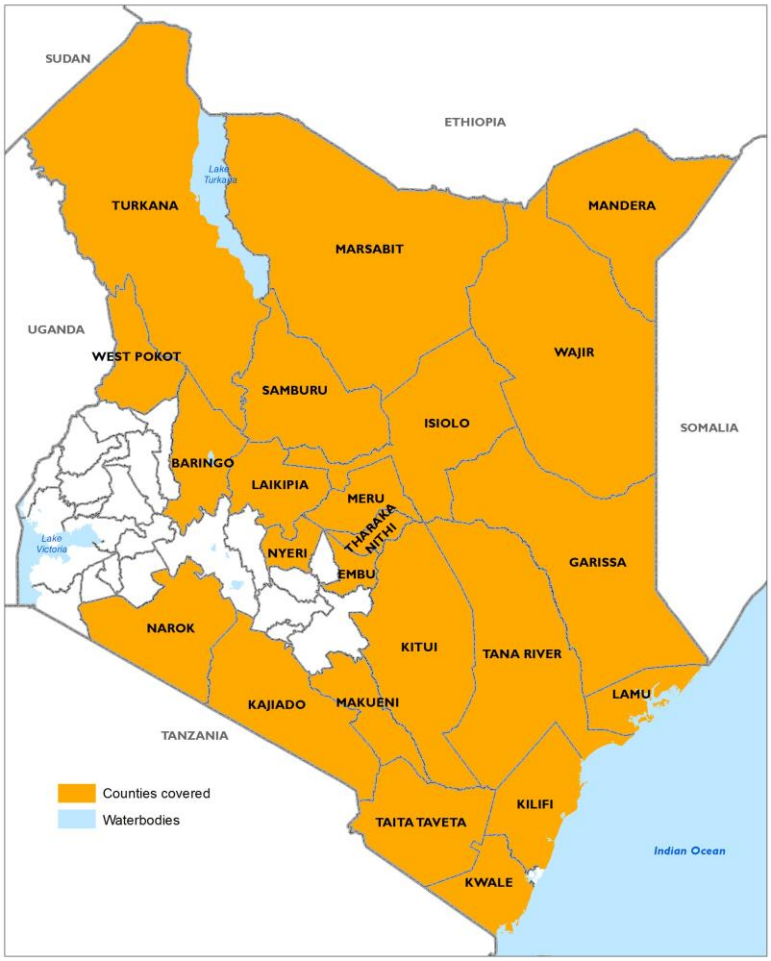
Government of Kenya

THE 2015 LONG RAINS SEASON ASSESSMENT REPORT

Kenya Food Security Steering Group (KFSSG)



Collaborative report of the Kenya Food Security Steering Group: Ministries of Devolution and Planning, Agriculture, Livestock and Fisheries, Environment, Water and Natural Resources, Health, and Education, Science and Technology, National Drought Management Authority, WFP/VAM, FEWS NET, FAO, UNICEF, World Vision, ACF; with financial support from the Government of Kenya, FAO and WFP.

AUGUST 2015

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Summary of key findings

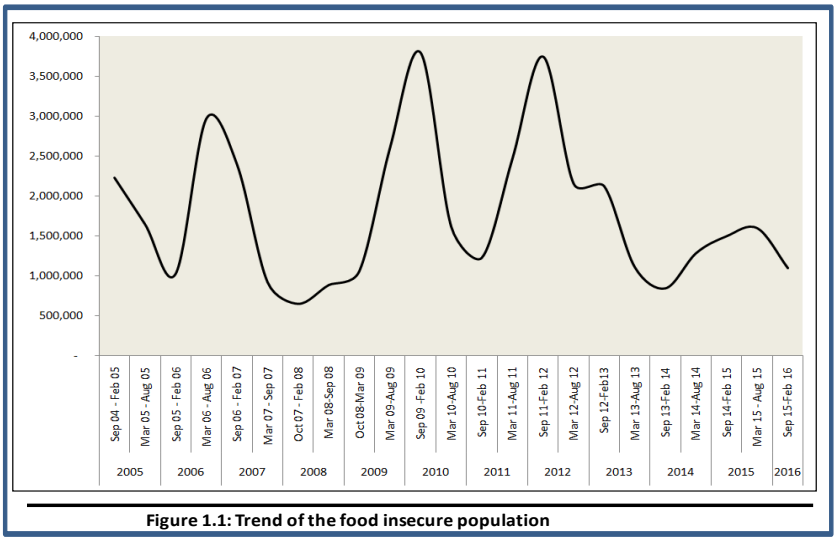

Figure 1.1: Trend of the food insecure population

Findings of the 2015 Long Rains Assessment (LRA) indicate that about 1.1 million people are acutely food insecure and cannot meet their basic dietary requirements, hence requiring immediate food assistance for the next six months (September 2015 – February 2016). This represents a 31 percent decline in the number of food insecure populations from the last short rains assessment in February, implying general improvements in households food security conditions (Figure 1.1). Improvement in the food security situation is attributed to the average to above average March – May cumulative rains across most parts of the high and medium potential areas, pastoral and marginal agricultural livelihood zones. In the pastoral and agropastoral areas, the rains resulted in improvements in rangeland conditions thereby boosting livestock production activities, after a poor 2014 short rains season. Increased availability of rangeland resources supported some kidding, lambing, and calving activities, albeit at below-normal rates, while milk production and consumption at household level also increased. Improvements in livestock body conditions supported favorable livestock prices across most markets resulting in some increase in household income from sale of livestock. Increased income supported food access further boosting household food consumption and improving nutritional status. The livestock-to-cereals terms of trade (ToT) were mostly above average in July, being five to 38 percent above their five-year averages (Figure 1.2). However, localized parts in northern Isiolo and western Wajir, where there were significant rainfall deficits, and worse conditions for livestock, low water availability, and low milk availability, improvements in food security conditions were not recorded. Poorer livestock body conditions meant that livestock-to-cereal TOT were below average in Isiolo County.

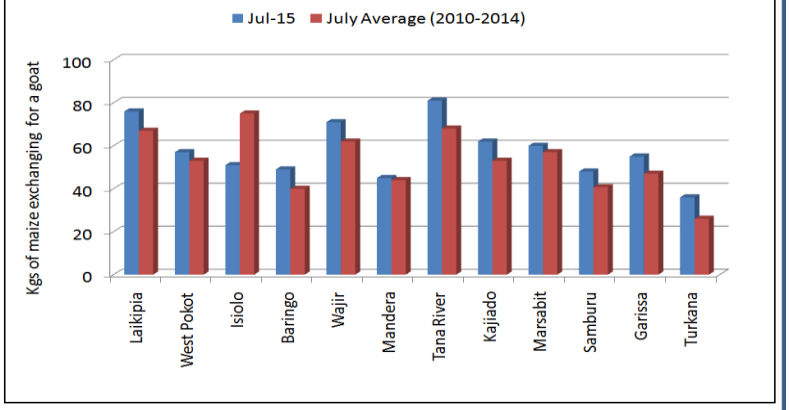

Figure 1.2: Cereals to livestock terms of trade

Nutrition situation has improved in most areas assessed due to improved food security situation. Though Turkana County still remains at very critical/ critical levels, the situation has notably improved. The prevalence of Global Acute Malnutrition (GAM) dropped from 17.4 to 16.7 percent in Turkana West, 28.7 to 20.9 percent in Turkana Central and, 27.2 to 22.9 percent in Turkana North. The situation has however remained unchanged in Turkana South and East at 24.5 percent. This might be attributed to the insecurity that has been experienced in the area. Nutrition situation has also remained very critical in Mandera County (GAM - 24.7 percent) but stable due to extremely high vulnerabilities in the County. Nutrition situation has also improved from very critical to critical in East Pokot (secondary data). The situation has however deteriorated in Wajir North from poor to critical with prevalence of GAM increasing from 8.8 percent to 14.3 percent. Isiolo County has also deteriorated from serious to critical. There is need for increased nutrition surveillance in Wajir, Isiolo County and areas neighboring Isiolo in Laikipia, Garissa and Samburu Counties. The total number of children less than five years requiring treatment (total caseloads) in the areas assessed has dropped to 239,446 in the LRA 2015 compared to 261,120 reported in the 2015 short rains assessment.

In the marginal agricultural areas, improvements in food security conditions between May and July were a result of average-to-above average cumulative rains during March – May period. Though the long rains accounts for about 30 percent of total annual crop production in most marginal areas, average-to- above-average cumulative amounts trigger increased agricultural activities, resulting in more casual wage labor demand and higher household incomes between May and July. However, poor temporal distribution of the long rains resulted in below average crop production, especially in the southeast marginal cluster. Maize crop across most areas withered away before maturity due to moisture stress. In the coastal marginal areas, conditions were more favorable, with maize and cassava production being above long term averages.

Scope of the 2015 Long Rains Assessment

The 2015 long rains assessment was conducted between 27th July to 7th August 2015 in 23 Arid and Semi-arid (ASAL) counties. The counties assessed include; Turkana, Samburu, Marsabit, West Pokot, Mandera, Wajir, Isiolo, Tana River, Garissa, Kitui, Makueni, Narok, Kajiado, Baringo, Laikipia, Kwale, Kilifi, Lamu, Taita Taveta and Kieni part of Nyeri county, Meru North part in Meru County, Mbeere region in Embu, and Tharaka part of Tharaka Nithi county. The areas covered are predominantly rainfall dependent with the major livelihood activities being crop production and livestock rearing. Drought, conflicts, crop and livestock diseases are among the common hazards that affect food security in these areas.

The main objective of the assessment was to determine the impact of the long rains season on various sectors including agriculture and livestock production, water for livestock and domestic use, health and nutrition, education, market operations and trade. All these are key in terms of food security either as outcome indictors or contributing factors. The assessment looked at impacts on these sectors and made recommendations on the type of interventions that various actors should take to improve the food security situation of the general populations. Interventions were in form of immediate measures to address acute food insecurity aspects or medium to long term approaches meant to reduce the vulnerability of the communities.

Categories of the food insecure population

Summary of food security phase classification

The 2015 long rains assessment has established that about 1.1 million people are acutely food insecure. Assessment findings notes that factors contributing to food insecurity currently include poor temporal and spatial distribution of the long rains, below average long rains in some areas, cumulative effects of the previous three consecutive poor rains seasons, elevated food prices, crop pests and diseases, livestock diseases, conflict incidences especially in the pastoral areas, and human-wildlife conflicts in areas bordering game reserves. The food insecure populations are mainly in the northwest and northeast pastoral clusters, and the southeast marginal agricultural areas.

To mitigate against the food insecure conditions, both the national and county governments together with development partners are implementing an array of activities which include, activation of drought contingency funds for all the affected ASAL counties, Hunger Safety Net Programme which implements a cash transfer programme in Turkana, Mandera, Marsabit and Wajir, food for assets/cash for assets programmes, general food distribution, provision of school meals under various programs including Home Grown School Meals Program, and Supplementary Feeding Programmes.

Population in Crisis (IPC Phase 3)

The current areas under Crisis (IPC Phase 3) include parts of Merti and Sericho in Isiolo County and western parts of Wajir County (parts of Hadado, Eldas and Griftu). Households in Crisis can marginally meet their minimum food needs only with accelerated depletion of livelihood assets, that exposes them to further food consumption gaps. These areas as shown in Figure 1.3 have received cumulative rainfall deficits for the past three consecutive seasons, and have worse conditions for livestock, low water availability, and low milk availability. After the 2015 long rains, owing to the poor rains in these areas, neither rangeland conditions nor food security improved as would be seasonally expected. Water, pasture, and browse are in poor condition, and depleted in some instances. The poor condition of rangeland resources resulted in unusual out-migration of livestock from these areas. Migration also occurred earlier than normal, in May as opposed to August. Figure 1.4 depicts the migration routes within and across Counties. The mass migration of livestock has affected operations of some livestock markets, with significantly lower livestock

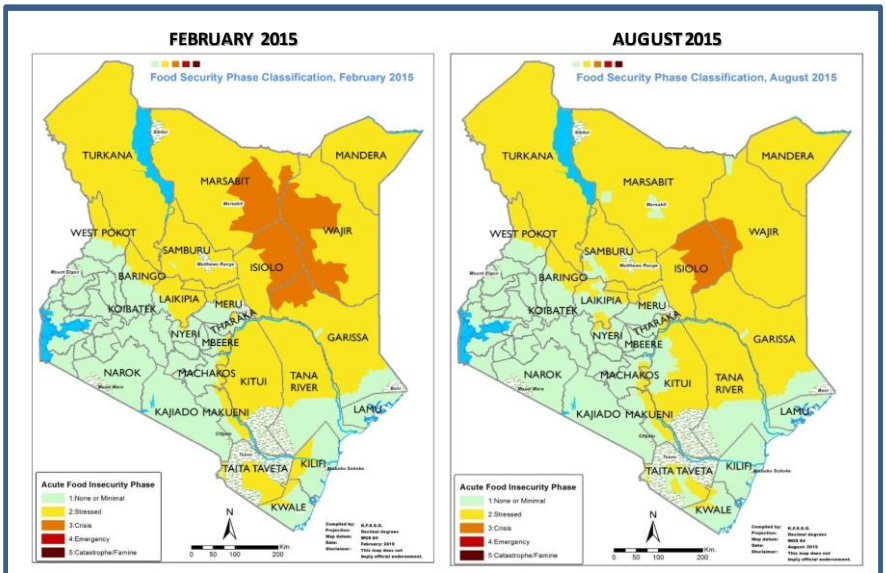

Figure 1.3: Food security phase classification

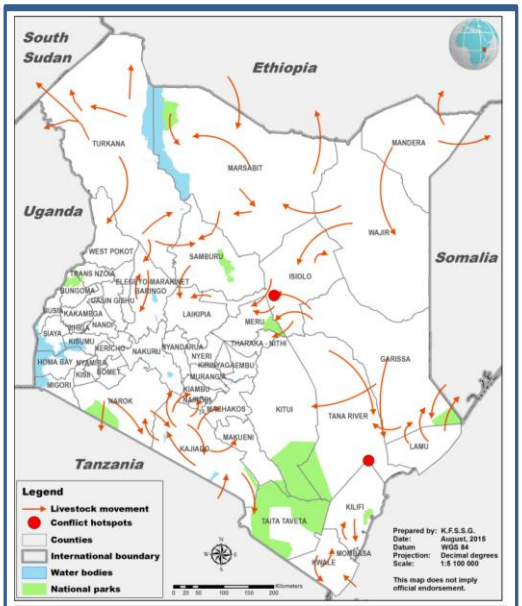

Figure 1.4: Livestock migration routes and conflict hotspots

volumes being traded in these markets. The current return trekking distance from grazing to watering areas for livestock range from 10 – 20 kilometres, and in some instances even more, against normal distances of 2 – 5 kilometres. Due to the migration levels witnessed and longer trekking distances to grazing and watering points, livestock productivity has reduced greatly, with milk production declining by up to 80 percent compared to the normal- milk production and consumption is less than one litre compared to normal of 3 – 4 litres per day. Consumption of milk from the markets has also been constrained by high milk prices, that had increased 50 – 80 percent due to scarcity, between May and July. The Coping Strategy Index (CSI) for Isiolo and Wajir were 19 and 31 compared to 5 and 11 respectively, for same time last year, implying an increase in frequency and severity of coping strategies applied to cope with food consumption gaps. While county-average livestock to cereal terms of trade remained favourable in Wajir, being 15 percent above long term averages (LTA), they were unfavourable in Isiolo, at 32 percent below the LTA. Due to low livestock holdings for the affected population, households are constrained from participating effectively in livestock markets sales, hence not enjoying the favourable ToTs in Wajir. Though nutrition situation in these areas has remained stable, due to the on-going nutrition interventions, GAM prevalence remains critical.

Population in Stressed (IPC Phase 2)

The number of households in the stressed (IPC Phase 2) reduced in most areas in August 2015 as a result the better performance of the long rains compared to the previous short rain season. However despite the improvement the stressed phase has been predominant in most areas mainly attributed to the fact that the season was not good enough to facilitate a good recovery of the livelihoods. Households in stress are able to afford minimally adequate food consumption but are unable to afford essential non-food expenditures without engaging in irreversible coping strategies. In the pastoral areas, households in Turkana, Marsabit, Samburu, Mandera, Wajir Isiolo, Garissa and Tana River are in stressed phase. There were however populations in these areas especially in Isiolo, Marsabit and Wajir who moved from crisis phase to stressed after the long rains. Other areas with population under stress include southeastern, marginal and agro pastoral livelihoods of Kitui, Tharaka, Meru North, Makueni, Laikipia Baringo and west Pokot. The number of households in stress phase in the coastal marginal areas significantly reduced, especially in Kilifi, Kwale and Taita Taveta counties, with areas that were previously in stress moving to Minimal (IPC Phase 1).

These areas received average-to-above average cumulative rainfall amounts, ranging between 90 – 200 percent of normal. The temporal distribution of the rains was however poor with most rains received in the month of April and first dekad of May. Water recharge levels in most areas ranged from 60 – 90 percent, though most water points have seasonally declined. In the pastoral

areas, modest improvements in rangeland resources supported livestock productivity, with livestock body conditions ranging from good to fair. Livestock prices marginally were favourable resulting in above-average livestock-to-cereals terms of trade across most areas. Though milk production seasonally declined in July, production and consumption levels remained within normal, with production being 1 – 2 litres compared to normal of 2 – 4 litres per day. Return trekking distances to watering points from grazing areas have seasonally increased to 5 – 10 kilometres. Seasonal decline in rangeland resources has resulted in normal livestock migration. In the marginal agricultural areas, the poor temporal distribution of rains and late planting in some areas affected crop production. In the southeastern marginal areas, maize, cowpeas and green grams production were 48, 59 and 65 percent respectively of the long term average. However, in the coastal marginal areas, production of maize and cassava increased by 38 and 48 percent of long term averages respectively.

Impacts of the 2015 Long Rains Season

The long rains season of March to May 2015 was characterized by a late onset in most parts of the country, with most areas receiving rainfall in the third dekad of March as oppesed to the first to second dekad. Temporal distribution was poor in most parts, where most of the rains were received in the month of April and the first dekad of May. While this was good for recovery of the rangelands, crop production was affected by the late onset and the poor temporal distibution. Among areas where temporal distibution was poor included Turkana and Samburu in the pastoral northwest cluster, Taita Taveta, Lamu in the coast, Narok, West Pokot, Nyeri, Baringo and Kajiado counties in the agro pastoral zones.

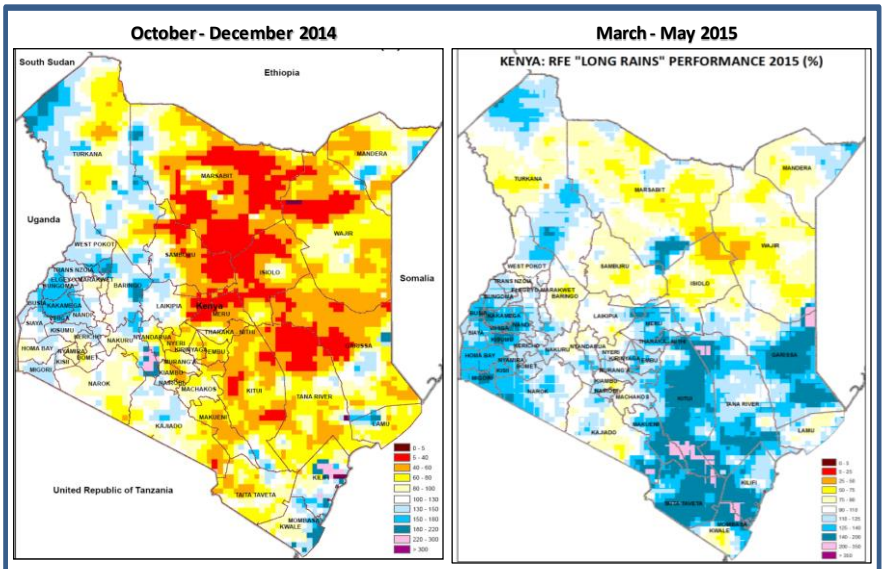

Figure 1.5: Short Rains season compared to Long Rains season Rainfall anomalies

Overall, performance of the season in terms of rainfall amounts was better than the short rains in October – December 2014, with most counties in southeastern and coastal marginal areas including southern part of Garissa receiving enhanced rainfall between 110 - 200 percent of normal rains (Figure 1.5). Most pars of Isiolo, Wajir and Marsabit had below average cumulative rainfall amounts of between 50 - 90 percent of the normal, while most of the other parts of the country had near normal to above normal cumulative rainfall amounts. Most of the rainfall was received for a short period over the season, mostly in the month of April and the first dekad of May. The season was also characterised by an early cessation in most parts.

