National Drought Management Authority
NYERI COUNTY
DROUGHT EARLY WARNING BULLETIN FOR FEBRUARY 2018

NDMA

A Vision 2030 Flagship Project

KENYA VISION 2030

FEBRUARY 2018 EW PHASE

Early Warning (EW) Phase Classification

Livelihood Zone	Phase	Trend
Mixed Farming	Normal	Worsening
Agro pastoral	Normal	Worsening
County	Normal	Worsening
Biophysical Indicators	**Value**	**Normal Range/Value**
Rainfall (% of Normal)	56	80 -120
VCI-3Month	42.36	>60
Forage condition	poor	Fair
Production indicators	**Value**	**Normal**
Livestock Body Condition	Fair-poor	Fair
Milk Production	4.3 litres	4.5 litres
Livestock Migration Pattern	In migration	Normal
Access Indicators	**Value**	**Normal**
Terms of Trade (ToT)	69	60
Milk Consumption	1.5	1.5
Return distance to water sources	3 km	< 1.8 Km
Cattle prices	19,800	26,000
Utilization indicators	**Value**	**Normal**
Nutrition Status, MUAC (% at risk of malnutrition)	2.3	<1.3
Coping Strategy Index (CSI)	5.85	<5.0

Drought Situation & EW Phase Classification

Biophysical Indicators

- The month was characterised by dry weather conditions. However, offseason rains were received for an average of two to four days.
- Vegetation condition was below normal across all the livelihood zones.

Socio Economic Indicators (Impact Indicators)

Production Indicators

- Farmers were undertaking land preparation and dry planting.
- Livestock body condition was fair to poor for all species.
- Milk production was within normal ranges.
- Livestock in migration was reported.

Access indicators

- Terms of trade were favourable for livestock keepers.
- Milk consumption was within normal ranges.
- Distances to water sources were above the long-term averages.

Utilization Indicators

- Children at risk of malnutrition were above the normal ranges.
- Coping strategy index of 5.85 was report which was above normal ranges.

▪ 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

Seasonal Calendar

1.0 CLIMATIC CONDITIONS
1.1 RAINFALL PERFORMANCE

☐ Dry spells continued being experienced for in the month of February. However, offseason rains were received across all the livelihood zones for an average of two to four days.

☐ The rain were poorly distributed in space and volume. Above normal amounts were received in high altitude areas compared to lower zones that received showers. The region received 56 percent of normal during the first and second dekads.
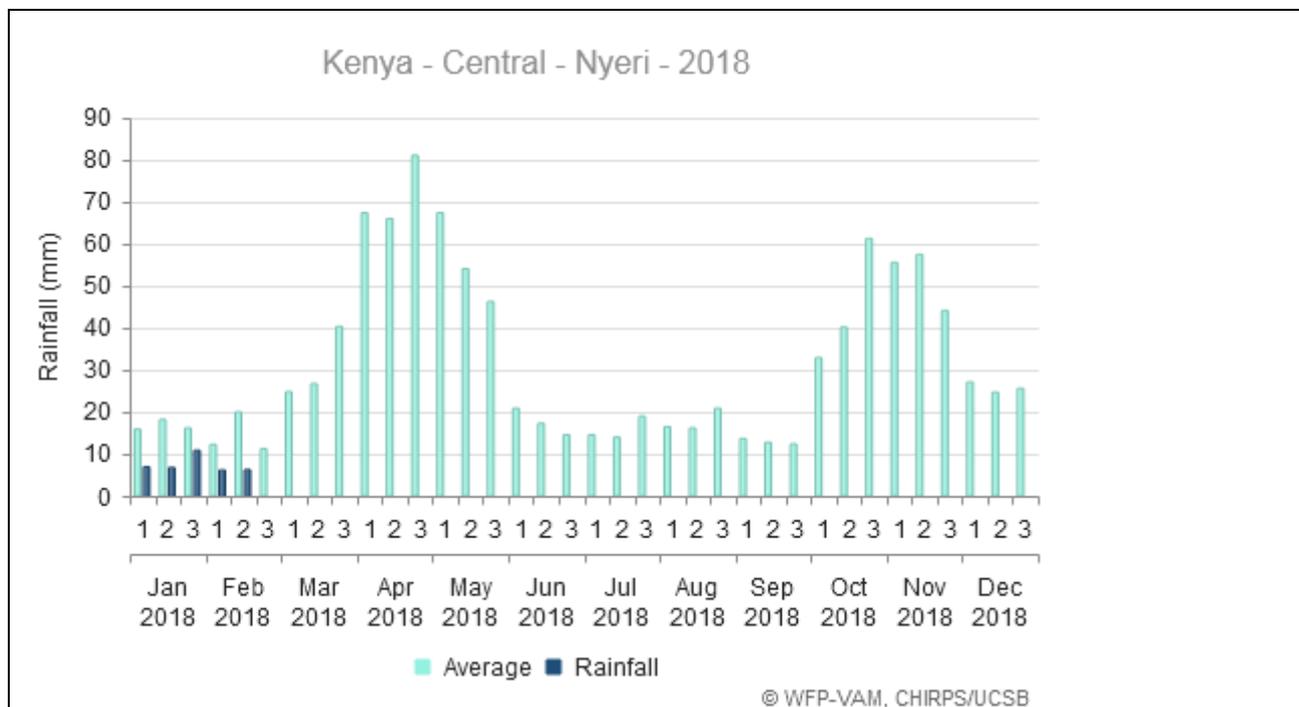

Figure 1: Presentation of the rainfall performance for December 2017

1.2   AMOUNT OF RAINFALL AND SPATIAL DISTRIBUTION

☐ Upper zones received above normal amounts while in lower zones light showers were received for an average of two to four days.

2.0 IMPACTS ON VEGETATION AND WATER
2.1 VEGETATION CONDITION
2.1.1 Vegetation Condition Index (VCI)

☐ The vegetation conditions have been on a decline since November attributed to inadequate precipitation. However, the three Months' VCI was below the normal ranges at 42.36 as shown in figure 2 (a) and 2 (b).
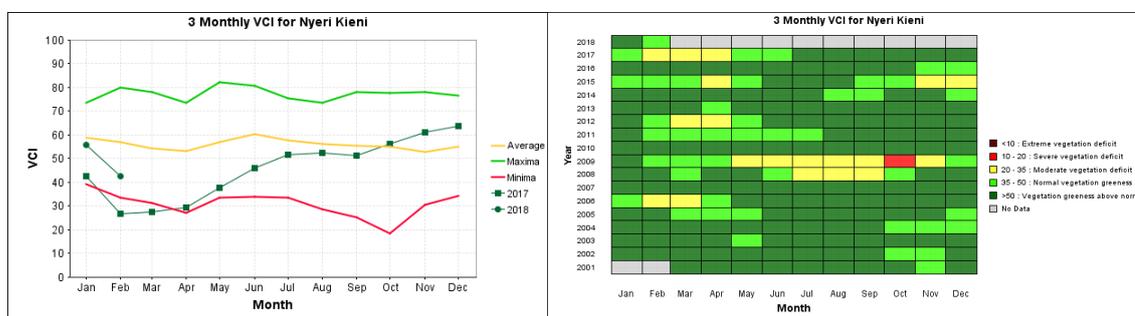

Figure 2(a): VCI -January 2018   *Figure 2(b): 3 monthly VCI for Nyeri County*

2.1.2 Pasture

☐ During our monthly monitoring 75 percent of those interviewed noted that pasture condition was fair while 25 percent indicated poor conditions.

