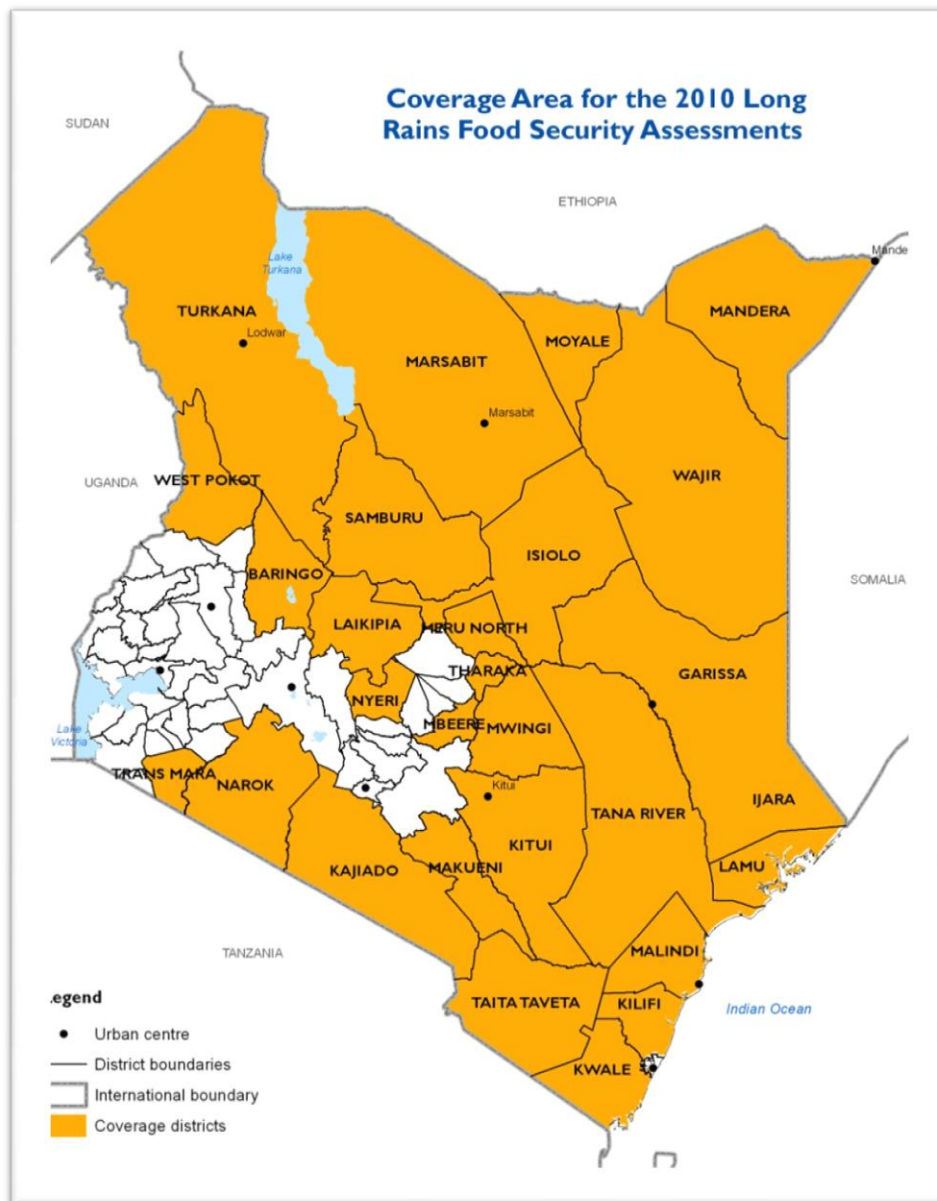




THE 2010 LONG RAINS SEASON ASSESSMENT REPORT

Kenya Food Security Steering Group (KFSSG)



A collaborative report of the Kenya Food Security Steering Group (KFSSG): Office of the President (Ministry of State for Special Programmes); Office of the Prime Minister (Ministry of Development of Northern Kenya and other Arid Lands (Arid Lands Resource Management Project (ALRMP))); Ministries of: Agriculture, Livestock Development, Fisheries Development, Water and Irrigation, Public Health and Sanitation, Medical Services, Education; WFP/VAM; FEWS NET; UNICEF; FAO, EU; UNDP, OCHA; with financial support from ALRMP, WFP and FAO.

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1.0 Executive Summary and Key Recommendations

1.1 Summary of Key findings

Significant improvements in food security across rural livelihoods

An estimated 1.2 million persons, down from 1.6 million persons in March 2010, require continuation of food and non-food interventions to mitigate continued food insecurity. See figure 1.1. Improvements in household food security that started during the October – December 2009 short rains have been sustained by generally favorable 2010 long rains, especially in the northwestern pastoral, central, Nyanza, western and the Rift Valley highlands. The improvements are significant because the drought-affected pastoral and southeastern marginal agricultural areas had experienced a prolonged drought that started in 2007, ending in October 2009. While fairly good rains have translated into substantial improvements in household food security, less than average performance of the long rains in parts of the northern and northeastern districts including Mandera, Wajir, Marsabit, Isiolo and parts of Tana River and Garissa led to an accelerated seasonal decline in key production fundamentals, in September.

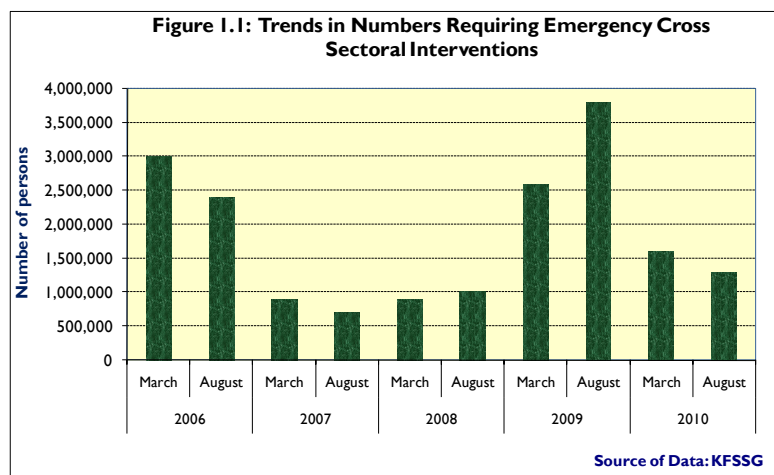
Well above average short rains maize output in 2009, in the marginal agricultural areas, carried into October 2010. However, an estimated 30 percent of the harvest was contaminated with aflatoxin and is still being traded in markets or in storage at the

household level, raising concerns regarding medium to long term effects on health. The glut in maize supply in the southeastern lowlands has also resulted in sustained well below normal prices, compromising incomes for surplus producers, yet reducing food stress for deficit producers.

Increased availability of food, obtained during the 2010 long rains season, in most of the key growing areas has also led to increased supply of cereals, in particular maize. Declining maize prices in key reference markets has also lowered the pressure on household purchasing capacities resulting in an overall improvement in food security among households that are net buyers of maize and other food commodities.

Urban food insecurity

Short term food security has also improved among urban households due to increased supply of food commodities, maintaining the downward pressure on food prices, through most of 2010. In addition, continued availability of power has ensured that small and medium sized industries, where most of the vulnerable urban populations obtain their income from, have operated to full capacity. Improved availability of water has also meant that households spend less income purchasing it while reducing the amount of time spent fetching water. Nevertheless factors underlying urban food insecurity are chronic and are unlikely to be addressed by a few good seasons and require programs and policies that deliberately address the different facets of urban food insecurity. Results from comprehensive urban assessments will be covered in subsequent sections.



Scope of the 2010 long rains food security assessments

The multi-sectoral 2010 long rains assessments, carried out by the technical district steering groups in 28 districts explored the impacts of two consecutive fairly good seasons on: crop and livestock production; water availability and quality; nutrition and health; markets and prices; education; and food availability and access at the household level. The impacts on household food security of other events including conflict, lower-than-average cereal prices in the marginal agricultural areas and heightened livestock prices in the pastoral livelihood, were also evaluated. Subsequently, detailed cross-sectoral interventions, intended to address ongoing short-term needs, were formulated. Concurrently, interventions and policy options intended to address factors underlying intractable urban food insecurity are outlined.

Numbers and categories of the food Insecure

The food security status of an estimated 1.2 million pastoralists, agropastoralists and marginal agricultural farm households is assessed to be precarious, requiring food and non-food interventions. A large proportion of the population is residing in areas where the short and long rains were lower-than-average, unlike in most other livelihoods. Impacts of conflict including displacements, loss of assets and lack of access to markets have also compromised recovery in the northwest, in spite of favorable rains from October 2009 to the present. An additional 720,000 school children are included in the School Meals Programme and 252,000 in the Expanded School Meals Programme. An estimated 98,000 persons are included in the supplementary feeding programme, targeting moderately malnourished pregnant and lactating women and children less than five years of age, in pastoral and marginal agricultural areas. Results from urban assessments suggest that at least 3.5 million persons across urban centers are severely food insecure, increasingly employing undesirable coping strategies so as to bridge recurrent food gaps.

1.2 Overall Phase classification in August 2010 as compared to March 2010

Significant improvements in the food security of the majority of pastoralists, agro-pastoralists and marginal agricultural farm households have occurred. Many households were affected by several shocks including drought, floods, heightened food prices, conflict, human and livestock disease, prior to the 2009 short-rains season. Figure 1.2 is an illustration of the change in the food security situation between March and August 2010. Most of the pastoral, agropastoral and marginal agricultural areas are now in the Borderline Food Insecure phase. However, some eastern parts of Marsabit district remain in the Acute Food and Livelihood Crisis phase. Although improvements have been significant, the risk of deterioration in food security is substantive, particularly in the northern and northeastern pastoral areas as well as in the southeastern lowlands. The likely deterioration is attributed to anticipated adverse impacts of the La Niña episode that is expected to occur during the 2010 October-December short-rains season. Some few marginal agricultural areas have also remained in the Generally Food Secure phase, low resilience, with a low risk of the food security worsening.

1.2.1 Areas classified in the Acute Food and Livelihood Crisis Food Security Phase

The 'Acute Food and Livelihood Crisis', phase 3, shaded deep Orange, is defined as a highly stressed situation coupled with critical lack of food access, with high and above usual malnutrition and accelerated depletion of livelihood assets that, if continued, will slide the population into the 'Emergency' phase.

The area falling under this phase is found in the eastern areas of the pastoral Marsabit district including Maikona, Laisamis, Central and Gadamoji as shown on figure 1.2. However, there is only a moderate risk of deterioration into Humanitarian Emergency or Phase 4, largely because of on-going interventions. The eastern areas were characterized by an early onset of the long rains and a similarly early cessation, coupled with low rainfall amounts of 20-50 percent of normal.

Trekking distances of up to 20 kilometers compare unfavorably to the normal seasonal averages of 10 kilometers. Extensive livestock migrations from wet-season grazing areas have left sedentary household members – children, women and the elderly – with less than a liter of milk as pastoralists migrate with the main herd.

Milk prices have also doubled in much of that area, while maize prices are 20-40 percent above normal, further constraining pastoral purchasing capacities. Although livestock prices are over 50 percent higher than normal, body conditions are rapidly declining as drought conditions intensify and trekking distances lengthen. Some pastoralists have migrated with their livestock into Ethiopia to mitigate the drought, while some others have crossed into the neighboring Moyale district to escape insecurity and conflict.

Increased water stress has resulted in the usage of 5-7 liters of water, per person per day as compared to the recommended 15 liters, predisposing households to diseases such as Cholera, in an area that is prone to the disease. Although the October – December 2009 short rains were favorable in the areas of concern, gains have been eroded by the poor 2010 long rains, maintaining most of the households in eastern Marsabit in the Acute Food and Livelihood Crisis. Most of these households in Phase 3 are unable to meet their food needs as their livelihoods are not self-supporting, requiring continued emergency food and food interventions to avert a further deterioration in their food security.

1.2.2 Areas classified in the Borderline Food Insecure Phase

The phase 'Borderline Food Insecure', Phase 2, shaded yellow, is defined as borderline adequate food access with a high risk of sliding into Acute Food and Livelihoods Crisis Phase, particularly in northern, northeastern and the southern marginal agricultural lowlands. Anticipated further deterioration in food security is attributed to expectation of deepening of drought conditions during the October-December short rains, resulting from the impacts of the La Niña event.

The areas falling within Phase 2 include all the pastoral, agropastoral and marginal agricultural areas, with the exception of eastern Marsabit and few parts along the coastal and southeastern lowlands. While food security has improved significantly in pastoral, agropastoral and marginal agricultural areas, improvements have not necessarily resulted in a shift to phase 1, but have been more measured movements within the same phase. However, significant improvements in food security in parts of Mandera, Wajir and Isiolo have motivated the movement in food security from Acute Food and Livelihood Crisis to the Borderline Food Insecure phase. Improvements represent a strengthening of household food security after an extended 2009 short-rains season and a fair though shortened long-rains season in 2010.

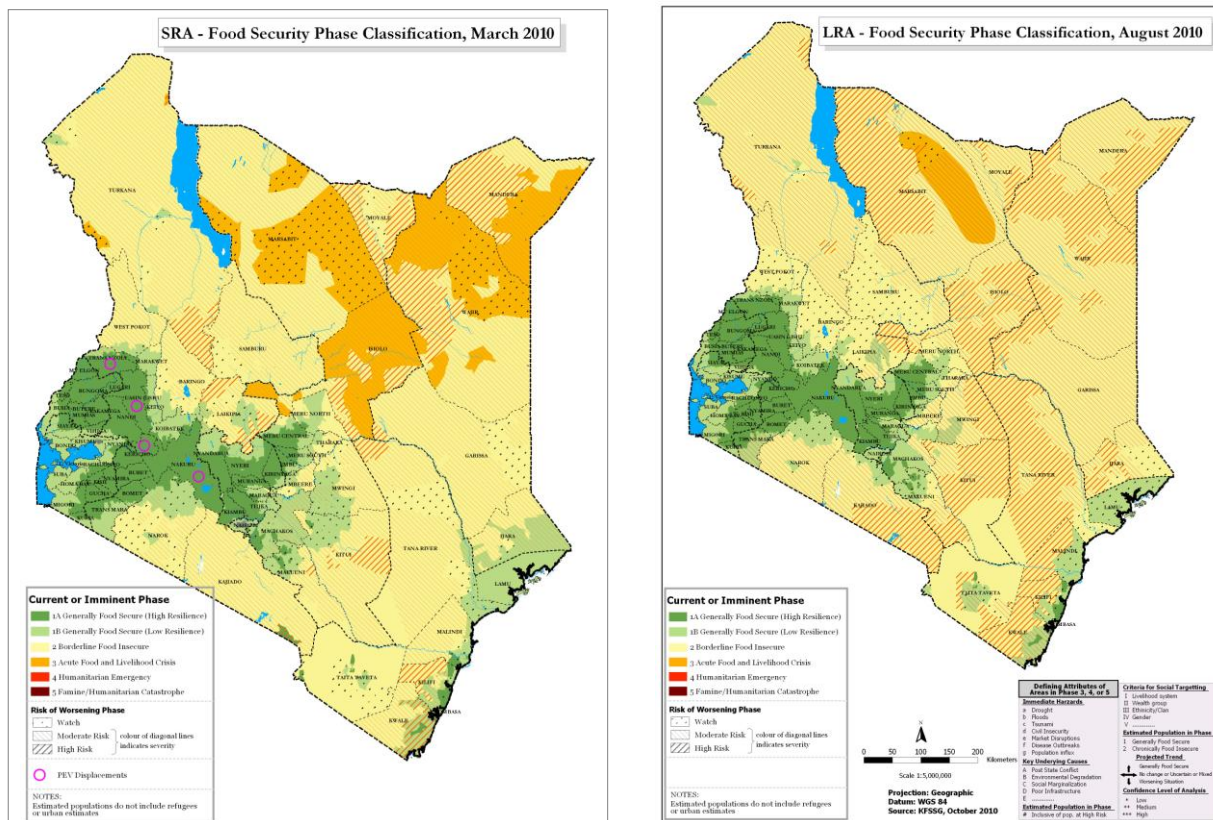
Milk availability increased while livestock prices are up to 80 percent higher than normal, a reflection of continued availability of pasture, browse and water availability. Pastoral migrations also started later-than-usual and were confined to respective districts, in most instances. However, there is a significant risk of deterioration in most of the eastern areas because of a combination of an early cessation of the long rains coupled with the expectation of heightened drought conditions due to poor La Niña rains from October onward.

