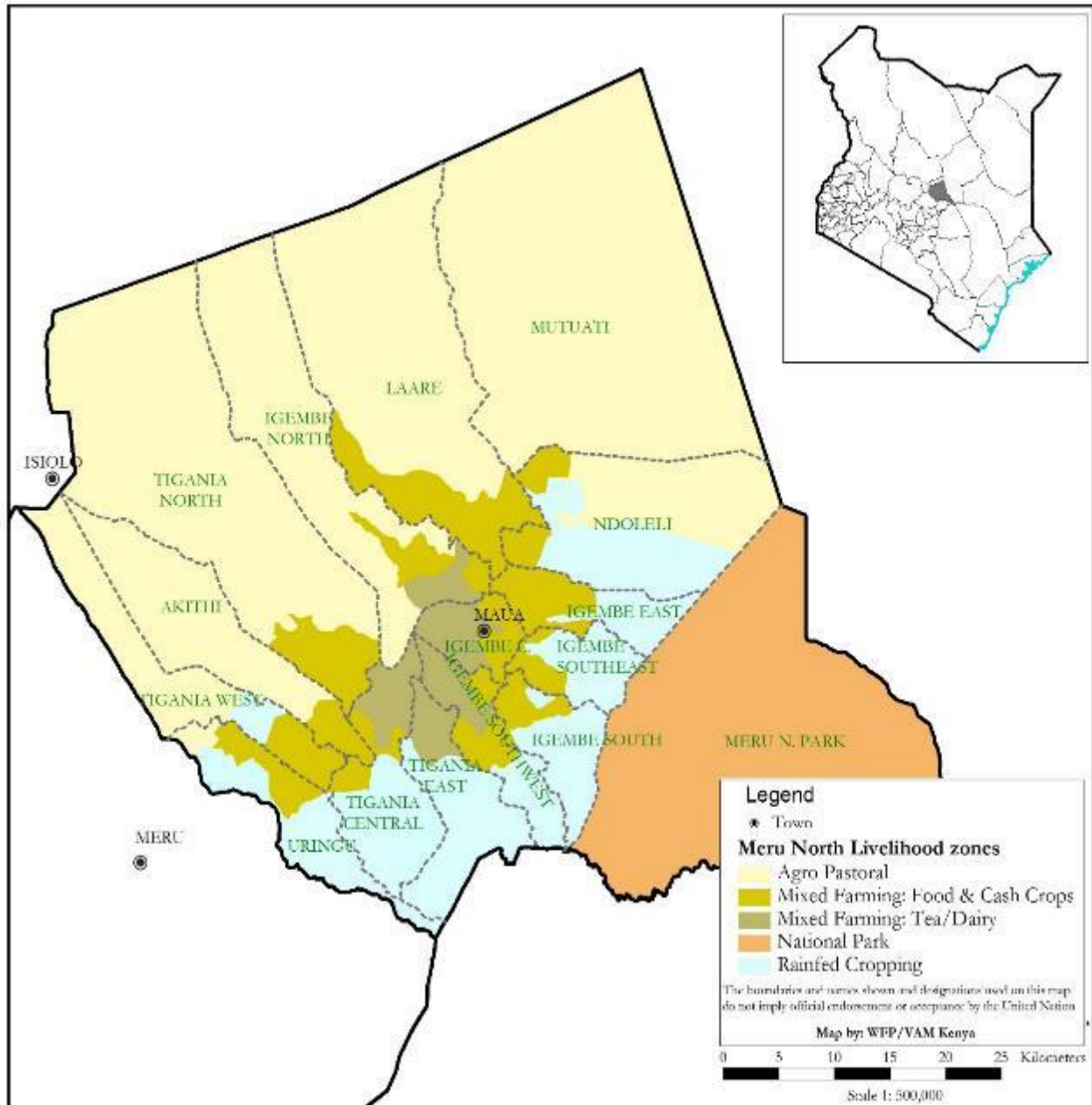


MERU COUNTY (MERU NORTH)
2017 SHORT RAINS FOOD SECURITY ASSESSMENT REPORT



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

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EXECUTIVE SUMMARY

Meru County is generally in the “None or Minimal” food insecurity classification phase (IPC Phase 1) except parts of Agro-pastoral livelihood zone which are in “Stressed” phase (IPC Phase 2).

Over 80 percent of the population in Meru County relies on agriculture for their food and income. The major agricultural activity in the county is rain-fed cropping, which has consistently been affected by changes in weather patterns with rainfall frequently falling below the expected levels. Short rains season is usually the most reliable, contributing to approximately 60 percent of the annual food production in the county. The 2017 short rains were characterized by significant rainfall deficit, poor distribution and early cessation which shortened the growing season leading to minimal forage regeneration and poor crop performance. Other drivers of food security in Meru North include: fall army worm infestation, poor agronomic practices, high temperatures, livestock diseases, resource-based conflicts, and influx of livestock.

Meru North, which is the grain basket of Meru County relies mainly on rain-fed agriculture. The early cessation of the October – December short rains, coupled with high land surface temperatures and fall army worm infestation caused 60-70 percent crop failure in mixed farming and rain fed cropping livelihood zones and 90-100 percent crop failure in agro-pastoral livelihood zone. This has led to over reliance on livestock for household income. Nonetheless, the below-average short rains generated modest improvement in rangeland conditions, providing ready feed for livestock and consequently improving livestock body conditions, resulting in increased milk production for home consumption and sale. The terms of trade are favorable with proceeds from sale of a goat buying 93kgs of maize which can sustain a household for two months. Farmers in the mixed farming and rain fed cropping livelihood zones are using the failed crops as fodder thus supplementing the pasture and improving livestock productivity. Most affected households are in the agro-pastoral livelihood zone where resource-based conflicts and accelerated depletion of pasture due to high land surface temperatures and livestock influx from neighbouring counties is undermining livestock production.

The reduced agricultural production and below-average labor opportunities have lowered household income and constrained purchasing power especially for households without livestock. The majority of poor households are entirely dependent on market purchases as their food source following consecutive seasons of below-average production. High market prices of staple foods, like maize and beans, has constrained the already diminishing household purchasing power. Many households in agro-pastoral farming livelihood zone are selling more livestock than usual as a means of coping and depleting their livelihood assets.

About 22 percent of households have poor and borderline food consumption scores (FCS) which is indicative of increasing food stress. Majority of the households in the agro-pastoral zone are currently consuming a below average 1-2 meals per day while those in mixed farming and rain fed cropping livelihood zones are consuming 2-3 times a day. Foods being consumed are mainly cereals and pulses. The reduced coping strategy index (rCSI) remained stable at 16 with households engaging mostly in consumption-based coping strategies. Nonetheless, the nutrition situation has improved with proportion of children under five years at risk of malnutrition gradually declining from 25 percent in September 2017 to 14.6 percent in January 2017.

