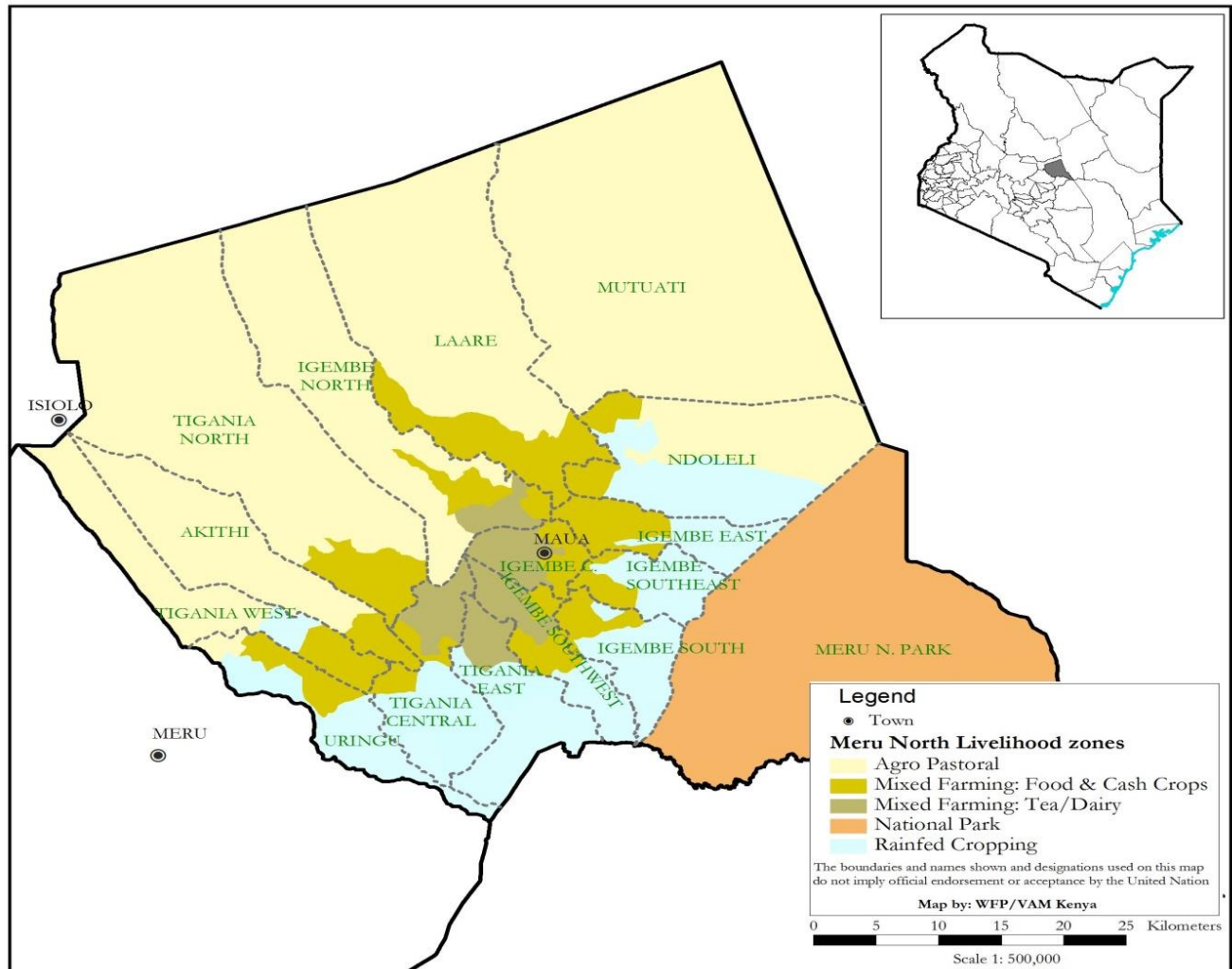


**MERU COUNTY (MERU NORTH)
2016 SHORT RAINS FOOD SECURITY ASSESSEMENT REPORT**



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

February, 2017

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Executive Summary

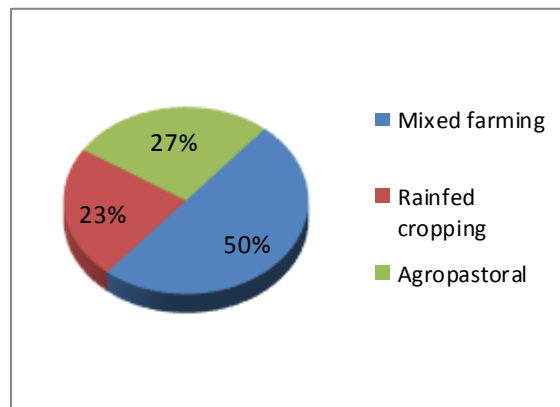
The county was classified in the Stressed food insecurity level (IPC Phase w) with households having minimally adequate food consumption but unable to afford some essential non-food expenditures. Areas specifically affected are mainly in the agro-pastoral livelihood zone of Amwathi, Antubetwe, Kiongo in Igembe North; Kangeta in Igembe Central; Karama, Muthara, in Tigania East; and Ruiru rwa rera, Timau in Buuri sub- counties. Households were accessing food from existing maize stock as well as markets which were functional. Households with poor and borderline food consumption were 30.2 and 34.9 percent respectively in the agro pastoral zone while in the rain fed cropping zone about 93.3 percent of the households had acceptable score as at January 2017. At the same time coping strategies index has been increasing, a trend which is expected to continue in the next three months. Most households will continue accessing food from their diminishing stock but the situation is stable as all markets were operational.

The main driver for food insecurity was the poor performance of the Short rains season which was below normal and erratic. The rainfall onset delayed in most parts of the County. The total amounts received were generally depressed. The amount received was adequate for optimal pastures and browse regeneration but was not adequate for crop maturity. The other drivers of food insecurity though to a lesser extent were insecurity posed by cattle rustling/banditry and human wildlife conflict. In the agro-pastoral livelihood zone herders could not access pasture and browse as a result of cattle rustling and in the mixed farming zone there were incidences of crops being destroyed by elephants.

1.0 INTRODUCTION

1.1 County Background

Meru County borders Isiolo to the North and North East, Tharaka Nithi and Kitui to the South and Tana River County to the South East. The county has nine sub counties namely; Igembe North, Igembe Central, Igembe South, Tigania East, Tigania West, Buuri, Imenti Central, Imenti South and Imenti North. The county covers a total area of 4,057 square kilometres with Meru National Park occupying 833 square kilometres. Meru North which consists of the Igembe (North, Central and South), Tigania (East and West) and Buuri sub counties and has a total population of 775,982 (KNBS Census 2009). Meru North has three major livelihoods zones: mixed farming, agro-pastoral and rain-fed cropping (Figure 1).



