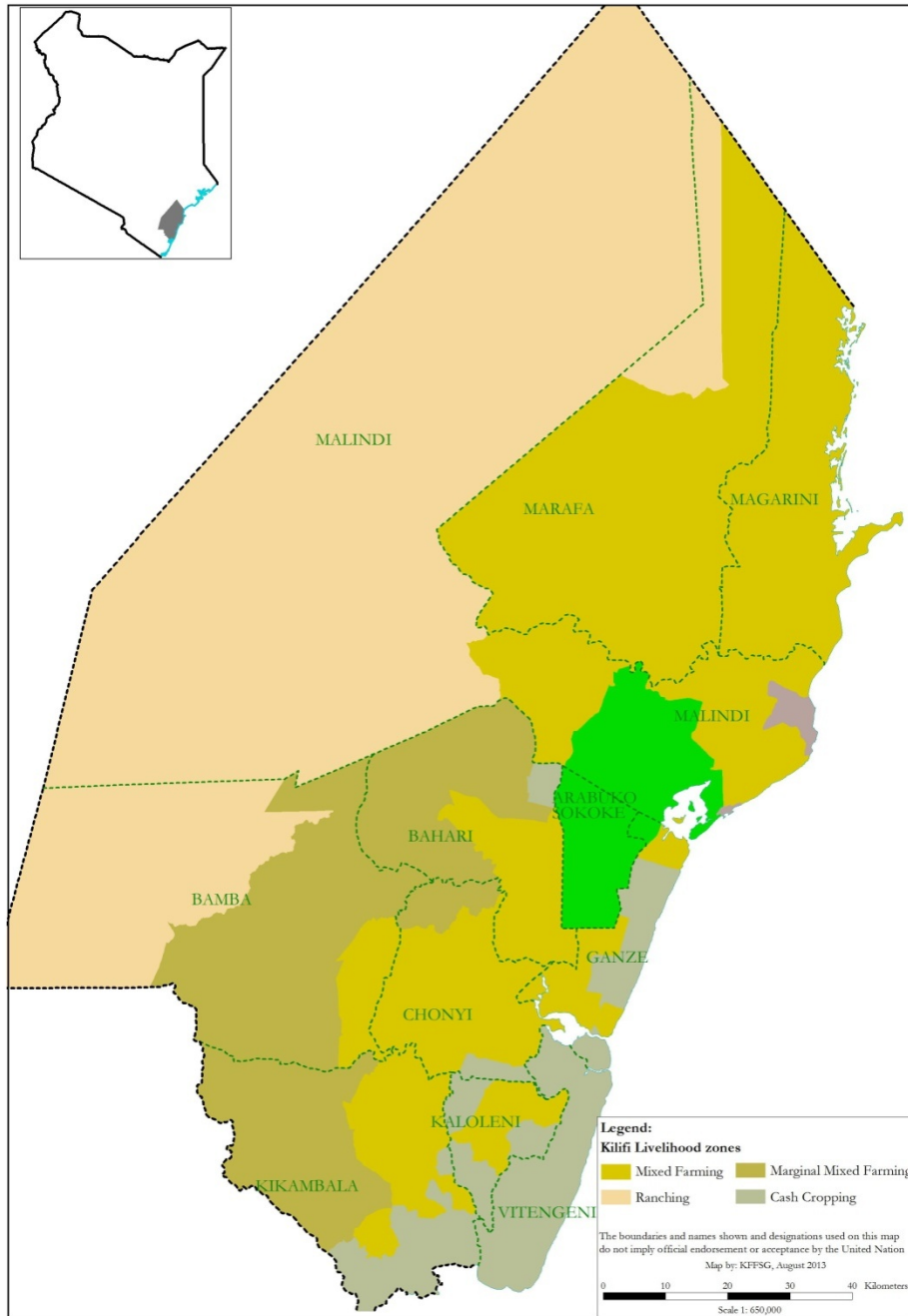


KILIFI COUNTY 2015 SHORT RAINS FOOD SECURITY ASSESSMENT REPORT



A joint report by the Kenya Food Security Steering Group (KFSSG)¹ and the Kilifi County Steering Group

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1.0 INTRODUCTION

1.1 County Background

Kilifi County is one of the six coastal counties. It borders Kwale County to the South West, Taita Taveta to the West, Tana River to the North, Mombasa to the South and the Indian Ocean to the East. Kilifi covers an area of approximately 12,609.7 square kilometres and has a population of 1,109,735². It comprises of seven sub-counties namely; Malindi, Magarini, Ganze, Rabai, Kaloleni, Kilifi South and Kilifi North. The county has four main livelihoods zones (Figure 1) including Marginal Mixed Farming (MMF) comprising 44 percent of the population, cash cropping/dairy (22 percent), Mixed Farming (11 percent) and ranching (two percent). Other livelihood zones include fishing and mangrove (three percent), formal employment (14 percent) and forest/tourism and casual labour (two percent each).

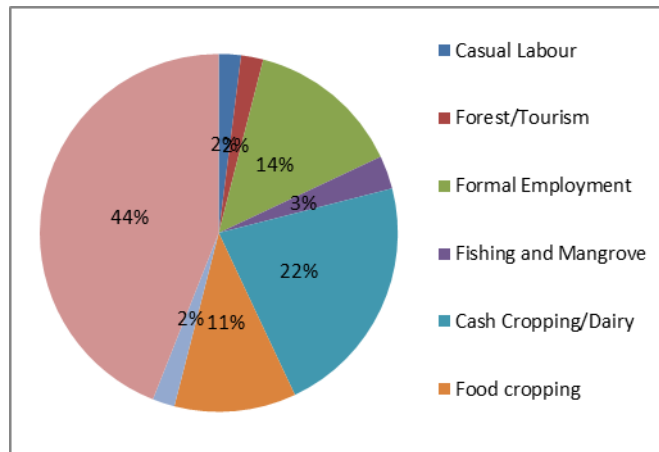


Figure 1. Population distribution by livelihood zone

1.2 Current Factors Affecting Food Security

- Poor rainfall performance
- Decline in tourism sector performance
- Limited income diversification
- Decreased livestock prices