National Maize Supply Situation and Prospects

Maize continues to be the dominant staple crop predominantly grown by majority of the smallholder farmers in Kenya. Due to the normal to above normal 2015 long rains, coupled with input subsidy support (by both national and county governments), projections by the State Department of Agriculture (SDA) under the Ministry of Agriculture, Livestock and Fisheries (MoALF), points towards average to above average maize production from the high and medium rainfall areas, and parts of the marginal agricultural areas. Exceptions are in parts of the marginal agricultural areas which had poor spatial and temporal distribution of the rains. The national achieved area under maize was about 1.6 million hectares, representing about 96 percent of the targeted area. The long-rains season is the most important with respect to maize production, accounting for about 80 percent of the annual national maize output, with more than 70 percent of national output coming from the high and medium rainfall areas.

According to the Food Security Report for July 2015, national food availability, accessibility and affordability in Kenya remains stable, due to the on-going long rains crop harvest (especially maize, wheat, beans, potatoes, cowpeas, green grams and vegetables) and cross border inflow. Maize crop harvesting has progressed well in many parts of the country including western Kenya, southeastern and coastal marginal areas, and central Kenya. Harvesting of the long rains maize crop is yet to start in the north Rift. However, concerns have been raised that expectation of enhanced rains during the October – December period, which coincide with the harvesting time in these key growing areas, would result in increased pre-and post-harvest losses. Therefore, it would be important to monitor storage facilities and moisture content of the harvested grain, to avoid aflatoxin contamination and likely infection.

National maize stocks remain adequate, owing to the continued imports from across the borders and harvesting of the long rains maize crop. The East Africa Cross-Border Trade Bulletin for June 2015 reports that maize exports from Tanzania to Kenya and especially to Nairobi, eastern and coastal lowland markets increased seasonably by 16 percent between the first (January – March) and second (April – June) quarters of 2015. Indeed the volumes exported in the second quarter were three times higher than the 2011/2014 average volumes for the quarter. This was attributed to increased purchases of the surplus stocks in Tanzania at lower prices for the Kenyan market towards the start of the May-to-August crop in the main producing southern highlands. As a result, national maize stocks stood at 0.99 million metric tons (Table 1.1) by end of July 2015. Between August and December 2015, analysis of the available maize stocks (from long rains harvest and imports) against utilization by different actors (manufacturers, consumers) indicate that the country will have 1 million metric tons of maize as surplus after December. This implies sufficiency of maize throughout the year. The long rains maize crop production is projected to be approximately 2.8 million metric tons, which is about 12 percent above the long term average.

Table 1.1: Maize balance sheet (1st August to 31st December 2015)

	90kg bags	**MT**
Stocks as at 31st July 2015	**11,074,196**	**996,678**
a) Total East Africa Imports* (cross border trade) expected between August 2015 to December 2015	850,000	76,500

b) Private sector/ Relief agencies estimated imports outside EAC between August 2015 to December 2015	400,000	36,000
Estimated harvest between August 2015 to December 2015		-
Estimated balance L.R harvest projections up to December 2015	21,000,000	1,890,000
Total available stocks by December 2015	**33,324,196**	**2,999,178**
Post –harvest storage losses estimated at 10%	3,332,420	299,918
Projected national availability as at 31st December 2015 (90kg Bags)	29,991,776	2,699,260
Amount used as animal feeds (3% of household stocks)	899,753	80,978
Amount retained as seed (1%)	299,918	26,993
Net available stocks by December 2015	**28,792,105**	**2,591,289**
CONSUMPTION @3.34 million bags/Month for 43 million people for 5 months	16,700,000	1,503,000
Balance as at 31st December 2015 (surplus)	**12,092,105**	**1,088,289**

Source: Ministry of Agriculture, Livestock and Fisheries

Food price trends

Food prices across most urban, pastoral and marginal agricultural markets have remained fairly stable, owing to availability of adequate supplies from imports and harvest from the long rains crops. Figure 1.6 depicts wholesale maize prices for representative urban markets. Evidently, wholesale maize prices have remained up to 10 percent below their 5-year averages between May and July in Nairobi, Kisumu and Eldoret, while being up to six percent above averages in Mombasa, due to supplies being drawn down. Between June and July, wholesale maize prices have remained atypically stable, as a result of increased inflows from across the borders, and availability of other substitute commodities. Maize prices have been fairly stable across the southeastern and coastal marginal agricultural areas, attributable to increasing availability of other foods like millet and rice in the markets, and some reduction in demand as households consumed recently harvested short-cycle legumes like beans, cowpeas, green grams, and pigeon peas. Prices remained within normal ranges, and in some instances up to 10 percent below averages. In the pastoral markets, retail maize prices also remained atypically stable between June and July, due to availability of other

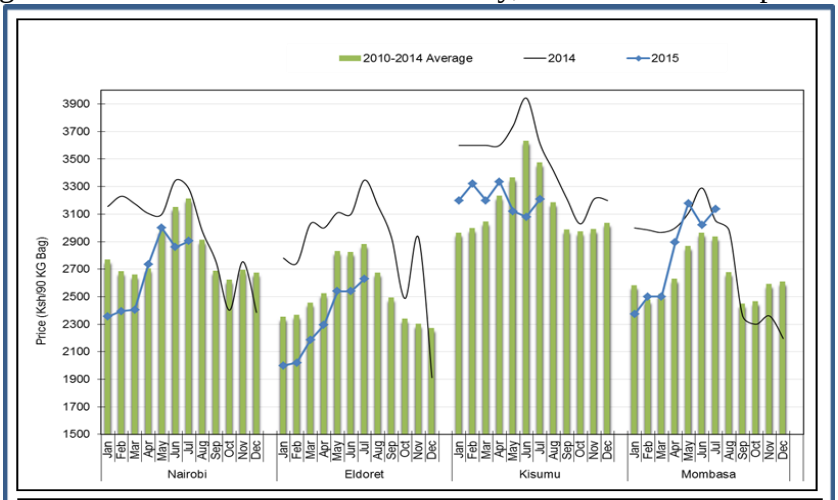

Figure 1.6: Maize price trends in major urban markets

substitute cereals and legumes resulting in reduced demand on maize. Normal market operations in pastoral areas have boosted availability of food commodities from various source markets.

Food Security Prognosis through December 2015

Household food security is expected to seasonally decline through October in both marginal agricultural areas and pastoral livelihood zones. Households will increasingly depend on markets for food access, at a time when household incomes are seasonally low, due to limited income earning opportunities, and staple prices gradually increasing. This is likely to lead to intensification of coping mechanisms and diversification of labor to other off-farm activities including petty trading, construction labor, and other forms of labor, to support food access from the markets. In the marginal agricultural areas, expected above averages short rains will trigger early preparation of land and planting, in September, especially in the mixed farming zones, resulting in availability of some agricultural labor opportunities. Though household food access and consumption are expected to be constrained up to October, majority of households would still be able to afford minimum dietary requirements and remain Stressed (IPC Phase 2). However, other areas of the marginal agricultural zones would remain in the minimal (IPC Phase 1). In the pastoral areas, seasonal decline in quality and quantity of rangeland resources will continue through October. Livestock productivity will track rangeland resources, declining through October. With less income from livestock sales and milk sales and rising staple food prices, livestock-to-cereal terms of trade will be eroded. Intensification of coping mechanisms including sell of charcoal and firewood, would ensure households sustain food access. Household malnutrition levels are expected to track food consumption, declining through October, but are not expected to reach emergency levels due to ongoing interventions and the use of coping strategies. Majority of pastoral households will remain in Stress(IPC Phase 2). Areas in Isiolo and Wajir, currently in crisis (IPC Phase 3), are expected to remain so through October.

Good performance of the 2015 short rains will significantly improve food security in the pastoral and marginal agricultural areas from November onwards. In the marginal agricultural areas, the rains are set to trigger higher-than-normal demand for agricultural labor, resulting in increased labor demand, wage and household incomes. Timely onset of rains would result in timely planting and availability of early-maturing leguminous crops by late November. Coupled with availability of long rains harvested crop from the north Rift, adequate availability of food in the markets is expected by December. As early-maturing short rains crops are harvested, demand on markets for staple foods will start to slowly, marginally decline towards December. As a result of rising supply and gradually falling demand, staple food prices will likely stabilize or marginally decline. Improvement in household food consumption is expected by December, with most households expected to move to Non e (IPC Phase 1). In the pastoral areas, above average short rains will result in substantial improvements in rangeland resources, improving livestock productivity by December. Livestock productivity is set to improve resulting in increase in milk production and consumption, and income from milk sales. Improvements in livestock health and body conditions will result in seasonal increase in livestock prices, further boosting household income. With stable or marginally declining staple prices, livestock-to-cereal terms of trade (ToT) will improve, resulting in improved food consumption and nutrition status. Majority of households will remain in stressed (IPC Phase 2) by December, including areas that were earlier in crisis (IPC Phase 3). However, some pastoral areas are likely to move into minimal (IPC Phase 1) by December 2015.

Options for response

Table 1.2 provides a summary of various response options for the various sectors. More detailed analysis of the sector specific interventions are represented in section 4 of this report.

Table 1.2: Summary of priority interventions by sector for September 2015 – February 2016

SECTOR	PROPOSED INTERVENTIONS	COST Ksh.(M)	COST IN U.S. DOLLAR (M)
AGRICULTURE	Provision of subsidized farm inputs, promotion of drought tolerant crops, water harvesting through construction of pans and irrigation, promotion of post-harvest management and marketing, conservation agriculture and good agricultural practices, establishment of green houses and Mother orchards	**1,879M**	**18.79 M**
LIVESTOCK	Promotion of market based destocking, Livestock vaccination, disease treatment, control and surveillance; Maintenance of boreholes for livestock, Up scaling of livestock Insurance, Livestock breeding improvement schemes, Range land rehabilitation and re-seeding, Pasture & fodder establishment & conservation,	**855M**	**8.55M**
WATER	Water Trucking, Fuel subsidy for community boreholes, Water treatment, Provision of water Tanks and storage facilities, Water Infrastructure development for emergency supply, repair of strategic boreholes in grazing areas, roof water harvesting, water pans repair and purchase generators and fencing of water points.	**2,441M**	**24.41M**
HEALTH AND NUTRITION	Scaling up High Impact Nutrition Interventions (HINI) including integrated management of Acute Malnutrition, Conduct Nutrition surveys/Rapid Assessment/Mass Screening, Provision of water treatment chemicals, Train field monitors and community health workers, Community Led Total Sanitation (CLTS)	**947M**	**9.5M**
EDUCATION	Up scaling of SMP, sustainability projects, Provision of water to schools- water trucking and storage, Construction of boreholes, toilets and Building of boarding schools	**810M**	**8.1 M**
FOOD ASSISTANCE	Building resilience to future shocks through food assistance programmes. Food commodities and cash for 1.1 million food insecure people in need of assistance for the next six months (September 2015 - February 2016).	**5,712M**	**57.12M**
Total		**12,644M**	**126M**

1.0 Introduction

1.1 Assessment Coverage and Objectives

The 2015 March to May long rains season assessment was conducted between between 27th July to 7th August 2015. The assessment was coordinated and conducted by the Kenya Food Security Steering Group (KFSSG)[1] and the County Steering Groups (CSG) in the 23 persistently drought-prone pastoral, agro pastoral and marginal agricultural counties. The 23 counties assessed cover close to 80 percent of the country's geographic area with diverse livelihood zones (Figure 1.7). Specifically, the following counties, grouped into five livelihood clusters, were covered during the assessment:

a) Pastoral Northwest Cluster (Turkana, Marsabit and Samburu Counties);
b) Pastoral Northeast Cluster (Mandera, Garissa, Isiolo, Wajir, and Tana River counties);
c) Agro pastoral Cluster (Baringo, West Pokot, Laikipia, Narok, Kajiado and Nyeri (Kieni) counties);
d) Southeastern Marginal Agricultural Cluster (Tharaka-Nithi, Embu (Mbeere), Meru North, Makueni, and Kitui counties); and
e) Coastal Marginal Agricultural Cluster (Taita Taveta, Kilifi, Lamu, and Kwale counties).

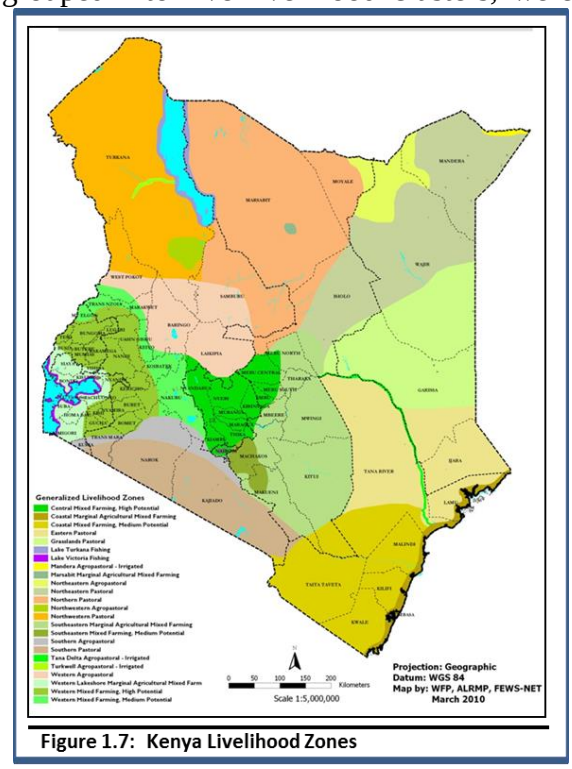

Figure 1.7: Kenya Livelihood Zones

The overall objective of the assessment was to develop an objective, evidence-based and transparent food and nutrition security situation analysis, taking into account the cumulative effect of previous seasons and inform the government and relevant stakeholders on the status of food security across the Arid and Semi-Arid areas. Moreover, the assessment aimed at identifying areas with high severity of food insecurity and to provide recommendations for appropriate response options, whether short or long term, required.

Specific objectives were to:

- Ascertain at the livelihood level, the quality and quantity of the 2015 March to May long rains, and assess their impact on all key sectors including crop agriculture, livestock, water, and health and nutrition as well as education .
- Establish the impacts of other compounding factors such as conflict, crop pest and disease, relative high food prices and floods on household food security.

[1] KFSSG is comprised of Government of Kenya (GoK) ministries, the UN, NGOs and key development partners.

- Assess potential food needs, including options for appropriate transfer modalities including food for assets, cash and vouchers, hunger safety nets and general food distribution.
- Establish required non-food interventions, with particular emphasis on programs that promote preparedness and build household resilience.

1.2 Assessment Approach

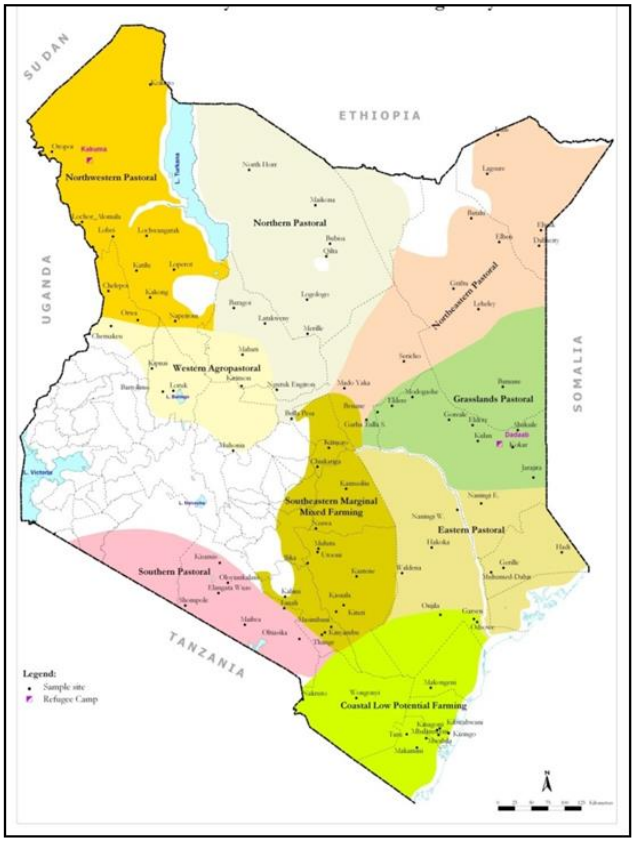

Figure 1.8: Sentinel sites for food security outcome monitoring

The overall assessment processes and methodologies were coordinated and developed by the KFSSG. First, secondary data for all assessed counties was collected, analyzed and collated into briefing packs. The data included livelihood zone baseline data, drought monitoring information, monthly nutrition surveillance data, price data and satellite imagery. Thereafter, the KFSSG organized a one-week training workshop for the assessment teams. During the workshop, the teams refined sectoral indicators and interview guides, and were taken through the entire assessment process, including, agro-climatic information analysis, sampling methods and field data collection techniques, integrated food security phase classification, estimation of population in need of emergency food assistance, and report writing. In addition, food security outcome monitoring indicators were also collected from 2,700 households situated in 90 sentinel sites. Outcome indicators that were collected included the coping strategy index, food consumption scores and household expenditure data. Figure 1.8 shows the sentinel sites from which the outcome indicators were collected. Once in the counties, each assessment team conducted a minimum of two community, two key informant and two market interviews in each sample site. The teams also visited health and education institutions to gather relevant information. Visual inspection techniques were also used during transects drives to obtain qualitative information. The field data was collated, reviewed, analyzed and triangulated to verify its validity. The NDMA drought monitoring bulletins, the June/July 2015 nutrition SMART survey reports and the KFSSG monthly Food Security Updates provided important additional information.

The KFSSG adopted a multi-sectoral and multi-agency approach covering the Agriculture, Livestock, Markets, Health and Nutrition, Water and Sanitation, Education and the Food

assistance Sectors. While the analytical framework is generally the sustainable livelihood framework with the livelihood zones being the focal areas, the required outcome is a detailed understanding of the changes in food security and identification of populations affected and in need of multi-sectoral assistance, particularly in the immediate and medium terms. Results from sampled areas were used, along with outcomes of discussions with the larger County Steering Groups (CSGs) and secondary data analysis to draw inferences for non-visited areas situated in similar livelihood zones. The findings and recommendations were provided at both the county and sub-county levels for planning purposes. The Food Security Integrated Phase Classification (IPC Version 2.0) was employed in classifying severity levels of food insecurity in different livelihood zones.

2.0 Food and Nutrition Security Analysis by Livelihood Cluster

2.1 The Pastoral Northwest Livelihood Cluster

2.1.1 Cluster Background

The cluster comprises of Marsabit, Turkana and Samburu Counties and covers an area of 173,877 square kilometers with an estimated population of 1.37 million persons (KNBS Census 2009). The cluster has three main livelihood zones namely: Pastoral livelihood zone, accounting for 69 percent of the population, Agro Pastoral 24 percent and Fisheries/Formal employment/Business/Petty trade at seven percent (Figure 2.1). The Pastoral livelihood zone accounts for 80 percent of the total area in the cluster. The main sources of income are; livestock production at 80 percent, Crop production at 15 percent and others including fishing, casual labor and charcoal burning at five percent.

