

National Drought Management Authority

MERU COUNTY

DROUGHT EARLY WARNING BULLETIN FOR SEPTEMBER 2018



A Vision 2030 Flagship Project



SEPTEMBER EW PHASE



Early Warning (EW) Phase Classification

Livelihood Zone	Phase	Trend
Mixed Farming	Normal	Improving
Agro-pastoral	Normal	Deteriorating
Rain-fed Cropping	Normal	Deteriorating
Meru County (Meru North)	Normal	Deteriorating
Biophysical Indicators	Value	Normal Range
VCI-3Month (County)	73.5	>35
Production indicators	Value	Normal
Crop Condition (Maize/legumes)	Land preparation	Land preparation
Livestock Body Condition	Good	Good
Milk Production	2.3	1 - 2 Litres
Livestock Migration Pattern	In-migration of camels from Isiolo	No Migrations
Access Indicators	Value	Normal
Terms of Trade (Goat/cereal price ratio)	157 kg	125 kg
Return distance to water sources	9 km	<7 km
Utilization indicators	Value	Normal
Nutrition Status, MUAC (% at risk of malnutrition)	12	<20

Drought Situation & EW Phase Classification

Biophysical Indicators

- September has been generally dry across all livelihood zones, a normal situation at this time of the year.
- The dry spell that began in late June has led to slight declines in forage resources across all livelihood zones.

Socio Economic Indicators (Impact Indicators)

Production indicators

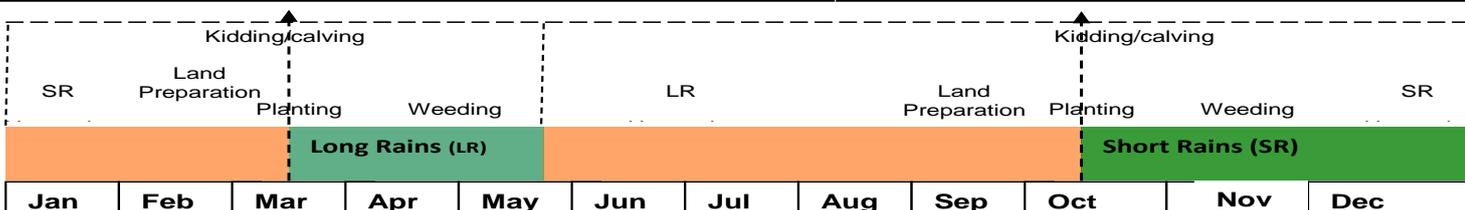
- Livestock body conditions are good in all species and across all livelihood zones.
- Land preparation was the main farm activity across all livelihood zones. The October to December period being the main cropping season, area under rain-fed crop production will be greater than the March to May season.

Access indicators

- Rivers and boreholes were the chief water sources for both livestock and domestic use. With the drying up of most open sources, the proportion of users relying on boreholes has significantly increased this month. This has also led to the increase in trekking distances compared to last month. Water vendors were also important sources in the agro-pastoral livelihood zone
- Terms of trade have improved compared to last month due to the low cereal prices prevailing.

Utilization Indicators

- The proportion of children under five years at risk of acute malnutrition has decreased further compared to August.



1. CLIMATIC CONDITIONS

1.1 RAINFALL PERFORMANCE

- The dry spell witnessed since June also extended into September across all livelihood zones. This is normal for this time of the year.