☐ Pasture deteriorated further during the month under review compared to the previous month. Conditions were fair in mixed farming livelihood zoned and poor in agro pastoral livelihood zones. Compared to a normal year the current situation is below normal.

☐ Pasture quantity was low across all the livelihood zones and inadequate to meet livestock needs for a month. Livestock grazing field remained relatively bare which has led to livestock being feed on unpalatable grass species. Crop residue from failed cops from previous season and wheat straws obtained from wheat farms currently being harvested formed part of the livestock feeds for the month

2.1.3 Browse

☐ The browse condition depleted further compared to last month attributed to poor rainfall performance.

☐ During our monthly monitoring, 83 percent of our sample registered fair pasture conditions while 17 percent registered poor conditions.

2.2 WATER RESOURCE
2.2.1 Sources
☐ The main water sources were Pans and dams, rivers, traditional river wells and springs. Access to water had deteriorated due to a drop in flows and volumes in river and surface holding structures respectively. Rivers were flowing at the minimum levels while open water sources held about 10 percent of their full capacity. Water rationing has intensified mostly in lower zones with households receiving water once a week. The current water sources are expected to last for a month
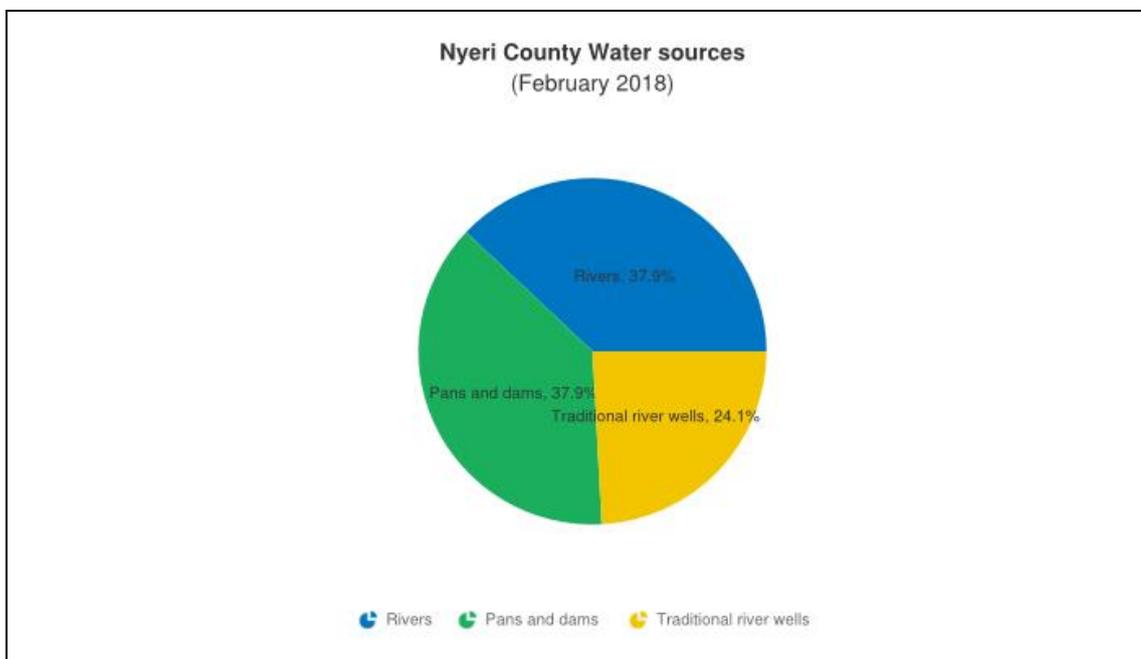

Figure 3: Nyeri county water sources

2.2.2   Household access and Utilization
☐ Distance from the household to water source increased by 7.1 percent from 2.8 km in January to 3 km in February. Increased distances could be attributed to reduced precipation. Compared to the 2013-2017 mean averages of 1.8 Km, distances covered in January were higher by 66.7 percent as indicated in figure 4.
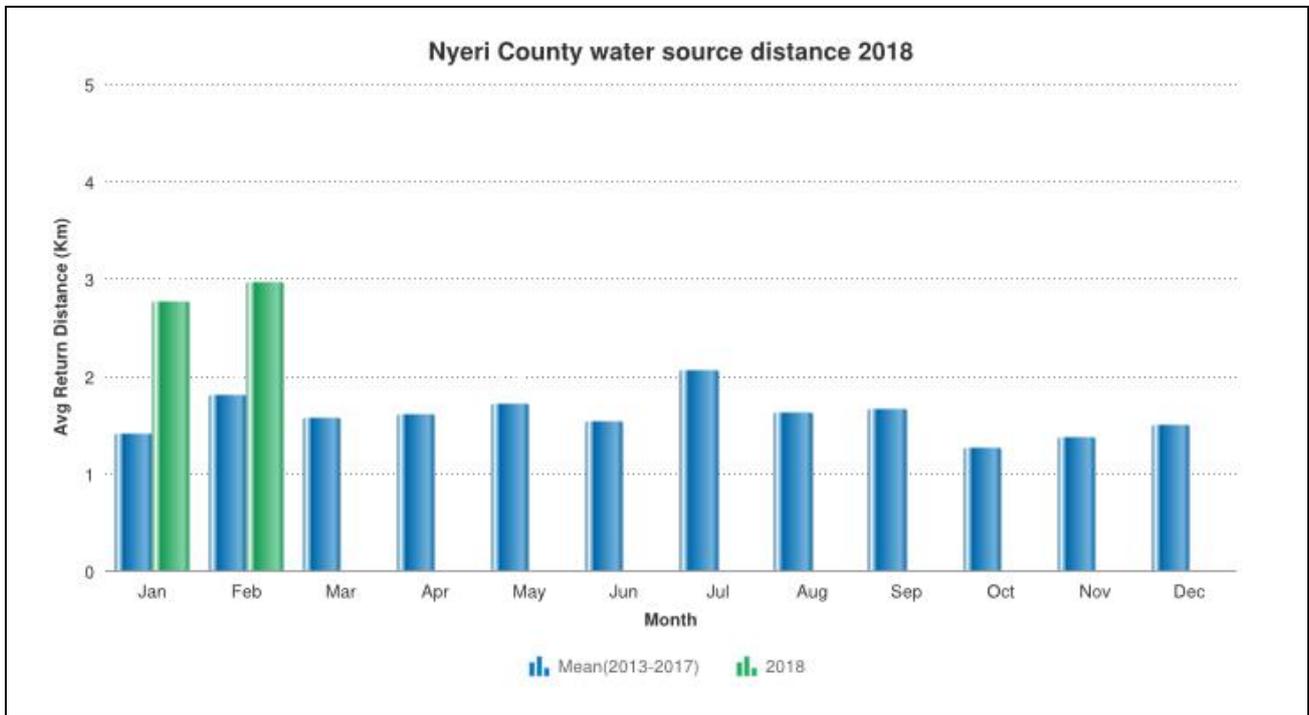
Figure *4: presentation of average return distances to water*

