National Drought Management Authority
MERU COUNTY
DROUGHT EARLY WARNING BULLETIN FOR APRIL 2017

NDMA

A Vision 2030 Flagship Project

KENYA VISION 2030

APRIL EW PHASE

Drought Situation & EW Phase Classification
Biophysical Indicators

- The County received an average of 20 – 50 percent of normal rains which were poorly distributed across space and time. Agro-pastoral livelihood zone received the least amounts
- Vegetation conditions declined further this month across all livelihood zones with Vegetation condition Index recorded at 25.41 compared to 30.92 last month
- Pasture and browse conditions were largely poor in the Agro-pastoral livelihood zone and fair in all the others.

Socio Economic Indicators (Impact Indicators)
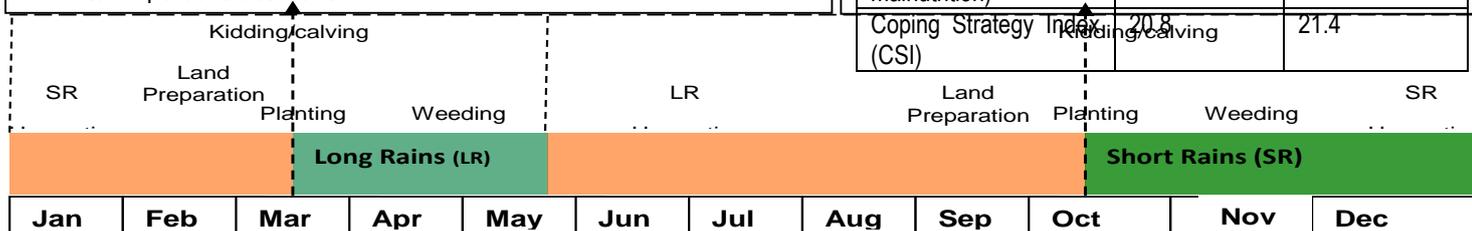### Production indicators

- Livestock body conditions were largely fair to poor in the Agro-pastoral livelihood zone and fair in the Mixed Farming and Rain-fed cropping livelihoods
- Milk production declined to an average of 13 litres compared to 20 litres the previous month due to deteriorating livestock body conditions.
- First weeding was carried out towards the end of the month in the Mixed Farming and Rain-fed cropping. Withering and complete drying of crops was noted in the lower areas of Agro-pastoral livelihood zone. Overall, crop performance is fair to poor this season

Access indicators

- Return watering distances for households was 14 km this month compared to 17 km last month. Livestock covered 9 km this month compared to 18 km the previous month.

Utilization Indicators

- 27 percent of sampled children were at risk of malnutrition compared to 24 percent last month.

Early Warning (EW) Phase Classification

Livelihood Zone	Phase	Trend
Mixed Farming	Normal	Improving
Agro-pastoral	Alert	Worsening
Rain-fed Cropping	Alert	Deteriorating
County	Alert	Worsening

Biophysical Indicators	Observed Value/Range	Normal Range/LTA
SPI-3Month (TAMSAT)	-0.36	-1.0 to 1.0
VCI-3Month (County)	25.41	>35
Igembe Central	18.75	>35
Igembe North	15.38	>35
Igembe South	23.89	>35
North Imenti	34.12	>35
Tigania East	21.77	>35
Tigania West	25.21	>35

Production indicators	Value	Normal
Crop Condition (Maize/legumes)	First weeding and replanting	Second weeding
Livestock Body Condition	Fair to poor	Normal
Milk Production	13	10 - 22 Litres
Livestock Migration Pattern	Internal migrations	Internal migrations
Livestock deaths (from drought)	No death	No death

Access Indicators		Value	Normal
Terms of Trade (ToT)		68 kg maize/sale of one goat	167 kg of maize/sale of one goat
Return distance to water sources	Households	14 km	<6 km
	Livestock	9 km	<11 km
Cost of water at source (20 litres)		Ksh. 5	<5Kshs

Utilization indicators	Value	Normal
Nutrition Status, MUAC (% at risk of malnutrition)	27	<20
Coping Strategy Index (CSI)	20.8	21.4

		Kidding/calving								Kidding/calving		
SR Harvesting	Land Preparation	Planting	Weeding			LR Harvesting			Land Preparation	Planting	Weeding	SR Harvesting

Long Rains (LR)		Short Rains (SR)	

