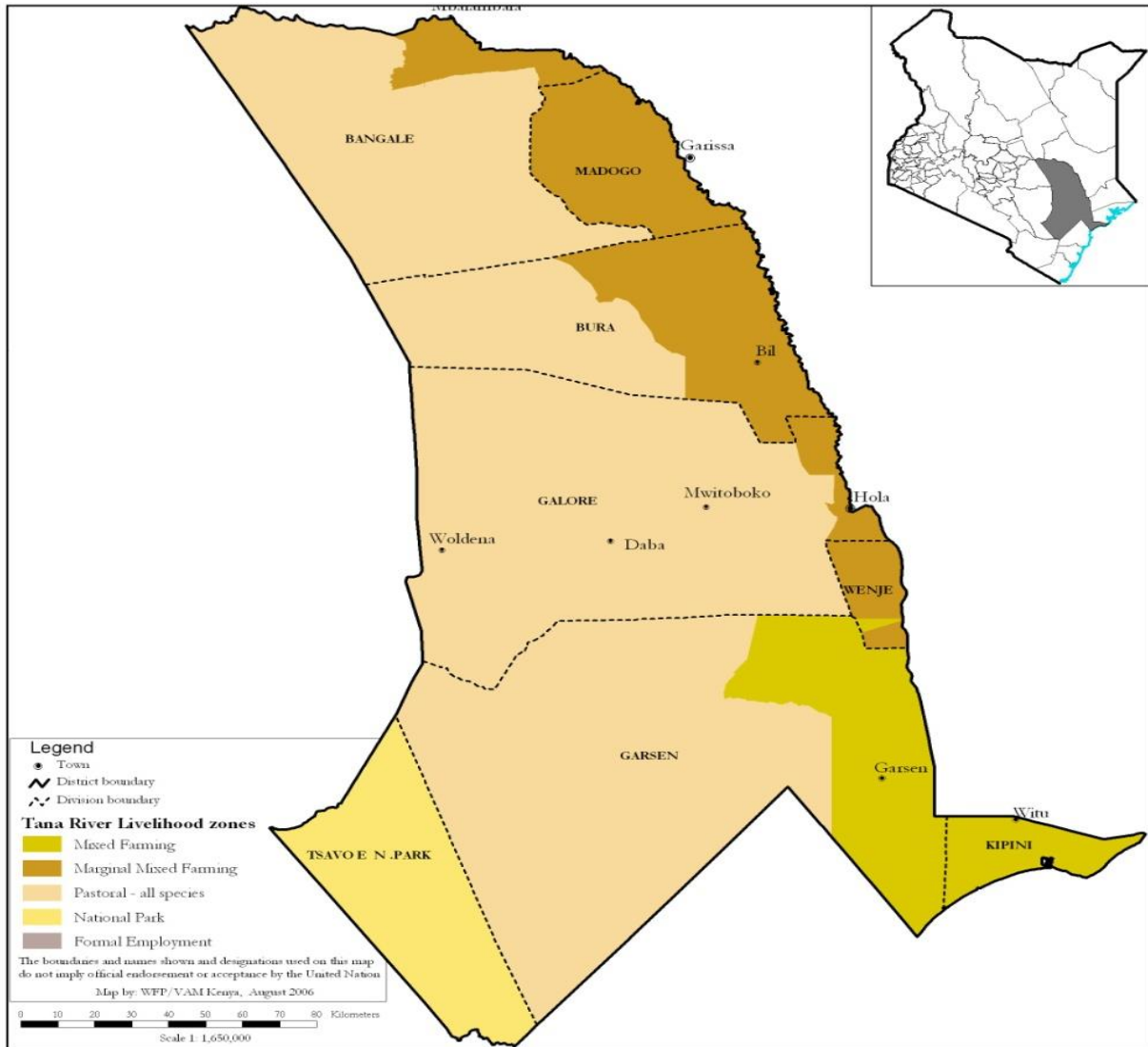


**TANA RIVER COUNTY**  
**2016 LONG RAINS FOOD SECURITY ASSESSMENT**  
**REPORT**



**A Joint Report by the Kenya Food Security Steering Group (KFSSG)<sup>1</sup> and the Tana River County Steering Group (CSG)**

**August, 2016**

<sup>1</sup> Shadrack Oyugi (Agriculture and Food Authority), Elizabeth Owino (WFP) and Liya Mango (FEWSNET)

## TABLE OF CONTENTS

<b>1.0</b>	<b>COUNTY BACKGROUND.....</b>	<b>1</b>
<b>2.0</b>	<b>COUNTY FOOD SECURITY SITUATION .....</b>	<b>1</b>
2.1	Current Food Security Situation .....	1
2.2	Food Security Trends .....	2
2.3	Rainfall Performance .....	2
<b>3.0</b>	<b>IMPACT OF RAINFALL PERFORMANCE, SHOCKS AND HAZARDS .....</b>	<b>3</b>
3.1	Crop Production .....	3
3.2	Livestock Production .....	5
3.3	Water Situation .....	7
3.4	Markets and Trade .....	8
3.5	Health and Nutrition .....	10
3.6	Coping Strategies Index .....	12
3.7	Sub County Ranking.....	13
<b>4.0</b>	<b>FOOD SECURITY PROGNOSIS.....</b>	<b>13</b>
4.1	Prognosis Assumptions.....	13
4.2	Expected Food Security Outcomes.....	14
<b>5.0</b>	<b>CONCLUSION AND RECOMMENDATION .....</b>	<b>14</b>
5.1	Conclusion Statement .....	14
5.2	Summary of Recommendations.....	15
<b>6.0</b>	<b>ANNEXES .....</b>	<b>16</b>
6.1	Recommended Food Interventions .....	16
6.2	Ongoing Non Food Interventions .....	16
6.2	Recommended Non Food Interventions .....	17

## 1.0 COUNTY BACKGROUND

Tana River County is administratively divided into three sub counties namely; Tana North, Tana River and Tana Delta. It covers an area of about 35,375.8 square kilometers with a population of 240,075 (KNBS, Census 2009). There are three main livelihood zones in the county namely; Marginal mixed farming livelihood zone comprising 48 percent of the population, Mixed farming livelihood zone comprising 38 percent and Pastoral Livelihood zone comprising the remaining 14 percent (Figure 1)