1.2 Objectives and approach

The overarching objective of conducting the Short Rains assessment was to determine and classify the severity of food insecurity in the county in order to provide actionable knowledge for the purpose of decision support. More specifically the assessment intended to:

- Ascertain at the livelihood level the quality and quantity of the October to December 2016 short rains and assesses their impact on all key sectors namely; agriculture, livestock, water, health and nutrition, markets and trade.
- Establish the impacts of other compounding factors on household food security, such as conflict, crop pest and disease, relative high food prices and floods.
- Establish required non-food interventions, with particular emphasis on programmes that promote preparedness and build household resilience.
- Assess potential food needs, including options for appropriate transfer modalities including asset creation, cash and vouchers, safety nets and general food distribution.

The assessment was conducted from 23rd to 27th January, 2016. The assessment team comprised of two members from Kenya Food Security Steering Group (KFSSG) and the heads of key sectors namely: Agriculture, Livestock, Water & Irrigation, Health & Nutrition and Education. The assessment started by getting the overall impact of the main drivers of food and nutrition in the county. The process was followed by compilation and review of pre-filled sectoral checklists. The assessment team conducted transects drive for direct field observation together with community focused group discussion in sampled areas for the purpose of triangulating the data. Based on this a second compilation and review was done on the sector reports in order to ensure intra-and inter-sectors indicators harmony. Finally, the team prepared a draft county food security report which was for adoption by the County Steering Group (CSG).

2.0 DRIVERS OF FOOD AND NUTRITION SECURITY IN THE COUNTY

2.1 Rainfall Performance

The October to December short rains 2016 were generally delayed by two weeks as onset occurred in the first week of November compared with the second week of October normally. The distribution of the rainfall in time and space was generally poor over most places in the county. Most of the western parts of the county received 50-75 percent of the normal rainfall, while the Eastern parts received 75-90 percent of the normal rainfall. Cessation was in the second week of December which was earlier than normal.

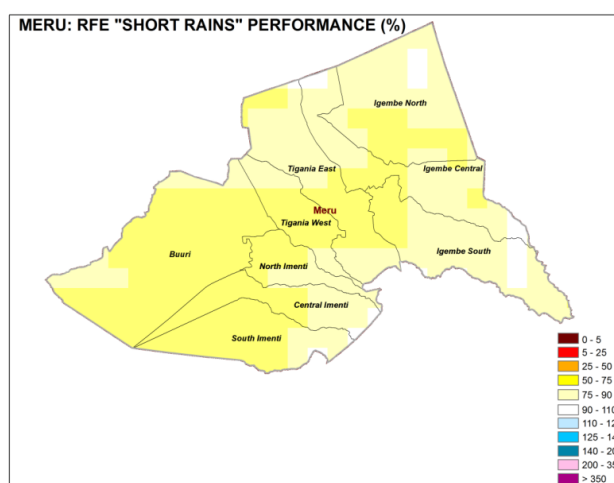


Figure 2: Rainfall Performance as a percentage of normal

3.0 IMPACTS OF DRIVERS ON FOOD AND NUTRITION SECURITY

3.1 Availability

3.1.1 Crop Production

Crop production activities in the county are mainly short rains dependent. Crop production contributes 63 percent to food and 37 percent to income for the households (Table 1). The main crops grown in the county include maize, beans, bananas, millet, pigeon peas, sorghum across all livelihood zones. The farming community also grows tea, coffee, vegetables and Miraa (*Cartha edulis*) also known as Khat as cash crops. The contribution of the main crops to both food and cash income across the livelihood zones is as tabulated below;

Table 1: Contribution of major crops to food and income

Livelihood zone	Crop	Percent contribution (%)	
		Food	Income
Agro-pastoral zone	Maize	56	40
	Beans	27	30
	Pigeon peas	5	7
Mixed Farming	Maize	45	10
	Beans	20	3
	Bananas	12	28
Rain fed cropping	Maize	60	4
	Beans	10	30
	Bananas	20	5

Rain-fed Crop Production

During the short rains, the area under maize decreased marginally by 50 hectares (ha) from 38,450 long term average (LTA) to 38,400 ha. Despite the marginal decrease in area put to maize, the production decreased by 49.5 percent compared to the long term average attributed to

moisture stress and the crop not attaining maturity. The area under beans increased by 46 percent from a long term average of 21,300 ha during the season as farmers were issued with legume seeds by the county government. Similarly, production of beans increased by 27 percent to 234,490 (90kg bags) from 184,548 bags normally (Table 2). The area under pigeon peas also increased by 450 hectares from 3,900 hectares to 4,350 ha during the season and production was consistent with the long term average. The decline in production was generally attributed to the inadequate rainfall which was also poorly distributed both in space and time in the dry areas where pigeon peas are grown.

Table 2: Rain-fed Crop Production

Crop	Area planted during 2016 short rains season (ha)	Long term Average Area planted during the short rains season (ha)	Percentage change	2016 short rains season production (90 kg bags) Projected/actual	Long term average production during the short rains season (90 kg bags)	Percentage change
1. Maize	38,400	38,450	-1	294,887	583,620	-49
2. Beans	31,137	21,300	+46	234,490	184,548	+27
3. Pigeon peas	4,350	3,900	+12	68,172	68,000	+0.25

Irrigated Crop Production

Crops grown under irrigation are mainly tomatoes and onions. The area under tomatoes increased significantly by 20 percent from 182 hectares to 219 hectares (Table 3). The increase is as a result of 2 new irrigation schemes being established in the county while production decreased by 17 percent in the short rains due to low levels of irrigation water and due to *Tuta absoluta* infestations. However, the area under onions decreased minimally from 120 ha long term average to 110 hectares due to the inadequate water, while production increased to 2,130 tons compared to the long term average of 1,775 tons as farmers are using better yielding varieties and improved skills through capacity building.

Table 3: Irrigated Crop Production

Crop	Area planted during the 2016 short rains season (ha)	Long term Average (3 years) Area planted during short rains season (ha)	Percentage change	2016 short rains season production (90 kg bags) Projected/actual	Long term average (3 years) production during the short rains season (90 kg bags)	Percentage change
Tomatoes	219	182	+20	4,124 tons	5,020	-17
Onions	110	120	-8	2,130	1,775	+20

Maize stocks

Maize and beans are the major staple foods consumed across all livelihood zones. Maize stocks in the county declined by 33 percent compared to the long term average which was attributed to the poorly distributed and inadequate short rains received (Table 4). The stocks are declining fast as these are carryover stocks held by farmers for their own consumption. Traders stocks decreased by 51 percent due to declining supplies which are sourced from outside the county.

