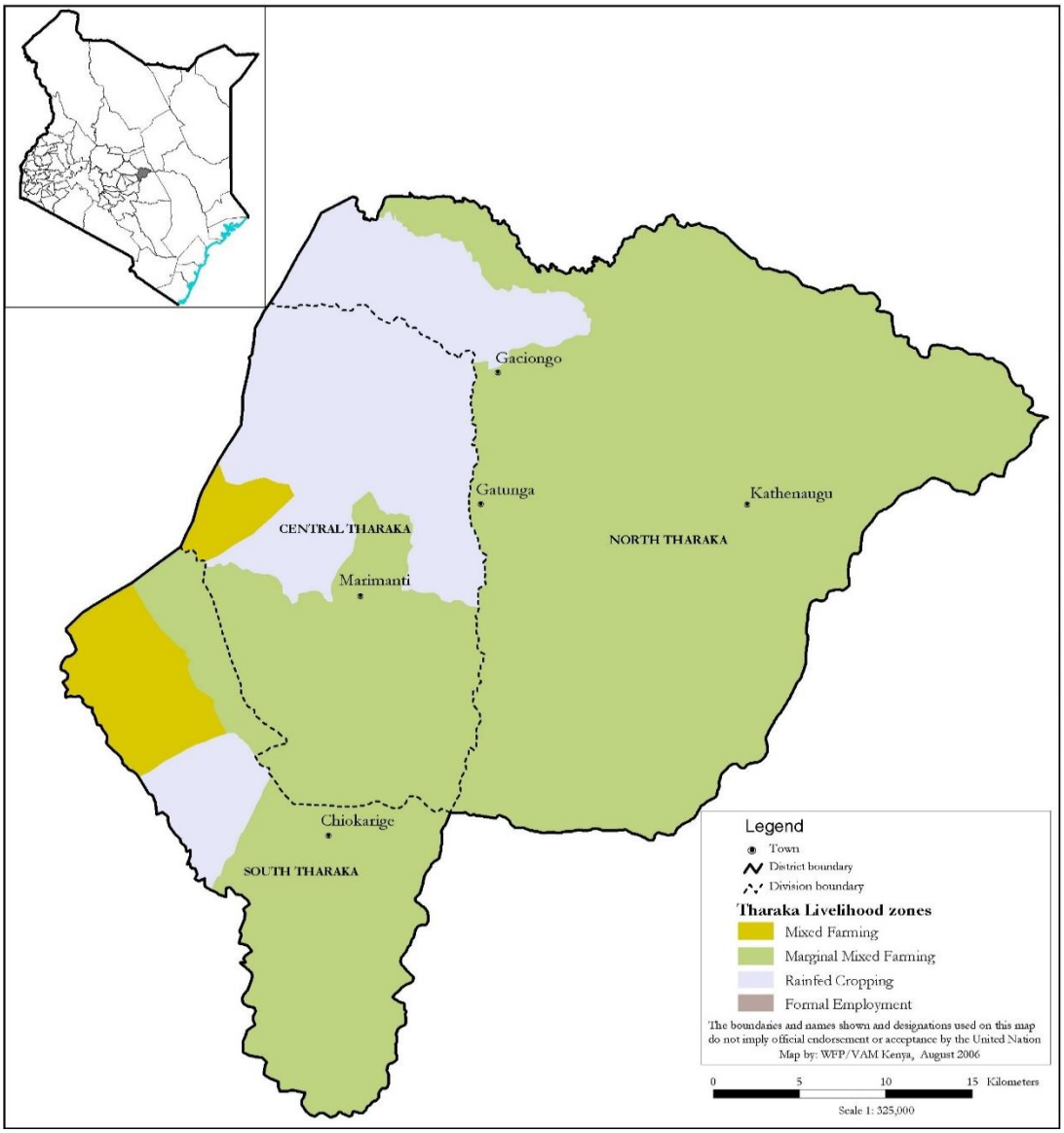
THARAKA NITHI COUNTY (THARAKA) 2017 SHORT RAINS FOOD SECURITY ASSESSMENT REPORT



A Joint Report by the Kenya Food Security Steering Group (KFSSG)[1] and Tharaka Nithi County Steering Group (CSG)

February 2018

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EXECUTIVE SUMMARY

The 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. Marginal Mixed Farming and Rain Fed Cropping livelihood zone were most affected with 60-80 percent crop failure mainly due to moisture stress. Furthermore, fall army worm infestation affected maize crop in Mixed Farming livelihood zone, destroying 30 percent of the crop. All livelihood areas are experiencing drier than usual conditions for this time of the year. Forage condition is deteriorating and water resources for domestic and livestock use is getting depleted faster leading to increased water stress. Terms of trade are falling in tandem with decline in livestock body condition. Influx of livestock from Garissa is increasing pressure on the already diminishing rangeland recourses thus increasing the risk of conflict.

Decline in crop and livestock production is affecting food availability for the population in Tharaka. The current household cereal stocks are 22 percent of the long term average and can sustain households in Rain Fed Cropping and Mixed Farming livelihood zones for one to two months. Most households in Marginal Mixed Farming livelihood zone have no stock and are relying on markets for supply of staple food. Average household milk production is as low as 0.25 liters per day in Marginal Mixed Farming livelihood zone, which in not adequate for the household. In Rain Fed Cropping and Mixed Farming livelihood zones, household milk consumption is one to 1.5 liters per day, which is the long term average. Reduced agricultural production and below-average labor opportunities have lowered household income. Majority of poor households are entirely dependent on market purchases to meet their minimum food needs. The high market prices of staple foods are therefore constraining further the already diminishing household purchasing power. Livestock-to-cereal terms of trade are unfavorable due to higher than normal food prices, compromising household income and constraining household food access and consumption.

A significant proportion (22%) of households have poor and borderline food consumption score (FCS) which is indicative of deteriorating household dietary diversity and food frequency that has resulted from declining food production and unfavorable market prices of staple food commodities. Majority of the households in the Marginal Mixed Farming and Rain Fed Cropping zones are currently consuming 1-2 meals per day which is not normal at this time. Food groups being consumed are mainly cereals and pulses. The mean coping strategy score remain stable at 16 with households engaging in relatively severe consumption coping strategies. Moreover, majority of households (66%) are employing crisis and emergency livelihood strategies thus depleting their assets to meet their daily dietary requirement. Nonetheless, the nutrition situation remains stable with six percent of children under five years at risk of malnutrition.

