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

NDMA

A Vision 2030 Flagship Project

KENYA VISION 2030

JANUARY EW PHASE

Drought Situation & EW Phase Classification
Biophysical Indicators
- The month remained largely dry with no off-season showers which is not normal
- Vegetation conditions remained poor across all livelihood zones with Vegetation condition Index recorded at 41.49
- Pasture and browse conditions ranged from poor to fair in the Agro-pastoral livelihood zone to fair to good in all the others.

Socio Economic Indicators (Impact Indicators)
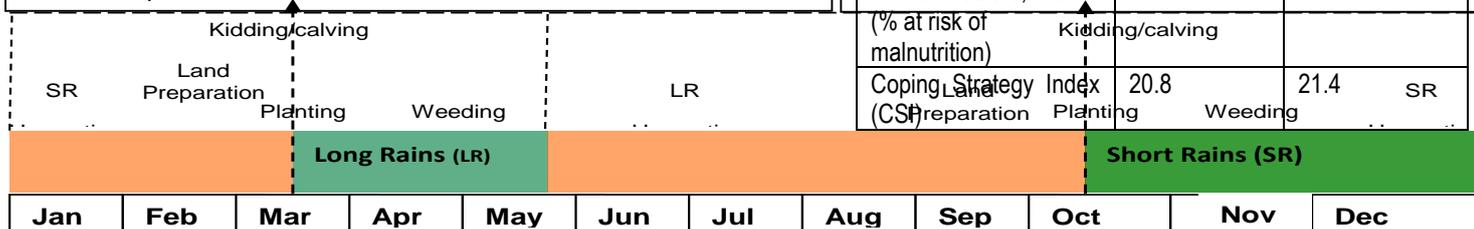### Production indicators
- Livestock body conditions were largely fair in the Agro-pastoral livelihood zone and fair to good in the Mixed Farming and Rain-fed cropping livelihoods
- Bean harvesting continued this month with poor harvests realized in the Agro-pastoral livelihood zone. Fair harvests expected in all other livelihood zones
- Maize crop is at tussling and grain-filling stages in the Mixed Farming and Rain-fed cropping zones. A fair harvest is expected if rains are received. The crop is at grain filling in the Agro-pastoral livelihood and of very poor conditions. Wilting and drying noted. Minimal harvests are expected in this zone

Access indicators
- Return watering distances for households was 14km this month from 10 km last month. Livestock covered 13 km compared to 10 km last month

Utilization Indicators
- 24 percent of sampled children were at risk of malnutrition compared to 28 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)	-0.58	-1.0 to 1.0
VCI-3Month (County)	41.49	>35
Igembe Central	41.89	>35
Igembe North	44.31	>35
Igembe South	44.39	>35
North Imenti	33.82	>35
Tigania East	39.33	>35
Tigania West	37.81	>35

Production indicators	Value	Normal
Crop Condition(Maize)	Poor/tussling/ grain-filling	Good/grain-filling/ consumption of green maize
Livestock Body Condition	Fair to poor	Normal
Milk Production	50	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)		30 kg maize/monthly wage	99 kg of maize/monthly wage
Return distance to water sources	Households	14 km	<6 km
	Livestock	13 km	<11 km
Cost of water at source (20 litres)		Ksh. 5	<5Kshs

Utilization indicators	Value	Normal
Nutrition Status, MUAC (% at risk of malnutrition)	24	<20
Coping Strategy Index (CSI)	20.8	21.4

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

SR | Kidding/calving | Land Preparation | Planting | Weeding | LR | Long Rains (LR) | Short Rains (SR) | Kidding/calving | Land Preparation | Planting | Weeding | SR