1.2.3 Areas classified in the Food Secure - Low Resilience Phase

The phase 'Generally Food Secure – low resilience', category phase 1B, shaded light green, is defined as adequate food access at the assessment period, with moderate to low risk of sliding into the 'Borderline Food Insecure' Category. Most of these areas are nevertheless characterized by chronic food insecurity exacerbated by recurrent drought.

The areas classified in the food secure, low resilience phase include the marginal agricultural cropping lowlands along the coastal strip as well as in parts of Kitui, Machakos, Makueni, Mbeere, Kitui and Tharaka districts as shown in figure 1.2. The food security status in these areas was upheld by fair long rains production, after an exceptionally good short rains harvest in March 2010. However, part of the critical short rains harvest was contaminated by aflatoxin, increasing the downward pressure on maize prices since trade bans were imposed. Subsequently, improvements from the borderline food insecure phase to the food secure phase – low resilience were not as widespread as expected in the southeastern marginal agricultural areas, because farmers' purchasing capacities were constrained by absence of markets to trade their produce. While livestock prices are up to 50 percent above average levels, the number of livestock holdings per households is low, mitigating their ability to significantly compensate for livestock losses. Of concern is the high risk of food security deteriorating to the borderline food insecure phase because of an expectation of poor production during the more important October-December 2010 short-rains season since rains are anticipated to be depressed.

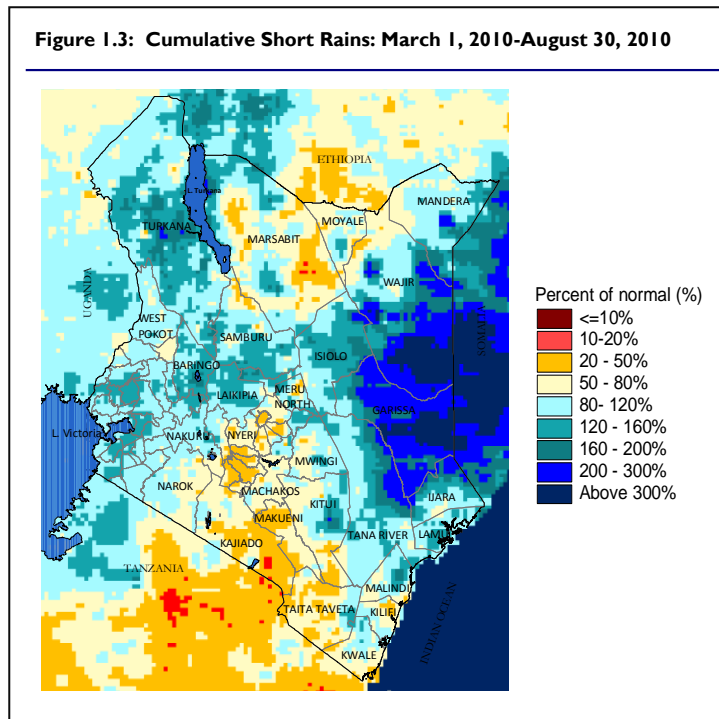
Figure 1.2: Food Security Classification in August 2010, Compared to March 2010



1.3 Long rains performance and prospects for the 2010 short rains

1.3.1 Performance of the long rains

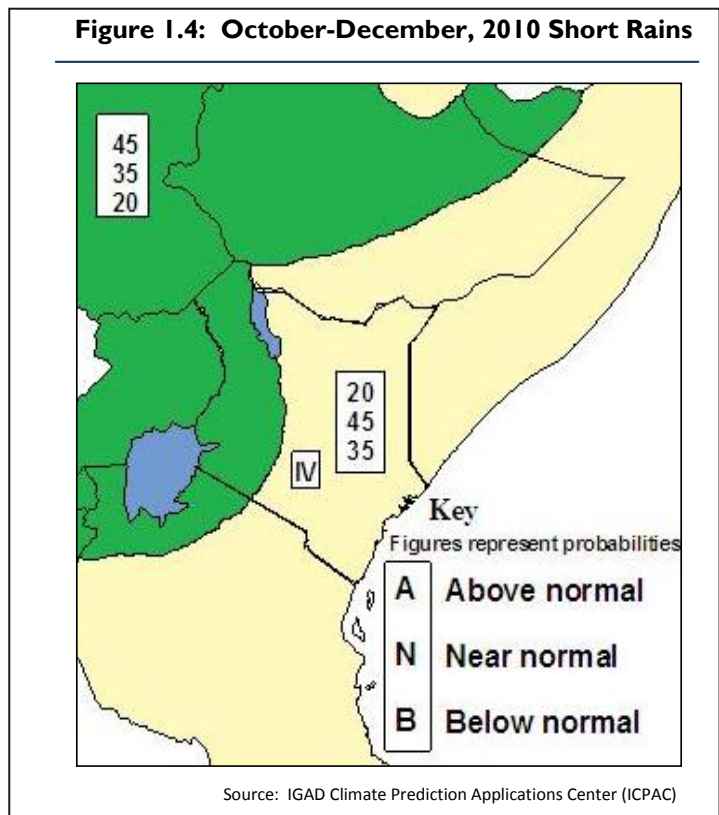
The performance of the 2010 long rains was more favorable in the western half of the country than in the eastern pastoral and marginal agricultural areas. Rains began earlier-than-usual, in February, in the eastern half of the country but tended to end early in April or early May. Subsequently, parts of the northeastern pastoral districts of Mandera, Marsabit and Isiolo experienced overall below normal long rains. The southern pastoral Maasai rangelands also received fairly poor rains, especially Kajiado district. However, resurgence of unseasonable rains in July tempered somewhat rapid deterioration in pasture, browse and water availability. The intermittent July rains in parts of the southeastern marginal agricultural areas were also beneficial in facilitating physiological maturity of the crops.



However, the 2010 long rains were favorable and above normal in key growing areas in the Western, Nyanza, Rift Valley and parts of the Central and Eastern highlands. Rains continued beyond the normal long rains period particularly in the western and Rift Valley, transcending the harvesting period in some instances. Figure 1.3 is an illustration of the anomalies through the long-rains season and into September. Detailed analysis of the rainfall performance for each livelihood cluster will be covered in individual livelihood cluster sections.

1.3.2 Prospects for the 2010 short rains

The consensus climate outlook for eastern Africa for the September through December 2010 short rains was released in early September by the IGAD Climate Prediction Applications Center (ICPAC), suggesting the expectation of a moderate to strong La Niña episode.



La Niña is associated with drier-than normal conditions in the eastern sector of the country including the northern and northeastern pastoral areas, as well as the drought-prone southeastern and coastal marginal agricultural lowlands.

However, the western sector, including the northwestern pastoral districts and the high potential cropping highlands in the Rift Valley and western Kenya, are likely to receive above-normal short rains. Of additional concern in the northern and eastern areas is the expectation of above-average temperatures and erratic rains.

The likelihood that La Niña conditions could persist through the March to May 2011 period, is a cause for serious concern, because the eastern sector of the country would experience two consecutive drought seasons, in effect reversing the recovery process and likely reverting to the heightened food insecurity that prevailed prior to October 2009.

1.4 Overall National Maize Supply Situation

Introduction

Maize is the overwhelming national staple in Kenya. It is also the predominant crop grown across most livelihoods, even in agro-ecological zones that are not necessarily suitable for production. Area put to maize is about 1.8 million hectares annually, accounting for nearly 60 percent of all land planted to key cereals and pulses. The long-rains season is the most important with respect to maize production, accounting for 85 percent of the annual maize output. Up to 80 percent of national output is derived from the Rift Valley, Western and Nyanza highlands. Unfortunately, the country has a structural deficit in the production of the majority of key pulses and cereals including maize, resulting in dependence on inflows through cross-border trade and imports from often volatile overseas markets. A shortfall in domestic production often heightens food insecurity for close to 70 percent of the net deficit-producers and consumers, situated primarily in urban, pastoral and several areas of the southeastern and coastal marginal agricultural livelihoods.

Maize production during the July 2010 – June 2011 production year and prognosis

An estimated 2.9 million MT of maize will be harvested during the 2010/'11 production season, comparing closely with the short-term average of about 3.0 million MT. The assumption is that the October-December short rains harvest will be below normal due to production losses in the La Niña impacted southeastern and lowlands.

Harvesting of the long rains maize crop, which accounts for over 80 percent of national long rains output, has progressed significantly in the central, western, Nyanza highlands and southeastern lowlands. However, harvesting of the long rains crop in the Rift Valley's 'grain basket' has just begun and is expected to continue through January 2011. The expectation that enhanced rains in the key growing areas of the Rift Valley could result in significant pre- and post harvest losses rains is a major cause for concern. The western and Rift Valley 'grain basket' areas contribute up to 50 percent to national annual maize output and any serious losses could lead to production shortfalls at the national level, after favorable seasonal rains. It is critical at this time to monitor storage facilities as well as the moisture content of the harvested grain, so as to avoid aflatoxin contamination and likely infection. Land preparation and planting in bi-modal areas of the Central, Nyanza, western and south Rift highlands as well as the southeastern lowlands is also at an advanced stage.

National maize supply is favorable after a well above normal 2009 short rains harvest coupled with favorable long rains harvest. National Cereals and Produce Board (NCPB) stocks are 280,000 MT against the statutory grain reserve requirement of 720,000 MT - half of that quantity is required in physical stock and the rest in cash. It is likely that the requirement will be met because the GoK intends to raise the purchase price of maize just as the harvest is set to begin in the 'grain basket' areas, irrespective of the price impacts on purchasing capacities of deficit consumers. Although annual national maize consumption is about 3.4 million MT, the shortfall has been covered by carryover stock and significant cross border imports, through June 2011. See the maize availability analysis shown on table 1.1.

Table 1:1 Maize Availability: August 2010 - June 2011		
Period	Source	Quantity (MT)
August 2010	Opening stocks (Farmers, NCPB, millers, traders)	1,800,000
January - August 2010	Imports (cross border and Japan grant)	115,000
September 2010 - January 2011	Remaining national Long rains output	1,700,000
February-March 2011	National Short rains output (projected)	270,000
September 2010 - June 2011	Post-harvest losses	350,000
June 2011	Total National Availability	3,535,000
September 2010 - June 2011	Total National Consumption	3,140,000
July 1, 2011	Surplus	395,000

Source of Data: MoA, MoSSP, RATIN, NCPB, Millers and Traders

1.5 Food Price Trends

Food prices have been on a downward trend since late 2009, after a sustained period of two years of exceptionally high prices. Maize prices have declined in most markets outside the pastoral areas and are over 50 percent below their respective 5-year averages in most cropping areas. The downward pressure on maize prices is a function of harvest that has been completed in some western highland areas as well as in the south Rift. Maize prices are unusually low, over 80 percent below normal, in the drought-prone marginal agricultural lowlands principally because the previous short-rains season was very favorable. However, many of those households could be consuming stocks that are contaminated with aflatoxin which were not mopped up.

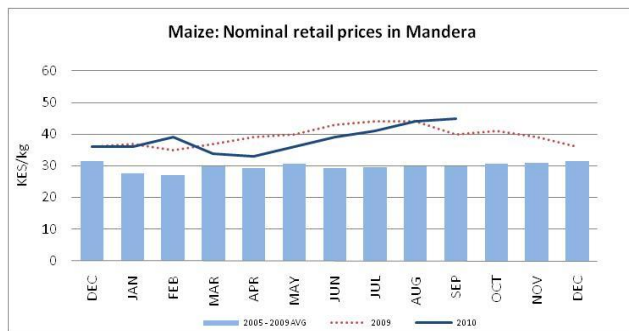
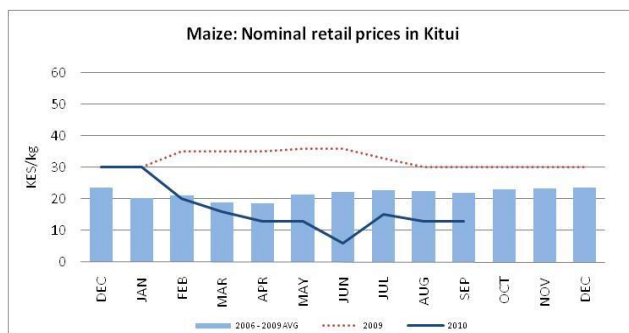
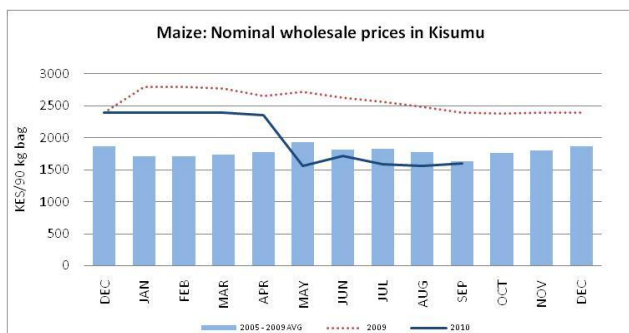
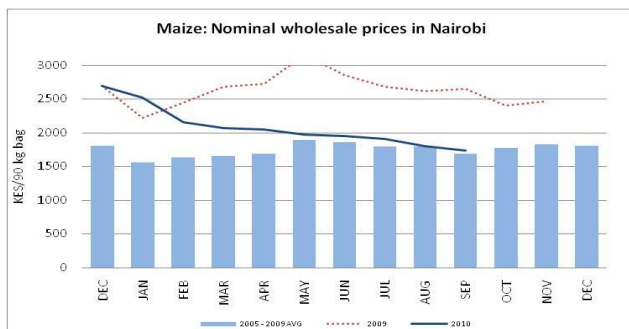
In contrast, maize prices are at least 30 percent above average in some markets in the coastal lowlands attributed to poor long rains production. Cross border imports into coastal markets have not dampened prices to a significant extent. Maize prices are up to double the price in pastoral as compared to markets in cropping areas. High transaction costs remain the key impediment in transmission of lowered prices from the cropping to pastoral areas. Substantial price differentials, of up to 30 percent, between markets adjacent to key pastoral urban centers and those in the hinterland are also a common feature in pastoral areas. Figure 1.5 is an illustration of the trend in maize prices in key markets.

Figure 1.5: Lowered maize price trends in most of the key markets



Maize and beans are the most important commodities consumed, with maize availability considered synonymous with food security. The Nairobi market is the key urban market, while Eldoret a key surplus market, located in Kenya's 'grain basket'. Kisumu is a large market situated in the marginal agricultural zone. Kitui is prone to droughts and is in the southeastern lowlands. Lodwar market in Turkana, a highly food insecure pastoral district, is poorly integrated market. Mandera is a food insecure pastoral cross-border market. Marsabit is a conflict-affected area that is highly food insecure and poorly integrated with other markets.

Monthly prices used in this analysis are supplied by the market research branch of the Ministry of Agriculture and Arid Lands Resource Management Project.



1.5.1 Prognosis - Market prices

The direction of maize prices from this point forward is not entirely clear. On one hand, the GoK is anticipated to revise upward NCPB's purchase price by 20 percent, to Kshs. 1,500. The NCPB is a major actor in the market and such purchases are expected to exert an upward pressure on maize prices, if a substantial proportion of the harvested output does not reach the open market. On the other hand, a large harvest is set to be released into the market from November through January, significantly lowering market prices. It is also not clear whether the GoK will have sufficient funds to purchase large quantities of maize to exploit the capacity of NCPB stores which is 1.9 million MT.

Nevertheless, the likely failure of the short-rains season in the southeastern and coastal marginal agricultural areas, suggests that national food and cereals supply will tighten considerably. Subsequently, many surplus-producing farmers are likely to withhold their harvest from the market in anticipation of better prices. However, on-going heavy rains in key harvesting areas in the western parts of the country as well as in the south Rift could degrade the maize harvest and farmers may be forced to sell their produce much earlier than planned, at lowered prices, sustaining the downward pressure on maize prices. It is unlikely that maize prices will reduce significantly in pastoral markets even through the harvest period, because transaction costs remain intractable. Heavier-than-normal rains in parts of the northwestern pastoral areas could cause a temporary spike in prices of cereals and other food commodities in November and December, as the road infrastructure is likely to be decimated, limiting access to markets by traders.

1.6 Options for Response

Continued food and non food interventions are required for an estimated 1.2 million persons residing in rural livelihoods even as food security conditions have improved in several areas. The rationale for continued interventions is several-fold, as summarized below:

- Recovery will require many more good seasons consecutively, after several successive poor or drought seasons.
- Cumulative livestock mortalities have eroded severely pastoral livelihood resilience and re-building herds is crucial in restoring pastoral livelihoods.
- Several areas where food security has deteriorated remain, including, Isiolo, Marsabit, Mandera, Wajir and coastal lowlands.
- Sustained high rates of global acute malnutrition of between 19-25 percent persist, particularly in some parts of the pastoral Mandera, Marsabit, Turkana and Wajir.
- Critical to re-build productive levels, while improving capacities to mitigate shocks, especially as the widely anticipated La Niña episode is likely to reverse the recovery process that was consolidating.
- Coping strategies, including undesirable ones, are increasingly becoming livelihood strategies.
- Implementation of non-food interventions is often below requirement.

