National Drought Management Authority
(NYERI) COUNTY
DROUGHT EARLY WARNING BULLETIN FOR DECEMBER 2017

A Vision 2030 Flagship Project

DECEMBER EW PHASE

Drought Status: NORMAL

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Drought Situation & EW Phase Classification
Biophysical Indicators

- The month of December received below normal rains that were poorly distributed in time and space. Cessation of the OND rains was by the first dekad of December.
- Vegetation condition index for the month stood at 64.84. This is indicative of above normal vegetation condition greenness.

Socio Economic Indicators (Impact Indicators)

- The livestock body condition was fair across all livelihood zones.
- Milk production increased from 5.1 in November to 7.1 in December.
- Milk consumption increased from 1.6 litres in November to 1.7 litres in December.
- Terms of trade ratio increased from 63.9 in November to 113.4 in December.
- Percent of children at risk of malnutrition increase from 0.8 percent in November to 1.3 percent in December
- CSI dropped from 5.75 In November to 5.29 in December.

Early Warning (EW) Phase Classification

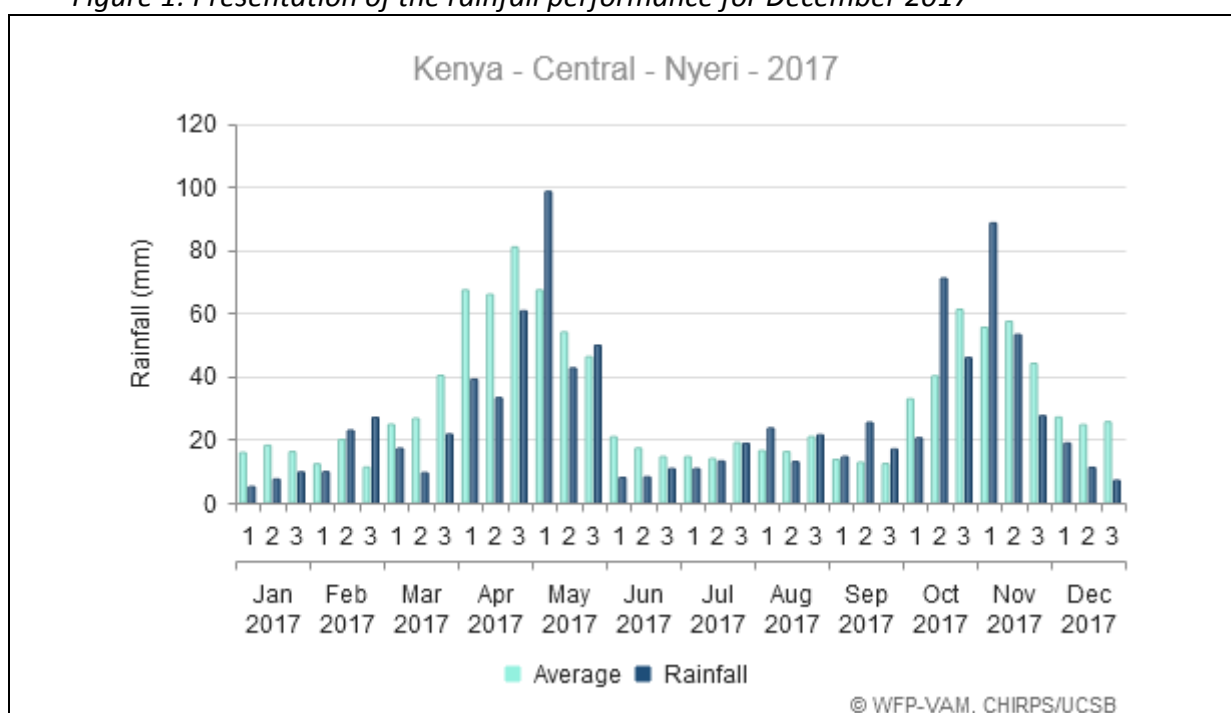| Livelihood Zone	Phase	Trend
Mixed Farming	Normal	Stable
Agro pastoral	Normal	Stable
Biophysical Indicators	**Value**	**Normal` Range/Value**
Rainfall (mm)	36.9	77.1
VCI index	64.84	>60
Forage condition	fair	Fair
Production indicators	**Value**	**Normal**
Crop Condition(specify crop)	poor	good
Livestock Body Condition	Fair	Fair
Milk Production	7.1 litres	6.2 litres
Livestock Migration Pattern	None	None
Livestock deaths (from drought)	None	None
Access Indicators	**Value**	**Normal**
Terms of Trade (ToT)	113.4	60
Milk Consumption	1.7 litres	2.0 litres
Return distance to water sources	0.5 Km	1.2 Km
Cattle prices	32,900	28,800
Utilization indicators	**Value**	**Normal**
Nutrition Status, MUAC (percentage at risk of malnutrition)	1.3	2.4
Coping strategy index	5.29	0.0

▪ Short rains harvests ▪ Short dry spell ▪ Reduced milk yields ▪ Increased HH Food Stocks ▪ Land preparation	▪ Planting/Weeding ▪ Long rains ▪ High Calving Rate ▪ Milk Yields Increase	▪ Long rains harvests ▪ A long dry spell ▪ Land preparation ▪ Increased HH Food Stocks ▪ Kidding (Sept)	▪ Short rains ▪ Planting/weeding

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

1.0   CLIMATIC CONDITIONS

1.1 RAINFALL PERFORMANCE

☐ The onset of the OND rains was early by the second week of October compared to the third week normally. Its progression into the month of December was poor in terms of distribution both in time and space. Below normal amounts were received for an average of four days mostly in high attitude areas while the lower zones remained relatively dry. Cessation was by the first dekad of December.

☐ The first, second and third dekads registered a downward trend of 18.8 mm, 11.1 mm and 7 mm compared to long-term averages of 27 mm, 24.6 mm and 25.5 mm respectively.

Figure 1: Presentation of the rainfall performance for December 2017

2.0   IMPACTS ON VEGETATION AND WATER

2.1 VEGETATION CONDITION

2.1.1   VEGETATION CONDITION INDEX(VCI)

☐ The vegetation condition index for the region was on an upward trend since the onset of the OND rains. The VCI for the month had improved from 60.91 in November to 64.84 in December. The current conditions were above the long-term average and better compared to the same period last year as shown in figure 2(a).