2.0 COUNTY FOOD SECURITY SITUATION

2.1 Current Food Security Situation

The county is currently classified in the 'Minimal' (Integrated Food Security Classification Phase 1) phase. The cash cropping/dairy, fisheries, fishing and mangrove harvesting, food cropping, forest/tourism, formal employment/business/trade, livestock keeping and majority of the mixed farming and mixed farming livelihood zones are classified in the minimal phase while parts of the food cropping, marginal mixed farming and mixed farming livelihood zones of Marafa and Magarini sub-counties are classified as 'Stressed' (IPC Phase 2). In the month of December 2015, the food consumption score (FCS) was 8, 34 and 59 percent for the poor, borderline and acceptable categories respectively. The coping strategy index (CSI) was 16 for December 2015 which was normal implying that the households were engaging in normal insurance coping strategies such as reduction in ration sizes and number of meals to between one and two compared to between two and three normally. The crude mortality rate (CMR) was 0.074/10,000/day which was normal for this time of the year. Maize production was 12 percent lower than the long term average (LTA). The available pasture will last for 1.5 months to mid-

² Kenya National Bureau of Statistics Census 2009

March and browse is likely to last for about two months up to April when normally they would last for two and four months respectively. Livestock is currently being watered on alternate days compared to daily normally. The distance to water sources for households is 2.5 kilometres compared to two kilometers normally; water consumption per person per day (PPPD) is 12 litres compared to 17 litres normally. The terms of trade (ToT) are 21 percent higher than the long term average (LTA). The nutrition status of children under five years as measured by mid upper arm circumference (MUAC < 135 mm) was 4.8 percent compared to an average of 7.4 percent.

2.2 Food Security Trends

In the 2015 long rains assessment carried out in August, the county was classified in the ‘Stressed’ (IPC Phase 2) phase of food insecurity. The cash cropping/dairy livelihood zone was classified in the ‘Minimal’ (IPC Phase 1) phase while the marginal mixed farming, mixed farming and ranching livelihood zones were classified as ‘Stressed’ (IPC Phase 2). The March - May long rains performed well for the season and resulted in over 90 percent recharge of surface water sources in contrast to the poor performance of the current short rains that resulted in only 50 percent of surface water sources recharged in the ranching and marginal mixed farming livelihood zones. Consequently, distances to water sources have increased from two kilometres recorded in August 2015 compared to 2.8 kilometres currently. The consumption of water PPPD reduced by 29.4 percent from 17 litres PPPD in August to 12 litres PPPD currently. The maize stocks available in the county were above average during the last assessment period but currently the stocks are 12 percent below the LTA. The CSI was 17 in May 2015 compared to 16 in December 2015. The terms of trade dropped by 28.3percent as households could purchase 92 kilograms of maize with the sale of one goat in December 2015 compared to 66 kilograms in January 2016. Maize prices decreased by 3.3 percent from Ksh 39.3 in December 2015 to Ksh 38.0 currently. Goat prices improved to Ksh 2,500 26.3 percent above the LTA of Ksh 1,980.

2.3 Rainfall Performance

The rainfall onset was early in the first dekad (10 day period) of October 2015 with an above normal rainfall amount of 193 mm, 16 percent above the LTA of 167 mm. Despite this above normal rainfall amount, the temporal distribution was poor across the county. The spatial distribution was uneven across the county. Near normal to normal rainfall was experienced in most parts of the ranching and mixed farming livelihoods with above normal rainfall in most parts of marginal mixed farming and southern parts of mixed farming zones (Figure 2). The cessation was normal in the third dekad of December.

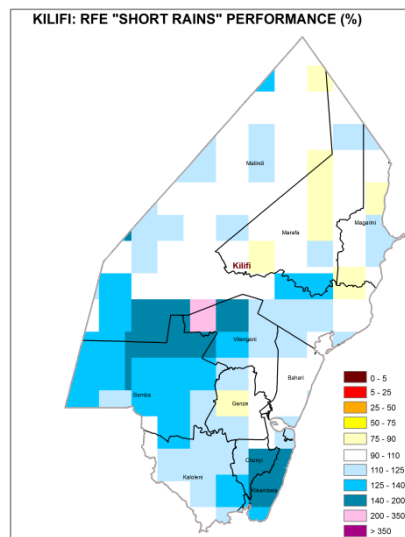


Figure 2. Rainfall performance

2.4 Current Shocks and Hazards

The steady decline in the performance of tourism sector has led to decline in income diversification in the county. The situation has been worsened by drought effects on livestock and on crops resulting in poor performance and failure in some areas in addition to poor recharge of water sources.

3.0 IMPACT OF RAINFALL PERFORMANCE, SHOCKS AND HAZARDS

3.1 Crop Production

The short rains season is not the main crop production season as it contributes to only 40 percent of the county's total annual crop production. In the ranching and marginal mixed farming livelihood zones however, it is considered more reliable than the long rains season. Across all the livelihood zones, maize is the staple food while cassava contributes at least 20 percent to food sources. Cowpeas contribute 10 percent to food in the ranching and some parts of mixed farming zones. Cassava contributes to 30 percent of cash income in Magarini where it is cultivated extensively.

a. Rain-fed (3 major crops)

Table 1. Main crops grown

Crop	Area planted during 2015 Short rains season (Ha)	Long Term Average area planted during the Short rains season (Ha)	2015 Short rains season Actual production (90 kg bags)	Long Term Average production during the Short rains season (90 kg bags)
1.Maize	19,881	21,800	191,060	217,000
2.Cassava	4,032	2,700	75,728	41,889
3.Cowpeas	6,508	7,937	27,430	28,577

The area planted with maize, cassava and cowpeas was 91.2, 149.3 and 82.0 percent of the LTA respectively. The decrease in acreage for maize and cowpeas was because most households did not engage in extensive farming during the season since they still had food stocks leftover from the well performing long rains season and they mainly depend on the long rains. Increase in acreage for cassava was as a result of ongoing promotion of the crop by the county government and partners. Production for maize, cassava and cowpeas was 88.0, 180.8 and 96.0 percent of the LTA respectively.