Table 1.2, in the following page, is a summary of interventions that is required for each sector: More detailed analysis of sector-specific interventions will be expounded in the last chapter of the document.

Table 1.2: Summary of Priority Interventions by Sector – March 2010 - Sep. 2010

	SECTOR	INTERVENTION	COST
1.	AGRICULTURE SECTOR	Provision of drought-tolerant seeds and seed bulking; post-harvest management and aflatoxin campaigns and surveillance; promotion of value addition of agricultural produce; water harvesting and irrigation; soil conservation and conservation agriculture; value addition through processing; establishment of cereal banks; and promotion of green house technology.	Ksh. 1,150M (\$14.4 M)
2.	LIVESTOCK SECTOR	Livestock vaccinations and disease surveillance; re-stocking of small stocks; fodder conservation; re-seeding pastures and rangeland rehabilitation; promotion of alternative livelihoods; and streamlining livestock marketing chain.	Ksh. 800M (\$ 10.0 M)
3.	HEALTH AND NUTRITION SECTOR	Integrated Management of Acute Malnutrition; emergency polio immunization; public health surveillance of food and water; provision of effective insecticide-treated nets; micronutrient supplementation and de-worming; health and nutrition education; support to infant and young child feeding; water treatment chemicals; integrated outreach programs and medical supplies; nutrition surveys; supplementary feeding program and disease surveillance.	Ksh. 335M (\$ 4.2 M)
4.	WATER SECTOR	Drilling and equipping of boreholes; construction and de-silting of water sources; construction and rehabilitation of water sources; provision of storage tanks; protection of open water wells; promotion of rain/water harvesting technologies; repair of four water bowsers; capacity strengthening for rapid response teams.	Ksh. 360 M (\$ 4.5 M)
5.	EDUCATION SECTOR	Provision of water tanks for roof catchment and rain water harvesting; advocacy campaigns against child labor and early marriages; Provision of water trucking and shallow well rehabilitation; expansion of home grown school meals programme; Infrastructure improvement programme (construction of toilets/ renovation of existing ones); health education campaigns for de-worming.	Ksh. 100 M (\$1.3 M)
6.	MARKET SECTOR	Market infrastructure development – information technology, storage and cooling facilities’ development, transportation facilitation; cereal banking; capacity strengthening on value addition; supply chains development for inputs and outputs.	Ksh. 401 M (\$ 5.0 M)
7.	FOOD SECTOR	Food and associated costs for 1.2 million people affected by drought for the next six months (September 2010-February 2011). An estimated 96,310 MT of food commodities will be required from September 2010 to February 2011.	Ksh. 6,949 M (\$ 86.9 M)
	Grand Total		Ksh. 10.1 B (\$ 126.3 Million)

2.0 Food Security Assessment Methodology and Scope

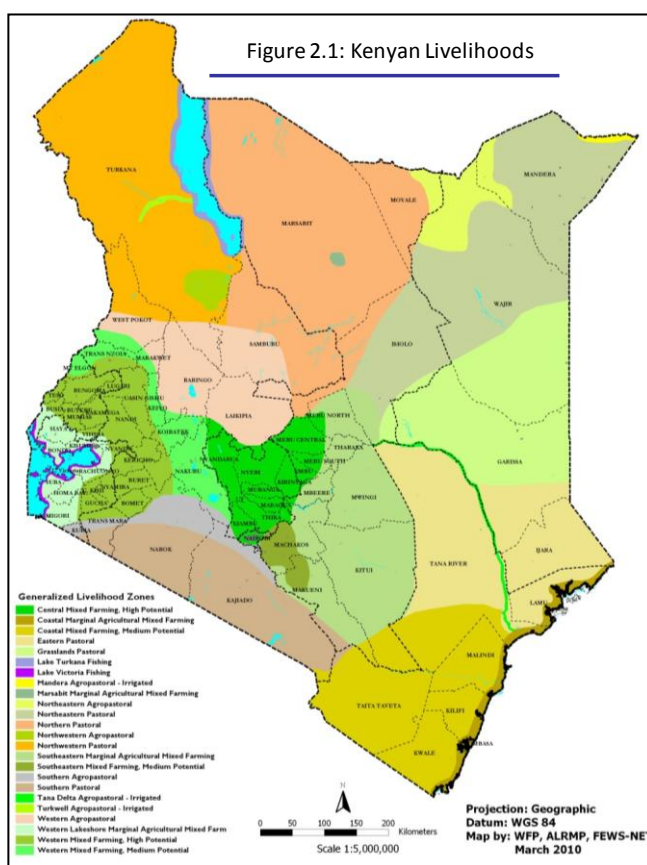
2.1 Background and Objectives

The 2010 August-September long rains assessments were carried out under the aegis of the Kenya Food Security Steering Group (KFSSG) that includes institutions in government, the United Nations, NGOs and key development partners. The coverage of the assessment extended to 28 traditionally drought-prone pastoral, agropastoral and marginal agricultural districts. The map on page 1 shows the assessment coverage, representing about 80 percent of the country's geographic area. Figure 2.1 shows the generalized livelihood zones. While the newly sub-divided districts were assessed, the point of reference is the pre-November 2007 district boundaries. The field assessments were conducted by respective technical district steering groups (DSGs) in each of the following five livelihood clusters:

- Northern Pastoral Cluster (Turkana, Moyale, Marsabit and Samburu districts).
- Eastern Pastoral Cluster (Mandera, Wajir, Garissa, Isiolo, Ijara and Tana River districts).
- Agro-Pastoral Cluster (Baringo, West Pokot, Laikipia, Narok, Nyeri (Kieni east and West), and Kajiado districts).
- South Eastern Marginal Agricultural Cluster (Tharaka, Meru North, Mbeere, Makueni, Machakos, Mwingi, and Kitui districts).
- Coastal Marginal Agricultural Cluster (Taita Taveta, Malindi, Lamu, Kilifi and Kwale districts).

The overall objective of the assessment was to inform humanitarian, recovery and other short term interventions across the food; water and sanitation; health and nutrition; agriculture and livestock; markets and the education sectors. Specific objectives were to:

- Ascertain at the livelihood level, the quality and quantity of the long rains, and assess their impact on all key sectors.
- Establish required non-food interventions, with particular emphasis on programs that promote recovery and build household resilience.
- Assess potential food needs, including options for, food for assets and general food distribution.
- Establish the impacts of other compounding factors such as conflict, livestock disease, higher than average food prices and floods on household food security.



2.2 The Approach

The overall assessment processes and methodologies were coordinated and developed by the KFSSG. The technical DSGs conducted at least two interviews, each for communities, households, key informants and market actors. Visual inspection techniques through transect drives were also applied, to obtain qualitative information. Secondary data were collected for all assessed districts. The data was collated, reviewed, analyzed and triangulated to verify its validity. The Arid Lands Resource Management Project (ALRMP) drought monitoring bulletins, the technical working group's monthly Food Security Updates, and the Kenya National Bureau of Statistics (KNBS) poverty indices information and population data provided important additional information.

The KFSSG adopted a multi-sectoral approach covering the Agriculture, Livestock, Markets, Health and Nutrition, Water and Sanitation, Education and the Food Sectors. The analytical framework is the livelihood, while the required outcome is a detailed understanding of the changes in food security and identification of populations in need of multi-sectoral external support. Sub-district locations were assessed according to detailed livelihood zones. Efforts were made to ensure that all major Livelihood zones were then sampled to gain a representative understanding of food security prospects for 2010 and beyond. Results from sampled areas were used, along with outcomes of discussions with the wider DSGs and secondary data analysis, to draw inferences for non-visited areas situated in similar livelihood zones. While the analysis was conducted at the livelihood zone level, findings and recommendations were provided at the district and divisional level for planning purposes. The integrated phase classification was employed in categorizing levels of food security.

The KFSSG sees the need for an evaluation mechanism that institutes a monitoring component to inform changes in behavior of selected indicators that determine household food access. Such indicators include changes in retail food prices, season progress, availability of food in markets, migration, key coping indicators and others that could point to further deterioration in current conditions. The multi-sectoral KFSSG endeavors to conduct detailed household and livelihood analysis to determine, at the sub-district and household levels, the magnitude and implications of recurrent shocks on food security baseline for different livelihoods. Towards this overarching goal, the urban assessments were successfully concluded in September 2010.

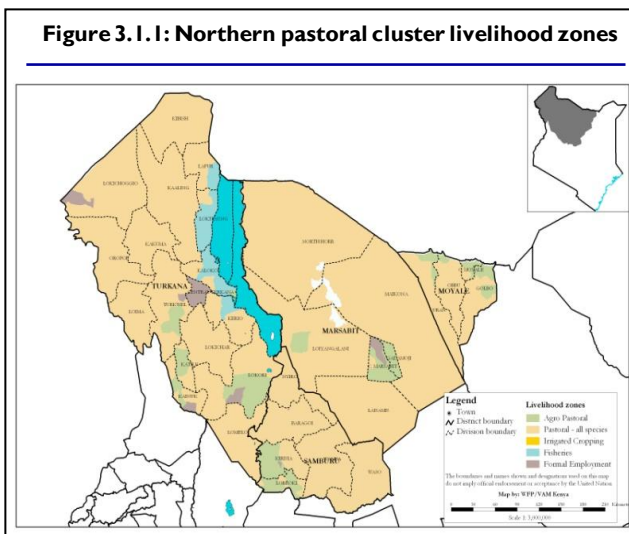
3.0 Food Security Analysis by Livelihood Cluster

3.1 The Northern Pastoral Livelihood Cluster

3.1.1 Introduction

The northern pastoral cluster consists of Turkana, Marsabit, Moyale and Samburu districts. The cluster has an estimated population of 921,044 persons, and occupies an area of 173,875 square kilometers. The larger districts have been subdivided into fifteen new administrative districts.

The pastoral livelihood zone, account for 60 percent of the cluster population; agropastoral, 21 percent; formal employment, 11 percent; and fisheries, eight percent. Figure 3.1.1 shows the geographic locations of various livelihood zones within the cluster. Livestock production is the main income source and contributes to 80 percent of household income. Households source up to ninety percent of food from market purchases while the remaining 10 percent is from own livestock production.

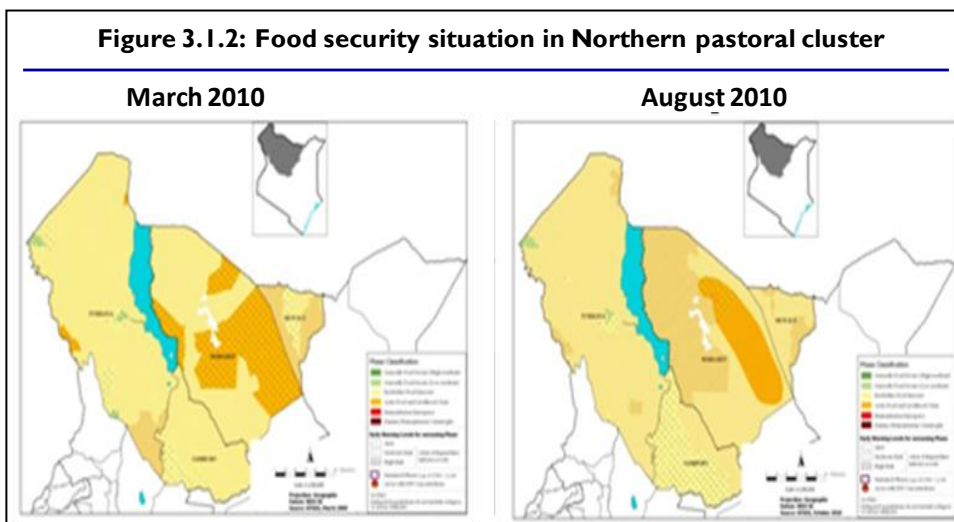


3.1.2 Factors Affecting Food Security

The main factors affecting food security in this cluster are civil insecurity, as a result of intense cattle rustling particularly along Suguta valley and Kawop in Samburu district and along all the international borders with Turkana; widespread land degradation, resulting in poor regeneration of pasture despite adequate amounts of rainfall; and poor road network, which is an impediment to trade.

3.1.3 Overall Food Security Situation

The Northern pastoral cluster is Borderline Food Insecure with moderate to high risk of deteriorating to Acute Food and Livelihood Crisis. However, some areas of Marsabit remain at Acute Food and Livelihood Crisis. Samburu district recorded significant improvement in food security and the risk of sliding into Acute Food and Livelihood crisis is alert. Figure 3.1.2 shows a comparison of food security situation after the 2009/2010 short rains and 2010 long rains.



3.1.4 Food Security Trends

The improvements to food security situation realized after the 2009 short rains and 2010 long rains are expected to continue for the next six months, particularly in most of Samburu and Turkana districts. The expected above average 2010 short rains in the western side of the cluster is likely sustain availability of pasture, browse and water, which will ensure high livestock productivity. However, food security situation is likely to deteriorate in eastern parts of the cluster, in Marsabit, Moyale and parts of Samburu, which received poor long rains and are likely to receive below normal short rains too. Already, livestock migrations have been reported in parts of Marsabit, and affected households have no access to livestock products.

3.1.5 Current Shocks and Hazards

3.1.5.1 Rainfall

The 2009 short rains season extended into January-February 2010 and coincided with early onset of the long rains across the cluster. Rainfall amount received ranged between 80-200 percent of normal in most parts. Exceptional rains, 300 percent of normal were received in central and western parts of Turkana. However rains were below normal in many parts of Marsabit and Moyale, averaging 20-80 percent of normal. The rains were characterized by uneven temporal and spatial distribution in many parts of Moyale and Marsabit, and in parts of Turkana. The rains ceased earlier than normal, in late April to early May, except in Turkana and Samburu where rains continued into July- August.

3.1.5.2 Other Shocks and Hazards

Other shocks and hazards that have impacted livelihoods within the cluster are civil insecurity in Turkana, Samburu, Marsabit and Moyale, where over 300 households have been displaced; and floods in Turkana district, which destroyed irrigation infrastructure, swept away over 350 acres of crop, and affected more than 3,000 households.

3.1.6 Impact of Shocks and Hazards

3.1.6.1 Crop Production

In parts of the cluster, good rains resulted in above normal crop production. For example in Samburu district, 900 ha for maize and 500 ha for beans were planted, which is 80 and 43 percent above respective averages. As a result, 21,000 bags of maize and 600 bags of beans harvested in Samburu were 350 and 300 percent above normal. However, crop production was poor in Moyale and Marsabit where only about half (2,000 ha for maize and 1,800 ha for beans) of normal land was put to production resulting to only 10 and 25 percent of normal long rains harvest for maize and beans respectively.

3.1.6.2 Livestock Production

Livestock production improved in many parts of the cluster after good regeneration of pasture and browse, and recharge of water sources. Available pasture and browse is rated fair to good in all districts, and expected to last the next 3-4 months, except in Samburu where pasture and browse is expected to last for 4-8 months. However, pasture availability has started to diminish in parts of Marsabit due to prevailing high temperatures, and has resulted to unusually long trekking distances.

Vaccinations carried out prior to the onset of the long rains have prevented disease outbreaks, and livestock productivities have improved considerably. While kidding is normalizing, calving and lambing remain below normal. Milk production at household level is only half of normal. In agropastoral zones, households' are accessing 0.25 liters of milk per day compared to normal of 1-2 liters while in the pastoral zone, households are accessing 0.3-1 liters compared to the normal five liters.

Overall, trekking distances to water points have either reduced or are within normal range except in Marsabit. For instance, trekking distance in Turkana is 6-10 km, which is significantly lower than the usual 14-20 km, whereas in Moyale, it is 6.5-7.0 km compared to normal 6.5-15 km. However, in Marsabit, the distance is increasing and average 16-20 km compared to the normal 10 km.

Livestock migrations into dry season grazing areas have begun though on a small scale, which is considered normal at this time of the year. However, in some areas of Marsabit that recorded poor rains, abnormal migrations of livestock to distant locations, such as Ethiopia have occurred. In addition, livestock migrations have been reported in parts of Moyale and Samburu, due to insecurity.