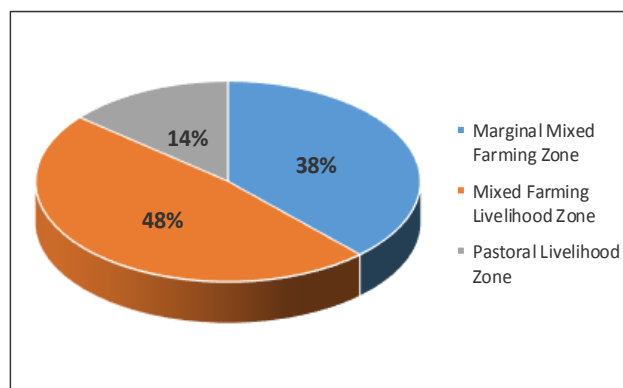


Figure 1: Population proportion by livelihood zone

## 2.0 COUNTY FOOD SECURITY SITUATION

### 2.1 Current Food Security Situation

The Pastoral Livelihood Zone is currently classified to be in Stressed Phase (IPC Phase 2) of food security classification while the mixed farming and marginal mixed farming Livelihood zones are classified in Minimal Phase (IPC Phase 1). The current factors affecting food and nutrition security include poor rainfall performance which led to water stress in households, migration of livestock and crop failure. Damage of crops by wildlife in the marginal mixed farming and mixed farming livelihood zones is also affecting crop production. In the Pastoral livelihood the zone milk consumption is currently one to two litres per day compared to the normal 3 litres while water consumption is five litres compared to the normal 10 litres per person per day. Households are currently consuming one to two meals per day compared to the normal two to three meals per day. In the marginal mixed and mixed farming livelihood zones, milk consumption and meal frequency is within normal range. Water consumption ranges between 15 and 20 litres, which is within the SPHERE standards. Although there are currently no maize stocks held in the county, harvesting of short rains season crops around February and harvesting of mangoes in the month of June has generally stabilized food and nutrition security.

Across the county the average terms of trade were one percent below the long term average (LTA), indicating a marginal decline in purchasing power for pastoralist. Currently, percentage of households with poor food consumption is 15 compared to 39 percent in May 2015. Households with borderline and acceptable food consumption were currently at 30 and 55 percent respectively, compared to 31 (borderline) and 29 (acceptable) in May 2015. The Coping Strategy Index (CSI) is currently at 21, with households mainly applying insurance coping strategies, this was a marginal decrease from CSI of 22 in May 2015. The percentage of children at risk of malnutrition as measured by Middle Upper Arm Circumference (MUAC) <135mm) has been rising and was at 10.1 percent in July 2016 compared to LTA of 10.7 percent. No food related mortalities were reported during the period.

## 2.2 Food Security Trends

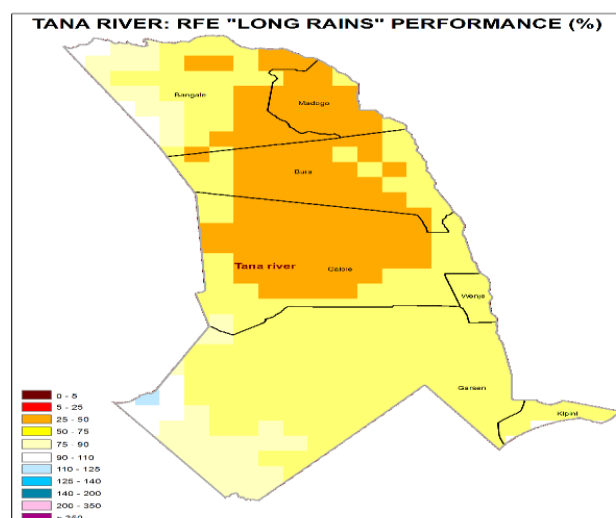
During the short rains food security assessment conducted in February, 2016 (SRA, 2016) the whole county was classified to be in the Minimal Phase of food security classification (IPC Phase 1). During the current food security assessment, most parts of the county mainly comprising the pastoral livelihood zone are classified in the Stressed Phase (IPC Phase 2). The marginal mixed farming and the mixed farming livelihood zones have however remained in the Minimal Phase of food security classification (IPC Phase 1). Table 1 shows trends in various food security drivers and outcomes for July, 2016 compared to February, 2016.

**Table 1. Food security trends**

Indicator	Current	Previous season
Food stocks	No stocks across livelihood zones	
Livestock body condition Pastoral Livelihood zone	Fair to good	Good
Livestock body condition Marginal Mixed Farming zone	Good	Good
Livestock body condition Mixed Farming zone	Good	Good
Water consumption Pastoral Livelihood zone	5 litres per person per day	10 litres per person per day
Water consumption Marginal mixed farming livelihood zone and Mixed farming livelihood zone	15 litres per person per day	30 litres per person per day
Coping Strategies Index	26.8	17
Food consumption scores	Poor-2.7 Borderline-5.5 Acceptable -91.8	Poor-2 Borderline-20 Acceptable-78
Percentage of Children at Risk of Malnutrition	10 percent	5 percent

## 2.3 Rainfall Performance

The onset of the season was late in the first dekad of April instead of the third dekad of March. The total of rainfall received was 75 millimetres which was below the Long Term Average (LTA) of 145 millimeters with majority of areas receiving between 25-50 and 50-75 percent of normal. Isolated pockets in the extreme western parts of Garsen and Bangale sub counties received normal amounts of rainfall. The temporal distribution of the rains was uneven as shown in Figure 2. Cessation was early in the second dekad of May compared to the normal cessation which occurs in the first dekad of June.



**Figure 2: Rainfall performance**

### 3.0 IMPACT OF RAINFALL PERFORMANCE, SHOCKS AND HAZARDS

#### 3.1 Crop Production

Crop production is mainly carried out in the marginal mixed farming livelihood zone and the mixed farming livelihood zone. The mixed farming livelihood zone is mainly dependent on the long rains while the marginal mixed farming livelihood zone mainly depends on the short rains season for crop production. In the marginal mixed farming livelihood zone, maize contributes 30 percent to income and 50 percent to food while banana contributes 20 percent to cash income and 15 percent to food. In the mixed farming livelihood zone, maize and bananas contribute 40 and 20 percent to food respectively while mangoes contributes 37 percent to cash income. Overall, crop production contributes 45 percent of cash income in the mixed farming livelihood zone and 10 percent in the marginal mixed farming zone.

#### Rain fed crop production

The main crops grown under rain fed production are maize, green grams and cowpeas. Other crops include mangoes, bananas, pigeon peas, tomatoes and cotton. Rain fed crop production is mainly done in the mixed farming livelihood zone in Kipini and marginal mixed farming livelihood zone in Hurara area. Due to the poor performance of the rains, maize production is expected to be 60 percent of LTA. Green grams and cowpeas production is expected to be about 80 percent of LTA mainly attributed to poor rainfall performance, reduction in area planted and reduced yields. Due to late planting, harvesting of most food crops is also expected to delay up to the month of August compared to the normal late July to August. Table 2 shows rain-fed crop production trends.

**Table 2. Rain fed crop production**

Crop	Area planted during 2016 Long rains season (Ha)	Long Term Average area planted during the Long rains season (Ha)	2016 Long rains season production (90 kg bags) Projected	Long Term Average production during the Long rains season The (90 kg bags)
Maize	2,470	2500	24,700	40,000
Green grams	400	450	2,800	3,600
Cowpeas	490	550	3,430	4,400

#### Irrigated crop production

Irrigated crop production is mainly practiced in the marginal mixed farming livelihood zone using flood waters along the River Tana, small scale irrigation along the river and in Hola and Bura Irrigation Schemes. During the long rains season there was excessive flooding along River Tana occasioned by rain water and water from dams upstream. The floods led to destruction of crops and displacements of families living along the river early in the season. The farmers had to replant their crops after the water receded, but in a larger area as the floods covered a wider area than normal. The replanted crop is doing well and harvesting is expected to commence from the month of August.

