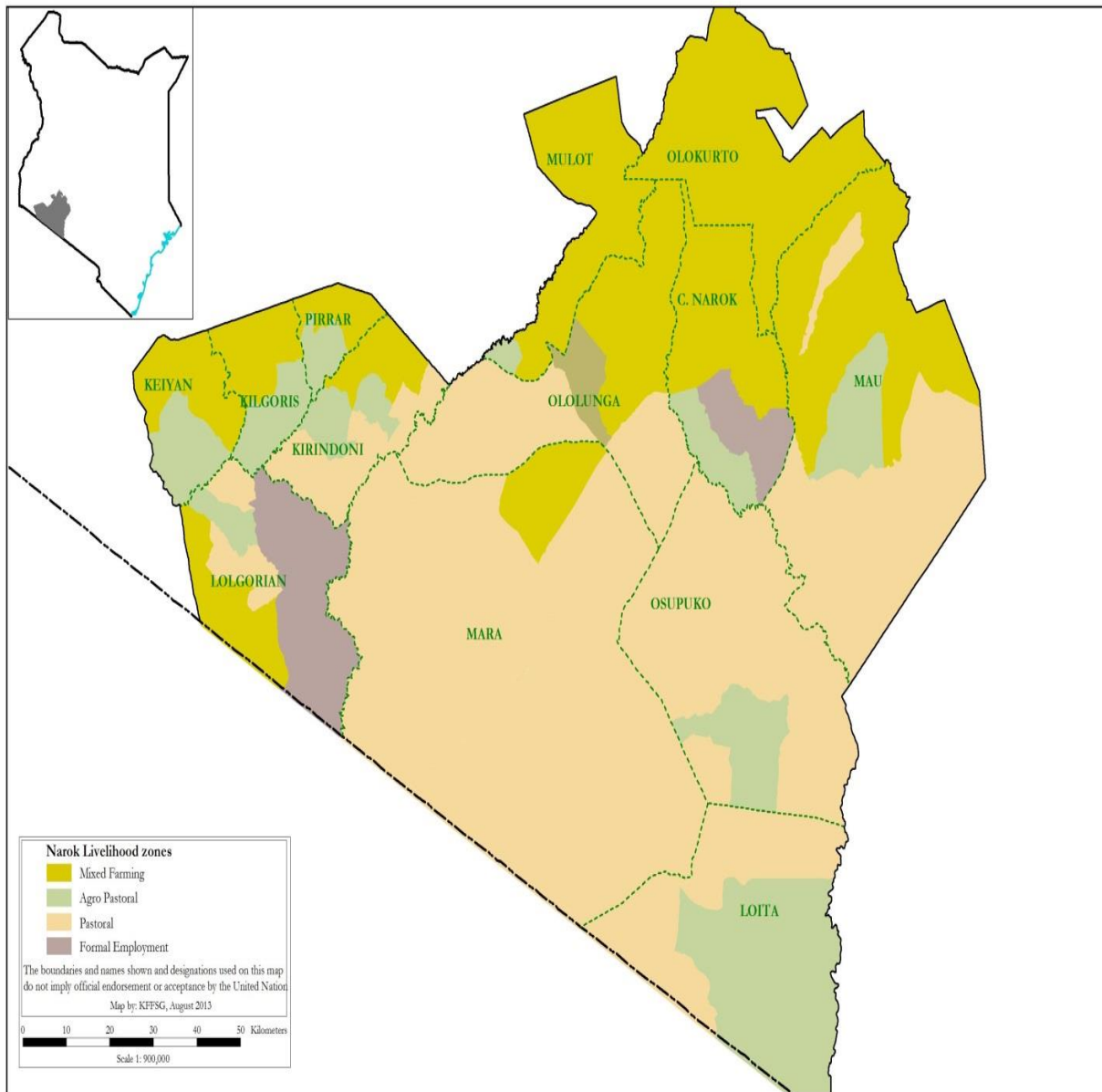


# NAROK COUNTY

## 2017 SHORT RAINS FOOD SECURITY ASSESSMENT REPORT



**A Joint Report of Kenya Food Security Steering Group<sup>1</sup> and Narok County Steering Group**

**February, 2018**

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**TABLE OF CONTENTS**

- 1.1 County Background ..... 3
- 1.2 Objectives and approach ..... 3
- 2.0 DRIVERS OF FOOD AND NUTRITION SECURITY IN THE COUNTY ..... 3
  - 2.1 Rainfall Performance ..... 3
  - 2.2 Current Shock and Hazards ..... 4
- 3.0 IMPACT OF IMPACTS OF DRIVERS ON FOOD AND NUTRITION SECURITY ..... 4
  - 3.1 Availability ..... 4
    - 3.1.1 Crop production ..... 4
    - 3.1.2 Cereal stock..... 5
    - 3.1.3 Livestock Production ..... 5
  - 3.2 Access ..... 7
    - 3.2.1 Markets Operations ..... 7
    - 3.2.2 Terms of trade ..... 8
    - 3.2.3 Income Sources ..... 8
    - 3.2.4 Water Access and Availability..... 9
    - 3.2.5 Food Consumption..... 10
    - 3.2.6 Coping Mechanisms..... 10
  - 3.3 Utilization..... 11
    - 3.3.1 Health and Nutrition ..... 11
    - 3.3.2 Hygiene and Sanitation ..... 12
  - 3.3 Education..... 13
- 4.0 FOOD SECURITY PROGNOSIS ..... 15
  - 4.1 Prognosis Assumptions ..... 15
  - 4.2 Food Security Outlook ..... 16
- 5.0 CONCLUSION AND RECOMMENDATIONS ..... 16
  - 5.1 Conclusion ..... 16
    - 5.1.1 Phase classification ..... 16
    - 5.1.2 Summary of the findings..... 16
    - 5.1.3 Sub-County Food Security Ranking ..... 17
  - 5.2 Ongoing Interventions..... 0
  - 5.3 Recommended Non Food Interventions..... 4

## **Executive Summary**

The Mixed farming livelihood zone of Narok County is classified in the Minimal Food Insecurity Phase (Phase 1) while the Pastoral and Agro-pastoral livelihood zones are classified in the Stressed Phase (Phase 2) of the Integrated Food Security Phase (IPC). The main hazard contributing to food insecurity in the County is poor temporal distribution and early cessation of short rains especially in December which led to wilting of maize crop. Fear of Maize Lethal Necrosis Disease (MLND) and the fall army worm infestation in the previous year's made more farmers to reduce areas planted under maize, hence reduced production. High cost of production due to expensive farm inputs and high food prices continue to limit household access to food. Human wildlife conflicts in Ewaso Ngiro have led to destruction of crops. About half of the population practice open defecation and could have led to increased cases of diarrhoea.

Stocks held by farmers are lower than normal though season's harvest is on-going following delayed onset of long rains. Pastoralists are relying on market purchases. The average County maize price in the month of January stood at Ksh. 53 per kilogram, which is about 15 percent above the long term average of Ksh. 46 per kilogram. A kilogram of maize was trading between Ksh. 33-40 per kilogram in the mixed farming and agro-pastoral livelihood zones and between Ksh. 40-48 per kilogram in the Pastoral zone. A medium-sized goat was selling between Ksh. 3,000-4000, which is comparable with the long term average of Ksh. 3,433.