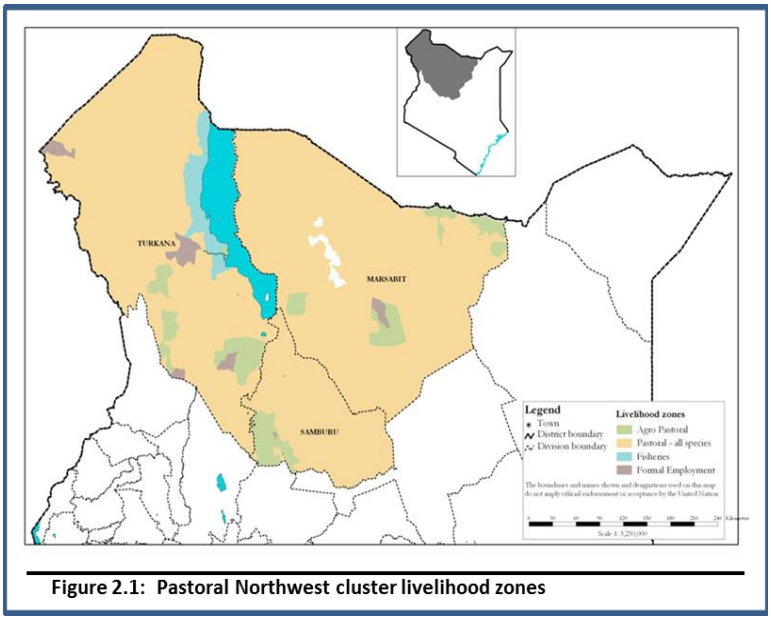

Figure 2.1: Pastoral Northwest cluster livelihood zones

2.1.2 Factors Affecting Food Security

The main factors affecting food security across the cluster include: Cumulative effects of poor rainfall performance from the previous seasons, high food prices, endemic livestock diseases, and poor hygiene and sanitation practices. In addition, insecurity and cattle rustling are key factors affecting food security in Turkana and Samburu counties leading to frequent market interruptions.

2.1.3 Cluster Food Security Situation

2.1.3.1 Current Food Security Situation

The current food security phase classification for the cluster is Stressed (IPC Phase 2) with an exception of some parts of the Agro Pastoral livelihood zone in Samburu which is in the None or Minimal food insecurity phase (IPC phase 1). Terms of Trade (ToT) for the cluster are above the long term average and ranged between 36kg in Turkana and 60kg in Marsabit from the sale of a goat. The ToT improved significantly in Turkana by 38 percent. Maize stocks held in the cluster are within long term average (LTA). The stocks held by households are 81 percent of LTA. Household water consumption was 10 to 12 and 10 to 15 liters per person per day in the Pastoral and Agro Pastoral areas respectively and was normal at this time of the year. Milk production per household per day is a half liter compared to a normal of 2-3 liters in the Pastoral zones, and 2-3 liters in the Agro Pastoral zones, which is normal at this time. Milk consumption per household

per day is 0.5-1 liters across all livelihood zones compared with the normal 3-5 liters at this time. Meal frequency was normal at one to two meals per day in the Pastoral areas and two to three meals in the Agro Pastoral areas. The percentage of children at risk of malnutrition based on Mid Upper Arm Circumference (MUAC <135mm) had improved across the cluster. The coping strategy index across the county improved to 19 in May 2015 from 22 in December 2014. Crude Mortality Rate and Infant Mortality Rate were within the normal ranges.

2.1.3.2 Food Security Phase Classification

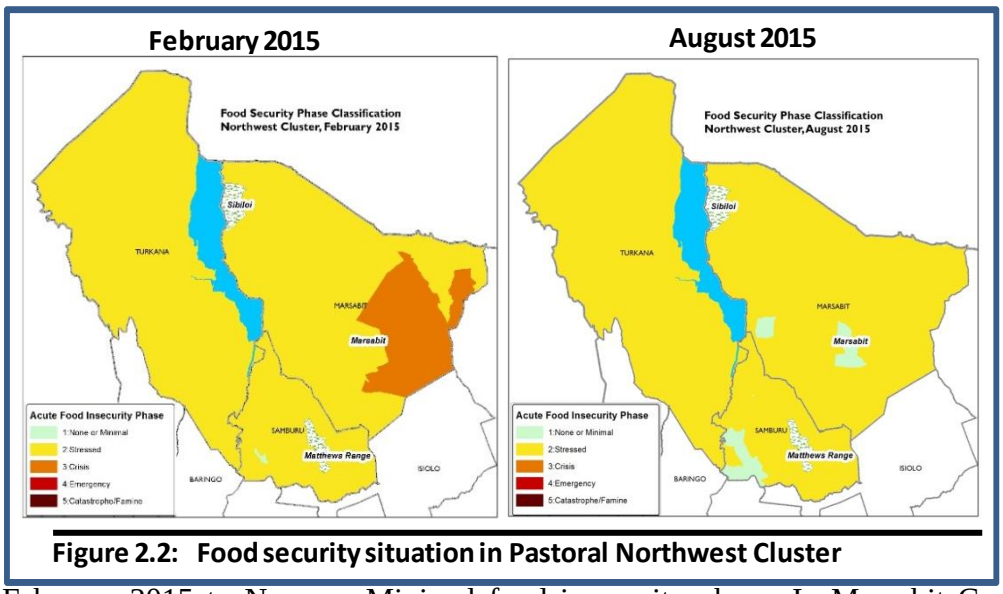

Figure 2.2: Food security situation in Pastoral Northwest Cluster

The current food security phase classification for the cluster after the 2015 long rains assessment is Stressed (IPC phase 2) as was the case in February 2015. However, some agro pastoral areas of Samburu have improved from being stressed in February 2015 to None or Minimal food insecurity phase. In Marsabit County, areas such as Turbi and Kalacha in Maikona, El Hadi in North Horr and Golbo in Moyale sub-county that were classified in Crisis (IPC phase 3) after the short rains, have now improved to the Stressed phase (Figure 2.2). Household water consumption remained between 10-15 liters per person per day in most areas but has significantly improved from 6 l/pppd to 10-12 l/pppd in the Pastoral areas of Marsabit. The terms of trade slightly decreased in Marsabit and Samburu by 4.8 and 9.4 percent respectively but have significantly improved by 44 percent in Turkana since February 2015. The nutritional status has improved across the cluster since February as indicated by a reduction in percentage of children underfive years at risk of malnutrition (MUAC < 135mm) by 6, 3 and 12 percent in Marsabit, Samburu and Turkana respectively. The Coping Strategy Index (CSI) during the short rains assessment was 22 compared to the current 19 indicating a marginal reduction in severity and frequency of coping strategies applied.

2.1.4 Rainfall Performance

The onset of the rains in this cluster started in the third dekad of March which was late across all the counties as rains normally begin in the second dekad of March in Turkana and the first dekad in Samburu and Marsabit counties. The rainfall amount was near normal to above normal across the cluster, with Samburu, Marsabit and Turkana receiving rainfall amounts of 90, 85 and 112 percent of normal respectively. Across the season, the temporal distribution was fair across the cluster. In Turkana and Samburu, most parts experienced high rainfall intensity in the first dekad of April and first dekad of May only. Most of the rainfall in Marsabit was received in the first dekad of March and May which was normal.

The spatial distribution within the cluster was generally uneven with variation of rainfall amounts across the cluster. Cessation was earlier than normal in Marsabit in the first dekad of May instead of the second dekad. The cessation in Turkana and Samburu was timely. Rains ceased in the second dekad of May in Turkana although off-season showers were experienced in July while in Samburu they ceased in the third dekad of June.

2.1.5 Current Shocks and Hazards

Current shocks and hazards across the cluster include insecurity, cattle rustling and increasing distances to water sources. Others include livestock diseases, poor performance of the rain and conflicts. Increasing distances from water sources to grazing areas and endemic livestock diseases have continued to reduce livestock productivity in Turkana County. Additionally, poor road infrastructure has continued to hinder access to markets and resulted in high food prices.

2.1.6 Impact of Rainfall Performance, Shocks and Hazards

2.1.6.1 Crop production

The long rains is the main season for crop production contributing about 70 percent of food production except Marsabit county which relies mainly on short rains. The main crops grown include maize, beans and sorghum. Other crops grown on small scale are cow peas and green grams. The area under maize and beans increased by about 60 percent mainly attributed to subsidized tractor services provided by Samburu County. There was a slight decline in area under sorghum as farmers are beginning to prefer other crops to sorghum. In Marsabit County, farmers reduced area under crops due to previous consecutive failed long rains seasons. Across the cluster, production of beans and sorghum increased by 35 and 154 percent respectively. The expected maize production is 67 percent above the Long Term Average. The drastic increase in sorghum production is attributed to the above normal rainfall received in most parts of Turkana County.

Main irrigated crops mostly done along rivers in Turkana are maize, sorghum and cow peas. Overall area under irrigation in the cluster has increased by about 60 percent due to expansion of land under irrigation with a consequent increase in irrigated production. Irrigated maize production increased to 16,850 bags compared to the LTA of 6,550 bags while production of sorghum increased from about 1,000 bags to about 4,700 bags. The overall maize stocks held in the cluster are within LTA. The stocks held by households are 81 percent of LTA while stocks held by traders and National Cereals and Produce Boards are 140 and about 20 percent above LTA.

2.1.6.2 Livestock Production.

Pasture condition in the Pastoral and Agro Pastoral livelihood zones is fair to poor. Browse condition is fair to poor in the Pastoral and Agro Pastoral livelihood zone, which is normal at this time of the year in Samburu and Marsabit. However, forage condition is good in Turkana and this is normal at this time of the year. In the Agro Pastoral livelihood zones, animals are feeding on crop residues (maize stovers, standing hay and leaves litter). Available pasture and browse is estimated to last up to end of August in the Pastoral areas and up to September and October in the Agro Pastoral zones, which is normal. Insecurity and ethnic tensions are limiting forage accessibility in parts of Samburu county (Marti, Lbukoi and Suyan in Samburu North Sub

county) and parts of Marsabit (Mt. Kulal). The body condition of Cattle, sheep and goats is good in the Pastoral and Agro-Pastoral livelihood zones, which is normal. Livestock body condition is likely to remain stable across all livelihoods as they continue to access forage in grazing areas during migration.

Trekking distances to watering points ranged from 10 to 20 kilometers in the Pastoral livelihood zone and two to seven kilometers in the Agro Pastoral livelihood zone, which is normal at this time of the year. The average watering frequency is once in two days for cattle, sheep and goats in the Pastoral and Agro Pastoral livelihood zones. Frequency for watering camels was three to seven times per week across all livelihood zones. Milk production per household per day is a half liter compared to the normal range of two to three liters in the Pastoral zones, and two to three liters in the Agro Pastoral livelihood zone, which is normal at this time. Milk production is expected to decline as the dry spell progresses. Milk consumption per household per day is half a liter to one liter across all livelihood zones compared with the normal three to five liters at this time. Much of the household milk was retailed to generate household income. The average price of milk per liter is Ksh. 75 - 120 across all the livelihood zones, which is normal at this time of the year while Camel milk retailed at Ksh. 90 which is normal.

Birth rates are normal across the livelihood zones in the cluster. Tropical Livestock Units (TLUs) ranged between 10 to 13 in the Pastoral livelihood zones, except in the Pastoral areas of Turkana which recorded TLU of 60. In the Agro Pastoral livelihood zone TLU range was four to six compared to the normal range of 8 to 15. Migration in Turkana County was influenced by insecurity in areas along Baringo and West Pokot county borders and international borders with Uganda and Ethiopia. In Marsabit, there was influx of animals into Dabel (Moyale Sub county) from Wajir county (Buna, Korondile and Tuluroba) and from Southern Ethiopia. In Samburu, livestock are migrating towards Marti, Lbukoi, Lesirikani, Uaso Rongai and Tuum mountain ranges where there is still standing hay. Cattle from Samburu East Sub county have migrated to Laikipia, Isiolo and Marsabit counties. Migration routes and destinations are normal. A few unconfirmed cases of Foot and Mouth Disease (FMD), Lumpy Skin Diseases (LSD), Peste des Ruminant (PPR), Contagious Bovine Pleuropneumonia (CBPP), and Contagious Caprine Pleuropneumonia (CCPP) in sheep and goats were reported across the cluster.

2.1.6.3 Water and Sanitation

The main sources of domestic water are boreholes, springs, pans, dams, shallow wells and Lake Turkana, River Turkwel and River Kerio in Turkana County and River Ewaso Nyiro in Samburu County. Open sources were recharged up to 80 percent across the cluster. Over 80 percent of pans in Marsabit have dried up while most pans in Turkana and Samburu have water expected to last until October. Return distances to water sources are within the seasonal range of between one to two kilometers except in the Pastoral areas of Turkana East where return distances are in the seasonal ranges of between 4 - 7 kilometers compared. Waiting time at water sources was normal at less than 30 minutes in Samburu and in the Agro-pastoral areas of Turkana. However, waiting time is normal in the Pastoral areas of Turkana at 60 - 90 minutes while waiting time has increased from 30 to 60 minuntes in the Agro-pastoral areas of Marsabit. Increased waiting time has been observed in the Pastoral areas of Marsabit and Lomelo in Turkana East going up to two hours from the normal one hour. The waiting time also increased to 3 - 5 hours in Korr and Karare in Laisamis sub county due to influx of livestock and breakdown of the boreholes

respectively. Cost of water ranges between two to five shillings per 20 liters jerrycan. However, cost of water has doubled to Ksh. 10 in Waso and Samburu North in Samburu County while in Ambalo in Marsabit a 20 liters jerrycan cost Ksh. 20. Water trucking in Laqi in Marsabit has increased the price of water up to Kshs. 60 per 20 liters jerry can. Most households don't pay for water as they rely on shallow wells, springs, water pans, and rivers while some pay a monthly water fee of between Ksh. 100 – 300. Household water consumption per person per day is 10 liters to 20 liters except in Turkana East sub county where households are consuming 6 - 10 liters compared to normal of 10 - 15 liters per person per day due to insecurity while in Elmolo in Laisamis, high fluoride content limits consumption. Areas facing severe water shortage include Dabel, Jaldessa, Forolle, Hurri Hills, Korr, Karare, Tupsha and Mount Kulal in Marsabit.

Water treatment at household level is less than 20 percent in the cluster and is either by water treatment chemicals, boiling, and use of herbs sand filters. Latrine coverage is lowest in Turkana at 28 percent and highest in Marsabit at 50 percent across the cluster. Low latrine coverage is attributed to nomadic lifestyle, loose soil structure hence collapsing of latrines during the rainy season especially in Turkana county. Contamination of water sources in the county is prevalent due to open defecation, crude dumping, direct bathing and washing clothes at open water sources. Most of the open water sources do not have a separate collection point for livestock and human. Though no water borne disease outbreaks have been reported, high incidences of typhoid, diarrhea, dysentery and kidney stones have been reported across all livelihood zones.

2.1.6.4 Market Performance

Market operations and activities in this cluster were adversely affected by insecurity caused by cattle rustling in Samburu county (Baragoi), and Turkana county (Lomelo, Kapedo, Kibish and Kainuk). Other factors affecting market functioning were poor infrastructure, long distances to markets and shortage of supplies. The cluster engages in cross border trade with Uganda to the West and Ethiopia to the North which normally supplements local supplies. An estimated 80-95 percent of the households in the cluster depend on markets for food supplies. Maize prices in the cluster ranged from Ksh. 49 per kilogram in Marsabit and Samburu, to Ksh. 75 per kilogram in Turkana. Goat prices in the cluster ranged between Ksh. 2,362 in Samburu to Ksh. 3,076 in Marsabit county. These prices ranged between nine percent above LTA in Marsabit to 48 percent above the LTA in Turkana. The current Terms of Trade (ToT) were slightly above the LTAs across the cluster. Marsabit had the most favorable ToT where the sale of a goat would purchase 60 kg of maize compared to the LTA of 57 kg. Turkana had the least favorable ToT of 36 kg but which is still 38 above the LTA of 26 kg (Figure 2.3).

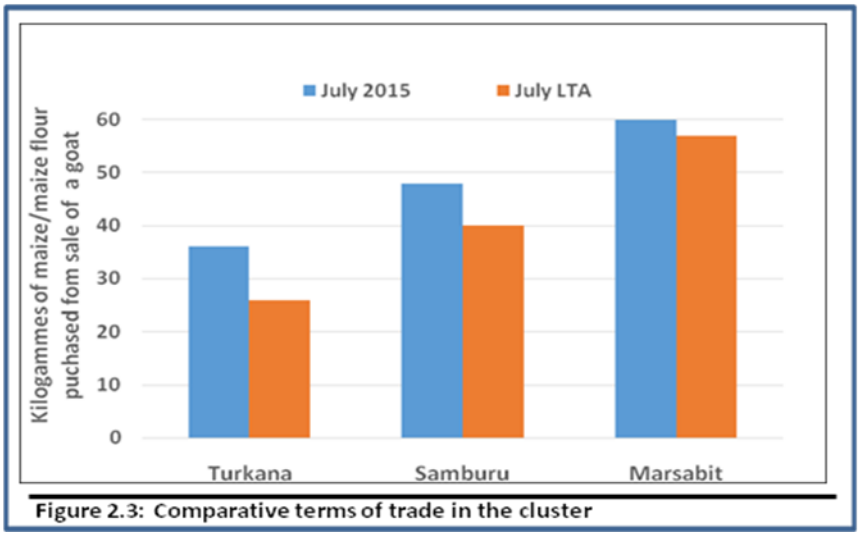

Figure 2.3: Comparative terms of trade in the cluster

2.1.6.5 Health and Nutrition

2.1.6.5.1 Morbidity and mortality patterns

There was a noted increase in reported morbidity cases compared to the same period last year in Turkana and Marsabit counties with no change in Samburu county. The most common diseases reported among under-fives and the general populations in the cluster are malaria, diarrhea and pneumonia. Others include Upper Respiratory Tract Infection (URTI) and diseases of the skin in Marsabit and Samburu, dysentery and chicken pox in Turkana whereas eye infection was reported in Samburu. There was a significant increase in diarrhea cases across the cluster compared with the same period last year attributed to lower latrine coverage ranging from 14 percent increase in Kibish Sub county of Turkana to about 50 percent increase in Marsabit county. Mortality rates remained within the seasonal ranges with crude mortality rate (CMR) of between 0.13 and 0.34 while under five mortality rate (UMR) ranged between 0.19 and 0.22 deaths per 10,000 persons per day.

2.1.6.5.2 Immunization and Vitamin A supplementation

The proportion of Fully Immunized children in this cluster ranges from 71 percent in Samburu to 84 percent in Marsabit. Turkana and Samburu coverage is below the National target of 80 percent though there was improvement compared to the same period in 2014. The improvement in the coverage in Marsabit from 71 percent in 2014 to 84 percent in 2015 is attributed to increased outreach services, improved health seeking behaviors by the local communities and increased advocacy, 6 new facilities and Beyond ZERO mobile clinic have improved access and coverage. Vitamin A coverage across the cluster is less than National target of 80 percent with coverage of 65.9, 60.9 and 50.7 percent in Turkana, Marsabit and Samburu respectively.