In the irrigation schemes, the area planted under maize is 13 percent of LTA attributed mainly to failure by local financial institutions to grant loans to farmers for farm operations. The main reason was failure by farmers to repay previous loans leading to disagreements between the

farmers and the bank. Projected maize production under irrigation is eight percent of LTA. The area under green grams and cow peas however increased by 15 and 13 percent respectively, attributed to the excess flood waters which increased the area flooded for use in crop production. Expected production from green grams and cowpeas is therefore about 10 percent above LTA. (Table 3). There was harvesting of mangoes from farms along the river bank in the month of June which stabilized food security for households within the marginal mixed farming zone.

**Table 3. Irrigated crop production**

Crop	Area planted during 2016 Long rains season (Ha)	Long Term Average area planted during the Long rains season (Ha)	2016 Long rains season production (90 kg bags) Projected/Actual	Long Term Average production during the Long rains season (90 kg bags)
Maize	240	1,900	2,400	28,500
Green grams	300	260	2,100	1,870
Cowpeas	450	400	3,150	2,800

Destruction of crops by wildlife is a major challenge to crop production in both the marginal mixed farming livelihood zone and mixed farming zone. Migration of livestock to these livelihood zone during the dry spell is also another challenge which leads to destruction of crops and conflicts. Invasion by Army worms was reported in Chewani in the marginal mixed farming livelihood zone, which destroyed about 50 Hectares of maize but was controlled in time by the county government.

### Maize stocks

Currently there are no stocks held by the households across all the livelihood zones compared to the LTA of about 15,780 bags. In the Marginal Mixed Farming zone, the destruction of crops by flooding along the River Tana necessitated replanting of the crop which has delayed the harvest. Planting within the irrigation schemes also declined drastically. In the mixed farming livelihood zone, delayed onset of the rains delayed planting of maize and consequently harvesting. Usually the farmers would have harvested their maize from the month of July onwards and would be having some maize stocks. The current maize stocks held by traders is about 40 percent of LTA, attributed to delayed harvests, while stocks held by National Cereals and Produce Board were 30 percent of LTA (Table 4). Replenishment of maize stocks is expected from the month of August in the marginal mixed farming livelihood zone and mixed farming livelihood zone, when harvesting is expected to start. The stocks will however be low and only last for less than a month. Households in the pastoral livelihood zone usually rely on markets for their maize purchases and are expected to continue purchasing maize from markets.

**Table 4. Maize stocks**

Maize stocks held by:-	Quantities of maize held (90-kg bags)	Long Term Average quantities held (90-kg bags) at similar time of the year
House Holds	0	15,780
Traders	5,780	14,780
NCPB	250	800
<b>Total</b>	<b>6,030</b>	<b>31,360</b>

### 3.2 Livestock Production

The main livestock species kept in the county are goats, sheep, cattle, indigenous poultry and camels. Bee keeping is also gaining importance especially in the marginal mixed farming zone. Livestock production is the most important enterprise in the pastoral livelihood zone, contributing about 68 percent of cash income. In the marginal mixed farming and mixed farming livelihood zones, livestock contributes 20 and 15 percent of cash income respectively. In the pastoral livelihood zone, goats provide milk to a limited extent, while cattle are mainly kept for milk production. In the marginal mixed and mixed farming livelihood zone, the main source of milk is cattle. Goats and sheep are sold to take care of major expenses when need arises and for milk production to a limited extent.

#### Forage condition

Pasture in the pastoral livelihood zone is depleted and livestock have migrated to areas which still have pasture. The pasture and browse rejuvenation is expected after the onset of the short rains in November, 2016. In the marginal mixed farming zone, the pasture condition is normal attributed to the floods which occurred along the River Tana resulting into good pasture growth. The pasture and browse in the mixed farming livelihood zone is expected to last up to the onset of the short rains in October, 2016. Table 5 shows the pasture and browse condition across the livelihood zones as compared to normal.

**Table 5. Pasture and browse condition**

Livelihood zone	Pasture condition		How long to last		Browse condition		How long to last	
	Current	Normally	Current	Normally	Current	Normally	Current	Normally
Pastoral	Depleted	Fair	Depleted	2-3 months	Poor	Good	1 month	3 months
Marginal Mixed Farming	Good	Good	3 months	3 months	Good	Good	4 months	4 months
Mixed Farming	Good	Good	4 months	4 months	Good	Good	4 months	4 months

#### Water for livestock

Main sources of water for livestock are irrigation canals, River Tana, water pans, shallow wells along the *laagas*, swamps, and bore holes. Some water pans have dried up earlier than normal especially in the pastoral livelihood zone leading to longer trekking distances of up to 10km compared to the normal two to seven kilometers. Trekking distance in some areas within the pastoral livelihood zone such as Titilla, Wayu, Haroresa, Elrar, and Bangale are up to 15km. In the marginal mixed farming livelihood zone, along the Tana River, the trekking distance remained within normal ranges as the livestock continued utilizing the river as the main source of water. In Hurara area there are no nearby watering points for livestock and households buy water for livestock at Ksh 25 per 20 litre *jerrican*. In the mixed farming livelihood zone, trekking distance remained within the normal range. Table 6 indicates trekking distances for livestock across the livelihood zones. Water in the remaining sources in the Pastoral Livelihood zone is expected to last for a maximum of one month compared to the normal two months.

In the pastoral livelihood zone, cattle are watered once per day compared to twice per day at this time of the year while goats and sheep are watered every two days compared to once per day. Camels once every 10 days compared to the normal once every 5 days. Further depletion of water from sources in the pastoral livelihood zone is expected to result in increased trekking distances, reduced watering intervals, likely deterioration in livestock body condition and further reduction in productivity and reduced milk production and household consumption.

**Table 6. Situation of water for livestock**

Livelihood zone	Current distances	Normal distances	Expected duration to last currently	Expected to last normally
Pastoral Livelihood zone	5-10	2-7	Less than 1 month	2months
Marginal Mixed farming livelihood zone	1-2km	1-2km	Mostly permanent sources like River Tana and boreholes	
Mixed farming livelihood zone	0.5-3	0.5-3		

## **Livestock Productivity**

### **Livestock body condition**

In the pastoral livelihood zone, the body condition of cattle and sheep is fair compared to the normal good at this time of the year, mainly attributed to longer trekking distanced and poorer pastures and browse condition. The body condition of camels is currently good in the same livelihood zone which is normal at this time of the year. In the marginal mixed farming, the body condition of all livestock species remained good, which is normal at this time of the year, attributed to the good pasture and browse along the Tana River flood zone and easy access to water. In the mixed livelihood zone within Kipini area, pastures and browse are in good condition and water for livestock is easily accessible and within reach of all livestock species thus the good body condition.

The body condition of livestock in the pastoral zone is expected to deteriorate further as the dry spell progresses, with recovery expected in November, 2016 at the onset of the short rains. In the mixed farming livelihood zone and marginal mixed farming livelihood zone, along the Tana River, the body condition of livestock is expected to remain good until the onset of the short rains. The body condition of livestock in parts of the marginal mixed farming livelihood zone, in Hurara area is expected to deteriorate as water stress increases.