The stocks held by millers were 20 percent above the long term average while the stocks held by NCPB were low by 51 percent. There were no stocks held by relief agencies in the county. The current food stocks are expected to last for a maximum of two months by the time which the current minimal harvest will have been harvested. In a normal season, stocks would last six months since the short rains was the most relied upon and most productive.

Table 4: Maize stocks held

Maize stocks held by	Quantities held currently (90-kg bags)	Long term average quantities held (90-kg bags) at similar time of the year
House holds	39,641	41,550
Traders	16,413	33,200
Millers	3,000	2,500
NCPB	18,300	37,730
Relief agencies	0	0
Total	77,354	114,980

3.1.2 Livestock Production

The main livestock species across all the livelihood zones include cattle, goats, sheep and chicken. The contribution of livestock to cash income also varies across the livelihoods. Livestock contributes 26, 22 and 15 percent of income to households in agro-pastoral, mixed farming and rain fed cropping livelihoods respectively. Livestock products such as milk, hides and skins, eggs and other by-products also contribute to cash income. However during periods of inadequate rainfall, livestock plays a key role in provision of both food and cash income especially in marginal mixed farming and mixed farming livelihood zones.

Pasture and browse

Pasture was in fair condition in agropastoral zones while in the rainfed mixed farming zone, the pasture condition was good. However, this was below normal at this time of the year. The browse situation was good to fair in all the zones but was below normal compared to a similar period at this time of the year. The condition was attributed to the inadequate rainfall experienced during the short rains season which was also poorly distributed. The pastures and browse in the agropastoral are expected to last for one to one and half months as opposed to two to three months in a normal year. However, should livestock from other counties migrate into these areas, pasture and browse are likely to deplete sooner. The pasture and browse in the rainfed and mixed farming was expected to last for about two months. However, there were reported cases of livestock unable to access pasture or browse in areas where there were threats of cattle rustling and conflicts. The failed crop residues are also expected to supplement the animal feed available.

Livestock body condition

Livestock body condition for all species across all zones was generally good to fair which was normal at this time of the year (Table 5). The body conditions is expected to deteriorate further within the next one month as the watering frequency decreases due to the large numbers of animals at watering points. The body condition for cattle in the rainfed zone are good to fair mainly due to shortage of pasture coupled with aspects of poor management. Normally body condition would be good in the livelihood zone.

Table 2: Livestock body condition

Livelihood	Cattle		Goats		Sheep	
	Current	Normal	Current	Normal	Current	Normal
Mixed farming	Good	Good	Good	Good	Good	Good
Agro pastoral	Fair - good	Good	Good	Good	Good	Good
Rain-fed Agriculture	Good - fair	Good	Good	Good	Good	Good

Milk availability and consumption

The milk availability at household was averaging at two litres in the agropastoral livelihood zone compared to three normal time of the year (Figure 3). The decline was attributed to the dry spell coupled with livestock having moved further in search of pasture and water. The price of milk in agropastoral was Ksh. 80 as opposed to Ksh 50 normally (Table 6). In the rainfed zone, milk availability at household level was three litres compared to five litres compared to the LTA while in the mixed farming zone, milk availability was six litres compared to eight litres normally. Approximately 50 percent of the milk produced in mixed and rainfed livelihood zones was consumed at household level, with the remaining being sold to milk vendors, cooperative societies and hotels. In agropastoral livelihood zone all the milk was consumed at household level.

Table 3: Milk production and consumption

Livelihood zone	Milk production(litres)/household		Milk consumption litres per household		Prices Ksh	
	Current	LTA	Current	LTA	Current	LTA
Rainfed	3	5	2.5	2.5	50	60
Mixed farming	6	8	1.5	2	50	60
Agropastoral	2	3	1	2	80	50

Tropical livestock Units (TLUs) and Birth rates

The average TLUs per household remained the same compared to 2015 Short rains season. The average TLUs per household was 1-2 in mixed farming zones, 3-5 in rain-fed and 20 and above in agro-pastoral zones which was normal at this time of the year. The birth rates are low which was normal at this time of the year but are expected to increase in with onset of the long rains season. However, Igembe Central reported that birthrate for sheep and goats were normal in all zones where goats twined above average in all livelihood zones but for cattle birth rates were affected by outbreak of Lumpy Skin Disease (LSD) across all livelihood with several cases of abortions were reported. The peak calving and kidding rate is between March and May.

Livestock migration, disease and mortalities.

There was in-migration of livestock from parts of Laikipia and into Mount Kenya forest which was not normal at this time of the year. There was also internal migration that started from the lower zones towards farmlands which was not normal at this time of the year. However, it is expected that there will be further in-migration in the next one month from Isiolo, Samburu and Laikipia Counties. Foot and Mouth disease in cattle, Lumpy Skin Disease and Contagious Caprine Pleuro Pneumonia (goats) were reported in Igembe Central Sub-County. Newcastle disease in poultry was reported across all livelihood zones. There were no vaccination campaigns

reported during the period. Mortalities were within the two percent due to natural causes which was normal at this time of the year.

Water for livestock

The current water sources for livestock include permanent rivers, springs, boreholes, water pans, piped water and seasonal rivers which are the normal sources at this time of the year. However, water volumes declined across all livelihood zones. For permanent rivers, the water levels have decreased by 70 percent, piped water and springs declined by 50 percent, while waterpans in the agropastoral are already dry. Borehole yield was normal but the demand was high as a result of increased volumes of livestock around the boreholes resulting in increased pumping hours leading to frequent breakdowns especially in the agropastoral zone. The levels of water in most sources with the exception of the boreholes are significantly below normal at this time of the year due to poor recharge. The current return trekking distances in the agropastoral zone tripled compared to the normal at this time of the year due to drying up of water pans which are the common source of water in this zone (Table 7). The trekking distance is likely to increase thereby reducing the watering frequency within the next two months for all species and zones. This will impact negatively to livestock body conditions and prices.

Table 4: Trekking distances, duration expected to last and watering frequency for livestock

Livelihood zone	Return trekking distances		Expected duration to last(Months)		Watering frequency	
	Current (km)	Normal(km)	Current	Normal	Current	Normal
Mixed farming	0-0.5	0-0.5	3	3-12	Once to twice	Daily
Agro pastoral	30	5-7	1- 3*	2-12	Once in two-three days	Once
Rain-fed Agriculture	0-1km	0-1km	3	3-12	Once	Daily

* Lower digit is for rivers and upper is for borehole.