1.   CLIMATIC CONDITIONS

1.1   RAINFALL PERFORMANCE
- January remained dry across all livelihood zones. Normal off-season light showers were absent. This is not normal for this time of the year
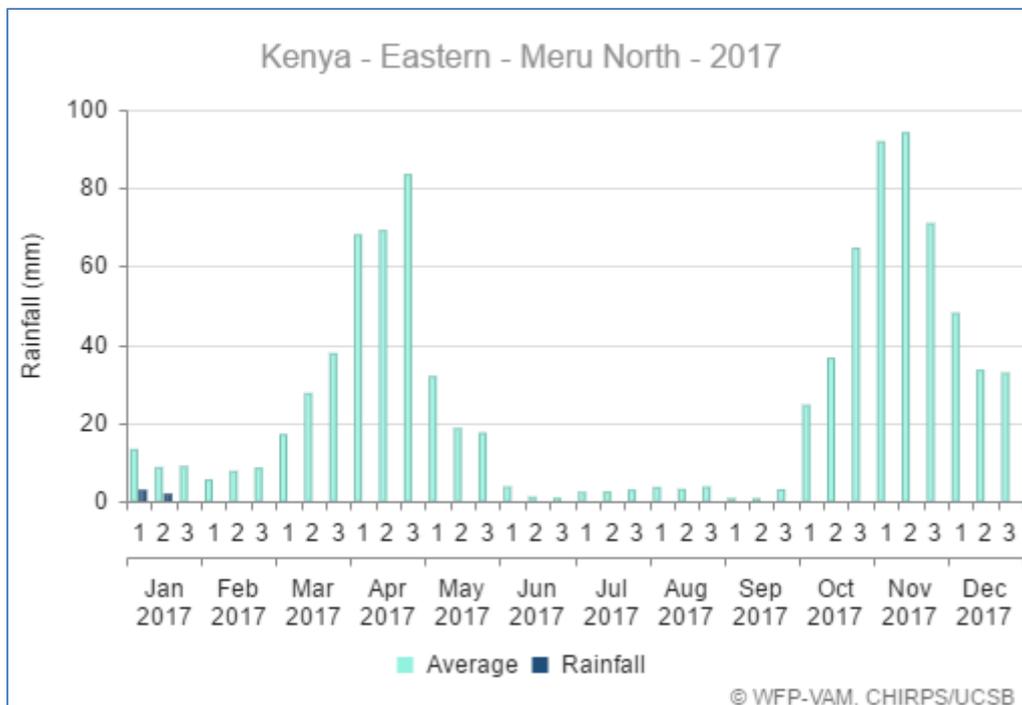

Figure 1: Rainfall Performance for Meru North in the month of January 2017. (Source: WFP-VAM)

2.   IMPACTS ON VEGETATION AND WATER

2.1   VEGETATION CONDITION
2.1 1 Vegetation Condition Index (VCI)
- Vegetation conditions remained poor across the entire county as indicated in the Vegetation Condition Matrices below:
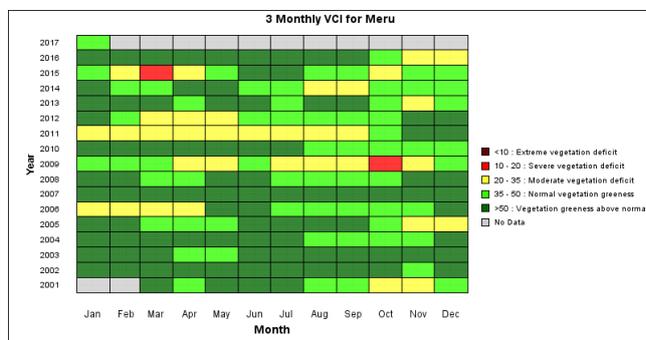
Figure 2a: VCI matrix for Meru County, 2001 – 2017
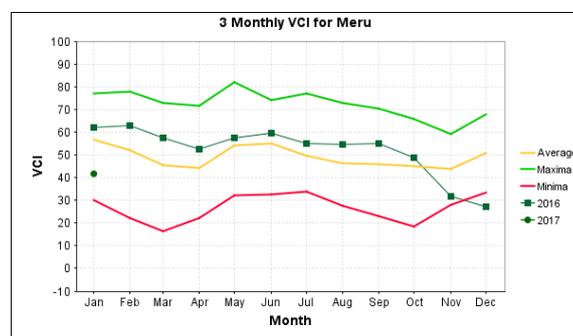
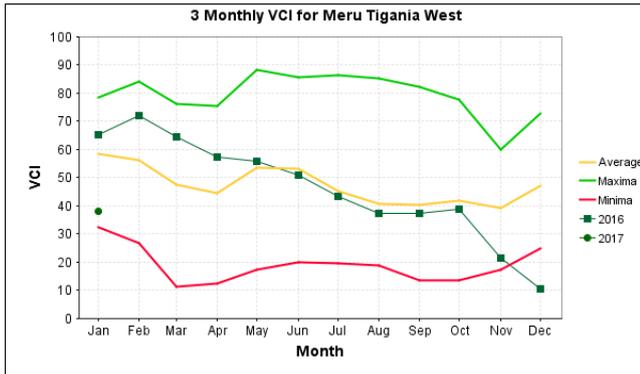
Figure 2b: VCI graph for Meru County, January 2017