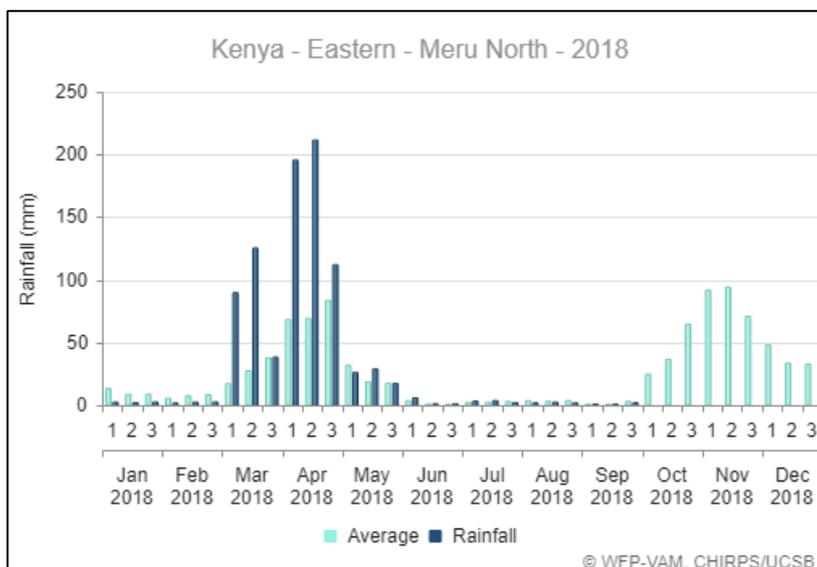


Figure 1a: Meru North: Rainfall totals for September 2018

2. IMPACTS ON VEGETATION AND WATER

2.1 VEGETATION CONDITION

2.1.1 Vegetation Condition Index (VCI – 3 month)

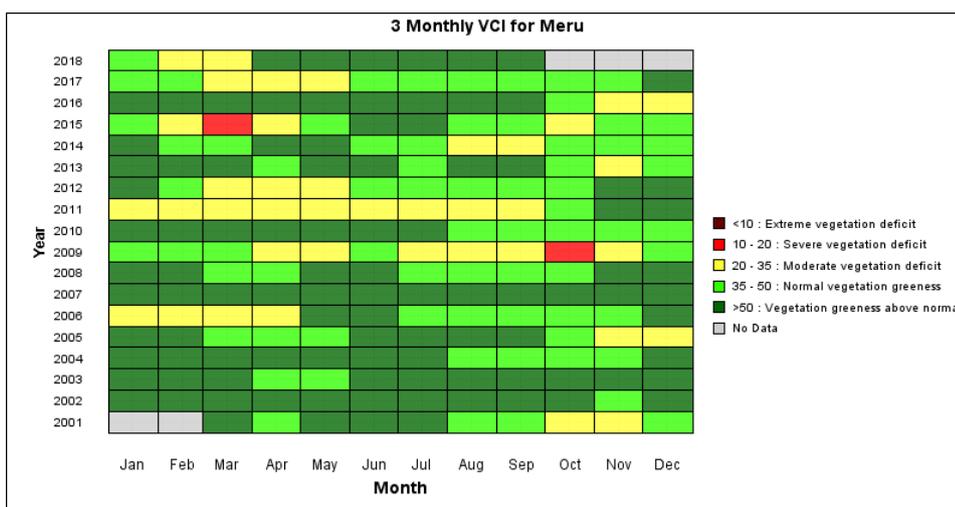


Figure 2: VCI matrix for Meru County, 2001 – 2018

- The dry spell that has prevailed since has led to declines in vegetation conditions with VCI (3-month) declining to 73.5 compared to 78.03 in August. Deterioration in the natural vegetation conditions was witnessed across all livelihood zones.

2.1.2 Pasture

- Pasture conditions have deteriorated this month, especially in the agro-pastoral livelihood zone following the long dry spell over the last three months. From community interviews across all livelihood zones, only 36 percent of respondents reported pastures being in good conditions. The rest, mainly in the agro-pastoral livelihood zone and parts of the rain-fed cropping livelihood zone bordering the Meru National Park and Tharaka Nithi County reported pastures being in fair conditions and were deteriorating fast.
- Nonetheless, current pasture amounts are likely to sustain livestock through the month of October. Crop residues from the last season’s harvest are currently being used as fodder.