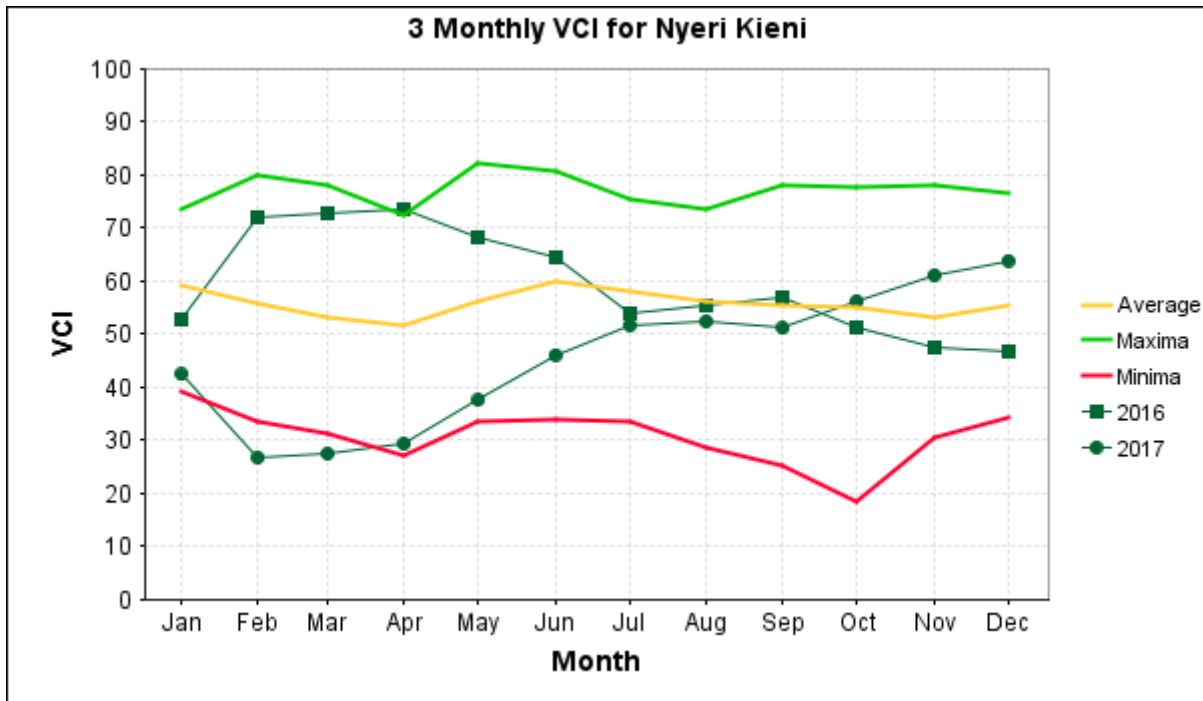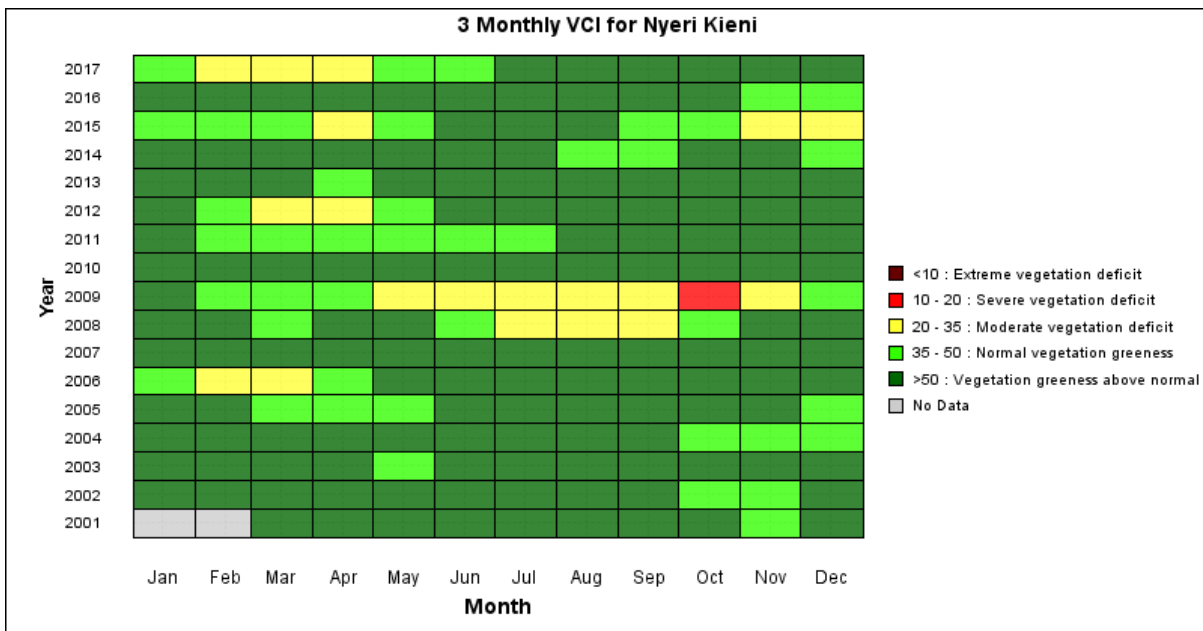*Figure 2: Presentation of 3 monthly VCI for Nyeri County*

Figure 3: Presentation of the Vegetation Condition Index (VCI)-December 2017
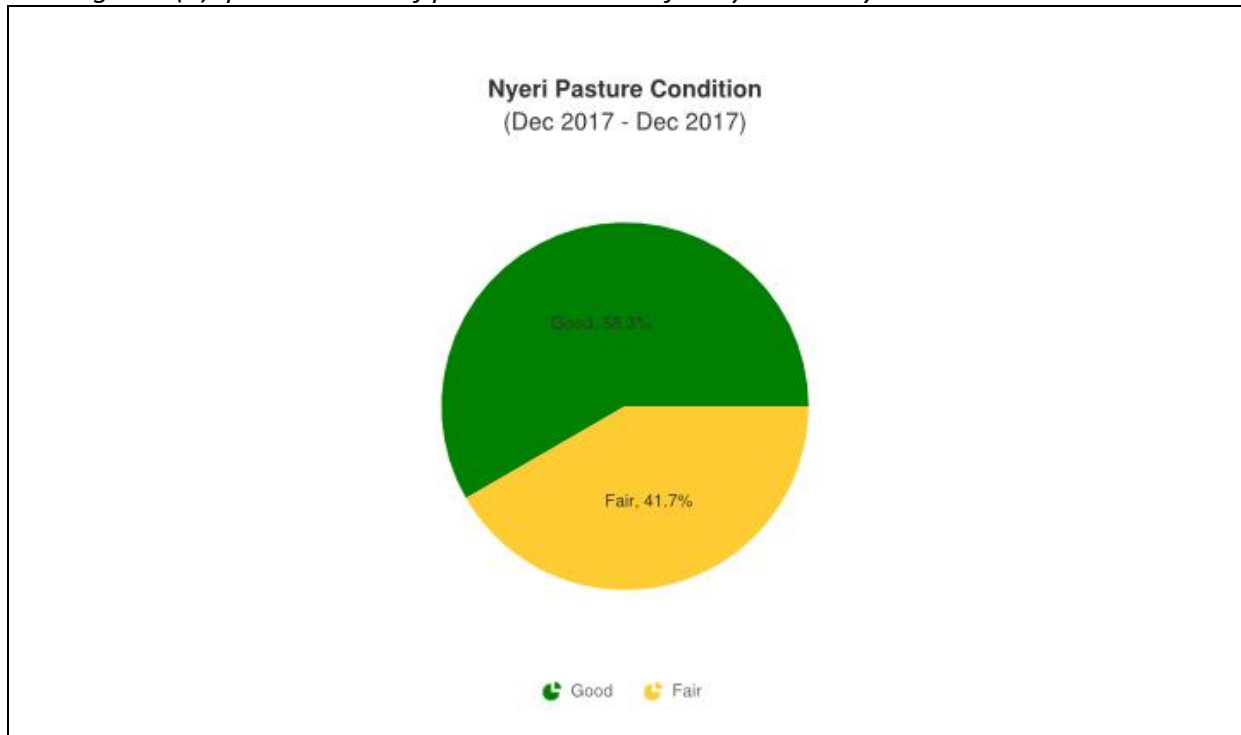

2.1.2 Pasture

☐   Pasture rejuvenation was notable across the livelihood zones attributed to the OND rains. Situation was good in high attitude zones and fair in lower zones where pasture

was highly depleted prior to the onset of the rains. Pasture condition stands at 58.3 percentages good and 41.7 percentages at fair as shown in figure 4(a) below.