2.2.3   Livestock access

☐   Average distances from grazing field to watering points increased by 6 percent from 3.3 Km in January to 3.5 km in February. Reported distances were higher by 9.4 percent compared to 2013-2017 mean average of 3.2 Km as indicated in figure 5.
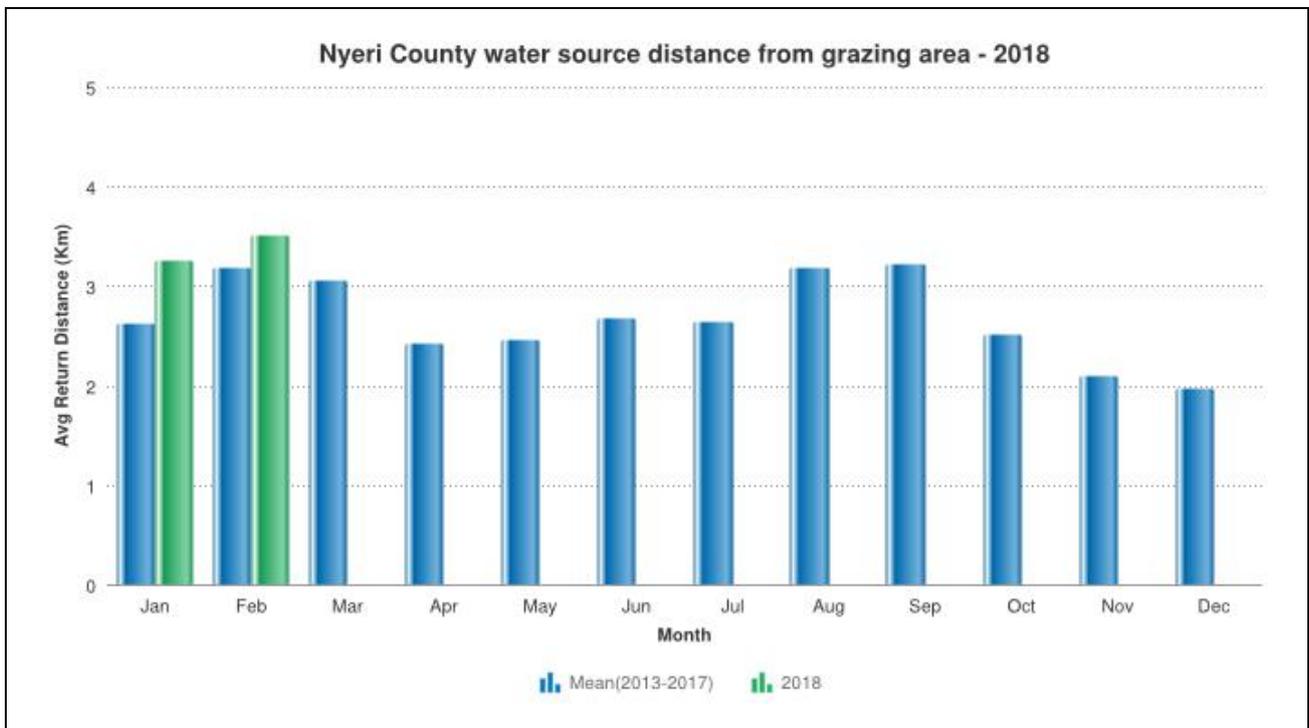

Figure *5: presentation of average grazing distances to water*

3.0   PRODUCTION INDICATORS
3.1   LIVESTOCK PRODUCTION
3.1.1 Livestock Body Condition
☐ Livestock body condition was fair to poor for all species across the livelihood zones attributed to unavailability of pasture, poor pasture condition and long trekking in search of water. Current body conditions was below normal compared to a normal year.

☐
3.1.2 Livestock Diseases
☐ Cases of pulpy kidney disease in sheep were reported among pastoralist in Naromoru ward in Kieni East during the month under review.

3.1.3   Milk Production
☐ Milk production decreased by 6.5 percent from 4.6 litres in January to 4.3 litres in February. Decrease in production could be attributed to poor pasture conditions and livestock trekking distance in search of pasture and water. Compared to the 2013-2017 mean averages of 4.5 litres the month's production was lower by 4.4 percent as indicated in figure 6.
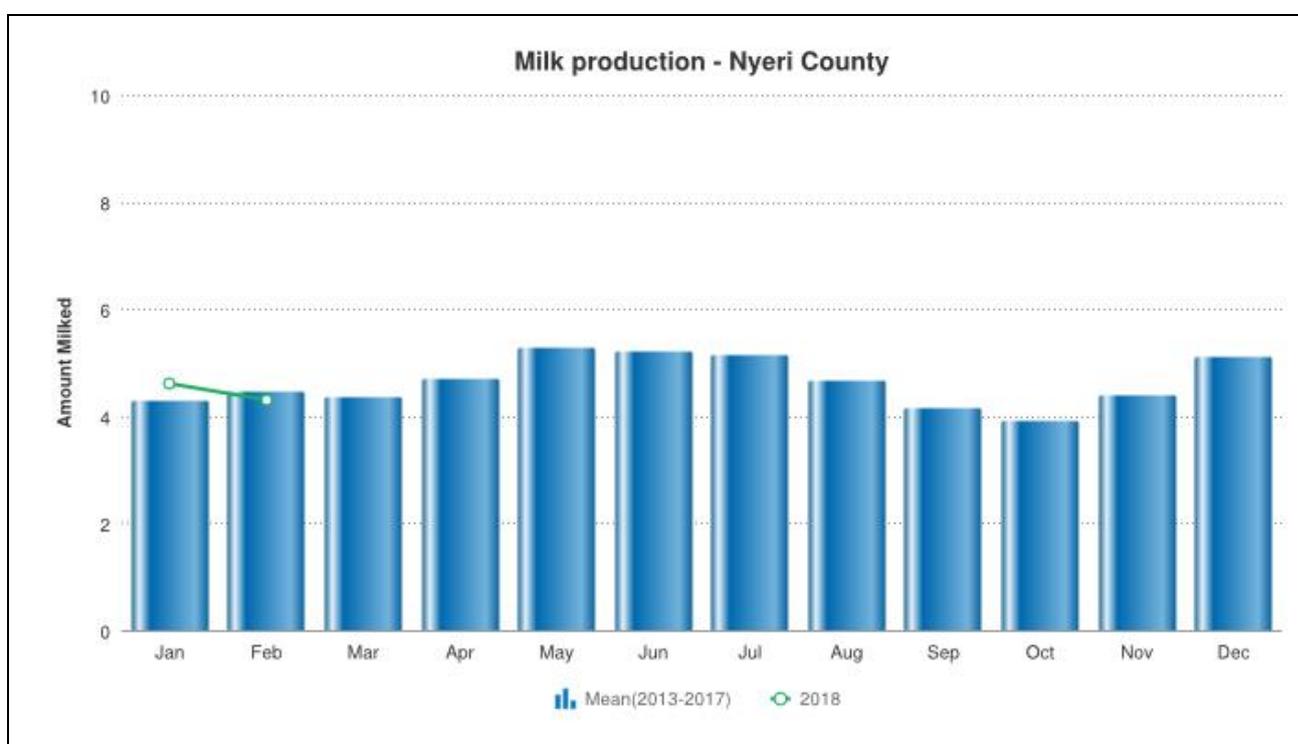