3.1.6.3 Water Access and Availability

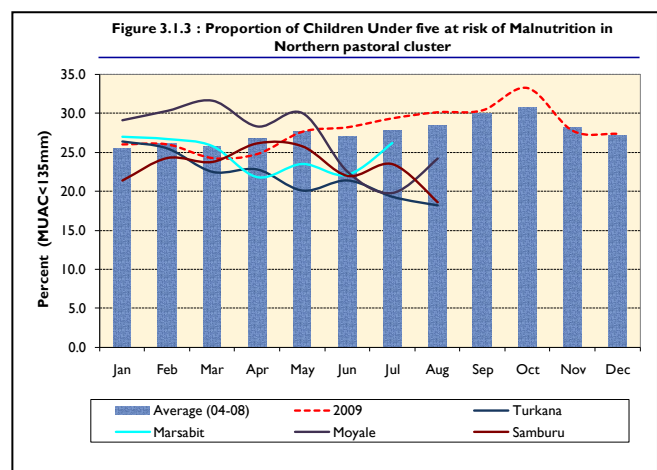
The major water sources within the cluster have recharged to 45-100 percent of capacity. As a result, distances to water sources for households have either reduced, for instance in Samburu and Turkana where they average 0.5-5 kilometers, which is over 100 percent below average; or remained the same, as in parts of Marsabit where distances range from 10-15 kms. However, distances have increased in Moyale, by up to 55 percent, and average 3-9 kms. Most temporal water sources are likely to last up to December 2010 across the cluster except in Samburu where water is likely to be available until March 2011.

The cost of a 20 liter jerrycan of water is Ksh10-20 in parts of Turkana and Kshs 20-30 in most parts of Marsabit. Water consumption is lowest in Marsabit at 5-7 liters per person per day and highest in Moyale at 9-15 liters per person per day. However, water consumption is below the normal cluster average of 17-20 liters per person per day.

3.1.6.4 Health and Nutrition

The leading causes of morbidity in the cluster, for the general population and children under five years are malaria, upper respiratory tract infections, diarrhea, skin and eye infections. Cholera outbreak affected 15 people in Samburu and resulted in two confirmed deaths. Increased morbidity, particularly for children under five years could be attributed in part, to low immunization and vitamin A supplementation coverage, which average 40-60 percent, and is below recommended thresholds. Nevertheless, under five mortality rate, which range between 0.24-2.04/10,000/day remain below emergency thresholds of 4/10,000/day. Similarly, crude mortality rate, which range between 0.26-0.8/10,000/day, is below the threshold of 2/10,000/day.

The proportions of children at risk of malnutrition as depicted by Mid Upper Arm Circumference (MUAC) trends in figure 3.1.3 indicate significant improvements. At the same time, nutrition surveys carried out in May 2010 depict significant reduction in child malnutrition compared to the last two years. The highest Global Acute Malnutrition (GAM) rate of 15.2 percent (above WHO emergency threshold) was reported in Turkana. However, in Marsabit and Moyale GAM rates are 13.4 and 12.3 percent respectively, compared to GAM of 23 percent in the year 2009. Improvement in nutrition status is attributable to improved household food security situation, as well as the recent blanket supplementary feeding program implemented in the region.



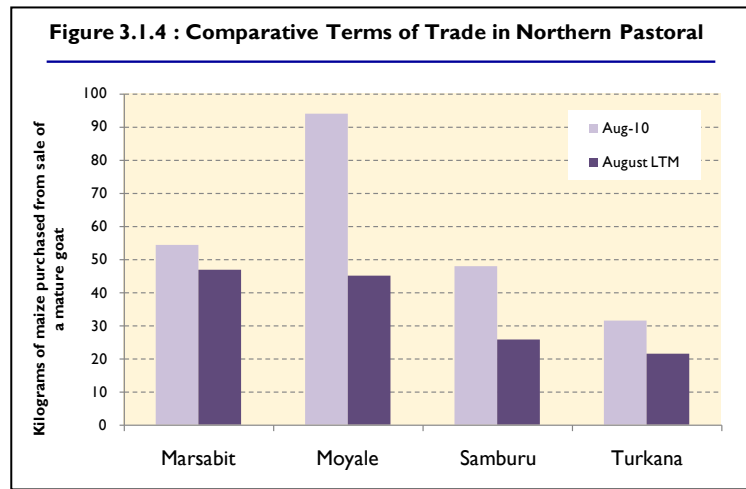
Despite improved food security situation, dietary diversity remain poor for nearly 80 percent of the population who are consuming 1-2 meals per day made up of cereals, pulses, milk, edible oil and sweetened beverages. From the surveys, dietary diversity score is poor in Turkana at 3.9, but fair in Marsabit which has a score of six.

3.1.6.5 Market Performance

Livestock market operations have been frequently disrupted due to insecurity, conflicts and rampant cattle rustling, during the last six months. At the same time, Rumuruti market, which is a major livestock assembly market, has been closed due to an outbreak of Foot and Mouth Disease (FMD) in neighboring Laikipia district. Market disruptions affect trade and may limit potential income gains from improved livestock body conditions.

Nevertheless, livestock prices have appreciated significantly due to good body conditions; reduced market supply; and increased demand, as pastoral households continue to restock. For instance goat and cattle prices are 80-110 percent and 20-70 percent above five year averages respectively, across the cluster. However, benefits of higher livestock prices are being moderated by above average cereal prices that are 20-40 percent above five year average, except in Moyale where maize price is 10 percent below five year average due to significant cross border inflows from Ethiopia.

Terms of trade have improved and are above average by 45 and 80 percent in Turkana and Samburu; by over 100 percent in Moyale; and by 15 percent in Marsabit as figure 3.1.4 show. In Moyale a household is able to access double the amount of maize (94 kg) from sale of a goat, while in Marsabit, Samburu and Turkana, a household is able to access 30-55 kgs compared to the usual 20-50 kgs.



3.1.6.6 Education

All public primary schools in this cluster are implementing the Regular School Meals Programme (RSMP), which has contributed to increased enrollment and retention of pupils. However, delays in food delivery to schools in parts of Marsabit have affected operations. Transition rates from primary to secondary schools are better in the remote pastoral zones where they average 50 percent compared to the agropastoral zones, 47 percent, likely due to high poverty rates and overwhelming need to engage in casual labor activities, to supplement household incomes.

3.1.7 Coping Strategies

Reduction in the size and number of meals, sharing of food, casual labor and selling firewood have been identified as some of the coping strategies being employed within the cluster. However, the coping strategy index (CSI) is less than 0.2 depicting a normal situation. Households in areas where livestock migrations have occurred may start employing distress coping strategies, sooner, at the peak of the lean season between August-November.

3.1.8 Food Security Prognosis

The food security situation has improved across the cluster due to positive effects of long rains, following a good short rains season. However, pocket areas where rains performed poorly remain highly food insecure. Poor short rains as a result of the La Niña event may cancel out the gains made so far, particularly in eastern parts of the cluster, in Moyale and parts of Marsabit and Samburu. However, the forecast normal to above normal short rains in most of Turkana and Samburu may strengthen recovery process and greatly improve food security situation. However, there is need to watch for areas within the cluster that may experience flash floods, landslides and even water borne diseases and other outbreaks, due to enhanced rains.

3.2 Eastern Pastoral Livelihood Cluster

3.2.1 Introduction

The northeastern pastoral cluster comprise of Mandera, Wajir, Garissa, Isiolo, Tana River and Ijara districts. The cluster is about 190,789 square kilometers in size, and has an estimated population of 1,713,610 persons.

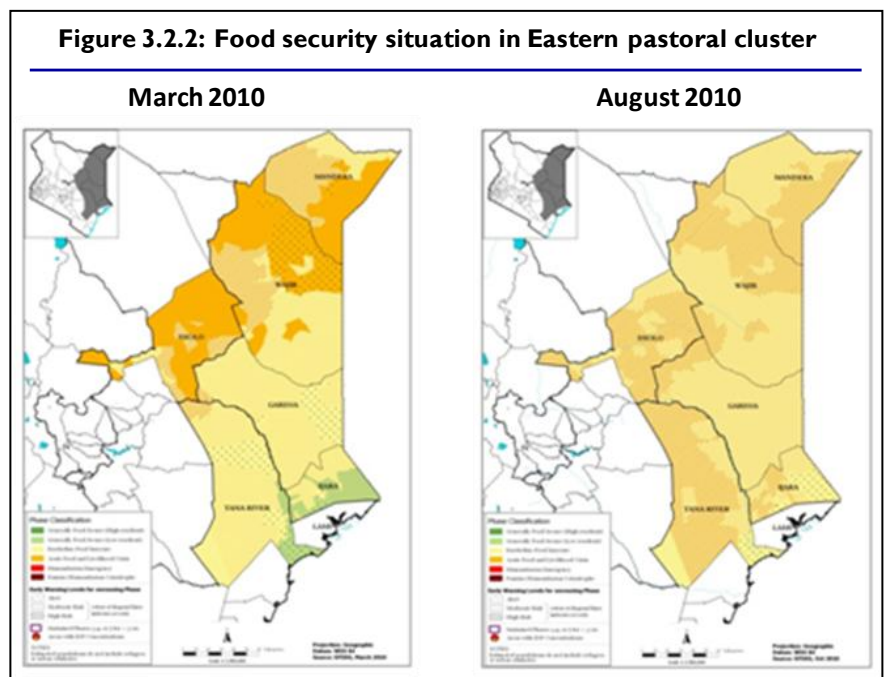
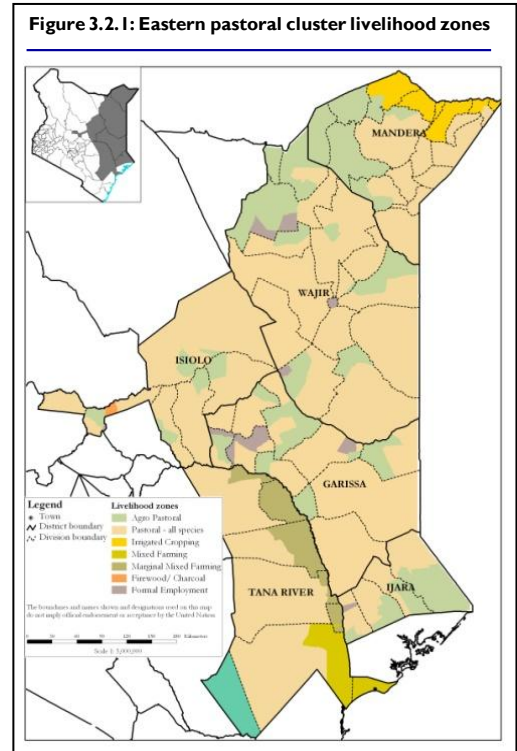
The pastoral livelihood zone accounts for majority of the population, forty seven percent. Other important livelihood zones include agropastoral, which account for 20 percent of the population; formal and informal employment, casual labor and business, 16 percent; and marginal mixed farming, 13 percent. Figure 3.2.1 shows the main livelihood zones within the cluster. Livestock production is the main source of income, contributing to about 70 percent of household income, while crop production contributes to about 18 percent. Household source up to 65 percent of food consumed from market purchases, 18 percent from own production and the balance from gifts, food aid, hunting and gathering.

3.2.2 Factors Affecting Food Security

The main factors affecting food security in the cluster are, frequent droughts; frequent livestock disease outbreaks; recurrent water shortages; large influx of livestock from Somalia to Mandera, Wajir and Garissa districts; insecurity along the border with Somalia; poor infrastructure, which add onto transport costs and subsequently to prices of food and non-food items; and periodic flooding on the banks of Tana and Daua rivers.

3.2.3 Overall Food Security Situation

As figure 3.2.2 show, the food security situation improved in most parts of the cluster, which are in Borderline Food Insecure phase. Significant improvements in parts of Isiolo, Wajir and Mandera moved the areas from Acute Food and Livelihood Crisis phase to Borderline Food Insecure phase. Besides, parts of Ijara and Tana River districts that were Generally Food Secure low resilience, have deteriorated to Borderline Food Insecure phase. Due to likely poor short rains, the risk of food security deteriorating to Acute Food and Livelihood Crisis is high.



3.2.4 Food Security Trends

The food security situation is likely to deteriorate in the next six months, across the cluster. Pasture, browse and water, which are declining seasonally, are expected to deplete within the next 2-3 months, in many areas. Furthermore, regeneration of vegetation and recharge of water sources may be insufficient due to poor short rains. Livestock migrations, which have started in parts of Isiolo, Wajir, Garissa, Ijara and Tana River, may heighten towards end of the year, precluding households from accessing livestock products. For example, majority of households may not benefit from increased milk availability when lambing, kidding and calving, peak in November-December, due to livestock migrations. The demand for alternative food, particularly cereals, is likely to push prices up, further impacting on household terms of trade and thus constraining food access, in most areas.

3.2.5 Current Shocks and Hazards

3.2.5.1 Rainfall

The long rains started early by almost two weeks and peaked in mid February-early March, in most places. It is only in Garissa that onset of the long rains was timely. The rains were well distributed and most areas received 80-160 percent of normal long rains. However, rains were excessive in southeastern Wajir and Garissa, which received over 300 percent of normal rains. Rains were poor in northern parts of Wajir, which received about 20-80 percent of normal rains. The rains were well distributed temporally across the cluster, except in Ijara and Tana River where rains were erratic. In most places the rains ceased earlier than usual in late April - early May.

3.2.5.2 Other Shocks and Hazards

Other shocks and hazards that have impacted households within the cluster include floods along the river Daua in Mandera and river Tana in Tana River and Garissa districts; influx of livestock from Somalia into the southern and eastern parts of Wajir; and intrusion of sea water in parts of Kilelengwani and Ozi locations of Kipini Division, Tana River district, which negatively affected crop production.

3.2.6 Impact of Shocks and Hazards on Food Security

3.2.6.1 Crop Production

Crop production remains a peripheral livelihood activity in most parts of the cluster, which is mainly practiced in agropastoral and irrigated areas. In Mandera, near total crop failure occurred as a result of floods that washed away irrigation infrastructure resulting to minimal production of maize staple. Only about five metric tonnes of maize was produced, compared to the average of 1,035 metric tonnes. Meanwhile, in Isiolo, only about half of the normal area was put to production, 438 ha compared to the normal 800 ha, due to inconsistent rains. As a result, harvests were more than 50 percent below normal in Isiolo. The only significant harvests were realized within irrigation schemes in Tana River, where maize production nearly doubled from 2,571 MT to 4,634 MT, following successful implementation of Economic Stimulus Programme (ESP).

3.2.6.2 Livestock Production

Good regeneration of pasture and browse across all livelihoods within the cluster has resulted into significant reduction in distances, which are lower than normal in many parts. The available pasture and browse is expected to last 2-3 months in some areas as the seasonal decline is likely to be accelerated, following the influx of livestock from Somalia and the neighboring Eastern province. The distance to watering points is less than normal in most areas and range from 5-15 km compared to the usual 20-30 km. However, in Tana River and Wajir districts average distances to watering points depict an increasing trend.

Livestock body condition is good for all species, but is best for camel followed by cattle. There are no indications of physiological stress associated with long trekking distances to pasture, which characterize parts of the cluster. Improved kidding and lambing, currently averaging 20 percent further suggests enhanced livestock productivity. However, calving rates are as low as 40 percent of normal because of interruption to the usual mating sequence caused by effects of previous droughts. Overall, milk production within the cluster is fair, though the trend is declining. The daily milk consumption per household has dropped by 67 percent across all livelihoods after production dropped from the normal 2-5 bottles (750 ml bottle) to 1-1.5 bottles. Below normal milk supply in market centers is suggestive of lowered household incomes, since households usually sell up to 60 percent of milk produced. Although milk prices have increased by 60-100 percent, households are not deriving any benefits due to low production volumes.

Livestock movement is largely within respective districts, which is normal at this time of the year. In pastoral all species livelihood zone of Mandera, notably in Shimbir Fatuma, there is gradual in-migration of all livestock species from Qalanqalesa, Takaba, Dandu, Didkuro and Ashabito. The cumulative effect of depletion of pasture in these areas has also precipitated an out-migration to neighboring Wajir district. As a result, some pastoralists have moved from Wajir into Sericho, Eldera Yamicha and Urura grazing areas in Isiolo district. In Ijara, bulk of cattle moved to Witu in Lamu district and some have migrated to Boni forest and to other areas in Tana Delta district.