☐ Available pasture is expected to last for two months in both mixed farming and agro pastoral livelihood zones. Compared to a normal year the current situation was normal.
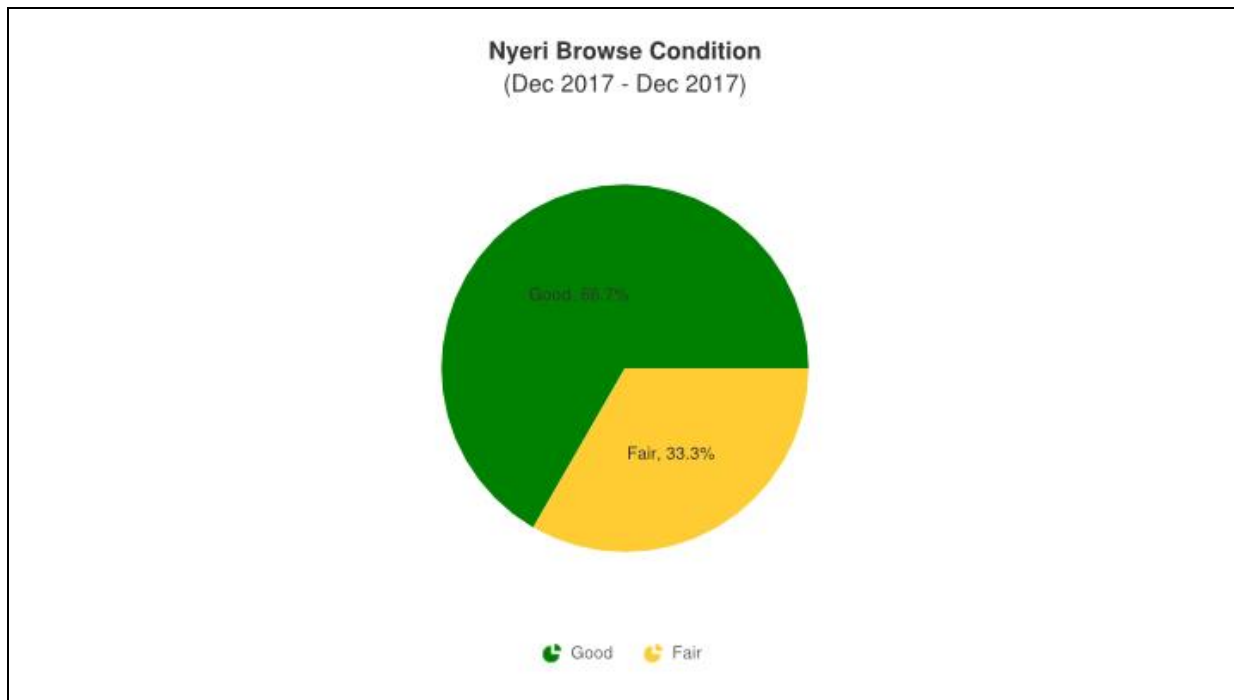
Figure 4(a): presentation of pasture condition for Nyeri County

Nyeri Pasture Condition
(Dec 2017 - Dec 2017)

Good, 58.3%

Fair, 41.7%

● Good   ● Fair

2.1.2   Browse

☐ The browse condition has improved from last month attributed to the OND rains. The situation was fair to good across all the livelihood zones.

☐ The browse situation stands at 66.7percentage good and 33.3percentage fair in both mixed farming livelihood zones and agro pastoral livelihood zones as indicated in figure 4(b).

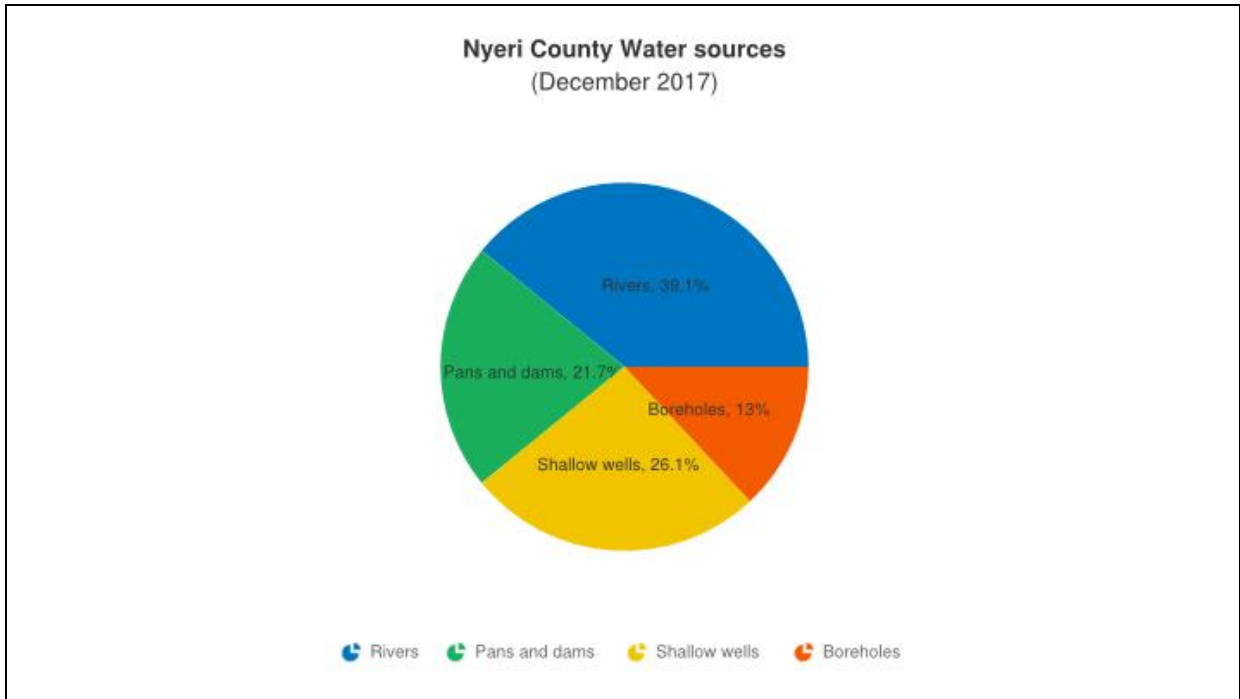*Figure 4(b): Presentation of browse condition for Nyeri County*

Nyeri Browse Condition
(Dec 2017 - Dec 2017)

Good, 66.7%

Fair, 33.3%

🌱 Good   🌱 Fair

2.2 WATER RESOURCE
2.2.1 Sources

☐ Main water sources in the region were rivers, pans and dams both at 39.1percentage and 21.7 percentage. Other sources were boreholes at 9.5percentage, shallow wells at 3.7percentage as illustrated in figure 5.