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

1. CLIMATIC CONDITIONS

1.1 RAINFALL PERFORMANCE
- In general, the month of April was wetter across all livelihood zones compared to March.
- However, rainfall received during the month was characterised by below normal amounts that were poorly distributed across time and space.
- As a result, there were significant intra- and inter-livelihood zone differences noted. Agro-pastoral livelihood zone received the least amounts of rainfall compared to other livelihood zones. Within the Agro-pastoral livelihood zone, grazing and farming areas close to Isiolo and Laikipia Counties received only 3 rain days the entire month. These areas include lower areas of Igembe North, Igembe Central, Tigania East, Tigania West, and Buuri Sub-counties.
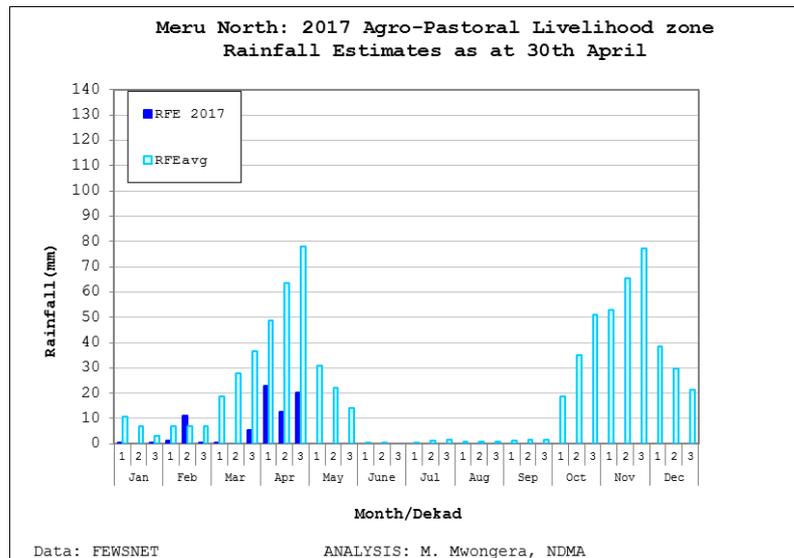
Figure 1a: Rainfall totals received in the Agro-pastoral livelihood zone (Source: FEWSNET)

- Most areas received between 20 – 50 percent of the normal rains this month. Rainfall trends and amounts received this month are not normal for this time of the year
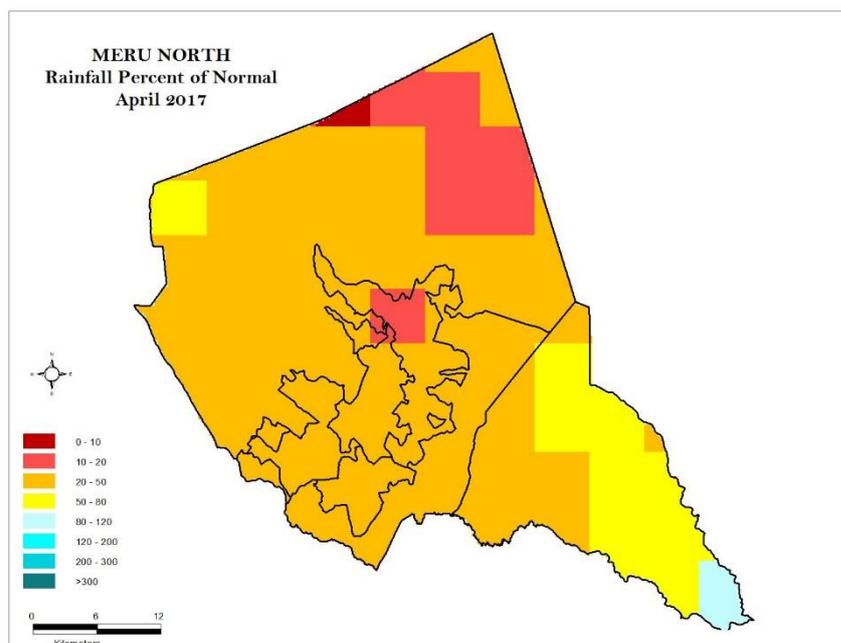

Figure 1b: Rainfall Percent of normal for the month of April, 2017

2. IMPACTS ON VEGETATION AND WATER

2.1 VEGETATION CONDITION
2.1 1 Vegetation Condition Index (VCI)

- Vegetation conditions remained poor across all livelihood zones as rainfall received was neither enough nor well distributed across time to ensure proper rejuvenation of natural vegetation. In general, vegetation greenness as measured using the Vegetation Condition Index declined further this month compared to the previous month. Igembe North Sub-County registered lowest values as illustrated below:
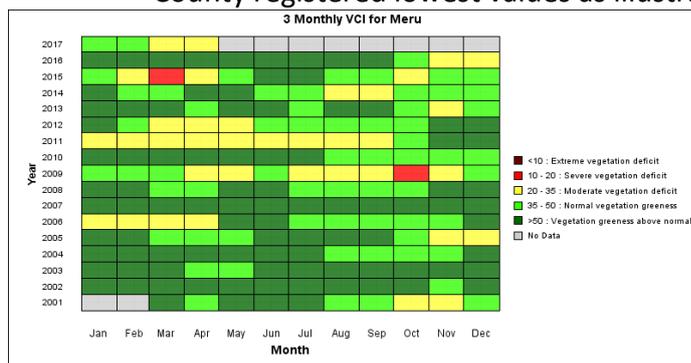
Figure 2a: VCI matrix for Meru County, 2001 – 2017
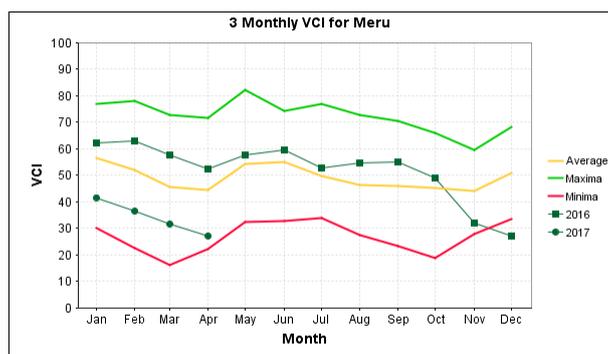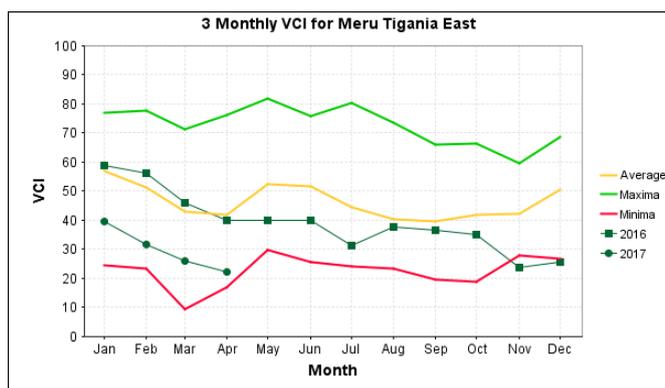