3.2.6.3 Water and Sanitation

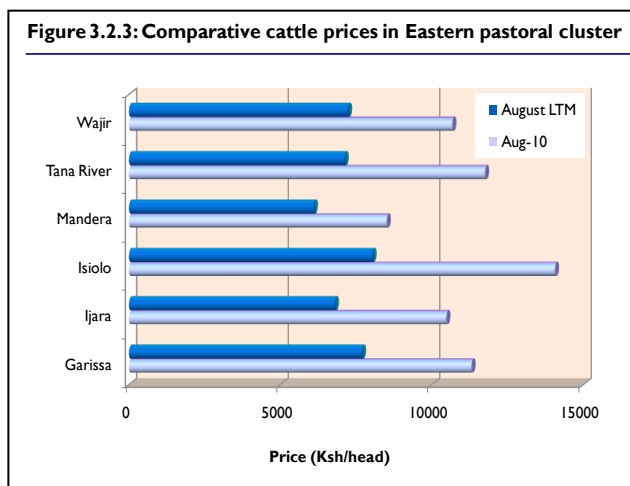
The long rains positively impacted on the temporal water sources like pans and earth dams which recharged to 50-100 percent of capacity. As a result, distances to water sources, for domestic use, have declined greatly. In the agropastoral areas the distances range between 0.1-8 km, which is 50 percent below normal. However, in Wajir district distance to water are as long as 25 km in some areas.

The waiting time at water sources is normal and average 20-30 minutes, for both domestic and livestock, with the exception in Wajir district where waiting time of up to 2-4 hours has been observed. The cost of a 20 liter jerrycan is Kshs 2-5 in most parts except in parts of Wajir and Tana River, where the price has risen to Kshs 10-20. The waiting time and cost of water are considered to be within normal range in most parts. However, in Garissa the cost of watering camels has increased by 43 percent from seven shillings to Kshs 10, due to increase in demand. Water consumption remains low and average 4-10 liters per person per day in most areas, but is highest and well above normal in parts of Tana River and Ijara, at 15-30 liters per person per day. In most areas within the cluster, water quality is poor to fair yet most people do not boil or treat water before drinking. The low latrine coverage, ranging between 5-30 percent, further compromises water quality, particularly when runoff flows into sources.

3.2.6.4 Market Sector

Markets located near the border with Somalia are not operating normally as the border is officially closed. As a result, supply of sugar, rice, pasta and cooking oil through cross border trade has been affected. Consequently, traders are incurring extra costs to source supplies.

Overall, livestock prices have increased remarkably and cattle prices are 40-75 percent above five year average (see figure 3.2.3). Goat prices are 40-110 above average, except in Garissa where they are only 16 percent higher.



Maize price has declined marginally, but remain 45-70 percent above average in Wajir, Mandera and Garissa. Inflows from neighboring districts and little harvests have occasioned a marginal decline in prices, which are up to 10 percent below average in Isiolo and Tana River districts.

Terms of trade are favorable, and are 45-100 percent above average in Ijara, Tana River and Isiolo, mainly due to low maize prices. Terms of trade have increased only marginally in Wajir and Mandera where they are 5-10 percent above average. As figure 3.2.4 show, households in Tana River, Isiolo and Ijara are able to purchase 95-105 kg of maize compared to the normal 40-75 kg, from sale of a goat. Terms of trade are likely to deteriorate within the next 3-5 month due to poor short rains.

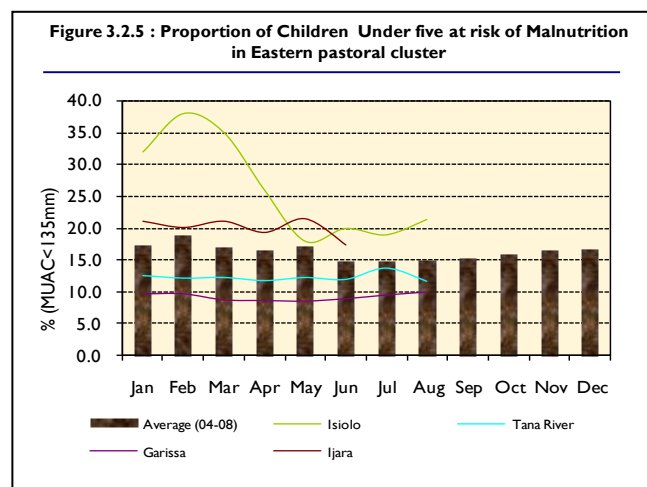
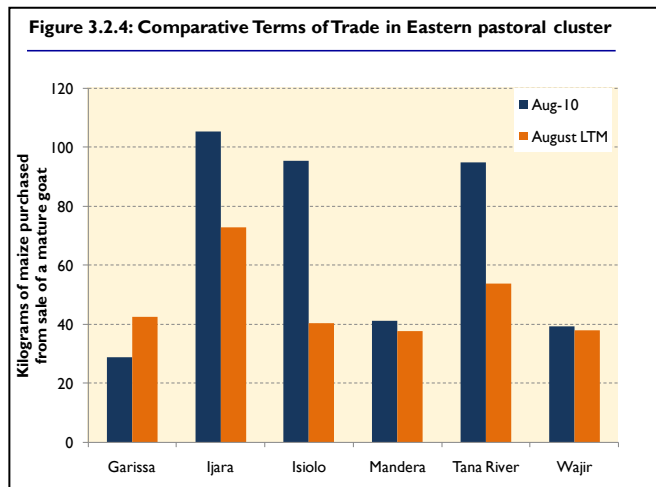
3.2.6.5 Health and Nutrition

The leading causes of morbidity in the cluster include malaria, upper respiratory tract infections, skin infections and diarrheal diseases. An upsurge of malaria and upper respiratory infections was reported in Ijara while in Tana River, cases of pneumonia and skin infections have increased. Mandera continue to report increased incidences of diarrheal diseases, which have lead to unconfirmed deaths. With an exception of 13 cases of measles reported in Isiolo, no other outbreaks of epidemic diseases have been reported within the cluster.

Immunization coverage is poor in most districts due to high remoteness as well as acute staff shortage in most health facilities. Immunization rates surpass national threshold in Tana River district alone. In the other districts coverage range between 35-70 percent. Vitamin A supplementation, which is an important booster to children’s body immunity, is below threshold across the cluster.

The nutrition status of children under five years as measured by Mid Upper Arm Circumference (MUAC) indicate an improving, or stabilizing food security situation in the entire cluster. The proportion of children at risk of malnutrition is currently below long term average except in Isiolo and Ijara as figure 3.2.5 show. A nutrition survey conducted in Wajir depicts reducing GAM rates from 22.2 percent, at a similar time last year, to the current 19.8 percent. However, GAM rates remain high in Mandera at 25.8 percent, which is indicative of a critical situation.

The dietary diversity of households has either remained stable or improved slightly. Majority of households are consuming 3-4 food groups, composed of cereals, pulses, milk and occasionally meat and oil. A substantial proportion of food consumed by most households is derived from food aid intervention. Majority of households are consuming 2-3 meals a day, which indicates a normal situation.



3.2.6.6 Education

All the public primary schools in the cluster are included in the Regular School Meals Programme (RSMP). There has been a marked improvement in enrolment, which is attributable to the RSMP, Free Primary Education (FPE) and government advocacy campaigns on education. However, improvements to enrollment have put pressure on facilities, especially in Ijara, Isiolo and Wajir. The RSMP is reported to have contributed to a general decline in dropout rates. For example, in Mandera the dropout rates for both boys and girls have declined by 1-3 percent. In general, completion rate has improved though it is still below national average. For instance primary school completion rates in Mandera are 86 percent for boys and 84 percent for girls.

3.2.7 Coping Strategies

Overall, households within the cluster are not employing any adverse coping mechanisms. The coping strategy index (CSI) is below the threshold of 0.4 in all the districts and range between 0.1-0.2. Ijara district has the highest CSI of 0.24 while in other districts, the CSI is below 0.20. Nevertheless, coping strategies currently being employed include, sharing food, purchasing food on credit, voluntary skipping and reducing the size of meals, charcoal burning, sale of firewood and casual labor, which suggest a normal situation.

3.2.8 Food Security Prognosis

The food security situation is expected to remain stable in many parts, until onset of short rains. However, in some areas pasture and browse has started to deplete faster than expected due to influx of cattle and camels from outside the cluster. Water situation has started to decline and may not improve significantly due to poor short rains. The high probability of extended livestock migrations and resultant decline in livestock productivities possibly will preclude households from benefiting from their main livelihood, thereby worsening food security situation, in the next six months.

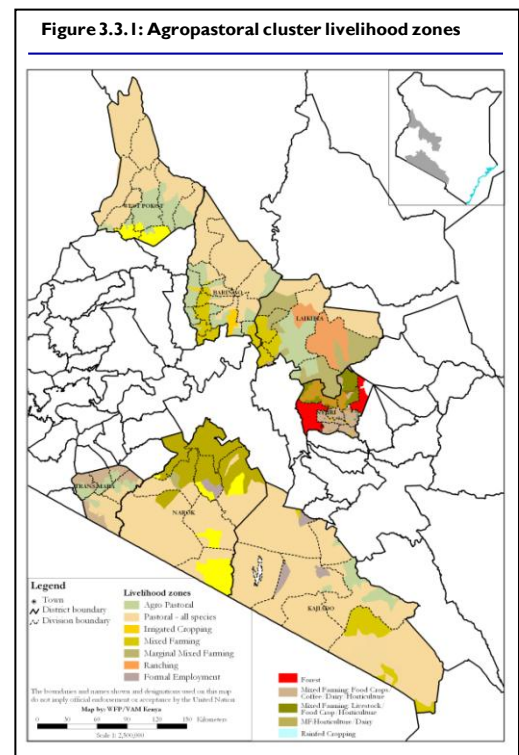
3.3 The Agropastoral Livelihood Cluster

3.3.1 Introduction

The Agropastoral Cluster cover seven larger administrative districts namely Kajiado, Narok, West Pokot, Baringo, Laikipia, Transmara and Nyeri (Kieni West and East). The cluster has an estimated population of 2,542,888 persons and covers an area of 68,422 square Kilometers.

The main livelihood zones are; pastoral-all species with 31 percent of the population; mixed farming, 29 percent; agropastoral, 12 percent; and the marginal mixed farming, formal employment and irrigated cropping with 28 percent of the population. Figure 3.3.1 shows the location of livelihood zones in the agropastoral.

Livestock and crop production are the main sources of cash income contributing 48-66 and 84-90 percent of household incomes in the agropastoral and pastoral-all species livelihood zones respectively. Food and cash crop production is a major income source in the mixed farming livelihood zone.



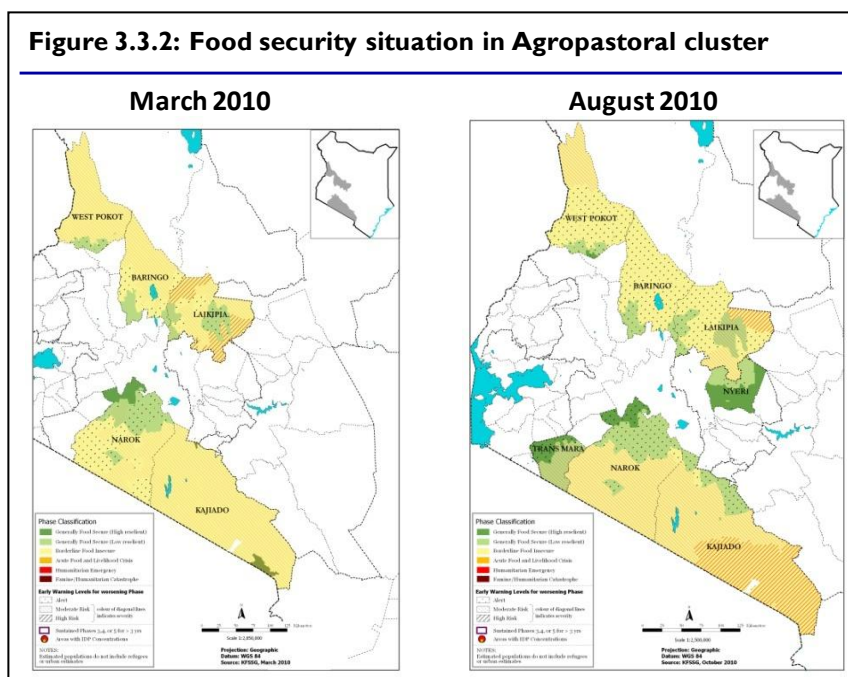
3.3.2 Factors Affecting Food Security

The underlying factors affecting food security within the cluster include civil insecurity and livestock rustling; livestock diseases, which lead to frequent closure of livestock markets; widespread land degradation, for example, by invasive *Prosopis Spp*; poor road infrastructure; imperfect market networks; and the lingering effects previous severe droughts that resulted into high livestock mortalities and reduced livestock holdings in the pastoral zones.

3.3.3 Overall Food Security Situation

The cluster is generally classified as being in Borderline Food Insecure phase with moderate risk of falling into Acute Food and Livelihood Crisis phase. However, parts of Kajiado and Laikipia district have a high risk of falling into Acute Food and Livelihood Crisis phase. The mixed farming livelihood zones are in Generally Food Secure low resilience phase and the risk of deterioration to Borderline Food Insecure phase is alert. Figure 3.3.2 shows the food security situation in the agropastoral cluster in August 2010 compared to the situation in March 2010.

Figure 3.3.2: Food security situation in Agropastoral cluster



3.3.4 Current Shock and Hazards

3.3.4.1 Rainfall

The onset of the long rains was timely across the cluster. In most parts of the cluster, 120-200 percent of normal long rains were received. However, below normal and poorly distributed rains, ranging from 50-80 percent of normal, were received in pastoral areas of Kajiado, Narok, Transmara, and Laikipia districts. Off-season rains have been received in Baringo, West Pokot and parts of Laikipia since July.

3.3.4.2 Other Shocks and Hazards

Other shocks and hazards include incidences of civil insecurity and cattle rustling in West Pokot, Baringo, Laikipia and Transmara; and flash floods in parts of Baringo, which have damage road infrastructure in Marigat, Mukutani and Nginyang.

3.3.5 Impact of Shocks and Hazards

3.3.5.1 Crop Production

Crop production contributes to between nine to 61 percent of household cash income; and between 22-66 percent of food, the lowest percent being in the pastoral while the highest is in mixed cropping livelihood zones. While crop production is mainly rain fed and largely long rains dependent, the potential for irrigated agriculture is great even though only 30 percent of potential is currently being exploited.

Plentiful and well distributed long rains led to above normal crop production in most parts of the cluster. For example, in Baringo district, area put to maize production increased by three percent leading to a 24 percent increase in production (to 78,180 ninety kilogram bags). In general, harvests of staple maize were 12-25 percent above average in West Pokot and Laikipia, and more than double in Narok. However, in the marginal mixed farming areas, poor rains resulted into low yields. For example, in Kajiado yields reduced from the normal 8-10 bags of maize per acre to three bags. Nevertheless, food stocks are reported to be sufficient to last the next 2-4 months, except in Transmara where stocks can last over a year, barring significant post harvest losses.

3.3.5.2 Livestock Production

The availability of water, pasture and browse has improved considerably across the cluster. However, encroachment of bush especially *Prosopis spp* and rise in water levels in lakes and swamps checked a more robust pasture regeneration. Livestock trekking distance range between 2-3 kilometers compared to a normal range of 3-5 kilometers and available forage is expected to last 2-4 months. Despite ample availability of grazing resources, access is limited in parts of West Pokot and parts of Baringo at the border with Turkana, due to insecurity.

Livestock body conditions have improved considerably and range from fair to good. However, milk available to households is still below normal as most cows were still in gestation. Households are able to access 0.5-1.0 liters of milk compared to the normal three liters per day, mainly from sheep and goats. However, the situation is expected to improve from September-October onward when calving is expected pick up.

Livestock disease outbreaks have been minimal, with the exception of localized outbreaks of lumpy skin disease (LSD) and food and mouth disease (FMD) in West Pokot and Laikipia districts, respectively. Minimal livestock migrations have contributed to reduced risk of livestock diseases spreading. In most areas, livestock have remained in the wet season grazing areas for an unusually longer period of time. The only reported livestock migration, from Transmara into Narok, is strategic and aims to save grazing resources near homesteads.

3.3.5.3 Water and Sanitation

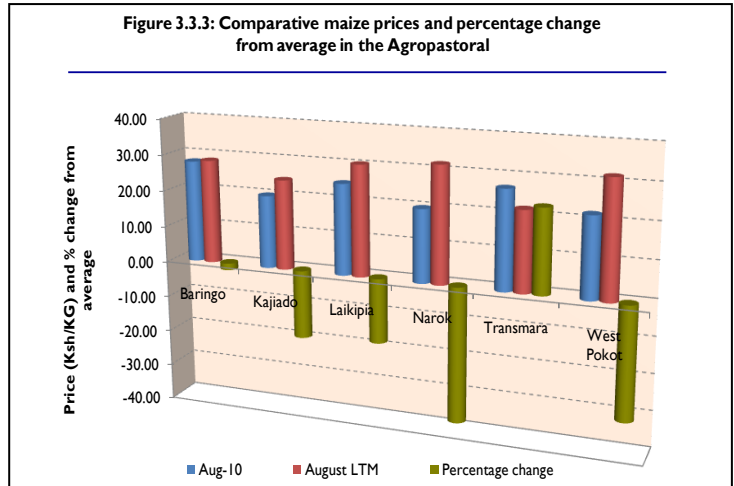
Most water sources have recharged significantly and are 50-100 percent of capacity across the cluster, which is considered positively unusual at this time of the year. Accordingly, distances to water sources have declined and range between 40 to over 100 percent below average. For example, in Kieni, Nyeri district, distance to water is down to 1-1.5 km from 1.8-2.3 km in 2009 while in West Pokot the distance is 0.5-3.5 km, down from 2.5-4 km. However, in Transmara and Narok, distances to water are normal and average 4-7.5 km and 5-15 km, respectively. Most temporal sources across the cluster are expected to hold water up to January 2011.