The decrease in production for maize and marginal decrease in cow peas was mainly attributed to the early cessation of the short rains coupled with poor temporal distribution in some areas. Maize crop experienced failure in the food cropping livelihood zones of Vitengeni, Jaribuni in Ganze sub-county, the mixed farming zones of Gongoni in Magarini, Adu, Bungale, Dagamra, Garashi in Marafa, the marginal mixed farming zones of Garashi in Marafa, Mwahera and Vitengeni, livestock keeping zones of Adu in Marafa. The acreage planted decreased in the cash cropping and dairy and mixed farming livelihood zones since farmers did not extensively engage in crop production as they had food stocks and were still harvesting their crop but increased in the ranching and marginal mixed farming zones. In the livestock and marginal mixed farming livelihood zones, farmers opened up more land for cultivation since they significantly depend on the short rains.

b. Irrigated

Table 2. Irrigated crops

Crop	Area planted during 2015 Short rains season (Ha)	Long Term Average area planted during the Short rains season (Ha)	2015 Short rains season production (90 kg bags) Actual	Long Term Average production during the Short rains season (90 kg bags)
1. Amaranthus	66	117	670	744
2. Okra	16	20	89	140
3. Tomatoes	27	73	681	1030

The area planted for the irrigated crops such Amaranthus, Okra and Tomatoes decreased by 90.1, 63.6 and 66.1 percent of the LTA respectively because farmers opted to rely more on the forecasted enhanced rains in order to minimize the costs of irrigation.

Maize stocks

Households in the county held maize stocks 80 percent of the LTA which includes previous stocks from the long rains 2015 season. The NCPB held maize stocks 217 percent of the LTA in anticipation of increased demand for the commodity as the rains had failed in Magarini and Marafa sub counties in the North.

Table 3. Available maize stocks versus long-term average

Maize stocks held by	Quantities of maize held (90-kg bags)	Long Term Average quantities held (90-kg bags) at similar time of the year
Households	160,120	200,986
Traders	97,709	118,770
Millers	623	650
NCPB	13,000	6,000
Total	271,452	326,406

Household stocks held are sufficient to last up to the March-May long rains season except in Magarini and Marafa sub counties. The mixed farming zone has stocks sufficient for three months up to May while reduced acreage in the cash cropping and dairy zone resulted in lowered production and stocks which are likely to last two months up to April. Poor rainfall performance led to below average stocks in the marginal mixed farming likely to last for 1.5 months up to April as opposed to three months and in the ranching livelihood zones one month up to March as opposed to two months.

3.2 Livestock production

Livestock production contributes 75 percent of cash income in the ranching livelihood zone, 30 percent in both mixed farming and marginal mixed farming whereas the cash cropping/dairy livelihood zones derive 15 percent of their cash income from it. The main livestock species kept include, cattle, goats, sheep and poultry. Cattle, goat and poultry contribute 15, 20 and 50 percent respectively to food in ranching livelihood zone, whereas in the marginal mixed farming zone they contribute 10, 82 and three percent respectively.

Pasture and browse

The browse condition remained good across all livelihoods in the county while pasture condition was good in cash cropping and mixed farming zones as the areas received good amounts rainfall especially along the coastal strip. The pasture condition was fair and below normal in areas of Gongoni in the ranching zone there was poor regeneration due to inadequate rainfall that ceased early. The trend for browse is downward across livelihoods. Pasture was deteriorating fast especially in the ranching areas exacerbated by the high livestock numbers. Most of the pasture has remained as standing hay due to high daytime temperatures. The pasture in the cash cropping and mixed farming zones is likely to last for two months although browse may last for two to three months. Water was becoming a limiting factor for livestock access to pasture. Livestock in parts of Magarini, Malindi and Ganze for instance, had started grazing closer to the permanent water sources thereby increasing distance to forage. Crop residue, maize stovers and pulse husks formed part of livestock feed, extending to ranching areas that had crops.

Livestock Productivity

Livestock body condition

The body condition for cattle in all livelihoods varied between good to fair as a result of pasture and water availability, whereas that of sheep and goats was good owing to availability of good browse. The trend for cattle body condition was downward from good to fair and is attributed to increasing trekking distance to pasture and water. The body condition of sheep and goats remained good and stable due to adequate availability of browse and water and were fetching high prices on the market enhancing the purchasing power of livestock owners. Milk production is also better for livestock in good body condition thus better milk availability. The birth rates were currently normal as sustained by good fodder, browse and availability of water. However the declining quantity and quality of pasture may affect cattle birth rates negatively which will be negatively affected should the long rains delay.

Milk availability

Milk availability slightly declined due to decreased quality of pasture and the increasing trekking distance to water especially in the ranching livelihood zone. In the cash cropping/dairy zone that constitutes bigger parts of Kilifi South, Kilifi North, Rabai, sections of Malindi, Kaloleni and Magarini, the production was 5 - 7 litres per household per day below a normal of 7 - 8 litres, while the mixed farming and ranching zones produced 1 - 2 litres per household per day below the normal 2 - 3 litres. Milk production is expected to track forage availability resulting in reduced milk consumption especially for the low and medium income households, a situation that will expose them to malnutrition.

Milk consumption

Despite the decreased milk availability, the average milk consumption per household remained normal at 1 - 2 litres, with households opting to reduce the amount of milk sold. The price per litre was Ksh 45 - 50 compared to the normal of Ksh 40 - 50 in the mixed farming and ranching zones depicting some increment, which will further increase as the forage and water reduces. The downward trends in roughage and water availability in the mixed and ranching zones will further depress milk production and ultimate consumption.

Tropical livestock units (TLUs)

There was no significant variation in the average Tropical Livestock Unit (TLU), which stood at 0 - 3, 4 - 10 and above 20 for low, medium and high income households respectively. The TLUs are within the normal range for all the income levels in the county. The high income households have the capacity to offer more animals for sale whereas low income households turn to chicken instead. There has been no significant variation in the herd numbers for all livestock species.