1.0 INTRODUCTION

1.1 County Background

Meru County lies to the east of Mt. Kenya whose peak cuts through the southern boundary of the county. It shares borders with Laikipia County to the west, Nyeri to the south west, Tharaka/Nithi to the east and Isiolo to the North. The county comprises of nine administrative sub-counties which are equivalent to the constituencies namely, Tigania East, Tigania West, Igembe North, Igembe South, North Imenti, South Imenti, Buuri, Igembe Central and Central Imenti. The county has a total area of 6,936.2 Km² out of which 1,776.1 Km² is gazetted forest. For the purpose of this assessment, the coverage includes Meru North, which is the semi-arid part of Meru County with a projected population of 775,982 (KNBS 2016 projections).

There are three main livelihoods zones: mixed farming (food crops, tea, coffee and dairy), agro-pastoral livelihood zone, and rain fed cropping livelihood zones. The lower parts which constitute about 60 percent of the total area are designated the northern grazing livelihood zones characterized by low rainfall.

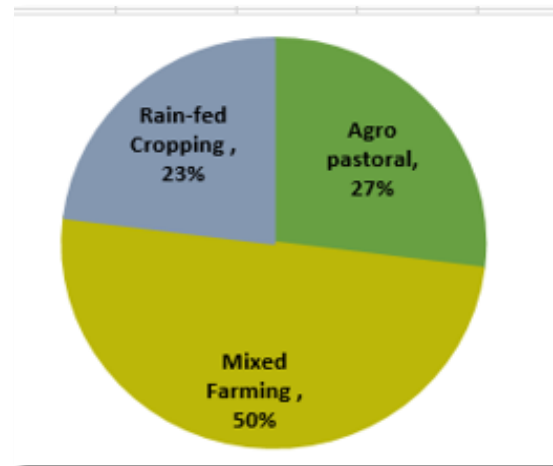


Figure 1 Proportion of population by livelihood

1.2: Objective and approach

The purpose of the short rains assessment was to develop an objective, evidence-based and transparent food security situation analysis following the short rains (October-November-December) season of 2017, taking into consideration the cumulative effects of previous seasons, and to provide actionable recommendations for possible response options based on the situation analysis. The exercise was carried out jointly by the Kenya Food Security Steering Group (KFSSG) and Meru County Steering Group (CSG).

A technical working group was formed by the CSG to consolidate analysis of the food security situation for evidence-based decision support. The technical team, comprising of experts from relevant government sectors and key stakeholder organizations, reviewed existing secondary data (including sectoral reports), to establish the current food security situation and determine the trends. The team then conducted transect drives across the three livelihood zones to assess the field situation and carried out community dialogues, household interviews, market assessments and key informant interviews to collect qualitative data that explained the changes in household food security over time. The technical team analyzed the available evidence in a transparent and consensus-building manner, and presented a preliminary report which was discussed and adopted by the CSG during a special meeting held on 16th February 2018.

2.0 DRIVERS OF FOOD AND NUTRITION SECURITY IN THE COUNTY

2.1 Rainfall Performance

Onset of the 2017 short rains occurred during the second dekad of October, which was one dekad

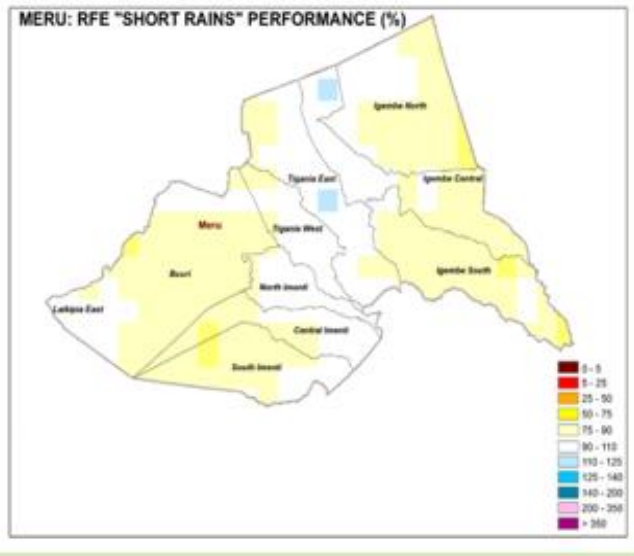


Figure 22 Short Rains Season

late. Cumulatively, the rains were mostly below average. Most parts of agro-pastoral livelihood zone received 75 – 90 percent of normal rainfall. The mixed farming and parts of rain fed cropping livelihood zones received 90 – 110 percent of normal rainfall (Figure 1.2). Spatial distribution was uneven while temporal distribution was good. The rains ceased earlier than usual in the second dekad of December, rather than third dekad of January. Effectively, the short rains had a shorter time period (having started late and ended one month early).

For Meru, this was the third consecutive

poor season. Hot, sunny and dry weather conditions were dominant throughout the month of January and February, which negatively affected the rangeland conditions.

2.2 Insecurity/Conflict

In-migration of livestock from Garissa, Wajir and Isiolo counties was reported in parts of Tigania East, Igembe North, Igembe Central and Igembe South. The livestock influx is increasing pressure on the already dwindling pasture and inadequate water resource, and aggravating resource-based conflicts. The increased tension is limiting access to pasture for livestock and disrupting farming activities in the agro pastoral livelihood area.

2.3 Other shocks and hazards

Human-wildlife conflict was reported in Buuri Sub County. Following deterioration in rangeland conditions, wild animals, especially elephants, are crossing over into neighbouring villages in search of water. The elephants have destroyed a substantial amount of crops and disrupted daily socio-economic activities. Crop pests and diseases such as fall army worm have also invaded maize farms in all livelihood zones resulting to crop losses.

3.0 IMPACTS OF DRIVERS ON FOOD AND NUTRITION SECURITY

3.1 Availability

The major economic activity in the county is agriculture, which is the primary source of food and income for most households. The major agricultural activity, in this County is rain fed cropping which has consistently been affected by changes in weather patterns with rainfall frequently falling below the expected levels. The short rains season is usually the most reliable, contributing to approximately 60 percent of the annual food production in the county. Food availability is also influenced by food imports from other cropping counties, which covers food shortages in the county and stabilizes market prices. Food assistance by the National Government is a source of food for many vulnerable households in Meru North. Adequate availability of food is a prerequisite for people to meet basic food needs, but often the mere presence of food does not ensure access to “sufficient, safe, and nutritious food.”