2.1.6.5.3 Nutrition Status and Dietary Diversity

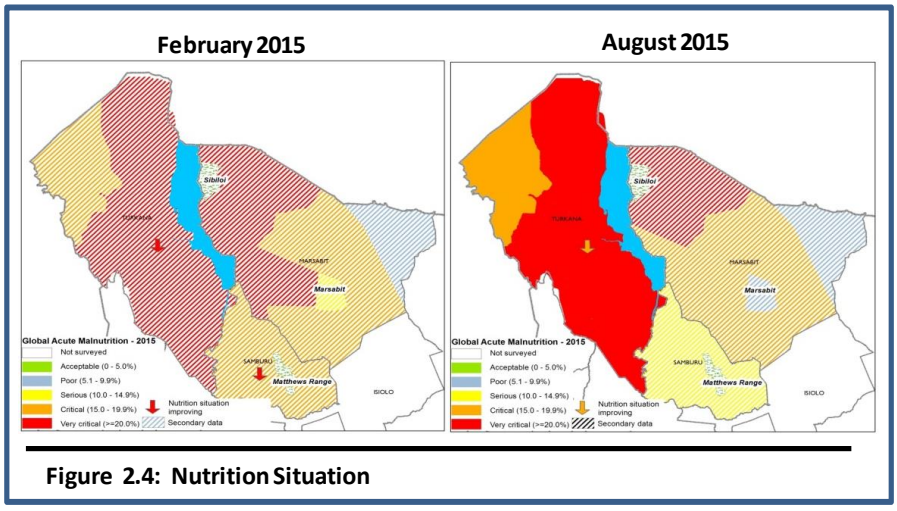

Figure 2.4: Nutrition Situation

The Nutrition Situation in the cluster shows a general improvement with reduction in percentage of children at risk of malnutrition, currently below the long term average in Samburu and Marsabit Counties while Turkana was the same as the LTA which is normal at this time. The results from SMART survey conducted in June in Turkana County indicate an improving nutrition situation in the county with a Global Acute Malnutrition rates at critical but improving for central and north at 20.9 and 22.9 percent respectively compared with GAM of 2014 which was 28.7 and 27.2 (Figure 2.4). Turkana West and South showed no significant change with a GAM rate of 24.5 and 16.7 percent compared with the same period last year which was 24.5 and 17.4 percent respectively.

The Integrated Management of Acute Malnutrition (IMAM) admission trends in the county show moderately malnourished children under five improved in Turkana from 2132 in March 2015 to 899 in June 2015, in Marsabit improved from 1009 to 594 in the same period while Samburu admission remained relatively similar.

2.1.6.6 Education

There was a general increase in enrolment and attendance across the cluster with highest increase in Turkana county at 24 percent and Marsabit recording an increase of 2.5 percent. Marsabit county recorded an improved attendance rate at 98 percent from the previous year of 95 percent. The transition rate from Early Childhood Development and Education centers (ECDEs) to primary school for both boys and girls ranged from 85 to 93 percent in Samburu and Marsabit while there was a decline of eight percent in Turkana attributed to suspension of school feeding program in satellite ECDEs. Transition from primary to post primary institutions for both boys and girls ranged from 71 to 80 percent across the cluster with the highest recorded in Marsabit County at 80 percent. The drop outs rate ranged from 5 to 40 percent for both girls and boys across the cluster with the lowest recorded in Marsabit at 5 percent and highest in Samburu at 40 percent. More girls were dropping out of school than boys due to early marriages, long distance to schools, poor sanitation in schools and parents migration with livestock. All public primary schools across the cluster were on school Meals Program. Turkana and Marsabit Counties were on Regular School Meals Program while Samburu was under the Home Grown School Meals Program. The meals programs positively enhanced pupils' access to basic education at this level across the cluster.

2.1.7 Coping Mechanisms

The coping strategy index in May 2015 was 19 compared to 22 recorded in December 2014 indicating that households were employing consumption related coping strategies less frequently. The main consumption related coping mechanisms that were employed more frequently by the communities included limiting portion size at mealtime, relying on less preferred and less expensive food and reducing the number of meals eaten in a day.

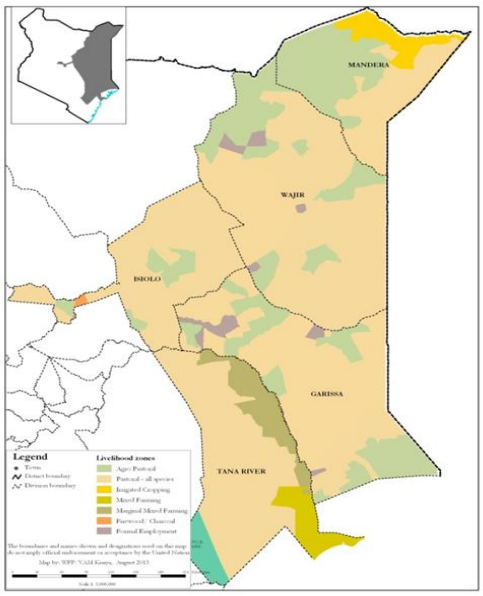

Figure 2.5: Pastoral Northeast cluster livelihood zones

2.2 The Pastoral Northeast Livelihood Cluster

2.2.1 Cluster background

The cluster comprises five counties namely; Mandera, Wajir, Garissa, Tana River and Isiolo which cover covers an area of 190,634 square kilometres with a population of 1,844,780 persons according to the 2009 population census. The major livelihood zones in the cluster are Pastoral and Agro Pastoral Livelihood Zones (Figure 2.5) accounting for 51.8 and 19.2 percent of the population respectively. Marginal Mixed Farming and Irrigated livelihood zones account for 7.6 and 6.4 percent of the population respectively. The major economic

activities in the cluster are livestock and crop production contributing 60 and 30 percent of cash income respectively.

2.2.2 Current Factors Affecting Food Security

The factors affecting food security in this cluster include: poor long rains performance in the northern parts of the cluster, conflict and insecurity, influx of internally displaced persons, water scarcity, closure of the border hampering cross border trade, livestock diseases, poor livestock market and high food commodity prices.

2..2.3 Cluster Food Security Situation

2.2.3.1 Current Food Security Situation

The current food security phase classification for the cluster is 'Stressed' (IPC Phase 2) with pockets in Isiolo and Wajir which are classified as "Crisis" (IPC Phase 3). The terms of trade were slightly above the long term average across the cluster except in Isiolo County where they were 32 percent below the LTA. Maize prices are currently increasing and above the LTA except Tana River where the prices are within the seasonal norms. Goat prices across the cluster ranged from Ksh. 2,485 to Ksh. 3, 751 and were above LTA but within the seasonal norms. Milk production per household per day is 0.5 to four litres across the cluster which is below normal. Maize stocks held by households have declined by 62 percent compared to LTA. Most households are consuming one to two meals per day comprising mainly two food groups. Only 42 percent of the households are having acceptable food consumption while 56 percent and two percent have at borderline and poor food consumption respectively. The current Coping Strategy Index (CSI) in the cluster is 31, while in Garissa and Tana River it is 11 and 23 respectively, compared to the upper limit of 56.

2.2.3.2 Food Security Phase Classification

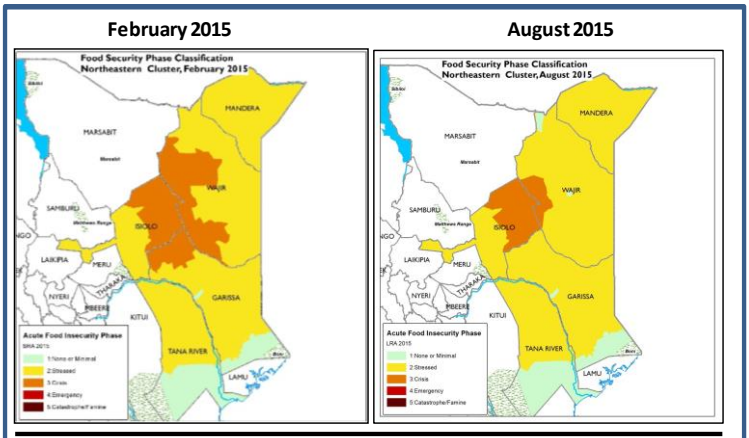

Figure 2.6: Food security situation in Pastoral Northeast Cluster

During the 2015 short rains assessment, most parts of the cluster were in 'Stressed' (IPC Phase 2) with some parts of Isiolo Garissa and Wajir being classified as 'Crisis' (Phase 3). Currently the phase classification remains similar in most areas of the cluster, however, the areas under 'Crisis' (Phase 3) have since reduced. The terms of trade improved across the cluster except in Isiolo where they remained stable and Tana River where they were below what was reported during the short rains assessment of 2015. Water consumption per person per day ranged between 10-20 litres which is within the normal ranges except in parts of Isiolo where water consumption range between seven and 10 litres. The Coping Strategy Index (CSI) in the cluster remained comparable to what was recorded in December 2014 except for Garissa where the current CSI is 11 compared to 16 in December 2014. The under-five mortality rate (U5MR)

and the crude mortality rate remained below the alert threshold of two deaths per 10,000 live births per day and one death per 10,000 live births per day respectively.

2.2.4 Rainfall Performance

The onset of the rains was late across the cluster in the third dekad compared to the normal first dekad of March except in Garissa where it was normal. The rainfall received across most parts of Isiolo, Mandera and Wajir was 50-90 percent of normal. Most parts of Tana River and Garissa counties received above normal rainfall ranging from 110-200 percent of normal rainfall. Temporal distribution was poor across the cluster except in Mandera where it was good. Spatial distribution was uneven across the cluster. Cessation of the rains was normal except in Mandera where it was early.

2.2.5 Current Shocks and Hazards

The current shocks and hazards include insecurity in the area along the Somali border especially in Arabia- Lafey and Hulugho which led to closure of some markets along the border and inter clan conflicts in localized areas in Garissa, Mandera and Tana River counties. Unusual livestock migrations witnessed in parts of the cluster and predisposing factor for conflicts over pastures and water. Human-wildlife conflicts were reported in parts of Tana River county.

2.2.6 Impacts of Rainfall Performance, Shocks and Hazards

2.2.6.1 Crop Production

The long rains season is not the main season for crop production across most parts of the cluster. The main crops grown in the cluster are maize, cowpeas and green grams. Other crops are sorghum and beans. Most of the food crop production is in Tana River County. The area planted increased in Isiolo, Wajir and Garissa counties attributed to provision of subsidized tractor services, subsidized fertilizers and community sensitization. There was, however, a decline in the overall area under production by about 20 percent largely in Tana River and Wajir. Production achieved was about 45 percent of LTA mainly attributed to decline in area under production and poor rainfall achieved in parts of the cluster. Irrigation is an important economic activity in some parts of the cluster and is mainly done along rivers. The main crops grown are maize, bananas and mangoes. Other minor crops include tomatoes, cowpeas, green grams and onions. Both area under irrigation and production increased by about 30 percent attributed to expansion in area under irrigation in Tana River, Wajir and Garissa. Poor rainfall and conflicts affected production in Isiolo and Mandera counties respectively.

2.2.6.2 Livestock Production

Pastures and browse condition was fair to poor across the Pastoral, Agro pastoral and Marginal mixed farming livelihood zones compared to the normal fair to good and good in the Marginal Mixed Farming and Marginal Farming Zones in the cluster especially in Tana River county. Community conflicts and Tsetse fly infestation along riverine areas of Ijara in Garissa County are limiting access to available forage. Return trekking distances in the Pastoral livelihood zones ranged between 8 to 15 kilometres compared to the normal of five to 8 kilometres except in Garissa and Wajir where they cover 20-30 kilometres. In the Agro-Pastoral, Marginal Mixed Farming and Mixed Farming Zones, it ranges between 5-10 kilometres, which is normal. The body condition cattle, sheep, goats and camels is good to fair in the Pastoral livelihood zone and

good in the Agro-Pastoral and Marginal Mixed Farming Livelihood zones compared to the normal good across the cluster. Livestock body condition is however expected to deteriorate as the dry spell progresses. Average watering frequency is every two days across all livelihood zones but is expected to increase as the dry season progresses. Milk production per household per day is 0.5 to 4 litres in the Pastoral and Agro-Pastoral Zone compared to the normal three to seven litres. In the Marginal Mixed Livelihood zones, milk production is two to five litres compared to four to eight litres per household per day.

Milk production is anticipated to decline further as the forage condition deteriorates and water availability decreases. Milk consumption per household ranged between 0.5 and 1.5 litres compared to the normal 1.5 to 3 litres across all livelihood zones. Milk price per litre range between Ksh. 50 and Ksh. 80 across all livelihoods compared the normal range of Ksh. 30 to 60. Livestock migration occurred into the traditional dry season grazing areas of Tana Delta, Laikipia, parts of Isiolo County, and across international borders of Ethiopia and Somalia. Unusual livestock migration was reported in parts of Isiolo County. No major notifiable livestock disease outbreaks were confirmed except some reported cases of endemic diseases such as Contagious Caprine Pleural- Pneumonia (CCPP), Pestes des Petit Ruminants (PPR) in small stocks and Contagious Bovine Pleural Pneumonia (CBPP), Blackquarter (BQ) and Trypanosomiasis. Suspected cases of Foot and Mouth Disease (FMD) were reported in Ngaremara in Isiolo and Ijara in Garissa. Vaccination campaigns against FMD were undertaken in Ijara (Garissa) and Isiolo counties.

2.2.6.3 Water and Sanitation

The major water sources in the cluster are rivers, shallow wells, boreholes, dams, pans, irrigation canals, piped water and springs. Recharge to open water sources was 50-70 percent of their total capacity. Return distance to water sources remained within the normal range of 0.5-5 kilometres in Garissa but greatly increased in Mandera from the normal 5-10 kilometres to 15-25 kilometres. Return distances in Isiolo and Wajir increased from 4-5 to 6-7 kilometres. However, the distances remained at 5-10 kilometres in the Pastoral and marginal mixed zones and 0.2-5 kilometres in the mixed farming zones of Tana River County. Waiting time remained within the normal range of less than 10 minutes in Garissa and between 30-60 minutes in Mandera, Wajir and Isiolo. However, waiting time increased in Tana River from the normal 10-30 minutes in the pastoral zones to up to two hours due to concentration of livestock at domestic water sources due to concentration in the few water points. The cost of water at the source remained within the normal Ksh. 2-5 across the cluster with the exception of Wajir and Mandera where the cost has increased to Ksh. 8 and 10-20 per 20 litres jerrycan respectively compared to the normal five shillings. Water consumption has remained stable at 20-30 litres per person per day in Garissa, Wajir and in the Mixed and Marginal Mixed farming zones of Tana River. Water consumption is also normal in Mandera, Isiolo and in the Pastoral zones of Tana River ranging from 5-10 litres per person per day. The possible sources of water contamination include upstream contamination, poor disposal of human waste and same point use by both livestock and humans. Water treatment chemicals are not available at household level although they are acceptable. Food handling and hygiene practices are generally poor. Water treatment is generally low as most households do not treat water before drinking. Latrine coverage is highest in Tana River at 46 percent and Lowest in Wajir and Mandera at 30 percent.

2.2.6.4 Markets and Trade

Market operations and activities are normal in most areas except in Garissa (Dadaab and Balambala) and Isiolo where disruptions were triggered by insecurity and livestock migration respectively. Trade volumes have reduced and livestock prices have declined in the affected areas. Maize prices within the cluster range between Ksh. 42 per kilogram in Tana River and Ksh. 67 per kilogram in Mandera. The prices are within Long Term Average (LTA) except for Isiolo where they are 47 percent above the LTA. Goat prices across the cluster range from Ksh. 2,485-3,751.

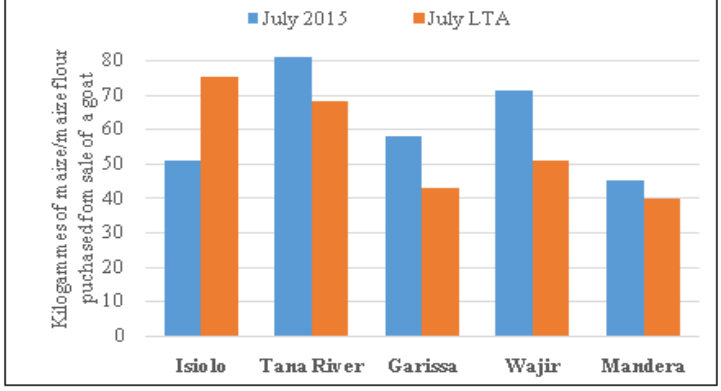

Figure 2.7: Comparative terms of trade in the cluster

The terms of trade are favorable and above the long term average across the cluster except in Isiolo County where they are 32 percent below the LTA (Figure 2.7). The terms of trade are least favorable in Mandera where the sale of a goat can be exchanged for 45 kilograms of maize and most favorable in Tana River where communities are able to procure 81 kilograms from the sale of a goat.

2.2.6.5 Health and Nutrition

The top five common causes of morbidity in the cluster for children under-fives and the general population were: disease of the respiratory system, pneumonia, diarrhea, malaria and skin diseases. There was a noted increase of URTI in Mandera among under-fives and general population attributed to poor sanitation, scarcity of water and poor hygiene practices. In Isiolo County, there was a noted decline in disease prevalence compared to a similar period last year, with cases of confirmed malaria among under-fives reducing by 39 percent from 2,730 between January and June 2015. Among the general population, morbidity cases in January and June 2015 reduced by 26 percent from 5,468 reported in the same period in 2014. There were reported cholera outbreaks in Garissa and Isiolo, with one death occurring in Isiolo. Preventive and control measures have been put in place. There was a measles outbreak in Garissa with 196 cases being reported between January and June 2015. The crude and under-five mortality rate in the cluster is within the seasonal ranges. The proportion of fully immunized children across the cluster ranges between 56 and 67 Percent which below the National target of 80 percent. Vitamin A coverage. The low coverage is attributed to poor health seeking behavior among caregivers, nomadic lifestyle, distance to health facilities, stock outs, and lack of outreaches, poor infrastructure and partner withdrawal in Tana River County.

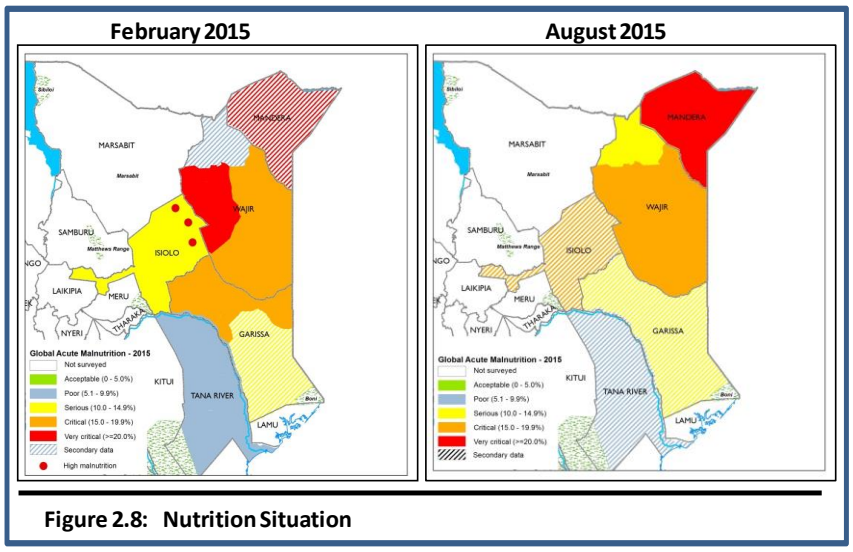

Figure 2.8: Nutrition Situation

The children under- five at risk of malnutrition in this cluster based on mid-upper-arm circumference (MUAC) (< 135 mm) and SMART survey conducted in the county in June 2015 remains high except in Garissa and Tana River counties. In Mandera, the global acute malnutrition (GAM) rate was 24.7 percent (20.4 - 29.6 at 95% CI) with a high severe acute malnutrition (SAM) of 3.7 percent (2.3 - 6.1 at 95% CI), remains in critical levels (Figure 2.8). Wajir remains in critical but improving nutrition situation with MUAC levels of 17.2 percent. The percentage of children at risk of malnutrition in Isiolo was at 19.1 percent slightly below the LTA 20.6 percent. The food consumption and dietary diversity across the cluster declined with meal frequency being one to two meals per day except in Garissa and Tana River where meal frequency was 2-3 meals per day. Food from farms and markets are available Tana River County. The percentage of households with poor consumption score remained at nine percent while borderline increased to 55 percent in 2015 from 32 percent in 2014.