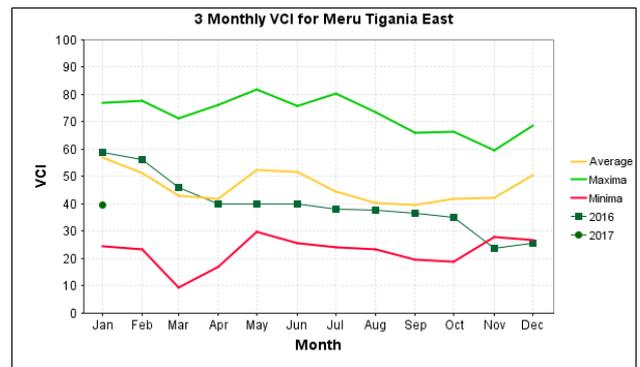Figure 3a: VCI graph for Tigania West
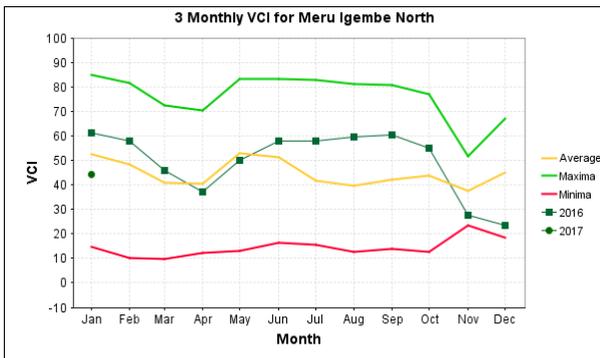

Figure 3b: VCI graph for Tigania East

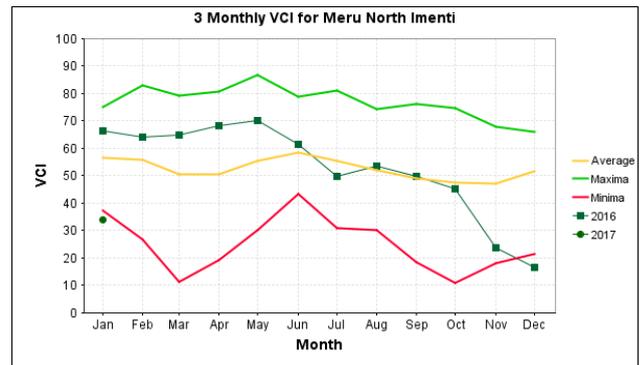
Figure 3c: VCI graph for Igembe North

Figure 3d: VCI graph for North Imenti

2.1.2 Pasture

- Pasture conditions were largely fair similar to the previous month with a few pockets reporting poor conditions. 67 percent of respondents reported pastures being of fair conditions in most areas of the Agro-pastoral livelihood zone while 25 percent reported pastures being of good conditions. Only 8 percent reported pastures being of poor conditions especially in Akithi and Buuri Sub-Counties.
- Despite a vast area of the Agro-pastoral livelihood zone having pastures of fair conditions, access was hampered by lack of water and insecurity.
- Current situation is not normal for this time of the year and is likely to worsen further.
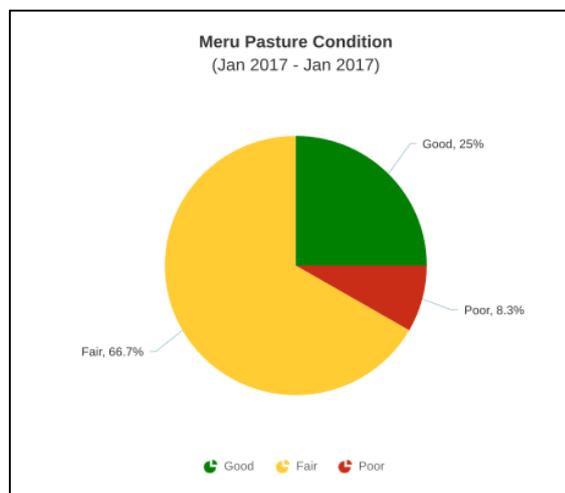

Figure 4: Meru County Pasture conditions. January, 2017

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2.1.3 Browse

- Browse conditions were mostly fair during the month with a few areas reporting poor and good conditions. 75 percent of respondents reported browse being of fair conditions especially in the Agro-pastoral livelihood zone while 17 percent reported browse being of good conditions. Only 8 percent of respondents reported browse being poor.
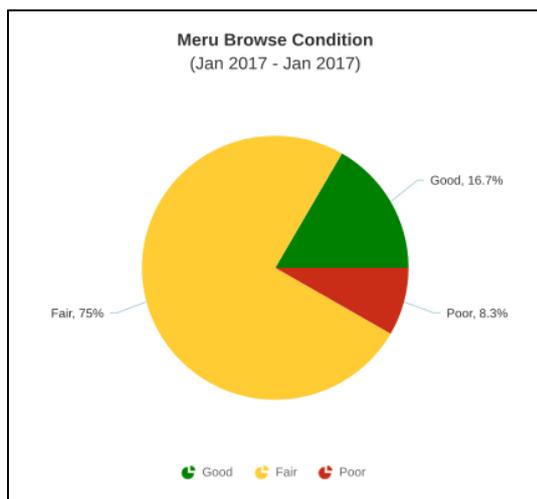- Current situation is not normal for this time of the year and is expected to deteriorate further next month.