Tharaka is therefore experiencing stressed (IPC Phase 2) food security outcomes where most households are marginally able to meet their minimum food needs except by more rapidly depleting their assets and thus undermining their food consumption. The January-March lean season will continue to erode the ability of poor households to meet their basic needs. With already diminished purchasing power, more vulnerable households, especially in Marginal Mixed Farming livelihood zone, are expected to continue experiencing stress (IPC Phase 2) acute food insecurity outcomes through April. In the absence of adequate rangeland recovery and improved harvest following the long rains, an increasing proportion of poor households would likely experience crisis (IPC Phase 3) acute food insecurity outcomes during May-July 2018.

1.0 INTRODUCTION

1.1 County Background

Tharaka-Nithi County is located in Eastern Kenya and borders Embu County to the South West, Meru County to the North East, Kirinyaga and Nyeri counties to the West and Kitui County to the South East. For the purpose of this assessment, the coverage includes Tharaka North and Tharaka South sub-counties which are semi-arid and cover an estimated area of 1,569 square kilometres (km^2). The two sub counties are divided in to five wards and 38 locations with a total population 158,023 people (KNBS Projections 2016). There are three main livelihood zones namely; Marginal Mixed Farming (MMF), Mixed Farming (MF) and Rain-fed Cropping (RF). The main occupation of the people in the three livelihood zones is agriculture, which include crop and livestock production. Livestock keeping, especially the indigenous breeds is the main sources of livelihood for the residents in Marginal Mixed Farming while the population in Rain Fed Cropping rely almost entirely on crop production. Other economic activities include formal employment, casual labour, gemstones, sand harvesting and stone quarry.

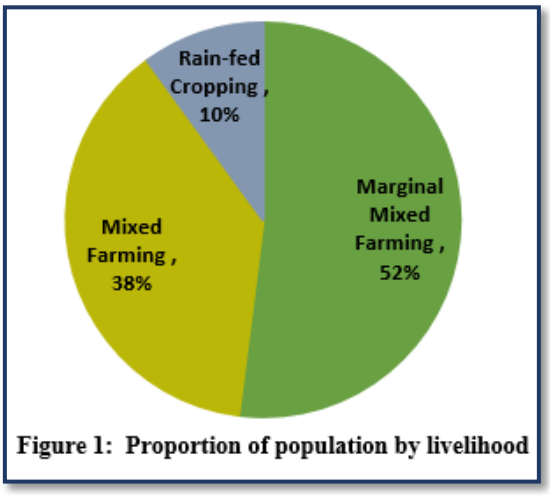

Figure 1: Proportion of population by livelihood

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 season of 2017, taking into consideration the cumulative effects of the 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 Tharaka Nithi 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 carry out community dialogues, household interviews, market assessments and key informant interviews to collect qualitative data that explained the food security over time. The field data was collated, reviewed, analyzed and triangulated, and a preliminary report presented, discussed and adopted by the CSG during a special meeting held on 9th February 2018.

2.0 DRIVERS OF FOOD AND NUTRITION SECURITY IN THE COUNTY

2.1 Rainfall Performance

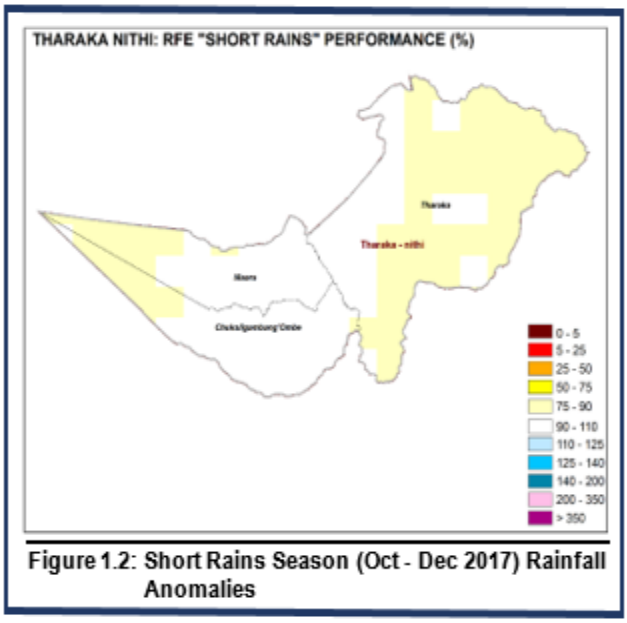

Figure 1.2: Short Rains Season (Oct - Dec 2017) Rainfall Anomalies

The county experiences bi-modal rainfall pattern. The short rains are most reliable contributing more to crop and livestock production. The short rains started in the second dekad of October, being late by one dekad as the area normally receives the rains in the first dekad of October. Generally, the rains were largely below average with most parts of Marginal Mixed Farming and Rain Fed Cropping livelihood zones receiving 75 – 90 percent of normal rainfall. The Mixed Farming livelihood zone received 90 – 110 percent of normal rainfall. Spatial distribution was uneven while temporal distribution was poor. The rains ceased earlier than usual in the third dekad of November, rather than third dekad of January. The rains ceased earlier than usual in the third dekad of November, rather than third dekad of January. Effectively, the short rains had a shorter time period (having started late and ended two months early) which could not support crops to maturity, especially in Marginal Mixed Farming and Rain Fed Cropping livelihood. For Tharaka, this was the third consecutive poor season. Hot, sunny and dry weather conditions were dominant throughout the month of December and January, which negatively affected the rangeland conditions.2.2 Insecurity/Conflict

2.2 Insecurity/Conflict

Herders from Garissa and Isiolo counties drove their livestock through Meru National Park in search of pastures and are now in Kamachabi and Kiamiramba area in Tharaka North. The large number of livestock in this area is increasing pressure on the already diminishing pasture and inadequate water resource, consequently aggravating resource based conflicts. Loss of livestock due to conflict between herders was reported in November 2017 and January 2018. The increased tension is limiting access to pasture and disrupting livelihood activities for communities bordering Meru national park.