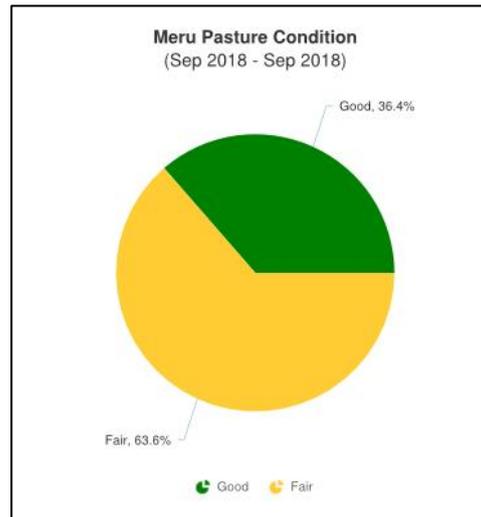


Figure 3: Pasture conditions

1.3 Browse

- Browse conditions have generally deteriorated this month compared to last month due to the ongoing dry spell. The decline was more pronounced in the agro-pastoral livelihood zone
- The noted decline is normal for this lean period but recovery is expected with the onset of October to December rains.

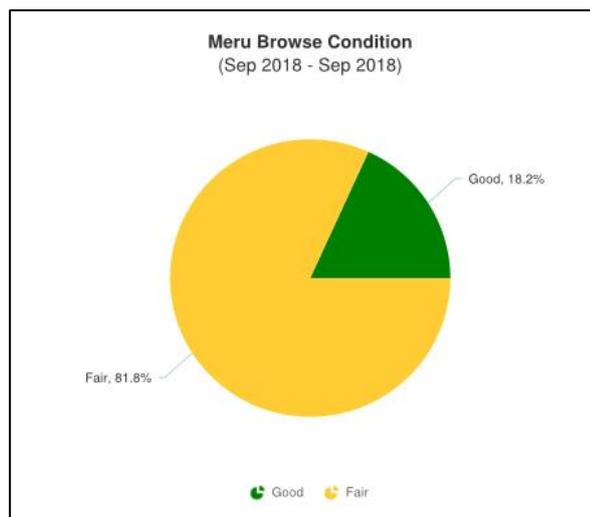


Figure 4: Browse conditions

2.2 WATER RESOURCE

2.2.1 Sources

- Rivers and boreholes were the major sources of water for both livestock and domestic use during the month. Following the drying up of most open water sources, there has been a steady increase in the number of households relying on boreholes especially in the agro-pastoral livelihood zone over the last three months. From community interviews, 73 percent of households relied on boreholes compared to 53.8 percent in August while only 27 percent of households relied on rivers compared to 46 percent last month. Rivers were most important sources in the mixed farming and the rain-fed cropping livelihood zones. However, volumes were significantly low.
- Commercial water vendors were also vital sources in the agro-pastoral livelihood zone particularly in Igembe North and Igembe Central sub-counties. In addition, privately owned boreholes in this livelihood zone were also important sources.
- The cost of water, both at source and upon delivery, increased slightly due to an increase in fuel prices recently. At the source, a 20-litre jerry can cost between Kshs 2 in public boreholes and Kshs 5 in privately owned boreholes and Kshs 20 – 25 upon delivery depending on distance.
- Water treatment was still low with only 24 percent of sampled households that were treating water before drinking. Treatment methods that were employed included filtration and boiling.

