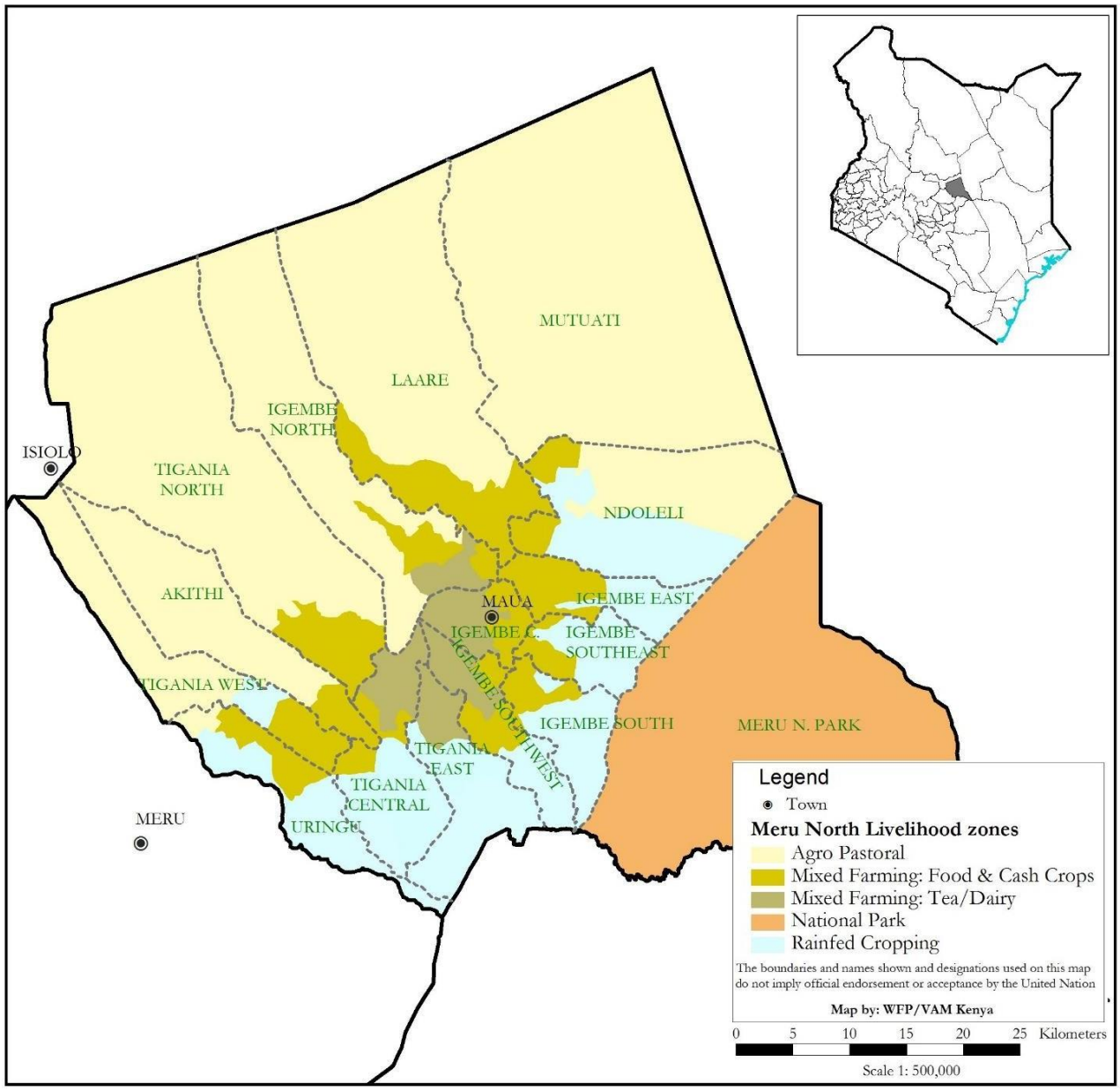
MERU (MERU NORTH) COUNTY
2018 LONG RAINS FOOD SECURITY ASSESSMENT REPORT



A Joint Report by the Kenya Food Security Steering Group (KFSSG)[1] and Meru North County Steering Group

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EXECUTIVE SUMMARY

The long rains food security assessment was carried out in Meru North targeting six semi-arid sub counties; Igembe North, Igembe Central, Igembe South, Tigania East, Tigania West, and Buuri. The assessment was done by the Kenya Food Security Steering group in conjunction with the County Steering group. The main objective of the long rains assessment was to develop an objective, evidence–based and transparent food and nutrition security situation analysis following the March-April- May (MAM) 2018 rains. The situation analysis was done using both quantitative and qualitative methods.

The 2018 long rains were above normal where the County received above 350 percent of normal rains across the livelihood zones there was even special distribution, early onset and early cessation. The above rainfall received contributed positively towards forage regeneration and crop performance. Other drivers of food and nutrition insecurity were; Insecurity and resource based conflicts, land conflict in the border of Igembe and neighbouring Tharaka Nithi County, pests and diseases for both crops and livestock. Livestock body condition was good across all the livelihood zones. Distances to water sources was normal compared to the long term average and households water consumption was at least 10- 15 litres of water per person per day in the agro-pastoral livelihood zones while in the mixed farming and the rain-fed cropping livelihood zones consumption was at 20-30 litres per person per day thus meeting the SPHERE standards.

All major markets were operational in the County except for market in Buuri Sub County where markets were closed due to outbreak of Rift Valley Fever and mandatory quarantine. In addition, quarantine imposed in the neighbouring Isiolo County also affected the markets due to restricted trades. Terms of trade was favourable across the livelihoods as evidenced by the sale of one goat which could be exchanged with 163 kilograms of maize.

Morbidity trends of season for the three most prevalent diseases in the county (Upper respiratory tract infections, malaria and diarrhea was within the seasonal norm for the children aged less than five years while it increased by 44 percent among the general population. Immunization rates were at 51 percent which was below the national target of 80 percent. Latrine coverage was high at 93.4 percent, hand washing was at 66 percent and population of household who treat water was at 20-30 percent.

According to the food security outcome monitoring (FSOM) data, households having borderline and acceptable food consumption as at May, 2018 were 6.7 and 93.3 percent respectively. The coping strategy index as at July 2018 was 7.2 percent with 21.7 percent of the households not employing any livelihood coping strategies while 50.5 of the households employed stress coping strategies. Nutrition status was acceptable based on the trends of the mid upper arm circumference of children at risk of malnutrition which was 16 percent. Under Five Mortality Rate was 0.07 per 10,000 live births while the Crude Mortality Rate (CMR) are 0.13per 10,000 persons per day.

Food security phase classification for the county is Minimal (IPC Phase 1) across the livelihood zones.

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1.0 INTRODUCTION

1.1 County Background

Meru County is located in Eastern Kenya and the peaks of Mt. Kenya cuts through the County in southern border. The County borders Isiolo County to the North, Tharaka Nithi to the East, and Laikipia to the West. The County comprises of nine administrative sub counties namely; Igembe North, Igembe Central, Igembe South, Tigania East, Tigania West, Buuri, Imenti Central, Imenti South, and Imenti North Sub Counties. The County covers an estimated area of 6,936.2 Km² of which 1,776.1km² is Meru National Park. The assessment covered Meru North with a projected population of 775,982 (KNBS 2016 projections). There are three main livelihoods zones: Mixed Farming (Food crops, Tea, Coffee and dairy) comprising 50 percent of the population, Agro-pastoral livelihood zone with approximately 27 percent of the population and Rain-fed cropping zones with 23 percent of population as shown in Figure 1.