3.2 Access

3.2.1 Markets

Market operations

Meru, Timau, Kianjai, Ngunduni, Mulika, Kangeta, Maua, Mutuati, Kiengu, Kanuni, Mikinduri and Kunati are the main markets in the County and most were operational. However, in December and January, there were market disruptions caused by insecurity along the Isiolo-Meru Border around Kinna area which affected the supply of sheep, goat for meat and other beef animals. The main commodities traded in the markets include beans, sorghum, green grams and pigeon peas and cowpeas, Irish potatoes, cassava, sweet potatoes, cattle, sheep, goats and chicken, which originate from within the county. A few commodities like maize, beans and millet were sourced from outside the county as a result the low stocks expected from the short rains, which was not normal at this time of the year. Though most of the livestock are sourced from within the county, a good number are also sourced from Isiolo and Laikipia counties. There was decrease in the numbers of livestock presented for sale compared to same time last year which was not common phenomenon at this time of the year. The volumes of livestock traded are low as the communities have low purchasing power. Livestock being disposed were mainly

to access cash income to meet household needs and pay school fees requirements. In the agro pastoral zones, most of the players are traders but in the rain-fed and mixed farming zones, the farmers are the majority players in the market. Poor road network also hampered transportation of commodities to the interior areas thereby resulting in higher than normal prices for commodities.

Market Prices

Maize prices

The prices of maize have largely remained stable from September to December 2016 at approximately Ksh. 35 per kilogram and below their respective averages. (Figure 3). However in January 2017, for the first time since the same period last year, prices are above the LTA by 21 percent and are currently retailing at Ksh. 40 per kilogram compared to Ksh. 33 normally. The prices are also higher compared to the same period in the last two years. The expected below harvests for the short rains season are likely to push prices up.

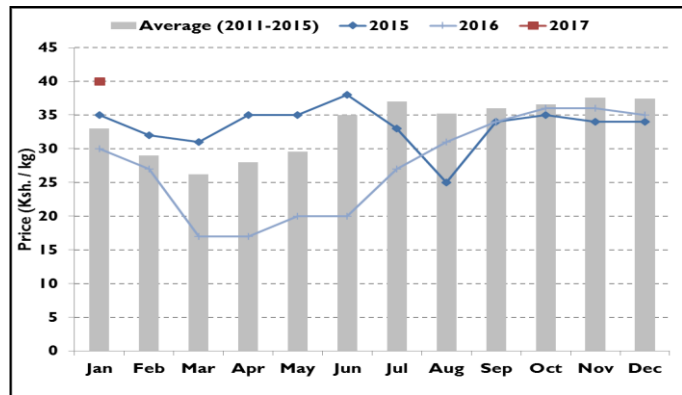


Figure 3: Retail maize prices

Goat prices

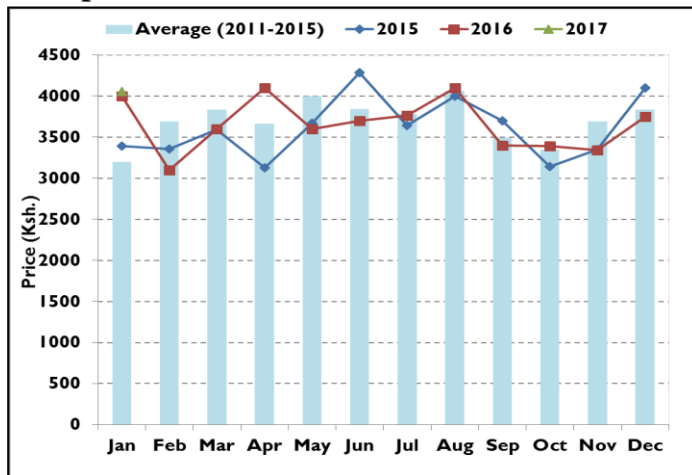


Figure 4: Average goat prices

price of Ksh 4,500. The prices are expected to continue to decline in next three months as farmers dispose of their livestock to purchase food and meet other household requirements.

Goat prices have been on an increasing trend since November last year. In January 2017, goat prices increased by eight percent from Ksh. 3,750 in December 2016 to the current 4,058. The prices were also higher than the LTA by 27 percent (Figure 4). The increase in price was attributed to the increased demand during the festive seasons. Highest prices were noted in Kangeta livestock market in the agro-pastoral livelihood zone at Ksh 4,000 per mature goat. However, market survey in Ngunduni market indicated that the prices had started declining to an average of Ksh. 3,500 against a normal

3.2.2 Terms of trade

The terms of trade have been stable since September 2016 to January 2017 (Figure 5). Currently the proceeds from the sale of one goat can purchase 101 kilograms of maize compared with the long term average of 97 kilograms. The situation is expected to deteriorate in the coming months with the expected downward trend of goat prices as a result of reduced browse resulting in poorer body condition and increasing maize prices.

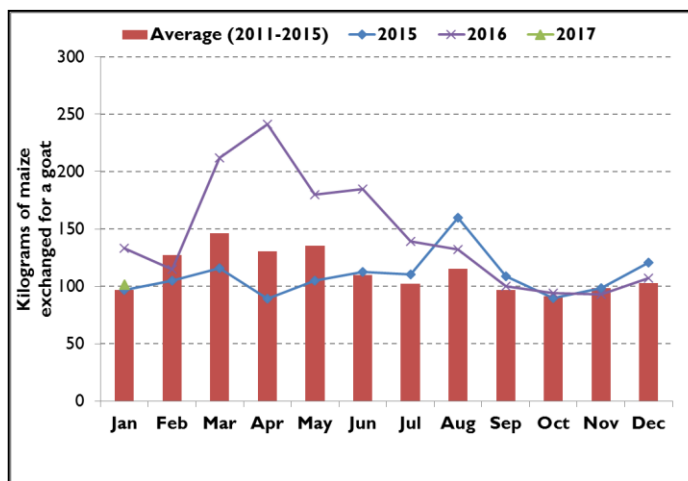


Figure 5: Terms of Trade

3.3.3 Income sources

In the agro pastoral zone, the main source of income was casual waged labour which contribute 38 percent, livestock production (meat, milk, hides, skins and by products) 26 percent, food crop production 13 percent. In the mixed farming livelihood zone, in particular tea/coffee growing areas, casual waged labour contributes 50 percent of the income while in the same livelihood zone where tea /dairy it contributes only 15 percent. Cash crop production contributes 40 percent in the tea/dairy area while in the tea/coffee zone it contributes only 10 percent. Livestock production contributes 30 percent in the tea/dairy and 15 percent in the tea/coffee areas. In the rain-fed cropping livelihood zone, food crop production contributes 29 percent while casual waged labour and livestock production contribute 25 and 15 percent respectively. In the same zone where coffee and food crops are grown together, casual labour contributes 39 percent food crops 20 percent while poultry and cash crop production contribute 10 percent each.