☐ Access to water for domestic and livestock use is good. Rivers have been recharged and are registering above normal flows. Water harvesting at the household level was good with open water sources registering about 50 percent recharge level of their full capacity.
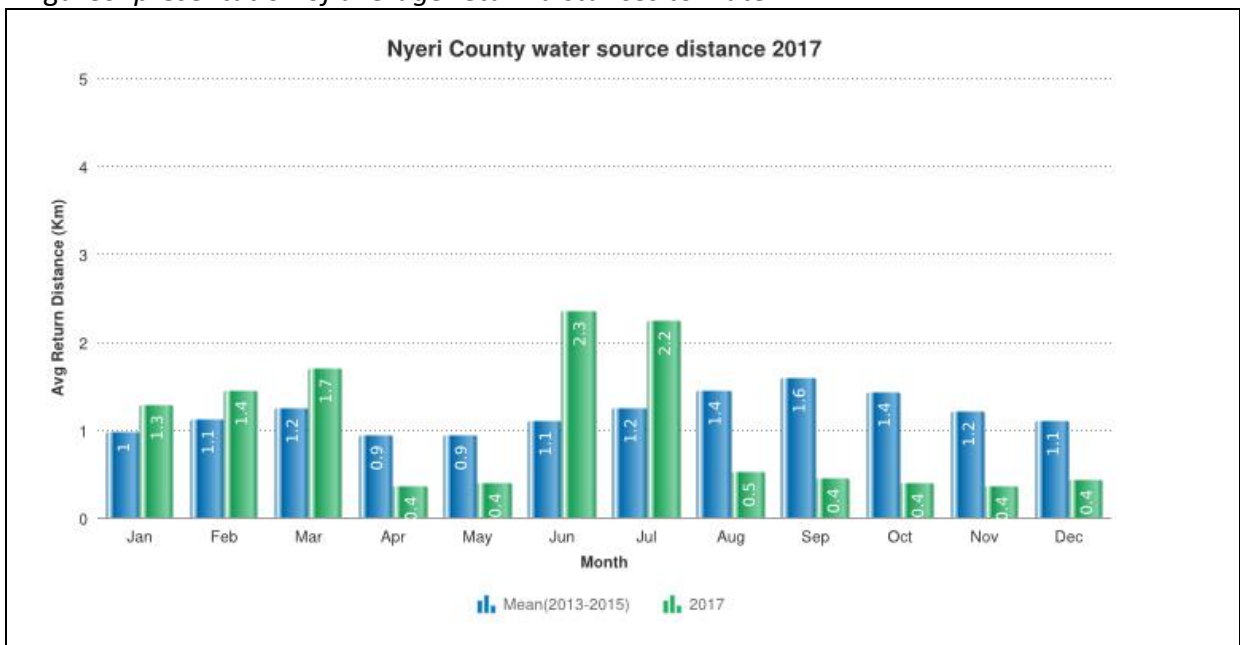
Figure 5: Shows main water sources for the region

Nyeri County Water sources
(December 2017)

Rivers, 39.1%
Pans and dams, 21.7%
Boreholes, 13%
Shallow wells, 26.1%

● Rivers ● Pans and dams ● Shallow wells ● Boreholes

2.2.2 Household access and Utilization

☐ Distance from the household to water source remained unchanged from last month at 0.4 Km. Low distances could be attributed to recharged water sources facilitating access. Distances during the month were lower by 63.6 percent compared to the long term averages as shown in figure 6 below.

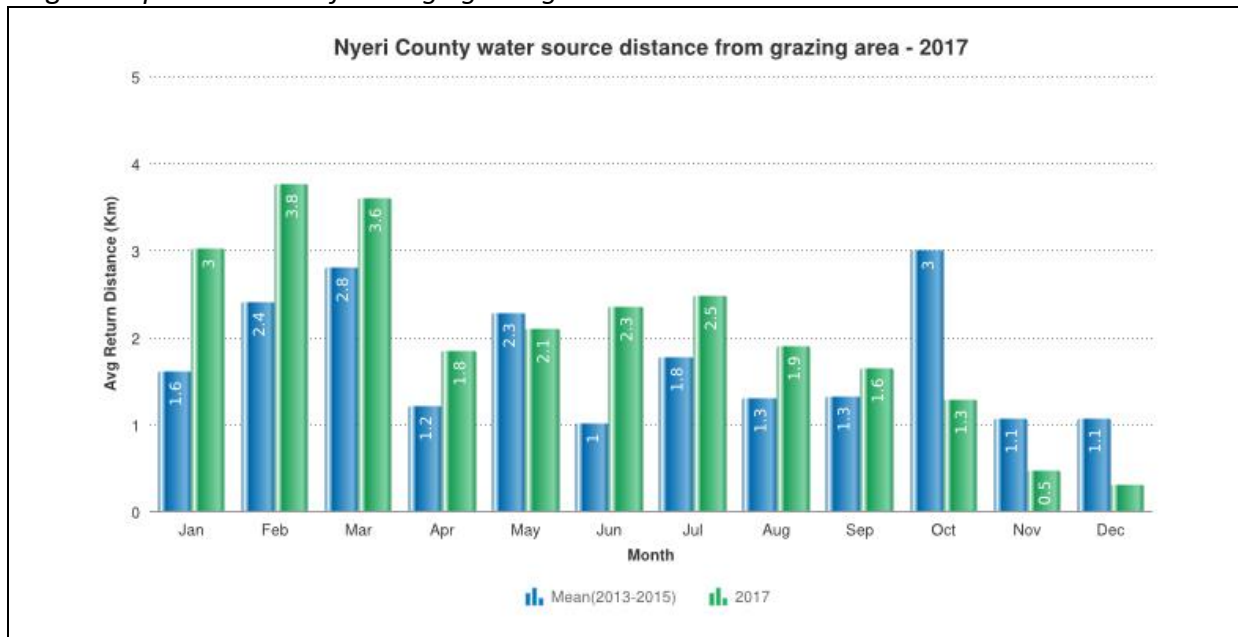Figure*6: presentation of average return distances to water*

2.2.3 Livestock access

☐ Average distances from grazing field to watering points dropped by 40 percentage from 0.5 Km in November to 0.3 Km in December. Drop in distances could be attributed to

recharge of water sources near the homestead. Reported distances were lower by 72.7 percentage compared to 2013-2015 long term average of 1.1 Km as indicated in figure7.