The cost of a 20 liter jerrycan of water varies across the cluster. In Kieni the price is Kshs 1.50-3; in West Pokot, Kshs. 11.30; in Transmara, four shillings; Kshs 5-10 in Kajiado; and Kshs. 5-10 in Narok. In Mosiro and Sakutiek areas of Narok a 20 liters jerrycan is selling for as much as Ksh 30-50, due to water scarcity. However, water consumption across the cluster is fairly good and range between 10-15 liters per person per day. Water consumption is highest in Kieni at 20 liters per person per day.

3.3.5.4 Market Performance

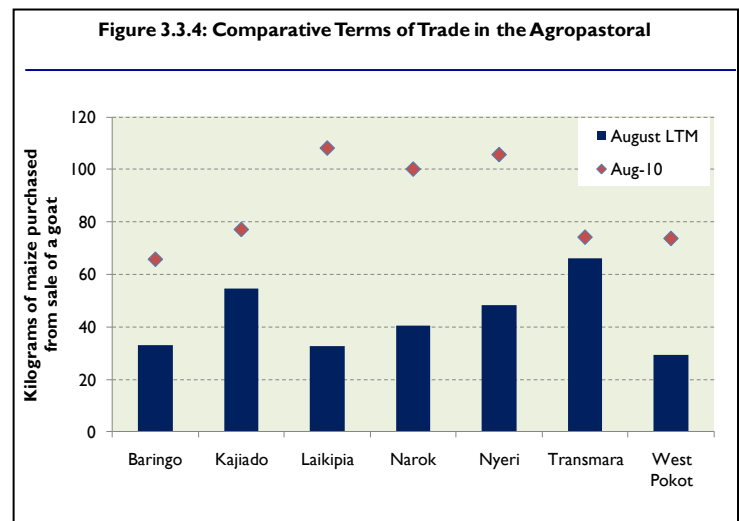
Significant market disruptions have occurred across the cluster. Livestock markets are closed in pastoral areas of Baringo, in parts of Kieni, West Pokot and Laikipia, due to outbreaks of livestock diseases. In April, all markets in West Pokot were closed due to a cholera outbreak.

As figure 3.3.3 show, maize prices have declined considerably in the agropastoral cluster and range between Kshs 20-28 per kilogram, which is 20-40 percent below five year average in Kajiado, Laikipia, Kieni, Narok and West Pokot districts. Maize prices are likely to continue declining in the next three months as harvesting continues in most parts since the crop is staggered, and in different stages of growth.



Livestock prices have increased remarkably within the cluster and cattle prices are 25-80 percent above five year average in Transmara, West Pokot, Kieni, Narok, Kajiado and Baringo, and up to 120 percent above five year average in Laikipia. Similarly, goat prices are 40-95 percent above five year average in Transmara, Narok, Kieni, West Pokot and Baringo, and up to 170 percent higher in Laikipia. Livestock prices are likely to continue increasing in the next three months since most households still have adequate food stocks and are not compelled to sell livestock to access food.

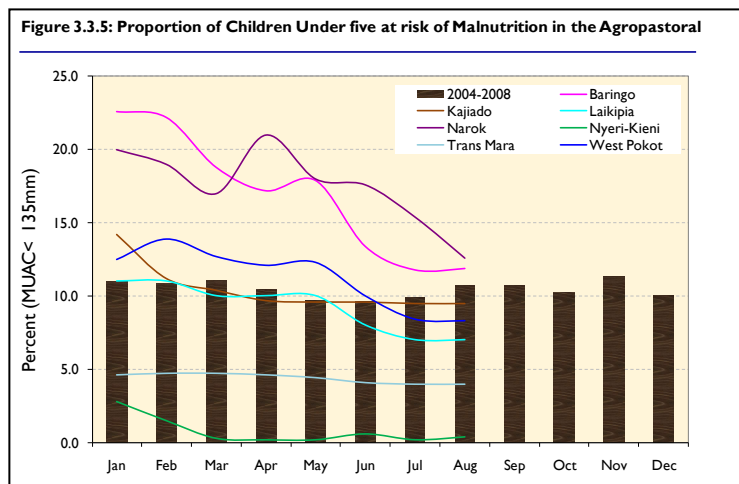
In general, terms of trade have improved significantly for majority of households due to the combined effects of low maize price and high livestock price. As a result, households' access to food has improved considerably for those who may sell livestock in order to purchase cereals. A household is able to access an average of 70-110 kilograms of maize, compared to the normal 30-70 kilograms, from the sale of a goat as shown in figure 3.3.4.



3.3.5.5 Health and Nutrition

The leading causes of morbidity within the cluster include upper respiratory tract infection (URTI), malaria, diarrheal diseases, skin infections and eye infections. In Baringo and West Pokot, increased incidences of URTI have been reported due to increased windy and dusty conditions. Malaria cases are lower than the previous year, which could be due to up-scaled malaria programmes. Over 600 cases of cholera were reported in West Pokot resulting in 13 deaths. Nevertheless, mortality rates have remained low, portraying a normal situation. Both crude and under five mortality rates are below the emergency threshold of 2-4 per 10,000 per day.

Immunization coverage has improved across the cluster following outreach campaigns and accelerated immunization, but remains below the national target of 80 percent except for Baringo district (88 percent). Immunization coverage is 40-75 percent in Kajiado, Laikipia, Narok, Nyeri, Transmara and West Pokot districts. Similarly vitamin A supplementation coverage for children 6-59 months has improved over the last six months except for Transmara. However, coverage is still below the national target of 80 percent.



The rates of child malnutrition as depicted by proportion of children at risk of malnutrition indicate a gradual decline over the last three months in all districts as illustrated in figure 3.3.5.

The MUAC rates are above average in Baringo and Narok districts only. The highest percentage of children at risk of malnutrition is reported in Narok at 15.4 percent. The general improvement in nutrition status is attributed to an increase in food and milk availability across the cluster. Most households are consuming 2-3 meals which depict normal situation. The dietary diversity has also improved and majority of households are consuming 4-5 food groups comprising of maize, beans, vegetables, edible oil and milk.

3.3.5.6 Education

All agropastoral districts are implementing the Home Grown School Meals Programme (HGSMP) with the exception of Transmara district. The ongoing HGSMP coupled with free primary education have contributed to the marginal increase in school enrollment, for instance, by five percent in West Pokot and one percent in Kajiado. At the same time, dropout rates have reduced significantly, by up to 11 and 7.5 percent for girls and boys respectively, in West Pokot. The completion rates have improved in most of the districts including Nyeri, West Pokot and Kajiado as have the transition rates from primary to secondary schools. For example, in Kajiado completion rates stand at 100 percent for boys and 98 percent for girls, while transition rates are 58 and 42 percent for boys and girls respectively. The improvement to education indicators are partly attributed to improved food security situation.

3.3.6 Coping Strategies

The main coping strategies employed by households are charcoal burning and sale; borrowing and sharing of food; sand harvesting, and reducing sizes and skipping meals. Overall, the coping strategies are within normal and no adverse coping mechanisms have been observed.

3.3.7 Food Security Prognosis

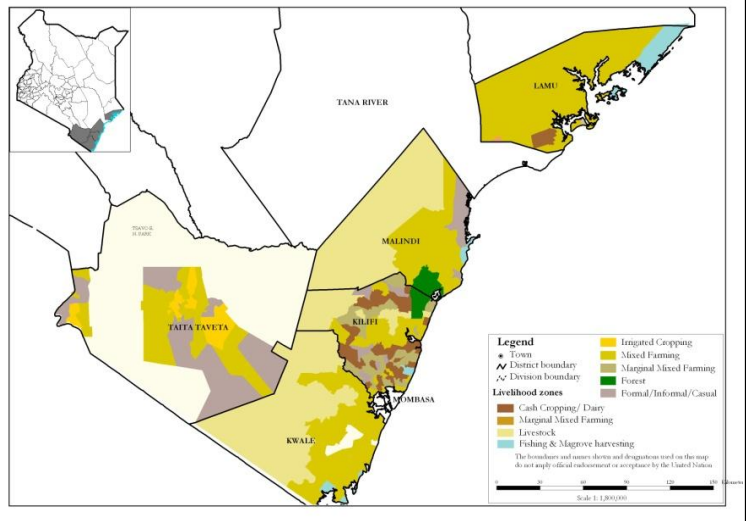
Most areas of the cluster are expected to receive normal to above normal short rains. As a result, food security situation is expected to remain stable in most parts as households will be able to continue restocking and thus accessing livestock products, while also being able to obtain unseasonable harvests. However, the food security situation may deteriorate in parts of Kajiado which though are short rains dependant, are likely to receive poor short rains.

3.4 Coast Marginal Agricultural Livelihood Cluster

3.4.1 Introduction

The coastal marginal agricultural cluster consists of five administrative districts namely; Malindi, Kilifi, Taita Taveta, Kwale and Lamu. The cluster has an estimated population of 2,014,683 people and an area of 47,586 square Kilometers. As figure 3.4.1 show, the main livelihoods include; mixed farming, which accounts for 60 percent of the population; urban livelihood, accounting for 18 percent; marginal mixed farming, and livestock-ranching, each accounting for eight percent; and other minor ones such as fishing and mangrove growing, which account for five percent of the population. Crop and livestock production are the principal source of household income and contribute to 40 and 30 percent respectively, while off-farm activities and remittances contribute to 30 percent of income.

Figure 3.4.1: Coast Marginal Agricultural cluster livelihood zones



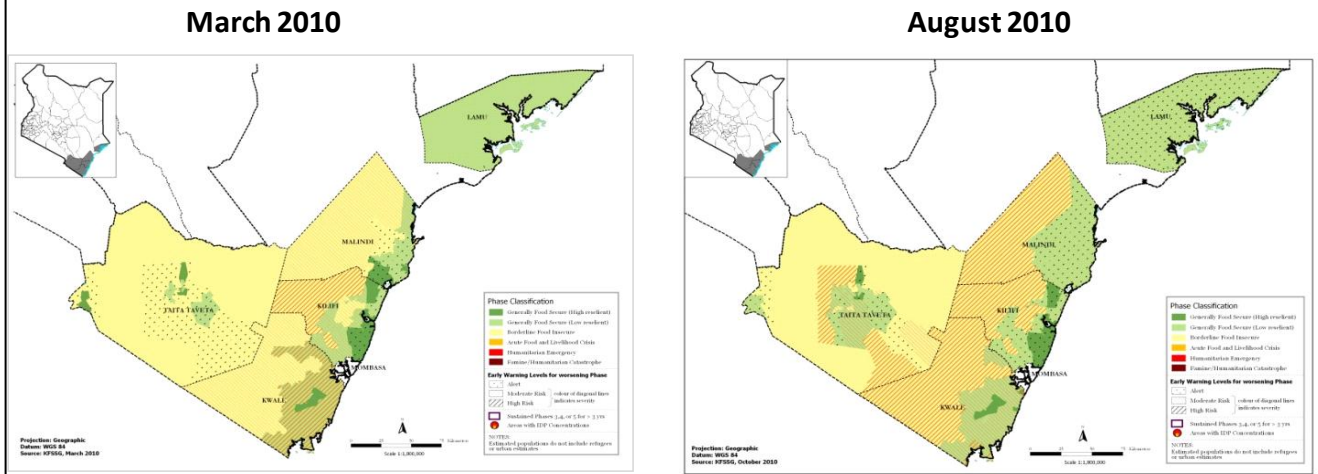
3.4.2 Factors Affecting Food Security

Chronic poverty is the underlying factor to food insecurity in the coast marginal agricultural cluster. Other factors that have affected food security negatively include poor agronomic practices, widespread human-wildlife conflicts, poor market access and high illiteracy levels.

3.4.3 Overall Food Security Situation

Most of the mixed marginal and livestock farming zones in the western parts of the cluster have remained in Borderline Food Insecurity phase. However the risk of deterioration to Acute Food and Livelihood Crisis is high as the short rains are likely to fail leading to influx of livestock; rapid depletion of pasture and water; conflicts; and poor short rains crop harvests. The coastal strip and most parts of mixed farming zone are Generally Food Secure, low resilience and the risk of deteriorating to Borderline Food Insecure phase is alert. Figure 3.4.2 shows a comparison of food security situation after the 2010 short rains and the 2010 long rains.

Figure 3.4.2: Food security situation in Coast Marginal Agricultural cluster



3.4.4 Food Security Trends

Food security is expected to remain stable, in most parts of mixed farming zone in Malindi and Kwale, where households are likely to hold food stocks for an unusually longer period, up to early next year. However, in most parts of marginal mixed farming and livestock zones, food security may start to deteriorate from December onward, due to expected poor short rains, which may lead to poor yields, poor livestock productivities and water shortages. Influx of livestock from neighboring pastoral zone may trigger resource based conflicts and lead to high food insecurity.

3.4.5 Current Shocks and Hazards

3.4.5.1 Rainfall

The period between the cessation of 2009 short rains and onset of 2010 long rains was unusually short in most areas, due to lingering effects of El Nino phenomenon. Throughout the cluster, onset of long rains was timely in mid March 2010. Both temporal and spatial distribution of rains was good across the cluster, with the exception of Taita Taveta and eastern parts of Kilifi districts. Most parts of Lamu, Malindi, Kilifi, Kwale and northeastern Taita Taveta received 80-160 percent of normal rains, while parts of central Malindi received up to 300 percent of normal rains. However, rains were exceptionally poor in north, south and west Taita Taveta, where only 20-50 percent of normal rains were received. The rains were more intense and above average in May and June in most parts of the cluster, except in Taita Taveta. However, the rains were erratic towards the end of long rains season but continued to August.

3.4.5.2 Other Shock and Hazards

Other shocks that negatively impacted livelihoods in the cluster include localized floods, which resulted to destruction of roads, bridges and crops in farms; and caused displacement of families in Kilifi, Malindi and Lamu districts. In addition, there was a cholera outbreak in Kilifi and Kwale, leading to increased morbidity and loss of lives.

3.4.6 Impacts of Shocks and Hazards on Food Security

3.4.6.1 Crop Production

Crop production within the cluster varied. Harvests were generally below average in most of the marginal mixed farming zones within the cluster, either because of poor rains or leaching caused by water logging. However, above average maize harvest by up to 40 percent, was realized in mixed farming zones in Lamu, Kwale and Malindi, following good rains and increased acreage. In general, the area put to crop production increased during the long rains. For instance, area put to cotton production in Lamu increased by 50 percent, and output is expected to be significantly higher than average. In addition, maize acreage also increased. For instance, area put to maize production increased by 10 percent compared to long term average in Malindi. As a result, maize stocks have increased significantly across the cluster and households in Malindi, Kilifi, Kwale and Lamu where harvests were above average, are likely to hold maize stocks for an unusually longer period for the next 2-6 months, well into the hunger season. Poor agronomic practices such as use of uncertified seeds, planting of inappropriate seed varieties and late planting; low adoption of appropriate technology, including irrigated agriculture; and wildlife menace, are among the factors that hinder the realization of agricultural potential within the cluster, even when rains are above average.

3.4.6.2 Livestock Production

Livestock production is an important livelihood activity in the cluster that contributes to about 30 percent of households' cash income. Enhanced availability of water, pasture and browse, has reduced distances to water sources to 0.5-3 kilometers, which is 50 percent below normal. Also livestock diseases are minimal across the cluster and no cases of disease outbreaks have been reported, as low livestock mortality, averaging only five percent shows. As a result, livestock productivity has improved significantly, for instance, household milk production has increased by 10 percent and milk consumption is nearly normalized to 1-3 liters per day. Grazing indicators are expected to remain positive for four months, which is an unusually long period. However, water, browse and pasture is likely to start depleting earlier, particularly if short rains are poor and livestock migration from neighboring Tana River and Ijara districts intensify.