Figure 2b: VCI graph for Meru County, April 2017
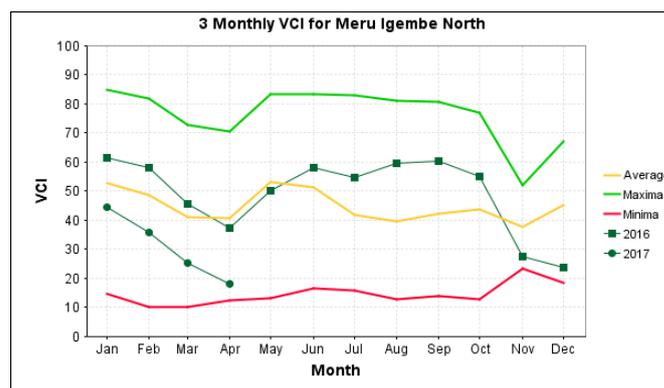

Figure 3a: VCI graph for Tigania East as at April 2017

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

2.1.2 Pasture

- Pasture conditions deteriorated further this month due to poor rains received. 75 percent of interviewed communities reported pastures being of poor conditions compared to 58 percent the previous month. Only 8 percent of respondents reported pastures being of good conditions.
- Pasture deterioration was more evident in the grazing areas of the Agro-pastoral livelihood zone as this zone received the least amounts of rains. Good pastures were only reported in the Rain-fed cropping livelihood zone which received slightly better rains.
- Current pasture conditions are not normal for this time of the year and are expected to decline further if current rainfall trends persist.
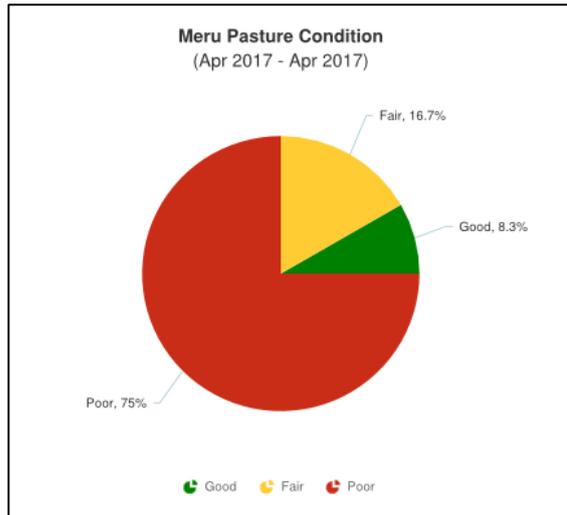
Figure 4: Meru County Pasture conditions. April, 2017

2.1.3 Browse

- Browse conditions deteriorated further this month compared to last month, a condition that is not normal for this time of the year. Of the interviewed communities, 75 percent of them reported browse being of poor conditions compared to 58 percent of a similar sample size the previous month.
- Browse conditions were much poorer in the Agro-pastoral livelihood zone compared to other livelihood zones.
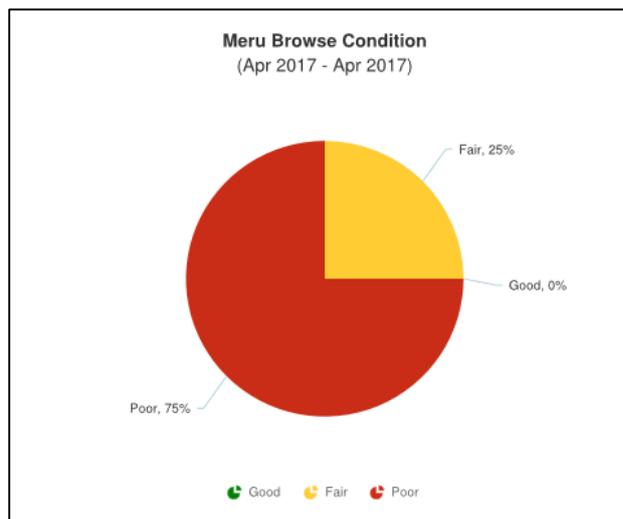

Figure 5: Meru County Browse conditions, April 2017

2.2   WATER RESOURCE

2.2.1 Sources

- Rivers and boreholes were the major sources of water this month for both livestock and domestic use. River flows had declined significantly at the beginning of the month leading to an increased reliance on boreholes especially in the Agro-pastoral livelihood zone. However with the onset of rains, pressure on some boreholes subsided with the slight improvements in river flows.