3.1.1 Crop Production

Over 80 percent of the population rely on agriculture, both crop and livestock production, for their food and income. The average farm size in the county currently ranges from 1.8 ha for small scale to 18.25 ha for the large scale farmers. Buuri Constituency has the largest farms in the county. Crop production contributes 63 percent to food and 37 percent to income for the households. Farmers in Meru North produce food crops, cash/horticultural crops which include: maize, beans, tomatoes, bananas, onions, tea, coffee and *miraa*. Maize and beans constitute 70 percent of food in all livelihood zones. In the recent past, most farmers have been shifting from traditional cash and food crops to horticultural production which fetches relatively high prices in the market. *Miraa* (khat) farming is the major agricultural cash crop in the Nyambene ranges area with most farmers specializing in it as the major source of income.

Rain Fed Cropping Production

Meru North, which is the grain basket of Meru County rely mainly on rain-fed agriculture. The 2017 short rains were enhanced during the first four dekads, supporting crop germination and growth. However, early cessation of the rains caused moisture stress while crops were at knee height to tasseling stage in agro-pastoral livelihood zone and at vegetative stage to grain filling stage in mixed farming and rain fed cropping livelihood zones. Mixed farming and rain fed cropping livelihood zone experienced 60-70 percent crop failure caused by moisture stress and the Fall Army Worm. The agro-pastoral livelihood zone experienced 90-100 percent crop failure mainly due to moisture stress and poor agronomic practices. The performances of the three main crops under rain fed cropping agriculture are tabulated below.

Table 1: Rain-fed cropping

Crop	Area planted during 2017 Short rains season (Ha)	Long Term Average (5 year) area planted during the Short rains season (Ha)	2017 Short rains season production (90 kg bags) Projected/Actual	Long Term Average (5 year) production during the Short rains season (90 kg bags)
Maize	41,405	36,400	199,773	758,015
Beans	29,271	32,499	101,347	197,999
Sorghum	5,678	5,460	26,475	50,720

The hectares under maize and sorghum increased by 13.7 and 4 percent respectively due to relief seeds issued by the county government and the projection of enhanced short rains. Cereals and pulses harvesting begun in mid-January 2018. The projected production of beans and sorghum is 50 percent of the long term average (LTA). Maize is the most affected crop with production expected to decline by 26 percent. Performance of the other crops including cash crops, such as tea, coffee, *miraa* and bananas, was equally affected by the depressed rains. This led to over abstraction of water for irrigation by farmers upstream as they struggle to salvage their cash crops thereby reducing water flow downstream. Declining soil fertility and poor agronomic practices, such as use of uncertified seeds, low adoption of fertilizers and poor pest control, also contributed to the low crop production.

Irrigated crop production

Meru County has a wide range of agro-ecological livelihood zones and untapped water for irrigation which support the production of a variety of crops such as mangoes, citrus, coffee, maize, beans, bananas, pigeon peas, cow peas and horticultural crops. The area which is potential for irrigation is 81,262 ha with only 2,131 ha under irrigation. Irrigated agriculture is mainly practiced by farmers in mixed farming livelihood zone, near river sources where the water flow is more consistent and reliable. The three major crops which were produced under irrigation during the October to December short rains are as tabulated below.

Table 2: Irrigated cropping

Crop	Area planted during 2017 Short rains season (Ha)	Short Term Average (3 year) area planted during the Short rains season (Ha)	2017 Short rains season production (90 kg bags) Projected/Actual	Long Term Average (5 year) production during the Short rains season (90 kg bags)
1.Tomato	245	101	3933	4899
2.Onion	170	130	990	1655
3.Bananas	129	96	1174	1998

The area under irrigation increased by 66 percent due to adoption of the technology by more farmers following unreliability of rain-fed agriculture. However, projected production is 71 percent of long term average. Decline in production is mainly attributed to pest infestations, *Tuta absoluta* that invaded tomatoes farms, low river flow following early cessation of the short rains and over abstraction upstream. Most farmers in Meru are experiencing post-harvest losses due to poor transport infrastructure and inadequate storage facilities, which is causing the farmers to lose income due to early disposal, reduced quality of the stored produce and spoilage.

3.1.2 Cereals stock

Currently, 51 percent of cereal stocks are held by farmers as harvesting in ongoing. However, farmers continue to dispose their stock to traders in order to meet other household needs, including school fees for tertiary education. As a result, stocks held by traders will increase as farmers continue to dispose their stocks. Household cereal stocks are expected to last for less than one month to early March in agro-pastoral livelihood zones and 2-3 months up to between mid-April

and mid-May in the rain fed cropping and mixed farming livelihood zones. Maize currently held by traders is mostly imports from Kitale and Eldoret covering the deficits caused by poor production within the county.

Table 3: Cereal stocks

Food stocks held by	Quantities held currently (90-kg bags)	Long Term Average quantities held (90-kg bags)
Farmers	38,230	135,179
Traders	36,610	62,293
Millers	0	0
NCPB	0	0
Total	74,840	197,472

3.1.2 Livestock Production

Livestock keeping is among the main sources of livelihood for the residents, especially indigenous breeds. The main livestock species kept in the region are cattle, sheep, goats and poultry. Farmers in mixed farming livelihood zone keep dairy cattle and goats, mainly cross breeds and a few local breeds. The mixed farming livelihood zone is a vital supply of milk to dairies, and other commercial enterprises. Farmers also get income from sale of manure and culls. Rain fed cropping livelihood zone has dairy cattle and goats, and some meat goats and sheep, as well as poultry for commercial and subsistence use. The agro-pastoral livelihood zone is the main source of beef and local goats hence supplies livestock to local livestock markets.

Pasture and Browse Condition

The below average short rains were adequate for forage regeneration. However, the rangeland condition is deteriorating following the high land surface temperatures experienced since December. Currently, the condition of pasture and browse is fair to poor in agropastoral livelihood zone and is expected to last until mid-March. In the rain fed cropping and mixed farming livelihood zones, pasture and browse condition is good to fair. Failed crops are used as livestock feeds, especially in rain fed cropping livelihood zone to complement limited pasture. Livestock influx from Garissa, Wajir and Isiolo has increased pressure on the already diminishing pasture and browse. Access to the forage in parts of Igembe North, Igembe Central and Igembe South is affected by conflict between herders from other counties and the local farmers.