Milk production reduced with both pastoral and agro-pastoral zones producing between half to two litres per day per household while farmers in mixed farming areas produced about three to eight litres per day. Milk consumption per household per day is about one to two litres in the mixed farming and agro-pastoral zones while in pastoral livelihood zones, households consumes about half a litre per day which is rarely available. The average milk price was Ksh. 50 per litre, compared to the long term average of 35 shillings. Livestock body condition for cattle in the Pastoral zone is fair. However, all other livestock species were in good body condition. Domestic water consumption has improved with households in the mixed farming and agro-pastoral zones consuming between 20-30 litres per person per day. Pastoralists are consuming between 15-20 litres per person per day. The average return trekking distances from grazing area to watering points have improved and livestock is watered daily. Currently there is no migration of livestock into or out of the County. However, outbreak of Blue Tongue and Foot and Mouth Disease (FMD) has been reported. Reported mortality rates are within the normal ranges.

A recently conducted SMART survey (January 2018) in Narok showed a GAM by WHZ as 6.8% (This is in alert phase-IPC 2) despite the NDMA reporting proportion of children (6-59 months) at risk of malnutrition in January 2018 to be stable at 8.3 percent, which is slightly below the LTA of 10 percent. The leading three common diseases among children under-five are upper respiratory tract infections (URTIs), malaria and diarrhoea whose cases have significantly increased in the last quarter compared to the same period of 2016.

A number of factors that need to be monitored include availability of maize which scarcity is likely to trigger high food prices and continuous livestock disease surveillance and treatment owing to the current outbreaks that have been reported. The long rains season is the most reliable in most parts of the County and it will influence the outcome of food security in the remaining part of the year. Conflicts that may arise out of common resource especially in Transmara East need to be monitored and managed immediately in case they arise.

## 1.0 INTRODUCTION

### 1.1 County Background

Narok County covers an approximate area of 17,933 square kilometres with a total population of 1,077,719 people (KNBS, Projected 2016). The county is divided into six sub-counties which include: Narok North, Narok South, Trans Mara West and Trans Mara East, Narok East and Narok West. There are four (figure1) livelihood zones in the county namely: Pastoral, agro pastoral, mixed farming, and tourism/trade/business.

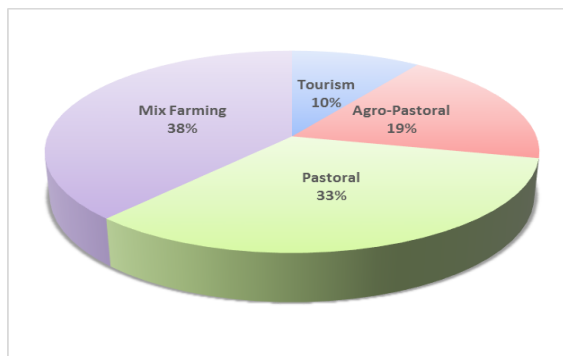


Figure 1: Population proportion by livelihood zone

### 1.2 Objectives and approach

The main objective of rapid Short Rains Food Security assessment was to develop an objective, evidence-based and transparent food security situation analysis following the short rains season of October to December (OND) 2017, taking into account the cumulative effect of previous seasons, and to provide immediate and medium term recommendations for possible response options based on the situation analysis. Primary data was collected during the field visits at the County where community and market interviews were conducted. Technical reports were also provided by the sectoral technical members at the County level. Secondary data collected from the early warning system was also relied upon to provide trends for the different food security indicators.

## 2.0 DRIVERS OF FOOD AND NUTRITION SECURITY IN THE COUNTY

### 2.1 Rainfall Performance

The onset of the Short rains season was timely with heavy downpour experienced in the second dekad and third dekad in the mixed farming zone and Agro-pastoral livelihood zones. Some areas in the Pastoral livelihood zones received few showers during the month of October. A total of 121.3mm between October and December, 2017 compared the long term average of 163mm. Further the County experienced off seasons rains amounting to 137mm in the month of January 2018 compared to the long term average of 77.2mm. Temporal distribution was poor. Three stations recorded a total of 32 rainy days during OND. However, the County experienced a dry spell during the month of December indicating an early cessation. Most of the Mixed farming and Agro-pastoral zones received 90-110 percent of normal rainfall while the Pastoral zones received between 75-90 percent of normal rains. Areas that received depressed rains in the Pastoral zone include Narosora, Naigara, Maji Moto, Ololunga, Mosiro, Mara, Lemek and Siana. The short rains ceased in the third dekad of November. Normally, rains end in the third dekad of December.

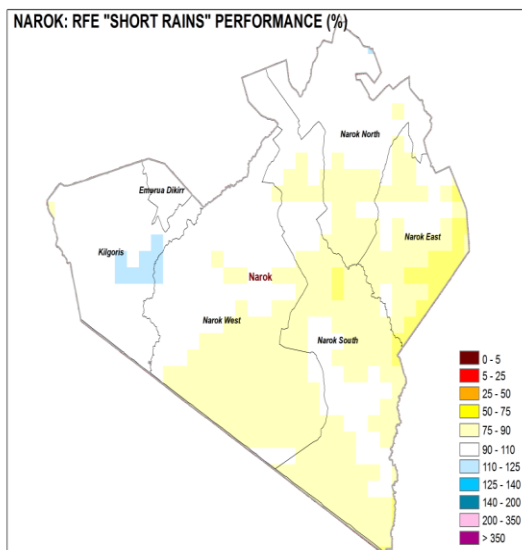


Figure 2: Rainfall performance

## 2.2 Current Shock and Hazards

The main hazards contributing to food insecurity in the county include poor temporal distribution of rain especially in December led to wilting of maize crop. Reduced acreage of maize was due to fear of MLND and the fall army worm infestation in the previous years though the magnitude has reduced. High cost of production due to expensive farm inputs, and high food prices continue to limit household access to food. Human wildlife conflicts especially in Ewaso Ngiro have led to destruction of crops.

## 3.0 IMPACT OF IMPACTS OF DRIVERS ON FOOD AND NUTRITION SECURITY

### 3.1 Availability

#### 3.1.1 Crop production

##### Rain fed crop production

Crop production is significant in the mixed farming and agro-pastoral areas. Maize and beans contribute 60 and 20 percent to food and 70 and five percent to income respectively in both mixed farming and agro-pastoral livelihood zones. Main crops grown under rain fed areas are maize, beans and Irish Potatoes.

**Table 1: Comparison of the current area planted and current production with LTA**

Crop	Area planted during Short rains season (Ha)	Long Term Average (5 year) area planted during the Short rains season (Ha)	2018 Short rains season production (90 kg bags) Projected/Actual	Long Term Average (5 year) production during the Short rains season (90 g bags)
Maize	36,200	39,500	834,600	1,018,800
Beans	1500	1900	15000	38000
Irish potatoes	6300	7020	58075	93088

The area under production was below the long term average for all crops by more than eight percent for maize, by 21 percent for beans and by 10 percent for potatoes. In addition to poorly distributed short rains, fear of MLND and the fall army worm infestation in the previous year's made more farmers to reduce areas planted under maize consequently reduced production. Beans and potatoes production declined due to poor temporal rainfall distribution.

##### Irrigated crop production

The main crops produced through irrigation are maize, beans, tomatoes and kales as shown in the table 2.

**Table 2: Comparison of the current area planted and current production with LTA**

Crop	Area planted during the 2017 Short rains season (ha)	Long Term Average (3 years) area planted during Short rains season (ha)	2017 Short rains season production (90 kg bags/MT) Projected/actual	Long Term Average (3 years) production during 2017 Short rains season (90 kg bags/MT)
1.Maize	140	280	3700 bags	7400 bags
2.beans	60	50	600 bags	408 bags
3.Tomatoes	200	165	640 tons	570 tons
4. Kales	15	30	80tons	195 tons
Total	415	525		

There was an increase of 21 percent of the area put under Tomatoes. Tomato farming has increased supplying both local markets and markets in other counties. The yield per hectare has improved compared with the long term average due to the decline in the attack from Tuta absoluta. There is a growing trend by farmers in Mosiro irrigation scheme to increase the area under tomato. Specifically, in Mosiro irrigation scheme for example, this trend is attributable to a shift from rain fed to irrigated farming, especially venturing into Tomato and French beans production. There was less maize under irrigation unlike the same period last year. Farmers are venturing more into horticultural crop production owing to the increased demand for horticultural produce from the irrigation schemes. Threats to irrigated farming include wildlife and livestock grazing on farms, high cost of production, MNLD, Fall Army worms and inadequate farm machinery.