### **Milk production, consumption and prices**

In the marginal mixed farming and mixed farming livelihood zones, the main source of milk is cattle while in the pastoral livelihood zone, both cattle and camels provide milk for households. Goats are provide milk to a smaller extent across the livelihood zones. Milk consumption reduced in the pastoral livelihood zone, compared to the Long Term Average (LTA) mainly attributed to decline in milk production, livestock migration from normal settlement areas and increased prices as shown in table 7. The reduced milk consumption is expected to impact negatively on nutrition especially for the young children. In the marginal mixed and mixed farming livelihood zones, milk production and consumption is generally within the normal range.



**Table 7. Milk production and consumption trends**

Livelihood zone	Milk Production (Litres)/Household		Milk consumption (Litres)per Household		Prices (Ksh)/Litre	
	Current	LTA	Current	LTA	Current	LTA
Pastoral	0.5-1	2-3	0.5-1	2lts	60	40
Marginal Mixed Farming	1-2	1-2	0.5-1	1-2	55	35-40
Mixed Farming	1-3	1-3	0.5-1	1.5	50	50

**Tropical livestock units**

The average household livestock herd size in pastoral zone is 28 Tropical Livestock Units (TLU) (21 cattle, 28 goats and 21 sheep) while in the marginal mixed farming livelihood zone, herd size is 8 TLU (3 cattle, 21 goats, 14 sheep). In the mixed farming herd size is 8 TLU (2 Cattle, 15 goats, 5 Sheep). There were no significant deaths of livestock during the period due to any shocks or hazards. Consequently the TLUs across the livelihood zones are within the normal range.

**Migration**

There has been migration from areas within the pastoral livelihood zone, such as Bangale and Bura towards Waldena and into Tana Delta and from Ijara into Haroresa through Assa into Tsavo National Park. The migrations however started in the month of May compared to July, during normal times. Unusual migrations were observed from Gafuru area into Boni Forest in Lamu and from Assa (pastoral) into Marereni and Galana Gulalu in Kilifi County. Unusual migration into the county was also observed with camels migrating from Garissa County into Bangale area in Tana North sub-county and cattle migrating from Ijara into marginal mixed livelihood zone in Majengo area. About 80 percent of cattle, sheep and goats and 90 percent of camels have migrated from the pastoral livelihood zone. The migration has adversely affected milk availability at household level, as only a few lactating livestock have been left behind to provide milk for households. It has also increased the risk of conflicts between pastoralist and farmers within the marginal mixed farming livelihood zone and mixed farming livelihood zone in the Tana Delta.

**Livestock diseases and mortalities**

Outbreak of Foot and Mouth Disease (FMD) was reported in Garsen and led to a quarantine in the area. In the month of May cattle deaths were reported and confirmed to have resulted from Trypanosomiasis and Anaplasmosis. In June cases of sheep death were reported in Tana River sub-county and investigations are under way to determine the cause. Vaccinations were done across the county against Contagious Caprine Pleuro Pneumonia (CCPP), Sheep and goat pox and Rift Valley Fever.

**3.3 Water Situation**

The main sources of water for domestic use are water pans, shallow wells, bore holes and the River Tana. There are also some water supply systems within the mixed farming livelihood zone. Due to the poor performance of the rainfall, recharge to open water sources was about 50 percent which led to earlier drying up compared to normal.

In the pastoral livelihood zone where most households depend on water pans, boreholes and wells as the main sources of water, distances to water points and waiting time has drastically increased, while water consumption has reduced by about 50 percent. Most parts of Galole West

are water stressed, with distances to water points increasing from the normal one kilometer to 11 kilometres. In parts of Galole such as Kesi, Lakole and Chifiri areas in Galole, distance to water points are currently between 17 to 20 kilometres which has necessitated water trucking. In the water stressed parts of the pastoral livelihood zone, waiting time has increased from the normal one hour to two hours. There is a general high concentration of both humans and livestock at the few remaining water sources and the water is expected to last for one month compared to the normal three months at this time of the year.

The water situation in marginal mixed farming and mixed farming livelihood zones remained generally stable, as most households continued using the normal water sources. There is however, a slight increase in distances to water points and a slight decrease in water consumption, due to breakdown of some of the water sources and drying up of some water pans in the marginal mixed farming livelihood zone. Water consumption is however still above the SPHERE standards of 15 litres per person per day. Table 8 indicates the water situation across the livelihood zones. The common household water treatment practice is boiling, though the practice is still at minimal. Currently, latrine coverage in the County is about 24 percent.

**Table 8. Domestic water situation per livelihood zone**

Livelihood zone	Distance To Water for Domestic use (Km)		Cost of Water (Kshs / 20litres)		Waiting Time at Source (Minutes)		Water consumption per person per day		Projected duration to last	Normal duration
	Normal	Current	Normal	Current	Normal	Current	Normal	Current	Normal	Current
Pastoral	0 -6	10 - 20	0 -5	25 - 50	30 -60	120	10	5	1 month	3 months
Marginal Mixed Farming	0.5 - 1	3 -6	0 -5	0 - 5	0 - 30	30 - 60	20	15	N/A	N/A
Mixed farming	0.5-1	1.5	3	5	15	30	30	20	N/A	N/A

### 3.4 Markets and Trade

The main markets in Tana River County are Hola, Mandingo, Madogo, Bangale, Waldena, Kipini, Garsen and Bura and are operating normally with no market disruptions reported. The markets are well provisioned with the main food commodities. In the pastoral livelihood zone, the main food commodities traded in the markets include maize flour, rice, wheat flour and beans, mainly sourced from Garissa, Bura and Nairobi. In the marginal mixed farming and mixed farming livelihood zones, the main food commodities traded in the markets are maize and green grams. Most of the maize is currently sourced from outside the county as harvesting of maize is yet to start. Some little amount of green grams are being sourced from farmers due to some early harvests in Tana Delta sub-county. Normally a big proportion of green grams would be coming from farmers at this time of the year forming a big part of income for farmers within the marginal mixed farming and mixed farming livelihood zones. Trade volumes for maize, greens grams and cowpeas coming from farmers is expected to increase from August into September when harvesting will be at its peak and is expected to improve income and access to food.

### Maize prices

The price of maize are generally within the LTA and are following the normal seasonal trends, but are higher than the 2015 prices as shown in figure 3. Maize prices are expected to start declining from the month of August when the long rains harvests are expected to start in the county and other maize growing areas within the country.