2.2.6.6 Education

The enrolment increased in all the counties across the cluster with a range of one to 4.3 percent with the lowest in Tana River at 1.7 percent and Garissa recording the highest at 4.3 percent. Attendance was generally high with the attendance rates ranging from 91 to 95 percent. The dropout rates in primary schools were generally minimal and were two percent in Mandera to 3.8 percent in Tana River. The dropouts were attributed to insecurity along the Tana River and Lamu boarder, negative cultural practices such early marriages, truancy among students and migration.

Transition rates from ECDCs to primary schools are high, ranging from 86-95 percent except in Mandera where they are 64 percent. Transition rates from primary to secondary range from 76 to 99 percent except in Mandera and Tana River counties where they were 56 and 64 respectively. The improved transition rates particularly from ECDCs to primary across the cluster are attributed to intervention of county governments and stakeholders by employment of ECDCs teachers and establishment of more schools across the cluster. All the public primary schools across the cluster have regular school meals programme except Isiolo which is under Home Grown School Meals Programme. The school meals programmes have contributed to enhanced attendance and retention in schools.

2.2.7 Coping Mechanisms

The mean coping strategy score in May 2015 was 31 in Wajir, Mandera and Isiolo indicating that households were employing consumption related coping strategies more often compared to the same period in the previous year. In Garissa and Tana River, coping strategy score was 16

and 23 respectively. The coping strategies applied across the cluster included reduction in number and meal rations, reliance on less preferred and less expensive food, and limiting portion sizes at meal times. Livelihood diversification strategies reported by households included charcoal burning, collection and sale of firewood, casual labour and petty trading at the water points.

2.3 The Agro Pastoral Livelihood Cluster

2.3.1 Cluster Background

The cluster comprises of Narok, Laikipia, Kajiado, Baringo, West Pokot and Nyeri (Kieni) Counties and covers an area of 71,757 square kilometers. It has a population of 2,945,217 persons (KNBS 2009 census) and six main livelihood zones (Figure 2.9). The zones include Mixed Farming livelihood zone accounting for 31 percent of the population, Pastoral livelihood zone (27%), Marginal Mixed Farming (20%) and Agro Pastoral livelihood zone (11%). Others include Formal employment/Tourism/trade/Business and Irrigated Crop livelihood zone accounting for 10.7 and 0.7 percent of the population respectively. The main sources of income in the cluster are livestock production and cash crop production, which account for 75 percent and 55 percent of cash income respectively.

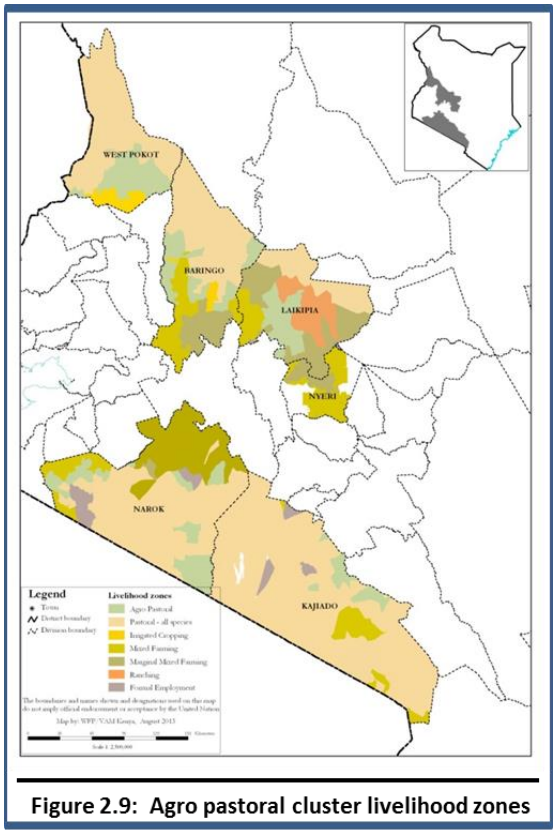

Figure 2.9: Agro pastoral cluster livelihood zones

2.3.2 Current Factors Affecting Food Security

The main factors affecting food security in this cluster include successive poor performance of rains with uneven spatial as well as poor temporal distribution, livestock diseases and decreasing livestock prices. Other factors include high food commodity prices, human-wildlife conflict and influx of livestock migrating from neighboring counties. The Maize Lethal Necrosis Disease and frost bite were critical elements affecting food security in Narok and Laikipia counties respectively.

2.3.3 Cluster Food Security Situation

2.3.3.1 Current Food Security Situation

The current food security phase classification for the cluster was none/minimal phase (IPC Phase 1). However, in Baringo County, the Pastoral and Agro-Pastoral livelihood zones, the Pastoral livelihood zone in West Pokot County were in the stressed phase (IPC Phase 2) and so were the pastoral and a few pockets in the Marginal Mixed Farming livelihood zones of Laikipia County. The terms of trade were above the long-term average across the cluster except in Kajiado County where a household could purchase 62 kilos of maize from the sale of a goat compared to a long-

term average of 75 kilos. In Kieni and Narok counties, households could purchase 88 and 65 kilos of maize from the proceeds of the sale of a goat compared to the long-term averages of 62 and 52 respectively. The maize production achieved was 87 percent of the Long-Term Average (LTA) while beans production was 72 percent of the LTA. The current maize stocks held in the county were 28 percent of LTA with households holding 15 percent of their LTA.

Milk consumption per household per day was 1-3 litres across all livelihood zones compared to 3-5 litres expected at this time of the year. The average price of milk per litre was Ksh.30 to Ksh.50 across all the livelihood zones, which was normal at this time of the year; except in Baringo where milk was retailing between Ksh. 60 and Ksh. 90 per litre. The water consumption per person per day remained within the normal range of 10 to 20 with the exception of Imbirikani, Oltinga, Matapato north and south, Imaroro and Magadi in Kajiado and in the pastoral zones of West Pokot where consumption was 8 to 10 liters per person per day. The coping strategy index (CSI) in May 2015 was 27 compared to 38 at a similar time last year implying that households were employing coping strategies less frequently. The percentage of children at risk of malnutrition as measured by the Mid Upper Arm Circumference (MUAC <135mm) was stable and below the long term average (LTA) across the cluster. In May 2015, 15 percent of the population had a poor food consumption score while 51 and 34 percent had a borderline and acceptable food consumption score respectively.

2.3.3.2 Food Security Phase Classification

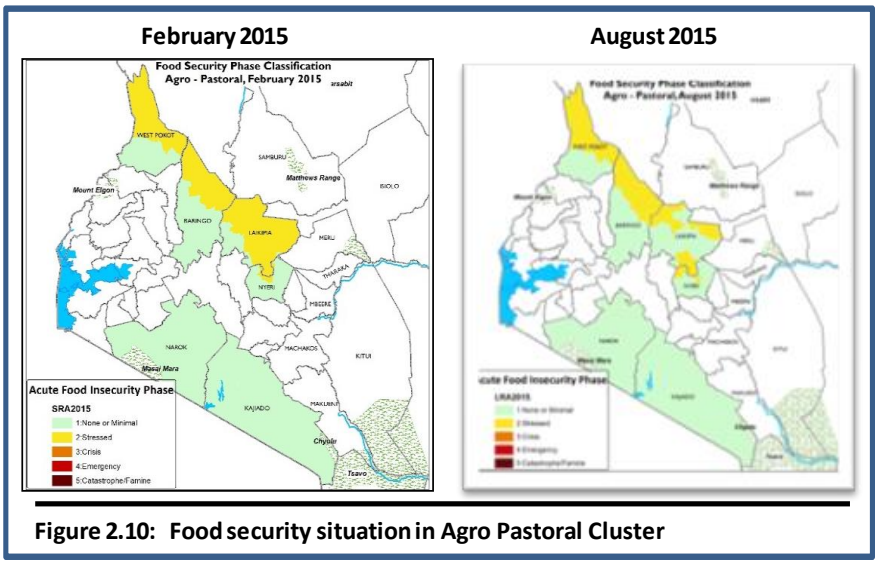

Figure 2.10: Food security situation in Agro Pastoral Cluster

The food security phase classification in the county remains unchanged compared to six months ago. The cluster is in the none/minimal phase (IPC Phase 1) except for Pastoral and Agro-Pastoral livelihood zones of West Pokot and Baringo, a few pockets in the Marginal Mixed Farming zone of Kieni and Pastoral and Marginal Mixed Farming livelihood zones of Laikipia which are in Stressed Phase (IPC Phase 2) as shown in Figure 2.10.

2.3.4 Rainfall Performance

The onset was timely in Nyeri County only where the rains set in the first dekad of April which was normal. In Baringo, Laikipia, Kajiado and Narok counties, the onset was late in the third dekad of March instead of the first dekad of the month normally. In West Pokot the onset was in the second dekad of March compared to the first dekad normally. The temporal rainfall distribution was generally poor in Narok, West Pokot, Nyeri, Baringo and Kajiado counties, where much of the rains were received in April and May. However, in Laikipia County,

distribution in time was generally fair. The eastern parts of West Pokot and Laikipia counties, western parts of Narok County and eastern and south-eastern parts of Kajiado County received over 110 percent of their normal rainfall. Cessation of the rains was timely in the third dekad of June in Baringo, West Pokot, Laikipia and Narok counties. It was also normal in Kajiado although it ceased in the second dekad of June. In Kieni, the rains ceased in the third dekad of May when normally they would cease in the second dekad of June.

2.3.5 Current Shocks and Hazards

The current shocks and hazards contributing to food insecurity in the Agro-Pastoral cluster include, outbreak of livestock diseases cases of Foot and Mouth Disease (FMD), Lumpy Skin Diseases (LSD), Contagious Bovine Pleuropneumonia (CBPP), and Contagious Caprine Pleuropneumonia (CCPP) in sheep and goats. Other hazards reported in this cluster were insecurity due to cattle rustling in Baringo and West Pokot, human-wildlife conflicts in Laikipia and frost bites in Nyeri and Laikipia. Maize Lethal Necrotic Disease was also reported in parts of Narok.

2.3.6 Impacts of Rainfall Performance, Shocks and Hazards

2.3.6.1 Crop Production

Most part of the cluster depends on the long rains season for crop production. The main food crops grown in the cluster are maize, beans and Irish potato. Other food crops include wheat, pigeon peas and finger millet. Wheat is mainly grown in Narok County. Although the area put under maize decreased marginally by five percent, production achieved was approximately 3.9 million 90-kg bags, which was 87 percent of the Long-Term Average (LTA). The area under beans and Irish potatoes declined by seven and 15 percent compared to the LTA respectively. However, bean and Irish potato production was 72 percent and 50 percent of the LTA respectively.The main crops grown under irrigation were maize, tomatoes and cabbages. The area under irrigation decreased by about 11 percent compared with the LTA. The production of maize and cabbage was at 82 and 97 percent of the LTA respectively while that of tomatoes increased by 12.3 percent compared to the LTA due to improved agronomic practices.

Maize stocks held in the cluster

The current maize stocks held in the county were 28 percent of LTA. Households held 15 percent of the LTA which was attributed to low production as a result of diversification, Maize Lethal Necrotic Disease, a closed season and a shift to produce maize during the short rains season in Narok. Stocks held by traders and millers were 58 and 65 percent of the LTA while National Cereals and Produce Board held eight percent above the LTA. Households in the Pastoral Livelihood zone were depending on markets for their maize supply.

2.3.6.2 Livestock Production

Pasture condition in the Pastoral and Agro-Pastoral livelihood zones was fair to poor compared to the normal condition of good to fair at this time of the year whereas in the Mixed Farming livelihood zone pasture condition was good which was normal. However, in the Pastoral areas of Kajiado County (Magadi, Ewaso, Imbirikani, Loodoklani, Namanga, and Mashuru) pastures were already depleted leading to livestock migration. Browse condition was fair in the Pastoral livelihood zone while in the Agro-Pastoral and Mixed Farming livelihood zones the condition

was good which was normal for this time of the year. Available pasture and browse was expected to last up to September and October in the said zones respectively which was normal. On-going conflicts between the locals and herders from Samburu, Isiolo and Baringo were limiting access to forage in Laikipia (Olmorane, Kimanju, Ilngweni and Mwenje as well as Baringo (Mukutani/Arabal and Kalabata). The body condition of cattle was fair while that of sheep and goats was good in the Pastoral Livelihood zone, while in the Agro-Pastoral and Mixed Farming Livelihood zones the body condition was good which was normal for this time of the year. The trend in livestock body condition was likely to remain stable across all livelihood zones.

The return trekking distances to watering points ranged between 7-10 kilometers in the Pastoral Livelihood zone; and 2.5 to 6 kilometres in the Agro-Pastoral and Mixed Farming livelihood zones, which was normal at this time of the year. The average watering frequency was once every two days across all livelihood zones. The milk production per household per day was 0.5-1, 2-3 and 4-6 litres in the Pastoral, Agro-Pastoral and Mixed Livelihood zones respectively, which was normal at this time. Milk production is expected to decline in the Pastoral and Agro-Pastoral livelihood zones as the forage condition deteriorates, water availability decreases and conflicts continue in the grazing areas. Milk consumption per household per day ranged between one to three litres across all livelihood zones compared with the normal 3-5 litres. The average price of milk per litre was Ksh.30-50 across all the livelihood zones, which was normal at this time of the year; except in Baringo where milk was retailing between Ksh.60-90 per litre. The Tropical Livestock Units (TLUs) were 8-14, 3-6 and 4-10 in the Pastoral, Agro-Pastoral and Mixed Farming livelihood zones respectively. Birth rates were normal across the livelihood zones in the cluster. Early migration of livestock from Laikipia to parts of Samburu, Baringo and Isiolo was reported; whereas in Kajiado, livestock migrated towards Machakos, Chyulu Hills and the Tsavo National park in Taita Taveta as the dry spell progressed. Livestock from Namanga and Central Kajiado had moved to Ildonyo, Kwenia, Singiraini, and Iloodokilani in Kajiado West which was normal. Migration routes and destinations were normal. A few unconfirmed cases of Foot and Mouth Disease (FMD), Lumpy Skin Diseases (LSD), Contagious Bovine Pleuropneumonia (CBPP), and Contagious Caprine Pleuropneumonia (CCPP) in sheep and goats were reported across the cluster. A quarantine that had been imposed in Chepkono market in Baringo County due to FMD was lifted in July 2015.

2.3.6.3 Water and Sanitation

The major sources of water in the cluster were rivers, piped water, springs, boreholes and shallow wells. Other sources include swamps, streams, roof catchment, dams, water pans and Lakes Bogoria and Baringo in Baringo County. Open water sources were recharged to about 80-90 percent of their capacity across the cluster and were estimated to last until October except in Narok and in the pastoral livelihood zone of Laikipia, where water pans may last up to the end of September due to siltation and poor retention capacity. The return distances to water sources were within the normal range of 1-3km except in the Pastoral and Agro-pastoral areas of Kajiado where distances had increased from the normal 3km to 7-8km. A few areas experiencing increased distances to water sources include Imbirikani and Matapato North households were covering 20 – 30km. The waiting time at the water source was within the normal range of less than 20 minutes except in the Pastoral and Agro-Pastoral Livelihood zones of Kajiado and Pastoral livelihood zones of Laikipia where waiting time ranged from 30-60 minutes. Most

households in the cluster did not pay for water at source while those who bought it from communal kiosks paid an average of Ksh. 2-3 per 20-litre jerry can. Households connected to piped water pay a monthly fee of about Ksh. 150. However, vendors charged a transportation fee of Ksh. 5-20 in Gakawa, Thengu and Mwiyogo in Kieni, West Pokot and Kajiado Counties and between Ksh. 15-20 in the Mixed Farming and Irrigated Cropping zones. Households also paid Ksh. 30-50 in the Pastoral, Marginal Mixed Farming and Agro-pastoral livelihood zones of Baringo for transportation. The water consumption per person per day remained within the normal range of 10-20 liters with the exception of Imbirikani, Oltinga, Matapato north and south, Imaroro and Magadi in Kajiado and in the pastoral zones of West Pokot where consumption was 8-10 litres per person per day. The latrine coverage ranged from 31 to 36 percent in Baringo, Kajiado, Narok, 56 percent in West Pokot and over 90 percent in Kieni and Laikipia. Households in the Pastoral Livelihood zones had a latrine coverage of about 10 percent across the cluster. Water treatment level was mainly done at communal water sources by the public health department. About 30 percent of households treated water in the Mixed and Marginal Mixed zones of Narok, Kajiado, Laikipia and Kieni either by use of chlorine, water tabs or boiling. Water treatment chemicals were not available in most areas. The main sources of water contamination included the use of agricultural chemicals especially from flower farms, sharing of domestic water sources with livestock, quarrying activities along the riverine and washing of vehicles near domestic water sources. About 50 percent of households washed hands at critical times in the Mixed and Agro-Pastoral Livelihood zones. Hand washing remained low in the Pastoral Livelihood zones. A cholera break-out was reported in Baringo County where 98 cases and two deaths were confirmed. Other water-borne diseases that were reported in the cluster include typhoid and diarrhea.

2.3.6.4 Markets and Trade

Market operations in the cluster were normal except in East Pokot sub-county of Baringo in Nginyang, Loruk, Amaya and Tangulbei markets were closed in May. The closure was a preventative measure to curb cattle rustling. The insecurity, occasioned by cattle rustling displaced people around Loruk and Yatya. The terms of trade were above the long-term average across the cluster except in Kajiado County. The terms of trade were more favorable in Kieni and Laikipia Counties where households could purchase 88 and 76 kilos of maize from the proceeds of the sale of a goat compared to the long-term average of 62 and 67 respectively. In Kajiado County, a household could purchase 62 kilos of maize from the proceeds of the sale of a goat compared to the long-term average of 75 kilos. The favourable terms of trade were as a result of better prices of goats than the long-term average and fairly stable prices of maize which were below their long-term average except in Kajiado and Kieni. Goat prices were lowest at Ksh. 1,948 in West Pokot and highest in Kieni at Ksh 3,963 while maize prices were lowest in West Pokot at Ksh. 34 per kilogram and highest in

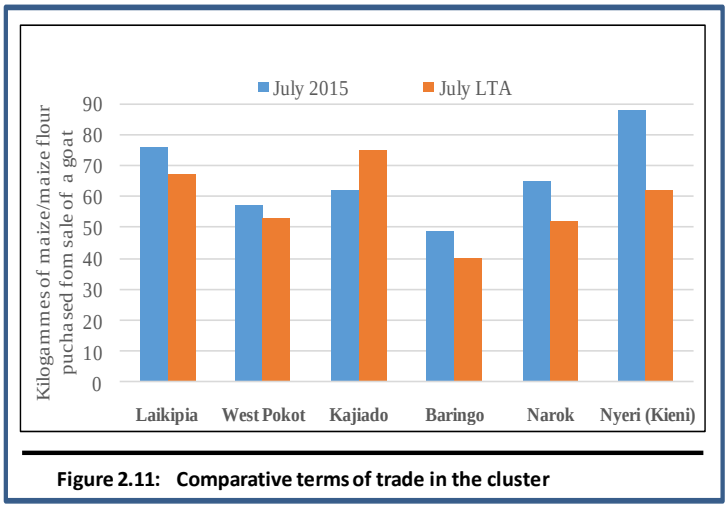

Figure 2.11: Comparative terms of trade in the cluster

Kajiado at Ksh. 50. The current trend was expected to be sustained by the prevailing good body condition of goats and increased supply of maize from on-going harvesting in various parts of the cluster.