Figure 5: Meru County Browse conditions, January 2017

2.2   WATER RESOURCE

2.2.1 Sources

- Rivers, boreholes, and piped water systems were the major water sources for both livestock and domestic use during the month.
- Seasonal rivers have completely dried up while volumes in the few permanent rivers have declined significantly.
- Boreholes were the major sources for livestock especially in the Agro-pastoral livelihood zone.
- Water vendors were also significant sources in the Agro-pastoral livelihood zone with a 20 litre jerry can costing Kshs. 20 - 50 upon delivery depending on the distance.
- Community based piped water systems were the main sources in the Mixed Farming and Rain-fed cropping zones.
- Overall, current water sources are not normal for this time of the year and the situation is expected to deteriorate further.
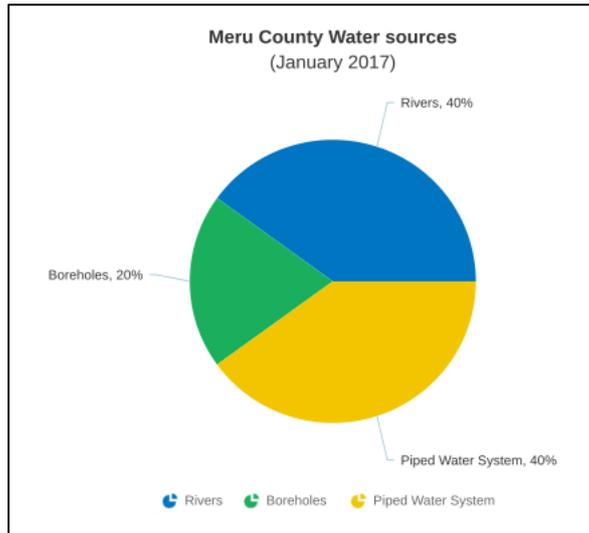
Figure 6: Meru County sources of water. January 2017

2.2.2 Household access and Utilization

- Distances to watering points for households increased to an average of 14 km from 10.5 km the previous month. Declining sources closer to homesteads contributed to the increase.
- Current distances are not normal and are expected to increase in the coming month.
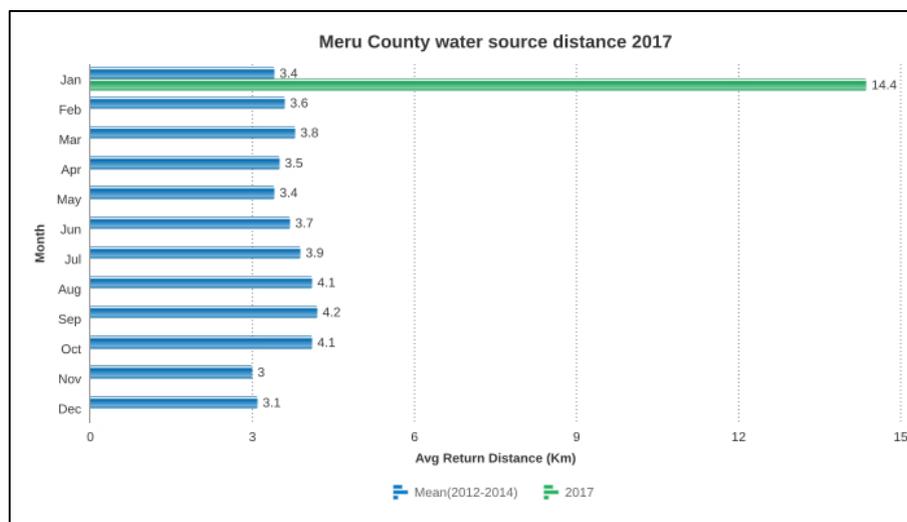