2.3 Other shocks and hazards

The Ura River, which is a source of water for the wildlife in Meru National Park and communities in Tharaka North has dried up due to over-abstraction upstream. This has resulted in human-wildlife conflict as wild animals, especially elephant, are crossing over to villages neighbouring the park in search of water. The elephants have destroyed a substantial amount of crops and disrupted daily socio-economic activities including schools. Crop pests and diseases such as fall army worms have also invaded several maize farms in the Mixed Farming livelihood zone resulting to crop losses. High food prices is also affecting food availability and access at household

3.0 IMPACTS OF DRIVERS ON FOOD AND NUTRITION SECURITY

3.1 Availability

Agriculture is the main source of food availability in Tharaka, and a primary source of food and income for most households. An estimated 80 percent of the population is engaged in agricultural activities, which include crop and livestock production. Fish rearing is a source of food especially for the population living along river Tana. Food availability is also influenced by food import from other Counties which covers shortages with the county by stabilizing market supplies. Food assistance by the National Government and development partners is a source of food availability for many poor households. 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

A majority of the Tharaka residents are small scale farmers with an average of 2.9 hectares mostly used for food and cash crop farming. Crop production is the main economic activity in the Mixed Farming and rain-fed Cropping livelihood zones contributing to 50 percent of household income. In Marginal Mixed Farming livelihood zone, crop production contributes to 25 percent of household income. The main crops grown in Tharaka are Millet, green grams, cowpeas, pigeon peas, sorghum and maize. Maize, cowpeas and pigeon peas are mostly produced for food while green grams and sorghum (Gadam variety) are produced for cash income. Maize is mostly grown in the Rain Fed and Mixed Farming and contributes to 40 percent of household food in the two livelihood zones. Millet, which usually which contributed 50 percent to food in Marginal Mixed Farming livelihood zone is increasingly being cultivated for cash income due to high demand by traders from outside the county and the favorable market prices.

Rain Fed Crop Production

Short rains season is usually the most reliable, contributing to approximately 64 percent of the annual food production in the county. However, the 2017 short rains were characterized by significant rainfall deficit and early cessation which led to poor crop performance. Marginal Mixed Farming livelihood zone was worst affected with 80 percent crop failure mainly due to moisture stress and poor agronomic practices. Rain Fed Cropping and Mixed Farming livelihood zones experienced 60 and 30 percent crop failure respectively, caused by moisture stress and the Fall Army Worm infestation. Performance of the three main crops under Rain Fed agriculture are as tabulated in table 1.

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)
Millet	15,330	13,098	80,875	138,003
Green grams	13,800	13,724	36,400	56,270
Maize	6,120	8,745	15,825	70,730

The area under maize decreased by 30 percent while the area under millet increased by 17 percent. A significant proportion of farmers did not prepare land for cultivation due to the projected below-normal performance of the short rains, thus contributing to the reduction in area under crop. Harvesting for various cereals and pulses begun in Mid-January 2018. The projected production of millet and green grams is 42 and 35 percent below the long term average respectively. Maize is the most affected crop with production expected to reduce by 77 percent. Performance of cowpeas, pigeon peas and sorghum was equally affected by the depressed rains. The decline in production is mainly due to moisture stress following early cessation of the rains and the high land surface temperatures in December 2017 and January 2018. 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

Tharaka is traversed by several rivers, which originate from both the Mt. Kenya and Nyambene Hills, flowing eastwards as tributaries of Tana River. These include Mutonga, Thingithu, Kathita, Thanantu, Thangatha, Kithinu and Ura rivers which provide water for irrigation in the moderately densely populated locations in parts of Tharaka. However, less than 10 percent of land is under irrigation despite the great potential for irrigated agriculture. Most of the irrigation schemes are concentrated in the mixed faming livelihood zone of Tharaka South where small scale horticulture production is mostly practiced. The 3 major crops which were produced under irrigation during the October to December short rains are as tabulated in table 2.

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)
Banana	435	446	7570 tons	8642 tons
Pawpaw	390	361	425 tons	481 tons
Maize	225	265	2400 bags	1147 bags

Area under maize crop reduced by 17 percent (Table 2), due to lower than normal river flow in the period before the onset of the short rains. Nonetheless, the projected production for Maize crop had doubled mainly because of the increased adoption of fertilizer use and capacity strengthening

of farmers on good agronomic practices by Ministry of Agriculture and Food Agriculture Organization. For Bananas and Pawpaw, the area planted and projected production is within the long term average. Though Paw paws was affected by viral diseases in most farms, the disease did not have significant effect on the production. Most farmers in Tharaka are experiencing post-harvest losses due to poor transport infrastructure and storage facilities, which make the farmers to lose income due to early disposal, reduced quality of the stored produce and spoilage.

3.1.2 Cereals stock

The projected stock levels of cereals is 146,400 metric tons which is 66 percent of the long term average. Being a harvesting season, 80 percent of the cereal stocks is still with the farmers. However, as households continue to dispose their produce for cash income, household stock levels will reduce drastically while stocks held by traders will increase.

Table 3: Cereal stocks

Food stocks held by	Quantities held currently (90-kg bags)	Long Term Average quantities held (90-kg bags)
Households	47,100	212,000
Traders	11,460	9,070
Millers	0	0
NCPB	0	0
Total	**58,560**	**221,070**

Short rains harvest usually last one to two months in the Marginal Mixed Farming and three to four months in the Mixed Farming and Rain Fed cropping livelihood zone. Due to poor crop performance, the current household cereal stocks will last for one to two months in the Mixed Farming and Rain Fed cropping livelihood zone; the next harvest is expected in June-July 2018, after the long rains. Despite the poor performance of maize crop, farmers in Rain Fed Cropping zone were able to harvest early maturing-drought tolerant crops such as green grams, millet and sorghum which improved household stocks and income thus cushioning them during the January-February dry spell. Therefore, households in Rain Fed Cropping and Mixed Farming livelihood zones are likely to face food deficit in the months of March and April as they will have exhausted the household food stocks. Most households in Marginal Mixed Farming livelihood zone have no stock and are relying on markets for supply of staple food. They depend on income from sale of livestock to purchase food. Farmers in Tharaka 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 Livestock Production

Livestock keeping is among the main sources of livelihood for Tharaka residents, especially the indigenous breeds. The main livestock species kept in the region are cattle, sheep, goats, chicken and donkeys. Contribution of livestock to cash income and food is illustrated in the table 4.