Figure 6: Presentation of average milk production for the region

3.2 RAIN-FED CROP PRODUCTION
3.2.1 Stage and Condition of food Crops
- Land preparation and dry planting is ongoing in readiness to the March-April-May (MAM) long rains projected by the second week of March.

4.0   MARKET PERFORMANCE
4.1   LIVESTOCK MARKETING
4.1.1 Cattle Prices

☐ Cattle prices remained unchanged from last month at Ksh 19,800. Compared to the 2015-2017 means prices of Ksh 26,000 reported prices were lower by 23.8 percent as indicated in figure 7.
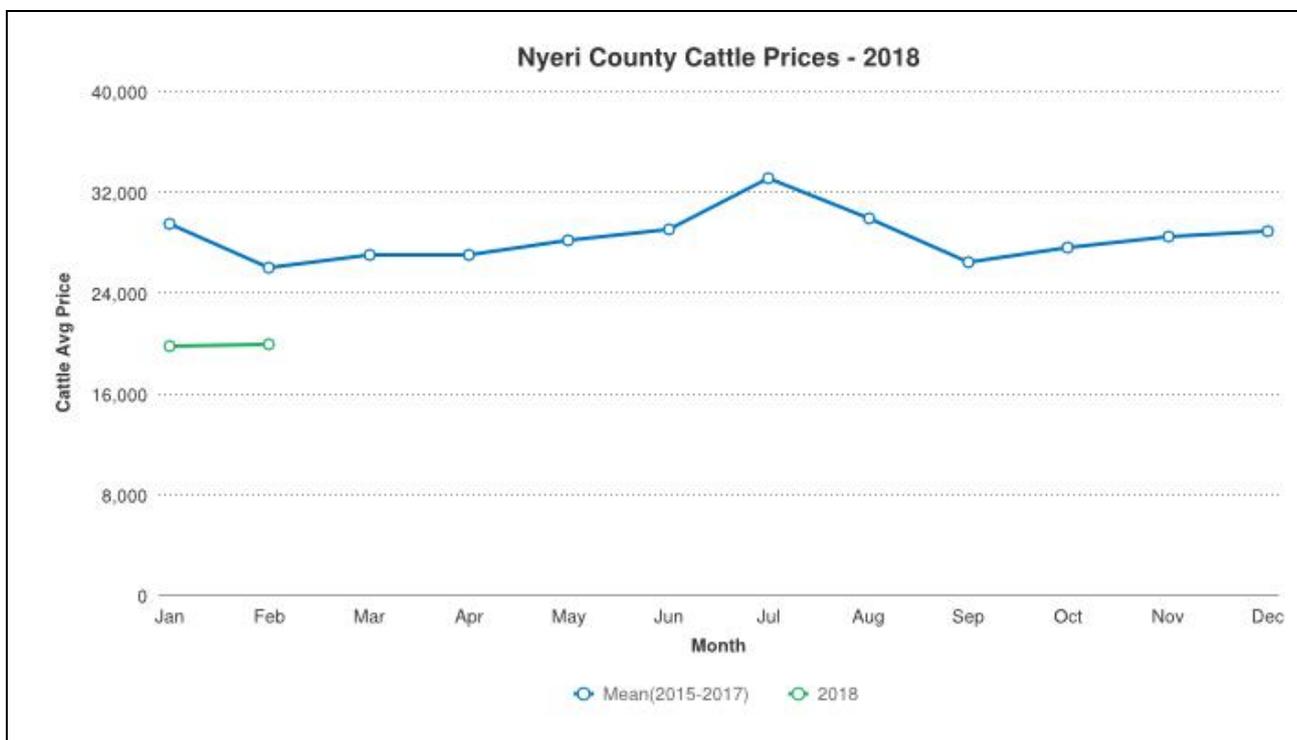