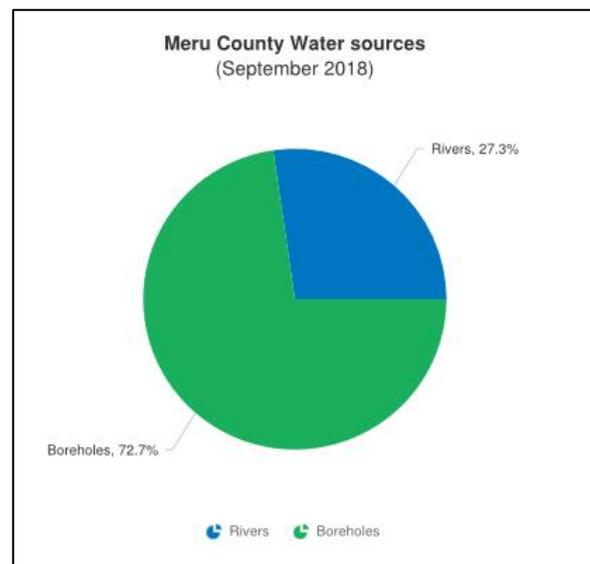


Figure 5: Major water sources

2.2.2 Household access and Utilization

- Households covered longer distances to watering points this month compared to August following the drying up of most open sources and the long distances between the few existing boreholes. On average, the return distance increased to 9.3 km from 5.4 km last month. Comparatively, households in the agro-pastoral livelihood zone trekked longer distances while those in the mixed farming livelihood covered the shortest distances.
- Although it is typical for households to cover long distances to watering points during the lean months of July to early October, current distances are 13 percent longer than the long-term average.

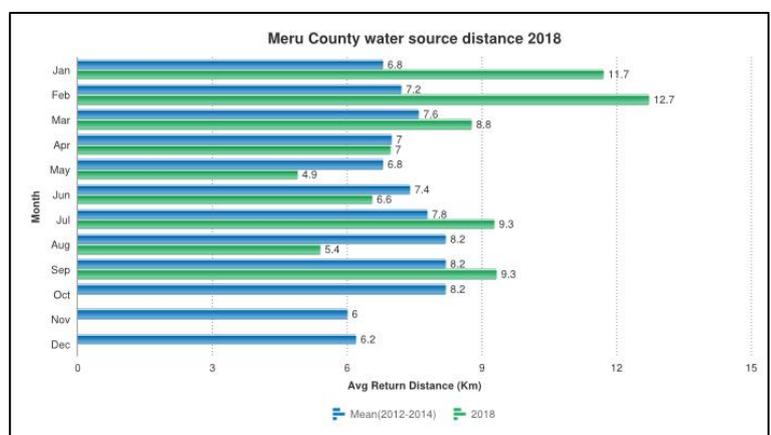


Figure 6: Household return distances to water sources.

2.2.3 Livestock access

- Distances to watering points from grazing areas remained high at an average of 14 km similar to the previous month. Lack of water in the grazing areas following the drying up of open sources (particularly pans, dams, and streams) was the main driver behind the abnormally high distances noted since July.
- The onset of the October to December rains is however expected to lessen the distances towards the end of October.
- Watering frequency was low in the agro-pastoral livelihood zone at once every two days.

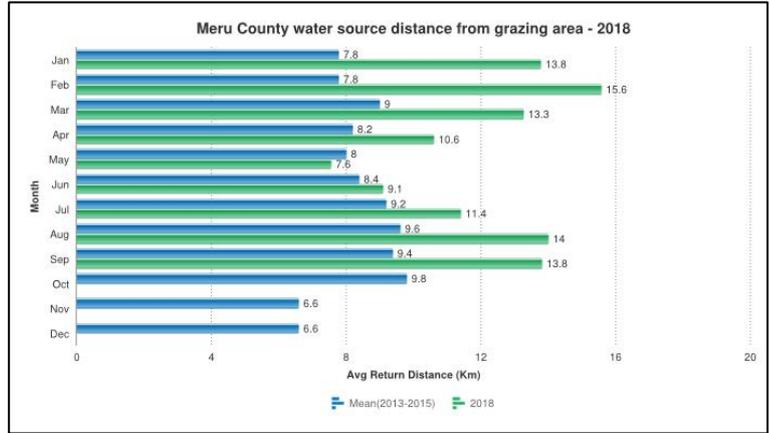


Figure 7: Livestock return watering distances from grazing areas

3.0 PRODUCTION INDICATORS

3.1 LIVESTOCK PRODUCTION

3.1.1 Livestock Body Condition

- Livestock body conditions were largely good across all species in all livelihood zones except in parts of the agro-pastoral livelihood zone (Kangeta ward) where the majority of cattle were of fair conditions.