### 3.1.2 Cereal stock

**Table 3: Grain stocks held in the County**

Commodity	Farmers	Traders	Millers	Food Aid	TOTAL
Maize	88,260	133,540	19,360	70,850	<b>312,030</b>
Sorghum	17,004	17,669	2	0	<b>34,675</b>
Millet	14,104	8,255	1	0	<b>22,360</b>

Stocks held by farmers are lower than normal due to declining production. It should be noted that only one crop is planted in a year during the Long Rains, which delayed thereby delaying season's harvest. Coupled with this, rains received were erratic pushing the yields further below the expectations for the season. Traders and millers' stocks are dynamic since they keep buying and selling. Some of the stocks held by traders were imported from other counties.

Households in the mixed farming and agro-pastoral livelihood zones tend to hold more stocks per household in a normal year as compared to those found in pastoral zones that depend on weekly recharge of stocks held during market days. Maize is also fast getting dissipated into the green maize market as the market rapidly expands, hence reducing dry maize harvests. The stocks currently held will last for less than 3 months.

### 3.1.3 Livestock Production

The major livestock species reared in the county are cattle, goats, and sheep. Livestock contributes to 85 percent of household income in the pastoral livelihood, while in the agro-pastoral and mixed farming they contribute 66 and 40 percent of household income respectively. Pasture and browse condition are fair in all the three livelihood zones and the availability of pasture is expected to last for one and a half months.

**Table 4: Pasture Condition**

Livelihood Zone	Pasture Situation	Situation	Projection (Months)	Projection If Normal(Months)
Pastoral	fair	normal	1.5	1.5
Agro pastoral	fair	normal	1.5	1.5
Mixed farming	fair	normal	2	2-3

### Water for Livestock

The main water sources for domestic and livestock use are permanent rivers, streams, water pans, dams and boreholes. Water is available and in good quality for the mixed farming and agro pastoral livelihood

zones as a result of off-season rains in January 2018. However, there was a decline of water availability in the pastoral livelihood zone due to poor recharge of water pans and rapid evaporation. Average return trekking distance was two to five kilometers, which was below normal across the livelihood zone except in Pastoral zones of Narok East where it was between five to 15 kilometers. The watering intervals are once per day for all livelihoods due to the availability of water.

**Table 5: Trekking distance between grazing areas and water source**

Livelihood Zone	Current Return Trekking Distances (Km)	Normal Trekking Distances (Km)
Pastoral	3-6	4-8
Agro pastoral	2-5	3-6
Mixed farming	1-3	2-4

Availability of water is projected to last for two months for the mixed farming and agro pastoral livelihoods and one month for the pastoral livelihoods. Normally, water sources for livestock would last between two to three months.

**Table 6: Expected duration current water sources are expected to last**

Livelihood Zone	Period (Months) Available Water Expected To Last	Period (Months) Of Water Lasting When Normal
Pastoral	1	2
Agro-pastoral	1	3
Mixed farming	2	3

### Livestock body condition and birth rates

Livestock body condition for cattle, sheep and goats are fairly good in all the livelihood zones, this situation is expected to persist for two months. The birth rates of all livestock species across all the livelihoods are normal in all the livelihood zones.

**Table 7: Body condition of Livestock**

Livelihood Zone	Status Of Body Condition (Good, Fair, Poor, Emaciated)			Comment (N)=Normal/ (X)=Not Normal			Projected Trend (+Ve/-Ve/Stable)			Birth rates (N)=Normal/ (X)=Not Normal		
	Cattle	Sheep	Goat	Cattle	Sheep	Goat	Cattle	Sheep	Goat	Cattle	Sheep	Goat
Pastoral	fair	good	good	N	N	N	+VE	+VE	+VE	N	N	N
Agro pastoral	good	good	good	N	N	N	+VE	+VE	+VE	N	N	N
Mixed farming	good	good	good	N	N	N	+VE	+VE	+VE	N	N	N

General average livestock units held per household for all livelihood zones and across all social classes are lower than the normal average numbers. High cost of living has made households to sell livestock units to support other non-food expenses. Furthermore, livestock prices have depreciated so one has to sell more animals to meet their financial needs. Increased sale of livestock has developed over time with poor performance of Short rains worsening the situation. Table 8 compares the current Tropical Livestock Units with the Long term average.

**Table 8: Tropical Livestock Units (TLUs)**

Livelihood Zone	Current average TLUs per household		Normal TLUs per household	
	Poor Income	Medium Income	Poor Income	Medium Income
Pastoral	5	18	7	21
Agro pastoral	3	18	7	21
Mixed farming	1	5	5	7

**Household milk availability and consumption****Milk production**

In pastoral livelihood zones milk production is about half to two litres per day per household, in agro pastoral livelihood zones, milk production is about one to three litres per day per household and about a three to eight litres per day in the mixed farming livelihood zones. All these are below normal despite availability of pasture and water due to declining TLUs.

**Table 9: Milk Production**

Livelihood Zone	Current Milk Availability (Litres/Day/Household)	Normal Milk Availability (Litres/Day/Household)
Pastoral	0.5 -2	2-3
Agro pastoral	1-3	2-4
Mixed farming	3-8	6-8

**Milk consumption and prices**

Milk consumption per household per day is about one to two litres in the mixed farming and agro pastoral zones while in pastoral livelihood zones, households consume 0.5 litres per day. Consumption per day is affected in the pastoral livelihood zones due to normal localized migrations. The average milk prices were 50 shillings per litre, this is 42 percent higher than the long term average of 35 shillings.

**Livestock migration**

There was no major livestock migration except normal localized livestock movements in the pastoral and agro pastoral livelihood zones to areas where there was more pasture. The local migrations were normal in pattern and routes.

**Livestock Diseases and Mortalities**

The main livestock diseases reported were, blue tongue, Foot and Mouth Disease (FMD), Lumpy Skin Disease (LSD), Sheep and Goat Pox and Contagious Caprine Pleuro-Pneumonia (CCPP), Rabies, Enterotoxaemia, Helminthiasis and Trypanosomiasis. Rare cases of anthrax were also reported. The reported mortality rates for the season are within the normal ranges.

**3.2 Access****3.2.1 Markets Operations**

The major livestock and food stuff markets in the county include Suswa, Ntulele Ewaso Ngiro, Tipis, Olulunga, Narroosura, Mulot, Aitong, Olmelili, Dikir, Kilgoris and Ogwedi. All the main markets are functioning normally and no markets disruptions reported. Market supply of food items maize, beans,



potatoes, tomatoes and vegetables were mainly from local produce. However pastoral livelihood zones depend on external supplies for food commodities all year round.

### Maize price

The average maize price in the month of January was Ksh. 53 per Kg which is about 15 percent above the long term average of Ksh 46 per. Maize prices were highest in the pastoral livelihood zone trading between Ksh. 40-48 per Kg. kilogram. The maize is supply is within the county. Imports of maize from Tanzania have been reported in Naroswa market. Supply of maize is expected reduce thereby bringing prices up.