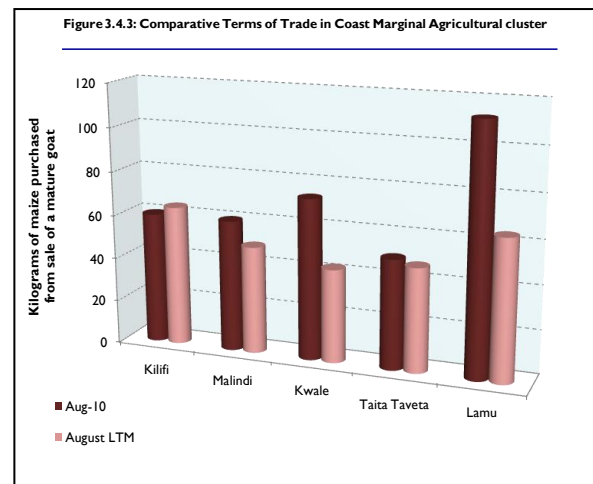
3.4.6.3 Water and Sanitation

Water sources have been recharged to normal across the cluster. Consequently, distances to water sources which range from 1.5-2.5 kilometers in Kilifi, Taita Taveta, Kwale and Malindi, are up to 50 percent below normal. Water is expected to last until onset of the short rains in October. Usually, water stress starts in late August. Water consumption has increased in Kilifi from an average of three liters to 10 liters per person per day. In the other districts within the cluster, water consumption averages 10-15 liters per person per day.

Majority of households obtain water from open sources and are currently not paying for the commodity. Despite poor water quality, majority of households rarely treat water before consumption. For instance, in Kwale only about 10 percent of the population boil water before drinking and a very small proportion use chlorine tablets supplied by the Ministry of Health dispensaries. In Lamu and Malindi some shallow wells are located near pit latrines, which increase likelihood of water contamination. Latrine coverage is low and average 40-60 percent.

3.4.6.4 Market Performance

Though market operations were generally normal, trade activities were disrupted in May and June when market access was impeded in Kilifi, Malindi, Kwale and Lamu, after heavy rains destroyed bridges and roads. Nevertheless, agricultural commodities were readily available in the markets, mainly sourced from local producers. Since March 2010, maize prices have been declining even though they remain 20-40 percent above five year average in Kilifi, Malindi, Kwale and Taita Taveta. Declining maize price is attributed to enhanced market supply from imports landing in Mombasa and from areas within the cluster that realized above average harvests.



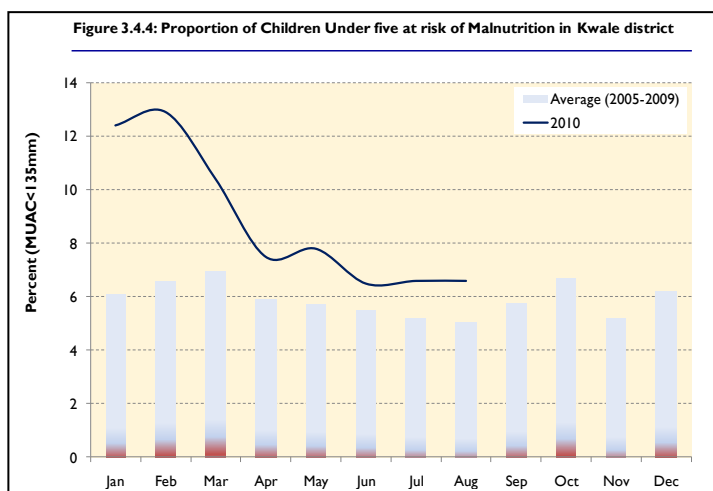
Meanwhile, livestock prices have risen significantly. For instance, goat prices are 30-45 percent above five year average in Taita Taveta, Lamu, Malindi and Kilifi, and up to 125 percent above average in Kwale. As a result, terms of trade for households in Malindi, Kwale and Lamu districts have improved and are 20-75 percent above five year average. Households are able to access 60-113 kilograms of maize compared to the normal 40-65 kilograms from the sale of a goat, as figure 3.43 shows. However, potential benefits from improved terms of trade are moderated by low livestock holdings.

3.4.6.5 Health and Nutrition

The most common causes of morbidity are respiratory tract infections, malaria, diarrheal diseases, skin infections and pneumonia, which are also rising because of extended cold period. For instance, respiratory tract infections and malaria are 14 percent above average in Taita Taveta district. Cholera outbreak was reported at Matsangoni in Bahari division of Kilifi district, and in parts of Kwale district, mainly due to water contamination, compounded by generally poor sanitation and hygiene practices. However, crude mortality rates for under five year old and the general population are within acceptable levels, and for instance are 0.39 and 0.16 percent respectively in Malindi.

Immunization coverage in the coastal region is above the World Health Organization (WHO) threshold of 80 percent, except in Taita Taveta district, where the coverage is only 49 percent. Conversely, Vitamin A supplementation coverage is below WHO threshold of 80 percent. Low Vitamin A coverage could be contributing to poor immunity of under fives, which manifest as marked increase in morbidity. Vitamin A supplementation ensures better food utilization and can reduce diarrheal morbidity by up to 33 percent and overall mortality by 23 percent.

Nutrition status has improved as figure 3.4.4 depict, for Kwale district. The percentage of children at risk of malnutrition, measured by MUAC, is 30-114 percent above average in Kilifi, Kwale and Malindi, but only 20-35 percent below average in Lamu and Taita. The trends show significant improvements, which is attributed to improved food access and enhanced dietary diversity. Majority of households are consuming up to 3-4 food groups in Kwale and Kilifi and up to 5-6 food groups in Malindi. Majority of households are eating three meals per day comprising of maize and beans (githeri), ugali, pulses, green leafy vegetables and fruits.



3.4.6.6 Education

Primary schools within the cluster are either on regular, expanded or home-grown school meals programmes. The increase in enrollment rates reported within the cluster is attributable to school meal programs (SMP), among other factors. Further, school attendance rates have increased and are above average, for example in Taita Taveta district where rates are 97 percent for boys and 93 percent for girls. In Malindi, increased retention rates and good performance in examinations is also being attributed to SMP among other initiatives. However, food security related issues like engaging more household members in income generating activities like casual labor is widespread and is depicted by low transition rates in Kilifi (54 percent for boys and 46 percent for girls) and high dropouts in Lamu and Malindi.

3.4.7 Coping Strategies

Significant improvements in food security conditions within the cluster have enhanced access to food for households. As a result, majority of households are applying normal coping strategies, minimally. Strategies like reduction of food portions and number of meals, charcoal burning for sale, selling of firewood and labor migration are practiced at low intensity across the cluster. Normalizing situation is evidenced by low coping strategy index (CSI), averaging less than one. The CSI is 10-50 percent below average in Kilifi, Malindi, Lamu and Taita Taveta, but is about 10 percent above average in Kwale.

3.4.8 Food Security Prognosis

In the mixed farming zones within the cluster, outside of Taita Taveta, food security situation is expected to improve in the next two-three months, and remain stable thereafter. Households are expecting an above average long rains harvests, and households' stocks are projected to last 4-6 months in many areas. However, poor short rains due to La Niña phenomena may lead to deterioration in food security situation, particularly in marginal mixed farming and livestock zones where households are depleting food stocks; and may realize below normal short rains harvest. The possibility of livestock influx from the pastoral zone may lead to rapid depletion of water and pastures, and trigger conflicts or an upsurge of water borne diseases.

3.5 South Eastern Marginal Agricultural Cluster

3.5.1 Introduction

The southeastern marginal agriculture cluster comprise of six districts namely; Tharaka, Mbeere, Makueni, Meru North, Mwingi and Kitui, which have been subdivided into 33 new districts. The cluster has an estimated population 2,943,752 and occupies an area of 46,016 square kilometers. The larger Kitui and larger Mwingi districts account for 66 percent of the entire cluster population and half of the new administrative districts.

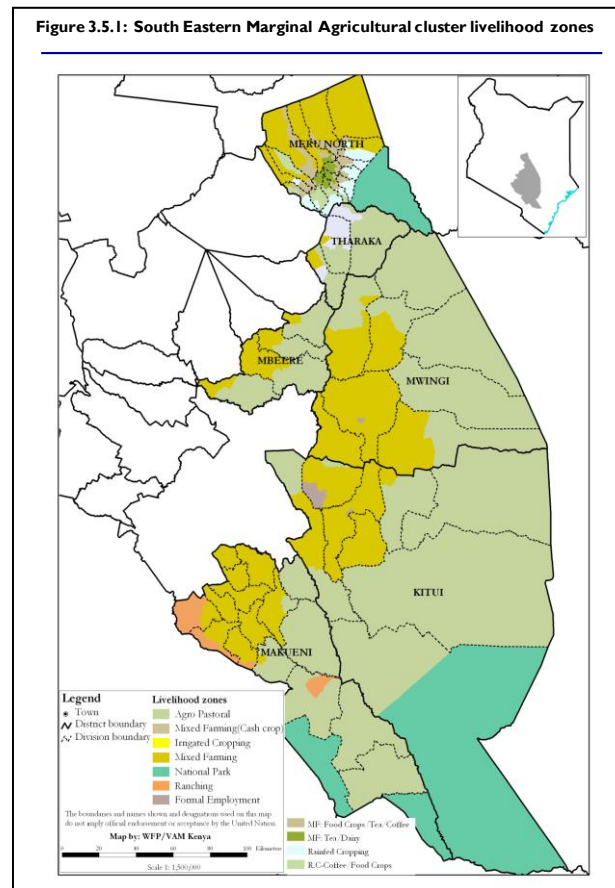
As figure 3.5.1 shows, the predominant livelihood zones within the cluster are mixed farming, marginal mixed farming and formal employment/trade/casual employment, which account for 65, 26 and nine percent of the population. Crop production is the most important income source, contributing to about 40 percent of household income. Livestock rearing and employment are also important sources of household income contributing to 35 and 25 percent of household income, respectively.

3.5.2 Factors Affecting Food Security

The main factors affecting food security within the cluster are frequent droughts, poor infrastructure; unreliable agricultural markets; high crop losses, due to inadequate post harvest management; low use of certified seeds; and low adoption of traditional drought tolerant food crops.

3.5.3 Overall Food Security Situation

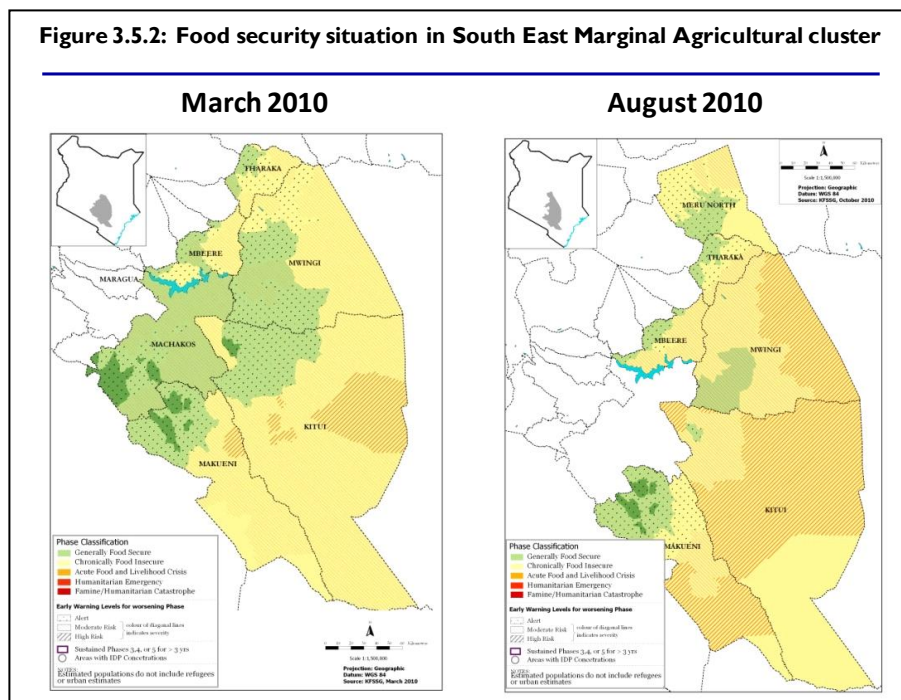
The food security situation has remained stable or improved in most parts of the cluster, compared to the period after the short rains. Most of the mixed farming zones are in Generally Food Secure low resilience phase, and the risk level is at alert. Most of the marginal mixed farming zones have remained in Borderline Food Insecure phase, and the risk level has increased, from moderate to high risk of deteriorating to Acute Food and Livelihood Crisis, as shown in figure 3.5.2.



3.5.4 Trend of Food Security

The food security situation is likely to remain stable in most of mixed farming zone, which realized above average long rains maize harvest, and where households are likely to hold food stocks for the next 4-6 months. In addition, pasture and browse condition together with water availability has improved, and is likely to sustain livestock production until the onset of the short rains. Poor short rains imply that the main season will be poor, for most households and food security situation will deteriorate.

Figure 3.5.2: Food security situation in South East Marginal Agricultural cluster



3.5.5 Current Shocks and Hazards

3.5.5.1 Rainfall

The long rains started earlier than usual, in February-March, in most parts of the cluster though the amount of rainfall received varied. The long rains performed better in mixed farming livelihood zone, which received 80-120 percent of the normal rains. However, rains were poor in most of marginal mixed farming zone which received only 20-80 per cent of the normal rains. The long rains ceased normally, in June, in most areas.

3.5.5.2 Other Shocks and Hazards

Other shocks and hazards that have impacted livelihoods within the cluster include crop pests and diseases, which have led to reduced yields in Kitui, Mwingi and Makueni; loss of maize stocks to aflatoxin poisoning in parts of Mwingi and Meru North; and an upsurge of livestock diseases in Mbeere, Tharaka and Meru North.

3.5.6 Impacts of Hazards on Food Security

3.5.6.1 Crop Production

The varied performance of long rains affected crop production in most of marginal mixed farming zones, particularly in Kitui and Makueni. Most farmers were unable to prepare land adequately, resulting to reduced long rains crop acreage and up to 30 percent yield reduction. For instance, in Kitui only about half of the area normally put to production, during the long rains, was planted. However, in mixed farming zone, rains were adequate for crop production resulting to 30-50 percent above average harvest, especially in Mwingi, Meru North, Mbeere and Tharaka. Consequently, majority of households in marginal mixed farming and mixed farming zones are likely to retain food stocks for the next 2-3 and 4-6 months respectively.

3.5.6.2 Livestock Production

Livestock productivity has improved significantly due to ample availability of water, pasture and browse, in most areas. While distances to water sources have reduced and are up to 150 percent below average, pasture is available and likely to last more than two months. As a result, livestock body condition is good for all livestock species, and calving rates have increased by up to 30 percent.

At the same time, kidding and lambing have increased by up to 75 percent in the mixed farming livelihood zones. However, due to low livestock holding, milk production has remained below average for households, who are only able to access about 300-500 ml per day, compared to the normal of more than a litre.

3.5.6.3 Water and Sanitation

Most water sources have recharged to 70-100 percent of capacity across the cluster. As a result, distances to water sources have reduced by up to 50 percent, with the exception of Meru North where distance to water remain high, up to 30 percent above normal in some areas. In marginal mixed farming areas in Kitui, lower divisions of Makueni and grazing areas of Mbeere, distances to water average 1-10 kilometers.

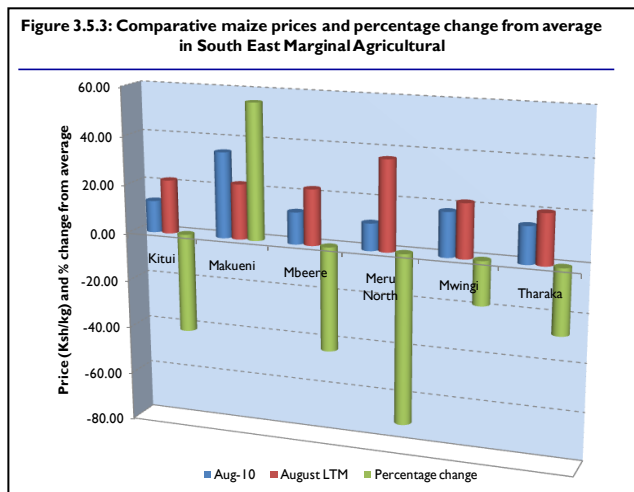
The waiting time at water sources also vary across the cluster and are: less than 25 minutes in mixed farming zone, from piped water supply; 30-45 minutes in other parts of mixed farming zone, without piped water supply; and are 45-60 minutes in marginal mixed farming zones in Kitui, which suggests a normal situation. The cost of water range between Kshs. 10-15 per 20 liters jerrycan compared to the normal five shillings, particularly in town areas. Water quality is fair to good in most areas of the cluster but water treatment through boiling and use of chlorine based tablets is minimal.