2.3.6.5 Health and Nutrition

3.5.1 Morbidity and mortality patterns

The major diseases among under-fives reported across the cluster between January and June 2015 were upper respiratory tract infections (URTI), pneumonia, malaria, diarrhea, intestinal worms and skin diseases. Major diseases reported among the general population were URTI, skin diseases, eye infections, rheumatism, clinical malaria and diarrhea/typhoid. Across the cluster, the disease prevalence decreased with the exception of Baringo and West Pokot counties. A cholera outbreak was reported in Baringo County, with 98 cases and two deaths confirmed. The Under-five Mortality Rate (U5MR) and Crude Mortality Rate (CMR) across the cluster were below emergency thresholds of 2 deaths/10,000 persons/day and 1 death/10,000persons/day respectively.

3.5.2 Immunization and Vitamin A supplementation

The percentage of the fully immunized child (FIC) for Baringo, Kajiado, Kieni, Laikipia, Narok and West Pokot counties were at 58.3 percent, 65.5percent, 95percent, 71percent and 67.3percent respectively between the January to June 2015 reporting period. Across the cluster, the percentage of FIC was below national targets of 80percent except for Kieni. Vitamin A supplementation among children aged (6-11 months) and (12-59 months) was below national targets of 80percent except in Laikipia and Kieni. The decline in vitamin A supplementation in Narok and West Pokot was attributed to poor reporting and documentation, untimely supplies and reduced outreach activities.

3.5.3 Nutrition Status and Dietary Diversity

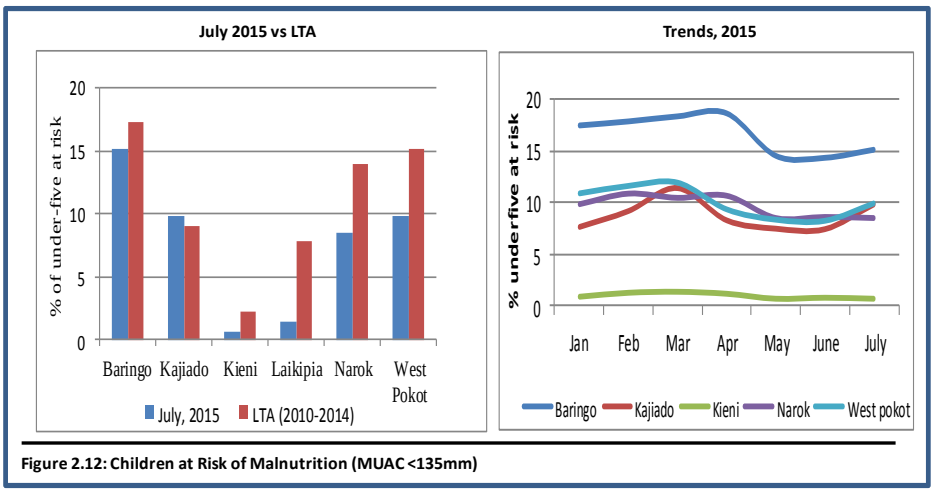

Figure 2.12: Children at Risk of Malnutrition (MUAC <135mm)

The percentage of under-fives at risk of malnutrition by Mid Upper Arm Circumference (MUAC) <135mm in the month of July 2015 in Baringo (15%), Kajiado (10%), Kieni (1%), Laikipia (1.5%), Narok (8.5%) and West Pokot (10%) respectively. The proportion of children at risk in all counties was below their respective long-term averages (LTA) except in Kajiado County as highlighted below. In Kajiado the increase in the proportion of children at risk was attributed to reduced household milk availability due to deteriorating rangeland conditions. Across the cluster, the trends in percentage at risk of malnutrition remained stable despite a slight

increase reported in Baringo, Kajiado and West Pokot in the month of July 2015 as highlighted below.

Meal consumption among the general population in the Pastoral livelihood zone was 1-2 meals per day while in the Marginal Mixed Farming and the Mixed Farming was 2-3 meals per day. Meals consumed include; maize, porridge and *"ugali",* milk, beans, local vegetables and *"githeri".* The food consumption scores across the cluster improved slightly with poor food consumption scores at 15percent in May 2015 compared to 27percent reported in 2014 during the same period.

2.3.6.6 Education

There was a general increase in primary school enrolment ranging from 1.1 to 5.8 percent across the cluster. West Pokot recorded the highest increase at 5.8 and 4.3 percent for boys and girls respectively. The growth was a normal annual population growth. Similarly, there was normal growth in Early Childhood Development and Education (ECDE) enrolment in all the counties within the cluster except Baringo where enrolment reduced by 5.5 and 6.0 percent for boys and girls respectively due to insecurity. Participation was generally good with most counties recording attendance rates above 85 percent. The primary school retention rate was generally high across the cluster as demonstrated by very low dropout rates. Narok County recorded a drop-out rate of less than one percent for both boys and girls while Kajiado recorded the highest dropout rates of above four percent followed by Baringo with 5.6 percent attributed mainly to cultural practices. The transition rate from ECDEs to primary was above 90 percent in most of the counties in the cluster except in Baringo and West Pokot which recorded 78.4 and 76.6 percent respectively. The transition from primary to secondary school was below the current national threshold of 70 percent except in Nyeri where it stood at 97 percent. Narok and Kajiado recorded the lowest transition rates of 55.8 and 57 percent respectively. A total population of 341,574 was beneficiaries of Homegrown School Meal Program (HGSMP), Regular School Meal Program (RSMP), and Expanded School Meal Program (ESMP) which was a decline from the previous caseload of 356,060. There were other School Meal Programs as a result of local initiatives. For example, Community School Meal Programme and Njaa Marufuku in Nyeri with beneficiaries of 9,043 and 1,690 respectively.

2.3.7 Coping Mechanisms

The coping strategy index (CSI) in May 2015 for the cluster indicated that households were engaging in coping strategies more frequently compared to Dec 2014 with an exception of Kajiado and Narok where they engaged less frequently. In Baringo, West Pokot, Laikipia and Nyeri (Kieni) the CSI was 27 in May 2015 compared to 21 in December 2014 but less when compared to May 2014 where CSI was 38. In Kajiado and Narok; the CSI was 22 in May 2015 compared to 28 in December 2014 indicating that households were engaging in coping strategies less frequently. The coping strategies being employed include; relying on less preferred and less expensive food being employed by 65.7 percent of the households, borrowing of food or relying on social networks (61.8 percent) and limiting potion sizes at meal times (67.7 percent), restricting consumption by adults in order for small children to eat (63.4 percent) and reducing the number of meals eaten in a day (56.9 percent).

2.4 The Southeastern Marginal Agriculture Livelihood Cluster

2.4.1 Cluster Background

The South Eastern Marginal Agriculture cluster comprises of five counties namely; Makueni, Kitui, Embu (Mbeere), Tharaka Nithi (Tharaka) and Meru (North). It covers an area of approximately 47,348 square Kilometres and has an estimated population of 3,032,460 persons. The two main livelihood zones in the cluster are Marginal Mixed Farming Livelihood zone and Mixed Farming Livelihood zone constituting 65 percent and 26 percent of the population respectively (Figure 2.13). Crop production is the major source of income for the households and contributes to 40 percent of total income. Other sources of income are livestock production and formal employment which represent 35 percent and 25 percent respectively.

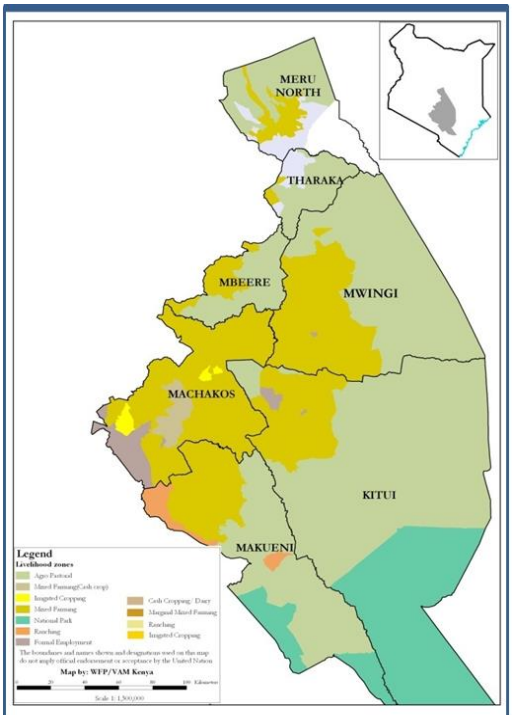

Figure 2.13: Southeastern marginal agricultural cluster livelihood zones

2.4.2 Current Factors Affecting Food Security

The main factors affecting food security across the cluster include: low use of appropriate crop husbandry practices, livestock diseases, human-wildlife conflict and non-diversified agriculture.

2.4.3 Cluster Food Security Situation

2.4.3.1 Current Food Security Situation

The current food security phase classification for the cluster is in none/minimal phase with an exception of Kitui County and the Marginal mixed livelihood zones of Mbeere, Meru North, Tharaka and Makueni Counties, which are classified under "Stressed" (IPC Phase 2). The cluster is mainly dependent on the short rains for crop production. Performance of the long rains was poor resulting to a decline in production of maize, cow peas and green grams at 48, 59 and 65 percent of the Long Term Average (LTA) respectively. The current stocks held by households are approximately 82 percent of LTA. Meal frequency is normal at between two and three meals per day. Pasture and browse, were fair to good and were favorably comparable to normal. Water consumption ranged between 15 and 20 liters per person per day (lpppd) except in the Marginal mixed livelihood zone of Mbeere, Meru North, Tharaka and Makueni counties, that was at a below normal of 10-15 liters pppd compared to 20-30 liters pppd. The percentage of children below five years at risk of malnutrition based on Mid Upper Arm Circumference (MUAC) measurements remained stable across the cluster in the range at 7 to 14.9 compared to the normal of 7 to 18.6 with an exception of Mbeere at 3.5 percent. The mean coping strategy index is currently stable at 22. Current livelihood coping strategies include charcoal burning and sand harvesting.

2.4.3.2 Food Security Phase Classification

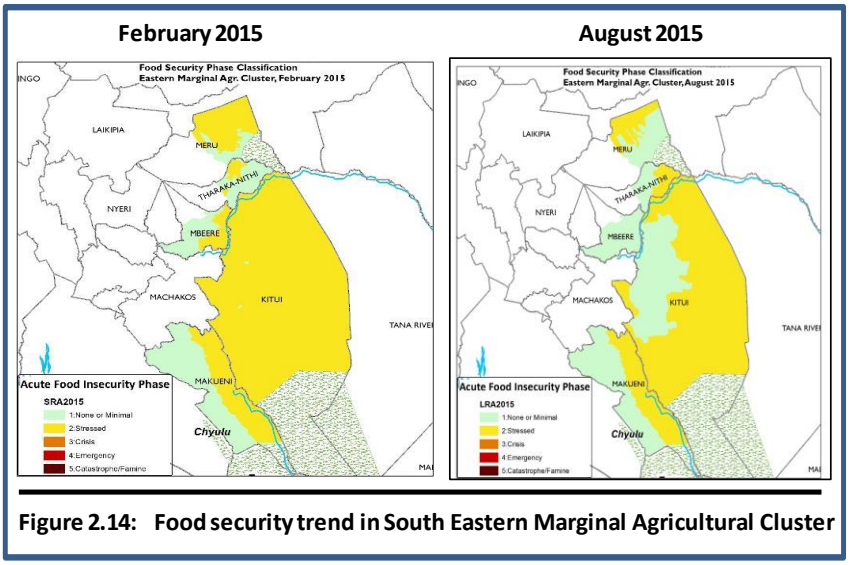

Figure 2.14: Food security trend in South Eastern Marginal Agricultural Cluster

The cluster was classified in "Minimal" (IPC Phase 1) with an exception of Kitui County together with Marginal mixed livelihood zones of Mbeere, Meru North and Makueni Counties which are "Stressed" (IPC Phase 2). The 2014 short rains assessment the classification is similar to the 2015 long rains (Figure 2.14). Pasture condition was generally fair in the larger part of the cluster and remains in the same status in comparison to the previous season. Water consumption stood at an average of 15-20 liters pppd in the mixed farming zones and remained at 10-15 liters pppd in the Marginal mixed farming livelihood zones. Milk availability at household level during the two seasons was similar at 0.5-2 liter per day compared to 1-3 liters per day during normal. The terms of trade remained the same as households could purchase between 88-134 kilograms of maize from the sale of one goat, which is normal. The proportion of children at risk of malnutrition based on MUAC was within the seasonal norms range of 7 to 14.9. The Coping Strategy Index (CSI) for May 2015 was 22 percent during the LRA 2015 compared to 23 percent in December 2014 during the SRA 2015 implying that households were not engaging frequently in consumption based strategies. The under-five mortality rate has remained below 1/10,000 per day.

2.4.4 Rainfall Performance

The onset was timely in all counties in the cluster except Embu and Makueni, where rains began in the third dekad of March compared to the second dekad normally. In Kitui and Meru North, the onset was timely in the third dekad of March whereas in Makueni and Tharaka, rains began in the second dekad of March. Temporal distribution across the cluster was generally poor except for Tharaka and Meru North. Spatial rainfall distribution was uneven. Most of the areas in the cluster received above normal rainfall of 110-125% with most parts of Meru, Tharaka Nithi and Embu counties receiving between 110-140%. The lower parts of Makueni and Kitui received over 200-350% of normal rainfall. Cessation was normal in all counties across the cluster except Makueni where rains a dekad earlier than usual.

2.4.5 Current shocks and hazards

The current shocks and hazards across the cluster include crop pests and diseases, human-wildlife conflict in Meru and Mwingi North and Central sub counties, poor temporal distribution of rains and insecurity in area of Meru. Livestock diseases include Contagious Caprine Pleuro-

Pneumonia (CCPP), Pests des Petits Ruminants (PPR) in goats and Newcastle Disease (NCD) in poultry.

2.4.6 Impacts of Rainfall Performance, Shocks and Hazards

2.4.6.1 Crop Production

The cluster is mainly dependent on the short rains for crop production. The main food crops grown are maize, cow peas and green grams. Other crops include sorghum, beans, and pigeon peas. Area put under maize, cowpeas and green grams were three, nine and two percent respectively above the LTA. However, there was a decline in production for all the crops attributed to poor rainfall performance. Production of maize, cow peas and green grams were 48, 59 and 65 percent of the LTA respectively.

The area under irrigation increased by nine percent attributed to more land being opened for irrigation and agronomic interventions by various stakeholders. There was a slight decrease in production of Irish potatoes by one percent, while there was an increase of 40 and 18 percent for tomato and kales production respectively. The current stocks held by households are 81 percent of Long Term Average (LTA) attributed to increased stock held by Millers and NCPB at five and 49 percent above the LTA respectively. In Embu and Kitui counties, the stocks are expected to last for four months compared to the normal two and three months respectively while in Meru North and Tharaka, the stocks are expected to last for about two weeks compared to the normal one and six months respectively. Current stocks in Makueni County are expected to last for three months compared to the six months average.

2.4.6.2 Livestock Production

Pasture condition is good to fair except in Ngaamba in Kilome sub county and large parts of Kibwezi East in Makueni, Kitui South (Mutha, Kamutei, Athi, Ikutha), Kitui Rural (Kanyangi), Kitui East (Endau and Zombe), Mwingi West (Thaana Nzau), Mwingi Central (Sosoma, Kivoo) and Mwingi North (Ngomeni) and in the Agro Pastoral livelihood zone of Meru where the condition is fair to poor. The pasture is expected to last till the short rains season except in the Marginal Mixed Farming livelihoods where it will last till the end of September. Browse is good to fair across the livelihood zones in the cluster. Crop residues are used to supplement livestock feeds. Livestock body conditions are good to fair across the livelihood zones with exceptions of parts of Kilome subcounty particularly Ngaamba & Kasikeu, parts of Kibwezi East, West, lower Mbooni (Kalawa) and Makueni (Kathonzweni and Nguu) where the conditions are fair to poor.

Milk availability ranged between half a litre to two litres per day in Marginal Mixed Farming livelihood zones of Tharaka Nithi, Kitui and Makueni and Agro pastoral livelihood zone of Meru. In the Mixed Farming and Rain Fed livelihood zones in Meru and Embu, availability of milk ranges between 2-3 litres per day. Milk consumption at household level ranges from 1-2 liters per day lower than the normal 3-5 litres per day. The cost of milk ranges between Ksh.60-70 compared to a normal of Ksh.45-55 per liter. Birth rates are normal across the livelihood zones in the cluster.

The current tropical livestock units (TLU) in the cluster ranges between 2 - 3 compared to normal of five. Poor households have 1-2 TLUs, medium 2-3 and above 10 TLUs for wealthy

households. Return trekking distance from grazing areas to water in the Marginal Mixed Farming livelihood zones of Tharaka, Makueni, Embu and Kitui were normal ranging in between 5-8 kilometres, in the Mutha, Kamutei, Endau, Kavaani and Mandongoi (Ngomeni), Sosoma and Kaningo areas of Kitui, the return distances were also normal at 15-20 kilometres. In the Agro-Pastoral Livelihood zone in Meru, distances were normal at 20-30 kilometers. In the Mixed Farming and Rain Fed livelihood zones, distances were normal between 2-4 kilometres. Water for livestock is expected to last till end of October. Frequency of watering livestock in the Marginal Mixed and Agro pastoral livelihood zones is on alternate days while in the Mixed Farming and Rain Fed livelihood zones is daily, depicting a normal situation.

Livestock have migrated from Isiolo, Wajir, Mandera, Moyale and Garissa to Meru County in search of pastures and water through Tigania–Igembe North, Isiolo–Igembe North, Merti–Kinna–Igembe North and Garissa/Mandera–Igembe North. Movement of livestock in search of water and pasture within the livelihood zones in the cluster has also been reported, and was normal. Contagious Caprine Pleuropneumonia (CCP) and Lumpy Skin Disease (LSD) have been reported in Tharaka Nithi, Makueni and Meru. Pests des Petits Ruminants (PPR) was reported in Mwingi North, Mwingi Central, Kitui Rural, Kitui East and Kitui South. Newcastle disease has been reported in poultry across the cluster.

2.4.6.3 Water and Sanitation

The main sources of water for domestic use are boreholes, springs, water pans, dams, shallow wells, piped water, roof and rock catchments. Majority of the open water sources were recharged to over 80 percent of their capacity although most have silted up. About 40 percent of pans have dried up in the cluster with water in the remaining ones is expected to last until September except for in Mbeere which are expected to last until October. Return distances are within the normal range of 1-3 km in the Mixed and Rain fed crop zones across the cluster except Kitui where they range from 4-8km. Return distances in the Marginal Mixed farming zones range from 4-10km except Katwagia in Mbeere, Kaanziko, Simisi, Sosoma, Endau and Ngomeni in Kitui County where return distances have increased slightly from 4-10km to 5-12 km. Most households are waiting for less than 20 minutes to collect water which is normal. However, households in Kaanziko, Simisi, Sosoma and Kaningo in Kitui are unusually waiting for about 2 hours occasioned by drying of water pans and low recharge of boreholes in the area. The cost of a 20 litres jerrycan range from Ksh. 2-6 in the Rain fed and Mixed farming zones. In Mbeere, Meru North and the Marginal Mixed farming zones across the cluster range from Ksh. 10 - 30 per 20 litres jerrycan. Sosoma in Mwingi Central rely on private vendors who sells water at Ksh.40 as the only borehole operational is salty. Water consumption per person across the cluster ranged from 10 - 20 liters per person per day compared to the normal 20-25 litres per person per day. Water treatment at household level is below 30 percent mainly attributed to lack of awareness and is either by boiling or use of water treatment chemicals. Latrine coverage across the cluster ranges between 63 percent in Tharaka to 86 percent in Makueni. Though no water borne disease outbreaks have been reported, a few cases of malaria, bilharzia and diarrhoea remain prevalent in most parts of the cluster. Main sources of water contamination are open defecation and sharing domestic sources of water with livestock and wildlife.