- Community based piped water systems especially in the Mixed Farming and the Rain-fed cropping livelihood zones were the major sources during the month.
- Water vendors were critical sources for households in lower areas of Igembe North Sub-County (especially in Kamweline and Kachiuru areas)
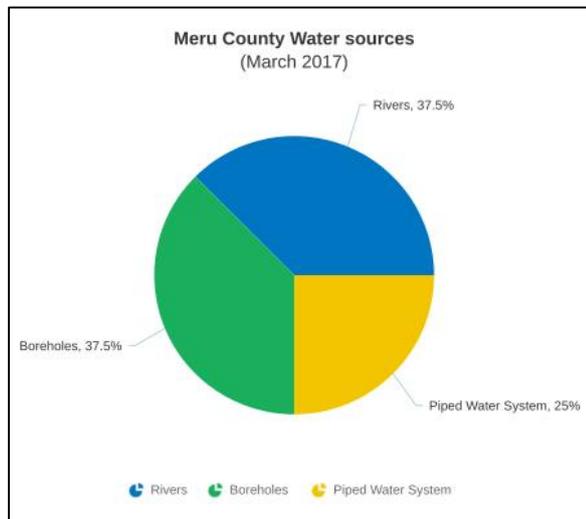- Current water situation is yet to normalise given the poor rainfall trends.

Figure 6: Meru County sources of water. April 2017

2.2.2 Household access and Utilization

- Distances to watering points for households still remained high at an average of 14 km this month compared to a long term average of 3.5km. They were however slightly lower than those recorded the previous month. Nonetheless, current distances are not normal for the month and could have resulted from drying up of sources close to households.
- Agro-pastoral livelihood zone recorded longest distances compared to Mixed Farming and the Rain-fed cropping livelihood zones.
- If current rainfall trends continue next month, distances to sources are likely to increase next month onwards.
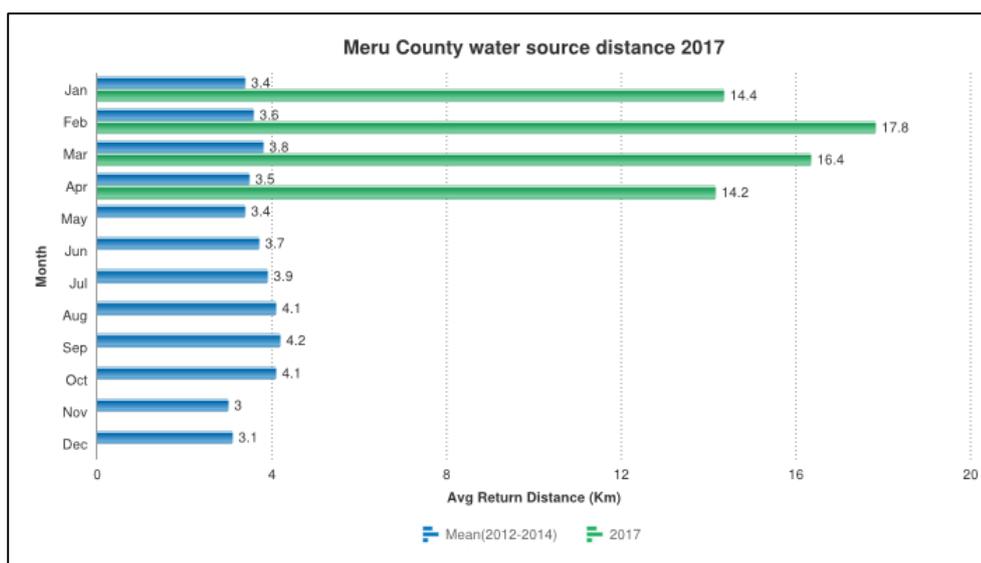

Figure 7: Meru County Household distances to water sources. April, 2017

2.2.3 Livestock access

- Watering distances for livestock declined notably towards the end of the month due to slight improvements in river flows into the grazing areas. In addition, outmigration in search of pastures and water contributed to decreased distances as herders settled livestock in new grazing that were closer to watering points.
- Current distances averaged at 9km compared to 18km the previous month. Current distances are still above the long term average for the month and are expected to increase if current rains cease prematurely.
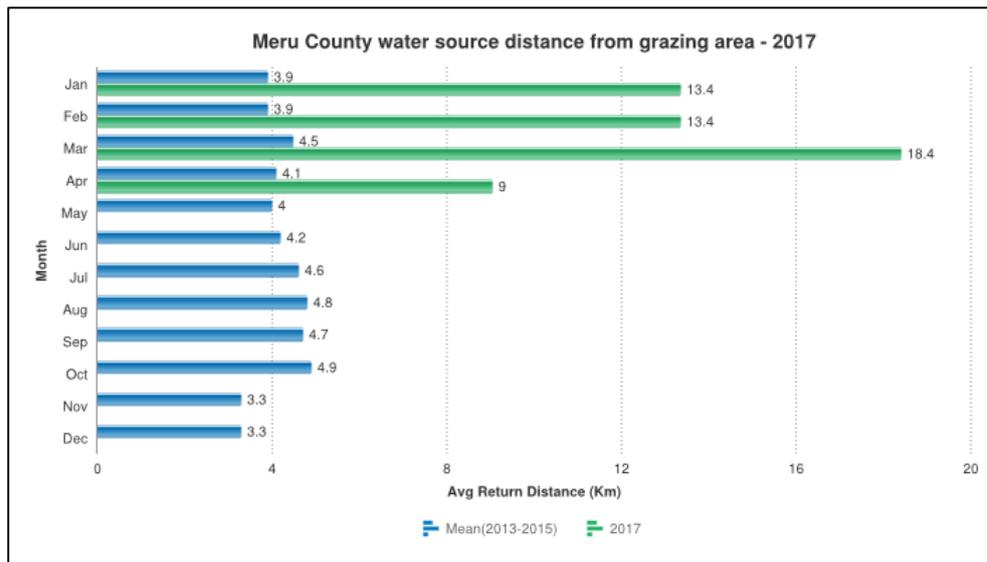
Figure 8: Meru County Livestock watering distances from grazing areas. April, 2017