Figure 7: Presentation of average cattle prices

4.1.2 Sheep prices

☐ Sheep prices also remained unchanged from last month at Ksh 3,500. Compared to the 2013-2015 mean averages of Ksh 3,610 reported prices were lower by 3.14 percent as indicated in figure 8.
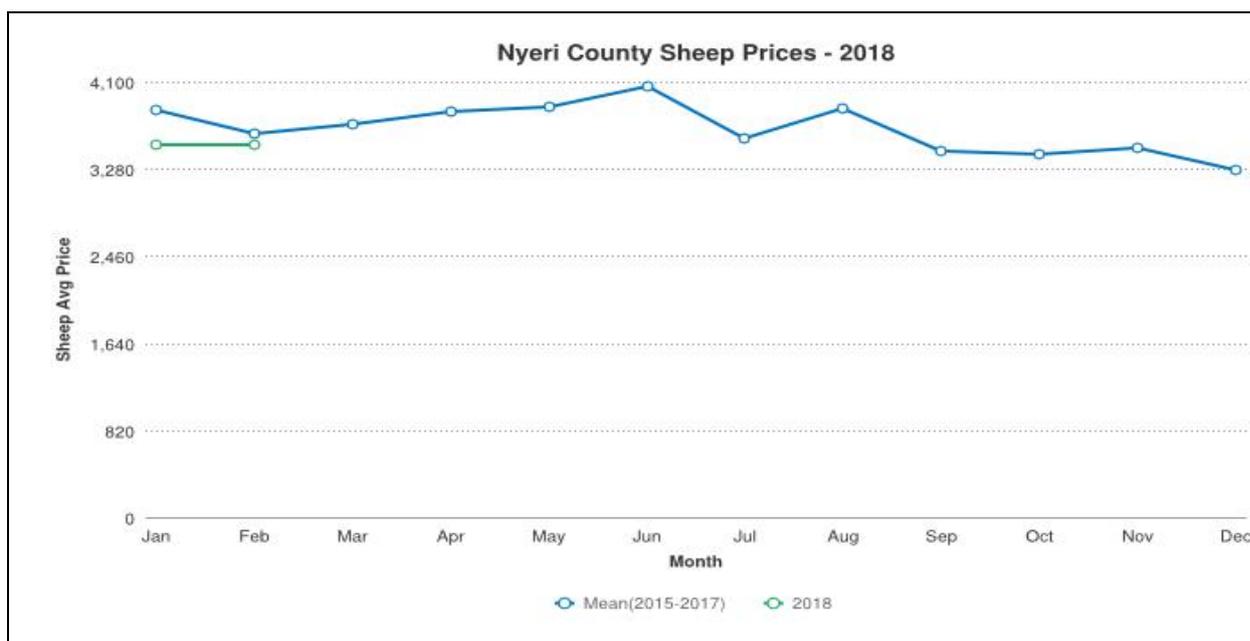

Figure 8: Presentation of average sheep prices

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4.2 CROP PRICES
4.2.1 Maize

☐ Maize prices declined by 18.8 percent to retail for Ksh 47 in February from 57.50 in January. Decrease in maize prices can be attributed to availability of maize from the neighbouring counties. Compared to the 2015-2017 mean prices of Ksh 42.50, the month's price was higher by 9.9 % as shown in figure 9 below.
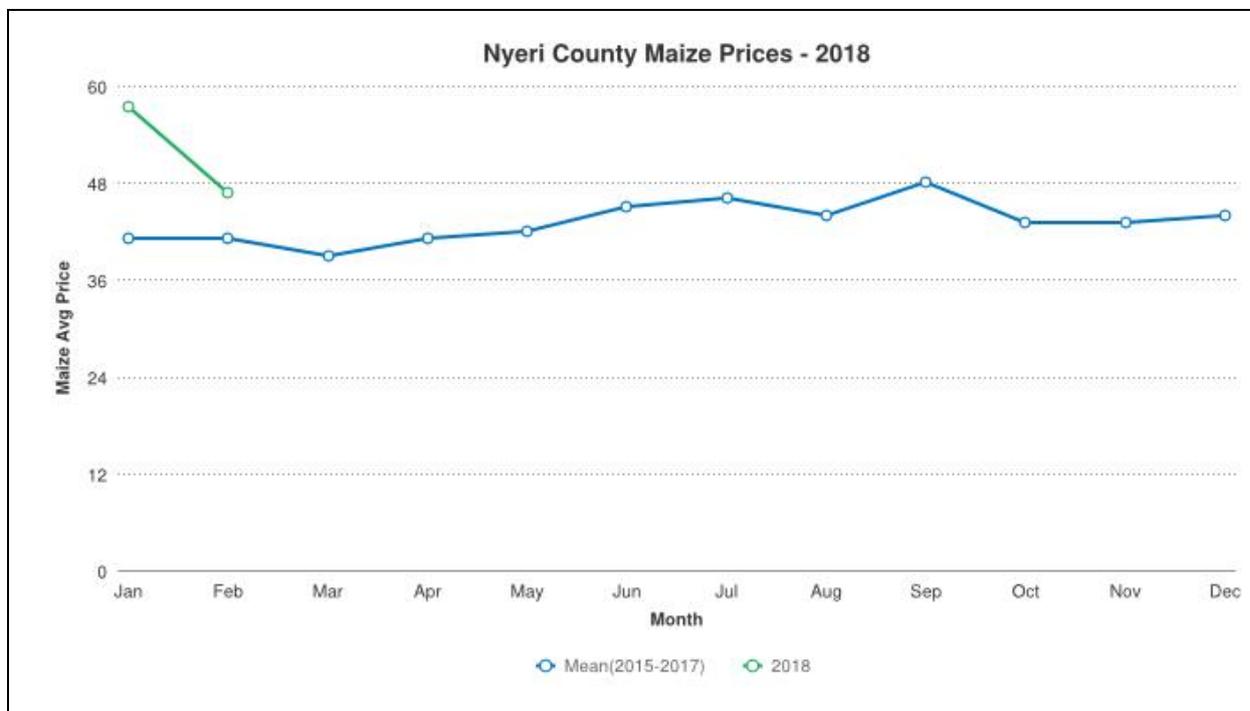

