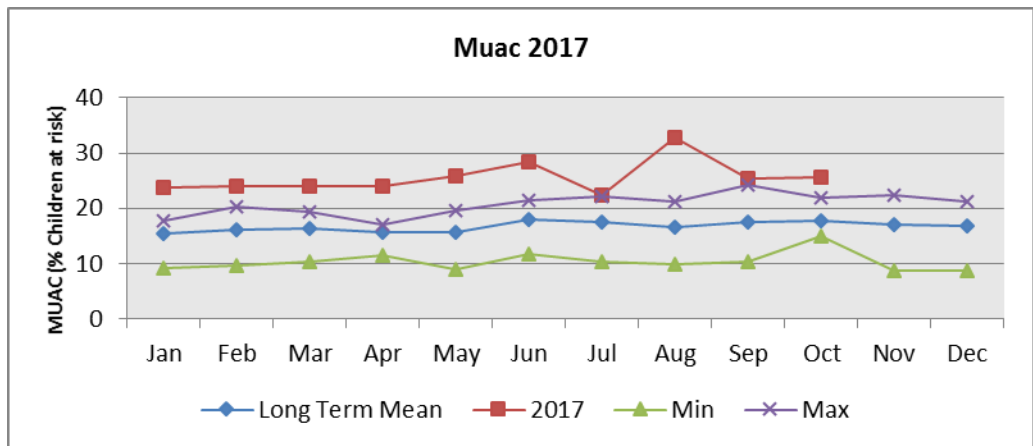


Figure 16: Meru County MUAC status, October, 2017

5.2.2 Health

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

CURRENT INTERVENTION MEASURES (ACTION)

6.1 NON-FOOD INTERVENTIONS

- There were no non-food interventions noted this month.

6.2 FOOD AID

- No food aid distribution was reported during the month.

7. EMERGING ISSUES

7.1 Insecurity/Conflict/Human Displacement

- Conflicts between local farmers and herders from neighbouring Isiolo county who had migrated into the farming areas of the Agro-pastoral livelihood zone continued this month with at least one human death reported in Kangeta ward.
- Majority of resident livestock that had migrated to the lower Imenti forest, Ngaya forest and into the Rain-fed cropping livelihood zone around the Meru National park have begun moving back to the normal grazing areas albeit slowly due to insecurity in the grazing areas.
- Livestock from the neighbouring Isiolo and Laikipia Counties are also migrating back to their normal grazing areas.

8. RECOMMENDATIONS

- Insecurity in the grazing areas of the Agro-pastoral livelihood zone require close attention. Peace and conflict resolution activities would go a long way to ensure lasting peace among the communities from Isiolo and Meru Counties.
- Malnutrition among children under the age of five years especially in the Agro-pastoral livelihood zone also requires attention. Nutrition screening/SMART survey would identify underlying factors leading to the abnormally high malnutrition cases and suggest sustainable ways to address them.

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 | Agricultural Drought Category |
|-------|-------------------|-------------------------------|
| | 3-monthly average | |
| | ≥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.