Table 4: Pasture and browse condition

Livelihood zone	Pasture condition		How long to last (Months)		Factors Limiting access	Browse condition		How long to last (Months)		Factors Limiting access
	Current	Normal	Current	Normal		Current	Normal	Current	Normal	
Agro-pastoral	Poor	Good	1	3	Insecurity	Fair	Good	1	4	Insecurity
Rain Fed Cropping	Fair	Good	2	4	None	Good	Good	3	5	None
Mixed Farming	Good	Good	3	5	None	Good	Good	5	6	None

Livestock Body Condition

The body condition for cattle is fair in agro-pastoral livelihood zone and good in the rain fed cropping and mixed farming livelihood zones. Body condition for goat and sheep is good in all livelihood zones, which is a normal situation for this time of the year. This is attributed to the availability of fair pasture and browse, which is supplemented by the maize stalks and bean husks. The body condition is expected to deteriorate further as the dry spell persists. Nonetheless with improvement in rangeland conditions following the long rains, livestock body condition will improve thus increasing productivity and consequently improving household food access.

Milk availability and consumption

Milk production is below LTA in all livelihood zones. However, households are able to consume 1-2 liters per day and sell some small quantities to raise household income. The low production is attributed to pasture quality and quantity as well as fewer lactating animals due to reduced tropical livestock units (TLUs). Milk prices have increased by 30-40 percent above the LTA across all livelihood zones due to decline in supply, further reducing food access for the vulnerable households (Table 8). Milk production is also constrained by the low yielding livestock breeds and poor rearing systems especially in the Agro-pastoral livelihood zones.

Table 1: 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
Agro-pastoral	2	3	1	2	60	50
Rain Fed Cropping	3	5	1	3	50	40
Mixed Farming	4	5	2	3.5	50	40

Tropical Livestock Unit and Birth Rates

The tropical livestock units (TLU) in the mixed farming and rain fed cropping livelihood zones are within the normal range of 1-2 for the mixed farming and 2-3 for the rain fed cropping livelihood zones. However, in the pastoral livelihood zone, the TLUs have reduced to 5-6 for most households compared to the normal TLU of 10-11. Variations of average TLUs across the livelihood zones was attributed to the increased sale of livestock due to school fees, fear of theft by rustlers as well as pressure on pastures from the previous drought period.

Livestock Mortality and Diseases

Sheep and goat pox disease outbreaks were witnessed towards the end of last year and this was countered by a vaccination drive supported by NDMA. Rabies has become endemic in Meru North region. Livestock mortalities range between 1-2 percent which falls within normal ranges.

Migration

No migration of livestock out of the region has been reported so far. However, about a thousand heads of camel have in-migrated from the neighboring Isiolo County into Meru North region around Ndumuru area in Igembe North. In-migration from Garissa and Wajir was reported in Igembe North, Igembe Central and Igembe South, a factor that is increasing pressure on the already diminishing pasture and aggravating risk of resource-based conflicts. The migration observed is normal at this time of the year. The migration route is usually from Isiolo to Meru towards Tharaka North area.

Water for Livestock

Main sources of water for both households and livestock were rivers, springs, boreholes, vendors, and piped water. Rivers were the most relied upon across all livelihood zones while boreholes and water vendors were important sources in the agro-pastoral livelihood zones of Igembe North and Igembe Central sub counties. Currently, the volumes are much reduced affecting the quality of water and the subsequent consumed volumes by livestock. Trekking distances to water sources has increased in agro-pastoral livelihood zones to 10 km from the normal seven km. In addition, watering intervals has reduced to once in two days as opposed to the normal daily watering in parts of Igembe North, Igembe Central and Igembe South. These areas are experiencing water stress as most surface water sources for animals are drying up fast. The deteriorating forage conditions and increased trekking distances are undermining livestock production in agro-pastoral livelihood zone.

Poor performance of the short rains in terms of onset, distribution and cessation coupled with two consecutive below normal rains has resulted to poor maturity of pasture and browse that led to faster depletion and this has a negative impact on livestock body condition, reduced milk production and consumption, increased trekking distance and increased milk prices.

3.2 Access

Households access food through a combination of production, purchase (markets), gifts, and transfers. Access is influenced by physical access (infrastructure), socio-political access (e.g., traditional rights to common resources), and economic access (ability to generate income, purchasing power, and the evolution of real incomes and food prices). Additional factors include access and control of productive resources, such as land, seed and water; governance, legal and regulatory frameworks, the macroeconomic environment, gender dynamics, HIV/AIDS and other diseases and conflicts.

3.2.1 Markets

Market Operations

There are three main urban centers (Laare, Timau and Maua) and five trading centers (Kangeta, Mikinduri, Kianjai, Muthara and Mulika) in Meru North. All the trading centers are agricultural markets operating two days per week. All markets are operational with free access and flow of commodities into and out of the county. The main products traded in the markets were livestock and livestock products, crop produce and other household items sourced locally and from the neighboring Embu, Laikipia, Nyeri and Kirinyaga Counties. Traded volumes for cereals are lower than normal for the season due to poor harvest. Maize and beans supply 60-70 percent is from Uasin Gishu and Trans Nzoia Counties, which is not normal at this time.

The region relies heavily on agriculture although, most of the commodities are sold in raw form without any value addition thereby fetching low prices in the markets and rendering lower returns to farmers. There is also poor market organization and exploitation by middlemen which affects stability of market prices. There was a notable increase in goats and cattle supplied to the various markets by both farmers and brokers attributed to farmers downsizing their stocks due to fear of the dry season and lack of livestock feeds. The supply of goats is mainly from the agro-pastoral livelihood zone while cattle are imported from outside the county.

Market Prices

Maize Prices

The price of maize has dropped between October 2017 and January 2018, and is currently within the LTA. The decline in maize prices was driven by influx of maize from Kitale and Eldoret that has significantly increased the supply. The imports have adequately covered the maize shortage in the county, but will only last until mid-March. As households exhaust their stocks, demand for maize will rise while the inflow will have reduced triggering a rise in maize prices as from March. Price of maize from then is likely to follow the same trend as experienced in 2017 and remain above the long term average owing to increased reliance on imports to cover shortages within the county.

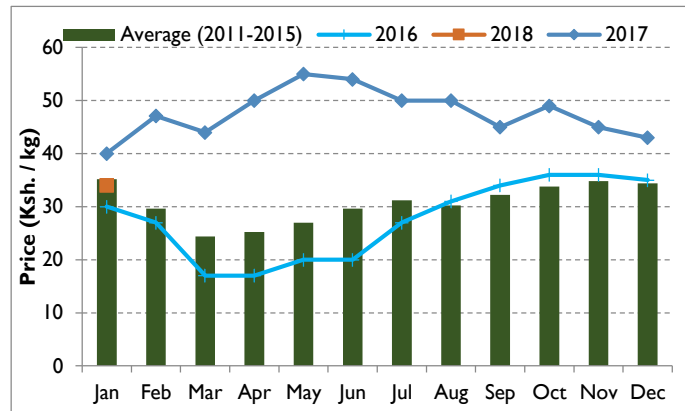


Figure 3.3 Maize price trends

Price of maize from then is likely to follow the same trend as experienced in 2017 and remain above the long term average owing to increased reliance on imports to cover shortages within the county.