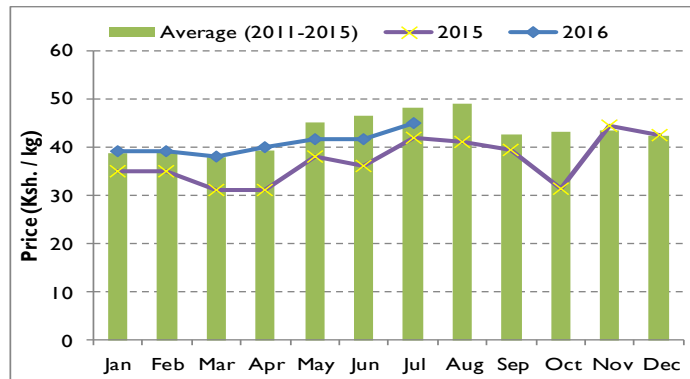


Figure 3: Maize price trends

### Goat prices

Goat prices remained generally stable between the month of January and May but started declining from the month of July mainly attributed to deteriorating body condition and more livestock being sold into markets in order to access food. The current goat prices are seven percent below the LTA and are 12 percent below that of 2015, attributed to poorer body condition and larger volumes in the market for sale to access food. The prices are expected to continue deteriorating but start rising in the month of November when the short rains are expected to start with a consequent improvement in body condition. Further, prices of most food commodities are expected to have stabilized and reduced during the same period. A lower number of animals will therefore be expected to be sold to access food with a resultant lower volumes coming into the markets and thus increased prices of goats. Figure 4 shows the trends of goat prices compared to LTA and 2015.

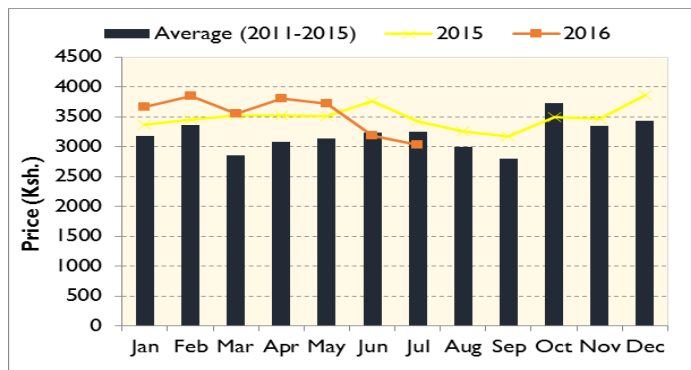


Figure 4: Goat prices trends

### Terms of trade

Terms of Trade (TOT) indicates how many kilograms of maize can be accessed through the sale of a goat. The terms of trade (TOT) from the month January July has been above the LTA but below that of 2015 and are following the seasonal trends (Figure 5). The more favourable TOT as compared to the LTA is mainly attributed to the higher goat prices. The TOT in 2015 were

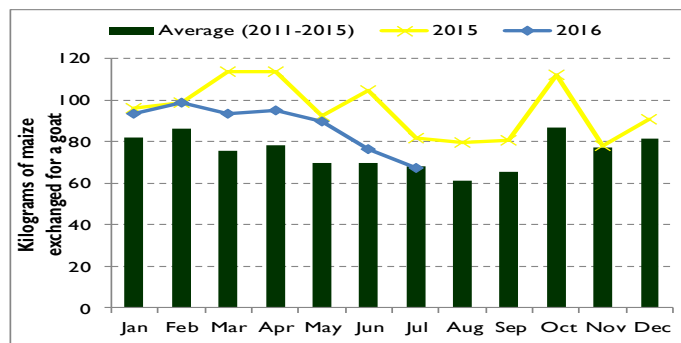


Figure 5: Trends in Terms of Trade

however more favourable than the current year due to the lower maize prices in the previous year. The ToT for the current year has been deteriorating from the month of May attributed to the steady rise in maize prices and decline in the prices of goats. The poor terms of trade are mainly affecting the households within the pastoral livelihood zone as they mainly depend on livestock to access food. The ToT are expected to bottom out in August and gradually rise from September and peak in October due to the onset of the short rains.

### 3.5 Health and Nutrition

#### Morbidity and mortality patterns

Upper Respiratory Tract Infections (URTI), diarrhea, pneumonia, skin diseases and ear infections are the five most prevalent diseases in children under five years. There is a decrease in the number of cases reported in the current year compared to 2015 (Table 9). Pneumonia and URTI prevalence rates decreased by 19.8 percent and 12.7 percent respectively in 2016 compared to 2015.

The five most prevalent diseases for the general population were URTI, diarrhea, skin diseases, Urinary Tract Infections (UTI) and malaria. There was a slight increase in diarrhea, skin diseases and UTI, by 21.4 percent, 24.5 percent and 30.8 percent respectively, while URTI and malaria cases decreased by 21.4 percent and 35.7 percent respectively (Table 9)

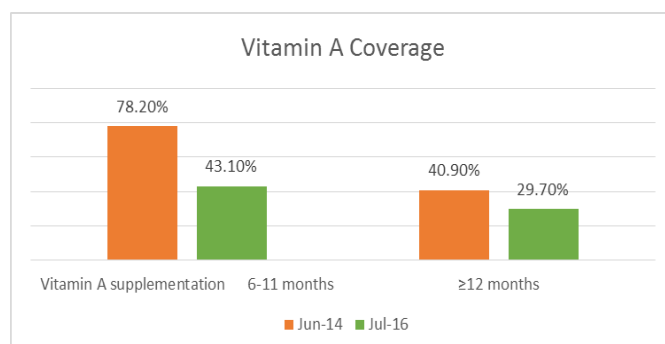
**Table 9. Morbidity cases for children under five and general population**

Reported Morbidity cases for children under five				Reported Morbidity cases for General Population			
Disease	Jan-Jun 2015	Jan-Jun 2016	% Change	Disease	Jan-Jun 2015	Jan-Jun 2016	% Change
Upper Respiratory Tract Infection (URTI)	26,095	23,140	-12.77%	URTI	30,800	25,359	-21.46%
Diarrhea	10,042	12,240	-17.96%	Diarrhea	5,286	7,484	-29.37%
Pneumonia	6,527	5,447	-19.83%	Skin diseases	5,406	7,161	-24.51%
Skin diseases	4,488	4,974	-9.77%	UTI	4,488	6,493	-30.88%
Ear infection	2,137	2,372	-9.91%	Malaria	9,167	5,893	-35.72%

There was notable increase in diarrhea prevalence for both under-fives and the general population mainly attributed to poor sanitation and hygiene practices, fecal matter contamination of water points, especially along the canals. The number of people defecating in the open increased from 56.9 percent to 65.3 percent (SMART survey, July 2016). Between the month of January and June, 2016, a total of 332 cases of cholera were reported with 9 deaths as at the end of June.

#### Immunization and Vitamin A supplementation

Vitamin A coverage for the period between January and June, 2016 was 29.7 percent compared to 40.9 percent during the same period in 2014 as per July 2016 SMART survey (Figure 6). The low coverage was attributed to cessation of mobile outreaches due to funding constraints. The percentage of fully immunized children in the county as of July 2016 was 89 percent.



**Figure 6: Vitamin A Supplementation**

Stock out of vaccines and poor storage facilities in the health centers are still challenges affecting immunization.

### Nutrition Status and Dietary Diversity

The current Global Acute Malnutrition (GAM) rates are 14 percent compared to 7.5 percent during the same period in 2014, which may be attributed to increase in diarrhea cases. Severe Acute Malnutrition (SAM) was 1. Percent compared to 0.9 percent in 2014. The prevalence of moderate malnutrition was 4.8 percent compared to 4.2 percent in June 2014, while prevalence of severe child malnutrition remained stable at 0.9 percent (SMART Survey, July 2016). See figure 7.