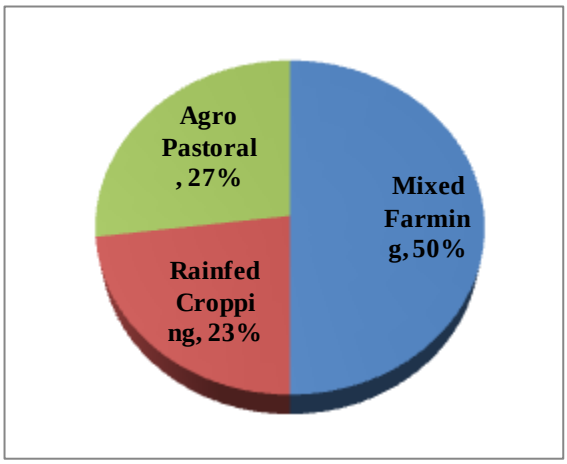

Figure 1: Proportion of Population per Livelihood

1.2 Methodology and Approach

The main objective of the long rains assessment was to develop an objective, evidence–based and transparent food and nutrition security situation analysis following the long rain season March-April- May (MAM) 2018 rains. The analysis took into consideration the cumulative effects of previous three seasons, and provided actionable recommendations for possible response options based on the situation analysis. The team used both qualitative and quantitative methods of research to interpret and analyze the data for reporting. Primary Data collection was conducted through semi structured focus group discussion, key informant interviews and market interview. A total of six focus group discussion, four key informant interviews and two market interviews were done across all the livelihood zones.

Purposive sampling was done to select sites per livelihood for the focus. Secondary data was also used to inform analysis of the report; the secondary data included satellite data for rainfall, information from SMART surveys, and the National Drought Management Authority bulletin which provides monthly surveillance data, the food security monitoring outcome data among other sources. The assessment exercise was conducted from 13th to 17th August, 2018 by a lead team from the Kenya food security steering group and County steering group.

Data collected was, analyzed and triangulated together with the secondary data to give the long rain assessment report. The analysis unit was livelihood zone and the integrated food security phase classification (IPC) protocols were used to do the classification of the severity and identify the causes of food insecurity.

2.0 DRIVERS OF FOOD AND NUTRITION SECURITY IN THE COUNTY

2.1 Rainfall Performance

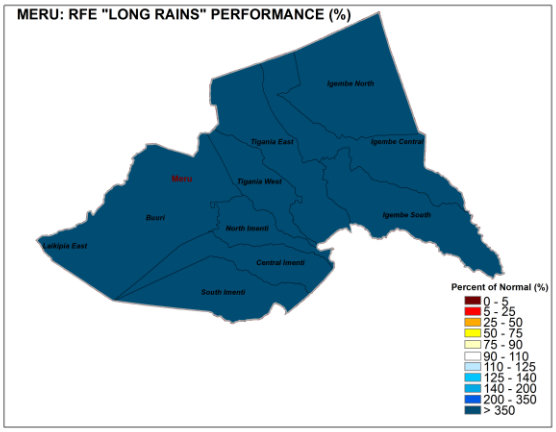

Figure 2: Rainfall Performance as a percent of Normal for Meru Sub Counties

The County receives bi-modal rainfall with the short rains of October-December being the significant season, contributing more to crop and livestock production. The onset of the long rains was early in the first dekad of March compared to the third dekad normally. The County received above 350 percent of normal rains across the livelihood zones. Most rainy days were experienced in the month of April across the two sub counties. Temporal distribution across was erratic with lowest amounts of rainfall being received in the third dekad of March and the highest amount in the second dekad of April. Spatial distribution was even across the sub counties. Cessation was early in the third dekad of May compared to the first dekad of June normally. The performance of the long rains was good and positively contributed to good crop and livestock production.

2.2 Insecurity/Conflict

There were minimal cases of insecurity/ conflict reported in the County. Cattle theft was reported in Laare in Igembe (five cows stolen) but eventually recovered. Insecurity/ conflict has had a significant drop compared to previous year same time. This is attributed to Joint Security patrols which have been increased in the grazing zones and group herding where animals are guarded by National Polis Reservists and the local community.

Other shocks and hazards

Fall army worm invaded maize farms in all livelihood zones resulting to crop losses. Farmers in Mixed farming livelihood zones were mostly affected where at least 45 percent of crop failure was attributed to infestation of the fall army worms.

3.0 IMPACTS OF DRIVERS ON FOOD AND NUTRITION SECURITY

3.1 Availability

3.1.1 Crop Production

The County is largely dependent on the short rains season which contributes to about 70 percent of crop production. Food crop production contributes to 29 percent of cash income in the rain-fed cropping livelihood zone and 13 percent in the agro-pastoral livelihood zones. The main food crops grown across all livelihood zones in order of importance include maize, beans and green grams. The main cash crops are tea, coffee and “miraa” which are mostly produced in the rain-fed and mixed farming-tea, coffee livelihood zones. Maize contributes 40 and 56 percent to cash income and food in the agro-pastoral livelihood zone; while it contributes 10 percent to cash income and 45 percent of food in the mixed farming tea, coffee and dairy livelihood zone. In the rain-fed zone it contributes 45 percent to cash income and 60 percent to food

Rain-fed Crop Production

The three main crops grown in the county are maize, beans and green grams. There was a decrease in area under maize and beans to 79 and 87 percent of the long term average respectively (Table 1). The early onset of rainfall also hindered land preparation leading to low area planted for maize and beans. Perception by farmers of poor performance of these crops during long rains as in the previous seasons was also attributed to low area under the crops. The area planted for green grams was more than eight times the long term average. The increase in acreage was attributed to the provision of certified green grass seed by the Meru County Government in Partnership with the Kenya Red Cross as well as assurance for ready market and better prices (Ksh.80 per kilogram).

Table 1: Rainfed Crop Production in Meru North

Crop	Area planted during 2018long rains season (Ha)	Long Term Average area planted during the long rains season (Ha)	2018 long rains season production(90 kg bags)Actual	Long Term Average production during the long rains season(90 kg bags)
Maize	19,645	24,941	317,396	390,385
Beans	27,510	31,783	152,530	186,220
Green Grams	8,044	1,978	75,592	17,791

The production of maize was 81 percent of the long term average (Table 1) due to late planting and fall army worm infestations which led to crop loss. Heavy rainfall resulted in reduced bean production to 82 percent of long term average due to rotting after pod formation (Table 1). There was an increase in the production of green grams however, yields were lower than the average expected from the county due to heavy rains that resulted in the crop becoming more vegetative at expense of grain production. High weed incidences and poor management also contributed to poor crop performance. Generally, all the crops performed better in terms of yields than the last three seasons in all the livelihood zones.

Irrigated crop production

Irrigation is done in both small and large scale. The irrigation schemes include: -Kiarimba in Tigania West, Kaumbura in Igembe South and Kanjoo in Igembe Central. The main crops put under irrigation are tomatoes, bananas and kales. There was a decrease in area planted for all the three crops where area for tomatoes, bananas and kales reduced to 71, 90 and 58 percent respectively of long term average (Table 2). The decrease in tomato and kales acreage was largely attributed to the early onset of rains and heavy rains making farmers to reduce acreage in fear of high attacks by the fungal diseases. The decrease in acreage for banana was attributed to lack of planting materials. There was a commensurate reduction in production for tomatoes, bananas and kales to 71, 52 and 53 percent of the long term average (Table 2) which was largely attributed to the low acreage cultivated. Sourcing of banana suckers from neighboring farms to establish new orchards also enhanced pest and disease spread leading to decreased production. Tomatoes production was affected by the heavy rains which lead to increased fungal diseases. In terms of gender, men, women and some youths are all involved in horticultural production.