Goat Prices

Goat prices went up by 60 percent between October and December 2017 but remained below LTA. The increase in price was attributed to improvement in body condition of goats at that time and the gradual scarcity occasioned by farmers holding on to livestock during good seasons. As the short rains ceased early and crops failed, households, especially in agro-pastoral livelihood zone, relied on livestock for household income thus increasing market supply and causing decrease in prices by 14 percent. Currently, the price of goat is 3,162, which is below the LTA. The demand is also low as many farmers are not restocking due to deteriorating rangeland conditions and anticipated depressed long rains. Goat prices are expected to decline and remain below the LTA until the long rains harvests in June 2018.

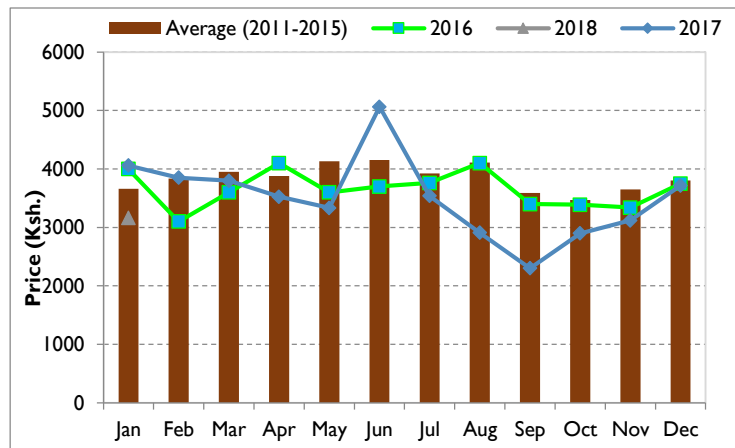


Figure 4.4 Goat price trends

Currently, the price of goat is 3,162, which is below the LTA. The demand is also low as many farmers are not restocking due to deteriorating rangeland conditions and anticipated depressed long rains. Goat prices are expected to decline and remain below the LTA until the long rains harvests in June 2018.

3.2.2 Terms of trade

Livestock-to-cereal terms of trade (ToT) improved in October to December 2017 from 51 to 86 due to favorable livestock prices but remained below the LTA. The TOT improved further to 93 in January 2018, though it is 30 percent less when compared to same period in 2016. Nonetheless, the TOT is favorable since proceeds from sale of a goat can purchase 93 kg of maize which can sustain a household for 2 months thus improving food availability especially

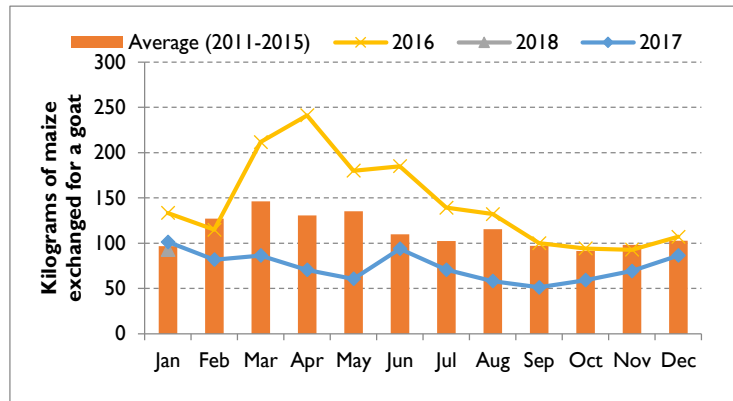


Figure 5.5 Term of Trade

for the agro-pastoral households who rely on markets. The ToT is expected to remain below LTA as livestock prices decline while cereal prices remain high until the next harvesting season.

3.2.3 Income Sources

The main sources of income in the county include food and cash crop production, livestock production and casual waged labor. Self-employment, which is mainly in the agricultural and petty trade, contributes on average 10 per cent of the total household income. The reduced agricultural production activities and below-average labor opportunities have lowered household income and constrained purchasing power. The majority of poor households are entirely dependent on market purchases to meet their minimum food needs following consecutive seasons of below-average production. Many households in agro-pastoral livelihood are selling more livestock than usual as it is currently their only source of income. As a result, they are depleting their already diminished livestock volumes and undermining their livelihood assets. Other sources of income noted at the time of the assessment include: sale of charcoal and petty trade.

3.2.4 Water access and availability

The major sources of water in the county are rivers, boreholes, springs, piped water, pans and dams which are the normal sources at this time of the year. The major sources of water for mixed farming and rain fed cropping zones are rivers, springs, few boreholes and shallow wells while sources for agro-pastoral are two semi-permanent rivers, boreholes and pans/dams. Open water sources recharged 80-100 percent following the short rains thus increasing water availability and accessibility. However, due to early cessation of the rains and the long dry period that followed, the water resources are dwindling. Current water level in most open water sources is 30-40 percent of capacity. Some rivers and water pans have already dried up.

Distance to water sources

Return distance to water sources has increased from 6-8 kilometres in the agro-pastoral livelihood zone. The increase in distance has been occasioned by drying up of some open water sources and

breakdown of boreholes. In mixed farming and rain-fed cropping livelihood zones, the distance to water sources are within the normal range of 0.5 - 2 kilometres.

Waiting time

There is no waiting time at the river source and water pans/dams. It therefore applies only to boreholes and piped water kiosks. Waiting time was longest in the agro-pastoral livelihood zones at 20-30 minutes compared to normal waiting time of 15 to 20 minutes. The long waiting time is attributed to the limited number of functional water sources. Most boreholes are saline hence residents have to search for fresh water from river beds or fresh water borehole that are far away leading to high concentration at those water points thus increasing in waiting time.

Cost of water

There is no cost of water at the river source and water pans. For boreholes, non- members pay Ksh 2-5 per 20 litre jerrican in Mixed Farming and rain-fed cropping livelihood zones, which is normal at this time of the year. Cost of water is highest in Agro-pastoral livelihood zone at Ksh 5-10 per 20 litre jerrican compared to normal cost of Ksh 2-5 per 20 litre jerry can.

Water consumption and cost

Current water consumption is 15-30 litres per person per day in all livelihood zones, which is normal and within sphere standards.