Table 4: Livestock Average Percentage Contribution of Cash Income

Livelihood zone	Livestock average % contribution to cash income	Livestock average % contribution to food
Marginal Mixed Farming	70	30
Rain Fed Livelihood zone	50	50
Mixed Farming	30	70

Pasture and Browse Condition

Tharaka is experiencing drier than usual conditions for this time of the year as the depressed short rains could not support adequate regeneration of forage. The condition of pasture is fair to poor in all livelihood zones. Browse situation is fair in Marginal Mixed Farming livelihood zone and good in Rain Fed cropping and Mixed Farming livelihood zones. In addition, the extremely high day-time temperatures experienced in December 2017 and January 2018 has led to further deterioration of pasture and browse. In migration of livestock from Garissa and Isiolo has also increased pressure on the already diminishing pasture and browse. Pastures and the browses are therefore expected to last up to two months. The areas mostly affected by pasture deficit are Chiakariga, Marimanti and Gatunga in the Marginal Mixed Farming livelihood zone (Table 5). Crop residue is also contributing to livestock feeds especially in the mixed and Rain Fed Cropping areas. There are concerns that use of failed crops (especially soghum) as animal feeds is posing a great threat of prusic acid poisoning and risk of livestock mortality. Currently there are no factors affecting access to the pastures by the livestock.

Table 5: Pasture and browse condition

Livelihood zone	Pasture condition		Browse condition		Trend
	Current	Normally	Current	Normally	
Marginal Mixed Farming	Poor	Good	Fair	Good	Worsening
Rain Fed Livelihood zone	Fair	Good	Good	Good	Deteriorating
Mixed Farming	Fair	Good	Good	Good	Deteriorating

Livestock Body Condition

The deteriorating forage conditions and increased trekking distances is undermining livestock production. The livestock body condition of all species in all livelihood zones is generally good-fair which is a below normal situation for this time of the year. The body condition is expected to deteriorate further as the dry spell continue, especially in the Marginal Mixed Farming livelihood zone. Decline in livestock body condition will impact negatively on prices which will greatly affect the farmers' purchasing powers and consequently limit the household food access.

Table 6: Livestock Body Condition

Livelihood zone	Cattle		Sheep		Goat	
	Current	Normally	Current	Normally	Current	Normally
Marginal Mixed Farming	Fair	Good	Good-fair	Good	Good-fair	Good
Rain Fed Livelihood zone	Good – Fair	Good	Good-fair	Good	Good-fair	Good
Mixed Farming	Good	Good	Good-fair	Good	Good-fair	Good

Milk availability and consumption

Milk production is below Long Term Average (LTA) in all livelihood zones and whatever is currently produced is consumed at the household. The low production is attributed to pastures quality and quantity as well as fewer lactating animals due to reduced tropical livestock units **(**TLUs). Milk prices have increased by 25-50 percent above the LTA across all livelihood zones due to decline in supply, further deducing food access for the vulnerable household. (Table 7). Milk production is also constrained by the low yielding livestock breeds and poor rearing systems. The low milk consumption is compromising the nutrition situation especially for children under-five years, pregnant and lactating mothers.

Table 7: 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
Marginal Mixed Farming	0.25	1	0.25	0.5	60	40
Rain Fed Livelihood zone	0.5	1.5 - 2	0.5	2	60	50
Mixed Farming	1.5	3	1.5	2	50	40

Tropical Livestock Unit (TLU) and Birth Rates

Currently, the average TLUs per household is 1.5 implying that the farmer's reliance on livestock for food security is not sufficient. The herd number for each livestock species are as tabulated in table 8; Livestock birth rates across all the species had slightly declined due to deteriorating body condition.

Table 8 Tropical Livestock Units

Type of livestock	Poor class			Middle class		
	2010	2017 SRA	Current	2010	2017 SRA	Current
Cattle	2	1	1	4	3	2
Goats	8	3	2	12	8	10
Sheep	2	0	0	5	2	3

Livestock Mortality and Diseases

There are no reported cases of disease outbreaks apart from spot cases of goats and sheep pox in Tharaka north and Kamanyaki in Tharaka South. The disease is becoming endemic in Kiamiramba due to in migration from other counties. The veterinary department carried out countywide vaccination and routine surveillance to contain the disease. Current mortality stands at two percent which is normal. There are no unusual livestock mortalities reported across all livelihoods.

Migration

In migration from Garissa and Isiolo thus increasing pressure on the already diminishing pasture and aggravating risk of resource based conflict conflicts.

Water for Livestock

The current water sources for livestock are; permanent rivers, boreholes, piped water, seasonal rivers water reservoir points and furrow water which is normal at this time of the year. Hitherto, the volumes are much reduced affecting the quality of water and the subsequent consumed

volumes by animals. Trekking distances to water sources has increased in Marginal Mixed Farming and Rain Fed cropping livelihood zones from a normal of two to six kilometres to four to eight kilometres. In addition, watering intervals has reduced to once in two days as opposed to the normal daily watering in Kathangachini and some parts of Tharaka north experiencing water stress. The increased trekking distance will impact negatively to animal's body conditions and animal prices. Most surface water sources for animals are expected to last for up to mid-march.

Alternative sources of food

The presence of many rivers in the county promotes fishing activities which is becoming an important source of food especially for the population living along river Tana. In addition, the wide rangelands and vegetation cover is suitable for honey production, which is mainly marketed locally in raw form with little value addition. Fish rearing and bee keeping are alternative source of food and income for households, and are equally affected by performance of the rains.

3.2 Access

Food access refers to a household's ability to obtain foods for a nutritious diet though a combination of production, purchase, gifts, and transfers. Access is influenced by physical access (infrastructure), socio-political access (such as 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 emergencies and conflicts.

3.2.1 Markets

Market Operations

Most trading activities are concentrated in the main livestock and foodstuffs markets in Tharaka which include; Kathangachini, Tunyai, Marimanti, Gatunga and Chiakariga. All markets were 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 counties. Traded volumes for cereals are lower than normal for the season due to poor harvest. 70 percent of maize and beans supply is from outside the county, which is not normal at this time. Green grams, millet, sorghum and cowpeas are supplied from within the county but traded volumes are low as harvesting is still ongoing.

There was a notable increase in goats and cattle supplied to the various markets by both farmers and brokers which was 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 Marginal Mixed Farming livelihood zone while cattle are imported from outside the county. Most households, especially in Marginal Mixed Farming livelihood zone, rely on markets for supply of staple foods. Poor road and communication infrastructure is limiting access to markets.