Table 2: Irrigated Crop Production in Meru North

Crop	Area planted during 2018Long rains season (Ha)	Long Term Average area planted during the Long rains season (Ha)	Percent Difference	2018 Long rains season production (Metric tonnes) Actual	Long Term Average production during the Long rains season (Metric Tonnes)	Percent Difference
1.Tomatoes	230	322	**-29%**	9282	13065	**-29%**
2. Bananas	122	136	**-10%**	1460	2793	**-48%**
3. Kales	70	120	**-42%**	5070	9580	**-47%**

3.1.2 Cereals stock

The maize stocks held by the farmers, traders and millers were six, 12 and 11 percent below the long term average respectively (Table 3). Most of the maize stocks were largely in the Rain-fed cropping livelihood zone. The reduction in maize stocks held by the farmers is largely due to the lack of carry-over stocks from the previous season which is considered the main season and the low production from the current season. There was no significant difference in the sorghum held by both farmers and the traders compared to the long term average. The green grams held by the farmers was very high compared to the long term average as the farmers anticipated that the County Government would provide better prices than what is currently offered at the market. The stocks held by the traders reduced by 52 percent since farmers sold green grams in small quantities to meet basic their needs as they wait for better prices. The current maize stocks are expected to last for one month in the agro-pastoral livelihood zone, two months in the mixed farming and three months in the rain-fed cropping livelihood zone.

Table 3: Cereals stock in Meru County

Commodity	Maize		Rice		Sorghum		Green gram	
	Current	LTA	Current	LTA	Current	LTA	Current	LTA
Farmers	134,629	142677	212	418	8421	8488	38,560	4955
Traders	74860	84603	4471	4605	3636	3319	16849	34983
Millers	7560	8470	0	0	0	0	-	-
Food Assistance/ NCPB	9907	2220	-	-	0	0	-	-
TOTAL	226956	237970	4683	5023	12057	11807	55409	39938

3.1.3 Livestock Production

The main reared livestock in the region are; cattle, sheep and goats. Other livestock kept are donkeys and poultry. Poultry is forthcoming and replacing sheep as an important livestock. Contribution of livestock to cash income and food is illustrated in (Table 4).

Table 4: Livestock Average Percentage Contribution of Cash Income

Livelihood zone	Cattle		Goats		Sheep	
	Percent contribution to cash income	Percent contribution to Food	Percent contribution to cash income	Percent contribution to food	Percent contribution to cash income	Percent contribution to food
Mixed Farming	60	4	10	20	6	10
Rainfed	8	40	61	10	5	7
Agro pastoral	15	8	25	10	40	70

Pasture and Browse Condition

The pasture and browse condition was good across all the livelihood zones and was above normal at this time of the year. Compared to the same period in the previous year the situation had improved as due to above normal long rains that triggered rejuvenation/spouting of the pasture and browse. The pasture and browse are expected to last for the next one and half to two months across all the livelihood zones. In the agro pastoral zone farmers conflicts and insecurity was a limiting factor in access to pasture and browse. In the rainfed zone Conflicts among farmers was reported in Igembe North and central. Farmers crop residues such as straws and pods/husks to supplement fodder (Table5).

Table 5: Pasture and browse Condition

Livelihood zone	**Pasture condition**		**How long to last (Months)**		**Browse condition**		**How long to last (Months)**	
	Current	**Normally**	**Current**	**Normally**	**Current**	**Normally**	**Current**	**Normally**
Mixed farming	Good	Good to fair	2-3	1	Good	Good	2	1
Rain-fed	Good	Good to fair	2-3	1	Good	Good to fair	2	1
Agro pastoral	Good	Good to fair	2	1	Good	Good to fair	2	1

Livestock Body Condition

The livestock body condition for all species was good across the livelihood zones (Table 6). The condition was normal at this time of the year and has improved compared to the same time in the previous year. Compared to the short rains season the condition has improved from good-fair to good in rain-fed zone and mixed Farming livelihood zones. In the Agro pastoral livelihood zone it had improved from fair-poor to good. The improvement was attributed to increased availability of forage and reduced distances to water sources. Good body condition is expected to

remain stable in the next two to three months. The good body condition of livestock has positively impacted on milk production.

Table 6: Livestock Body Condition

Livelihood zone	Cattle		Sheep		Goat	
	Current	Normally	Current	Normally	Current	Normally
Marginal Mixed Farming	Good	Good	Good	Good	Good	Good
Mixed Farming	Good	Good	Good	Good	Good	Good
Rain-fed	Good	Good	Good	Good	Good	Good

Tropical Livestock Unit and Birth Rates

The average tropical livestock units per household was normal across the livelihoods for the both poor and medium income households with an exception of medium income households in the agro pastoral where the TLU reduced. Most farmers in agro-pastoral zone had sold their livestock in the previous dry season. However, the situation was expected to return to normal due to availability of pasture, browse and water (Table 7).

Table 7: Tropical Livestock Units for the Poor and Medium Households

Livelihood zone	Poor income households		Medium income households	
	Current	Normal	Current	Normal
Marginal Mixed Farming	1-2	1-2	2-3	2-3
Rainfed	3-4	3-4	5-7	5-7
Agro pastoral	6	6	15	18

Birth rate

There were normal birth rates with minimal cases of abortions; the rates are expected to improve due to the current good situation of pasture and browse compared to the previous season. High conception rate was also expected due to improved livestock body condition.

Milk Production and consumption

Milk production and availability at household level increased compared to long term average. In the mixed farming livelihood zone milk production was 8-9 litres per household per day compared four litres in the short rains 2017. In the rain-fed zone production was seven litres per household per day compared to three litres in the short rains 2017. Production in the Agro-pastoral zone it was 3-4 litres per household per day compared to 2 litres in the short rain season (Table 8). Increased milk production was attributed to availability of forage and reduced distances to water points. Majority of the households consumed half of the total milk produced and the remaining half was sold for income. Milk prices have remained normal at this time of the year due to availability of milk supply at the household and at the markets.

Table 8: Milk Production Consumption and Prices

Livelihood zone	Milk Production (Litres) per Household		Milk Consumption (Litres)per Household		Prices (Ksh.) per Litre	
	Current	LTA	Current	LTA	Current	LTA
Mixed Farming	8-9	8	2	2	50	50
Rainfed	7	6	2	1.5	50	50
Agro pastoral	3-4	3	1.5	1	50	50

Migration

Minimal internal movements of livestock in Igembe North from rain-fed livelihood zones to Agro pastoral zones in search of pasture and browse were reported which was normal at this time of the year. The situation is due to availability of pasture, browse and water within the county and at the bordering counties.

Livestock diseases and mortalities

There were confirmed cases of Rift Valley fever in Buuri Sub County which had extended to the neighbouring Isiolo County. Quarantine was imposed from the first week of June where markets and slaughter houses in the area were closed. The situation was contained through vaccination and returned to normal in the third week of July. Veterinary department was on high alert on surveillance after reported cases of Anthrax disease, Lumpy Skin Disease (LSD), Foot and Mouth Disease (FMD) rabies and Rift Valley Fever (RVF) in Igembe North and Buuri sub counties.