Water for Livestock

Current water sources include water pans, rivers, boreholes, shallow wells and taps. These sources were normal in all livelihoods except for the ranching zone in Magarini, where most water pans had dried up with others poorly recharged. The current trekking return distance for livestock in the ranching and mixed farming zones is 5 - 15 kilometres compared to the normal of 3 - 5 kilometres, where livestock rely on water pans and the Galana River. Areas that received less rainfall had begun experiencing challenges. In the cash cropping/dairy zone, the livestock were relying on taps, shallow wells and boreholes thus there was no change in trekking distance. The trend of distance to water was upward with the watering of livestock in some parts of Magarini reducing the watering frequency to alternate days instead of daily. In parts of Malindi, the animals were grazing closer to the river so as to reduce the trekking distance. Livestock that trek long distances for water and pastures will have their productivity go down thus affecting the overall food situation at household level. On the other hand livestock which was moved closer to the watering points will limit households from accessing milk. The current water held in the pans is likely to last for two months up to April. The taps may experience disruption as a result of rationing thus livestock will not access water as expected.

Livestock Migration

There had been no outward migration reported in the County. However animals were moving towards River Sabaki in Malindi and Magarini. The likely migration of livestock into the county from Tana River in search of water at such a time of the year is normal.

Livestock Diseases and Mortalities

There was no major livestock disease outbreak that was reported during the period. There were reported cases of New Castle Disease (NCD). There were no unusual deaths of livestock. There were a few losses of local poultry due to NCD which may have impacted negatively to a few households' food security.

3.3 Water and Sanitation

Major water sources

The major water sources for domestic and livestock use in the county include pipelines, rivers, pans and boreholes. These are supplemented by an array of pans across the rural parts of the county. River Sabaki is also a major source of water in parts of Malindi, Magarini and Ganze. Rare River, a major source of water for livestock and households in Ganze, is currently dry with a few ponds used for watering livestock. Some areas in Magarini, Malindi and Kilifi North sub counties rely on shallow wells. Recharge of pans across the county was estimated at 50 percent in most areas. Water pans in the ranching zones of Ganze, Malindi and Kaloleni had a recharge of more than 50 percent and were likely to last for an average of two months until April. In the livestock and marginal mixed farming zones of Magarini, the recharge was poor hence almost all

pans are dry. Currently, households depend on trucking by vendors and the water department. The county has an extensive pipeline network in all livelihood zones. Pipelines in the ranching zones operate with disruptions due to breakages and operational hitches. Although pipelines in the cash cropping and mixed farming zones are more reliable, they too suffer interruptions due to disputes with the bulk supplier.

Distance to water sources

The average return distance to water sources increased across all livelihood zones from an average of 1.3 - 2.8 kilometres. In both the marginal mixed farming and parts of ranching zones of Magarini, the average distance increased from two kilometres to 10 kilometres due to drying of pans and failure of community boreholes. In the mixed farming and parts of the ranching and cash cropping/dairy livelihoods, the distances were normal with a range of 1 – 2 kilometres. However, it is projected that the distance to water in the cash cropping/dairy zones of Ganze, Malindi and Kaloleni will increase to more than two kilometres in the next one month (March) as pans get depleted over time.

Waiting time at the source

The average waiting time in the county increased from an average of 10 to 17 minutes. Intermittent operation of the main pipelines coupled with inadequate recharge of pans made accessing water take longer than usual. In the cash cropping/dairy livelihood zone, the waiting time was approximately five minutes. An estimated 10 minutes was taken in both the mixed farming and marginal mixed farming livelihood zones and 30 minutes in the ranching zone. The increased waiting time compared to normal was due to increased numbers of households accessing boreholes, water kiosks and trucking points as water pans dried up and some boreholes broke down.

Cost of water

The cost of water per 20 litre jerrycan in the county increased from an average of Ksh 4 to Ksh 12 across the livelihoods, occasioned by frequent closure of the pipeline system and the drying of some pans. The vendors had hiked the cost of water available from other sources. In the ranching and marginal mixed farming zones of Magarini the cost ranged from Ksh 30 to Ksh 50 per jerrycan. The cost of water was higher than normal due to the reduced availability of water which implied that there could be a reduction of water for normal household use which is likely to compromise hygiene standards.

Water consumption

The average water consumption per person per day (PPPD) in the county was below average estimated at 12 litres compared to the normal 19 litres. The reduction is due to decreased availability of water in all livelihood zones due to failed operational pipelines and below average rainfall in some livelihood zones. Water consumption was highest in the cash cropping and dairy livelihood zone at 20 litres PPPD and least in the ranching and marginal mixed farming zones at 10 litres PPPD while the mixed farming livelihood zone recorded 15 litres PPPD.

Sanitation and hygiene

The latrine coverage in the county is 52 percent although Ganze and Magarini sub-counties reported pit latrine coverage of approximately 18 percent. The availability and acceptance of

domestic water treatment chemicals at household level is currently low. Incidences of water borne diseases during the dry season were low since contamination of water sources by surface run off was nil. There is a potential of water contamination to the underground water sources from the septic tanks and salt farms in parts of the mixed farming livelihood zone (Gongoni in Magarini sub-county). Contamination of surface sources by dust occurs as most areas are dry, sunny and windy.

3.4 Markets and Trade

Market operations

The main livestock markets include Bamba, Guru Guru, Mariakani, Kanagoni and Kayafungo while crop markets include Kilifi, Mtwapa, Kaloleni, Mariakani, Malindi and Gongoni. Market operations were normal and well supplied with staple crops with seasonal variations in available commodities. Market supply and the volumes traded for *omona*, cassava and green grams were slightly normal but below normal for maize and *amaranthus*. The main commodities purchased by the community included maize flour, oil and sugar which was normal. The county is a net importer of staple food commodities from Mombasa and Taita Taveta counties. Cattle, goats and chicken are the main livestock species traded in the market although middlemen contribute to poor and decreased prices. Approximately 80 percent of the population in the marginal mixed farming and ranching livelihood zones were largely dependent on markets as opposed to own production from the short rains season due to failure of their maize crop. Reliance on markets is likely to increase in March and April across the county as those in the mixed farming and cash cropping/dairy and mixed farming deplete their stocks and join those already purchasing food commodities from the markets.

Market Prices

Maize prices

The average price of a kilogram of maize in January 2016 was Ksh 38 and stable between December and January attributed to availability of household stocks from the previous season. Prices were following seasonal trends (Figure 3) and were stable when compared to the LTA of Ksh 39.7 because of flooding of the market by holders of stored maize stocks in anticipation of the short rains harvest. The mixed farming and ranching livelihood zones recorded Ksh 37 and Ksh 39 respectively for a kilogram of maize. The prices will decline further and bottom out in March when the harvest becomes available but will rise gradually from April when household stocks decline and demand for maize on the market increases.