Figure 7: Meru County Household distances to water sources. January, 2017

2.2.3 Livestock access

- Watering distances for livestock from grazing areas increased significantly to 13 km on average compared to 10 km the previous month. As noted earlier, boreholes were the major sources of water for livestock and given their limited numbers and massive distances between them, overall watering distances for livestock remained high.
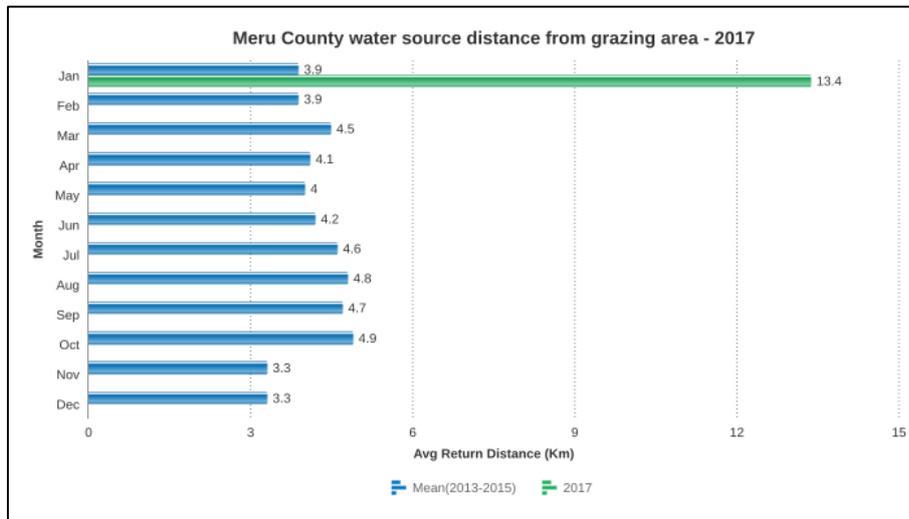- Current distances are not normal and are likely to remain high next month

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Figure 8: Meru County Livestock watering distances from grazing areas. January, 2017

3.0 PRODUCTION INDICATORS

3.1 LIVESTOCK PRODUCTION

3.1.1 Livestock Body Condition
- Livestock body conditions were largely fair in the Agro-pastoral livelihood zone and good in the Mixed Farming livelihood zone.
- In the former, long distances to grazing areas as a result of insecurity and cattle rustling contributed to the current conditions, in addition, long distances to watering points, and reduced watering frequencies of up to 3 days between watering sessions also contributed to the decline.
- Current conditions are not normal for this time of the year and are expected to decline further next month.
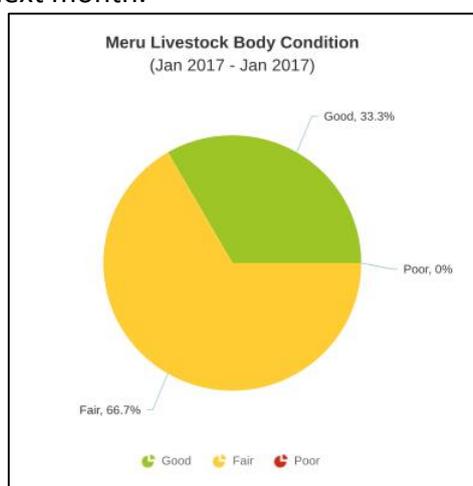

Figure 9: Meru County livestock body conditions. January 2017

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

3.1.3 Milk Production
- Milk production remained high this month similar to last as majority of households have moved closer to homesteads. Current production averaged at 50 litres compared to 39 litres the previous month. Despite the increase, diminishing pastures and long grazing and watering distances are likely to lower production next month.
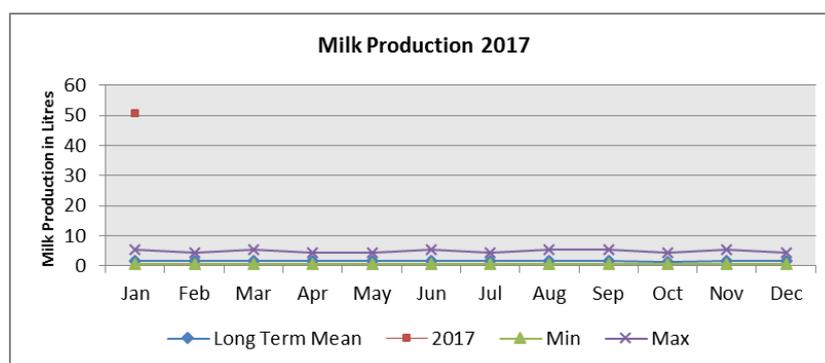

Figure 10: Meru County Milk production. January 2017

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3.2 RAIN-FED CROP PRODUCTION

3.2.1 Stage and Condition of food Crops

- Mature harvesting of beans was reported across all livelihood zones. A poor crop performance noted in the Agro-pastoral livelihood zone led to minimal harvests. Fair harvests have been realized in the Mixed Farming and Rain-fed cropping livelihood zones.
- Maize crop is at grain filling stages in the Agro-pastoral livelihood zone although crop performance has been very poor. Minimal harvests are expected in this areas. In the Mixed Farming and Rain-fed cropping zones, maize is at tussling stages and a fair harvest is expected if rains are received.
- Overall, crop performance has been poor this season and below normal harvests are expected.