Water for Livestock

The water sources for livestock are; piped water, pans, springs, rivers and boreholes. Water recharge levels was at 100 percent and was expected to last until the next rain season except the water pans which are expected to last for one month due to siltation. The return trekking distancesto water source is 0-1 km in the mixed farming and rainfed livelihood zones while in the Agropastoral it was 3-5km which was below the long term avarage (Table 7).

Watering frequency was on a daily basis for all species across the rainfed and mixed farming livelihood zones while in the agro-pastoral zones watering frequency was after every two days which is normal at this time of the year. The availability of water and the reduced distances have impacted positively on the livestock productivity in terms of; increased milk production, good body condition and favourable market prices. This was expected to boost food security at household level through dietry diversification and increased purchasing power of the livestock farmers.

Table 9: Water for Livestock

Livelihood zone	Return distances (km)		Expected duration to last (months)		Watering frequency	
	Current	Normal	Current	Normal	Current	Normal
Mixed farming	0-1	2-5	2	1	Daily	Daily
Rain- fed farming	0-1	2-5	2	1	Daily	Daily
Agro Pastoral	3-5	5-10	1	1	After every two days	After every two days

3.2 Access

3.2.1 Markets- prices – functioning

The main market for livestock is Ngundune while Maua market is solely for food commodities. Others markets that include Kianjai Laare, Mulika, Mikinduri and Timau are for both food commodities and livestock. Market operations were normal across the livelihood zones except in Buuri where the livestock market was closed due to outbreak of Rift Valley Fever imposed quarantine. The main sources for livestock traded was the neighboring County of Isiolo and some minimal local supply. Food commodities traded in the market are also largely supplied locally. Markets were well provisioned with a wide range of food commodities that include: - legumes and cereals such as green grams, pigeon peas, beans, maize, cassava, vegetables-kales, cabbages, tomatoes and onions. The main livestock traded in the market were goats, sheep and cattle. Supplies for the main staple food commodities was normal across the markets in the livelihoods zone as harvesting was ongoing. Traded volumes for both livestock and food crops were within the seasonal norms. Demand for maize in the markets was low due to availability of stocks at the household level. Market supplies for livestock was expected to increase as the households start selling to purchase food and also for school fees in September. Supply for maize for the next three months is expected to gradually increase from the external sources to meet the growing demand largely in the agro-pastoral livelihood zone. The maize stocks in this zone was expected to be exhausted in the next one month.

Maize prices

The price of maize in July 2018 was 48 percent below the price of Ksh.50per kilogram recorded in July 2017 and was 25 percent below the five-year long term average (2013-2017). Maize prices were above the long term average from January to May 2018 (Figure 3). The downward trend recorded from May up to July was attributed to the inflow of maize from the external markets as the government increased food reserves following the poor food security situation in the county after the 2017 short rains assessment. Maize prices recorded were generally the same across the livelihood zones

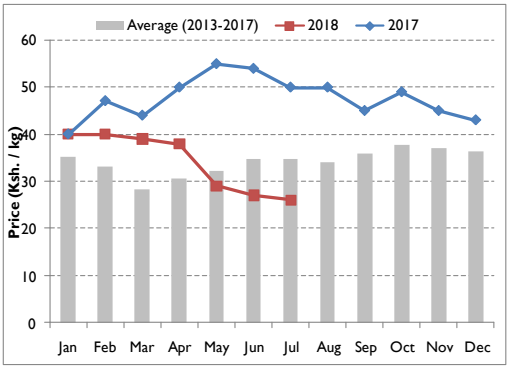

Figure 3: Maize Prices in Meru North

but was expected to marginally increase however remain below the long term average. The current prices of maize are favorable across the livelihood zones and this had improved access for households that rely on markets.

Goat Prices

The price of a goat as at July 2018 was 12 percent above the 2013–2017 five-year long term average and 20 percent above the price recorded at same period in 2017. The prices have been on an upward trend since March, 2018 but within the seasonal long term average except in month of May when the prices were slightly below the LTA. (Figure 4). The was no significant differences in the price of goats across the livelihood zones. The current high goat prices were attributed to the low supply in the market resulting in high demand. The increase in prices noted from April to May was also be attributed to the quarantine in the neighbouring Isiolo County that led to the closure of livestock markets. This limited the flow of goats into Kangeta and Ngundune markets which rely on both local and external supply from Isiolo. Most traders sourced for goats from the local supply which is normally not adequate and with high demand the prices shot up. Goat prices was expected to remain high in the next three months as the body condition of livestock remains good and above normal.

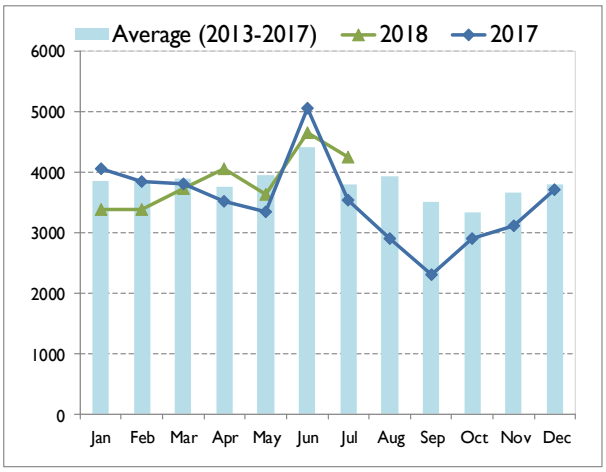

Figure 4: Goat Prices in Meru North

3.2.2 Terms of trade

The terms of trade in July 2018 were good as the sale of one goat could be exchanged for 163 kilograms of maize compared to the long term average when the sale of one goat could be exchanged for 110 kilograms of maize. The current terms of trade have more than doubled and are 130 percent above those recorded at the same time in 2017 (Figure 5). TOT was below the long term averages until May when they surpassed the long term average (Figure 5). The above normal terms of trade was attributed to the high goat prices as a result of the good body condition. The terms of trade are expected to remain relatively good for the livestock farmer and generally above the long term average for the next three months. The good terms of trade have greatly contributed to availability of income at the household level and as households are able to access more maize leading to improved food security situation.

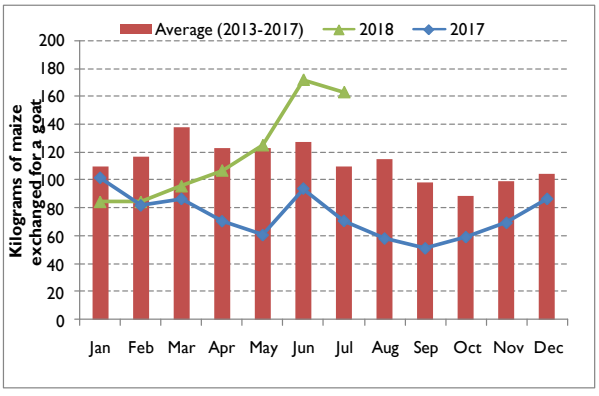

Figure 5: Terms of Trade in Meru North

3.2.3 Income Sources

The main sources of income in the county normally include casual waged labour, livestock and cash crop sales. In the month of July, the main source was casual labour as harvesting was going on and the sale of food crops such as green grams and millet. In the mixed farming, tea, coffee and dairy zones, households continued to access income through the normal sources which included cash crop sales and casual labour. Table 8 indicates the main sources of income normally and their percent contribution (Table 10)

Table 10:Source of Income and Percent Contribution per Livelihood

Livelihood Zone	Source of Income	% Contribution
Agro Pastoral	Casual waged labour	**38**
	Livestock Production (including meat, milk, hides, skins, and by products)	**26**
	Food Crop Production	**13**
Mixed Farming-Tea, Coffee and Dairy	Cash Crop Production	**40**
	Casual waged labour	**15**
	Livestock Production (including meat, milk, hides, skins, and by products)	**30**
Rainfed Cropping	Food Crop Production	**29**
	Casual waged labour	**25**
	Livestock Production (including meat, milk, hides, skins, and by products)	**15**

3.2.4 Water access and availability

The major sources of water for domestic use in the County are boreholes, rivers and piped water. Other sources are; springs pans and dams. The region received above normal long rains hence recharge levels were at 100 percent. Status of the water sources is as shown in Table11. Available water at the sources is expected to last until onset of the short rains. Water pans in the agro-pastoral zone are expected to last for one month.