3.1.2 Livestock Diseases

- Fowl pox in poultry was reported in pockets of the rain-fed cropping livelihood zone.

3.1.3 Milk Production

- Milk production remained relatively stable at an average of 2.3 litres per household per day compared to 2.4 litres in August. Current production is above the long-term average due to the current good body conditions across all livelihood zones.

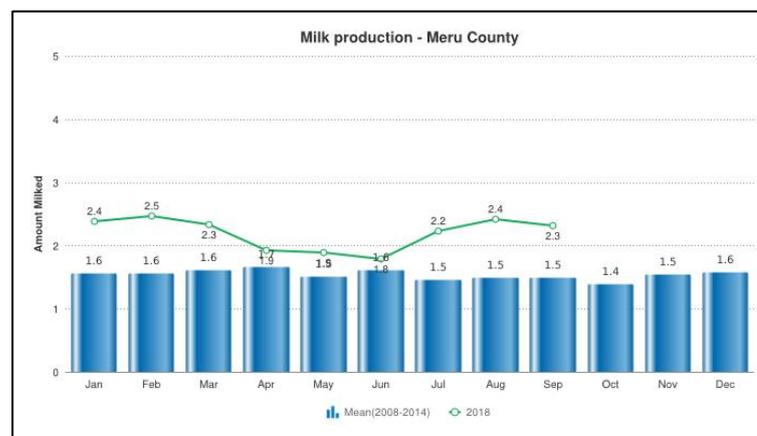


Figure 8: Milk production per household per day.

3.2 RAIN-FED CROP PRODUCTION

3.2.1 Stage and Condition of Food Crops

- October to December is the main cropping season for the County. The area under rain-fed food crop production is typically greater than that cultivated during the March to May season. Major food crops grown include maize, beans, pigeon peas, green grams, sorghum, and millet. Tea, coffee, and *Khat* (Miraa) are typical cash crops grown in the medium to high potential areas and whose acreage hardly ever changes.
- Land preparation was the main activity across all livelihood zones. Planting commenced during the last week of the month among the few early planters. Majority of households will plant at the beginning of the October.
- Current farm activities are normal for this time of the month.

4.0 MARKET PERFORMANCE

4.1 LIVESTOCK MARKETING

4.1.1 Cattle Prices

- The desire by livestock keepers to increase their herd sizes following good March to May rains and the calving period expected in October and November has constricted the supply of cattle in the markets since May which has resulted in a steady increase in prices. Currently, the average price of a mature 3-year bull is Kshs 20,000, a trivial decrease compared to August. However, current prices are 19 percent above the long-term average price for the month.

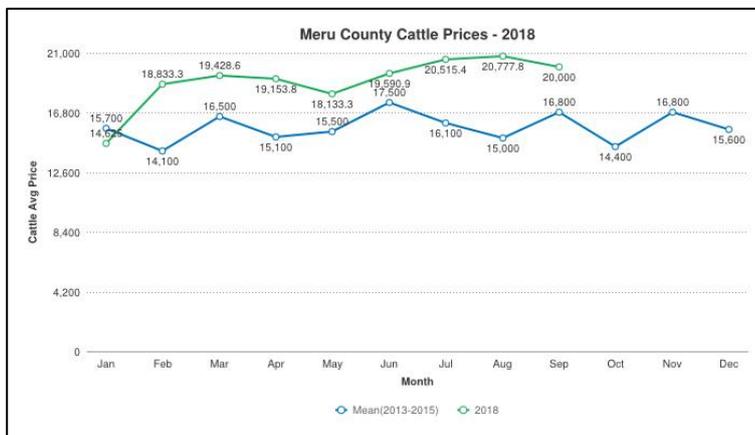


Figure 9: Average cattle market prices.