4.0   MARKET PERFORMANCE

4.1   LIVESTOCK MARKETING

4.1.1 Cattle Prices

- A 6 percent decline in cattle prices was noted this month compared to last month's prices due to declined body conditions and a slight increase in sales as headers try to offload some of their stocks. Current prices averaged at Kshs 18,000 compared to Kshs 19,250 last month.
- Although current prices are slightly above the long term averages, they are expected to remain low over the coming months as body conditions decline further from next month.
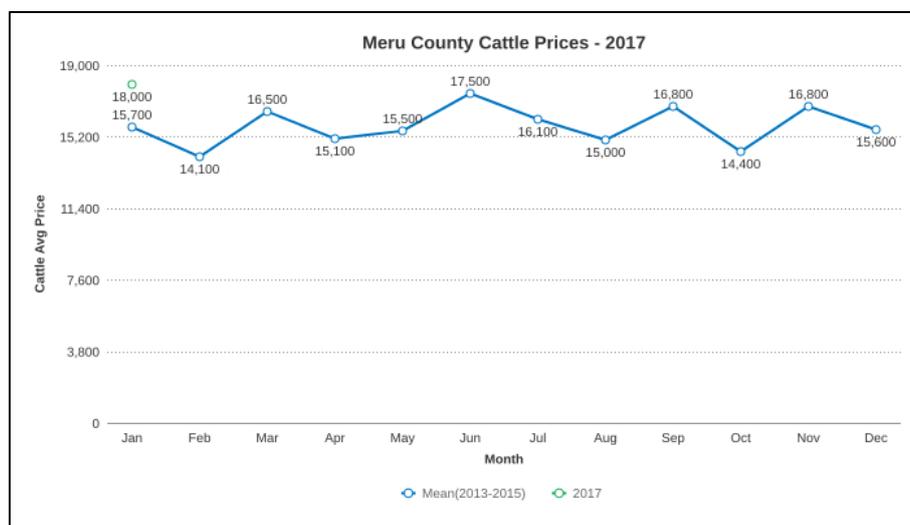

Figure 11: Meru County average cattle market prices. January, 2017

4.1.2 Goat Prices

- Goat prices increased by a mere 6 percent this month to average at Kshs 4,000 compared to Kshs 3,750 last month. This slight increase resulted from demand and supply forces in play during the month.
- Agro-pastoral livelihood zone recorded highest prices with Kangeta market reporting an average of Kshs 5,000.
- Significant changes in prices are not expected next month unless there are notable disruptions in the markets.
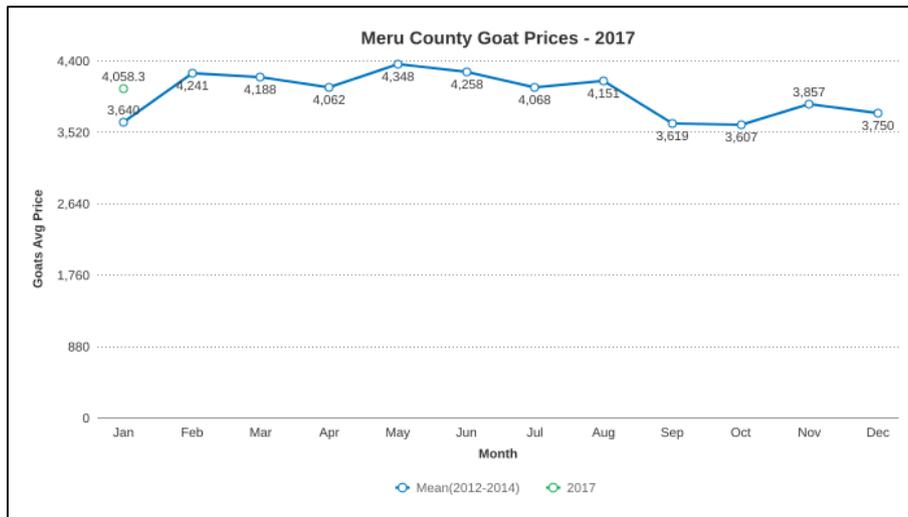
Figure 11: Meru County average goat market prices. January, 2017

4.2 CROP PRICES

4.2.1 Maize

- Maize prices increased to an average of Kshs 40 per kilo compared to Kshs 35 the previous month. Current prices are 10 percent higher than those of the long term average for the month.
- The noted increase is an indication of depleted household maize stocks. Most households are currently relying on markets as the main source of maize grain.
- This is not normal for this time of the year and given that poor harvests are expected, prices are expected to increase further from next month.