3.0 PRODUCTION INDICATORS

3.1 LIVESTOCK PRODUCTION

3.1.1 Livestock Body Condition
- Similar to the previous month, livestock body conditions were largely fair across all livelihood zones. However, the proportion of livestock of poor body conditions was witnessed this month especially in the Agro-pastoral livelihood zone due to lack of pastures and long grazing and watering distances.
- Current body conditions are not normal for this time of the year and are expected to decline further next month if pastures will not have regenerated properly.
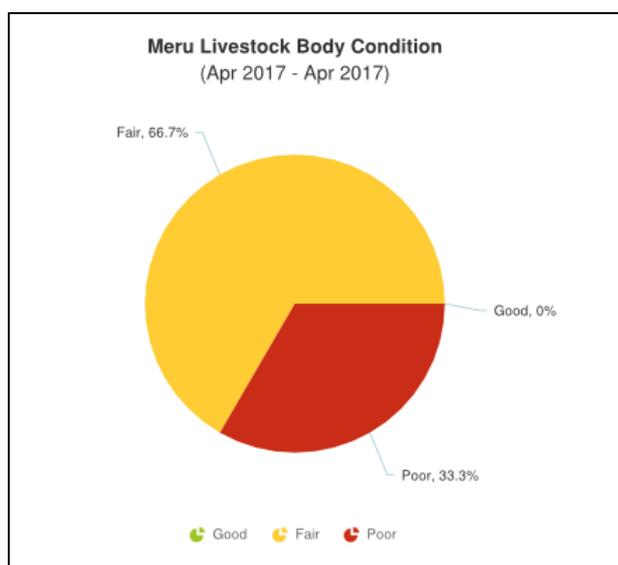

Figure 9: Meru County livestock body conditions. April, 2017

3.1.2 Livestock Diseases
- There were no livestock diseases reported during the month.

3.1.3 Milk Production
- Milk production declined to an average of 13.5 litres this month compared to 20 litres the previous month. This decline that has been sustained from the beginning of the year has resulted from declining livestock body conditions witnessed during the same period.
- Although current production is above the long term average, the noted decline especially this month is not normal and is likely to be sustained over the coming months until livestock body conditions improve.
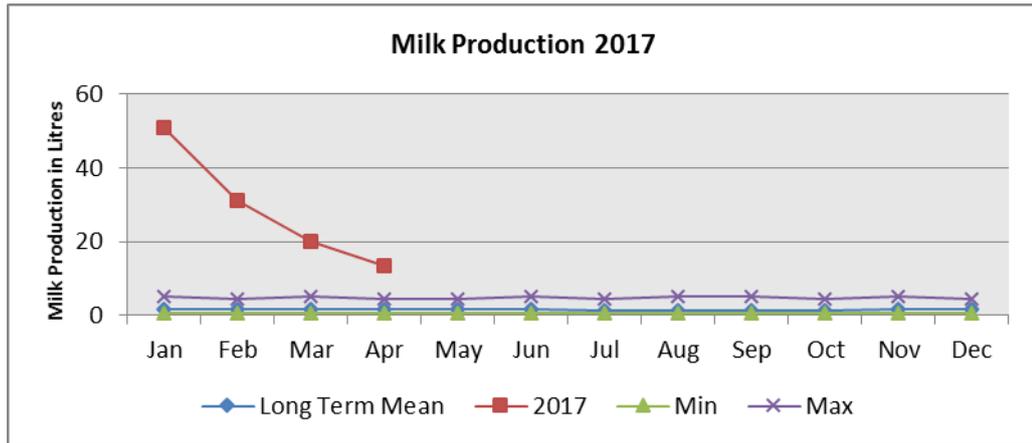
Figure 10: Meru County Milk production. April, 2017

3.2 RAIN-FED CROP PRODUCTION

3.2.1 Stage and Condition of food Crops

- Germination of crops across all livelihood zones occurred during the second week after rainfall onset at the beginning of the month. However, poor temporal distribution of rains led to withering and complete drying of the young shoots especially in the Agro-pastoral livelihood zone. This drying of the germinated crops which occurred well into the season in addition to high costs of inputs and the uncertainty of rainfall progression made most farmers to abandon replanting especially in lower areas of Igembe North, Igembe Central, and Tigania West. In the other livelihood zones, replanting was done in the few pockets that had also received poor initial rains.