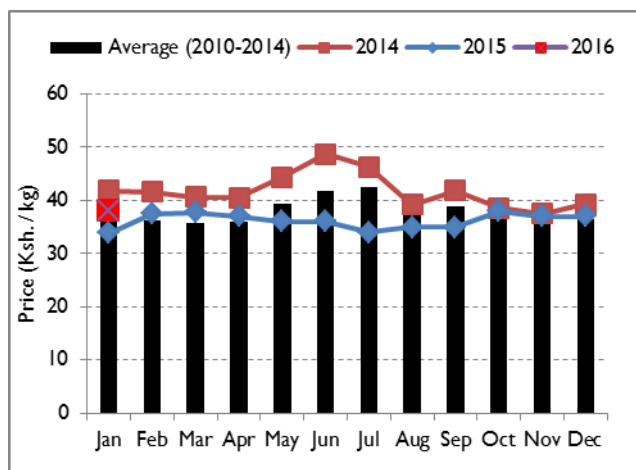


Figure 3. Maize prices

Goat prices

A medium-sized three-year-old goat was trading at Ksh 2,500 in January 2016, a 26 percent decrease from the December price of Ksh 3,400 and is 26 percent above the LTA (Figure 4). Prices decreased because most households sold their stock to raise school fees thus increasing the supply in the market. The ranching livelihood zone recorded the lowest price at Ksh 2,950 while the mixed farming zone recorded the highest price at Ksh 2,900. Prices are likely to remain stable in the next three months as the goat's body condition is projected to remain stable as the browse situation is stabilized by the March-May long rains.

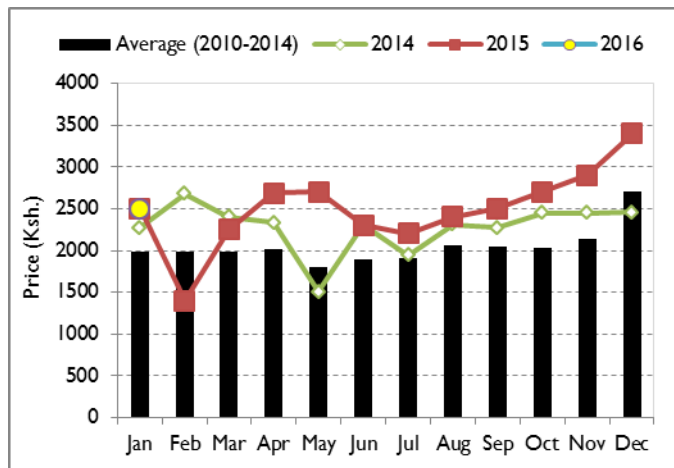


Figure 4. Goat prices

Terms of trade

The terms of trade (ToT) in January decreased by 28 percent from 92 in December to 66 kilograms of maize in exchange for a goat, which was 26 percent above the LTA of 54 kilograms. The terms of trade are likely to remain stable until the projected below average March - May long rains thereafter they will reduce as the price of maize is projected to increase while that of goats is projected to decrease in the months following the long rains season.

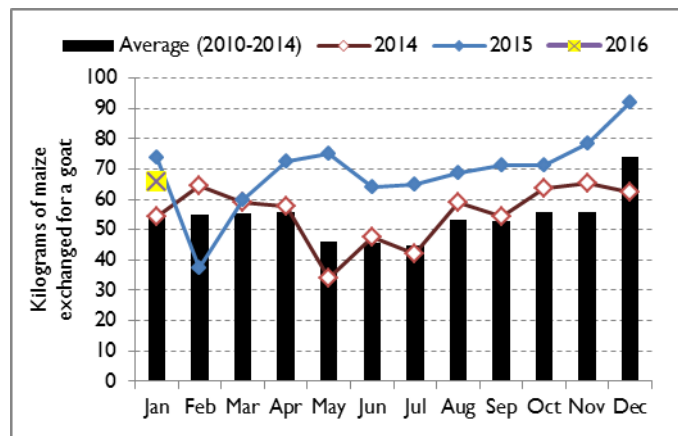


Figure 5. Terms of trade

3.5 Health and Nutrition

Morbidity and mortality patterns

The most common diseases from July to December 2015 for the under-fives included Upper Respiratory Tract Infections (URTI), urinary tract infections, malaria, diarrhoea with few incidences of skin diseases, and pneumonia. High prevalence of URTI was attributed to the generally dusty conditions. There was an unexpected sharp rise in cases of malaria recorded attributed to the improvement in diagnosis due to availability of testing kits. Incidences of malaria outbreaks were expected to decrease following the recent provision of mosquito nets to households. The crude mortality rate (CMR) was 0.074/10,000/day which was below World Health Organization (WHO) alert levels of 0.5/10,000/day. The morbidity level and trend were normal for the time of the year.

Immunization and Vitamin A supplementation

The coverage for the fully immunized child between July and December 2015 decreased from 77 percent to 72 percent compared to the same period in 2014 which remained below the

recommended national target of 80 percent. Vitamin A supplementation coverage for children aged below one year was 50 percent compared to 58 percent during the same period in 2014. Stability was observed in Vitamin A supplementation for children aged between two to five years in 2015 with 36 percent compared with that of 2014 for the same period. The coverage remained below the national target of 80 percent mainly because children in this age bracket stop attending child welfare clinics after completion of the routine vaccination and also due to inconsistent outreach services. Other factors that contributed to low figures in immunization and vitamin A supplementation in the county include, poor data capture and long distances to health facilities.