Figure *7: presentation of average grazing distances to water*

3.0   PRODUCTION INDICATORS

3.1   LIVESTOCK PRODUCTION

3.1.1   Livestock Body Condition

☐ Livestock body condition had improved during the month under review compared to the previous month attributed to improved pasture condition and reduced distances in search of water and pasture. Body conditions were fair across all livelihood zones with exception of some pockets in the high attitude areas where livestock had good body conditions.
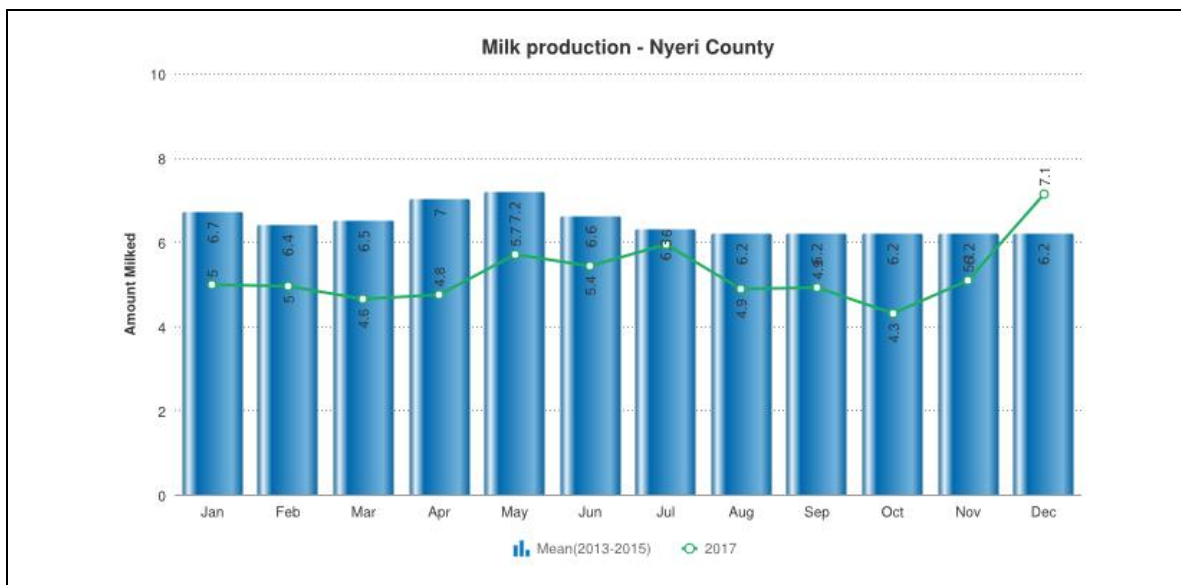
3.1.2 Livestock Diseases

☐ No livestock disease outbreaks were reported during the month under review.

3.1.3 Milk Production

☐ Milk production increased by 39.2 percentage from 5.1 litres in November to 7.1 litres in December. Increased production could be attributed to improved pasture conditions, reduced distances in search of water and pasture and provision of drought pellets to vulnerable livestock that helped to cushion them against the effects of drought. Compared to the 2013-2015 short term averages of 6.2 litres the month's production was higher by 14.5 percent as indicated in figure 8.

Figure 8: Presentation of average milk production for the region

3.2   RAIN-FED CROP PRODUCTION
3.2.1   Stage and Condition of food Crops
□ Due to poor performance of the rains in the month of December coupled with early cessation, crops have wilted across all the livelihood zones. This could highly impact negatively on the food security situation as farmers could be gearing up to a total crop failure given that the next rainy season by mid-March.
□ Crops at the farms were at different stages of development. Maize crop was at above knee height to tussling, Beans at pod formation while potatoes were at tuber expansion

3.2.2   Harvest
□ There were no harvests of the usual food crops in the region during the month.

3.2.3   Pest and Diseases
□ Fall Army Worm (FAW) and Millipedes are still a major challenge to crop production in Kieni East and Kieni West Sub Counties. Millipedes have multiplied to uncontrollable levels following the onset of rains. Areas mostly affected are Gatarakwa and Lower Mugunda in Kieni west Sub County, Gakawa, Naromoru, Kiamathaga, Thegu and Kabaru in Kieni East Sub County.
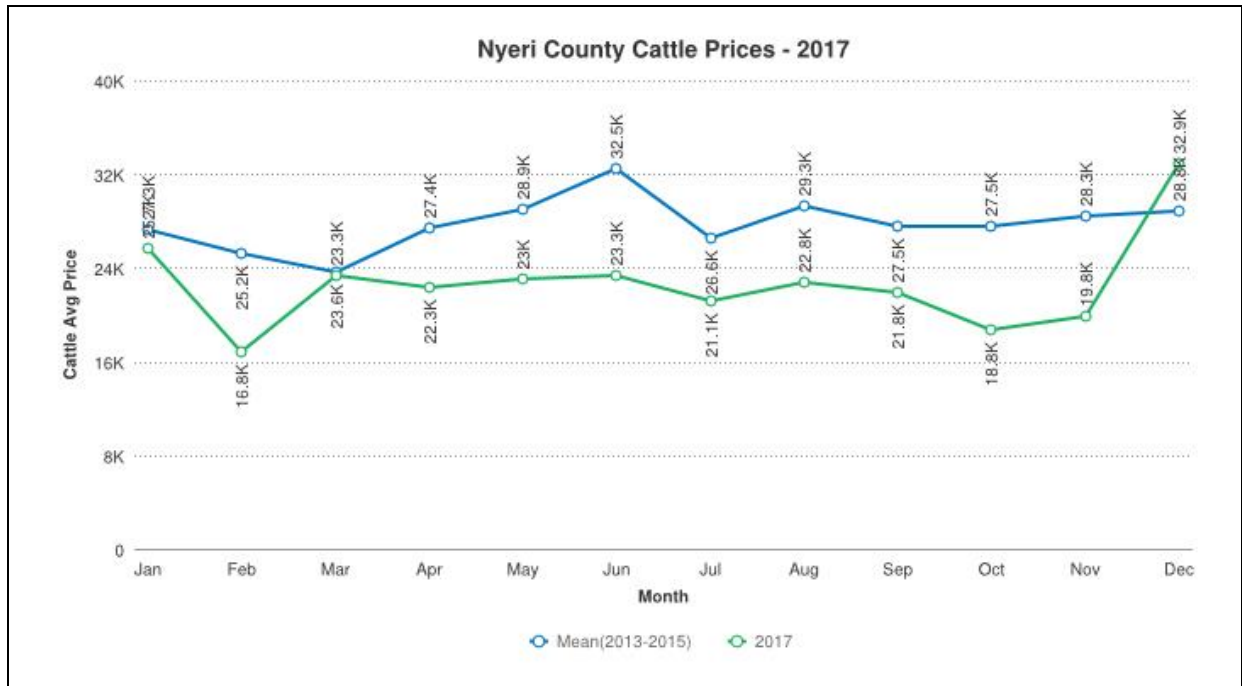
4.0   MARKET PERFORMANCE
4.1   LIVESTOCK MARKETING
4.1.1 Cattle Price
□ Due to improved livestock body conditions, prices were on an upward trend. Cattle prices increased by 66 percentage to sell for Ksh 32,900 in December from Ksh 19,800 in November. Compared to the 2013-2015 short term averages of Ksh 28,800 reported prices were higher by 14 percentage as indicated in figure 9.
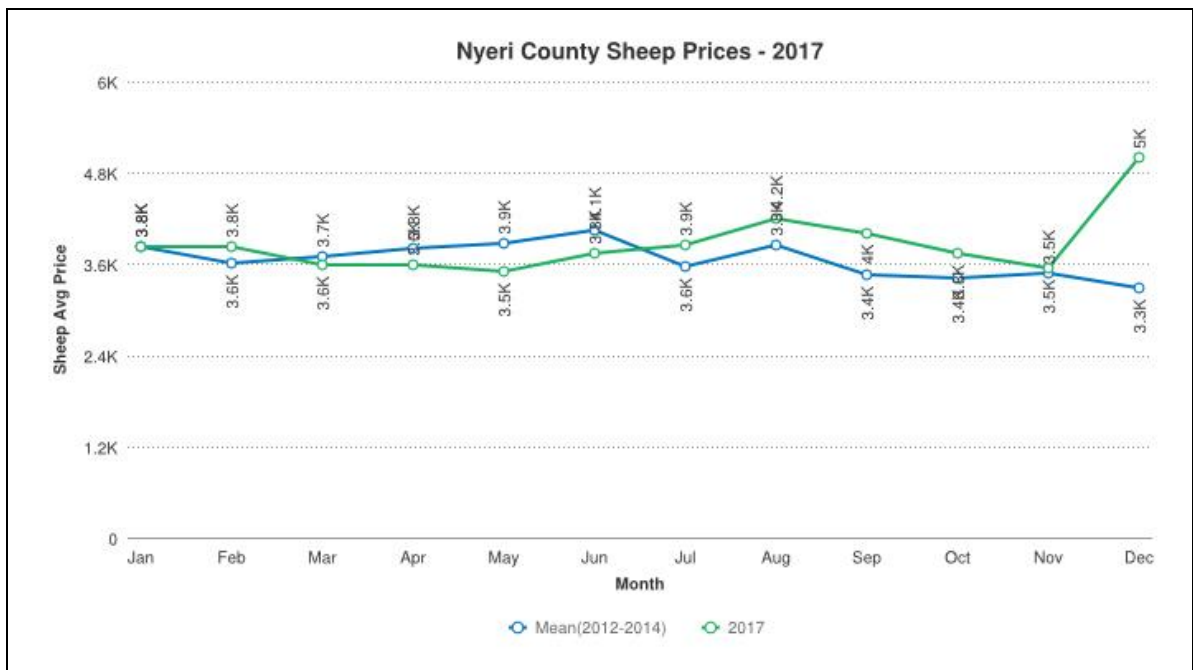
Figure 9: Presentation of average cattle prices