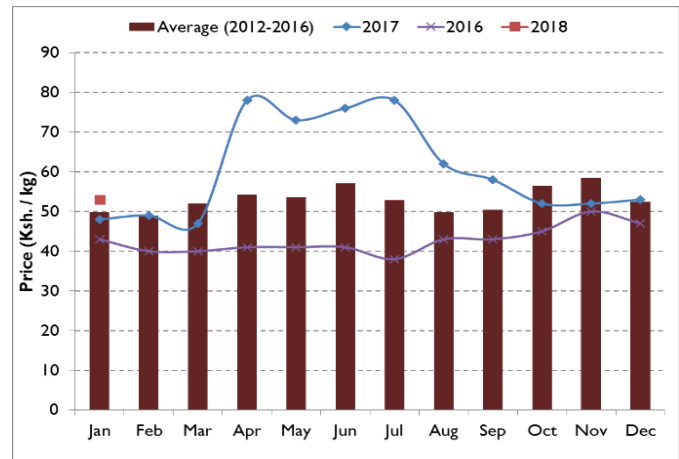


Figure 3: Maize prices trend

### Goat price

The average County farm gate price for a medium-sized goat is Ksh. 3,400. The current price is comparable with the long term average of 3,433 in the month of January (figure 4). Goats were trading at ksh 4,000 the mixed farming zone and ksh 3,000 in the Pastoral and Agro-pastoral zones. Livestock demand has been reported to very low during community interviews.

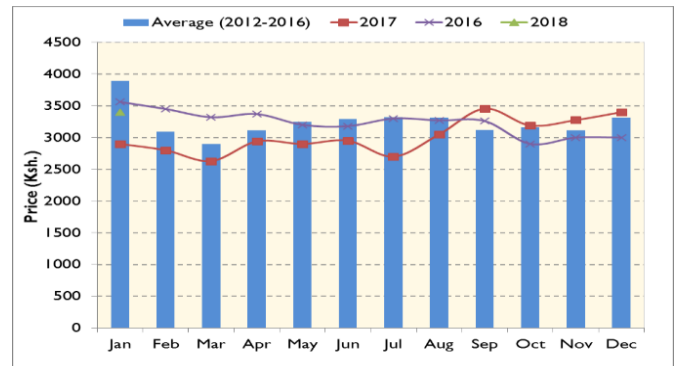


Figure 4: Goat prices trend

### 3.2.2 Terms of trade

The terms of trade are unfavorable to livestock keepers. Households are able to purchase 64 kilograms of maize with the sale of one medium-sized goat. Normally, households would access about 78 kilograms of maize with the sale of a goat (figure 5). Pastoral, agro-pastoral and Mixed farming zones are able to access 56, 66 and 74 kilograms of maize with sale of a goat respectively. Terms of Trade are expected to deteriorate as maize prices increase with goats fetching normal prices.

### 3.2.3 Income Sources

The current main source of income in the pastoral zone is sale of livestock while in the mixed farming and agro-pastoral zones is sale of livestock and farm produce. Sale of Horticulture produce is the main source of income to small scale farmers engaged in irrigation schemes along the riverine. The income sources are normal at this time of the year although more farmers are engaging in irrigated farming, which give higher returns.

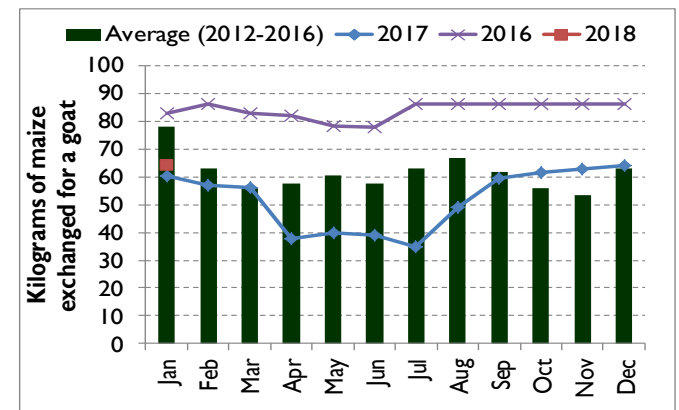


Figure 5: Terms of Trade

### 3.2.4 Water Access and Availability

#### Major water sources

The main sources for domestic water in the County are water pans, earth dams, boreholes, rivers and springs. Piped water is the main source in urban areas. Pans are currently holding between 40-60 percent while dams are holding about 60 percent of their capacity mainly due to siltation. Open sources such as pans are expected to last for four months in many areas which is normal. All water sources in the mixed farming zone are operational while two boreholes and eight water pans are not operational in the agro pastoral zones.

#### Distance to water sources

Average return distance to water sources in the mixed farming zone range between one to two kilometres while in the agro-pastoral zone, return distance average is three to five kilometres. Return distances in the Pastoral zone range between three to ten kilometres. Return distances to water sources are normal.

#### Waiting time at the source

Findings community interviews indicated that most households are able to fetch water within 20 minutes. However, Transmara East and a few areas in in Narok West and South had very high waiting time ranging between one to two hours compared to the normal 40 minutes. Most water sources are shared by both household s and livestock except for boreholes.

#### Cost of Water

Average cost of a 20 litre jerrican range from two to five shillings mainly at a water kiosk, which is normal. Water vendors in the mixed farming zones sell between Ksh. Three to six per 20 litres jerrican. However, cases of water vendors have diminished in the rural areas due to water availability. Households who rely on pans, dams, springs and rivers do not pay for water.

#### Water Consumption

The average water consumption was normal across all livelihood zones and is expected to remain stable until onset of long rains.

**Table 10: Access to Domestic Water**

Ward / livelihood zone	Return Distance to Water for Domestic Use (Km)		Cost of Water at Source (Ksh. Per 20litres)		Waiting Time at Water Source (Minutes)		Average Water Consumption (Litres/person/day)	
	Normal	Current	Normal	Current	Normal	Current	Normal	Current
Nkareta ward/ Agro-pastoral	3-10	3	3	3	40	40	20	20
Olokurto/ Agro pastoral	3.5-10	3-5	3	3	25	25	30	30
Olpusimoru ward/ Mixed farming	2.5	2	3	3	15	15	40	40
Melili ward	2-3	2-3	3	3	10	10	40	40
Mosiro ward/Pastoral	3-15	3	3	3	40	40	20	20

Ildamat ward/Angro pastoral	3.5-10	3-5	3	3	25	25	30	30
Keekonyokie ward/mixed farming	2.5	2	3	3	15	15	40	40
Narosura Ward (Narok South Pastoral Lz)	5 – 10	5	5	5	120	130	15	15
Ololunga Ward (Narok South) Agro-pastoral	4 - 5	4	5	5	60	60	20	20
Mulot Ward (Narok West) Mixed farming	0.5 – 4	4	5	5	30	30	20	20
Ilkerin ward/mixed farming	3	2.5	3	5	40	40	30	30
Kapsasian ward/mixed farming	3.5	3	3	6	50	60	30	30
Mogondo ward/mixed farming	2.5	2	3	5	40	40	40	40
Ololmasani ward/mixed farming	2	2	3	5	50	40	40	40

### 3.2.5 Food Consumption

About 68 percent of households have acceptable food consumption score (FCS) while 31 percent falls at borderline. Acceptable score implies that households were consuming at least a staple and vegetables on a daily basis complemented by a frequent consumption of pulses and oil. Food consumption score varied across the livelihood zones as shown in Figure 6.

### 3.2.6 Coping Mechanisms

The coping strategy index for the county in January 2018 remained stable with the Pastoral, Agro-pastoral and Mixed farming recording 3.4, 2.9 and 3.6 percent respectively. The index implies that about 3.3percent of the population is engaging in consumption-related coping strategies. Increased cases of charcoal burning and casual labour as a means of getting income to purchase food ware observed in Emurua Dikirr and Narok East Sub Counties. The coping strategies are normal at this time of the year.