- Towards the end of the month, first weeding had been carried out in the mixed farming and rain-fed cropping livelihood zones. Beans in these zones were at early flowering stages although their conditions were fair. Maize crop was at 30 cm (1ft) tall, a height that is not normal at this time of the season. Crops in the Agro-pastoral livelihood zone were largely poor with farms in the lower reaches of the zone being bare and dry after crops dried up.

- In sum, current crop conditions in the field are not normal and more likely than not, a poor harvest is expected at the end of the season.

4.0   MARKET PERFORMANCE

4.1   LIVESTOCK MARKETING

4.1.1 Cattle Prices

- Cattle prices decreased to an average of Kshs. 16,600 this month compared to Kshs. 18,900 noted the previous month. This decline was mainly fuelled by increased supply in the markets as herders disposed animals that were of poor conditions as the prospect of improved pastures dwindled following poor rainfall performance. In addition, demand for cash to fund farm activities especially weeding also contributed to an increase in supply.
- Current prices are slightly above the long term average for the month but are expected to decrease further next month especially if pastures will not have rejuvenated
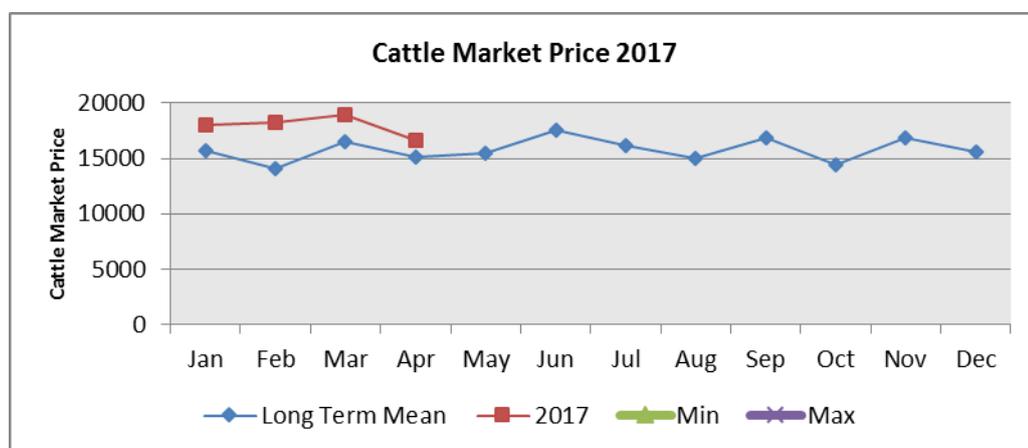

Figure 11: Meru County average cattle market prices. April, 2017

4.1.2 Goat Prices

- Goat prices decreased marginally to average at Kshs. 3,500 compared to Kshs. 3,800 the previous month. Prices of goats have remained low over the last three months following an increase in supply to the markets as the demand for cash to fund farm related activities increased over the same period.
- Current prices are below the long term average and are slightly above the lowest prices recorded for the month. Low prices are expected to prevail next month.
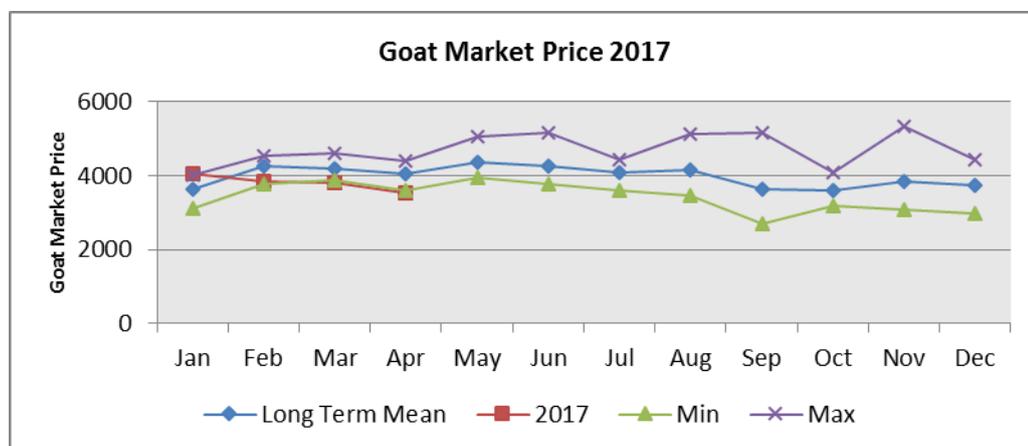