2.4.6.4 Markets and Trade

Market operations in the cluster were normal. The price of maize mostly remained stable between June and July with prices increasing by six percent in Kitui due to the crop failure during the season that affected the supply. Prices reduced by 13 percent in Meru North. Prices were mostly at their long term averages except in Makueni and Tharaka that were seven and 21 percent respectively. Counties were below the cluster average and consistently above cluster average in Embu (Mbeere) County. Prices are projected to remain stable due increased supply of the commodity to the market from on-going harvest in parts Embu, Kitui and Meru and maize importation in Makueni from neighboring Taita and Kajiado Counties.

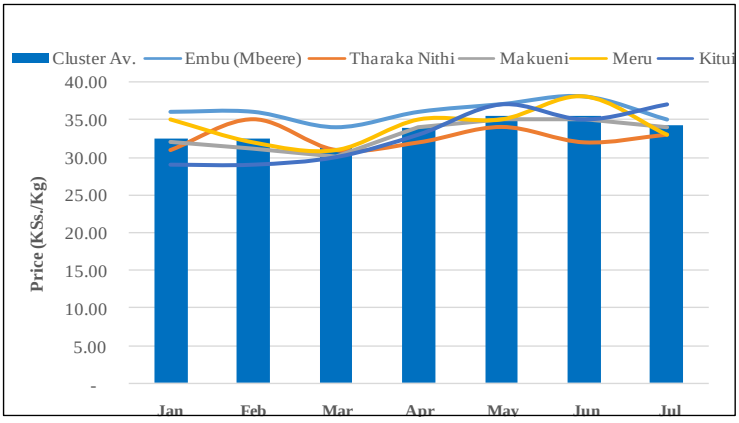

Figure 2.15: Comparative maize price trends in the cluster

2.4.6.5 Health and Nutrition

2.4.6.5.1 Morbidity and mortality patterns

The leading causes of morbidity among the general population and under five years are upper respiratory tract infections (URTIs), Malaria, pneumonia, diseases of the skin, intestinal worms and diarrhea.

2.4.6.5.2 Immunization and Vitamin A supplementation

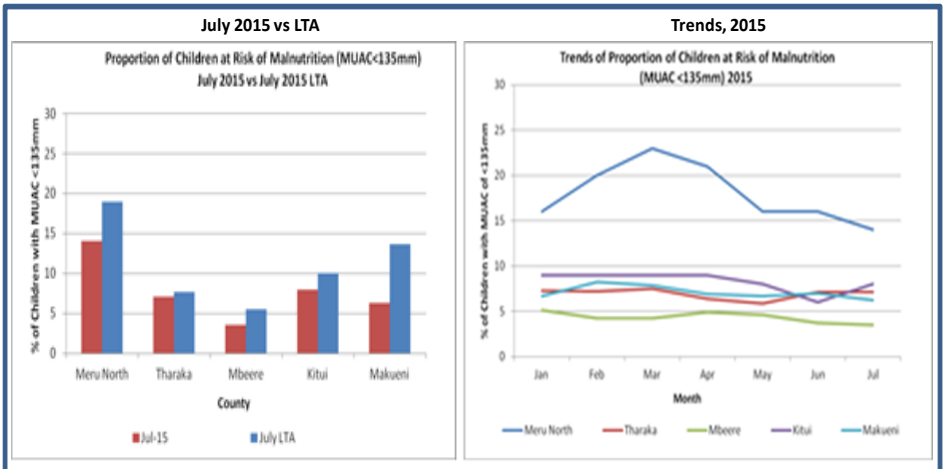

Figure 2.16: Children at Risk of Malnutrition (MUAC <135mm)

The percentage of fully immunized child (FIC) across the cluster in as from January to June 2015 ranged from 51 percent reported in Meru North to 84.5 percent in Mbeere. The improved immunization coverage in Mbeere is attributed to increased outreaches, mop ups and supplementation in the Early Childhood Development (ECD) centers. Vitamin A supplementation for children 6 to 59 months was below the national target of 80 percent across the cluster with Meru north and Tharaka-Nithi reporting the lowest coverage of 14 percent.

2.4.6.5.3 Nutrition Status and Dietary Diversity

The proportion of children at risk of malnutrition measured by Mid Upper Arm Circumference (MUAC <135mm) was stable across the cluster with exception of Tharaka Nithi which was slightly above normal in the month of July as illustrated in Figure 2.16.

2.4.6.6 Education

There was a general increase in enrolment across the cluster with the highest recorded in ECDE at 5.3 percent in Kitui County and in Primary 2.6 percent in Embu County. School attendance rates were high ranging from 98 to 99 percent with Tharaka Nithi County recording the lowest rate. Dropout rates ranged between 0.06 to 2 percent with Makueni recording the least 0.06 percent. Reasons for drop out varied across the cluster and included child labour, poverty, teenage pregnancies, early marriages, and cultural and religious cults. Transition rates from ECDE to Primary ranged from 90 to 96.5 percent while from Primary to post Primary institutions was 88 to 99 percent. Makueni registered the lowest transition rate of 88 percent from Primary to post Primary institutions. School Meals Programmes in this cluster were Home Grown School Meals Programme and Community School Meals Programme. The School Meals Programme had challenges of water shortage in some schools. However, the progammes led to high rates of enrolment, attendance, retention and better performance of pupils.

2.4.7 Coping Mechanisms

The Coping strategy index was 22 in May 2015 compared to 23 in December 2014 and 10 in May 2014. Households were employing coping strategies more frequently compared to a similar period last year but a slight improvement was noted when compared to December 2014. In May 2015, 12 percent of households were not employing any coping strategies compared to 6.3 percent in December 2014. Although the cluster is short rains dependent; crop and livestock production realized during the long rain season was better and thus the situation is expected to improve further. Coping strategies commonly employed in the cluster include; reduction of meals in quantity and quality, increased engagement in casual labour, charcoal burning, sand harvesting, and sale of firewood and consumption of less preferred but cheaper foods.

2.5 The Coastal Marginal Agricultural Livelihood Cluster

2.5.1 Cluster Background

The cluster is located in the south most tip of Kenya. It covers an estimated area of about 47,861 square kilometers, with a population of 2,182,554 persons (KNBS, 2009), and consists of Kwale, Kilifi, Lamu and Taita Taveta Counties (Figure 1). Major livelihood zones in the cluster include; Mixed Farming (60 percent of population), Trade/ Business/ Formal employment/Casual labour (21 percent), Marginal Mixed Farming (11 percent) and others (8 percent). Major source of income for

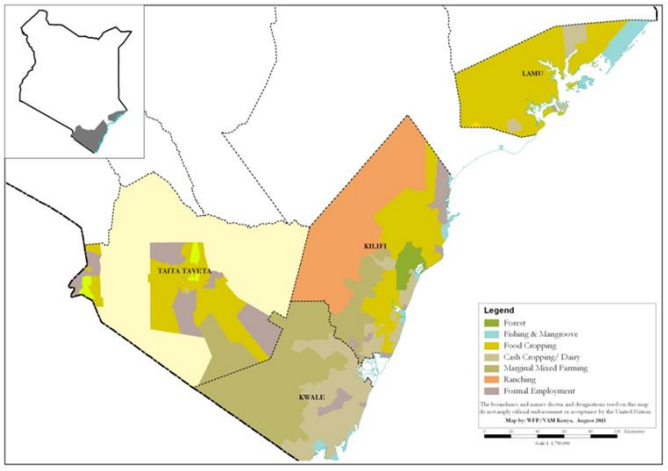

Figure 2.17: Coast marginal agricultural cluster livelihood zones

the livelihoods are livestock production representing 40 percent of total household income, crop production and waged labour accounting for 30 percent each respectively.

2.5.2 Factors Affecting Food Security

Main factors affecting food security in this cluster include; cumulative effect of poor rainfall performance, high food prices, low adoption of modern farming technologies, minimal use of farm inputs, human-wildlife conflict, low use of early maturing and drought tolerant crop varieties, endemic livestock diseases and insecurity.

2.5.3 Cluster Food Security Situation

2.5.3.1 Current Food Security Situation

The current food security phase classification for the cluster is "None" or "Minimal" phase except some pockets in Kwale and Taita Taveta Counties which are classified as "Stressed" (IPC Phase 2). Maize production increased to 37.9 percent above the long term average, attributed to provision of subsidized inputs and tractor ploughing by the county government. Consumption of meals per person per day was within normal range of two to three meals per day except in Taita Taveta County where it was one to two meals per person per day. Pasture and browse condition ranged between fair to good comparing favorably to normal across the cluster, the condition is expected to last for two to three months except in Taita Taveta where pasture will last for one month especially in the Mixed Farming livelihood zone. Domestic water consumption ranged between 15 and 20 litres per person per day (lpppd) across all livelihoods with an exception of mixed farming crop production/livestock livelihood zone of Taita Taveta at 10 litres per person per day which is below the normal 20 litres pppd. The percentage of children under -five at risk of malnutrition based on Mid Upper Arm Circumference (MUAC) measurements has remained stable when compared to to the long term average (LTA) and ranged between 3.3 - 6.6 which is similar to the long term average of 3.2 - 6.5. The Coping Strategy Index for the cluster decreased to 17 in May 2015 compared to the average of 20 for May 2014 implying households are employing consumption related coping strategies less frequently.

2.5.3.2 Food Security Phase Classification

The cluster was classified in "Minimal" phase classification, (specifically for Lamu and Kilifi) and in "Stressed" phase for Kwale and Taita Taveta during the Short rains. The food security situation marginally improved during the 2015 Long rains with most parts of the cluster retaining the Minimal phase except for Taita Taveta and the livestock livelihood zones of Kwale Counties which remained in "Stressed" (IPC Phase 2) as shown in Figure 2.18. Water consumption was normal

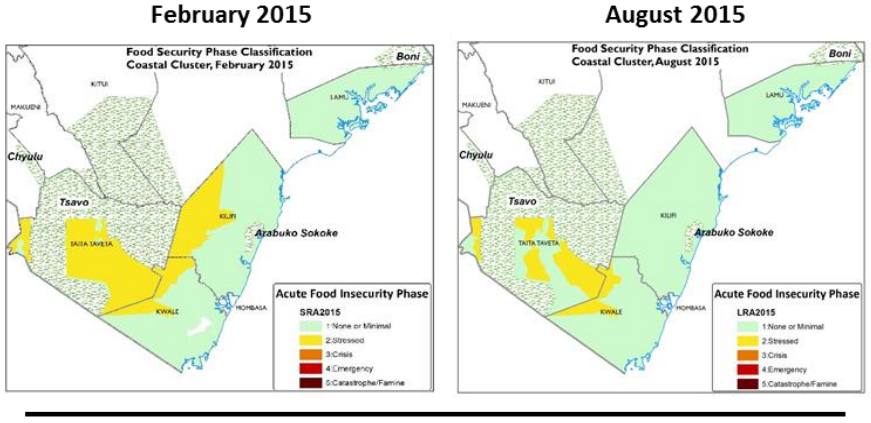

Figure 2.18: Food security situation in Coastal Marginal Agricultural Cluster

at 15 to 20 litres pppd except for Taita Taveta county which reduced to 10 to 15 litres pppd compared to 15 to 30 litres in February. Meal frequency was 2 - 3 per day with dietary diversity of 2 to 4 food groups similar to six months ago. Livestock productivity remained stable since February contributing to milk availability of one to three litres of milk across the cluster. Pasture and browse, was fair to good and was favorably comparable to the previous season across the cluster. The proportion of children 'at risk' (MUAC<135mm) of malnutrition is stable. The under-five mortality rate has remained below 1/10,000/ day.

2.5.4 Rainfall Performance

The onset was timely in the second dekad and third dekad of March in Kilifi and Lamu counties respectively. However, it was late in Kwale and Taita Taveta counties where it began in the second dekad of March instead of the first dekad. The temporal distribution was poor in Taita Taveta and Lamu counties, fair in Kwale and good in Kilifi county. Most areas in this cluster received more than 110-125 percent of normal rainfall. The eastern parts of Taita Taveta, the lower parts of Kilifi counties and the northern parts of Kwale county received over 140-200 percent of normal rainfall. The southern parts of Kwale and central to northern parts of Lamu counties received 75-90 percent of normal rainfall. Cessation was in the first dekad of June which was normal for Kilifi and Lamu but early in Kwale. In Taita Taveta, cessation was also early in the third dekad of May. Off-season showers were experienced in July across the cluster.

2.5.5 Other Shocks and hazards

Current shocks and hazards in the cluster include; human-wildlife conflict that led to crop destruction in Kwale, endemic livestock diseases such as Contagious Caprine Pleuropneumonia (CCPP), Contagious Bovine Pleural Pneumonia (CBPP) and Trypanosomniasis which have continued to reduce livestock productivity. Insecurity in Lamu East sub-county led to desertion of some farms and grazing areas. There was an upsurge of water-borne diseases and malaria in Kilifi and livestock migration in to the ranching parts of the county from Tana River.

2.5.6 Impact of Rainfall performance, Shocks and Hazards

2.5.6.1 Crop production

The cluster is dependent on long rains for crop production, except Taita Taveta County that is more dependent on the short rains. Crop production contributes 10 to 20 percent of cash income in the cluster. Main crops grown are maize, cassava and cowpeas. Overall area under crops increased by 29 percent compared to LTA with increase in area for maize, cassava and cowpeas being 30, 13 and 48 percent respectively. Production increased by 38 and 48 percent for maize and cassava but declined by six percent for cowpeas. Other important food crops grown in the cluster are rice and green grams covering an area of 1,048 and 3,013 hectares respectively. Production realized from rice and green grams was 10,480 and 35,105 bags respectively.

The main crops grown under irrigation include banana, green maize, rice and tomato. The area under irrigation increased by 13, 8 and 21 percent above the LTA for banana, green maize and rice respectively. Production of banana and rice increased by 47 percent and 62 percent respectively while green maize production decreased by 18 percent of the LTA. The overall maize stocks in the cluster increased by nine percent of LTA, attributed to increased area under cultivation and improved

agronomic practices. Households, millers and NCPB are holding 21, 3 and 11 percent than LTA respectively, while traders have 93 percent of the LTA stocks.

2.5.6.2 Livestock Production

Pasture condition is good to fair across the cluster which is normal at this time of the year, except in parts of Taita Taveta, Kilifi and Kwale where the conditions are fair to poor. The pasture is expected to last till the next season across the cluster except in Taita Taveta's Mixed Farming (Food Crops/Livestock) zone which will last till end of September. Insecurity in parts of Lamu County is limiting access to grazing areas. Browse conditions are good to fair across the livelihood zones. Crop residue (maize stovers) is used in livestock supplementation. Livestock body condition is good to fair across all livelihood zones and is expected to last until the next season. In the Mixed Farming (Horticulture/Dairy) livelihood zone in Kwale and Taita Taveta counties, milk availability ranges between 5-8 liters per cow per day above the normal of five liters while in the Mixed Farming (Livestock) zone, the availability is 1.5 liters per day compared to normal of half a liter. In Kilifi and Lamu counties, the availability is 3-6 litres in Mixed Farming livelihood zones, while in the other zones it ranges between 1-2 liters. Household milk consumption ranges between 1-2 liters across the livelihoods zone except in Mixed Farming (Cash and Dairy) in Kilifi where consumption is 2-3 liters per day. In Kilifi and Taita Taveta Counties, the cost of milk ranges between Ksh.40-60 per liter while in Kwale and Lamu it was Ksh.50-70 per liter compared to normal of Ksh.70-80.

Birth rates are normal for all the livestock types across the cluster. Tropical livestock units (TLU) ranged from 2-5 for poor households, 6-8 for medium households and more than 20 for wealthy households. Return trekking distance to water sources ranged between 3-4 kilometers except in the ranching areas of Kilifi where the distance is 12 kilometers. Distances have reduced in Mixed Farming livelihood zones of Kwale from 2-3 kilometers to less than one kilometer due good recharge rates of open water sources. Livestock from Kajiado County and North Eastern have migrated to Taita Taveta while others from Tanzania through Lungalunga to Kwale. Suspected Foot and Mouth Diseases was reported in Kishushe areas in Taita Taveta County and some parts of Kwale county while Contagious Caprine Pleuropneumonia, Trypanosomiasis, were reported across the cluster.

2.5.6.3 Water and Sanitation

Main sources of water in the county are rivers, boreholes, water pans, dams, springs, natural ponds, small lakes, shallow wells, djabas and piped water. Recharge of the open water sources was to 70-100 percent of their capacity except in some parts of Taita Taveta and Kilifi Counties where water sources were recharged to 30-60 percent of their capacity. Return distances to water sources are within the normal range of 1-3 kilometres. However, distances have increased from two to 8 kilometres in parts of Taita Taveta County due to drying up of the water sources in these areas .Waiting time at the source is within the normal range of 5-10 minutes across the cluster with the exception of the ranching zones of Kilifi County where it has tripled from 10-15 minutes to15-45 currently. Waiting time has also remained within the normal range of 30 minutes in the mixed farming (livestock/irrigation/cropping) zones of Taita Taveta. However, waiting time has increased to four hours from the normal 30 minutes in parts of Taita Taveta and Kwale counties attributed to water rationing, reduced yield at the source and increased population congesting at the water points. Cost of water has remained within the normal range of

Ksh.2-5 per 20 litre jerican in the cluster except Taita Taveta where the cost is normal at Ksh.5-10 per 20 litres jerrycan. Vendors are selling the water at Ksh. 20-50 across the cluster. Water consumption is within the normal range of 15-20 litres per person per day with the exception of the ranching zone of Kilifi and mixed farming (crop/livestock) of Taita Taveta Counties where consumption is lower at 10-12 litres litres per person per day compared to 15-20 normally. Latrine coverage in the cluster is from 53 percent in Kwale and 89 percent in Taita Taveta.

2.5.6.4 Markets and Trade

The cluster is served by several markets for both crop and livestock trade. Operations in these markets are normal in cluster except in Lamu County (Mpeketoni, Witu, Hindi, Mokowe, Faza and Kiunga which experienced disruptions due to insecurity for most part of the year. The average price of maize for the cluster gradually increased from January to June and slightly declined in July. Maize price was stable and above the cluster average in Taita Taveta while in Lamu prices steadily increased and below cluster average. In July, the price of a kilogram of maize was Ksh. 34, 38, 40 and 41in Kilifi, Lamu, Kwale and Taita Taveta counties respectively. In livestock market, goat prices ranged from Ksh. 2,200 in Kilifi to Ksh.3,700 in Lamu. The cluster also benefits from cross border trade with Tanzania and inter-county trade with Tana River and Mombasa Counties.

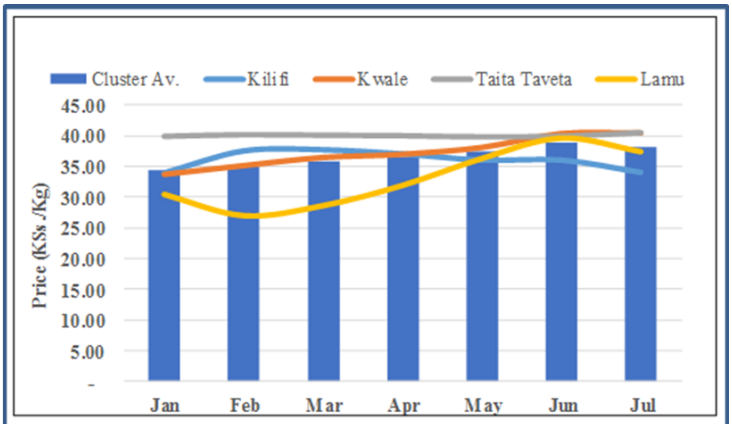

Figure 2.19: Comparative maize price trends in the cluster

2.5.6.5 Health and Nutrition

2.5.6.5.1 Morbidity and mortality patterns

The most common diseases reported in the first half of year for the general population were Upper Respiratory Tract Infections (URTIs), confirmed malaria, diarrhoea ,Urinary Tract Infection (UTI) and skin diseases. The morbidity trends indicated increased incidences of these diseases with a notable increase of malaria cases in Kilifi and Lamu. Common diseases affecting children less than five years were URTI, malaria, diarrhea, skin diseases, and pneumonia Diarrhea. The number of diseases reported during this period increased across the cluster except in Lamu where diarrhoea cases decreased by 10 percent and seven percent for both the under fives and general population attributed to either improved hygiene practices or low reporting rates by health facilities which have closed down as a result of insecurity. During the period, 29 Cholera cases were reported in Kilifi with one patient succumbing to death. There were 78 suspected measles cases reported in 2015 representing an increase of 16 percent compared to the same period last year in Kilifi.