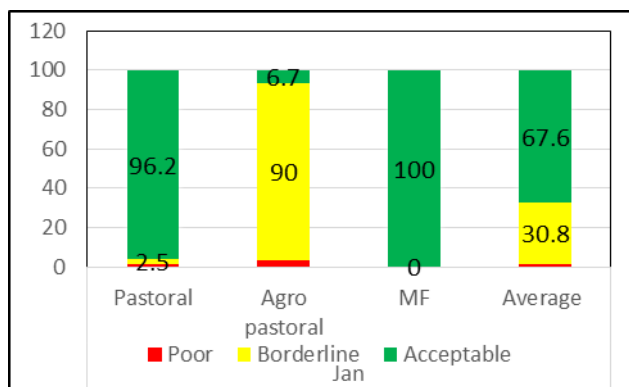


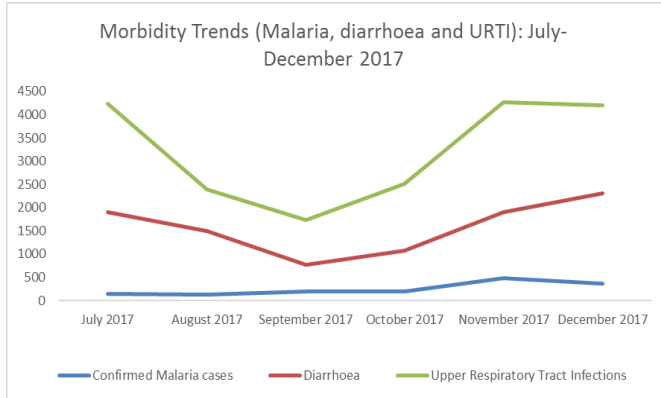
Figure 6: Food consumption score

### 3.3 Utilization

#### 3.3.1 Health and Nutrition

##### Morbidity and Mortality Patterns

The three most common diseases among under-fives and the general population were upper respiratory tract infections (URTIs), malaria and diarrhea. As reflected in figure 3, there was a slight increase in trends in malaria cases during the analysis period due to increased breeding areas for mosquito during the rainy season. The situation is expected to improve from February to April as bushes and stagnant water pods dry up. There was an increase in diarrhea cases during the same period and the situation is expected to deteriorate further due to poor sanitation practices such as open defecation and poor hand washing. Trends in URTI increased and the situation is expected to deteriorate further during the dry season. Morbidity is a major contributing



**Figure 7: Morbidity Trends-Narok County (2017)**

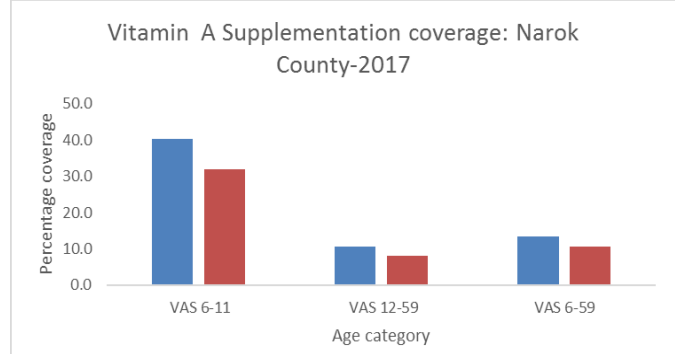
from February to April due to increased dust during the dry season. Morbidity is a major contributing factor to acute malnutrition and hence focus should be given to treatment, as well as prevention of further infections.

##### Immunization and Vitamin A supplementation

About 46 percent of children under one year were fully immunized (FIC) between July and December 2017 compared to 28 percent (13,252 children) in a similar period of 2016 (DHIS). Similarly, a total of 5,276 children (26 percent) less than one year of age and 16,460 children (10 percent) children 1-5 years of age received Vitamin A between July and December 2017 (Figure 8). This was a slight increase compared to a similar period of 2016 where 22 percent (10,445 children) and (10765 children) for the same age groups were covered respectively. The SMART survey results for January 2018 indicated that vitamin A coverage for children aged 6-11 months of age was 63.6 percent and for 12-59 months twice supplementation at 49.2 percent. Overall, the immunization and Vitamin A coverage is well below the national target of 80%.

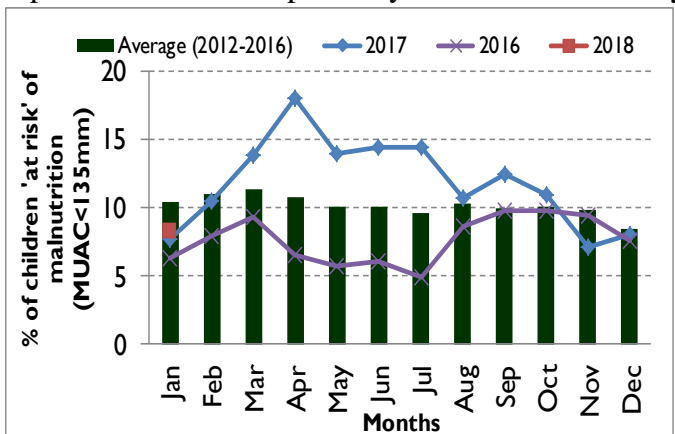
##### Nutrition Status and Dietary Diversity

The recently concluded SMART survey (January 2018) in the Narok showed a GAM by WHZ of 6.8% (This is in alert nutrition situation). On the other hand the proportion of children (6-59 months) at risk of malnutrition in January 2018



**Figure 8: Vitamin A supplementation coverage- Narok county 2017**

indicated that vitamin A coverage for children aged 6-11 months of age was 63.6 percent and for 12-59 months twice supplementation at 49.2 percent. Overall, the immunization and Vitamin A coverage is well below the national target of 80%.



**Figure 9: MUAC trends in Narok County**

remained stable at 8.3 percent, slightly below the LTA of 10 percent (Figure 9). The mid upper arm circumference is expected to remain at the emergency threshold of 15 percent. Meal frequency was reported to be two meals in pastoral livelihood to three meals in mixed farming. Meal composition for the under-fives and the general population comprised of cereals, pulses and milk across all livelihood zones which is normal.

Exclusive breastfeeding is rarely practiced in the county. Most mothers in the pastoral livelihood zone introduce their babies either porridge or milk mixed with herbs. 35-40 percent of the mothers in mixed farming livelihood zones practice exclusive breast feeding.

**Table 11: Nutrition status from SMART Survey, January 2018**

SMART survey January 2018	%
GAM: Weight for Height (WHZ) <-2 Z score or oedema	6.8 % (4.8 - 9.5 95% C.I.) Alert
SAM: Weight for Height (WHZ) <-2 Z score or oedema	1.1 % (0.4 - 3.2 95% C.I.) Alert
Stunting: Height for Age (HAZ) <-2 Z Score	27.2 % (23.1 - 31.8 95% C.I.) medium
Underweight: Weight for Age (WAZ) <-2 Z Score	18.9 % (15.5 - 22.7 95% C.I.) medium

### Performance of Selective feeding Programmes (OTP/SFP)

Both SFP and OTP admissions have significantly reduced between July and December 2017 this was attributed to the nurse's strike which affected the reports being submitted from the health facility and the number of children treated in that period.