Figure 11: Meru County average goat market prices. April, 2017

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4.2 CROP PRICES

4.2.1 Maize

- A kilogram of maize retailed at an average of Kshs 50 in the markets this month compared to an average of Kshs 43 the previous month. This increase resulted from poor harvest the previous season. Current prices are above the highest recorded over the last three years.
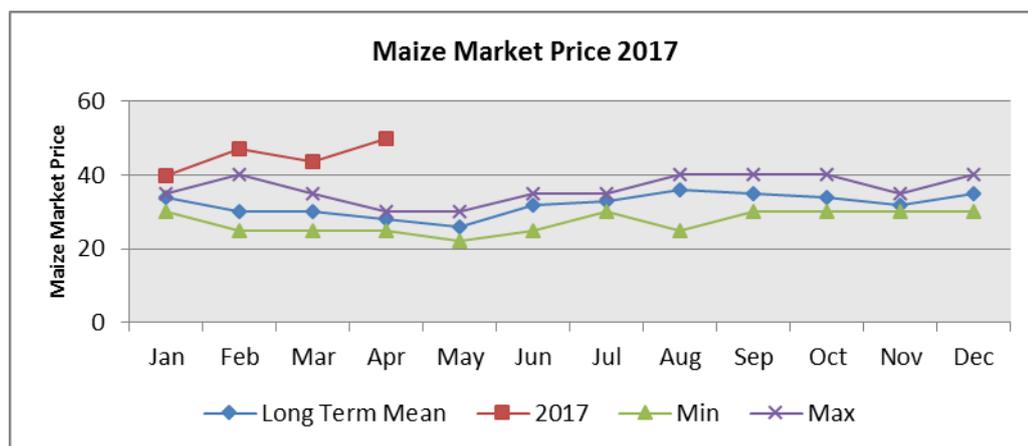- With the prospects of poor harvest this season, prices are likely to increase further.

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

4.2.3 Beans

- The cost of a kilogram of beans rose to an average of Kshs 86 in the markets this month compared to Kshs 78 the previous month. The increase results from poor harvests the previous season and diminishing household stocks.
- Majority of households relied on markets for the purchase of beans. This is not normal for this time of the year
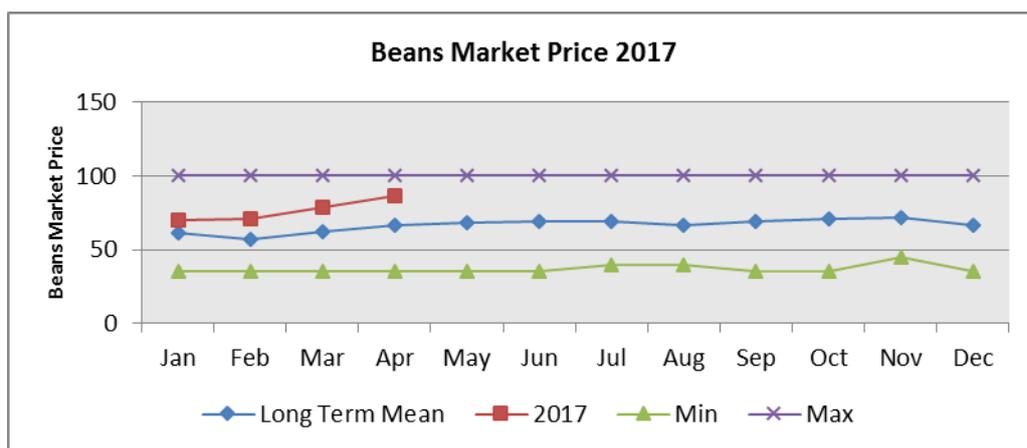
Figure 13: Meru County average bean market prices. April, 2017

4.3 Casual Labour Price Ratio/Terms of Trade

- Terms of trade continued to be unfavourable this month similar to last month. A household could only afford 68kgs of maize from casual labour wages this month compared to 88kgs the previous month. High costs of food items and low livestock prices especially goats, coupled by poor wages contributed to the unfavourable terms of trade.

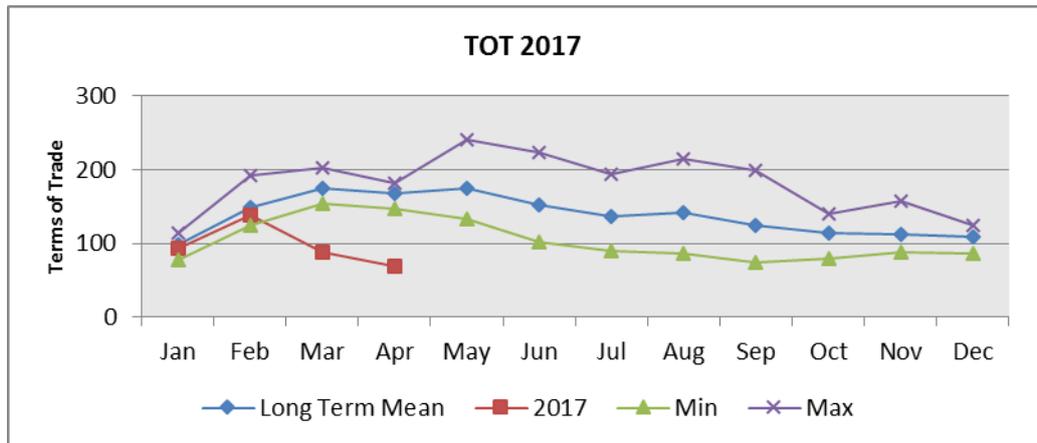- This is not normal for this time of the year