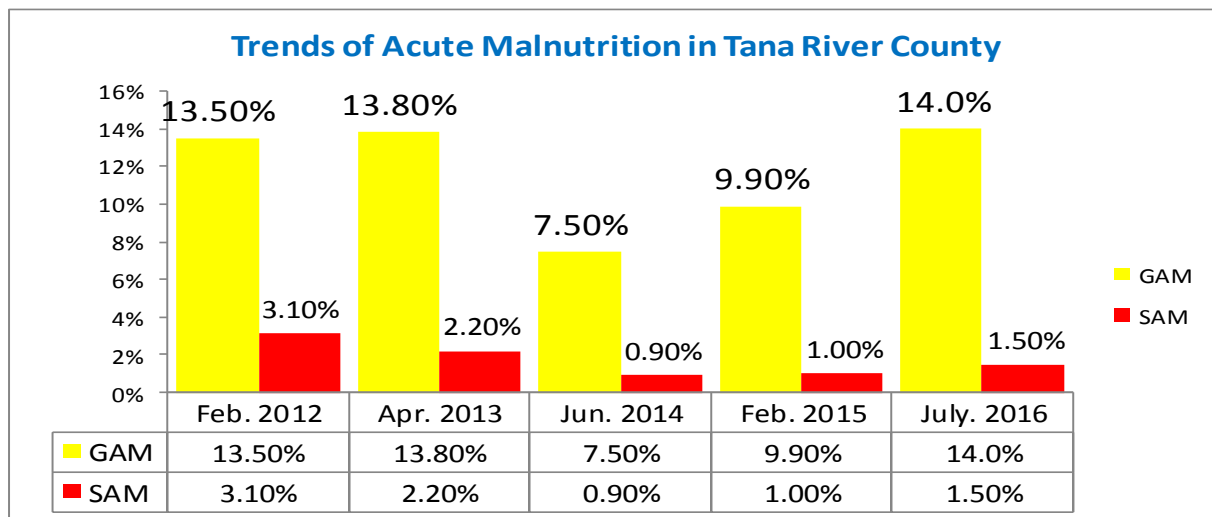


Figure 7: GAM Trends in Tana River County

The percentage of children at risk of malnutrition as measured by MUAC<135mm - from January to July 2016 – was below the LTA, mainly attributed to two consecutive good rainfall seasons preceding the current season which impacted positively on food and nutrition security. The percentage has however been on the rise from the month of April due to the poor rains received in the current season, which has led to poor food consumption especially in the pastoral livelihood zone (Figure 8). The percentage of children at risk of malnutrition is expected to increase in the pastoral livelihood zone, as the dry spell progresses. Improvement is expected from the month of November after the onset of the short rains when milk production and consumption is expected to increase.

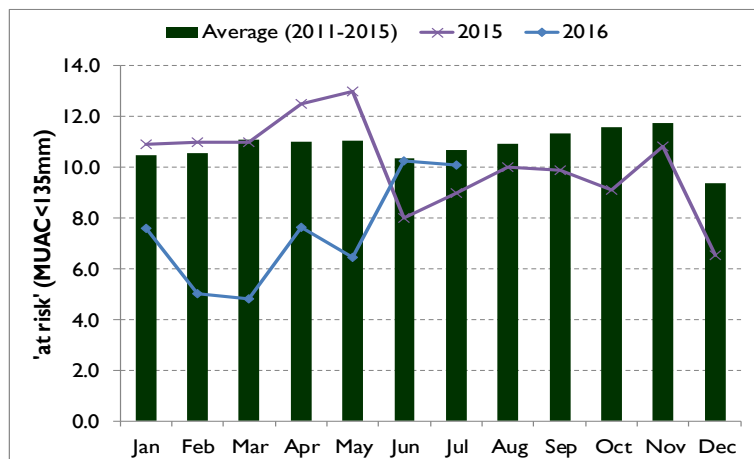
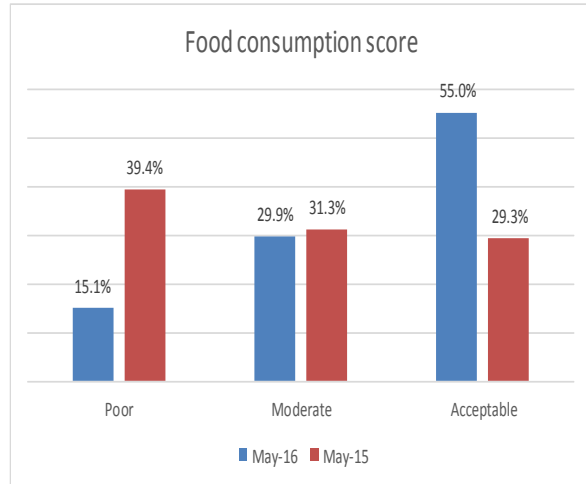


Figure 8: Percentage of children at risk of malnutrition

The May 2016 FSOM indicates a reduction in the percentage of households with poor Food Consumption Score (FCS) from 39.4 percent in 2015 to 15.1, with households with acceptable FCS increasing from 29.3 percent in 2015 to 55 percent in 2016 indicating an overall improvement in meal frequency and household diet diversity (Figure 9). The July 2016 SMART survey complements the same as households with poor food consumption, borderline food consumption and acceptable food consumption were 2.7 percent, 5.5 percent and 91.8 percent respectively, implying a good food consumption situation for a majority of the households especially in the mixed and marginal mixed farming livelihood zones.

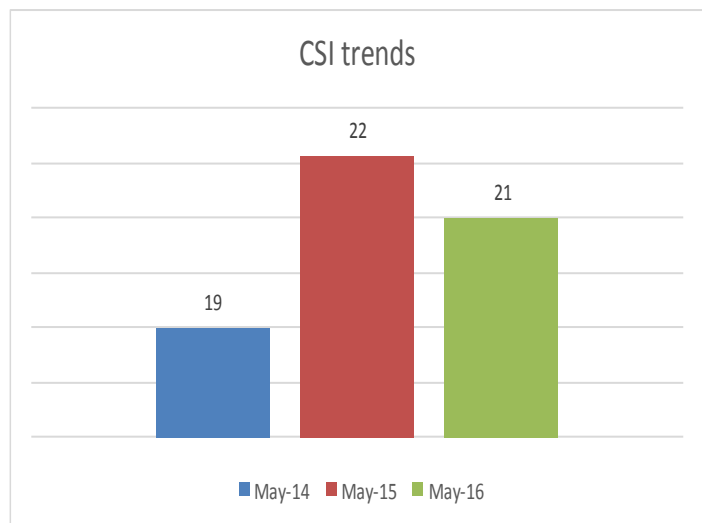


**Figure 9: Food consumption score-FSOM**

The percentage of households consuming less than three food groups was 3.3 percent while those consuming four to five food groups was 24 percent. The percentage of households consuming more than six food groups was 72.7 percent. The percentage of households with poor food consumption is expected to increase in the pastoral livelihood zone as the dry spell progresses, but improve from the month of November onwards, when the short rains in expected to start and lead to rejuvenation of pastures, improvement in body condition and better term TOT. In the pastoral livelihood zone, households are consuming one to two meals per day compared to two to three meals per day mainly comprising cereals, legumes, oils and milk. Meal frequency is 2-3 meals per day in the marginal mixed and mixed farming livelihood zones.