Maize Prices

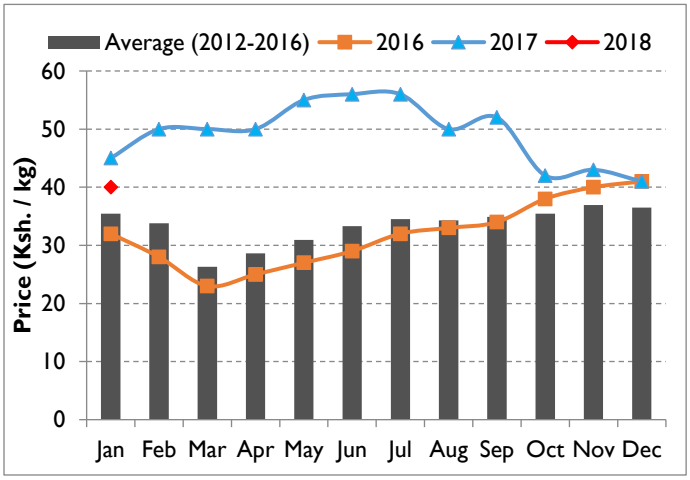

Figure 1.3 Maize prices

The price of maize remained high throughout 2017 and is currently Ksh 40, which is 14 percent above long term average. The persistent high maize prize is mainly due to low local production and high-priced imports from other counties. Maize production has been hampered by successive poor rain performance and the shift by farmers to millet and sorghum due to increased demand and favorable prices. Price of maize is projected to remain stable but above the long term average due to increased reliance on imports to cover shortages within the county.

Goat Prices

Goat prices went up by 45 percent between September and October 2017 and remained stable at 35 percent above LTA until December 2017. The high price was attributed to good 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 marginal mixed faming livelihood zone, relied on livestock for household income thus increasing market supply and causing a drastic decrease in prices by 14 percent. 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.

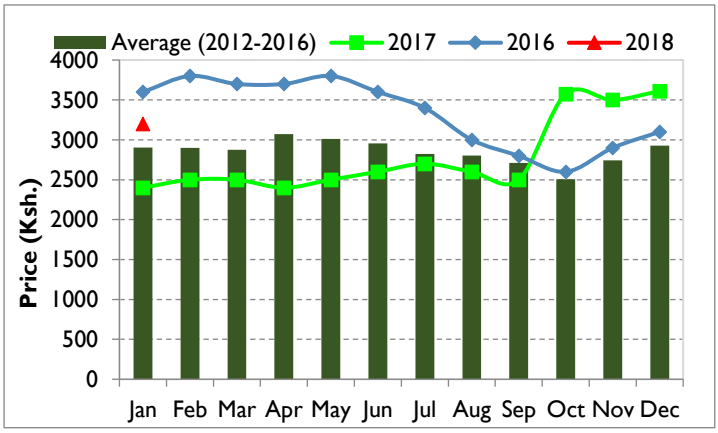

Figure 1.4 Goat prices

3.2.2 Terms of trade

Livestock-to-cereal terms of trade (ToT) improved in October to December 2017 due to favorable livestock prices. The TOT then dropped in January to slightly below the LTA but still 50 percent higher when compared to the same period last year. Decline in TOT was intended with the weakening livestock prices. Proceeds from sale of a goat can purchase 80 kg of maize which can sustain a household for 1.5 months thus improving food availability for the MMF households who rely on markets. The ToT is expected to remain unfavorable as livestock prices decline while cereal prices remain high until the next harvesting season

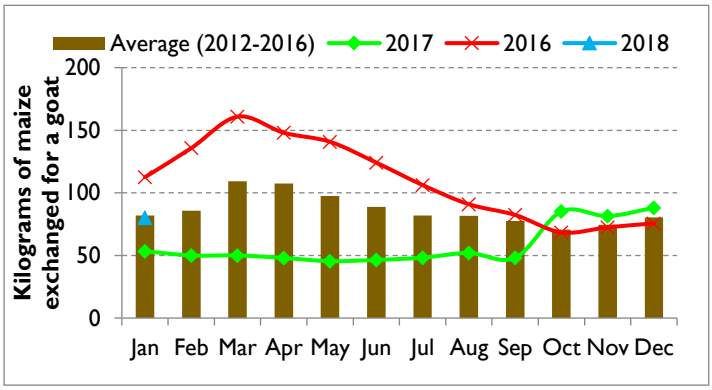

Figure 1.5 Terms of Trade

3.2.3 Income Sources.

The main sources of income in the county include livestock and food crop production and casual waged labor. 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 Marginal Mixed Farming 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, basketry, petty trade and the sale of firewood.

3.2.4 Water access and availability

The major sources of water for domestic use within Tharaka are rivers, boreholes, shallow wells and piped water system. Recharge of the open water sources following the short rains was between 80 and 100 percent of their capacity which impacted positively on water availability and accessibility. Underground water sources recharged up to 70 percent of their capacity. Over 90 percent of the water sources currently have water. However, some seasonal rivers, pans and dams in both Mixed Farming and Marginal Mixed Farming livelihood zones have dried up causing water stress in those areas. The areas with low water points concentration are Kamanyaki, Kamarandi, Gituma, Gakurungu, Chiakariga, Kathangachini and Maragwa. The population currently affected by water shortage is approximately 20,000 people.

Table 9: Access to domestic water

Ward / livelihood zone	Return Distance to Water for Domestic Use (Km)		Cost of Water at Source (Ksh. Per 20litres)		Waiting Time at Water Source (Minutes)		Average Water Consumption (Litres/person/day)	
	Normal	Current	Normal	Current	Normal	Current	Normal	Current
Marginal Mixed Farming	3-5	4-6	2-5	5-10	15-20	30-40	15-20	10-15
Mixed Farming	<1	<1-1.5	2-5	2-5	3-7	5-8	22-30	20-25
Rain Fed farming	<1	<1-1.5	2-5	2-5	6-8	5-10	20-25	15-20

Distance to water sources

Return distance to water sources has increased by one to three kilometres in Marginal Mixed Farming livelihood zones. The increase in distance has been occasioned by drying up of some open water sources and breakdown of boreholes and piped water system. The distance to water sources are within the normal range in the Mixed Farming and Rain Fed cropping livelihood zones.

Waiting time

There is no waiting time at the rivers, water pans and earth dams. Waiting time is longest in the Marginal Mixed Farming livelihood zones (30-40 minutes) due to limited number of functional water sources (boreholes and piped water kiosks). Most boreholes are extremely saline; hence residents have to search for fresh water from river beds or fresh water borehole that are far away. This leads to concentration at those water points thus increasing in waiting time.