4.1.2 Goat Prices

- The prices of goats have steadily declined since June following an increased supply particularly from Isiolo County (Garbatulla). Prices in September were similar to those in August at an average of Kshs 4,045.
- Although the price decline noted is normal for the period, they have been constantly above the long-term averages. Prices are likely to decrease further in October and later improve in November.

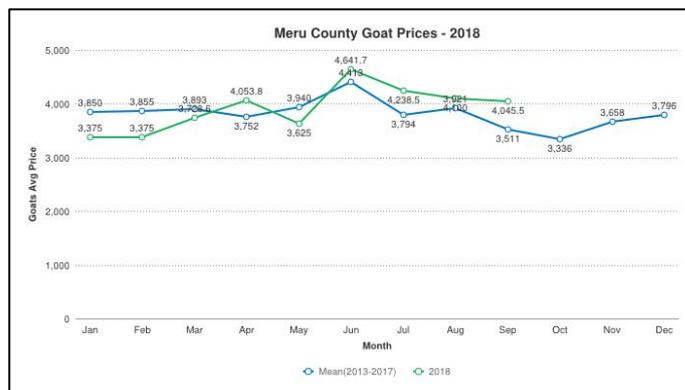


Figure 10: Average goat market prices.

4.2 CROP PRICES

4.2.1 Maize

- There has been a steady decrease in maize prices over the last 7 months resulting from increased imports at the beginning of the year and a relatively good harvest in the just-concluded season. The average price of a kilogram of maize was Kshs 26 compared to Kshs 27 in August and was 27 percent above the long-term average for the month.
- The highest prices were noted in Mutuati market in the agro-pastoral livelihood zone.

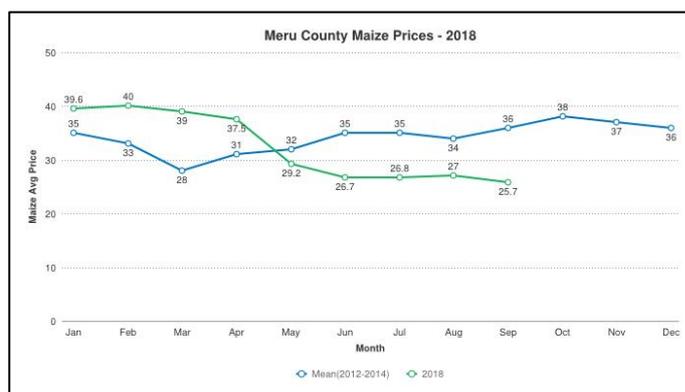


Figure 11: Average maize market prices.

4.2.3 Beans

- The price of a kilo of beans increased by 15 percent to Kshs 46 in September compared to Kshs 40 in August. This increase was mainly driven by a high demand for seed for the October to December cropping season. Prices are expected to also increase in October.