Table 11: 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)	
	Current	Normal	Current	Normal	Current	Normal	Current	Normal
Mixed farming	0.5-1	0.5-1	2-5	2-5	0-5	5-10	20-30	20-30
Rainfed	0.5-1	1-1.5	2-5	2-5	0-5	5-10	20-30	20-30
Agro pastoral	3-5	3-5	2-5	2-5	5-10	5-10	10-15	10-15

Distance to water sources

The distance to water sources ranged from between 0.5-5 km, which was normal at this time of the year. The return distances to water were 0.5 km and 1 km for mixed farming and rain-fed livelihood zones respectively while in the agro pastoral zone it was 3-5 km. Compared to the long rains 2017, the distances had reduced from 1-2 km, 1.5 -2 km and 8-10 kilometers for mixed farming, rainfed, and agro-pastoral livelihood zones respectively. Areas with long distances (above 5 km) were Kalimbene, Kachiuru, Kamwelini and Ndumuru in the agro pastoral livelihood zone. This was due to low concentration of water sources, water pans siltation and the available boreholes are salty hence unsuitable for domestic use.

Waiting time at Source and Cost of Water

The current waiting time at the source ranged from between 2- 10 minutes across all the livelihood zones which was normal at this time of the year. However, in Mutuati public water point of Igembe North in rainfed livelihood zone waiting time was between 20- 45 minutes. The source serves a larger population due to low concentration of water sources and the other available borehole are private and expensive. The current cost of water per 20 liters jerrican ranged from Ksh 2 – 5 at the source and Ksh 10-20 at vendor which was normal. In Kachiuru the cost was at Ksh. 50 since all the people depended on vendors for water supply.

Water consumption

The current water consumption per person per day was at 20- 30 in the mixed farming and rain-fed livelihood zones while in the agro-pastoral livelihood zone it was 10-15 liters which was normal compared to long term average. Compared to LRA 2017 consumption increased from 15-20 liters in both rain-fed and mixed farming while in the agro-pastoral zone it was 8-10 liters per person per day. The increase is attributed to 100 percent water recharge levels owing to above normal rainfall performance which increased water access at reduced distances.

3.2.5 Food Consumption

Based on data from NDMA, the proportion of households with acceptable, borderline and poor food consumption scores in July 2018 was 63.7, 27.7 and five percent respectively. In the agro-pastoral livelihood zone, the households with acceptable, borderline and poor food consumption scores were 57.8, 35.5 and 6.7 percent respectively. In the rainfed livelihood zone, the households with acceptable food consumption scores were 96.6 percent with the remain 3.4 percent having borderline food consumption scores (Figure 6). Based on the food security outcome monitoring (FSOM) data, majority of the population was had acceptable food consumption (93.3 percent) while borderline food consumption scores were 6.7 percent. There were no significant differences in the mean food consumption scores of

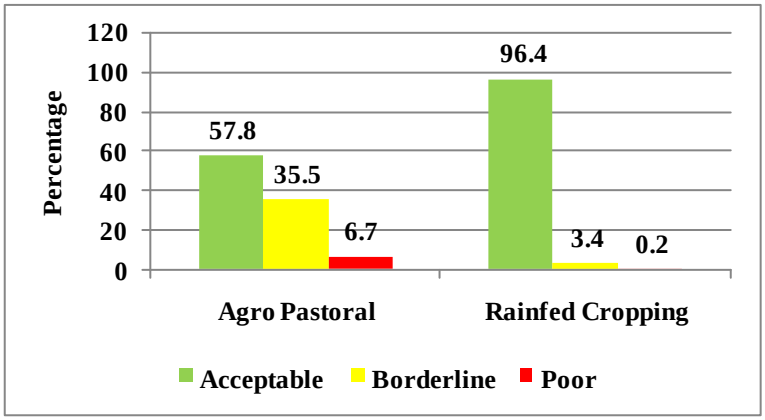

Figure 6: Food Consumption per Livelihood Zones

male headed households when compared to the female headed households. The high proportion of households consuming acceptable diets indicates an improved food security situation across the live hoods.

3.2.6 Coping strategies

The reduced coping strategy index (CSI) for Meru North in July 2018 was 7.2, based on NDMA data and was comparable to that reported by World Food Programme in the food security outcome monitoring which was 5.7. The trends for the last five years showed significant improvement in the current long rains season compared previous seasons as in 2017 when the mean coping strategy index was 24.1 (Figure 7)

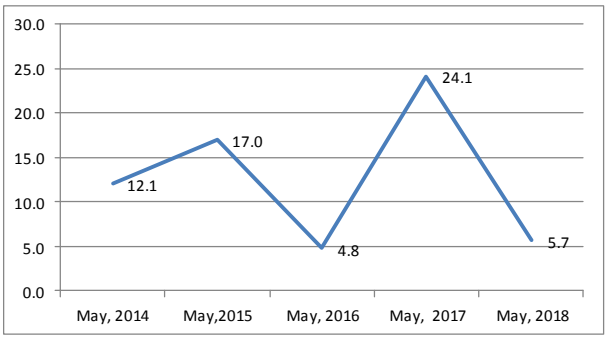

Figure 7: Coping Strategy Index Trends for Meru North

The mean coping strategy index for female headed households was lower (4.3) compared to that of the male headed households (6.9).

Households that employed insurance coping strategies were less than five percent for both the female headed and the male headed households. With regard to livelihood coping strategies 21.7 percent of the households were not employing any coping strategies while the rest employed some form of coping mechanism. Of the 78.3 percent employing some form of coping, 50.5, 15.8 and 12 .1 percent employed stress, crisis and emergency coping strategies respectively (Figure 8).

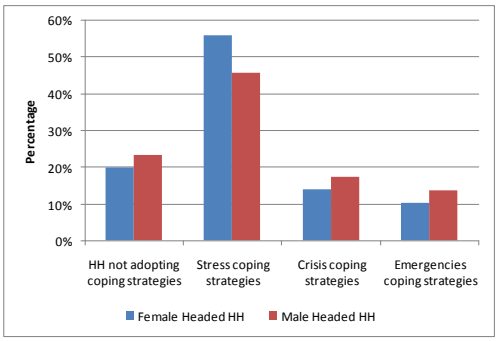

Figure 8: Proportion of Households adopting coping strategies by gender

3.3 Utilization

3.3.1 Morbidity and mortality patterns

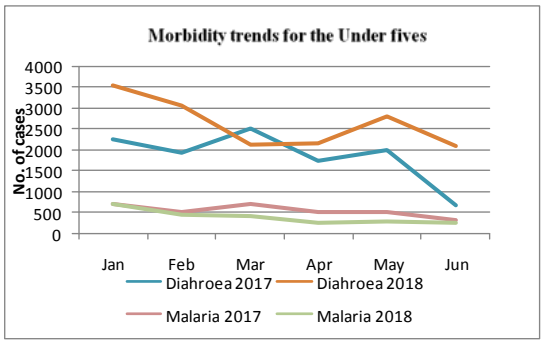

Figure 9: Morbidity Trends for the Under fives

General trends from January to July, 2018 indicated that the three most prevalent diseases in the county were within the seasonal norms for both the children under fives and the general population. Cumulatively, upper respiratory tract infections was within the seasonal norms for the children aged less than five years while it increased by 44 percent among the general population as at July, 2018 due to the cold weather conditions experienced in long rain season following the heavy rains.