2.4.6.5.2 Immunization and Vitamin A supplementation

Fully Immunized Child (FIC) coverage was within the normal target of 80 percent. Vitamin A supplementation coverage for children 6- 59 months was however below the national target of 80 percent, attributed to poor health seeking behavior after children receive measles vaccine after nine months, and possibly, poor documentation

2.5.6.5.3 Nutrition Status and Dietary Diversity

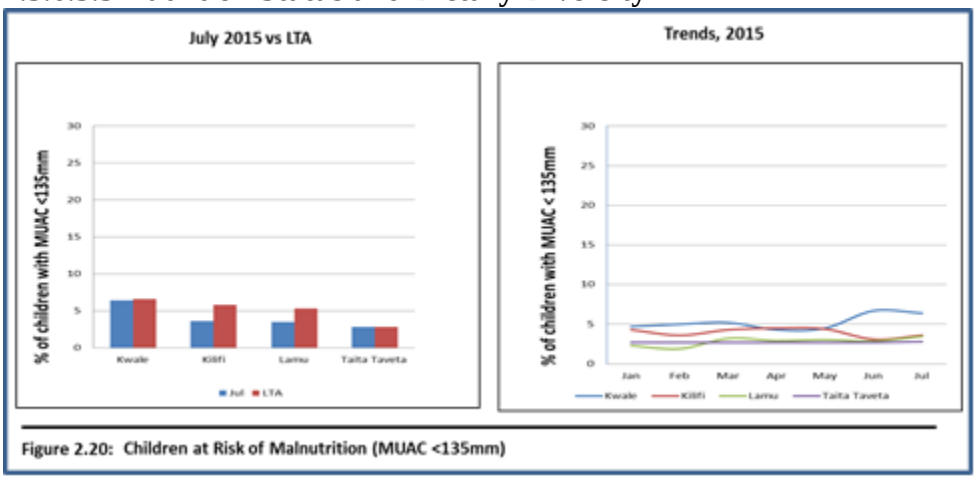

Figure 2.20: Children at Risk of Malnutrition (MUAC <135mm)

In July 2015 the percentage children at risk of malnutrition by Mid Upper Arm Circumference (MUAC) were below the LTA. The trends of children under five at risk of malnutrition based on MUAC less than 135mm were stable for Taita Taveta and Lamu counties whereas Kilifi County is has been on improving from May and marginally deteriorating in Kwale. The Dietary diversity was 2-5 food groups consisting of staples, pulses, vegetables ,dairy and fish ,however in Taita Taveta and parts of Kwale counties the dietary diversity is at 2-3 food groups. Frequency of meals taken per day ranges between two to three meals which is normal .

2.5.6.6 Education

Enrolment in primary schools generally increased across the cluster ranging from 5.4 percent in Lamu to 19.8 percent in Kwale; enrolment in Kilifi decreased by one percent. In Early Childhood Development and Education (ECDE), enrolment increased by 6 to 6.9 percent with Kwale registering the highest. Learners participation varied across the cluster. Attendance ranged between 70 percent in Lamu to 92 percent in Kwale. Decreased enrolment and school attendance was attributed to insecurity incidences in Lamu, and low prioritization of education by parents across the cluster. There was poor retention in both primary and ECDE as shown by moderately high dropout rates across the cluster. Dropout rates were between 4 to 4.8 percent for primary schools and 3.7 to Taita Taveta County had the poorest ECDE retention by recording 14 percent dropout rate. The transition rate from primary to post primary institutions ranged from 64.6 to 72 percent with Kwale County having the lowest rate. Transition rate from ECDE to primary school was 60 to 100 percent with Kilifi County having the lowest rate. Reasons for drop out were; cultural practices involving early marriages, teen pregnancies, and child labour, mainly *boda boda* business. School meals programme beng implemented in the Cluster was Home Grown School Meals Programme (HGSMP) benefitting 125,577 children Njaa Marufuku

Kenya Progamme was also being implemented in schools not covered by HGSMP. The meals programmes were improving school enrolment, attendance and retention in schools.

2.5.7 Coping Mechanisms

The Coping Strategy Index in Coastal Marginal cluster in the month of May 2015 was 17 compared to 18 and 20 in December 2014 and May 2014 respectively. Although households were employing coping strategies less frequently compared to the same period in the previous year; the proportion of those engaged in emergency coping strategies increased from 36 percent (December 2014) to 50 percent in May 2015. The common coping strategies employed by households across the cluster included reduction in number and meal rations, charcoal burning, purchasing on credit and consumption of less preferred foods.

3.0 Food Security Prognosis

3.1 Prognosis Assumptions

The food security outcomes in the next six months (September 2015 to February 2016) will be defined by several assumptions that mainly include agro climatic, food price assumptions, livelihood assumptions, and humanitarian assumptions. These include but are not limited to the following assumptions.

- Preliminary forecasts by different meteorological agencies points towards a more than 90 percent probability of El Niño event occurrence between September – December. The El Niño conditions will result in above average cumulative rainfall over eastern Kenya.

- Above-average October to December rainfall will likely result in increased availability of rangeland resources and thus, increased livestock productivity. However, localized flash floods are likely, leading to livestock and human deaths and increased incidence of water-borne diseases in some areas.

- Casual labor opportunities and wages are expected to decline through September due to limited wage-earning opportunities. However, labor demand is expected to increase from late September/early October as short rains land preparation and planting begins in the marginal agricultural areas.

- Gradual typical increase in staple food prices is expected through October as supplies are drawn down. Prices are expected to stabilize after the long rains harvest from north Rift and other surplus-producing areas becomes available from November.

- National and county governments and other development partners are expected to continue their food and non-food interventions in the pastoral and marginal agricultural areas in response the populations in need of assistance.

3.2 Food and Nutrition Security through December 2015

As the lean season progresses, household food security is expected to typically continue waning through October. In the marginal agricultural areas, seasonal decline in agricultural labor demand, would result in low household income. With increasing market dependence, as household food stocks get depleted, reliance on markets is set to increase, against declining household income. This scenario would result in intensification of coping mechanisms and diversification of labor to other off-farm activities including petty trading, construction labor, and other forms of labor, to support food access from the markets. Purchase from markets will be further constrained by typical increase in food prices through September. In September, there will likely be a marginal increase in labor demand for land preparation and early planting in preparation for the short rains forecasted to be above average. Though household food access and consumption are expected to be constrained, majority of households would still be able to afford minimum dietary requirements and remain Stressed (IPC Phase 2) through October. Other households especially in the coastal marginal areas are expected to remain in None (IPC Phase

1). In the pastoral areas, seasonal decline in quality and quantity of rangeland resources is expected to continue through October, with livestock productivity expected to track rangeland resources, declining through October. With less income from livestock sales and milk sales and rising staple food prices, household purchasing power will be eroded further. Households are expected to intensify their coping mechanisms including sell of charcoal and firewood to buy food. Though household malnutrition levels are expected to track food consumption, they are not expected to reach emergency levels due to ongoing interventions and the use of coping strategies. The current above average livestock-to-cereal terms of trade, ongoing humanitarian and nutrition interventions, are expected to sustain food consumption through October, with majority of households remaining Stressed (IPC Phase 2). Areas in Isiolo and Wajir, currently in crisis (IPC Phase 3), are expected to remain so through October.

Onset of the 2015 short rains in October, expected to be above-average, will bring substantial improvements in food security in both marginal agricultural and pastoral areas. In the marginal agricultural areas, the rains are set to trigger higher-than-normal demand for agricultural labor. Increased labor demand, and wage rates will likely increase household incomes, and support improved food access from markets. With the rains forecasted to have a timely onset, early-maturing leguminous crops are expected to be available in good quantities from late November. Coupled with availability of long rains harvested crop from the north Rift, adequate availability of food in the markets is expected by December. As early-maturing short rains crops are harvested, demand on markets for staple foods will start to slowly, marginally decline towards December. As a result of rising supply and gradually falling demand, staple food prices will likely stabilize or marginally decline. Improvement in household food consumption is expected by December, with most households expected to move to Non e (IPC Phase 1). In the pastoral areas, above average short rains will result in substantial improvements in rangeland resources, with most migrated livestock expected back to wet season grazing areas near homesteads. Livestock productivity is set to improve resulting in increase in milk production and consumption, and income from milk sales. Improvements in livestock health and body conditions will is set to result in seasonal increase in livestock prices expected, further boosting household income. With stable or marginally declining cereal prices, as the long rains harvest from the northern Rift becomes available, livestock-to-cereal terms of trade (ToT) will rise, reflecting growing household purchasing power. With improvements in quality of household diets expected, majority of households will be in stressed (IPC Phase 2) by December, including areas that were earlier in crisis (IPC Phase 3). Some pastoral households are however, expected to have faster than normal improvements in food security conditions, and move into None (IPC Phase 1) by December 2015.

4.0 Proposed Sectoral Interventions

4.1 Agriculture Sector: Priority Interventions September 2015 – February 2016

The upcoming short rains are the main season in the southeastern and coastal marginal agricultural zone as well as some agro pastoral zones. The rainfall during the season is expected to be above average and in order to enhance harvest prospects for vulnerable households, it will be necessary to farmers in accessing quality inputs and to diversify crop production as well as promote post-harvest handling and marketing in the event they realise surplus production. It will also be important to invest in irrigation and water harvesting activities that will boost production during the next season. Among the interventions that may be considered in the next six months include the following;

Intervention	Counties	Cost in Ksh (M)
Provision of subsidized farm inputs and promotion of drought tolerant crops.	Kilifi, Kwale, Lamu, Taita Taveta Baringo, Kajiado, Laikipia, Narok, West Pokot, Embu and Kitui County, Marsabit and Turkana, Samburu and Marsabit Laikipia	316
Water harvesting for crop production, Promotion and expansion of Irrigation scheme and infrastructure	Kwale, Lamu, Taita Taveta, Baringo, Laikipia, Narok, West Pokot, Embu, Kitui, Makueni, Meru north, Tharaka north Samburu and Turkana	1,179
Promotion of Post-harvest technologies and Marketing	Baringo, Kieni, Mbeere North and South, Tharaka North	145
Promotion of Conservation Agriculture and Good Agricultural Practices	Makueni, Kilifi and Tharaka North	215
Establishment of Green houses and Orchards	Embu, Meru North and Makueni	24
Total		**1,879**

4.2 Livestock Sector: Priority interventions September 2015 – February 2016

Livestock production is the main income source that supports livelihoods in the pastoral areas. The performance of the long rains was fairly good across most pastoral areas and has been beneficial in considerable improvements in livestock productivities. Normal livestock migrations have occurred and are within normal dry season grazing areas. Poor rangeland management still a challenge in the ASALs and is always aggravated by poor seasonal rainfall performances. The water availability is currently deteriorating and open water sources have started drying up in most places. It is expected that the short rains will be near average and hopefully reduce the pressure on the available grazing resources. The following measures have been recommended to mitigate on possibilities of extreme condition as we approach the peak of the lean season just before the onset of the next season.

Intervention	Counties	Cost in Ksh (M)
Promotion of market based destocking	Garissa, Wajir and Mandera, Marsabit and Turkana, Kilifi, Kwale, Lamu, Taita Taveta,	120
Livestock vaccination, disease treatment, control and	Garissa, Mandera, Wajir, Tana	350

surveillance	river, Samburu, Marsabit, Turkana, Lamu, Taita Taveta, Baringo, Kajiado, Narok, West Pokot, Mbeere, Meru North, Tharaka north and Makueni	
Maintenance of boreholes for livestock	Samburu,Marsabit and Turkana	6
Up scaling of livestock Insurance	Marsabit	100
Livestock, breeding, Marketing and Infrastructure	Laikipia, Narok, West Pokot, Tharaka	61
Local goats upgrading, milk collection and cooling centres and goat meat sale yard	Mbeere South and Mbeere North, Kitui, Kilifi	18
Range land rehabilitation, re-seeding, Pasture & fodder establishment & conservation	Samburu, Marsabit, Turkana, Baringo, Kajiado, Kieni, Laikipia, Narok, Mbeere, Wajir and Mandera, Kilifi, Kwale, Lamu, Taita Taveta	200
Total		**855**

4.3 Water Sector: Priority interventions September 2015 – February 2016

The long rains positively impacted on the recharge of open water sources in most parts of the pastoral, agro pastoral and marginal mixed farming livelihoods though not to the full capacity. However, in areas that received below normal rains, the open water sources were not sufficiently recharged. The availability of water is fair but has begun diminishing as the lean season starts. The trekking distances are seasonally increasing as well as the cost of water. The pressure at the permanent water sources has begun and the waiting time at source is expected to increase. The quality of water from pans and dams remains generally poor and the proportion of households treating water is low. The water consumption is stable across the livelihoods but still below the threshold and low in some areas. There is need to invest in medium to long term sustainable development of water structures that would ensure continuous availability of water to vulnerable households. In preparation for the upcoming short rains season there is also need to develop and rehabilitate existing water structures and desiltation of pans and dams. The recommended interventions in water sector include the following:

Intervention	Counties	Cost in Ksh (M)
Water trucking to Institutions and public watering points	Embu, Makueni, Kilifi, Taita Taveta, Kajiado,Narok, Isiolo, Tana River, Wajir, Mandera, Garissa, Samburu, Marsabit , Turkana	164
Fuel subsidies, Water treatment ,repair of storage facilities, water pans and purchase of generators	Kajiado ,Narok, Makueni, Wajir, Tana River, Samburu,Marsabit and Turkana	237
Water harvesting and treatment at household	Makueni, Kajiado, Baringo,Narok, Samburu, Marsabit and Turkana	220
Development and rehabilitation of water systems, desilting of open water sources, extension of water projects and management of water structures	Kitui,Makueni,Mbeere,Tharaka ,Meru North,Kilifi, Lamu and Taita taveta, Baringo, Kajiado, Laikipia, Narok, West Pokot, Samburu, Marsabit and Turkana	1,481

Drilling and equipping boreholes ,fencing of water points and development of water pans	Kilifi,Taita Taveta, Lamu, Samburu,Marsabit and Turkana	339
Total		**2,441**

4.4 Health and Nutrition Sector: Priority interventions, September 2015 – February 2016

The nutrition situation is stable or improving in most areas assessed including Turkana, Garissa and Tana River. However, due to high vulnerabilities in counties such as Turkana East Pokot Marsabit and Mandera, the nutrition situation remains critical to very critical. The situation has deteriorated in Isiolo county and is also expected to deteriorate in Kajiado county. Appropriate intervention should be immediately implemented to address the worsening trend in Isiolo county. Nutrition surveillance should be scaled up in Kajiado county. There is need to implement resilience building programs with wider coverage especially in the arid counties in order to reduce vulnerability. Sustained health and nutrition interventions and multi-sectoral approach in addressing malnutrition should be ensured. The ongoing cholera outbreak requires continued surveillance and response. The table below shows the proposed interventions for the health and nutrition sectors.

Intervention	Counties	Cost in Ksh (M)
Scaling up High Impact Nutrition Interventions (HINI)	All 23 ASAL counties	102
Implementation of Integrated Management of Acute Malnutrition	All 23 ASAL counties	795
Provision of water treatment chemicals.	Kajiado, Kilifi, Kwale, Taita Taveta, West Pokot	24
Conduct Nutrition survey	Kieni, Laikipia, Mbeere, Kitui, Meru North, Isiolo, Tana River	16
Conduct a Rapid Assessment/Mass Screening	Isiolo, Kajiado, Wajir West	4.5
Train field monitors and community health workers	Mbeere North and South	2.5
Community Led Total Sanitation (CLTS)	West Pokot, Turkana, Kilifi, Kwale	3.5
Total		**947.5**

4.5 Education: Priority interventions, September 2015 – February 2016

The school meals programme mitigates cases of drop outs and improves attendance and attention span in schools the in arid and semi-arid counties. Continuation and upscaling of the programme is necessary to enable more school going children to benefit. Learning requires a hygienically clean environment and hence provision of enough water and adequate toilet facilities is imperative in schools. Due to frequent migration in the nomadic communities it is important for the establishment of low cost boarding schools in their counties. In view of this, the following interventions are recommended:

Intervention	Counties	Cost in Ksh (M)
Up scaling of SMP and sustainability projects	Baringo, Kajiado, Lakipia, Narok, Tana River, Wajir, Garissa, Embu,Kitui, Kilifi, Kwale, Taita Taveta, Samburu, Marsabit and Turkana,	271.4
Provision of water to schools- water trucking and storage	Isiolo, Wajir,Mandera,Garissa, Tana river, Samburu, Kilifi, Taita Taveta,	212

	Marsabit, Turkana, Baringo, Kieni, West Pokot, and Laikipia.	
Construction of boreholes	Kilifi and Taita Taveta	80
Construction of toilets	Embu (Mbeere North and South)	6
Building of boarding schools	Baringo	280
Promotion of school gardens	Embu (Mbeere North and South)	1
Total		**810.4**

4.6 Food Assistance Sector: Priority interventions, September 2015 – February 2016

The overall food security situation has generally improved in much of pastoral, agro pastoral and the marginal agriculture livelihoods. However, the situation is still worrisome in areas that received below normal rains taking into consideration that the last two to three successive seasons have been poor across the arid and semi-arid lands. There is need to continue resilience building interventions through appropriate food assistance transfer modalities along with other cross-sectoral non-food interventions until the impacts of the next rainy season are established. The following table shows the locations and populations that are in immediate need of food assistance, until February 2016:

County	Total County Population	Population affected after the 2014 SRA	September 2015 – February 2016	
			% of population that is in need of food assistance	Number of people requiring food assistance
Turkana	539,264	136,500	24	128,100
Wajir	619,220	179,900	28	170,900
Mandera	337,800	157,600	39	133,400
Garissa	504,391	158,900	9	44,700
Marsabit	291,166	100,100	26	74,800
Samburu	223,947	83,500	36	80,500
Laikipia	399,227	36,400	3	13,800
West Pokot	512,690	46,800	4	19,600
Tana River	240,075	29,800	9	22,600
Isiolo	143,294	78,800	62	88,100
Kajiado	687,312	10,600	0	0
Baringo	555,561	59,600	1	6,500
Narok	576,388	10,800	0	0
Subtotal Pastoral	**5,630,335**	**1,089,300**	**14**	**783,000**
Makueni	884,527	21,900	1	12,400
Kwale	649,931	64,900	8	48,800
Kilifi	1,109,735	35,900	2	17,900
Kitui	1,012,709	179,300	9	89,300
Taita Taveta	284,657	67,100	19	52,900
Mbeere	219,220	32,900	2	3,700
Tharaka	130,098	26,000	12	15,500
Meru North	775,982	56,200	5	39,600
Kieni	324,659	35,200	7	11,800

Lamu	101,539	2,800	0	0
Marginal Agricultural	**5,493,057**	**522,200**	**5**	**291,900**
Total	**11,123,392**	**1,611,500**	**10**	**1,074,900**

Annex 1: Food Security Phase Classification Seasonal Trends, 2011 - 2015