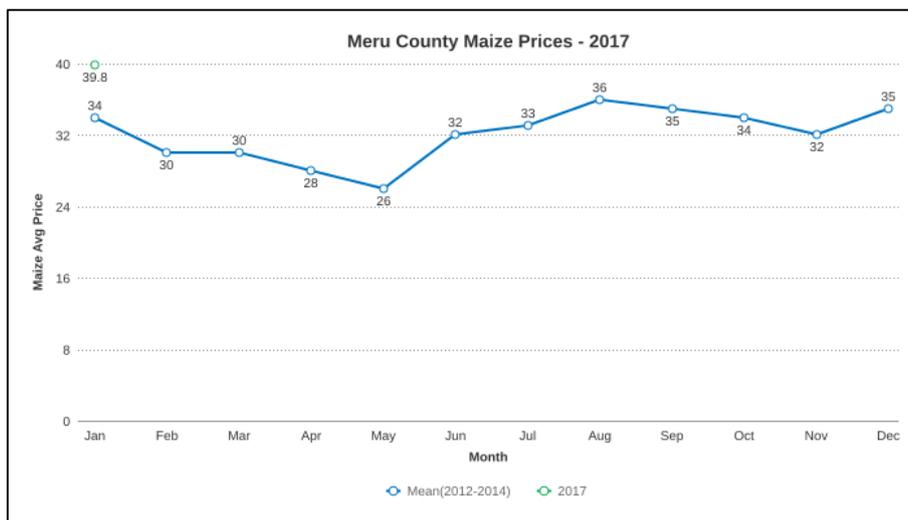Figure 12: Meru County average maize market prices. January, 2017

4.2.3 Beans

- Average bean prices declined to Kshs 70 per kilo from Kshs 77 the previous month mostly as a result of the ongoing harvests. Nonetheless, current prices are 10 percent higher than the long term average prices for the month.
- With poor harvests realised, prices are likely to increase from next month as stocks decline.

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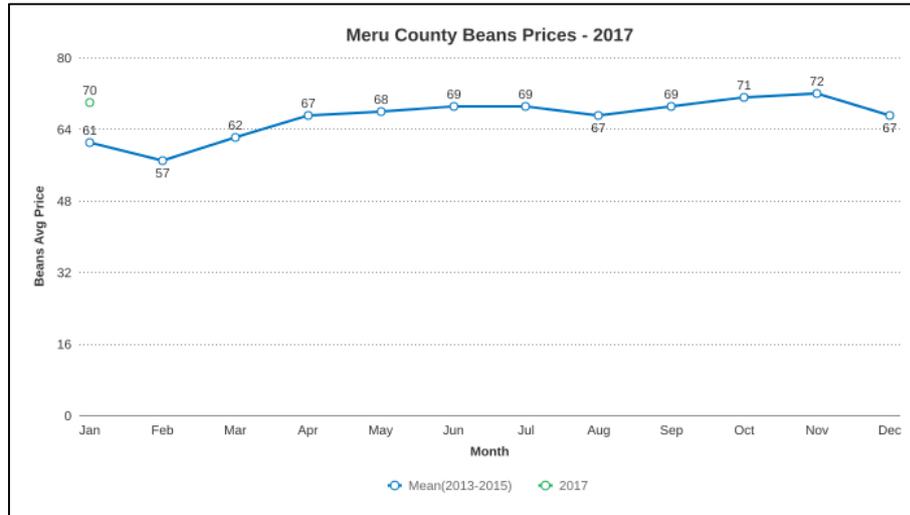
Figure 13: Meru County average bean market prices. January, 2017

4.3 Casual Labour Price Ratio/Terms of Trade

- Casual labour is the main source of income for majority of households in the County and as such it is used to calculate the terms of trade. Approximately, 30 kgs of maize could be bought with this month's wages compared to 32.7 kgs the previous month. This reflects declining terms of trade for casual labourers.
- The situation is likely to decline further as food prices increase.