As at July, 2018, malaria cases decreased by 28 and 70 percent for the children aged less than five years and the general population respectively (Figure 9). The reduction in malaria cases in the period under reference was attributed to streamlined testing and as such only confirmed cases were reported.

Diarrhoeal cases increased by 42 percent among the children under five while it reduced among the general population and was less by 27 percent when compared to the same period in 2017 (Figure 10). The increase among the under-fives was largely attributed to the poor hygiene practices among the caregivers. The reduction in diarrhoeal cases among the general population was attributed to availability food at household level and men tended to eat more at home compared to the same season last year. When the households were facing food stress more men ate their meals from vendors and hotels.

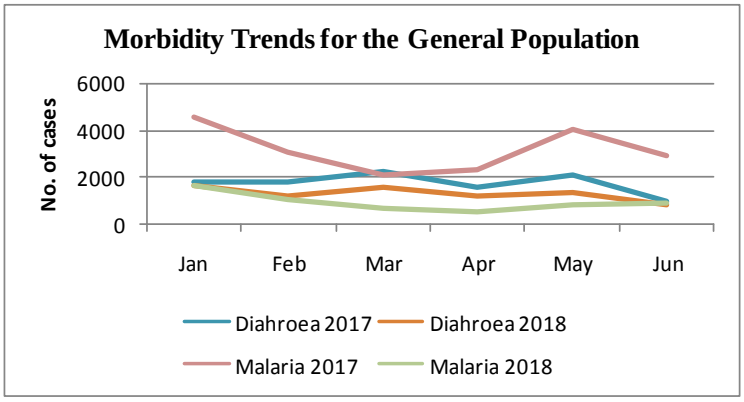

Figure 10: Morbidity trends for the general population

There were 18 cases of measles reported in the county. From January to June 2018, dysentery cases reduced to 240 cases compared to 372 cases reported at the same time in the previous year. Typhoid cases in the reference period increased by nine percent compared to 8,054 cases reported in the previous year. The increase in the water-borne diseases was attributed to contamination of open water sources during the long rains season as households in some areas continued to practice open defecation that led to the contamination of water sources. Under Five Mortality Rate was 0.07 per 10,000 live births while the Crude Mortality Rate (CMR) are 0.13 per 10,000 persons per day and were below the emergency cut offs.

3.3.2 Immunization and Vitamin A supplementation

The proportion of fully immunized children between January to June 2018 was 51 percent which was a reduction from 56.2 percent in 2017. This was still below the national target of 80 percent. From January to June 2018, the highest proportion of the fully immunized was reported in Tigania East sub County while Igembe North Sub County reported the lowest at 54.1 percent. The rest of the sub counties ranged between 60 -69 percent; Buuri (60.6 percent), Igembe Central (69.3 percent), Igembe South (65.9 percent) and Tigania West (66.9 percent). The decrease in immunization coverage is attributed to the fact most mothers or caregivers failed to take their children to the health facilities during the heavy rains experienced in the season and were also more engaged in the farms.

Vitamin A supplementation for children 6–11 months in Meru North was 62.1 percent in January to June 2018 compared to 31.3 percent reported in the same period in 2017 while that for the children aged 12-59 was 56.8 percent in January to June 2018 compared to 22.9 percent in the same period in the previous year. Generally, the proportion of children 6-11 months who had

received Vitamin A supplements was below 40 percent in all the sub counties except in Igembe Central where it was 47 percent. A very low coverage of less than 30 percent was recorded for the children aged 12-59 months. Overall, vitamin A supplementation for children aged 6-59 months, was lowest in Buuri Sub County (16.1 percent) and Tigania West Sub County (19.5 percent) (DHIS, 2018). The improvement in coverage in Vitamin A supplementation was attributed to the house to house campaign that was done in the month of May and June following support by stakeholders.

3.3.3 Nutritional status and dietary diversity

Based on surveillance data from NDMA, the proportion of children under five years with MUAC (<135mm) in July 2018 was 16 percent compared to 20 percent reported in the same period in 2017 (Figure 11). Since March, the trend for the proportion of children at risk of malnutrition was on a downward trend except in May, when there was a slight increase, however, during this period, the percentages have been below the long term average and also below the trend recorded in the year 2017 (Figure 11.).The downward trend for children at risk of malnutrition is indicative of an improving nutrition status for the children under five years of age and could be attributed to the current availability of food and milk at household level.

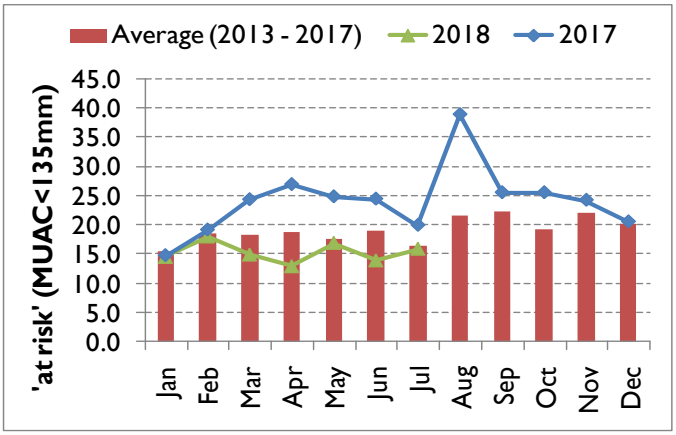

Figure 11: Proportion of children at risk of malnutrition based on MUAC (<135mm)

Data from the DHIS indicated that the proportion of children who were underweight has been less than four percent since January to June 2018. When comparing the male and female children, there were more females who were malnourished compared to the males (Table 12). Currently, food is available at the household and as such the children under five are fed more frequently compared to the same time last year.

Table 12: Percent Underweight by gender

Percent Underweight							
Year	**Gender**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**
Jan-June 2018	**Male**	3.1	2.2	3.1	2.7	2.7	2
	Female	3.4	2.6	3.6	3.9	3.4	3.2

Community interviews revealed that meal consumption was normal across the livelihoods. It was 2-3 meals in the agro pastoral livelihood zone, three in the rain-fed and the mixed farming livelihood zones. The dietary diversity is good with households consuming at least five food groups including cereals, fats, milk, meat, green grams and vegetables in the rainfed and mixed farming livelihood zone. Exclusive breastfeeding was still less than 40 percent with most children being introduced to solid foods at the age of two to three months.

3.3.4 Sanitation and Hygiene

The latrine coverage for the period under review remained the same at 93.4 percent in January to June 2018 compared to 89.3 percent reported during the same period in the previous year. The latrine coverage per Sub County is as indicated in Table 13.

Table 13: Latrine Coverage per Sub County

Sub County	January to June 2018 % Coverage	July to December 2017 % Coverage
Meru North	**93.4**	**89.3**
Igembe south	98	97.6
Igembe north	88	85.7
Igembe central	93	80
Tigania east	90	85
Buuri	98	98

Data from the public health office indicated that water treatment was being done by 45 percent of the households. The proportion of households practicing hand washing at four critical times was 66 percent. Water contamination was reported at Mboone river in Igembe South. The main source of contamination was human feaces which has led to an increase in diarrhoeal cases as seen in the morbidity.