3.4 Water and Sanitation

Introduction

The major sources of water in the county are rivers, boreholes, springs, piped water, pans and dams which are the normal sources at this time of the year. The major sources of water for mixed farming and rain fed cropping are rivers, springs, few boreholes and shallow wells while sources for agro pastoral are four semi-permanent rivers (Waso Mara), boreholes and pans/dams. Below normal long rains recharged the water sources to 70 percent.

Major water sources

All the sources were operational in mixed farming and rain fed livelihood zones. In agro-pastoral livelihood zone, all the borehole facilities were operational except Kandebene and Njia which are broken down and are yet to be repaired. Rivers flowing to those areas have 70 percent reduced flow volume. Two water pans which collected some little water have dried up. (Kalolone and Kalau). All other pans did not collect any water. Six water pans Kamberia among them serve over 2,000 persons and over 30,000 livestock. Ruraya pan was not operational since its embankment was partly destroyed by floods and has not been repaired. The water sources in the mixed farming and rain fed livelihood zones will last for at least three months whilst the same types of sources in the agro pastoral livelihood zone can only last for a month. Boreholes in these areas shall experience increased demand that may result to break downs of boreholes.

Distance to water sources

The current average distances to domestic water have increased to five km as compared to the normal four km in the agro pastoral livelihood zone during this time of the year but in places such as Kamweline and Kachiuru, the distances are seven km one way for domestic and at 30 km return journey for livestock. In the mixed farming and rain fed livelihood zones distances have marginally increased. However, distances are expected to increase if the long rains are not received in time.

Waiting time at the source

The current waiting time at the source especially for boreholes has increased slightly. There was no waiting time at rivers and springs. Water usage at the house hold level was normal in the marginal farming and rain-fed cropping livelihood but has reduced in the agro pastoral livelihood zone.

Water consumption and cost of water

Normal water consumption amounts were maintained at 25 - 30 litres per person per day while in the rain fed cropping, the situation remains at 35 litres which was normal at this time of the year. The cost of water at boreholes range between Ksh. 5 - 10 in agro-pastoral and Ksh. 2.50 in mixed farming and rain fed cropping which was normal. However, the cost of water in Kamweline and Kachiuru was at Kshs.50 per 20 litres container which was supplied by vendors. Water fetched from rivers, springs and streams was free.

Sanitation and hygiene

Water obtained from boreholes and protected springs was deemed safe and does not require any treatment, while water fetched from rivers, streams and pans was of poor quality due to possible contamination from farm chemicals, fertilizers, open defecation, use by livestock and wild-life. The source of water has a direct implication to the quality of water. In agro-pastoral livelihood and rain fed zones water was sourced from boreholes and vendors. About five percent of households use chlorine based water treatments purchased from pharmacies, while another five percent boil water before drinking.

3.2.5 Food Consumption

The proportion of households with poor food consumption in the agro pastoral livelihood zone reduced from about 74 percent in December 2016 to 30 percent in January 2017. In the rain fed cropping zones, a majority (93%) of households had acceptable food consumption in January. In

the agro pastoral livelihood, 35 percent of households had borderline food consumption and are at the risk of moving to poor food consumption due to the diminishing household stocks and food access (Table 5).

Table 5: Food consumption by livelihood

	Livelihood zone	Poor	Borderline	Acceptable
December 2016	Agro pastoral	74.4	15.6	10
	Rain fed cropping	0	36.7	63.3
January 2017	Agro pastoral	30.2	34.9	34.9
	Rain fed cropping	3.35	3.35	93.3

3.2.6 Coping strategy

The coping strategy index for December 2016 and January 2017 remained the same at 21 while in the rain fed cropping areas the index slightly increased from 5 to 8 during the same period (Table 6). This implies that households were employing coping strategies with equal or a slightly higher frequency. Some of the strategies employed are relying on less preferred meals and reducing the number of meals per day.

Table 6: Coping strategy index by livelihood

Livelihood zone	January 2017	December 2016
Agro pastoral	20.8	21.8
Rain fed cropping	7.8	5

3.3 Utilization

3.3.1 Nutritional status

3.5.1. Morbidity and mortality patterns

The most prevalent diseases for children less than five years were diseases of the respiratory system, confirmed malaria, diseases of the skin and wounds, pneumonia and diarrhea. There was a significant rise in malaria cases by 1,055 and intestinal worm cases by 94 seen in July-December 2016 compared to a similar period in 2015. Significant decrease in the prevalence of diarrhea diseases, skin diseases, occurred for July-December 2016 by 744,140 cases respectively when compared to similar period in 2015. However, the decrease in reported cases was affected by health workers strikes which happened within the period of July –December and cases were not reported.

The common prevalent diseases for the general population during July-December 2016 were diseases of respiratory system, diseases of the skin confirmed malaria, rheumatism and upper respiratory tract infection. There were no significant changes in prevalence of these diseases when compared to same period in 2015. Notifiable disease of concern during July to December 2016 included measles 55 cases, dysentery 355 cases, typhoid 2,178 cases, diarrhea 9,144 cases and malaria 8,746 cases. When compared to same period in 2015, there was a decrease in measles by 25 percent, dysentery by 4.1 percent, and diarrhea by 10 percent respectively. The water borne diseases (dysentery, diarrhea, typhoid) are endemic in the region as a result of water contamination by human waste upstream as witnessed in rivers Mboone, Bwathonaro, and

Kathita which passes through towns and markets. The crude and under five mortality rate in the county was within the normal ranges.

3.5.2. Immunization and Vitamin A supplementation

There was an improvement in the percentage coverage of the fully immunized children to 58.3 percent currently percent from 35 percent in the period July-December 2015. The immunization coverage is far below the national target (80%) which was attributed to health service delivery interruptions caused by health workers strikes as witnessed in the county and child care practices. Similarly, Vitamin A supplementation is far below the National target of 80 percent. Vitamins A supplementation for children less than one year decreased from 46 percent in 2015 to 41.6 percent during the same period in 2016. It was lower in Tigania west with 28.4 percent (largely agro pastoral) compared to 48.5 percent in Igembe south (higher in rain fed livelihoods). Vitamins A supplementation for children between one to five years decreased to 26 percent in 2016 from 46 percent in 2015. The highest coverage was 35 percent in Igembe south and lowest in Tigania west with a coverage of 7.4 percent. The poor coverage was affected by a health worker’s strike which was continuing during Malezi bora week.