4.1.2 Sheep prices

☐ Sheep prices also increased by 42.8 percentage to sell for Ksh 5,000 in December from Ksh 3, 500 in November. Compared to the 2013-2015 short term averages of Ksh 3,300 reported prices were higher by 34 percentage as indicated in figure 10.

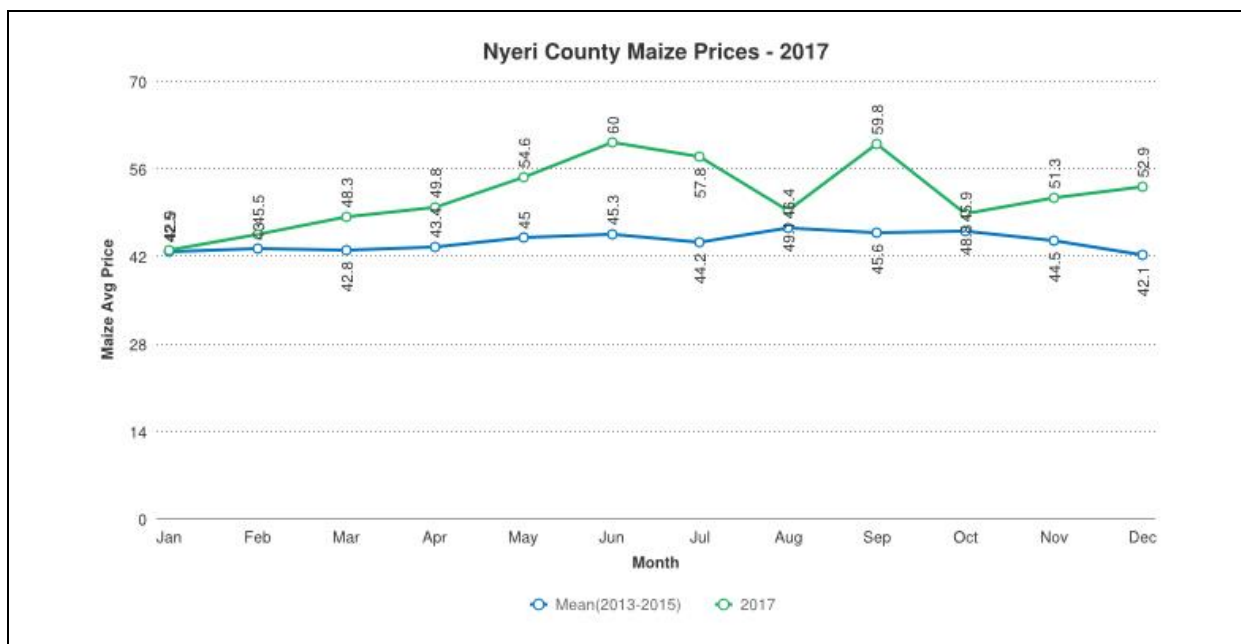*Figure10: Presentation of average sheep prices*