**Table 12: Selective Feeding Admission Trends (SFP)**

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	142	128	165	243	189	231	147	69	36	60	115	75
2016	330	270	287	130	116	140	184	128	218	312	179	84
2015	264	257	214	218	90	130	112	117	109	102	113	124
2014	113	211	251	206	187	134	122	114	117	114	117	120

**Table 13: Selective Feeding Data Admission Trends (OTP)**

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	123	60	89	138	230	61	72	39	23	38	48	69
2016	162	198	152	130	117	60	124	111	96	125	84	70
2015	138	158	102	111	117	123	125	106	108	112	98	112
2014	198	138	145	152	117	158	130	128	145	113	164	193

### 3.3.2 Hygiene and Sanitation

While nearly all households (99.8%) are aware of hand washing and 79 percent wash hands with soap, only 1.7% of the households practices hand washing at 4 critical times (SMART 2018). The survey showed that majority of residents (68.2%) were predominantly using surface water sources which are unsafe for human consumption yet only 28% of households reported to be using treating water before drinking. Water treatment methods used include pot filters, chemicals and boiling at (4.2 percent) is at (38.3 percent) and (71,3 percent) respectively. Further the survey showed that latrine coverage stood at 49 percent while open defecation was at 48 percent. Poor sanitation practices increased cases of diarrhea during the analysis period which is a major contributing factor to acute malnutrition

### 3.3 Education

#### Access

There were more boys than girls in early childhood development, primary and secondary school levels both in 2017 third term and 2018 first term. Taking care of livestock is one of the Factors hindering enrollment of boy in school while early pregnancies and early marriages hindered enrolment of girls. Enrolment for year 2018 term one was higher than that of year 2017 third term. This was attributed to more community awareness on importance of education which resulted in positive attitude change towards education and abandonment of negative cultural practices in some cases. Transfers mainly within the county were in response to good class eight and form four results making many learners to move to the best performing schools.

**Table 13: Enrollment**

Enrolment	Term 3 2017			Term 1 2018			Comments Reasons for Decrease or Increase
	Boys	Girls	Total	Boys	Girls	Totals	
<b>ECD</b>	25,661	23,230	48,891	28,842	27,227	56,069	More awareness on importance of Education
<b>Primary</b>	85,021	79,785	164,806	92,316	82,415	174,731	More awareness on importance of Education
<b>Secondary</b>	10,214	11,893	22,107	16,580	13002	29,582	More awareness on importance of Education

#### Participation

Participation for boys was higher at early childhood and primary level but lower for girls in 2017 third term and 2018 first term. The lower participation by boys at secondary level is attributed to child labour activities especially looking after cattle once they mature. The participation for both gender increased from 2017 to 2018 attributed to more awareness of the importance of education and start of new schools particularly secondary schools. Girl child rescue activities also helped to increase participation for girls. Free primary education, free secondary education and teacher employment by county government at early child childhood development level equally contributed to better access and participation in education.

The dropout of 130 students in Transmara West was the highest, followed by Narok North at 98 students and the last one was Transmara East at only 34 students. Drought and some families who moved with their children to take care of the livestock could have attributed to high dropout. Few day secondary schools available also make it hard for students to transition from primary to secondary.

**Table 14: Average monthly school attendance; participation**

Indicators	Term 3 2017						Term 1 2018				Comments
	Sept 2017		Oct 2017		Nov 2017		Jan 2018		Feb 2018		
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	
<b>School Attendance</b>											
<b>ECD</b>	1818	1760	1827	1767	2941	2837	2964	2861			
<b>Primary</b>	7987	7750	7753	8018	14651	14230	13571	10641			
<b>Secondary</b>	1128	987	1132	1134	2309	2281	2542	2528			

## Retention

Drop out is defined as failure to complete the term. 56 girls dropped out in Narok south compared to 42 boys. More drop out was seen first term 2018. 85 boys dropped out of school in Transmara West compared to girls at 45. Drop outs were more in first term 2018. In Transmara East, dropout rate between boys and girls was equal with more drop out being realized in first term 2018.

**Table 15: Retention**

Sub-County		Term 3 2017		Term 1 2018	
		Boys	Girls	Boys	Girls
Transmara East	Students who dropped out of school				
	ECD	3	3	5	5
	Primary	2	2	4	4
	Secondary (Rate)	1.5	1.5	1.5	1.5
Transmara West	ECD	14	5	26	3
	Primary	10	3	26	26
	Secondary	5	6	4	2
Narok South	ECD	5	10	20	10
	Primary	5	6	6	20
	Secondary	6	5	5	5
Narok North	ECD	-	-	-	
	Primary	-	-	-	76
	Secondary	-	-	-	54
Total	ECD	22	18	51	18
	Primary	17	11	36	126

## School Meals Programme

The school feeding data indicate most learners were out of the program. Only a few were under the home grown school meals. Low participation in school and higher drop out in some cases has also been associated with lack of school meals.

**Table 16: School meals**

Name of the sub county	No. of schools with SFP	HGSM		RSMP		ESMP		CSMP		Not feeding		Total Number of beneficiary	
		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Trans mara West	81			1,548	1,428			11,952	9,772	21,067	20,169	135,000	112,000
Narok South	20	5,000	3,000										
Narok north	51	11,400	10,180										
Transmara east	12									5,656	6,589		
<b>Grand total</b>	<b>164</b>	<b>16,400</b>	<b>13,180</b>	<b>1,548</b>	<b>1,428</b>			<b>11,952</b>	<b>9,772</b>	<b>26,723</b>	<b>26,758</b>	<b>135,000</b>	<b>112,000</b>

## Trends of key food security indicators

**Table 17: Comparison of the Current food security indicators with LRA 2017**

INDICATOR	LRA 2017	SRA 2018
Distance from source(km)	MF: 1-5Km, Agro-p: 7-10Km Pastoral: 10-15Km	1-2Km while in the Agro-pastoral zone, return distance average 3-5Km. Return distances in the Pastoral zone range from 3-10Km.
Waiting time(min)	MF: 20 Mins, Agro-p & Pastoral: 60 mins	20 minutes
Cost of water at source	Ksh 5 and Ksh15 in mixed farming livelihood zone and Ksh 30-50 per 20 liters in pastoral	2-5 shillings
Consumption (Litres/person/day)	MF: 30-40Lppd, Agro-p: 20-30Lppd, Pastoral: 15020Lppd	MF: 30-40Lppd, Agro-pastoral: 20-30LPPD, Pastoralists: 15-20
Goat Prices	Ksh. 2700	Ksh. 3400
Maize prices/Kilogram	78/Kg	53/Kg
Terms of Trade	35Kgs	64Kgs
% of maize stocks held by households	maize stocks held by farmers and traders were 63 and 40 percent of the LTA	No stocks for pastoralists, relying on market purchases
Livestock Body condition	Cattle: Fair to poor in Pastoral & Agro-p, sheep is fair in Pastoral, all others areas, all species are in good body condition	MF & Agro-p: All species in good body condition, Cattle in Pastoral zone is fair
Coping strategy Index	Mean CSI: 17%	Pastoral, Agro-pastoral and Mixed farming recording 3.4, 2.9 and 3.6 percent respectively
Food Consumption Score	Acceptable: 68 percent, 3% in Agro-p, Borderline:27%	68 percent of households have acceptable food consumption score (FCS) while 31 percent falls at borderline
Food security phase	Stressed	Stressed
MUAC<135mm	14.5	8.3percent

## 4.0 FOOD SECURITY PROGNOSIS

### 4.1 Prognosis Assumptions

Narok County food security prognosis for the next six months is based on the following assumptions:

- The onset of the Long rains will be timely and performance will be good both spatially and temporal distribution.
- The fall army worm will be managed in good time to save crops
- The County is not likely to experience influx of livestock from neighboring counties



- Maize deficit in the county is likely to be met by imports by traders, and this is likely to stabilize prices of maize
- Farm inputs including certified seed stock, fertilizers and tractor services are likely to be availed in good time and subsidized by both County and National Government

#### **4.2 Food Security Outlook**

**February to April:** Food security situation is expected to improve as some areas in the mixed farming zone such as Mau continue to harvest until end of March. Food security in the Pastoral zones may also stabilize until April as the off season rains experienced in January led to regeneration of pasture and recharge of water sources. Livestock will continue to fetch good market prices due to availability of forage. Water consumption is likely to increase from April when the Long Rains are expected.