Figure 9: Outlines average price trends for maize

4.2.3 Beans

☐ Beans prices decreased by nine percent to retail for Ksh 90 in February from Ksh 99 in January. The decrease in prices can be attributed to availability of beans from the neighbouring counties. Compared to the 2015-2017 mean prices of Ksh 80 the month's price was higher by 12.5 percent as shown in figure 10 below.
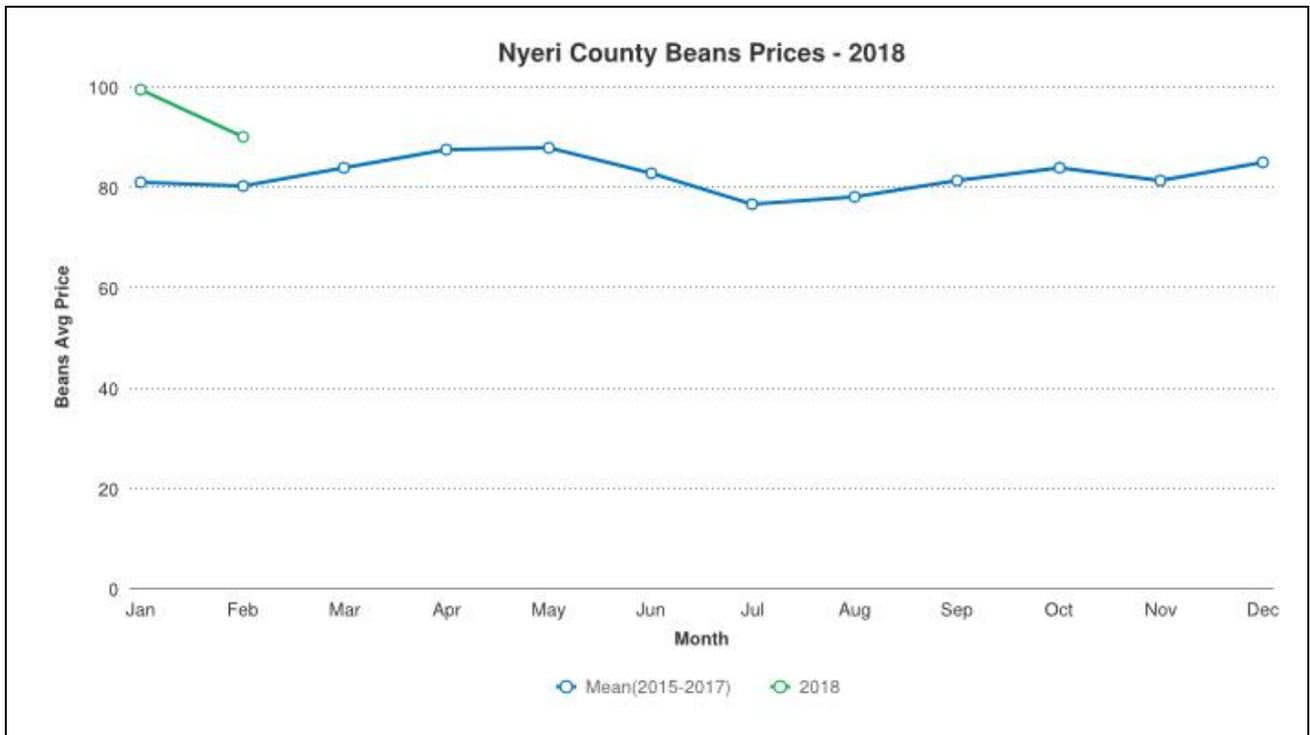
Figure 10: Outlines average price trends for beans

4.3 Livestock Price Ratio/Terms of Trade

☐ Terms of trade ratio increased by 8.2 percent from 64 in January to 69 in February. This is attributed to decrease in maize prices while goat prices were relatively stable. An indication that the situation was favourable for livestock keepers.
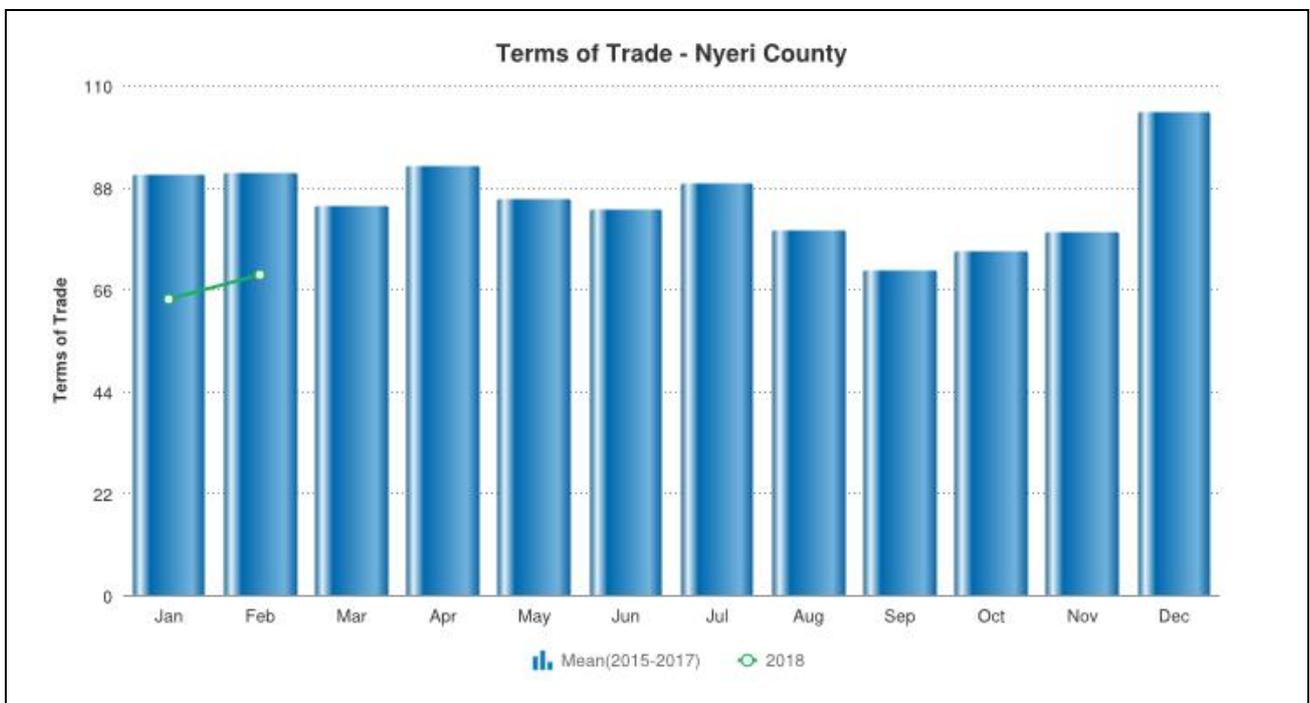