3.2.5 Food Consumption

According to food security outcome monitoring (FSOM) carried out by the World Food Programme (WFP) in December 2017, a significant proportion of households have poor and borderline food consumption score (FCS) which is indicative of deteriorating household dietary diversity and meal frequency. This is attributed to declining food production and unfavorable market prices of staple food commodities reducing access.

Majority of the households in the agro-pastoral livelihood zones are currently

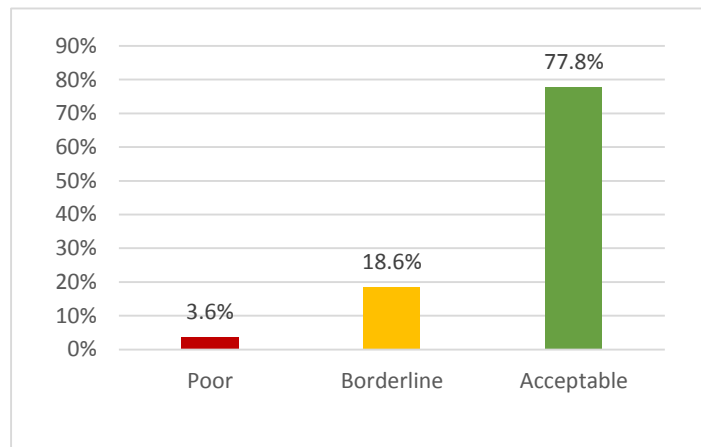


Figure 6.6 Food Consumption Score

consuming 1-2 meals per day which is not normal at this time. Foods being consumed are mainly cereals and pulses (Maize and Beans). Consumption of meat, milk, fruits and vegetables is constrained by the diminishing household purchasing power.

3.2.6 Coping strategies

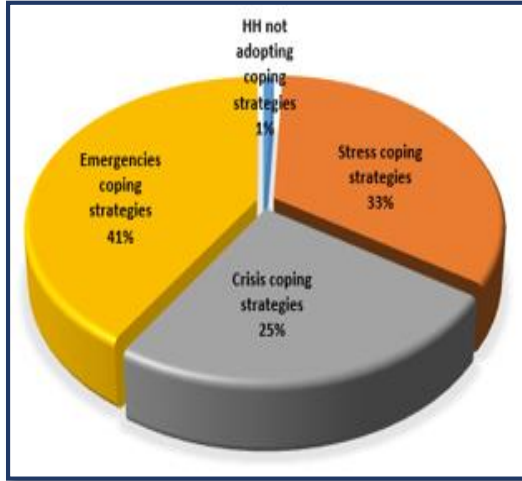


Figure 7.7 Livelihood Coping Strategies

The mean reduced coping strategy index (CSI) remained stable at 16 in December 2017 compared to the same period in 2016. Most common consumption related coping strategies employed by households were: reduction in portion size and number of meals eaten per day and reduction in the quantity of food consumed by adults to ensure that children had enough to eat. This implies relatively severe consumption coping strategies indicative of food stress. The proportion of households using crisis and emergency strategies is 25 and two percent respectively meaning that at least one in four households are unable to meet their minimum food needs except by selling productive assets and reducing expenditure on non-food needs.

3.3 Utilization

3.3.1 Morbidity and mortality patterns

The most common diseases affecting the general population and children under five were upper respiratory tract infections (URTI), diarrhea, malaria, pneumonia and skin diseases. Rheumatism was also common among adults. There was a significant decrease in morbidity cases, especially URTI and malaria in 2017 when compared to 2016. This was mainly due to the 5 months nurses' strike which paralyzed all public health care in the county. There was an upsurge in diarrhea cases in the months of December 2017 which was caused by poor hygiene conditions following the heavy rains November, flooding pit latrines leading to contamination of surface water sources. The outbreak of amoebic dysentery was reported in Tigania East and Tigania West in the month of December 2017 and January 2018.

3.3.2 Immunization and Vitamin A supplementation

Fully immunized child (FIC) coverage is 42 percent, which is below the national target of 80 percent and has reduced by nine percent when compared to the same period in 2016. The reduction in coverage is attributed to frequent health workers strikes experienced in 2017. Vitamin A supplementation is also below the national target, at 52 percent. The low Vitamin A supplementation is attributed to non-attendance of child welfare clinic after the measles vaccine at 9 months, poor data management on vitamin A logistics, inadequate social mobilization to improve vitamin uptake and placement of vitamin A at lower level of priority in the health facilities.

3.3.2 Nutritional status and dietary diversity

The proportion of children under five years at risk of malnutrition, based on mid upper arm circumference (MUAC) of < 135 mm, reduced by 8 percent between September and Jan 2018. Current caseloads for nutrition programme is 39 clients in inpatient, 25 in outpatient therapeutic programme (OTP) and 18 clients in supplementary feeding programme (SFP).

The number of malnourished children in Meru North could be higher as many cases are missed out due to inadequate documentation and lack of active case finding. Analysis of the admission trends shows an upsurge in malnutrition cases between January and May 2017 which could be attributed to the deteriorating food security situation at that time. The sharp decline in June 2017 was occasioned by nurses' strike which paralyzed health and nutrition services in public hospitals. Spikes in new admissions were noted during the lean period of July to October. In December 2017, admissions in all nutrition programmes had dropped to below 20. The reduction in malnutrition could be attributed to increased access to health care as well as improved household food consumption following modest improvement in crop and livestock production during the short rains. Improved nutritional status is also attributed to ongoing nutrition interventions by MOH and National Health Programme Plus (NHP plus).

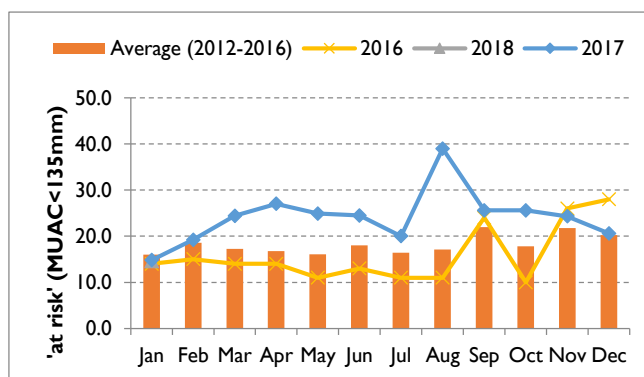


Figure 8.8 Proportions of children at risk

3.3.2 Sanitation and Hygiene

The major sanitation facilities are pit latrines which are used by over 80.4 per cent of the population. The latrine coverage has increased to 95 percent attributed to increased hygiene campaign by the ministry of health. About 60 percent of the populations are drinking water from open and unprotected sources predisposing them to waterborne communicable diseases. Waste and garbage disposal is mostly managed by the local authorities in the urban centres and within the rural households. Garbage pit, burning, public garbage heap and farm manure are the common modes of disposal.