4.2   CROP PRICES
4.2.1   Maize

☐   Maize prices increased by 3percentage to retail for Ksh 52.9 in December from Ksh 51.3 in November. Increase in prices is attributed to high dependence on markets for food supplies following exhaustion of food stocks at the household level. Compared to the short-term prices of Ksh 42.10, the month's price was higher by 25.6 percentage as shown in figure 11 below.
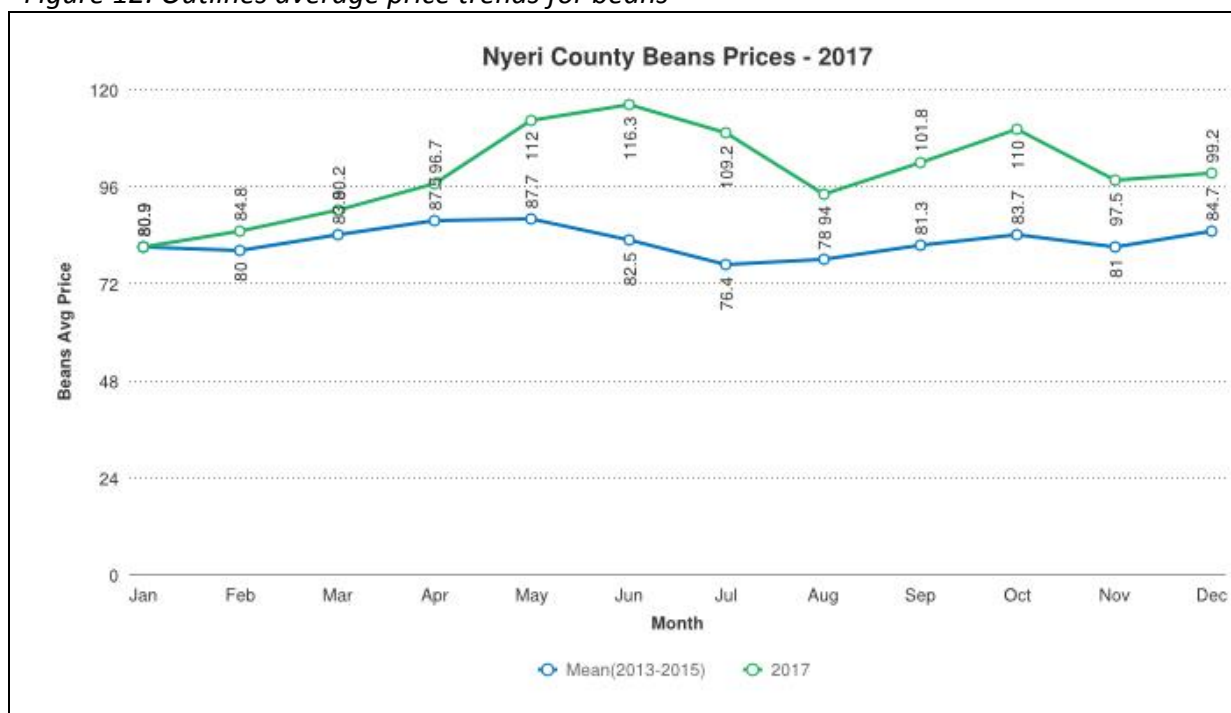
Figure 11: Outlines average price trends for maize

4.2.2   Beans

☐   Beans prices increased by 1.7percentage to retail for Ksh 99.2 in December from Ksh 97.5 in November. Compared to the short-term prices of Ksh 84.7 the month's price was above the long-term average by 17percentage in figure 12 below.

Figure 12: Outlines average price trends for beans

Nyeri County Beans Prices - 2017
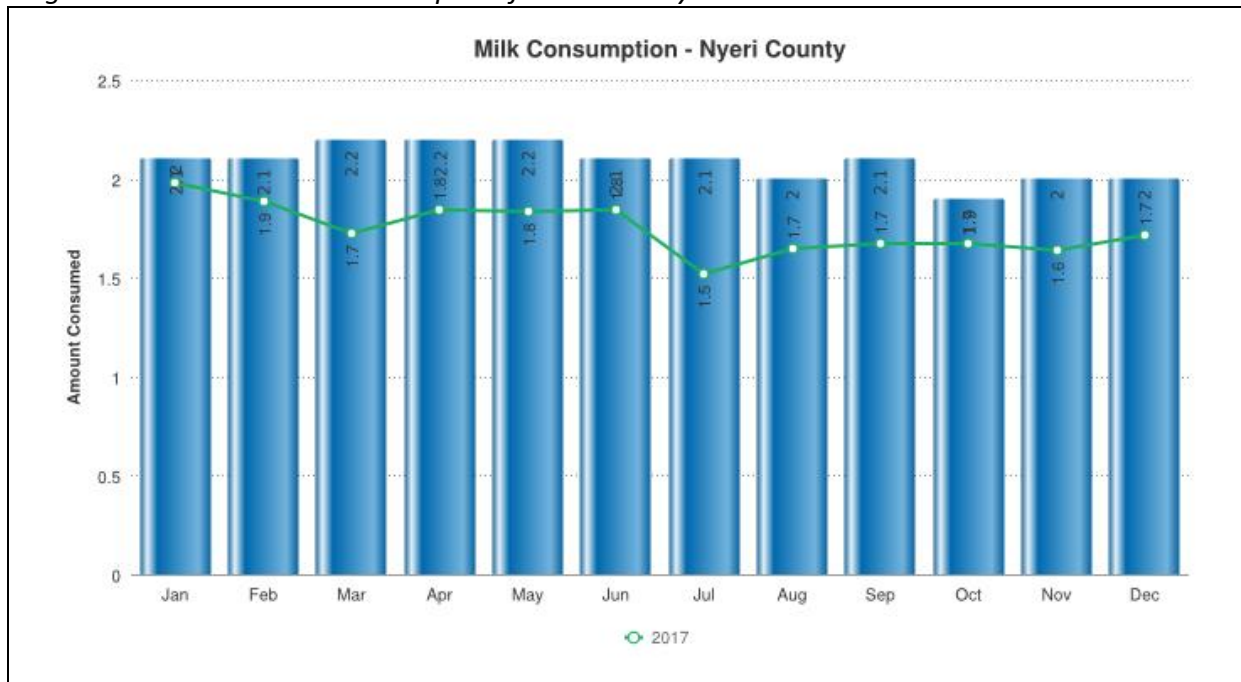
4.2.3   Livestock Price Ratio/Terms of Trade

☐ Terms of trade ratio increased by 77.5 percentage from 63.9 in November to 113.9 in December. This is attributed to an increase in livestock prices while food prices remained relatively stable an indication that household can buy more kilograms of maize from sale a goat compared to the previous month.

5.0   FOOD CONSUMPTION AND NUTRITION STATUS

5.1 Milk consumption

☐ The month's household milk consumption increased by 6.25 percentage from 1.6 litres in November to 1.7 litres in December. Increase in consumption can be attributed to increase in production. Compared to the 2013-2015 short term average of 2 litres the month's consumption was lower by 15 percentage as shown in figure 13 below.
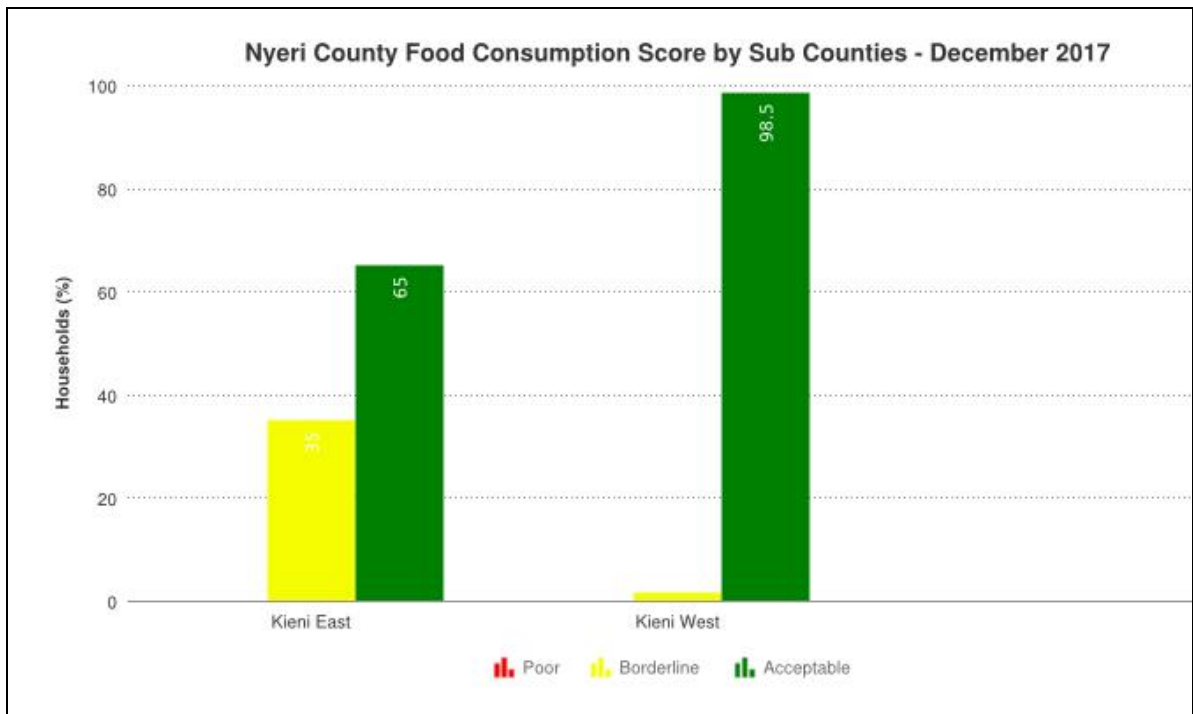
Figure 13: Outlines milk consumption for the county