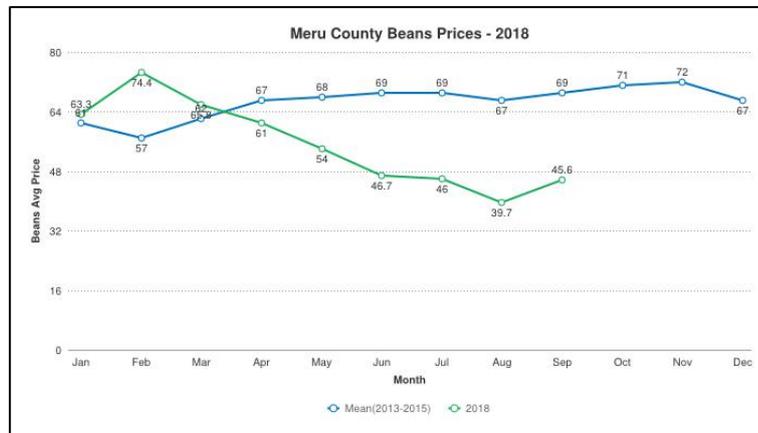


Figure 12: Average bean market prices

4.3 Terms of Trade (Goat/cereal price ratio)

- Over the last three months, terms of trade have been favourable sustained by below average maize prices and declining goat prices. Currently, the sale of one goat can afford a household 157 kilograms of maize compared to 152 kilograms in August. The amount of maize grain that can be purchased is 25.6 percent above the long-term average for the month.

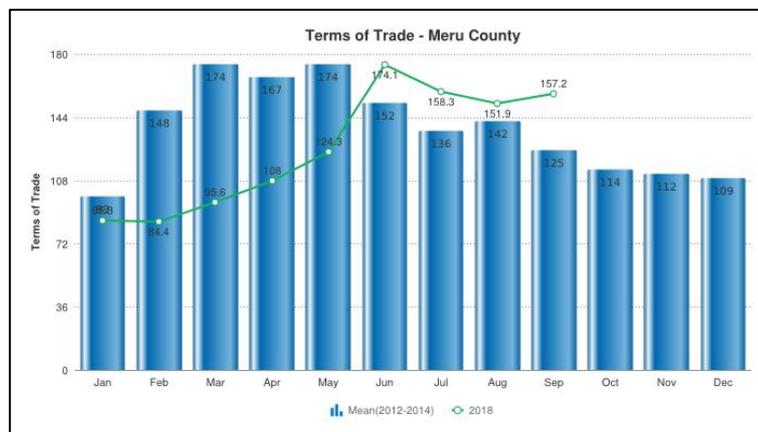


Figure 13: Terms of trade

5.0 FOOD CONSUMPTION AND NUTRITION STATUS

5.1 FOOD CONSUMPTION SCORE

- Improved food availability and access arising from the just-concluded harvests and low prices led to improvements in food consumption during the month compared to August. The proportion of households with acceptable food consumption scores increased from 67.3 percent in August to 72.4 percent while those with borderline consumption scores decreased from 27.7 percent to 25.9 percent. Households with poor consumption scores also decreased from 5 percent to 1.7 percent.
- Comparatively, households with poor food consumption scores were mainly in the agro-pastoral livelihood zone, particularly in Tigania West sub-county.

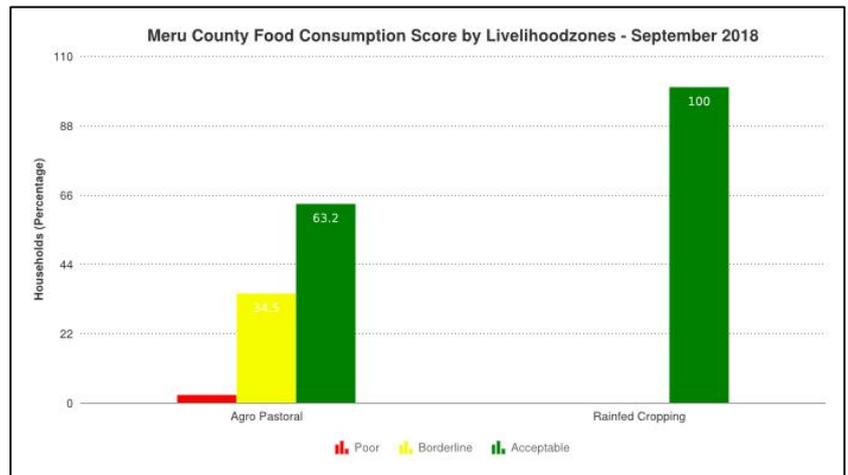


Figure 14: Food consumption scores per livelihood zone

5.2 HEALTH AND NUTRITION STATUS

5.2.1 Nutrition Status

- The proportion of children aged 6 – 59 months who were at risk of acute malnutrition (MUAC 125 – 135mm) reduced to 12 percent compared to 14 percent of a similar sample in August. The improvement in nutrition status was a result of improved dietary intake mainly driven by improved food availability and access following good harvests last season, in addition to improved infant and young child feeding practises.