Cost of water

Cost of water per 20 litres jerican is ksh two to three per 20 litre jerican in the Mixed Farming and Rain Fed cropping livelihood zones, which is normal at this time of the year. Cost of water is highest in the Marginal Mixed Farming at Ksh five to ten per 20 litre jerican.

Water consumption and cost

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

3.2.5 Food Consumption

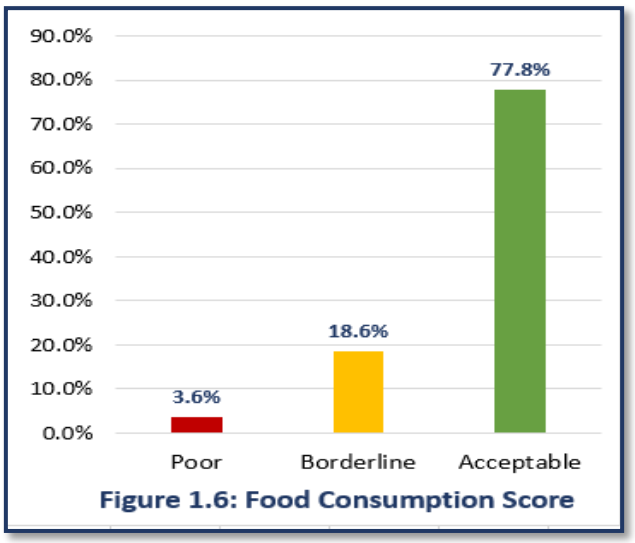

Figure 1.6: Food Consumption Score

A significant proportion of households have poor and borderline food consumption score (FCS) which is indicative of deteriorating household dietary diversity and food frequency which has resulted from declining food production and unfavorable market prices of staple food commodities.

Majority of the households in the Marginal Mixed Farming and Rain Fed Cropping livelihood zones are currently consuming two to three meals per day which is not normal. Foods being consumed are mainly cereals and pulses. Consumption of meat, milk, fruits and vegetables is constrained by the diminishing household purchasing power.

3.2.6 Coping strategies

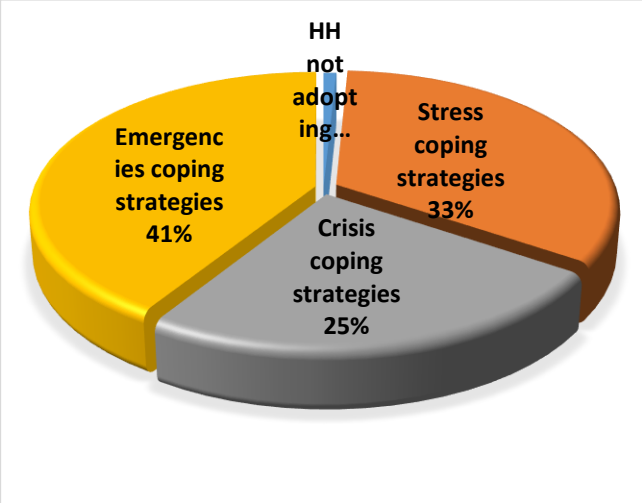

Figure 1.7 Livelihood Coping strategies

The reduced coping strategy index remain 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 constitute relatively severe consumption coping strategies and are indicative of food stress. The proportion of households using crisis and emergency livelihood coping strategies is 66 percent implying that most households are marginally able to meet their minimum food needs except by more rapidly depleting their assets and thus undermining their food consumption. Common livelihood diversification strategies reported by households included collection and sale of firewood, charcoal burning, weaving of baskets, beads and mats.

3.3 Utilization

3.3.1Morbidity and mortality patterns

Morbidity cases are averagely on normal trends since 2015 and there has been no upsurge of any disease during the short rains period. Upper respiratory tract infections (URTI), diarrhea, skin diseases and urinary tract infection remain the leading causes of morbidity for under five and the general population due to climatic changes as well as poor sanitation and hygiene conditions. A few cases of suspected cholera were reported in various parts of the county, but are yet to be confirmed.

3.3.2 Immunization and Vitamin A supplementation

Fully immunized child (FIC) coverage is 45 percent, which is below the national target of 80 percent and has reduced by 7.4 percent when compared to the same period in 2016. Oral Polio and Measles vaccination coverage also reduced in 2017 as compared to 2016 (Table 11). The reduction in coverage is attributed to frequent health workers strikes experienced in 2017. Immunization coverage is expected to improve following intense campaign during Malezi Bora Week in May.

Table 10: Immunization and vitamin A coverage

Year	Percentage of fully immunized children in the district (Source DHIS MOH 710 Vaccines and Immunizations)	Percentage of children immunized against the mentioned diseases in the district (DHIS)	Vitamin A supplementation for Children less than one year old (DHIS)	Vitamin A supplementation for children 1 to 5 years old (DHIS)
July to December 2017	45%	1. OPV 1 ____45.5% 2. OPV 3 ____40.3% 3. Measles ____36%	50%	58%
July to December 2016	43%	1. OPV 1 ____42.3% 2. OPV 3 ____42.9% 3. Measles ____39.2%	63%	48%

Vitamin A supplementation for children under 12 months decreased by 13 percent while coverage for children one to five years old increased by 10 percent in the period July to December 2017 as compared to the same period in 2016, however the coverage remains below the national target of 80 percent. The low Vitamin A supplementation is attributed to non-attendance of child welfare clinic after the measles vaccine at nine 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 from 10 to six percent between September and December 2018. 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 (NHP).

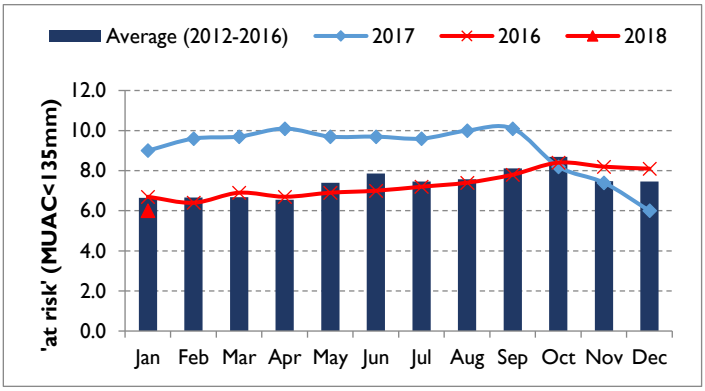

Figure 1.8 Proportion of children at risk of malnutrition

3.3.2 Sanitation and Hygiene

The major sanitation facilities are pit latrines which are used by over 76 percent of the population. The latrine coverage has increased by 8% when compared with the same period last year (68%). This could be attribute to increase hygiene campaign by the ministry of health. 72 percent of the population drinking water from open and unprotected sources, thus increasing risk of waterborne communicable diseases. Currently, 70% of households treat their water either by boiling or using aqua tabs. The high adoption of water treatment is temporary and is motivated be the fear of cholera, coupled with increased hygiene campaigns by Ministry of Health.