3.3.4 Trends of key food security indicators

Table 9: Food security trends

Indicator	Long rains assessment, July 2017		Short rains assessment, February 2018	
Percent of maize stocks held by households		34 percent of LTA	26 percent of LTA	
Livestock body condition	Agro-pastoral	Fair to Good	Good to fair	
	Mixed Farming		Fair to Good	Good to fair
	Rain Fed Cropping		Good	Good
Water consumption (litres per person per day)	Agro-pastoral		8-10lpppd	8-10lpppd
	Mixed Farming		20-30 lpppd	20-30 lpppd
	Rain Fed Cropping		25-30 lpppd	25-30 lpppd
Price of maize (per kg)			54	40
Distance to grazing	Agro-pastoral		12	4-8
	Mixed Farming		2	1

Indicator	Long rains assessment, July 2017	Short rains assessment, February 2018	
	Rain Fed Cropping	6	3-4
Terms of trade		98kgs	93kgs
Coping strategy index	Agro-pastoral	32.8	32.8
	Mixed Farming	4.8	4.8
	Rain Fed Cropping	4	4
Food consumption score	Poor	19	3.6
	Borderline	52.5	18.6
	Acceptable	28.5	77.3

3.5 Education

Enrollment

The enrollment rate slightly increased due to free primary and secondary education, digital literacy programme, enrolment drives and provision of school meals. It was observed that schools with home grown school meals programme (HGSMP) and expanded school meals program (ESMP) have higher enrollment than others.

Table 10: Enrolment rates

Enrollment	Term III 2017			Term I 2018			Increment
	Boys	Girls	Total	Boys	Girls	Total	
ECD	10,340	10,920	21,759	12,228	12,479	24,717	14 percent
Primary	66,345	68,180	134,873	70,094	71,973	141,577	5 percent
Secondary	12,448	14,569	27,017	12,920	15,748	28,713	6 percent

Retention

The drop-out rate for both boys and girls in primary school was negligible, less than 0.1 percent, which could be attributed to the enrolment drives.

Participation

The average attendance rate is 96 percent for boys and 97 percent for girls. Low attendance was reported in schools in marginal mixed farming areas where there were households with limited access to food, and are experiencing water scarcity and resource based conflicts.

Transition

Table 12: Transition rates

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

The government through the ministries of education and interior 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 have greatly lessened the burden of education on parents by removing tuition fee. Although transition rate has not reached the 100 percent, it is anticipated that by second term it will be above 90 percent for both boys and girls.

4.0 FOOD SECURITY PROGNOSIS

4.1 Prognosis Assumptions

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

- According to FEWSNET/USGS preliminary forecast, there is increased likelihood of normal to below-normal March-May long rains.
- According to FEWSNET/USGS preliminary forecast, there increased likelihood for hotter-than-normal temperatures during February through March, and also later in June through August.
- Based on trends of long term price from NDMA sentinel data, the prices of staple foods are likely to remain high due to high dependence on imports.

4.2 Food Security Outlook

Food Security Outcomes (February, March and April)

Household food security will atypically deteriorate during February-March lean season as the long rain is projected to have delayed onset. The expected higher-than normal temperatures will worsen the forage condition and deplete water resources. Influx of livestock from Isiolo will increase pressure on available rangeland resources and increase risk of conflicts. With increased trekking distances, livestock body condition will worsen leading to lower prices and poor terms of trade thus constraining the household purchasing power. Milk availability at household level will decline due to worsening livestock body condition thus compromising nutrition status of children. Food consumption will decline as household stocks run out by mid-July and market price of staple food remains high. As a result, the proportion of population with acceptable food consumption score is expected to decline while those with borderline and poor food consumption will increase. Most households are likely to engage in severe strategies to cope with food shortage. Modest improvement in rangeland condition is expected in April, which is the peak month for the long rains season. Water source will be recharged thus improving availability and access to water. Forage will regenerate, with improvement in quality and quantity expected towards end of April. With already diminished purchasing power, and depleted household stocks, more vulnerable households, especially in agro-pastoral livelihood zone are expected to continue experiencing stress (IPC Phase 2) food insecurity outcomes through April.

Food Security Outcomes (May, June & July)

As the long rains continue in May, pasture and browse condition will improve providing ready feed for livestock and consequently improving livestock body conditions, resulting in increased milk production for home consumption and sale. However, the impact will be less significant and short-lived as the depressed rain season will be followed by a long dry period of June to September. The above-normal temperatures will cause moisture stress leading to crop failure and accelerated depletion of pasture in the dry months of June and July. The Fall Army Worm infestation is likely to cause decline in crop production in the mixed farming and rain fed cropping zones. The June-

July lean season will continue to erode the ability of poor households to meet their basic needs. In the absence of adequate rangeland recovery and declining harvest following depressed long rains, poor households will continue to experience stress (IPC Phase 2) food security outcome, with a sizable proportion sliding to crisis (IPC Phase 3) acute food insecurity outcomes.

5. CONCLUSION AND INTERVENTIONS

5.1. Conclusion

5.1.1 Phase classification

Meru County is generally in the “None or Minimal” food insecurity classification phase (IPC Phase 1) except parts of agro-pastoral livelihood zone which are in “Stressed” phase (IPC Phase 2). Factors to monitor include; rainfall performance, crops performance, forage condition, access to water, price of staple food, food consumption patterns, coping strategies, nutrition status and resource-based conflicts.

5.1.2 Summary of Findings

The below-average 2017 short rains marked a third consecutive poor rain season in Meru. All livelihood zones are experiencing drier than usual conditions for this time of the year. The vegetation condition index shows moderate vegetation deficit with the agro-pastoral livelihood zone experiencing more severe conditions. The early cessation of the rains, coupled with fall army worm infestation caused 60-70 percent crop failure especially in agro-pastoral and rain Fed cropping livelihood zones. Additionally, increased trekking distances, combined with accelerated depletion of pasture due to high land surface temperatures undermined livestock production. As a result, household food availability and access is constrained by diminishing household cereal stocks and low income levels.

Although markets were functioning normally, high prices of staple foods continue to limit access to diversified foods. The livestock-to-cereal terms of trade are unfavorable due to higher food prices against declining livestock prices, further compromising the purchasing power and constraining household food access and consumption. As a result, a significant proportion (22 percent) of households has poor and borderline food consumption score (FCS) which is indicative of increasing food stress. The deteriorating household dietary diversity and food frequency is consistent with the low crop and livestock production, which is likely to worsen as rangeland conditions deteriorate. Majority of households are employing crisis and emergency livelihood coping strategies in order to meet their daily dietary needs thus depleting their livelihood assets.