**May to July:** Should the long rains perform well, which is the main season for the County, food security will improve with most households consuming two to three meals in day with more food varieties. Livestock body condition will improve due to availability of pasture and browse therefore fetch better prices. The number of children at risk of malnutrition is likely to reduce as households will be able to have more dietary diversity.

### **5.0 CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Conclusion**

##### **5.1.1 Phase classification**

The mixed farming livelihood zone of Narok County is classified in the Minimal Food Insecurity Phase (Phase 1) while the pastoral and agro-pastoral livelihood zones are classified in the Stressed Phase (Phase 2) of the Integrated Food Security Phase (IPC). The mixed farming zone has shown some improvement from the previous assessment when it was previously classified under stressed phase. Though there are few pockets experiencing food insecurity, the County is expected to remain stable. A number of factors that need to be monitored include maize availability which is likely to trigger high food prices if scarce, continuous livestock disease surveillance and treatment owing to the current outbreaks that have been reported. The long rains are the most reliable season in most parts of the County and it will influence the outcome of food security in the remaining part of the year. Conflicts that may arise out of common resource especially in Transmara East need to be monitored and managed immediately in case they arise.

##### **5.1.2 Summary of the findings**

The main drivers to food insecurity in Narok County include human wildlife conflicts in Ewaso Ngiro have led to destruction of crops. Farm inputs remain high with small scale farmers straining to acquire them. Cases of diarrhoea among the under-fives have also increased. About half of the population that use open defecation could have led to increased cases of diarrhoea. Nutrition status of children under five years is likely to stabilize below emergency threshold. Households are expected to consume the minimum recommended amount of 15 litres per person per across the County. The current good body condition of shoats is likely to be sustained until the next rainy season. Cattle body condition may continue deteriorate especially in the Pastoral areas. There is urgent need to increase the number of

secondary day schools to provide access to children who cannot afford the high school levies. Serious uptake of recommended Non-food interventions needs to give priority.

### 5.1.3 Sub-County Food Security Ranking

**Table 18: Sub-County Food Security Ranking (Worst to best)**

Sub County	Food security rank (1-10)		Main food security threat (if any)		
	Very Good (9-10)	Good (7-8)	Fair (5-6)	Poor (3-4)	Very Poor (<2)
Narok East		4			
Transmara East		4			
Narok South		5			
Narok West		5			
Narok North		7			
Transmara West		7			

## 5.2 Ongoing Interventions

### 5.2.1 On-going Food Interventions

There are no on-going food interventions in the County.

### 5.2.2 On-going Non Food Interventions

**Table 19: On-going Non Food Interventions by Sector**

Sub County	Ward	Intervention	No. of beneficiaries	Implementers	Impacts in terms of food security	Cost (Kshs)	Time Frame
<b>Agriculture sector</b>							
Narok County	Capacity building	countywide	1000 HH	ASDSP/DOALF	-Higher productivity -lower post- harvest losses		2013-2018
Countywide	Provision of GoK subsidized fertilizer	Countywide	15,000	MoA	Improving crop production at affordable farm inputs prices		Continuous
Countywide	Provision of relief seed	Countywide		MoA	Improving crop production		On going
Countywide	Input subsidy	Countywide	Over 5000hh	MOA and Stakeholders	INPUTS and program logistics	Vehicles and personnel	seasonal
Countywide	Drought tolerant crops	Countywide	Over 5000 hh	MOA and Stakeholders	Inputs seeds – logistics such as fuel	Vehicles and personnel	seasonal
Countywide	Water harvesting for crop production	Countywide	Over 5000 hh	MOA and Stakeholders	-Earthmovers, fuel, manpower	Trained manpower	By 2022

Livestock sector							
All sub-counties	Extension Messages	Countywide	40% of population	MOALF	+VE		Continuous
All sub-counties	Livestock diseases prevention and control	County wide	All affected households	Vet. staff	+VE		continuous
	Vector control	County wide	All affected households	Vet. staff	+VE		continuous
Countywide	Pasture establishment and conservation	All county especially pastoral and agro-pastoral livelihood zone	30% of the population	MOALF and SNV Netherlands Development Organizations	+ve improved livestock production		Continuous
Narok South	Growing livestock feeds reserve, Capacity building and provision of breeding stock (Sahiwal and Galla goats)	All county especially pastoral and agro-pastoral livelihood zone	+ve improved livestock production	ENSDA- Ewaso-Nyiro South Development Authority	improved livestock production		Continuous
Trans Mara	Supply of breeding stock – Sahiwals and Red maasai	All county especially pastoral and agro-pastoral	+ve improved livestock production	KALRO (Kenya Agricultural and Livestock Research Organisation (Lolgorian)	+ve improved livestock production		Continuous
County	Beef and Dairy husbandry, value addition and marketing	County wide	+ve improved livestock production & marketin	ASDSP	+VE		Continuous

Water sector							
Narok East/Mosiro ward	Rehabilitation of Mosiro community bore hole	Mosiro centre	3000	Safaricom through Action Aid	70M	6 months	90%
Narok East/Suswa ward	Rehabilitation of Suswa pipeline	Suswa	5000	World bank through RWSB		1year	50% Narok
Narok East /Keekonyokie ward	Rehabilitation of Nairegie Enkare (Lelongo) Dam	Nairegie Enkare	15000	Equalization fund through RWSB		1 year	50%
Narok East Keekonyikie ward	Rehabilitation/ Extension of Olpunyua water project	Ntulele	5000	Equalization fund through RWSB	20M	1year	20%
Narok East/Mosiro ward	Rehabilitation of Mosiro community bore hole	Mosiro centre	3000	Safaricom through Action Aid	70M	6 months	90%
Health and Nutrition Sector							
Sub county	Ward	Intervention	Location	No. of beneficiaries	Implementers	Estimated Cost (Ksh)	Time Frame
All	All locations	Vitamin A Supplementation	Countywide	220,000	MOH/UNICEF/RE D CROSS/CAID/ND MA/NI	20 M	Continous
All	All locations	Zinc Supplementation	Countywide	220,000	MOH/UNICEF/RE D CROSS/CAID/ND MA/NI	-	Continous

All	All locations	Management of Acute Malnutrition (IMAM)	Countywide	220,000	MOH/UNICEF/RE D CROSS/CAID/ND MA/NI	-	Continuous
All	All locations	IYCN Interventions (EBF and Timely Intro of complementary Foods)	Countywide	220,000	MOH/UNICEF/RE D CROSS/CAID/ND MA/NI	-	Continuous
All	All locations	Iron Folate Supplementation among Pregnant Women	Countywide	220,000	MOH/UNICEF/RE D CROSS/CAID/ND MA/NI	-	Continuous
All	All locations	Deworming	Countywide	220,000	MOH/UNICEF/RE D CROSS/CAID/ND MA/NI	-	Continuous
All	All locations	Food Fortification	Countywide	220,000	MOH/UNICEF/RE D CROSS/CAID/ND MA/NI	-	Continuous
All	All locations	Other Public Health Interventions	Countywide	220,000	MOH/UNICEF/RE D CROSS/CAID/ND MA/NI	-	Continuous
All	All locations	Integrated outreaches	Narok East, Narok South & Transmara East	220,000	MOH/UNICEF/RE D CROSS/NDMA/	2.4 M	3 months
<b>Education sector</b>							
Narok North	Food provision(HG SMP)	51	21580	MOE	Access and Retention is assured.	Continuous	Narok North

	Provision of water tanks	51	21580	Min of water & Environment	Access and Retention is assured	Continuous	
Narok South	Parents programme for Boarders	Enkare Nairowua	250	Parents	Retention improved	Yearly	Narok South
		Ntuka, Koseka, Nkimpa		Contributions	Parents are poor		