3.4 Trends of key food security indicators

Table 11: Food security trends

Indicator	Long rains assessment, July 2017		Short rains assessment, February 2018
% of maize stocks held by households	21 percent of LTA		22 percent of LTA
Livestock body condition	Marginal Mixed Farming	Good to fair	Good to fair
	Mixed Farming	Good to fair	Good to fair
	Rain Fed farming	Good	Good to fair
Water consumption (litres per person per day)	Marginal Mixed Farming	13-15lpppd	10-15 lpppd
	Mixed Farming	15-20 lpppd	20-25 lpppd
	Rain fed farming	15-20 lpppd	15-20 lpppd
Price of maize (per kg)		50	40
Distance to grazing	Marginal Mixed Farming	12	4-8
	Mixed Farming	2	1
	Rain fed farming	6	3-4

Terms of trade		52kgs	53kgs
Coping strategy index	Marginal Mixed Farming	32.8	6.2
	Mixed Farming	4.8	1.9
	Rain fed farming	4	2.3
Food consumption score	Poor	19	6.5
	Borderline	52.5	27.4
	Acceptable	28.5	66.1

3.5 Education

Enrollment:

Despite many obstacles enrolment rates are relatively high suggesting a change in attitude of parents in the area towards education which could be partly attributed to the campaign by government and non-governmental organizations to promote school enrolment. Other contribution factors include free primary and secondary education, digital literacy programme, and provision of school meals. School with home grown school meals programme (HGSMP) and expanded school meals program (ESMP) have higher enrollment than others.

Table 12: Enrolment rates

	Term III 2017			**Term I 2018**			**% Increment**
Enrollment	Boys	Girls	Total	Boys	Girls	Total	
ECD	1,949	2,142	4,091	2,243	2,442	4,685	**15%**
Primary	18,935	18,487	37,422	19,003	19,498	38,501	**3%**
Secondary	3,263	3,445	6,708	3,499	3,846	7,345	**9%**

Retention

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

Table 13: Retention

Indicator	**End of Term II 2017**		**End of Term III 2017**	
Students dropped out from school	**№ Boys**	**№ Girls**	**№ Boys**	**№ Girls**
ECD	5	6	3	0
Primary	36	37	39	44
Secondary	24	35	24	30

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 were household have limited access to food, and are experiencing water scarcity and resource based conflicts.

Transition
The government through the ministry of education and the ministry of interior is enforcing 100 percent transition for both early ECD to primary and primary to secondary school. This enforcement is supported by the free primary and free secondary education programmes which has greatly lessened the burden of education on parents by removing tuition fee, which was major barriers to education. Transition rate is anticipated to be above 90 percent for both boys and girls by second term.

Table 14: Transition rates.

Indicator	**2017**		**2018**	
% of transition	Boys	Girls	Boys	Girls
Primary to post primary	84%	79%	85%	80%
ECD to primary				

School Meals Programme
The school meals program has contributed greatly to high enrollment, retention, increased transition rate, improved academic performance, immunity and good health. There are 52 schools under homegrown meals in Tharaka North and 13 in Tharaka South. There are seven schools in Tharaka North and 37 in Tharaka South sub counties under expanded school meals program. 58 schools in both Tharaka North and Tharaka South are not under any school meals program. There has been an appeal from the communities of those 58 schools be included in the meals programmes for improved attendance, retention and better academic performance. The implementation of the school meals program is adversely affected by delays in fund disbursement, delayed supplier deliveries, and water shortage in some schools. Furthermore, transfers of students to schools where school meals program are offered was recorded in at least 10 schools

4. FOOD SECURITY PROGNOSIS

4.1 Prognosis Assumptions

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

- According to FEWS NET/USGS preliminary forecast, there is increased likelihood of normal to below-normal March-May long rains.
- FEWS NET/USGS preliminary forecast also indicate increased likelihood for hotter-than-normal temperatures in February through March, and also later in June through August.
- Based on long term price trends 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 typically deteriorate during February-March lean season as the long rain are projected to have delayed onset. The expected higher-than normal temperatures will accelerate depletion of forage and water resources. Water resources for domestic and livestock use will get depleted faster leading to increased water stress. Influx of livestock from Garissa will increase pressure of 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 get depleted by mid-March and market price of staple food remain 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 Marginal Mixed Farming livelihood zone, are expected to continue experiencing stress (IPC Phase 2) acute food insecurity outcomes through April.

Food Security Outcomes (May, June & July)

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 as March to May rains continue. 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 livelihood 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, a sizable proportion of poor households are likely to experience crisis (IPC Phase 3) acute food insecurity outcomes during the June-August dry period.

5. CONCLUSION AND INTERVENTIONS

5.1. Conclusion

5.1.1 Phase classification

Tharaka is experiencing stressed (IPC Phase 2) food security outcomes where most households are marginally able to meet their minimum food needs except by more rapidly depleting their assets and thus undermining their food consumption. Factors to monitor include; rainfall performance, crops performance, forage condition, access to water, price of staple food, food consumption patterns, coping strategies, nutrition status, resource based conflicts.