5.2   FOOD CONSUMPTION SCORE

☐ The proportion of households with borderline and acceptable food consumption score in the sampled population was 17.6percentage and 82.4 percent respectively.

☐ 98.5 percentage and 1.5 percentage of the household in Kieni West had an acceptable and borderline consumption score compare to 65.3 percentage and 35 percent in Kieni East. This is an indication that households in Kieni West had a higher dietary diversity and consumption frequency.

Figure 14: Presentation of food consumption score by livelihood zones

Nyeri County Food Consumption Score by Sub Counties - December 2017

5.3 HEALTH AND NUTRITION STATUS
5.3.1 Nutrition Status
□ Nutrition status of children below the age of five increased from 0.8 percentage in November to 0.9 percentage in December as indicated in figure 10 below. Percentage of children at risk of malnutrition was below the 2011-2015 long term average of 2.4 percent.

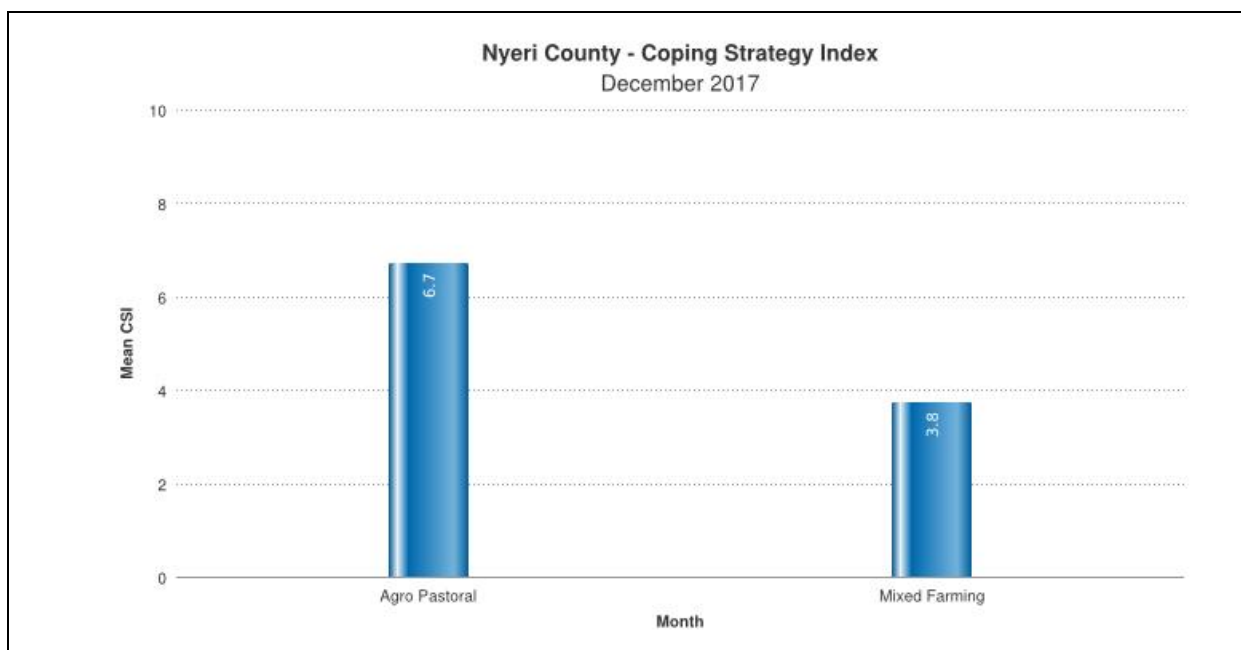*Figure 15: Presentation of nutrition status of children below five years*

Mid at Risk Children 2017 - Nyeri County

5.3.2 Health

☐ No human disease outbreaks were reported in the region for the period of monitoring.

5.4 COPING STRATEGIES

☐ Mean coping Strategy Index (CSI) for the month of December stood at 5.29 from 5.75 last month. Decrease in the mean CSI is an indication that households were coping less frequently compared to last month attributed to an improvement on the food security situation due to the OND rains. Agro pastoral farming livelihood zones registered high coping strategy index of 6.7 as compared to 3.8 Mixed farming livelihood zones as indicated in figure 16 below.

Figure 16: presentation of the region coping strategies

6.0 CURRENT INTERVENTION MEASURES (ACTION)

6.1 Non-food interventions

☐ No non-food intervention was currently ongoing.

6.2 Food Aid

☐ No food intervention was currently ongoing.

7.0 EMERGING ISSUES

7.1 Migration

☐ There were no unusual human and or livestock movements into or out of the county.

7.2 FOOD SECURITY PROGNOSIS

☐ The early cessation of the OND rains has impacted negatively on crops at farm level and at a critical stage of development. Crops have wilted across all the livelihood zones. As a result, farmers could be gearing up to a total crop failure.

Food prices are relatively stable but given that household have exhausted on their stocks holding, rise in prices might be inevitable. If it so happens, household purchasing power will be eroded thus forcing majority of them to increase the frequency by which coping mechanisms will be employed.

8. RECOMMENDATIONS

- Pasture establishment and conservation. (N.D.M.A and livestock department).
- Continued livestock diseases surveillance. (Livestock Department).
- Review of county drought contingency plans. (N.D.M.A).
- Sensitization on water harvesting (Water department).

REFERENCE TABLES

Table 1: Drought Phase Classification

Normal	Alert	Alarm	Emergency
All environment Agricultural an pastoral indicators a within the season ranges	Meteorological droug indicators move outsid seasonal ranges	Environmental and least two productic indicators are outsid Long term season ranges	All Environmenta Metrological an Production indicato are outside norm 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.