3.5.6.4 Market Performance

Market operations though normal, were characterized by a large influx of brokers at the start of harvesting period. However, livestock trade volumes have remained below average throughout the season, due to low market supply. In contrast, demand for livestock is high as households continue to restock herds. As a result, livestock prices have increased across the cluster, for all species. For instance, goat prices are 40-70 percent above five year average in Meru North, Kitui, Tharaka and Mwingi, and up to 150 percent above average in Makueni.

Meanwhile, heightened market supply of maize has resulted into significant price reductions. Maize prices are currently 20-70 percent below five year average in Mwingi, Tharaka, Kitui, Mbeere and Meru North, as figure 3.5.3 show. However, in Makueni maize price is up to 55 percent above average.

Terms of trade have improved and households are able to access 90-210 kilograms of maize from sale of a goat, compared to the normal 45-60 kilograms. Significant improvements have occurred in Tharaka, Mwingi, Mbeere, Meru North and Kitui. However, households have to sell 1.5-2.3 bags of maize in order to purchase a goat, which is an impediment to restocking.

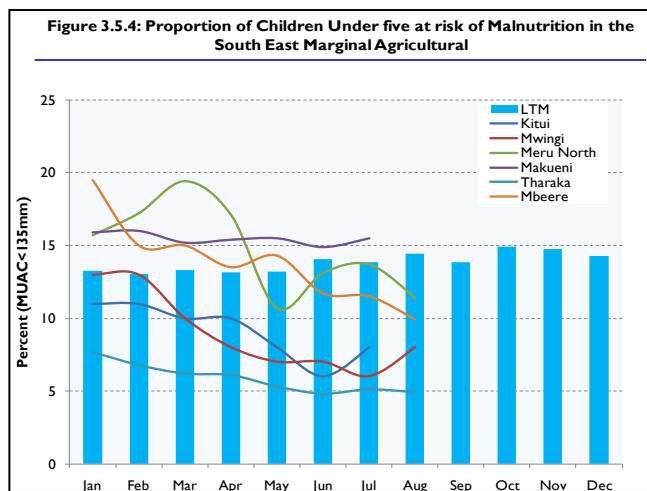


3.5.6.5 Health and Nutrition

The five leading causes of morbidity across the cluster for both under fives and the general population are malaria, upper respiratory tract infections (URTI), intestinal worms, diarrhea, and skin diseases. Cases of morbidity have increased due to hot and humid weather and dusty conditions; increased mosquito breeding sites, after the rains; inadequate use of mosquito nets; inadequate waste disposal; and low latrine coverage, which average 26 percent, across the cluster.

Furthermore, low immunization and vitamin A supplementation rates could be contributing to high morbidity. Immunization and coverage is below national targets of 80 percent, except in Mbeere while vitamin A supplementation is below recommended threshold in all the districts. Efforts are needed to boost both Vitamin A and immunization coverage for reduced morbidity and improved food utilization.

The nutrition status of children under five years has improved significantly, and Mid Upper Arm Circumference (MUAC<135mm) rates are below the long term means as figure 3.5.4 show. In the last three months, the proportion of children at risk of malnutrition has reduced by up to 19.5 percent. Significant changes have occurred in Mwingi and Mbeere, from 13 and 19.5 percent to 6.8 and 11.5 percent respectively. However, the percent at risk of malnutrition is high in marginal mixed farming livelihood zone in Kitui where MUAC rate average 13.2 percent compared to 2.3 percent in mixed farming zone. Improvement to nutrition status is attributable to improved dietary diversity across the cluster. Most households are consuming three meals per day, made up of an average of 3-4 food groups, which is indicative of a normal situation. The diets consist of maize, beans/cowpeas, green gram, vegetable and fruits.



3.5.6.6 Education

Primary schools identified for the school meals programme (SMP) are situated in areas of high poverty and harsh climatic conditions. With the exception of Meru North, all the districts are implementing regular or homegrown school meals programme. Some schools have also benefited from the Government of Kenya (GoK) relief food. In general, there is a marked increase in enrollment and attendance in schools that are under the SMP, and in some instances, pupils have transferred from non-implementing to implementing schools in Kitui district.

Throughout the cluster, transition rates from primary to secondary schools are high, averaging 73 percent, as are retention rates. Thus, performance in Kenya Certificate of Primary Education (KCPE) has improved, particularly in Mbeere district. Dropout rates are minimal, an indication of improved access to food, except in parts of Makueni district where dropouts have occurred. In Mwea division of Mbeere district 1,537 dropouts have been reported, mainly due to child labor in miraa farms, livestock herding or domestic work.

3.5.7 Coping Strategies

Throughout the cluster, coping strategies being employed indicate a normal situation. Households are not employing any severe coping strategies and the Coping Strategy Index (CSI) is low, averaging 0.2-0.4. Any CSI above 0.4 is indicative of high food insecurity. However, higher CSI are recorded for most areas in marginal mixed farming zones, but are below the critical level.

3.5.8 Food Security Prognosis

The food security situation in the South Eastern Marginal Agriculture cluster has either stabilized or improved and the situation is likely to remain favorable for the next 4-6 months, particularly in mixed farming zones. However, in marginal mixed farming zones, household food stocks are likely to deplete early and food security may start to deteriorate by October. Poor performance of critical 2010 short rains may exacerbate food insecurity since the next major harvest will be in February-March 2012.

4.0 Recommendations

4.1 Rationale for Sustained Cross-sectoral Interventions

The 2010 long rains season was the second consecutive good season in most parts, after previous four to five poor seasons. The long rains positively impacted the recharge of water sources and regeneration of pasture and browse in many areas, thus strengthening recovery of food security. Beneficial impacts of the rains have led to improvements to water availability, for both domestic and livestock use; enhanced crop and livestock production; better terms of trade, and thus access to food; and has resulted to improved nutrition status in many areas. However, there is need for continued cross-sectoral interventions because of the following;

- Recovery has not been uniform in all areas such as in parts of the north, northeast, and coastal lowlands which received poor long rains.
- Persistent high rates of malnutrition, for example in pastoral areas of Mandera and Wajir, where GAM rates are between 19-25 percent.
- Below par implementation of recommended non-food interventions in most areas, this is limiting the sustainable recovery of livelihoods.
- Urgent need to build capacities of livelihoods to mitigate impacts of probable La Niña.
- Unresolved effects of impacts of floods, livestock disease outbreaks and conflict, which are still lingering.
- It is crucial to avoid 'institutionalization' of undesirable coping strategies, such as charcoal burning and sand harvesting, which lead to environmental degradation.
- The recognition of the fact that one or two good seasons are not sufficient to reverse extended period of poor seasons and sudden shocks.

Proposed immediate sectoral interventions are summarized in subsequent sections: Section 4.2-4.8.

4.2 Agriculture Sector

Immediate Interventions			
	Intervention	District	Cost (Ksh)
1	Promotion of water harvesting and irrigation.	Narok, Kajiado, Baringo, Transmara, West Pokot, Laikipia, Kieni, Malindi, Lamu, Kwale, Taita Taveta, Mandera, Ijara, Garissa, Turkana, Marsabit, Moyale, Samburu, Meru North, Tharaka, Mwingi, Mbeere, Kitui, Makueni, Wajir, Isiolo and Tana River	250 M
2	Supply of seed for drought tolerant crops.	Narok, Kajiado, Baringo, Transmara, West Pokot, Laikipia, Kieni, Malindi, Lamu, Kwale, Taita Taveta, Mandera, Ijara, Garissa, Turkana, Marsabit, Moyale, Samburu, Meru North, Tharaka, Mwingi, Mbeere, Kitui, Makueni, Wajir, Isiolo and Tana River	100 M
3	Promotion of soil conservation and conservation agriculture.	West Pokot, Baringo, Laikipia, Narok, Kajiado, Transmara, Lamu, Kilifi, Malindi, Kwale Taita Taveta, Kitui, Makueni, Mwingi, Tharaka, Meru North, Kieni and Mbeere	150 M
4	Promotion of post-harvesting technologies and aflatoxin campaigns/ surveillance.	West Pokot, Baringo, Laikipia, Narok, Kajiado, Transmara, Lamu, Kilifi, Malindi, Kwale Taita Taveta, Kitui, Makueni, Mwingi, Tharaka, Meru North, Kieni and Mbeere	150 M
5	Promote value addition through processing.	Mandera, Wajir and Tana River	100 M
6	Establish cereal banks	Mwingi and Tharaka	50 M
7	Seed bulking for drought tolerant crops.	Kieni, Lamu, Malindi, Kwale, Kilifi and Taita Taveta	200 M
8	Promotion of green house technology.	Kitui, Makueni, Mwingi, Tharaka, Meru North, Kieni and Mbeere	150 M
Grand Total			1,150 M

4.3 Livestock Sector

Immediate Interventions			
	Intervention	District	Cost (Ksh)
1	Livestock disease control, surveillance and vaccination.	Narok, Kajiado, Baringo, Transmara, West Pokot, Laikipia, Kieni, Malindi, Lamu, Kwale, Taita Taveta, Mandera, Ijara, Garissa, Turkana, Marsabit, Moyale, Samburu, Meru North, Tharaka, Mwingi, Mbeere, Kitui, Makueni, Wajir, Isiolo and Tana River	141 M
2	Restocking: purchase and distribution of breeding stock (bucks and dooper rams)	Narok, Kajiado, Baringo, Transmara, West Pokot, Laikipia, Turkana, Marsabit, Moyale, Samburu, Mwingi, Mbeere, Kitui and Makueni	548 M
3	Purchase bee hives and bee keeping kits	Narok, Kajiado, Baringo, Transmara, West Pokot, Laikipia and Tana River.	27 M
4	Promotion of fish farming	Turkana, Kieni and Kajiado	14 M
5	Reseeding of pastures	Tharaka, Mwingi and Mbeere	26 M
6	Fodder conservation and hay making	Tana River, Mandera, Ijara, Garissa, Meru North, Tharaka, Mwingi, Mbeere, Kitui and Makueni	32 M
7	Promotion of alternative livelihoods.	Garissa	12 M
Grand Total			800 M

4.4 Water Sector

Immediate Interventions			
	Intervention	District	Cost (Ksh)
1	Construction and de-silting of water pans and dams.	Marsabit, Kieni, Baringo, West Pokot, Laikipia, Kieni, Malindi, Lamu, Kwale, Taita Taveta, Mandera, Narok and Turkana,	150 M
2	Repair, rehabilitation, drilling and equipping of boreholes.	Turkana, Kajiado, Narok, West-Pokot, Baringo, Laikipia, Transmara and Nyeri (Kieni West and East), Malindi, Lamu, Kwale and Kilifi, Mandera, Wajir, Tana River, Makueni, Mbeere and Kitui	163 M
3	Spring protection / rehabilitation.	Narok, Kajiado, Baringo, Transmara, West Pokot, Laikipia, Malindi, Lamu, Kwale and Kilifi	5 M
4	Capacity building of water committees through trainings; activation of Rapid Response Teams.	Malindi, Lamu, Kwale and Kilifi, Mandera , Tana River, Mbeere, Makueni, Kitui and Mwingi	11 M
5	Provision of water storage facilities and provision of water treatment chemicals.	Malindi, Lamu, Kwale and Kilifi, Kitui/Mbeere and Makueni	24 M
6	Water trucking.	Wajir and Ijara	5 M
7	Repair of four water bowsers.	Wajir	2 M
Grand Total			360 M

4.5 Health and Nutrition Sector

Immediate Interventions			
	Intervention	District	Cost (Ksh)
1	De-worming and Vitamin A supplementation.	Mbeere, Mwingi, Agro-pastoral districts	9 M
2	Emergency polio vaccination and vitamin A supplementation.	Turkana	8 M
3	Public hygiene awareness and environmental sanitation	Mbeere, Mwingi, Tharaka, Turkana, Agro-pastoral districts	42 M
4	Intensify human disease surveillance.	Meru North, Mbeere, Mwingi, Turkana, West Pokot, Baringo, Laikipia, Transmara, Kajiado and Narok	6 M
5	Nutrition survey.	Mbeere and Garissa	3 M
6	Supply of water treatment chemicals to households.	Mbeere, Kitui, Makueni, West Pokot, Baringo, Laikipia, Transmara, Kajiado and Narok	7 M
7	Integrated outreach programs and medical supplies.	Malindi, Turkana, Marsabit, Garissa, Wajir, Isiolo, Mandera, Moyale and Samburu	93 M
8	Facilitate supervision of nutrition activities in the district.	Mandera, Wajir, Garissa and Isiolo.	13 M
9	Scale up integrated management of acute malnutrition (IMAM).	Narok, Kajiado, Baringo, Transmara, West Pokot, Laikipia, Kieni, Malindi, Lamu, Kwale, Taita Taveta, Mandera, Ijara, Garissa, Turkana, Marsabit, Moyale, Samburu, Meru North, Tharaka, Mwingi, Mbeere, Kitui, Makueni, Wajir, Isiolo and Tana River	98 M
10	Nutrition education on infant and young child feeding practices.	West Pokot, Baringo, Laikipia, Narok, Kajiado and Transmara	35 M
11	LLITN (treated nets) distribution to children, mothers and the aged.	West Pokot, Baringo, Laikipia, Narok, Kajiado and Transmara	21 M
	Grand Total		335 M

4.6 Education Sector

Immediate Interventions			
	Intervention	District	Cost (Ksh)
1	Expansion of Home Grown School Feeding Programme.	Tharaka, Mbeere, Makueni, Mwingi, Meru North, Narok, Kitui and Kilifi	40 M
2	Water trucking to schools.	Wajir, Malindi, Lamu, Kilifi, Turkana, Samburu and Marsabit	5 M
3	Advocacy campaigns against child labor and early marriages.	Narok, Mbeere, Malindi, Kilifi and Lamu	10 M
4	Infrastructure development (construction of toilets)	Wajir, Malindi, Lamu and Kilifi	5 M
5	Provision of water tanks for rainwater harvesting.	Wajir, Narok, Kajiado, West Pokot, Baringo, Malindi, Kilifi and Laikipia	35 M
6	Health education campaigns and de-worming.	Malindi, Lamu, Taita Taveta, Kilifi, Tharaka, Mbeere, Makueni, Mwingi and Meru North	5 M
	Grand Total		100 M

4.7 Market Sector

Immediate Interventions			
	Intervention	District	Cost (Ksh)
1	Improve market infrastructure including information platform, fisheries storage facilities, milk cooling facilities and cereal banking.	Garissa, Malindi, Kilifi, Lamu, Meru North and Turkana	177 M
2	Restocking Cattle and goat Camel and goat	Narok, Kajiado, Baringo, Transmara, West Pokot, Laikipia, Kitui, Makueni Tana River, Turkana, Marsabit, Moyale and Samburu.	80 M
3	Livestock off-take.	Turkana	100 M
4	Capacity building and support to value addition and marketing.	Garissa, Malindi, Mandera, Wajir and Tana River.	23 M
5	Support to livestock drug supply chain.	Turkana	20 M
6	Support farmers to be able to transport maize to NCPB.	Lamu	1 M
	Grand Total		401 M

4.8 Food Sector

District	Total District Population	March – August 2010		September 2010 – February 2011	
		% in need	Number of people requiring food assistance	% in need	Number of people requiring food assistance
Turkana	459,202	58	265,000	48	220,700
Wajir	576,894	30	173,000	23	134,300
Mandera	334,476	35	117,000	31	105,000
Garissa	338,452	30	102,000	18	61,300
Marsabit	148,016	61	90,000	63	92,600
Samburu	175,922	41	73,000	21	37,400
Laikipia	440,781	15	66,000	7	32,600
West Pokot	392,456	16	61,000	11	43,300
Tana River	237,740	25	58,000	22	52,700
Isiolo	131,740	42	56,000	38	49,900
Kajiado	568,753	8	46,000	7	39,200
Baringo	323,392	12	38,000	8	26,200
Moyale	62,665	26	17,000	21	13,300
Ijara	90,519	13	12,000	13	12,000
Subtotal Pastoral Districts (GFD)	4,281,008	27	1,174,000	22	920,500
Makueni	940,096	14	130,000	10	95,900
Kwale	599,551	10	61,000	8	48,100
Mwingi	356,805	13	46,000	13	45,900
Kilifi	691,708	6	41,000	6	41,000
Kitui	598,028	6	37,000	4	24,900
Taita Taveta	269,463	13	34,000	11	29,900
Malindi	370,015	7	26,000	6	22,500
Mbeere	200,317	12	25,000	0	0
Tharaka	125,334	12	16,000	0	0
Subtotal Marginal Agricultural Districts (FFA)	3,825,666	11	416,000	8	308,200
Total	8,106,674	20	1,590,000	15	1,228,700