The percentage of children at risk of malnutrition by mid upper arm circumference in agro pastoral (MUAC <135mm) was 28 percent in December and 26 percent in November 2016. The proportion of children at risk was 54 percent higher than the LTA in December 2016 and also significantly higher compared to the same period in 2015 (Figure 6). The high proportions of children at risk of malnutrition is attributed to poor dietary diversity.

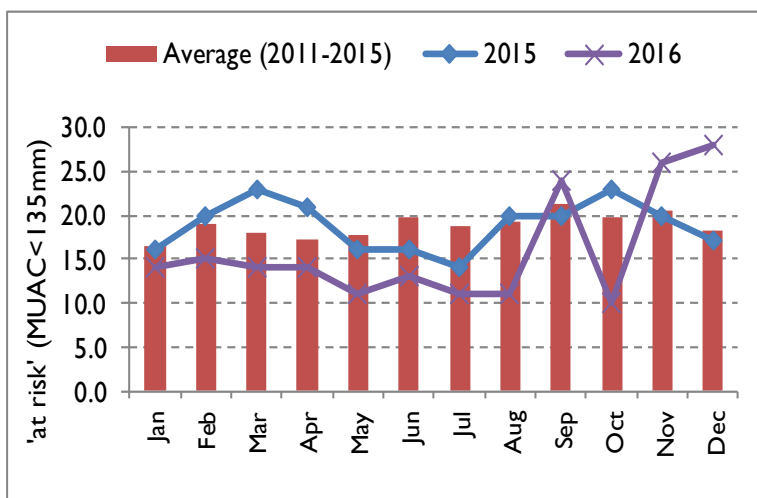


Figure 6: Proportion of children at risk of malnutrition

Meal frequency was 1-3 meals and 3-4 meals in the agro pastoral and rain fed cropping livelihood zones respectively. Most households were accessing meals from a mix two or more of 5 main food groups drawn from cereals (maize and potatoes) vegetables (cabbage/Kales, lentils), pulses (green grams, beans, and black beans), fruits (mangoes, bananas and pawpaw), milk and meat. Children under five years are fed 3-4 times a day with meal composition of 2-3 food groups.

3.4 Trends of key food security indicators

Table 7: Food security trends in Meru County (Meru North)

Indicator	Long rains assessment, July 2016	Short rains assessment, February 2017
Maize stocks held by households (90 kg bags)	53,988	39,641
Livestock body condition	Good in mixed & rain-fed cropping and fair to good in agro pastoral	Good in mixed & rain-fed cropping and fair to good in agro pastoral-
Water consumption (litres per person per day)	20-25 and 10-14 mixed farming & rain fed cropping and agro pastoral respectively	25 - 30 l(mixed farming and 35
Price of maize (Ksh/ kg)	Ksh. 29	Ksh.38
Distance to grazing(agro-pastoral)	6.5km	30 km
Terms of trade	138 kg	98kg
Coping strategy index	20	17.44
Food consumption Score		Households with poor and borderline were 30.2 and 34.9 percent in agro pastoral while in rain fed cropping about 93.3 percent of the households had acceptable score as at January 2017

3.5 Education

3.5.2. School meals programme

Home Grown School Meals Program was being implemented in ten schools in Buuri sub-county with a total enrolment of 3,843 children. However, there was a delay in disbursement of the capitation for the feeding program hence children were going without meals. Most schools had adequate water storage and only required water trucking as the tanks were empty.

4.0 FOOD SECURITY PROGNOSIS

4.1 Prognosis Assumptions

- The long rains are likely to be below normal to near normal.
- Markets are likely to remain functional with a steady increase in commodity prices.
- Isolated cases of conflicts over water and pasture is likely in the agro-pastoral livelihood zone.
- Increased migration of livestock is expected in Agro pastoral areas.
- The livestock body condition is likely to remain stable to the next season.

4.2 Outlook for 3 months and 6 months

4.2.1 Outlook for 3 months (February-April 2017)

The food security situation in the rain-fed cropping and mixed farming livelihood zones is expected to remain stable because of availability of other staple food stocks for two months which will also be supplemented by the harvests for the short rains. However, the food security situation in the Agro-

pastoral zone and in few areas in Igembe North, Tigania West, Tigania East and parts of Buuri is expected to deteriorate due to total crop failure after the below average short rains in these areas. Nutrition situation will remain stable in mixed farming and rain-fed cropping except in agro pastoral livelihood zone where pasture and browse is expected to deteriorate, return distances to water sources are expected to increase coupled with increased levels of livestock migration. There will be more demand for the available water sources in the agro pastoral zone which may result to conflict. Commodity prices are likely to remain high as stocks diminish and as households become more market dependent.

4.2.2 Outlook for the last three months (May – July 2017)

Forecasts for the long rains indicate that the rains are likely to be below normal to normal. Area put under crop is likely to be below normal leading to below average production. Grazing resources are not likely to regenerate adequately and is likely to be depleted earlier than usual. Recharge of water sources is also likely to be inadequate and consumption levels may not meet the required thresholds. Livestock are expected to return to their wet season grazing areas and milk production is likely to increase at household level across all livelihood zones which will likely improve the nutritional status of children especially in the Agro-pastoral livelihood zone. However, modest improvements as a result of the rains are likely to be short lived and household food security is likely to begin deteriorating earlier than usual.

5.0 CONCLUSION AND INTERVENTIONS

5.1 Conclusion

5.1.1 Phase classification

Meru North is classified in the Stressed food insecurity phase (IPC Phase 2), but with certain areas tending towards crisis. The major drivers were water stress especially in the agro pastoral zone.

5.1.2 Sub-county ranking

Sub county	Food consumption score		Coping strategy index	County Rank	Percentage in need of assistance	Ward	Rank
	Borderline to Poor	Acceptable					
Igembe North	100	14	14	1	10-15	Amwathi	1
						Antubetwe	2
						Naathu	3
						Autuambai	4
						Ntunene	5
Tigania West	86		14	2	10-15	Akithi	1
						Kianjai	2
						Athwana	3
						Mbeu	4
Igembe Central	83	0	14	3		Kangeta	1
						Njia	2
						Akirang'ondu	3
						Athiru Ruujine	4
Tigania East	36		14	4		Karama	1
						Muthara	2
						Thangatha	3

Buuri	---	---	14	5		Ruri rwa rera	1
						Nari Timau	2
						Kiirua	3
						Kibirichia	4
Igembe South			14	6		Athiru Gaiti	1
						Kanuni	2
						Akachru	3