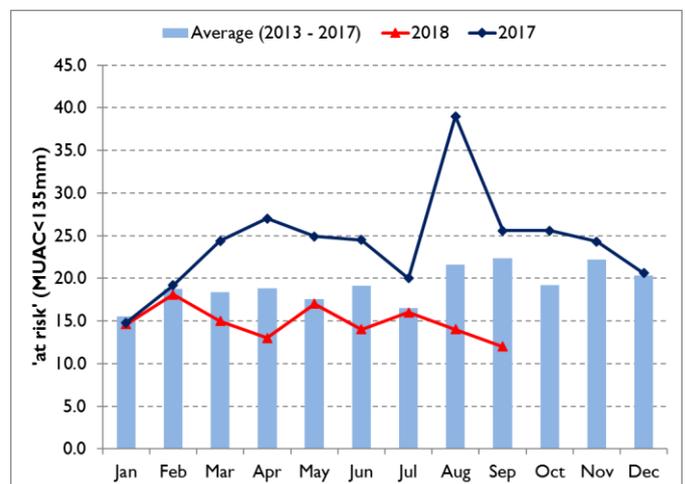


Figure 15: Percentage of children at risk of malnutrition

5.2.2 Health

- There were no major human disease outbreaks noted during the month.

CURRENT INTERVENTION MEASURES (ACTION)

6.1 NON-FOOD INTERVENTIONS

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

6.2 FOOD ASSISTANCE INTERVENTIONS

- There were no food assistance interventions reported during the month

7. EMERGING ISSUES

7.1 Insecurity/Conflict/Human Displacement

- Despite there being no cases of conflicts reported in the grazing areas of the agro-pastoral livelihood zone, the presence of huge numbers of camels from Isiolo County during this land preparation and planting period has further elevated tensions between local farmers and foreign herders.

7.2 Food Security Prognosis

- According to the Kenya Meteorological Department forecast for October to December rainfall season, above normal (highly enhanced) rainfall is expected and will peak in November and fizzle out from mid-December. The onset is expected during the second and third weeks of October and cessation will occur during the fourth week of December. The above average rainfall will likely lead to localised flooding especially in poorly drained areas. Current attenuation of water resources especially in the agro-pastoral livelihood zone is likely to be shortlived. Notable recharge of open sources is likely between late October and November thereby reducing trekking distances significantly. Although forage resources have deteriorated noticeably, availability of farm residues from the March to May cropping season will cover the shortfalls until the end of October. Pasture regeneration is expected in early November after rainfall onset. Current good livestock body conditions across all livelihood zones are likely to prevail well into October. Body conditions are then likely to decline immediately after onset and into the better part of November due to the low dry matter content in the highly succulent grasses and the high likelihood of an upsurge of intestinal worm infestation. Land preparation and planting will likely extend into early October. In spite of an expected increase in livestock prices, the prevailing favourable terms of trade are likely to extend into October and November as cereal prices are expected to remain below the long-term averages. As such, and in addition to improved food availability and access arising from the just-concluded harvests and prevailing low prices, the prevalence of undernutrition among children 6 – 59 months will likely remain low in October and November.

8. RECOMMENDATIONS

- There is a need for the Department of Agriculture to sensitize farmers on the use of certified seeds for the upcoming cropping season.
- There is need to monitor rainfall progress this season including flood watch by all key technical departments to minimise potential loss of life and property.

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 the 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 the 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, the 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 the 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 signaled 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 biophysical and production indicators are back to normal range.