### 5.3 Recommended Non Food Interventions

**Table 20: Agriculture sector recommended interventions**

Sub County	Ward	Intervention	No. of beneficiaries	Implementers	Impacts in terms of food security	Cost (Kshs)	Time Frame
Narok County	Capacity building	countywide	1000 HH	ASDSP/DOALF	-Higher productivity -lower post- harvest losses		2013-2018
Countywide	Provision of GoK subsidized fertilizer	Countywide	15,000	MoA	Improving crop production at affordable farm inputs prices		Continuous
Countywide	Provision of relief seed	Countywide		MoA	Improving crop production		On going
Countywide	Input subsidy	Countywide	Over 5000hh	MOA and Stakeholders	INPUTS and program logistics	Vehicles and personnel	seasonal

Countywide	Drought tolerant crops	Countywide	Over 5000 hh	MOA and Stakeholders	Inputs seeds – logistics such as fuel	Vehicles and personnel	seasonal
Countywide	Water harvesting for crop production	Countywide	Over 5000 hh	MOA and Stakeholders	-Earthmovers, fuel, manpower	Trained manpower	By 2022

**Table 21: Livestock sector recommended interventions**

District	Intervention	Division/Areas	No. of beneficiaries	Implementers	Impacts in terms of food security	Cost	Time Frame
All sub-counties	Extension Messages	Countywide	40% of population	MOALF	+VE		Continuous
All sub-counties	Livestock diseases prevention and control	County wide	All affected households	Vet. staff	+VE		continuous
	Vector control	County wide	All affected households	Vet. staff	+VE		continuous
Countywide	Pasture establishment and conservation	All county especially pastoral and agro-pastoral livelihood zone	30% of the population	MOALF and SNV Netherlands Development Organizations	+ve improved livestock production		Continuous
Narok South	Growing livestock feeds reserve, Capacity building and provision of breeding stock (Sahiwal and Galla goats)	All county especially pastoral and agro-pastoral livelihood zone	+ve improved livestock production	ENSDA- Ewaso-Nyiro South Development Authority	improved livestock production		Continuous
Trans Mara	Supply of breeding stock – Sahiwals and	All county especially pastoral and agro-	+ve improved livestock	KALRO (Kenya Agricultural aand	+ve improved livestock		Continuous



	Red maasai	pastoral	production	Livestock Research Organisation (Lolgorian)	production		
COUNTY	Beef and Dairy husbandry, value addition and marketing	County wide	+ve improved livestock production & marketin	ASDSP	+VE	,	Continuous

**Table 22: Water sector recommended interventions Water sector**

<b>Immediate On-going Interventions</b>								
<b>Sub Ward</b>	<b>County/</b>	<b>Intervention</b>	<b>Location</b>	<b>No. of beneficiaries</b>	<b>Implementers</b>	<b>Cost</b>	<b>Time Frame</b>	<b>Implementation Status (% of completion)</b>
Narok East/Mosiro ward		Rehabilitation of Mosiro community bore hole	Mosiro centre	3000	Safaricom through Action Aid	70M	6 months	90%
Narok East/Suswa ward		Rehabilitation of Suswa pipeline	Suswa	5000	World bank through RWSB		1year	50%Narok
Narok East/Keekonyokie ward		Rehabilitation of Nairegie Enkare (Lelongo) Dam	Nairegie Enkare	15000	Equalization fund through RWSB		1 year	50%
Narok East Keekonyikie ward		Rehabilitation/Extension of Olpunyua water project	Ntulele	5000	Equalization fund through RWSB	20M	1year	20%
<b>Medium and Long Term On-going Interventions</b>								
Ololulunga		Construction of water pan at Olashapani.	Olashapani	500	R.V.W.S.B	2M	2 months	75%

**Table 23: Health and Nutrition recommended interventions**

<b>Immediate Recommended Interventions</b>								
<b>Sub County /Ward</b>	<b>Intervention</b>	<b>Location</b>	<b>No. beneficiaries</b>	<b>of</b>	<b>Proposed Implementers</b>	<b>Required Resources</b>	<b>Available Resources</b>	<b>Time Frame</b>
Narok East	Integrated outreaches	Mosiro Ward	10,000		MOH/UNICEF/RED CROSS/NDMA	3 M	-	6 months
Narok South	Integrated outreaches	Naroosura Maji Motho wardWard	12,000		MOH/UNICEF/RED CROSS/NDMA	3 M	-	6 months
Transmara East	Integrated outreaches	Ikerin Ward	8,000		MOH/UNICEF/RED CROSS/NDMA	2 M	-	6 months
<b>Medium and Long term Recommended Interventions</b>								
<b>Sub County /Ward</b>	<b>Intervention</b>	<b>Location</b>	<b>No. beneficiaries</b>	<b>of</b>	<b>Proposed Implementers</b>	<b>Required Resources</b>	<b>Available Resources</b>	<b>Time Frame</b>
All 6 sub counties	CHVs training on nutrition	All 6 sub counties	30 CUs		MOH/UNICEF/RED CROSS/CAID/NDMA/NI	25 M	0	3 years starting April 2018
All 6 sub counties	All HCW training on IMAM	All 6 sub counties	200 HCW		MOH/UNICEF/RED CROSS/CAID/NDMA/NI	30 M	0	3 years starting April 2018
All 6 sub counties	School Nutrition Program	All 6 sub counties	250 schools		MOH/UNICEF/RED CROSS/CAID/NDMA/NI	40 M	0	3 years starting April 2018

**Table 23: Education sector recommended interventions**

Sub-county	Intervention/ activity	Justification/ reason/need for this activity	Location	No beneficiaries targeted	Proposed implementers	Required resources	Available resources	Time frame
Narok South	Foods support to school		Naroosura zone	250	BOM Parents	8,000	-	1 yr
Transmara East	Food security And health Water	Poverty levels is high Clashes along the borders Diseases malaria and typhoid	Emurua Dikirr,murkan, mogor and kapsasian	12000	County government	Finance, Human resource	Available water source Already dug boreholes with adequate water	1 year
Narok North	Provision of food	Pupils will access education and be retain in schools.	Suswa Mosiro Oletukat	21580	MOE and WFP	Food	Kitchen Firewood Utensils	Continuous
	Water Tank	Pupils will access education and be retain in schools.	Suswa Mosiro Oletukat	21580	Min of Water and NDMA	Water tanks	Roof for water harvesting	Continuous
	Increase No. of schools in the feeding Programmes	More pupils will access and be retain at schools	All ASAL areas in sub - county	72,926	MOE and WFP	Food and water tanks	Schools in ASAL areas	From 2018.
	Construction of day secondary schools	Increase transition to secondary school						

### ANNEX 1: Irrigation Schemes in the County

Ward /Livelihood zone	Name of the Irrigation Scheme and Size	Type of irrigation	Acreage During the Previous LRA	Current Acreage	Potential Acreage for Irrigation
Narok town ward/mixed farming	Olopito Meeyu A	Furrow	10	10	150 50
	Meeyu B	Furrow	15	15	50
	Polonga	Furrow	200	200	400
	Oletuka	Furrow	10	10	300
Mosiro ward/Pastoral	Mosiro irrigation	Furrow	20	20	300
Naroosora	Naroosora	Surface	65 Ha	65 Ha	100 Ha
Elangata	Elangata Enterit	Surface	45 Ha	45 Ha	80 Ha
Kanunka	Kanunka	Surface	50 Ha	50 Ha	150 Ha

Among factors that limit utilization of total potential acreage include lack of organized marketing strategy thus killing the morale of the farmers and Lack of enough funds to exploit the potential acreage across the schemes. Scarcity of water during drought times in Narosora irrigation scheme leads to conflicts.