Nutrition Status and Dietary Diversity

The proportion of children under five years of age at risk of malnutrition measured by Middle Upper Arm Circumference (MUAC) of below 135 millimetres increased by 45 percent from 3.3 in December to 4.8 percent in January but was 35 percent below the LTA of 7.4 percent (Figure 6). According to the World Food Programme (WFP) Food Security Outcome Monitoring (FSOM) in December 2015 in the coastal marginal livelihood zone, eight, 34 and 59 percent of the population had poor, borderline and acceptable food consumption score respectively compared to September 2015

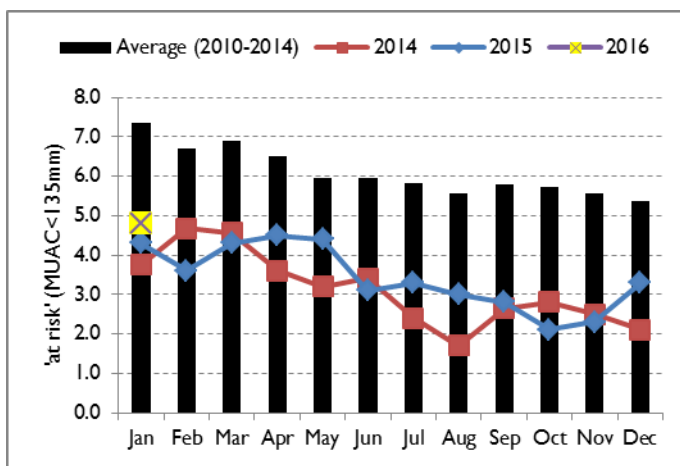


Figure 6. Children at risk of malnutrition

where 11.9, 37.6 and 50 had poor, borderline and acceptable food consumption score respectively. The implication of this is current food consumption in terms of diversity and frequency has improved as more people have moved from acceptable to borderline attributed to increased food availability from the short rains season harvest. However, data from the National Drought Management Authority (NDMA) sentinel sites show that in most areas that experienced below average rainfall and crop failure like Vitengeni, Jaribuni, Gongoni, Adu, Bungale, Dagamra, Garashi, Garashi, Mwahera, Vitengeni and Adu, most households were consuming 1 - 2 meals per day in some areas like Adu, Kadzandani and Ramada, instead of 2 - 3 meals normally, whereas children maintained a normal three times per day. The meals comprised largely cereals, pulses and vegetables, such as cassava, maize meal, *omena*, beans, cowpeas with vegetables like *mchicha*, *mchungu* and *mnavu* respectively. Children were breastfed and given milk and porridge as normally done.

3.6 Education

Enrolment

Gross enrollment for Early Childhood Development and Education (ECDE) increased from 43,766 in the third term of 2015 to 44,983 in January 2016, which represents a normal growth rate of 2.8 percent. Other areas recorded a higher growth rate, which was attributed to the establishment of new ECDE centers by the County government bringing the facilities closer to households. Primary school enrollment also increased albeit marginally from three to five,

percent which was normal and consistent with the expected annual growth rate. Enrollment is slightly skewed in favor of boys. Pupil’s participation as shown by attendance was above 90 percent for both genders within the two levels. The flash floods experienced in Malindi and Magarini did not affect attendance as schools were in recess at the time.

Dropout

Generally low dropout rates were observed in both ECDE and primary school levels across the sub - counties. Girls had lower dropout rates of 2.20, 0.70 and one percent in Term I, II and III respectively, compared to boys with dropout rates of 2.90, 0.80 and 1.20 percent respectively within the same period. Conversely, girls registered consistently higher dropouts in the three terms of 1.60, 1.30 and 0.90 compared to boys with one, 0.7 and 0.6 percent respectively. The dropout rates observed were generally within the national norm.

Transition

Rates of transition of ECDE to primary were similar to the previous year of 65 percent. Transition from primary to secondary schools has consistently been low at 45 percent which is below the national average of 75 percent. The below average transition rate is attributed to poor academic performance, parents’ negative attitude towards education and lack of school fees.

School meals programme

A total of 108 out of 526 schools in the county are under the Home Grown School Meals Program. The schools are drawn from Ganze (48), Magarini (21), Kaloleni (19) and Malindi (20) sub-counties. The total county case load is 69,790 of which 34,431 are boys and 35,359 are girls. The beneficiaries represent a small percentage of the total enrolment. Implementation of the school feeding program is faced with a number of challenges which include lack of adequate clean water to prepare the meals, lack of capacity of the schools’ management committees to remunerate the cooks, delay in disbursement of the school meals program funds and in delivery of food rations as most food supplies are not sourced from schools’ localities.

3.7 Coping Mechanisms

The coping strategy index (CSI) was 16 in December 2015 compared to 20 in September 2014 which implies households were employing less severe coping strategies in December 2015 as compared to September 2014. The coping strategies employed by 56 - 68 percent of households included; reliance on less preferred and/ less expensive food, borrowing food or relied on help from a friend or relative, reduction of the number of meals eaten per day, Reduction in portion/size of meals, and Reducing the quantity of food consumed by adults to ensure that children had enough to eat.

Table 4. Coping strategies employed

Summary of asset depletion				
Coping strategies	HH not adopting	Stress	Crisis	Emergencies
December 2015	9.0%	30.1%	35.3%	25.6%
September 2015	3.0%	21.8%	23.8%	51.5%

There was a variation in types of coping strategies employed in September and December of 2015 (Table 4). In December, households reduced the adoption of emergency coping strategies from 51.5 to 25.6 percent and the number of households not employing any coping strategies

increased from 3 percent in September to 9 percent in December showing an improvement in food security status of these households.

3.8 Ongoing Interventions by Sector

Non- food interventions

Intervention	Objective	Location	Activity target	Cost (Million Ksh)	No. of beneficiaries	Implementation stakeholders	Implementation Time Frame
HEALTH							
Vitamin A Supplementation	Reduce disease incidences	All facilities			204,581	MOH, UNICEF, WV, CISP, IMC, PS Kenya Plan Kilifi, APHIA,	Ongoing
Zinc Supplementation	Reduce disease incidences					MOH, UNICEF, WV, CISP, IMC, PS Kenya Plan Kilifi, APHIA,	
Management of Acute Malnutrition (IMAM)	Improve Nutrition Status	27 facilities			1,808	MOH, UNICEF, WV, CISP, IMC, PS Kenya, Plan Kilifi, APHIA	Ongoing
IYCN Interventions (EBF and Timely Intro of complementary Foods)	Improve knowledge on Nutrition	Ganze-3 CU Magarini 1 CU and Malindi 1 CU facilities			7 CUs Capacity building	MOH, UNICEF, WV, CISP, IMC, PS Kenya, Plan Kilifi, APHIA	Ongoing
Periodic Nutrition surveillance	Early identification and referral. Making Informed decisions	Ganze- Mirihini and Maryango CUs			Whole community	World vision, NDMA, MOH, UNICEF, Kenya Redcross, Plan Kilifi, APHIA	Ongoing
LIVESTOCK							
Construction of sale yard	Increase income and food security		Jilore, Marafa, Vitengeni, Kayafungo	25.1	>4000		Livestock production/ County Govt
Purchase and distribution of 65 dairy cows	Improve income and nutrition		All wards	9.2	>700		Livestock production /County government
Purchase and distribution of 347 Langstroth bee hives	Improve income and nutrition		Selected groups in the Sub County	2.5	580		Livestock production /County government
Installation of milk collection and cooling centre	Improve food security and increase income		Mtondia, Zowerani Mwawesa, Bamba, Ganze and Marafa	34.0	>2000		Livestock production/ County Govt
Rehabilitation of Cattle dips	Improve food security and increase income		All	28.0	>1500		CDVS/County Govt