5.2 Ongoing Interventions

5.2.1 Food interventions

Sub county	Type of intervention	Implementer	Location	Target group	Period
Igembe Central	GOK Relief Food support(Maize, Beans, Rice, Cooking oil, neutropup	National government	All wards	Primary schools, Day schools and Groups:(OVCs, Physically challenged	Nov-Dec 2016
Buuri	Maize and rice	All sub county locations	Community members	DCCs office	

5.2.1 Non-food interventions

Sub County	Intervention	Location	No. of beneficiaries	Implementers	Impacts in terms of food security	Cost	Time Frame
AGRICULTURE							
Igembe North,Igembe central	Provision of relief seeds and promotion of greenhouse technology	All wards	16,000	Meru County Govt.	Increased acreage planted during the SR season	2,400,000	Seeds distributed in October 2016
Igembe North	Aflatoxins surveillance & Post harvest management	All Wards	1,500 famers.	Meru County Govt. and FAO	Reduced post-harvest losses	Normal extension.	Continuous
Buuri, Igembe south, Tigania west	1. Training farmers on conservation Agriculture in order to conserve moisture in the soil 2. training farmers on draught escaping crops.	Numbering, subsidiary, and the whole of Ruri Rwarera ward Akachiu. Kanuni and Athiru Gaiti	2,200	FAO in collaboration with the County Government and department of Agriculture and Fisheries.	Positive because the moisture conserved is enough to sustain the growth of the crop up to maturity.	Farm inputs such as seeds, Fertilizer.	2015_2016
Igembe South	Tumu irrigation scheme and	Kiguru, Kindani	850	Jica/Gok	Water for Irrigation	105,000,000	2 years

	Kaumbura Irrigation scheme						
Tigania West	Water harvesting for irrigation	Akithi	300	County government	Improved food security		Every season
Tigania West	NERICA rice promotion	Uringu	300	County government	Improved food security	-	Every season
LIVESTOCK							
Tigania West	Livestock improvements (AI)	Tigania West	2,000	County Govt	Improved Breeds	0.7M	July-Dec
	Livestock extension	Tigania West	1000	County Govt	Improved productivity	0.5M	July-Dec
Buuri	Milk coolers, feed mixers, fodder, poultry and dairying	Buuri	1050	DALF, Meru central and farmers	Reduce milk spoilage,	7.0M	Ongoing
Igembe North	Livestock disease surveillance	Igembe North	Across the entire sub county.	DALF	Enhanced food security		
Igembe South	Fodder/pasture production	Igembe South	Livestock keepers in the wards	Directorate of Livestock Dev Meru county	Quality animal feeds for increased production		Ongoing
Igembe South, Tigania East	Dairy goat rearing projects	Igembe South	Livestock keepers in the Sub-county	Directorate of Livestock Dev Meru county	Increased goat milk and quality dairy goats for sale.		Ongoing
Igembe South, Tigania East	Bee keeping		Livestock keepers in the Sub-county	Directorate of Livestock Dev Meru county	Honey for home consumption and for sale		Ongoing
Igembe South Tigania East	Promotion of AI services	Igembe South	All livestock farmers in the Sub-county	Directorate of Livestock Dev Meru county	Good quality breeds for increased milk/meat production		Ongoing
HEALTH AND NUTRITION							

Buuri (Ruiru, Rwarera, Timau, Kisima, Kibirichia, Kiirua, Naari)	kitchen gardens, promotion on exclusive, breastfeeding Good feeding habits, Screening of malnutrition in facility and community level	Nchoiroiboro, Kithithina, Maritati, Ngusishi, Mbaaria, Naari, Kiamiogo, Muruguma	1000	County government of Meru NDMA	Bad	50,000	2 months
Buuri	Vitamin A Supplementation	Kimbo	500	APHIA	Fair	7000	3 Days
	Zinc Supplementation	Naari Sub District	200	GOK	Fair	5000	1 Month
	Management of Acute Malnutrition (IMAM)	Kiirua Mission Hospital	15	GOK	Fair	5000	1 Month
	IYCN Interventions (EBF and Timely Intro of complementary Foods)	Farm	25-30	APHIA	Fair	25000	1 Week
	Iron Folate Supplementation among Pregnant Women	Timau Sub District	500	GOK	FAIR	5000	1 month
	Deworming	Kiirua Health Centre	200	GOK	FAIR	10,000	1 month
Igembe North	Vitamin A Supplementation	I.N	27062	MOH	Improve health status	N/A	Ongoing
	Zinc Supplementation	I.N	7186	MOH	Improve nutrition	KEMSA	Ongoing
	Management of Acute Malnutrition (IMAM)	I.N	-	MOH		KEMSA	Ongoing
	IYCN Interventions (EBF and Timely Intro of complementary Foods)	I.N	-	MOH			

	Iron Folate Supplementation among Pregnant Women	I.N	7186	MOH	Decrease mortality rates	KEMSA	ONGOING
	Deworming	I.N	24055	MOH	Improve health status	KEMSA	ONGOING

5.3 Recommended Interventions

5.3.1 Food interventions

- Expanded School Meal Programme(ESMP) for the 77,252 for primary school not covered by the home grown school programme and Day Secondary Schools
- Schools without water harvesting facilities to should be provided with the same
- Schools to be supported with water trucking and tanks

5.3.2 Non-food interventions

Sub County	Intervention	Location	No. of beneficiaries	Proposed Implementers	Required Resources	Available Resources	Time Frame
Agriculture							
Igembe North Igembe South	Provision of relief seeds for LR 2017	Whole Igembe north Sub-county, Kanuni, Akachiu and Athiru Gaiti in Igembe Central	10,000 farmers	Meru County Government and the national govt	Seeds	Extension staff	March 2017
Igembe South	Aflatoxin surveillance and control	Sub county wide	3000	County government, FAO	Funds	Staff train	3 Months
Tigania West	promotion of water harvesting technologies for irrigation and water conservation technologies	All wards	500 groups	County/SH	Facilitation	Transport Human resource	Continuous
Tigania West	Post-harvest handling and aflatoxin control training	All wards	500 groups	SH/ county	Facilitation	Transport / human resource	Continuous
Tigania West	Input supply and training on conservation agriculture	All wards	500 groups	SH/county	Facilitation	Transport / human resource	Continuous