5.1.2 Summary of Findings

The below-average 2017 short rains marked a third consecutive poor rain season in Tharaka. 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 Marginal Mixed Farming livelihood zone experiencing more severe conditions. The early cessation of the rains, coupled with fall army worm infestation caused 60-80 percent crop failure especially in marginal mixed and Rain Fed Cropping livelihood zones. Additionally, resource based conflicts, 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. Despite markets being functional, 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%) of households have 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

Table 15: Sub county ranking

Sub County	Food security rank (Worst to best)	Main food security threat (if any)
Tharaka North	Gatunga	Depressed rainfall, Accelerated depletion of pasture, low milk production, crop failure, high prices of staple foods, low household stocks, low term of trade, reduced access to water and poor road network
Tharaka South	Marimanti	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
Tharaka South	Chiakariga	Below normal rainfall, poor crop performance, High food prices, increased trekking distances.
Tharaka North	Mukothima	Crop failure, Fair pasture, cross-border conflict, human-wildlife conflicts, , shorter distances to water points,
Tharaka South	Nkondi	Access to markets, stable food price, shorter distances to water points, better infrastructure, more productive livestock

5.2 Ongoing Interventions

5.2.1 Food interventions

Table 16: Ongoing food interventions

Sub county	Intervention	population	Population targeted(%)	Implementers	Time frame
Tharaka North	**GFD**	**54,187**	**10-15**	**GOK**	**January–December 2017**
Tharaka South	**GFD**	**86,874**	**10-15**	**GOK**	**January–December 2017**
Tharaka	**SMP**	**15,871**	**102 Schools**	**MOE**	**January–December 2017**

5.2.2 Non-food interventions

Table 17: Non-food interventions

Sub county	Intervention	Location	No. of beneficiaries	Implementers	Impacts in terms of food security	Cost	Time Frame
Agriculture							
Tharaka North and South	Promotion of conservation agriculture	all	3400 Famers	MOA/FAO	Promotion of drought tolerant crop varieties and water harvesting technologies for improved productivity and profitability	20M	December 2019
	Cereals Enhancement program	all	9000	MOA/KCEP	Promotion of input usage for higher crop productivity	40M	December 2019
	ISPP	all	4000	FAO	Promotion of small holder irrigation schemes	20M	December 2019
Livestock							
Tharaka South and North	(Rural livelihood) Dairy farming – goats and cow	Marimanti, Nkondi Chiakariga, Gatunga and Mukothima	210	Upper-Tana ,Caritas of Meru and Livestock Production Office	improving production and availability of milk per household which has an impact on Nutrition of the Households and boost household income	2.5M	From August 2017 (continuous)
	[Rural livelihood] Improving local indigenous chicken		250		It will improve production and availability of meat and eggs per household which has an impact on Nutrition of the Households and boost household income	2.5 m	From August 2017 continuous

Water							
Tharaka South and North	Upgrading of 15 water facilities, construction of elevated tower for storage tanks and solar panels and a distribution line	Gatunga, Marimanti, Chiakariga, Igambang'ombe, Mukothima, Nkondi.	Gatunga-700, Mari- 450 Chiaka- 650 Igamba- 800 -450 -400	County Government	Reduce walking Distance to the Source	5 M	3 months
Tharaka South	Irrigation scheme	6 sites in Nkondi Ward, I site in Chiakariga and 2 sites Marimanti	7200 Beneficiaries	National Government and County Government and UTANRMP	Maximum production of Horticultural crops	450 M	24 Months
Health and Nutrition							
Tharaka South and North	High impact nutrition programme	All health facilities	All children under 5 years, pregnant and lactation mothers.	MOH		11M	Continuous
	Management of Acute Malnutrition (IMAM)	Health facilities		MOH and NHP		2.3m	Continuous

5.3 Recommended Interventions

5.3.1 Food interventions

Table 18: Food interventions

Sub County	Pop in need (percent range min – max)	Proposed mode of intervention	Locations	Time frame
Gatunga	15-20	CFA/GFD	Maragwa, Kathangachini, Kanjoro	January-July 2018
Marimanti	15-20	CFA/GFD	Gituma, Marimanti, Ntugi, Rukenya	January-July 2018
Chiakariga	15-20	CFA/GFD	Chiakariga, Kamanyiki, Kamarandi	January-July 2018
Mukothima	10-15	CFA/GFD	Mauthini, Thiiti	January-July 2018
Nkondi	10-15	CFA/GFD	Rukurini , Kereria	January-July 2018

5.3.2 Non-food interventions

Table 19: Non-food interventions

Sub county	Intervention description/type	Ward	No of beneficiaries	Proposed Implementers	Required Resources	Available Resources	Time Frame
Agriculture Sector							
Tharaka South and North	Promotion of post-harvest grain management, preservation	All	8500	MOA, NDMA, County Government	35M	Technical personnel, Demonstration Materials, Vehicles	End of March 2018
	Promotion of drought tolerant crops (Farmer Field Schools)	All	6500		20M	Technical personnel, Demonstration Materials, Vehicles	End of May 2019
Livestock Sector							
Tharaka South and North	Promote fodder production, preservation and management	Marimanti, Nkondi and Chiakariga	3,000	County Government, Livestock Production, Caritas Meru, NDMA, CDF	2M	Personel	January to March, 2018
	Community Sensitization on the alternative stock (poultry farming)	All	1500		1.5M	Personel	January to March, 2017
	Construction of an integrated modern livestock market	Marimanti and Gatunga	5,000		800M	Personel	2018 and 2019
	Re-seeding of pasture	All	1000		1M	Personnel	2018
Water Sector							
Tharaka North and South	Rehabilitation of 46 hand pumps	Gatunga- 5, Mukothima 4,Chakariga 18, Marimanti 10 and Nkondi 9	Gatunga-750, Mukothima- 600, Chiakariga- 2,700, Marimanti- 1,500 and Nkondi- 1,350	National Government, NDMA, County Government and Development partners (Plan International, Aids Services, Caritas Meru, e.t.c)	4.6M	Personnel	3 months
Tharaka North and South	Improvement of 5 hand pumps per wards in 5 wards to solar pumping system	Gatunga, Mukothima, Chiakariga, Marimanti and Nkondi	10,000 people		50M	Personnel	3 months

Tharaka North and South	Rehabilitation of; URA Kathangachini intake, Tumbura Kithuru polytechnic WSP, Kathita river crossing, GI pipes, Mutonga-Gituma and Kibunga Kakimiki water supply project	Mukothima Marimanti, Chiakariga and Nkondi Wards	1000 Beneficiaries 5000 Beneficiaries		30M	Personnel	
Tharaka North and South	Drilling of borehole for Karaani Market, primary and sec school	Marimanti	1000		5M	Personnel	**July 2018**
Health and Nutrition							
Tharaka South and North	Mass nutrition screening and active case finding	All	All	Nutritionist	5M	Non power	Continuous
	Upscale targeted supplementary programme	All	All H/H	nutrition	20M	Non power	Continuous
Education							
Tharaka South and North	Provision of home grown school meal programme	11 Schools	14,605 pupils	MOE	100M	Kitchen and Storage facilities; personnel	Feb 2018 to June 2019