Construction of Vaccination crush	Improve food security and increase income		All	4.2	>2000		CDVS/County Govt
Vaccines	Improve food security and increase income		All	3.0	>200,000		CDVS/County Govt
AGRICULTURE							
Promotion of THVC	-increased food production	Ganze, Jaribuni, Bamba and Vitengeni		4.6	12,087	Sub County Agricultural Officer	April-Sept 2014
Water harvesting for crop production	-increased food production	Ganze, Jaribuni		4.0	4,000	Sub County Agricultural Officer	October 2014-June 2015
Establishment of Fruit tree orchard	-Improve sources of livelihood -Improve nutrition -environmental conservation	Ganze, Jaribuni, Bamba and Vitengeni		0.5	250	Sub County Agricultural Officer	April 2014-2017
WATER							
Drilling & equipping 2no. Kadzandani Boreholes	Save time to work on farms	Marafa	Magarini sub-county	12.0	10,000	County Government	8months
Construction of Shomels Water Pan	Save time to work on farms	Gongoni	Magarini sub-county	12.0	3000	NDMA	3months
Water trucking	Save time to work on farms	Adu/Fundisa Sub-Location	Magarini sub-county	2.0	6200	County Government	6months
Construction of Kadzandani, Kamale and Pipeline	Save time to work on farms	Kadzandani ADU Kamale	Magarini sub-county	40.5	10000	County	6months
Rehabilitation of Bungale, Marafa	Save time to work on farms	Bungale/Marafa Magarini	Magarini sub-county	5.0	98,000	County Government	6months
17 shallow wells in Ganda Ward	Increased access to water	Ganda	Malindi sub-county	10.5	6000	County Government	6 months
EDUCATION							
HGSMP	Improve health and nutrition	Selected ECD and Primary schools	Children in schools under HGSMP			MoE, County Government	Ongoing but delayed

Construction of 24 classrooms	Reduce walking distances to schools	Ganze	School-going children	27.9		World Vision MoEST MOPHS	Ongoing
Sensitization of parents on importance of education	Increased awareness on importance of education		Parents	3.0		World Vision MoEST	Ongoing
School fees subsidy	Increase transition rates			1.0		World Vision MoEST	Ongoing

3.9 Sub-County Ranking

Sub County food security ranking (Worst to Best)

Sub County	Food security rank (1-10: worst to best)	Main food security threat (if any)	Remarks
Magarini	1	Crop failure (90 percent), occurrence of flush floods, Decline in casual labour opportunities, Water shortage (human and livestock), Limited coping strategies, inaccurate weather advisories, Uncertainty of rains, limited alternative livelihoods	Adu, Magarini (Garashi, Baricho and Dagamra) ward, Marafa ward,
Ganze	2	Crop failure (80 percent), limited casual labour opportunities, Limited coping strategies, inaccurate weather advisories, limited alternative livelihoods	Vitengeni, Malanga, Bamba, Jaribuni
Malindi	3	Poor crop performance, limited casual labour opportunities, occurrence of flush floods, poor performance of tourism industry, limited alternative livelihoods (partially)	Langobaya, Goshi, Marana Flooding along the riverine zone Chakama, Kisikicha Mzungu, Shaka Hola
Kaloleni	4	Poor crop performance,, low livestock prices, low adoption of technologies, inaccurate weather advisories, limited alternative livelihoods (partially)	Gotani, Tsangatsini, Mwanamwinga
Kilifi North	5	Low adoption of technologies, inaccurate weather advisories, Rocky area	Roka Decline in the fishing industry
Kilifi South	6	NCD on poultry, poor agronomic practices, low adoption of technologies, inaccurate weather advisories	Ngamani

Sub County	Food security rank (1-10: worst to best)	Main food security threat (if any)	Remarks
Rabai	7	NCD on poultry, low adoption of technologies, inaccurate weather advisories	Industrial zone, dairy farming, availability of cash crop(palm trees)
Very Good (9-10) Good (7-8) Fair (5-6) Poor (3-4) Very Poor (<2)			

4.0 FOOD SECURITY PROGNOSIS

4.1 Prognosis Assumptions

- It is expected that the long rains will be timely, range between normal to below normal.
- Pasture and browse are likely to deteriorate in quality and quantity due to the lower than normal rainfall during the short rain season, its early cessation, and the likely higher-than-normal temperatures until the onset of the rain when rejuvenation is expected to begin.
- Reliance on markets will increase as households deplete their existing stocks and food purchases rise.
- Maize prices are likely to remain stable since the high supply of the commodity from outside the county will continue even as households deplete their stocks.

4.2 Food Security Outcomes (February – April)

Food security is likely to remain stable until April when food stocks at household level are depleted. The price of maize, the county's staple food is likely to gradually decrease and be lowest in March ensuring access to food commodities and stable food consumption. With the start of the expected below average March-May long rains season, on-farm casual labour opportunities will be available from land preparation and planting as households are expected to put in more effort during the long rain season in compensation for the short rain season's crop failure increasing household's income and consequently, food and milk consumption. Early maturing crops will also be ready in April whose sales in combination with income from casual labour are likely to support market purchases. Milk availability will increase as the rains regenerate pasture improving livestock body conditions and milk production. The nutritional status of children is expected to improve as food and milk becomes more available and accessible through May improving household food consumption and dietary diversity. More households are likely to have acceptable food consumption and less households are expected to employ coping strategies to achieve food needs. The mortality is likely to remain stable.