Figure 11: Outlines terms of trade

5.0   FOOD CONSUMPTION AND NUTRITION STATUS
5.1   MILK CONSUMPTION

☐ The month's household milk consumption decreased by 16.6 percent from 1.8 litres in January to 1.5 litres in February. Compared to the 2013-2017 mean average of 1.5 litres the month's consumption was within the normal ranges as shown in figure 12 below.
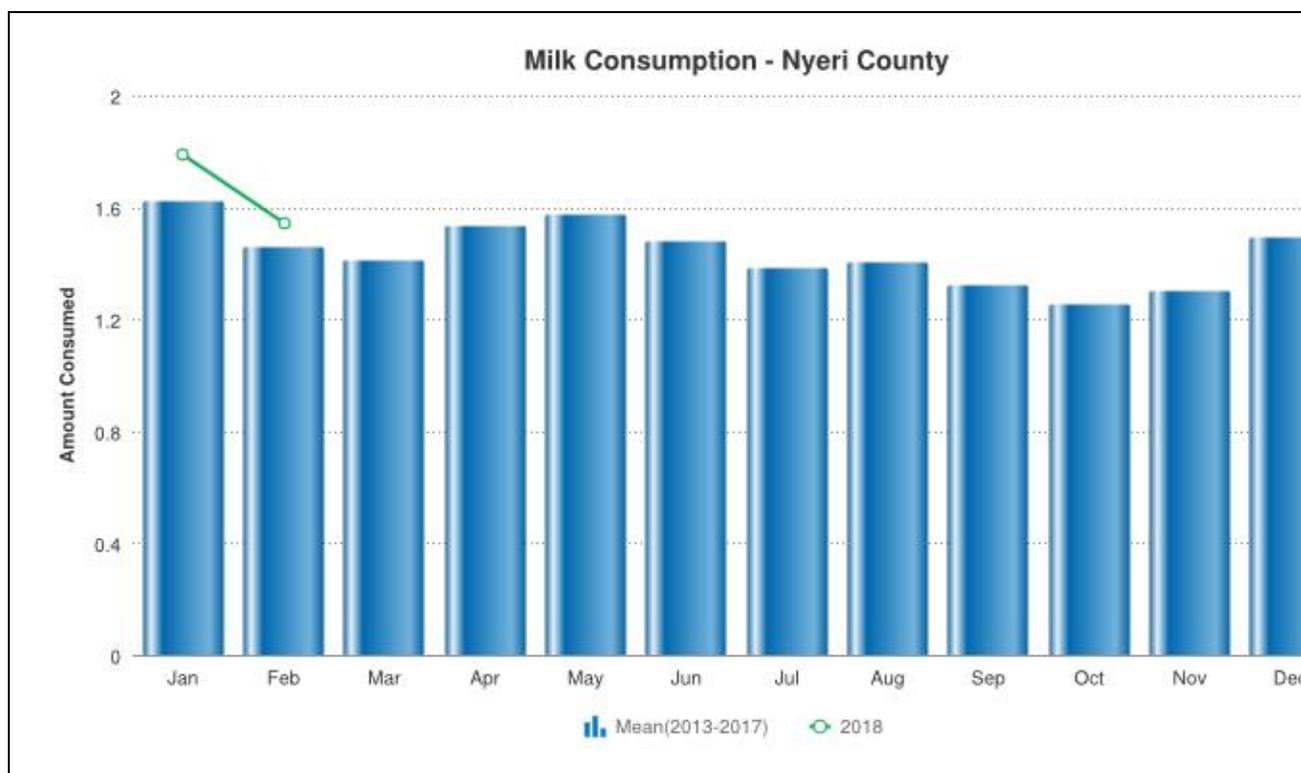

Figure 12: Outlines milk consumption for the county

5.2   FOOD CONSUMPTION SCORE

☐ The proportion of households with borderline and acceptable food consumption score in the sampled proportion were 43.64 percent and 56.36 percent respectively

☐ In Kieni West households had an 88.3 percent acceptable and 11.7 percent borderline consumption score compare to 18 percent acceptable and 92 percent borderline consumption score in Kieni East. This is an indication that households in Kieni West had a higher dietary diversity and consumption frequency.

☐ Household with acceptable food consumption score in Kieni East and Kieni West dropped by 17 percent and 12 percent respectively.
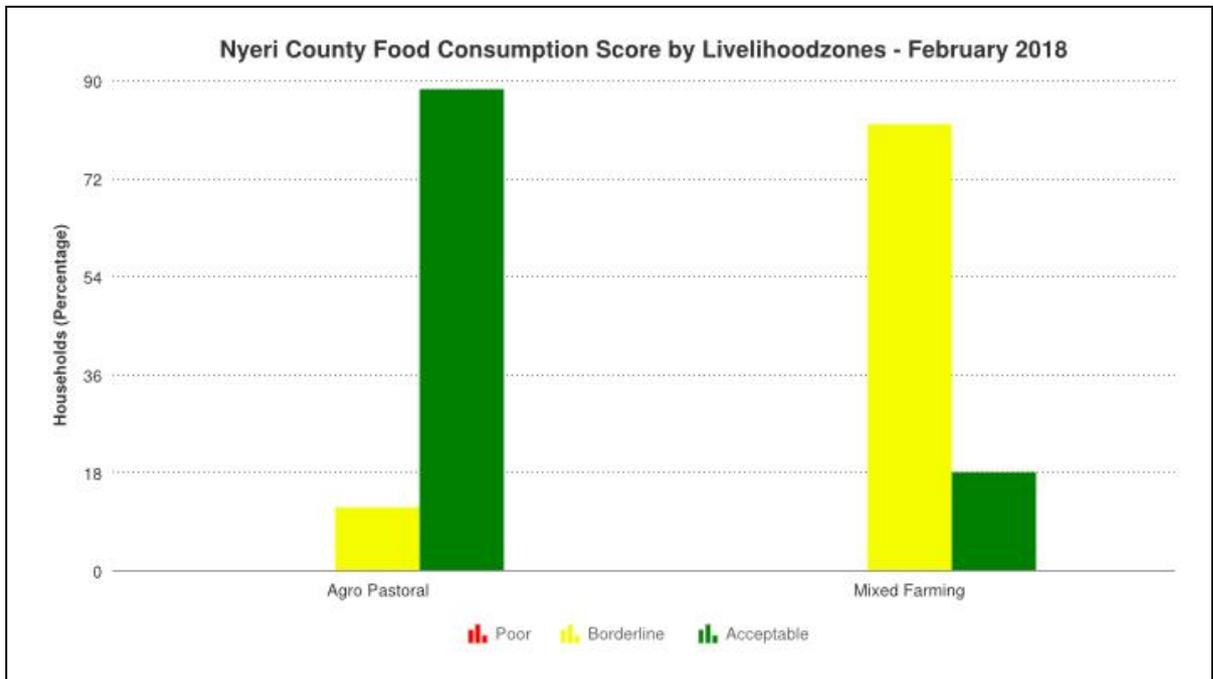
Figure 12: Outlines milk consumption for the county