Figure 14: Meru County terms of trade. December, 2016

5.0   FOOD CONSUMPTION AND NUTRITION STATUS

5.1   FOOD CONSUMPTION SCORE

- From a total of 117 households sampled this month, 58 of them had acceptable food consumption scores while 31 were at borderline. Only 27 of them had poor food consumption scores.
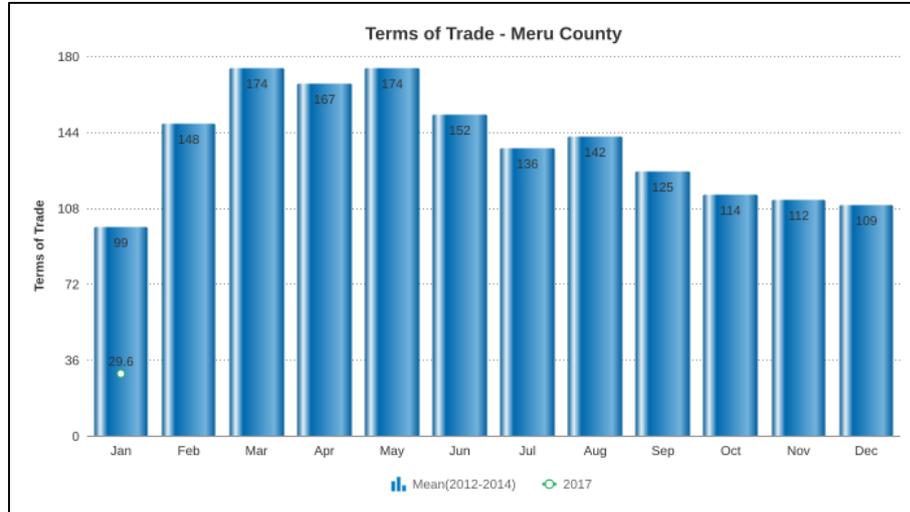- Majority of those who scored poorly were in Igembe North and Tigania West Sub-counties in the Agro-pastoral livelihood zone. Equally, majority of those who had a borderline score were also in the same Sub-counties.
- Overall, in Igembe North and Tigania West Sub-counties households were not achieving the right mixes of food for balanced diets
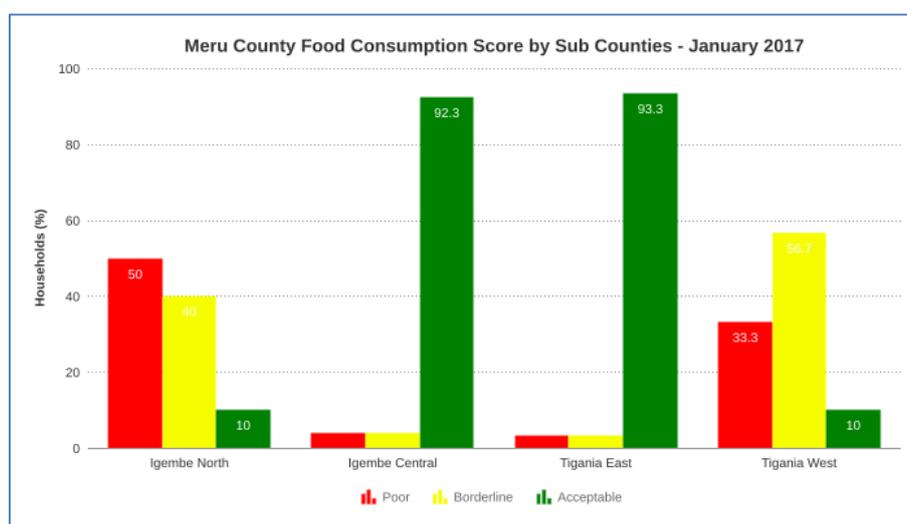
Figure 15: Meru County food consumption trends. January, 2017

5.2   HEALTH AND NUTRITION STATUS

5.2.1 Nutrition Status

- 24 percent of sampled children were at risk of malnutrition similar to 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.
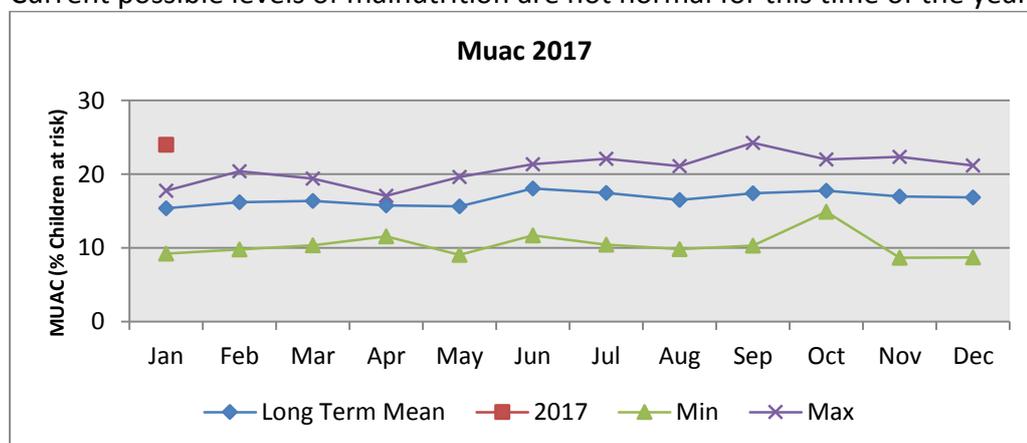
Figure 16: Meru County malnutrition levels. January, 2017

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

CURRENT INTERVENTION MEASURES (ACTION)

6.1   NON-FOOD INTERVENTIONS
- 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 within a month or two..

6.2   FOOD AID
- GOK relief food delivered to various sub-counties during the last week of the month. Distribution has commenced.

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.

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 3-monthly average	Agricultural Drought Category
	≥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.