4.3 Food Security Outcomes (May - July)

From May through June, accelerated by the poor March-May long rains performance, the food security situation will deteriorate quicker than normal through July as the below average household food stocks are depleted and reduced short cycle crop harvests and reduced income from casual labour opportunities will result in increased household food consumption gaps and increased malnutrition through July.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

Overall, the county is classified as 'Minimal' (IPC Phase 1), a situation that is likely to last up to May. However, the mixed farming and marginal mixed farming livelihood zones in Magarini, Ganze and Marafa are classified as Stressed (IPC Phase 2) and are likely to remain in the same phase up to the onset of the March - May long rains season. Water availability is among the key factors to be monitored, especially marginal mixed farming and parts of ranching livelihood zones of Magarini. Interventions in water should target maintenance of existing water points. In Livestock, efforts should target local poultry vaccinations against New Castle Disease, while in the education sector, emphasis should be on the increasing the number of schools in the HGSMP especially in Ganze and Magarini sub-counties. In the health sector, efforts need to be made to increase the Vitamin A supplementation in addition to increasing pit latrine coverage that compromises sanitation in the county.

5.2 Summary of Recommendations

1. Provision of subsidized certified seeds and fertilizer
2. Capacity building on kitchen gardens
3. Provision of tractor services
4. Supporting fodder and pasture conservation
5. Increase schools under HGSMP
6. Hire of more ECD teachers
7. Provision of water storage tanks especially to schools
8. Expansion and repair of existing pipelines
9. Excavation, expansion and de-silting of water pans
10. Water trucking, provision of fuel subsidy and maintenance of borehole equipment
11. Supporting the supplementary feeding program
12. Vitamin A supplementation

6.0 ANNEXES

Annex 1. Food Intervention Required

Proposed population in need of food assistance

Sub-county	Population in the sub-county	Population in need (% range min – max)	Proposed mode of intervention	Remarks
Magarini	177,241	17-20	CFA	Adu, Magarini (Garashi, Baricho and Dagamra) ward, Marafa ward
Ganze	137,664	24-26	CFA	Vitengeni, Malanga, Bamba, Jaribuni
Kaloleni	139,302	10-12	CFA	Gotani, Tsangatsini, Mwanamwinga
Malindi	162,712	7-9	CFA	Langobaya, Goshi, Marana Chakama, Kisikicha Mzungu, Shaka Hola
Kilifi North	207,587	0-2	CFA	Roka
Rabai	113,622	0-1	CFA	Kaliang'ombe
Kilifi South	171,607	0-1	CFA	Ngamani

Annex II: Non-food Interventions

Sub-County	Intervention	Location	No. of beneficiaries	Proposed Implementers	Required Resources (Million KSh)	Available Resources	Time Frame
Agriculture							
Ganze	Promotion of THVC	-Increased food production	Ganze, Jaribuni, Bamba and Vitengeni		4.57	12,087	Sub County Agriculture Officer
Ganze	Water harvesting for crop production	-Increased food production	Ganze, Jaribuni		4.0	4,000	Sub County Agriculture Officer
Ganze	Establishment of Fruit tree orchard	-Improve sources of livelihood -Improve	Ganze, Jaribuni, Bamba and		0.5	250	Sub County Agriculture Officer

		nutrition - Environmenta l conservation	Vitengeni				
Livestock							
Kilifi N, Malindi, Kaloleni, Magarini	Fodder & Pasture establishment conservation – Silage Hay & farm residue	All	4000	Directorate of livestock production	Transport, planting materials, Hay baler, Molasses, polythene, maize germ & Subsistence allowance	Nil	1 year
Malindi,	Provision of Dairy Breeding Bucks and does	All	300	CGOK, NGOs	Capacity building, Transport	Farmers	1 year
Kilifi S, Malindi, Magarini, Ganze	Apiary improvement and provision of Bee hives and Honey harvesting kits ;		715	CGOK, NGOs	Capacity building, Transport	Good Bee forages	1 year
Malindi, Ganze, Kaloleni, Magarini	Provision of meat goats Breeding Bucks and does		600	CGOK, NGOs	Capacity building, Transport	Farmers	1 year
Magarini, Malindi, Ganze, Kaloleni	Provision of improved Boran bulls		2,500	CGOK,NGO s	Capacity building,	Facilitator s, indigenous cows	1year
Magarini, Kaloleni, Ganze, Malindi	Excavation of Water Pans and expansion of old water pans for Livestock	2 wards per sub-county	All livestock farmers	County Government	14 M	Vehicles, technical staff	2014-2015
Education							
Marafa	- Provision of water	Marafa location, Kundeni	B:236 G:198	W. Vision Kenya			Early 2016
Magarini	- Provision of water	Magarini, Bomani Sub- Location	B:22717 G:2606	AMREF			Early 2016
Magarini	- Provision of Unimix	Magarini/Mar afa Division (special school/units	B:120 G:73	GOK			January 2016
Water							
Magarini	Water trucking	Fundisa & Gongoni	16000	County Government,	Fuel , Funds to purchase water, Maintenance of water boozers	Water boozers	5 months
Magarini	Construct large capacity water pan in Bibithole Gandhi to serve Chamari Community 161,000m3	Chamari Location	6000	County Government of Kilifi/ NDMA	Funds for excavation work	-	6months
Malindi, Magarini Kilifi South	Extend Pipeline from Kambicha Borehole to Marereni Market	Adu/Fundisa, Gahaleni, Ganda Mashamba, Ganda	30,000	County Government of Kilifi and World Vision Kenya	Funds for construction work and Materials		2016/2017

		Girimacha, Jilore Ward Junju Ward		WSTF			
Health							
All	Creation and harmonization of IFAS tools	Target sub county facilities		Stakeholders MOH			January 2016 to December 2016
	Increase and strengthen the CUs through new community nutrition curriculum	Sub counties	900	MOH stakeholders	Finance, Capacity building, Referral books, Transport		Ongoing
	Purchase of SFP products	Sub county	300	MOH stakeholders	Stationery, transport, allowances		January-December 2016