Tigania West	Strengthening General extension	All wards	2500	county	Facilitation	Transport Human resource	Continuous
Tigania West	Promotion of THVC Training on Post-harvest handling techniques Farmers sensitization on value addition across value chain	Sub county	1000	County /SH	Facilitation	Transport Human resource	Continuous
Tigania west	Construction of storage structures	Sub county	500 groups	County /SH	Finance	Human resource	Continuous
Igembe Central	Food for work(10% pop in most affected areas)	Laikumukumu, Kalimbene Kiolo Kia Muuti, Kathelwa Baibariu,Kalिंगene,Kitheo	3,816	Community Meru county Government, National government, NDMA Department of agriculture	Food , Transport, Personnel Subsistence allowance	Community Personnel	
	Relief food(15% of the affected pop)	Laikumukumu, Kalimbene Kiolo Kia Muuti, Kathelwa Baibariu,Kalिंगene,Kitheo	7,291	Community Meru county Government, National government, NDMA Department of agriculture	Food , Transport, Personnel Subsistence allowance	Community Personnel	
	Water harvesting for food production	Kalimbene, Laikukumu, Njia cia Mwendwa, kiolo kia muuti, Kathelwa.	5,000	Community Meru county Government, National government, NDMA Department of agriculture	Construction of water tanks (Kalimbene)	Site, EIA &Survey and design report	
	Improved irrigation technologies	Baibariu, Kanjoo,Kitheo, Nthambiro Sub locations	3,0000	Community Meru county Government, National government, NDMA Department of agriculture	Funds , personnel	Personnel , water, community, land	
Livestock							

Tigania West, Buuri, Igembe south	Vaccinations: LSD,FMD,RA BIES, NCD, Fowl Pox, BQ	Tigania West	10,000	County govnt, NDMA,	Vaccines, Fuel, subsistence	Personnel, vehicles	JAN-MARCH 2017
Buuri	Boreholes	Buuri	5000	Min of water community	Equipment	Land	Asap
	Fodder stalls		1000	Livestock dept. & farmers	Seeds	Land	1yr
	Extension		>5000	Min of agro, liv & fisheries	Officers, facilitation	Skillful personnel	Infinite
Timau Ward Kisima Ward	Train the community on the dietary practices, exclusive breastfeeding and when to start complementary feeding	Chumvi Mbuju Manyangaru Mukuri Ngarendare	500	County government of Meru NDMA	Facilitation of activities	Trainers	Any time when resources are available
Health and nutrition							
Igembe North	Vitamin A supplementation	I.N	27062	MOH	Transport lunch	personnel	March and September
	Deworming	I.N	24055	MOH	Transport Supplements Lunch	personnel	March and September
Buuri	Teach the mothers on timely weaning and the recommended foods. Teach the mothers on complementary feeding Teach the mothers on the important of a balanced diet	Maritati, Timau, Chumvi, Ngarendare Ruiru, Kimbo,Kibirichia	500-1000	County Government of Meru, NDMA	Allowance for 2 health workers Lunch for 32 people Allowances for 2 community health workers	Trainer	1 Week
	Teach the mothers on the management of malnutrition	Ntirimiti, Ngarendare, Chumvi,Ruiru, Kibirichia	500	County Government of Meru, NDMA	Allowance for 2 health workers Lunch for 32 people	Trainer	1 Week

					Allowances for 2 community health workers		
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6.0 ANNEXES

6.1 Ongoing intervention

Implementation status of Recommended Interventions (from 2016 LRA)

Intervention description/type	Location	No of beneficiaries		Cost in Ksh	Implementers /actors	Remarks ✓ Implementation status (ongoing, completed, not completed) ✓ % completion status
		Male	Female			
Conservation and Agriculture and drought escaping crops (Buuri)	Kisima ward, Kibirichia ward, Kiirua-Naari ward and RUIRI RWARERA ward	120	480	N/A FAO of the United nations is the donor of the project.	FAO, county government of Meru - department of agriculture, livestock and fisheries.	Ongoing project.
Drought recovery seeds (Igembe South)	Kiguru, Kindani and Giika	1000	1000	2,000,000	County and national governments	Ongoing
Relief seed (Igembe South)	Kindani, Kiguru and Giika	1000	1000	2,000,000	County government and National government	Completed – crop at physiological and harvesting stage.
Green house and drip irrigation technology	Igembe South (all wards)	20	180	2.4M	County government	Green houses Completed Drip irrigation ongoing
Green house and drip irrigation technology	Tigania West (all wards)	20	180	6M	SCAO	Green houses Completed Drip irrigation ongoing
Aflatoxin surveillance and training	Tigania West (all wards)	100	300	0.6 M	SCAO	On going
Pest control and surveillance	Tigania West (all wards)	150	450	1M	SCAO	On going
Water harvesting for food security	Akirang'ondu(Igembe central)	3,300	1,700	3,000,000		Not done

Relief food	Sub county wide(Igembe central)					Ongoing
Seed for Up scaling Drought Tolerant Crops	Sub County wide(Igembe central)	240	630	800,000	GOK, County government of Meru	Completed
Aflatoxin Surveillance and post-harvest Management-awareness Barazas & demonstrations	Sub County wide(Igembe central)	540	2200	200,000	County Government of Meru	storage demonstrations done and ongoing
Vaccination against LSD/FMD/NCD	Tigania west	7,000	3,000	0.5M	CGM, ASDSP,	COMPLETED 50%
Livestock disease surveillance/vaccinations	Buuri	>300	>200	>5m	Vet dept	>50% completion
Livestock breed improvement	Buuri	>1000	>700	>6m	AIs,livestock dev	Ongoing
Fodder establishment, production and conservation	Kiirua naari	>200	>100	>200,000	Livestock prodn, farmer groups	Ongoing
Peace and conflict resolution to curb rustling.	Antubetwe kiongo and Naathu	-	-	-	Multisectoral	Meetings, barazas can be held
Disease surveillance and vaccinations against, Foot and mouth Disease, CCPP, Newcastle ,fowl pox, fowl typhoid, Lumpy Skin disease and rabies diseases.	Igembe south	All livestock farmers in the Sub-county			County government of Meru NDMA NGOs eg caritas	This should be done routinely to prevent disease outbreaks.

B. Other interventions (non- food) implemented but not included in the 2016 LRA report (especially by Counties)

Intervention description/type	Location	No of beneficiaries		Cost in Ksh	Implementers /actors	Remarks - Implementation status (ongoing, completed, not completed) - % completion status
		Male	Female			
Relief seed	Kindani, Kiguru and Giika (Igembe South)	1000	1000	2,000,000	County government and National government	Completed – crop at physiological and harvesting stage.
Greenhouse Technology	Sub county wide(8 units)	4,500	6,000	2,400,000	County Government of Meru	Ongoing(5 in production,3 under installation)

Feeds	Kisima	80	120	>1m	Farmer groups,livestock prodn	Completed
Value addition	Kibirichia, Kisima	130	170	>2m	Meru central,farmer groups	Kibirichia completed,kisima is on going