### 3.6 Coping Strategies Index

The coping strategy index as per May 2016 FSOM was 21. This was a marginal - one percent - decrease compared to May 2015 which was at 22. (Figure 10). This indicates an insignificant change in the coping mechanisms being applied by households to close the food consumption gaps. The proportion of households employing various insurance coping strategies were 97.5 percent relying on less preferred and/or less expensive food, 90 percent borrowing food or relying on help from friends and relatives, 91.8 percent reducing the number of meals, 86.1 percent reduced their portion sizes and



**Figure 10: Coping Strategy Index trends -FSOM results**

81.4 percent reduced the quantity of food consumed adult to ensure that children had enough to eat as per May2016 FSOM findings.

### 3.7 Sub-county Ranking

Table 9 shows the ranking of sub-counties according to the current food security situation and the main food security threats. Tana North is the worst affected in terms of food security followed by Tana River then Tana Delta sub-county.

**Table 10. Sub-county food security situation ranking**

Rank	Sub County	Main food security threats	Remarks
1	Tana North	Livestock migration, water and pasture shortage, deteriorating Terms of Trade	Increased trekking distances, depleted pastures has led to deterioration of body condition, reduced milk production , prices and reduced milk production and food intake
2	Tana River	Livestock migration,Poor forage,Water shortage	Increased trekking distances, Depleted pastures, Increasing prices and reduced milk production
3	Tana Delta	Conflicts,inadequate and poorly distributed rainfall, Wildlife damage to crops,Poor forage	The poor performance of the rains has led to reduced crop production,destruction of crops by wildlife has led to households spending time guarding their crops as instead of engaging in other productive activities

## 4.0 FOOD SECURITY PROGNOSIS

### 4.1 Prognosis assumptions

Rangeland resources are already depleted and pasture and browse will remain scarce through November. Livestock prices will continue to decline from July through November, as body conditions deteriorate, but with a marginal improvement after October when onset of the short rains is expected. Further deterioration in TOT is expected to occur up to November, but improve after the onset of the short rains.

There is a 50% chance of a *La Niña* event setting in during the three month season of September-October-November resulting in below average rainfall of about 90% of normal. However,the forecasted below average short rains in October is expected to rejuvenate pastures and provide some reprieve to pastoral communities .The pastoralists are therefore expected to return to their normal grazing areas after onset of short rains.

Harvesting of maize and other food crops is expected to start in August and continue into the month of September. Maize prices are therefore expected to increase gradually through August, but decrease slightly from September onwards. It is also assumed that the 90 percent of normal rainfall will be able to sustain short season crops, especially in the marginal mixed farming livelihood zone, which is mainly dependent on the short rains season. Some harvests of this crops are expected in late January into February, 2016 which will likely stabilize food availability for the household within the livelihood zone.

## **4.2 Expected Food Security Outcomes**

### **August to October, 2016 (3 months)**

In ppastoral livelihood zone, the proportion of households with poor food consumption is expected to increase in the period between August and October 2016, if no external food interventions are received. There is a likelihood of increase in the frequency and severity of use of coping mechanisms. The proportion of households relying on less expensive food, reducing meal frequency and limiting meals sizes at meal time may increase during the period, so will the number of households applying stress coping strategies. It is however not expected that many households will start applying either crisis or emergency coping strategies. Increased risk of child malnutrition may be witnessed during the period if no interventions are put in place. Food security related mortalities are however not expected.

In the mmarginal mixed farming and mixed farming livelihood zones, food security is expected to remain generally stable. The expected harvests and the expected reduction in food prices from the month of August is expected to improve food consumption, with a consequent reduction in application of coping mechanisms some households may have been applying. Nutrition status is expected to remain stable over the period as well and improve from August 2016 onwards.

### **November 2016 to January 2017 (3 months)**

In the period between November, 2016 and January, 2017, the food situation is expected to improve across the county. In the ppastoral livelihood zone, the onset of the short rains, regeneration of pastures and browse and improved livestock body condition, as well as improved TOT is expected to improve availability and access to food. Milk consumption and intake of other food commodities is expected to improve. The proportion of households with poor food consumption is therefore expected to reduce from December moving into January, 2016. The nutrition status within the households is expected to improve with fewer children being at risk of malnutrition. It is also expected that the percentage of households applying either insurance or stress coping strategies is expected to decrease leading to a reduction in CSI.

In mmarginal mixed and mixed farming livelihood zones, households are expected to continue utilizing food stocks from the long rains season harvests. Some early harvests from the short season crops may also be expected in late January, 2016. Food consumption is therefore expected to remain stable during the period. Risk of child malnutrition cases is expected to be minimal. No food related mortalities are expected during the period across the livelihood zones.

## **5.0 CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Conclusion Statement**

The food security situation has deteriorated in most parts of the county, more especially in the pastoral livelihood zone. In this zone, the situation is expected to continue deteriorating until November when the expected short rains are expected to rejuvenate pastures and browse. The short rains are expected to be below normal and the situation will need to be monitored for its impact on pastures and browse. Some households within the pastoral livelihood zone may need food assistance between now and the month of November to help them cope with the current food consumption gaps. In the marginal mixed and mixed farming livelihood zone, the food security situation is generally stable and is expected to remain so up to January 2016. The



expected harvests from the long rains and early harvests from short season crops later in the year and early 2017 are expected to cushion the households from any food consumption gaps.

Meanwhile, the following factors will need to be monitored as the season progresses; performance of the 2016 short rains and its impact on pastures and water sources, trends in prices of main food commodities, market operations in terms of stability and food supplies, livestock disease outbreaks, possible escalation of conflicts between pastoralists and crop farmers, risk of child malnutrition and outbreak of human diseases such as cholera.

## **5.2 Summary of Recommendations**

### **Immediate/Short term**

#### **Agriculture Sector**

- Distribution drought tolerant and early maturing crop seeds
- Peace initiatives between pastoralists and farmers
- Distribution of farm inputs(fertilizers and pesticides)

#### **Livestock sector**

- Expansion of pasture and fodder production initiatives
- Processing of crop residues for livestock feeding
- Livestock insurance

#### **Water Sector**

- Water trucking in areas facing severe water shortage

### **Medium and Long term**

While planning for the medium and long term intervention, counties and development partners should integrate or incorporate resilience building programmes in order to improve the ability of households and communities to cope with shocks and hazards which may occur.