5.3   HEALTH AND NUTRITION STATUS
5.3.1 Nutrition Status

☐ Nutrition status of children below the age of five at risk of malnutrition increased by 200% from 1.1 percent in January to 3.3 percent in February as indicated in figure 13 below. Registered increase could be attributed to decrease in milk consumption. Percentage of children at risk of malnutrition were lower compared to the 2013-2015 mean average of 1.3 percent.
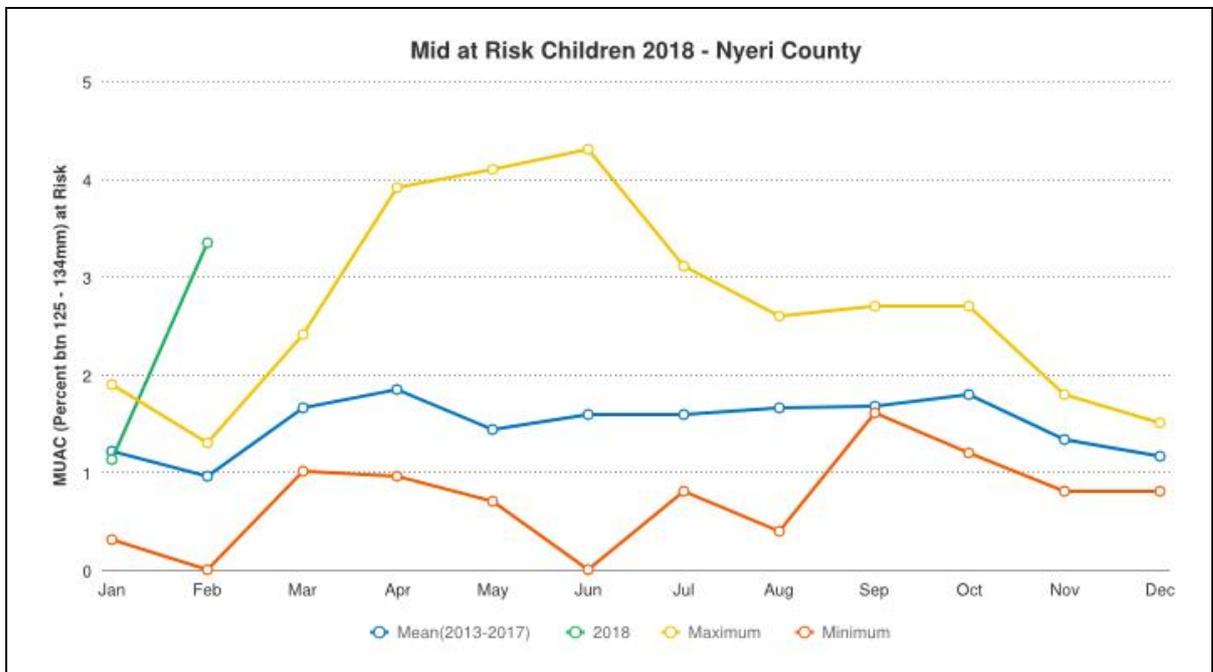
Figure 13: Presentation of nutrition status of children below five years

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 February stood at 4.85 from 5.40 in January. Decline in the mean CSI is an indication that households were coping more frequently compared to last month.

☐ Mixed farming livelihood zones registered high coping strategy index of 5.4 as compared to 4.4 Agro pastoral farming livelihood zones as indicated in figure 15 below.
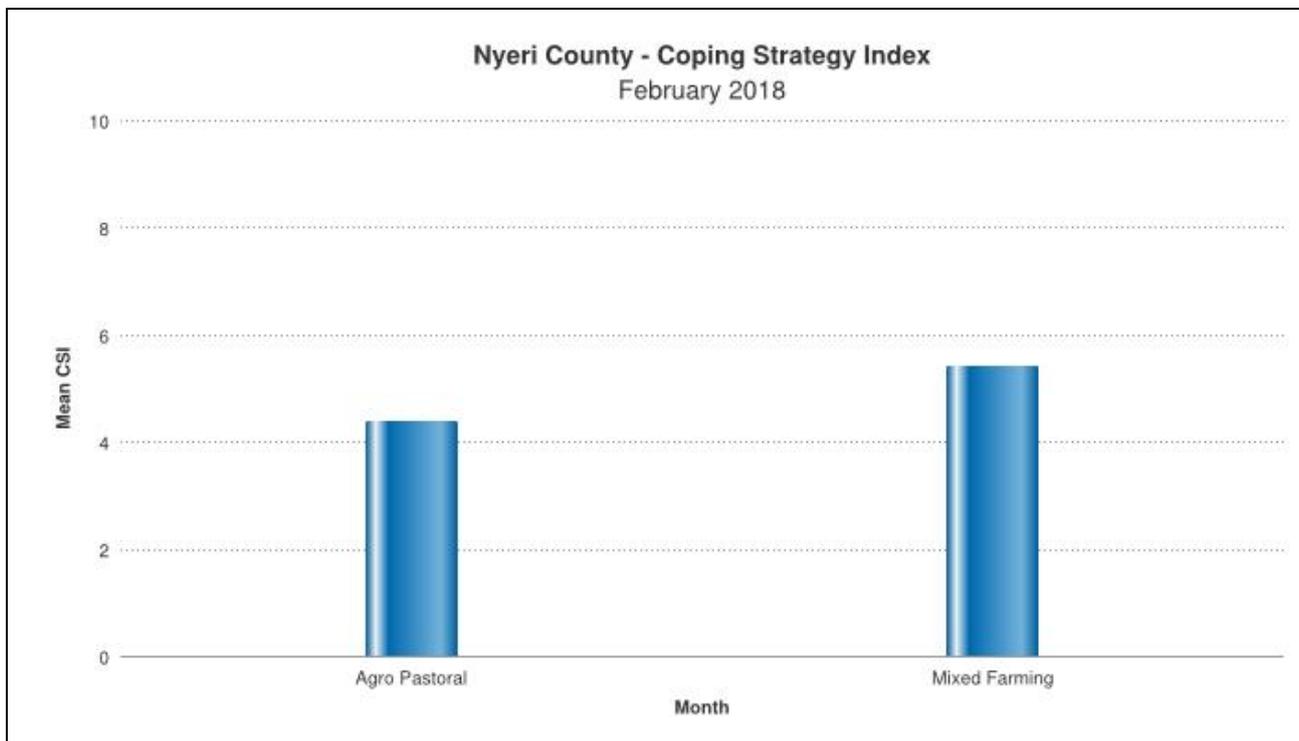
Figure 15: presentation of the region coping strategies

6.0   CURRENT INTERVENTION MEASURES (ACTION)

6.1   NON-FOOD INTERVENTIONS - NOTE THE FOLLOWING
☐ No non-food interventions were currently ongoing.

6.2   FOOD AID - NOTE THE FOLLOWING
☐ No food interventions were currently ongoing.

7. EMERGING ISSUES

7.2   Migration
☐ There was unusual migration of livestock into the county from the neighbouring counties in search of pasture and water. At least 1000 flock of sheep and 500 herds of cattle are already in the county.

7.3   FOOD SECURITY PROGNOSIS
☐ The food security situation for Kieni is currently classified at stressed phase. The situation will still remain stressed until the realisation of the March-April-May (MAM) rains that are projected by mid March.

8. RECOMMENDATIONS

- Pasture establishment and conservation. (N.D.M.A and livestock department).
- Continued livestock diseases surveillance. (Livestock Department).
- Vaccination of CCCP/FMD/ and pulpy kidney.
- Support to livestock feeds.
- Advocating for peace forum Barazas. (N.D.M.A).
- Review of county drought contingency plans. (N.D.M.A).
- Rehabilitation of water harvesting (Water department).
- Relief feeds and subsidies for production inputs
- Livelihood diversification in small stocks.
- Support farmers with certified seeds and subsidized farming implement (Agriculture department)
- Conduct rapid assessment on livelihoods following in migration of livestock.(NDMA & County govt)

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.