5.1.3 Sub-county ranking

Sub county	Rank	Main food security threat
Igembe North	1	Depressed rainfall, crop failure, diminishing pasture, low milk production, resource-based conflict, low household stocks, low term of trade, reduced access to water and poor road network,
Igembe Central	2	Depressed rainfall, Accelerated depletion of pasture, crop failure, high prices of staple foods, low household stocks, reduced access to water, poor road network and low terms of trade
Tigania East	3	Depressed rainfall, poor crop performance, low household stocks, high food prices, Fair pasture, increased trekking distances.

Tigania West	4	Below normal rainfall, poor crop performance, low household stocks, Fair pasture, Income from cash crops, stable food price, access to water points
Buuri	5	Human-wildlife conflict, Crop failure, fair pasture, stable food price, shorter distances to water points, better harvest, more productive livestock
Igembe South	6	Poor crop performance, stable food price, access to water points, alternative livelihoods, better infrastructure, more productive livestock.
Tigania Central	7	Poor crop performance, stable food price, access to water points, alternative livelihoods, better infrastructure, more productive livestock.

5.2 Ongoing Interventions

5.2.1 Food interventions

Table 14: Ongoing food interventions

Sub county	Intervention	Population targeted	Implementers	Time frame
Igembe Central	School Feeding	Rikiau, Kandubai, and Marioni primary school	CHALLIES (Diocese of Meru)	January–December 2018

5.2.2 Non-food interventions

Sub	Intervention	Location	No. of beneficiaries	Implementers	Impacts in terms of food security	Cost	Time Frame
Agriculture							
All Sub Counties	Greenhouse technology and conservation agriculture	All sub	2,500 Farmers	County Government, NRMP, FAO,	Improved food security	14M	July 2017 to June 2018
	Provision of Drought Recovery seed (Assorted)	All sub	1,850 Farmers	County Government	Enhance crop production	6.3M	Oct-Dec 2015
	Post-harvest management sensitization and CA/GAP project	All wards	10,000 Farmers	FAO & County government	Enhance food security	3.5M	2015-2019 (4years)
Livestock							
All Sub counties	Livestock diseases Surveillance & Vaccination	ALL Wards	10,000 Farmers	Department of agriculture, livestock, fisheries & Veterinary	Improving production which has an impact on food availability and access	10M	Continuous

	Fodder/pasture production	ALL Wards	2000 Farmers		Improve quality animal feeds for increased production	2.5 M	Jan to June 2018
Igembe south, Buuri, Igembe north, Igembe central	Dairy goat & bee keeping projects, promotion of artificial insemination	Igembe south, Buuri, Igembe north, Igembe central	650 Livestock keepers in the wards		Increased goat milk and honey for home consumption and for sale and Breed quality for increased milk/meat production	5M	July 2017 to June 2018
Water							
	Construction of rain water tank of 600m ³ and underground storage tanks	Luciuti, Miriki Kalerene, Lukununu, Kitera		County Government of Meru	Improves water access and quality	4.5M	2017-18 FY
	Equipping of Nkamathi borehole	Nkamathi		County Government of Meru	Improves water access and quality	1.5M	2017-18 FY
	Drilling of Mutuati primary school borehole (replacement borehole)	Mutuati primary school			Improves water access and quality	1.5M	2017-18 FY
Health and Nutrition							
All Sub counties	High impact nutrition programme	All health facilities	All children under 5 years, pregnant and lactation mothers.	MOH and NHP	Improve health and nutrition status of children under 5 years, pregnant and lactation mothers.	11m	Continuous
	Management of Acute Malnutrition (IMAM)	Health facilities				2.3m	Continuous

5.3 Recommended Interventions

5.3.1 Food interventions

Sub County	Pop in need (percent range min – max)	Proposed mode of intervention	Locations	Time frame
Igembe North	10-15	CFA/GFD	Amwanthi, Antuambui, A.Kiongo	February-July 2018
Igembe Central	10-15	CFA/GFD	Akirang'onde, Njia, Kangeta	February-July 2018
Tigania East	10-15	CFA/GFD	Muthaara, Karama	February-July 2018
Tigania West	5-10	GFD	Anthwana, Akithi, Kianjai	February-July 2018
Buuri	5-10	GFD	Ruiri rwa rera, Kiirua Nare	February-July 2018
Igembe South	5-10	GFD	Athiru Gaiti, Akachiu, Kanuni	February-July 2018
Tigania Central	5-10	GFD	Kibuchwa, Thangatha	February-July 2018

5.3.2 Non-food interventions

Sub county	Intervention description/type	Ward	No of beneficiaries	Proposed Implementers	Required Resources	Available Resources	Time Frame
Agriculture Sector							
Igembe North, Igembe Central, Tigania East,	Increase area under irrigation	Igembe North, Igembe Central, Tigania East,	6500 Farmers	MOA, NDMA, County Government	Fuel, Staff DSA	Technical personnel, Vehicles	March – December 2018
	Provision of relief seeds and subsidized farm inputs		18,500 Farmers		Fuel, Staff DSA		March 2018
	Promote drought tolerant crops		10,000 Farmers				Technical personnel, Vehicles
Livestock Sector							
Igembe North, Igembe Central, Tigania East	Relief Fodder and Livestock feeds supplementation	Igembe North, Igembe Central, Tigania East	3,000 Farmers	County Government, Livestock Production, Caritas Meru, NDMA, CDF	6 M	Technical personnel	February to July, 2018
All Sub counties	Promote fodder production, preservation and management	All Wards	18,500 Farmers		80M		
Water Sector							

Igembe central, Igembe south, Igembe north	Repair and equipping of strategic boreholes	Kiraone, Baithubuku, Ugoti, Ndumuuru	10,000 households	National Government, NDMA, County Government and Caritas Meru	5.3 M	Personnel	February to May, 2018
All Sub counties	Capacity building of Water recourse users associations	All Wards	All WRUAs		2M	Personnel	February to July, 2018
Health and Nutrition							
All Sub counties	Improve nutrition surveillance and reporting	All Health Facilities	All children under 5 years, pregnant and lactation mothers.	MOH and NHP	5M	Personnel	February to July, 2018
	Up scaling IMAM program				10M	Personnel	February to July, 2018
Education							
Igembe central, Igembe south, Igembe north, Tigania East, Buuri	Provision of home grown school meal programme	19 public primary schools	23,800 pupils	MOE	30M	Kitchen and Storage facilities; personnel	Feb to Dec 2018
	Improve water conservation in schools	All public primary schools and ECDE	141,577 pupils	MOE	15M	Personel	February to July, 2018