3.4 Trends of key food security indicators

Table 14 Food Security Trends

Indicator	Short rains assessment, February 2018		Long Rains Assessment, 2018
% of maize stocks held by households		26 percent of LTA	94 percent of LTA
Livestock body condition	Agro-pastoral	Good to fair	Good
	Mixed Farming	Fair to good	Good
	Rainfed farming	Good	Good
Water consumption (litres per person per day)	Agro-pastoral	8- 10 litres per person per day	10-15
	Mixed Farming	20-30 litres per person per day	20-30
	Rainfed farming	25-30 litres per person per day	20-30
Price of maize (per kg)		40	27
Distance to grazing	Agro-pastoral	4-8	5
	Mixed Farming	1	1
	Rainfed farming	3-4	3
Terms of trade		93kgs	172
Coping strategy index	Agro-pastoral	32.8	7.2
	Mixed Farming	4.8	
	Rainfed farming	4	
Food consumption	Poor	3.6	0

Indicator	Short rains assessment, February 2018		Long Rains Assessment, 2018
score	Borderline	18.6	3.4
	Acceptable	77.3	96.6

4.0 CROSS- CUTTING ISSUES

4.1 Education

4.1.1 Enrollment:

There was no significant difference in Enrollment from term one to term two for both girls and boys. The situation was normal since there were few transfers and food security situation was normal. The dropout cases reported were due to transfers, migration, early marriages, 'bodaboda' and miraa business and early pregnancies (Table 15).

Table 15: Enrolment rates

	Term I 2018			Term II 2018			Remarks
Enrollment	Boys	Girls	Total	Boys	Girls	Total	
ECD	17716	18153	35869	17692	18091	35783	Migration of parents Transfers
Primary	89054	92424	181478	88862	91998	180860	Early pregnancies Early marriage Peer pressure Bodaboda and miraa business
Secondary	23799	25857	49656	23597	25804	49401	Early pregnancies Peer pressure Early marriage 'Bodaboda' and' miraa' business

4.1.2 Participation

The attendance rate for both boys and girls was good across all the months for ECD, primary and secondary school. There were few cases of absenteeism in primary and secondary schools this was attributed to free primary and secondary education and the school milk program for ECDE. Absenteeism of girls was higher than for boys which was attributed to girls miss schools during menstrual period and are often engaged at home to take care of the young siblings when their parents are away for instance during market days. Attendance of teachers was good due to introduction of Teachers Performance Appraisal Development (TPAD) system hence curbing absenteeism.

4.1.3 Retention

The drop-out rate for both boys and girls in primary school was negligible, less than 0.2 percent, which was attributed to the Government policies and good food security situation (Table 16).

Table 16: Retention in Schools in Meru North

Indicator	**End of Term I 2018**		**End of Term II 2018**	
Students dropped out from school	**No. of Boys**	**No. of Girls**	**No. of Boys**	**No. of Girls**
ECD	17716	18153	17692	18091
Primary	89054	92424	88862	89898
Secondary	23799	25857	23597	25804

4.1.4 Transition

The Government through the Ministries of Education and Interior and Coordination is enforcing 100 percent transition for both ECD to primary and primary to secondary school. This enforcement is supported by the free primary and free secondary education programme that has reduced the burden of education on parents. Although transition rate has not reached the 100 percent, it is anticipated that by next year it will be above 90 percent for both boys and girls (Table 16).

Table 16: Transition rates.

Indicator	**2017**		**2018**	
% of transition	Boys	Girls	Boys	Girls
Primary to post primary	79%	74%	86%	83%
ECD to primary	93%	92%	95%	97%

4.1.5 School Meals Programme

There are no ongoing school feeding programme for primary and secondary schools however, the County government had initiated milk programme in all public ECDE schools in the County. This has greatly contributed to high enrollment, retention and increased transition rate.

5.0 FOOD SECURITY PROGNOSIS

5.1 Prognosis Assumptions

- According to FEWS NET/USGS preliminary forecast, cumulatively the short rains (Oct-Dec) are likely to be above average based on El Niño and IOD neutral conditions from October, 2018.
- Based on the NDMA price trends, the maize prices are expected to increase marginally in the next two to three months
- Based on the trends of long term price from NDMA bulletin, the goat prices are likely to remain above the long term average and the terms of trade are likely to remain above the LTA for the next three months.
- According to NDMA bulletin, the pasture and browse are likely to be available until the onset of the short rains and the livestock body condition is likely to remain good. Distances to water sources for livestock and to grazing areas is expected to slightly increase in the next three months. Distances and waiting time at the water source for domestic consumption are expected to remain stable

5.2 Food security Outlook

Food Security Outcomes (August, September, October)

For the next three months, the household food consumption is expected to remain stable across the livelihood zones as currently food is available both at households and the markets. Households purchasing power is expected to remain favorable. The proportion of households employing food consumption-related coping mechanisms is likely to remain within the seasonal norms. No significant changes are expected in both the nutrition status and mortality.

Food Security Outcomes (November, December, January)

Based on the assumptions that there is likely to be above normal rainfall for the short rain season, the households are likely to continue having access to food and thus the proportion of households having acceptable food consumption scores is expected to increase. Pasture and browse condition will improve consequently improving livestock body conditions, resulting in increased milk production for home consumption and sale. Water will be accessible at reduced trekking distances for both domestic and livestock and consumption will be normal per person per day. Watering frequency for livestock is likely to be on daily basis. Nutrition status is likely to remain stable. The mortality rates are not expected to change significantly and therefore a high likelihood that the county will remain in the minimal phase (IPC Phase 1).

6.0 CONCLUSION AND INTERVENTIONS

6.1 Conclusion

6.1.1 Phase classification

The County is currently classified in Minimal (IPC Phase 1) across the livelihood zones.

6.1.2 Summary of Findings

The performance of long rains was cumulatively above normal and was evenly distributed spatially and had significant positive impact in the food security situation across the livelihood zones. Food was available at both the household and markets and the prices were below the long term average. Livestock productivity was normal across the livelihoods. Water was available and accessible across all livelihood zones. Access to income was good as the terms of trade were favorable. Majority of the households (93.3 percent) had acceptable food consumption patterns with about 21.7 percent of the households not employing any livelihood coping mechanism. However, water treatment was being done by only 45 percent of the households and majority of the households had poor hygiene practices as evidenced by the poor hand washing practices.