#### **Agriculture Sector**

- Provision of portable irrigation equipment
- Revival of minor irrigation schemes

#### **Livestock sector**

- Promotion of alternative livestock enterprises such as indigenous chicken and beekeeping
- Promotion of collective livestock marketing

#### **Water Sector**

- Construction of large capacity dams
- Desilting of water pans, rehabilitation of shallow wells

#### **Health and Nutrition**

- Reintroduce integrated outreaches services

## 6.0 ANNEXES

### 6.1 Recommended Food Interventions

**Table 11. Recommended food interventions**

Sub County	Population	Poverty levels	% of population in need	Proposed mode of intervention
Tana North	82,545	75.60%	25-30	FFA
Tana River	60,866	74.50%	20-25	FFA
Tana Delta	96,664	76.30%	15-20	FFA
<b>TOTAL</b>	<b>240,075</b>			

### 6.2 Ongoing Non Food Interventions

**Table 12. Ongoing interventions per sector**

Sub County	Intervention	Location/ Ward	No. of beneficiaries	Implementers	Impacts in terms of food security	Cost	Time Frame
<b>LIVESTOCK SECTOR</b>							
ALL	Improved pasture management through Institutionalized planned grazing	Tana River -Wayu ward	2,000 households	Livestock production FAO	Improvement of grazing areas	Ksh 1,393,030	June 2016 – May 2017
	Pasture and fodder production in schemes and along the rivers for livestock feeding	Hirimani Chewele Madogo Sala	6,000	MALF/NALEP, SNV	Mitigation against drought to livestock-increased milk and meat production hence more income		12 months
	Annual vaccination	Bura, Madogo	5,00 households	Veterinary office	Good health hence high value for animals		
<b>AGRICULTURE SECTOR</b>							
ALL	Distribution of drought tolerant and early maturing crop seeds	All Wards	3,000	Department of Agriculture	Improved production and food security	3.7 M	LR 2016
<b>WATER SECTOR</b>							
ALL	Construction of water pans	Wayu, Asa, Waldena, Wachu Oda, Chara, Asa, Bilisa, Chewele, Hirimani, Sala, Bangale	19,300	County Government	Improved access to water	123.7M	May-Dec 2016
ALL	Drilling of Boreholes	Waldena and	14,300	County Government	Improved access to water	49.1M	May -Dec 2016

		Ndura Asa, Salama, Bura, Bangale					
TANA NORTH	Chardende pipeline construction	Nanighi/ Dokanotu	5,000	County Government	Improved access to water	65M	Jul 2015 – Aug 2016
<b>HEALTH AND SANITATION SECTOR</b>							
ALL	Micronutrient Supplementation( Vit A, Zinc, Iron Folate)	Entire County	55,344	MOH/UNICEF/ APHIA PLUS IMARISHA/IM C	Reduces morbidity and mortality rates		On-going
ALL	Management of Acute Malnutrition (IMAM)	Entire County	55,000	MOH/KRC/WF P/IMC/ UNICEF/KRCS	Reduce morbidity and mortality rates among the under fives		On-going
ALL	IYCN Interventions (EBF and Timely Intro of complementary Foods)	Entire County	11,068	MOH/UNICEF/ A+ IMARISHA/IM C/KRCS	Reduce morbidity and mortality rates among the under fives		On-going

## 6.2 Recommended Non Food Interventions

**Table 13. Short/immediate term interventions**

Sub County	Intervention	Ward	No. of beneficiaries/ Households (HH)	Proposed Implementers	Required Resources(Ksh)	Available Resources	Time Frame
<b>LIVESTOCK SECTOR</b>							
Tana river	Expansion of pasture and fodder production initiative	Chewani Mukinduni	5000 HH	County government FAO Fodder groups	10M		2016/2017 FY
Tana North	Processing of crop residues for livestock feeds	Sala Chewele Madogo	1,000 HH	NIB, TRCG, CDF Livestock	5M	Crop residues	2015-2016
Tana North	Introduction of drought tolerant cattle	Hirimani Chewele Madogo Sala Bangale	3,000 HH	TRCG, Livestock, Veterinary	1.5M	Cows for breeding, Expertise Pastures	2015-2016
<b>AGRICULTURE SECTOR</b>							
Tana River	Distribution Drought tolerant and early maturing crop seeds	All wards	4,000 HH	Department of Agriculture and other stakeholders	10M	Technical skills	LR 2016
	Distribution of assorted farm inputs (pesticides & Fertilizers)	Chewani,Mik induni and Kinakomba	2,000 HH	Department of Agriculture and other	6M	Technical skills	LR 2016

		wards		stakeholders			
Tana River Tana Delta	Peace Initiatives between farmers and pastoralists		20,000 HH	Ministry of Interior,  Shiriki County governmetn,Pe ace committees	2M		Immediate
<b>WATER SECTOR</b>							
Tana River, Tana North, Tana Delta	Water trucking	Milalulu, Chifiri, Gwano, Kinakomba, Masalani, Wayu, Bangale, Ngao, Wachu Oda, Sala, Dokanotu, Hirimani, and Madogo locations.	45,865	TRCG	15.16 M	Water bowzers	July - Sept 2016
Tana Delta	Desilting of water pans, rehabilitation of shallow wells, pipeline extensions	Assa, Wachuoda, Shirikisho, Kikomo, Kipini, Ndera, Mwina , Kipao, Kurawa	20,000	County government, National drought management authority, Coast water services board external/interna l NGOs	5M	Technical staff	Aug-Dec 2016
<b>HEALTH AND NUTRITION SECTOR</b>							
ALL	Active case finding	Entire County	55,344	MOH/NDMA/I MC	900,000	Staff, vehicles	July-Sep 2016
ALL	Re-introduction of integrated outreach services	All Health facilities in the County	55,344	MOH/IMC/AP HIA PLUS IMARISHA	810,000	Staff, vehicles	July-Sep 2016
ALL	Timely provision of food supplements	All facilities in the County	5,500	MOH/IMC/KR C/WFP	900,000	Staff, vehicles	Jul- Sep 2016

**Table 14. Medium and long term interventions**

District	Intervention	Sub County	No. of beneficiaries	Proposed Implementers	Required Resources( Ksh)	Available Resources	Time Frame
<b>LIVESTOCK SECTOR</b>							
Tana river	Promotion of indigenous poultry as an alternative source of income	Tana River	1,000 HH	County government	1M	Extension services	2016/2017 FY
Tana river	Promotion of collective livestock marketing	Tana River	5,000 HH	-Livestock department in the county	3M		2016/2017 FY
County wide	Livestock Insurance	County wide	10,000HH	National Government,	175M		2016/2017
<b>AGRICULTURE SECTOR</b>							
Tana,River ,Tana Delta,Tan North	Provision of portable water pump sets and accessories	Chewani,Mikinduni and Kinakomba Wards,  Madogo,Chewele, Sala,Garsen North and South	1000 HH	Department of Agriculture and other stakeholders	20M	Technical skills	LR 2016
Tana delta,Tana River	Revival of minor irrigation schemes	Wema,Kulesa, Oda	500 HH	Agriculture,	10M		
<b>WATER SECTOR</b>							
Tana North	Construction of 30,000 -50,000m3 large capacity dams	Hirimani, Bangale, Boka Madogo	20,000	County Government		Land	2016-2017