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

5.0   FOOD CONSUMPTION AND NUTRITION STATUS

5.1   FOOD CONSUMPTION SCORE
- From a total of 115 households sampled this month, 31 of them had acceptable food consumption scores compared to 51 the previous month. 57 households were at borderline compared to 46 the previous month. 27 households had poor consumption scores compared to 20 the previous month.
- Overall, food consumption in households deteriorated this month compared to last month mainly due to high costs of food items in the markets and lack of household reserves due to poor harvests realised this season.
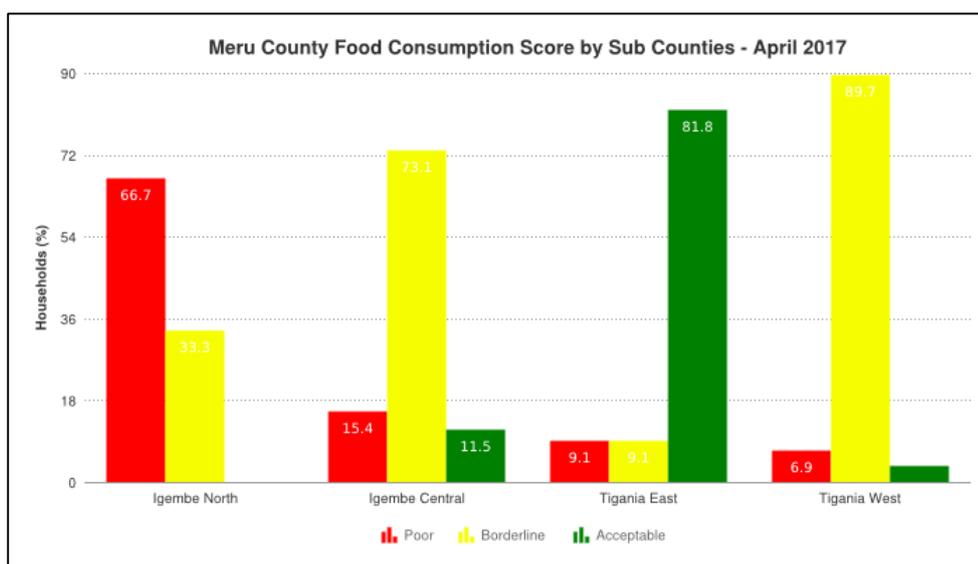
Figure 15: Meru County food consumption trends. April, 2017

5.2   HEALTH AND NUTRITION STATUS

5.2.1 Nutrition Status
- 27 percent of sampled children were at risk of malnutrition compared to 24 percent the previous month. This is higher than the long term average for the month an indication that food stocks at household levels have depleted.
- Current possible levels of malnutrition are not normal for this time of the year.

Figure 16: Meru County malnutrition levels. April, 2017

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5.2.2 Health

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

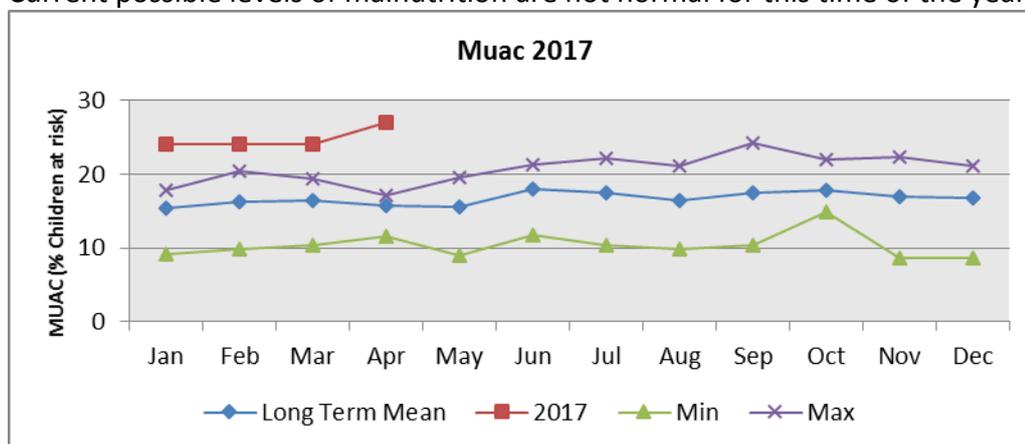# CURRENT INTERVENTION MEASURES (ACTION)

6.1   NON-FOOD INTERVENTIONS
- Construction of 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 is almost complete and will begin operations by June

6.2   FOOD AID
- GOK relief food was distributed to the needy across all the Sub-Counties this month.

7. EMERGING ISSUES

7.1   Insecurity/Conflict/Human Displacement

- Cattle rustling in the grazing areas of Igembe North and Igembe Central was reported during the month.
- Conflicts between herders and farmers was also reported in Akithi (Tigania West Sub-County) during the month.

8. RECOMMENDATIONS

- There is still need to monitor and implement interventions in pockets noted with possible high levels of malnutrition.
- There is an urgent need to activate the drought contingency planned activities to minimise and shield communities from the possible effects of the ongoing drought.

REFERENCE TABLES

Table 1: Drought Phase Classification

Normal	Alert	Alarm	Emergency
All environmental Agricultural and pastoral indicators are within the seasonal ranges	Meteorological drought indicators move outside seasonal ranges	Environmental and at least two production indicators are outside Long term seasonal ranges	All Environmental, Metrological and Production indicators are outside normal ranges.
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
	> +1.5or 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 agriculturaldrought
	10 to 20	Severe agricultural drought
	<10	Extreme agriculturaldrought

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	Emerciated	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.