6.1.3 Sub-county ranking

Sub County	**Food security rank (Worst to best)**	**Remarks**
Igembe North	1	Insecurity Low concentration of water sources Long distances to water sources Poor road networks Increased food prices
Igembe Central	2	Insecurity Low concentration of water sources Long distances to water sources
Tigania West	3	Poor road networks Increased food prices
Tigania East	4	Poor road networks Increased food prices
Buuri	5	Increased food prices Increased distances to water points
Igembe South	6	Poor road networks

6.2 Ongoing Interventions

Food interventions

Table 14: Ongoing food interventions

Sub county	Intervention	Population targeted (%)	Remarks/ Modality	Implementers
Igembe South	GFD	10%	GFD	National government
Igembe North	GFD	15%	GFD	National government
Igembe Cenral	GFD	10%	GFD	National government
All	School milk program	ECDE		County government

Non-food Interventions

Ongoing non-food intervention

Table 17: Ongoing Non-food Interventions

LIVESTOCK						
Intervention	**Objective**	**Specific Location**	**Cost**	**No. of beneficiaries**	**Implementation Time Frame**	**Implementation stakeholders**
Disease surveillance/ Livestock Disease Control (Livestock vaccinations)	To provide timely information of any disease out breaks	All Sub-Counties of Meru County	10M	All livestock farmers in the County. 25000 HHs	Continuous	Directorate of Livestock Dev.
Promotion of A.I. services		All Sub-Counties of Meru county	18.5 M	All cattle farmers in the county. 25000 HHs	Continuous	Directorate of Livestock dev.
Trainings in livestock husbandry practices		All Sub-Counties in Meru County	5.8M	7,200 households	Continuous when funds are available	Directorate of livestock Dev.
WATER						
Immediate ongoing interventions						

Equipping of the newly drilled and capped boreholes	To provide clean portable water for HH use To reduce trekking distances	All the 45 wards in the County	120M	100,000 HH	3 months	Meru County Government
Completion of the ongoing 3 dams construction	To provide water supply for irrigation and domestic use	Igembe South Igembe Central Tigania East	180M	60,000 HH	3 months	National government Tana Water Serviced Board
Medium and long term ongoing interventions						
Drilling and equipping of all the earmarked boreholes	To reduce trekking distances to and from watering points	All the 45 wards in the County	100M	100,000 HH	12 months	Meru county government
Completion and operationalization of all ongoing water projects	To provide clean portable water for HH use To reduce trekking distances	Mikinduri – Akaiga Thangatha – Igurune Antubochiu Kiegoikanthi Buuri – Runkuru Lerene borehole	200M	60,000 HH	6 months	Upper Tana Meru County Government GOK FBOs Caritas
AGRICULTURE						
Immediate						
Post-harvest management training	To reduce post-harvest losses	30 wards	700,000	8,000 farmers	On going	-Meru County Government -Caritas
Capacity building on soil and water conservation	To improve food production productivity To reduce soil erosion	30 wards	1M	8,000 farmers	On going	-Meru County Government -Caritas

EDUCATION						
ECDE school milk programme	To increase access and retention in ECDE centers	All public schools in the county	20 M	35,783 ECDE children	Ongoing – for 5 year period	Meru County Government
Sanitary towels for school going girls	To increase retention To improve hygiene	All public schools in the county	10 M	37,800 school going girls	On going	National Government
HEALTH						
Vitamin A Supplementation	To reduce Vitamin A deficiency	All ECDE community and health facility	1.6 M	53,479 under 5's	On going	Meru County Government
Zinc Supplementation	To reduce mortality and morbidity	Health facilities	200,000	22,000 children und.er 5's	On going	Meru County Government
Management of Acute Malnutrition (IMAM)	To reduce mortality and morbidity and long term effects	Health facilities	600,000	12,500 children under 5's	On going	Meru County Government
IYCN Interventions (EBF and Timely Intro of complementary Foods)	To reduce mortality and morbidity and long term effects	Health facilities, community units	1.6 M	142,137 children under 5's	On going	Meru County Government
Iron Folate Supplementation among Pregnant Women	To reduce mortality and morbidity and long term effects	All ANC clinics	700,000	30,002 pregnant women	On going	Meru County Government
Deworming	To reduce mortality and morbidity and long term effects	All ECDE Centers, community, all health facilities	900,000	53, 479 children under 5 years	On going	Meru County Government

6.3 Recommended Interventions

6.3.1 Food interventions

Table 18: Recommended Food Interventions

Sub county	Pop in need (percent range min -max)	Proposed mode of intervention	Implementers
Igembe North	0-5	CFA /GFD	GOK/ development partners
Igembe central	0-5	CFA /GFD	GOK/ development partners
Tigania East	0-5	CFA /GFD	GOK/ development partners
Tigania West	0-5	CFA /GFD	GOK/ development partners
Buuri	0-5	CFA /GFD	GOK/ development partners
Igembe south	0-5	CFA /GFD	GOK/ development partners
All	School milk program	ECDE	

6.3.2 Non-food interventions

LIVESTOCK							
County	**Intervention**	**Sub County**	**No. of beneficiaries**	**Proposed Implementers**	**Required Resources**	**Available Resources**	**Time Frame**
Meru	Disease surveillance Disease control	All Sub-Counties of Meru County	All livestock farmers in the county, 25000 HH	Directorate of Livestock Dev. NDMA,NGOs	2.2 M	-Technical Personnel -Vehicles	12 months 12 months
Meru	Training of farmers in good livestock husbandry practices	All Sub-Counties of Meru County	All livestock farmers in the count,-7200 HH	Directorate of Livestock dev, NDMA. Any other willing NGO	8M	-Technical Personnel -Vehicles	12 months
WATER							
Immediate recommended intervention							
Meru	Drilling and equipping of more boreholes	All sub counties	• 10 ,000 HH • 10 0,000 herd of cattle and shoats	• Meru county government • GOK • NGOs • NDMA	200M	-Technical Personnel -Vehicles Public land	2years

Meru	Construction of 4 new big dams and pans *Ngathu, Liliaba, Ndumuuru , Nginyo*	Igembe North IgembeCentral	30,000 persons and over 40,000 assorted livestock	• Meru county government • GOK • NGOs • NDMA	15M	-Technical Personnel -Vehicles Public land	2years
Meru	River patrols to control illegal and over abstraction of water	All sub counties	15,000 HH living down stream Wildlife in Meru national Park	-Water Resource Authority -Meru county government -Ministry of internal coordination -KWS -NDMA -WRUA	600,000	-Technical Personnel -Vehicles	3 months
AGRICULTURE							
Meru	Relief seed	All sub counties	24,000 HH	-Meru county government GOK - MOICNG NGOs – WFP FBOs - Caritas NDMA Red cross	120 M	-Technical Personnel -Vehicles	3 months
Meru	Development of irrigation schemes	All sub counties	5,000 HH	-Meru county government -NIB -FBOs – Caritas/SNV NDMA Red cross	50 M	-Technical Personnel -Vehicles Public land	12 months
Meru	Control of fall army worm	All sub counties	14,000 HH	-Meru county government -NIB -FBOs – Caritas/SNV -NDMA -Red cross -Research institutions	8 M	-Technical Personnel -Vehicles	6 months

				KARLO, ICIPE			
EDUCATION							
Meru	Support community barazas to advocate need for education access, retention and transition	All sub counties	All the stakeholders	Meru county government NDMA FBO – Caritas Elected leaders	1.5 M	-Technical Personnel -Vehicles	12 months
HEALTH							
Meru	KAPS survey	All sub counties	All under 5's – 142,137 children	• UNICEF • MOH • NDMA	3M	Technical personnel Vehicles Anthropometric equipment	3 months
Meru	Monthly Integrated outreaches	All sub counties	142,137 children under 5 years	• UNICEF • Meru County • NDMA	300,000	Technical personnel Vehicles Anthropometric equipment	12 months
Meru	Up scaling MIYCN – maternal infant and young child nutrition	All sub counties	171,011 (all pregnant and under 5's	• UNICEF • MOH • NDMA	3M	-Technical -personnel Vehicles -Anthropometric equipment	12 months
Meru	Improve nutrition surveillance and reporting	All sub counties	All under five children – 142,137 children	• MOH • NDMA	3M	-Personnel -Vehicles -Anthropometric -equipment	12 months
Meru	Up scaling IMAM program	All sub counties	All under 5's with under nutrition	• MOH • NDMA	1.5 M	-Personnel -Vehicles -Anthropometric equipment	12 months