



## **CONSOLIDATED INTER-AGENCY REPORT**

**Kenya Food Security Steering Group  
(KFSSG)**

## **KENYA LONG RAINS ASSESSMENT REPORT 2006**

**12<sup>th</sup> SEPTEMBER 2006**

A collaborative report of the Kenya Food Security Steering Group; (Kenya Office of the President; Ministries of Agriculture, Livestock and Fisheries Development; FEWS NET, FAO, Oxfam GB, UNDP, WFP; and UNICEF; with financial support from the Government of Kenya, WFP, UNICEF and Oxfam GB.

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## LIST OF ABBREVIATIONS

ADC	Agricultural Development Corporation
ALRMP	Arid Lands Resource Management Programme
ALSWG	Agriculture and Livestock Sector Working Group
ART	Acute Respiratory Tract
ASAL	Arid and Semi Arid Lands
B/CCPP	Bovine and Caprine Contagious Pleuro Pneumonia
CBTD	Community Based Targeting
CBTF	Community Based Therapeutic Feeding Programmes
CCPP	Contagious Caprine Pleuro Pneumonia
CERF	Central Emergency Response Fund
CRS	Catholic Relief Services
CSB	Corn Soya Blend
ECDs	Early Childhood Development
ECF	East Coast Fever
EIA	Environmental Impact Assessment
EMOP	Emergency Operation
FANC	Focused Antenatal Care
FAO	Food and Agriculture Organization
FEWS NET	Famine Early Warning System Network
FFW	Food For Work
FMD	Foot and Mouth Disease
GAM	Global Acute Malnutrition
GB	Great Britain
GFD	General Food Distribution
GoK	Government of Kenya
Ha	Hectare
HIST	Historic
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
Hrs	Hours
ICPAC	Climate Prediction and Application Center
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IDSR	Integrated Disease Surveillance and Response
IGAD	Intergovernmental Authority on Development
KARI	Kenya Agricultural Research Institute
KEPHIS	Kenya Plant Health Inspectorate Service
KES/Kshs	Kenya Shillings
KFSM	Kenya Food Security Meeting
KFSSG	Kenya Food Security Steering Group
Kms	Kilometers
KVA	Kilovolt Amperes
LEWS	Livestock Early Warning System
LR	Long Rains
LRA	Long Rains Assessment
Lts	Litres
LZ	Livelihood Zone
MCF	Malignant Catarrh Fever
MoA	Ministry of Agriculture
MoEST	Ministry of Education, Science and Technology

MoH	Ministry of Health
MT	Metric Tonnes
MUAC	Mid-Upper Arm Circumference
NCPB	National Cereals and Produce Board
NDVI	Normal Deviation Vegetative Index
NGO	Non Governmental Organization
NPEP	National Poverty Eradication Plan
OP	Office of the President
PMG	Producer Marketing Group
<i>PPR</i>	<i>Peste des Petits Ruminants</i>
RACIDA	Rural Agency for Community Integrated Development and Assistance
SFC	supplementary feeding centres
SR	Sub-regional
TFC	Therapeutic Feeding Centre
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
USD	United States Dollars
USGS	United States Geological Survey
UTI	urinary tract infection
WFP	World Food Programme
WHO	World Health Organization
WRSI	Water Requirement Satisfaction Index

## **1.0 EXECUTIVE SUMMARY**

From July to August 2006, a joint GoK, UN and NGO multi-sectoral Long-Rains Assessment Mission assessed the impact of the 2006 long rains on food security among drought-affected households. The performance of 2006 long rains of February to June was varied. Generally, precipitation was fair to good in the northeast, coast and in some areas in the south. However rainfall performance was 50-75 percent below normal in the northwestern and northern parts of the country.

A succession of poor rain seasons preceding the 2006 long rains, had led to significant livestock losses among the pastoralists and agro-pastoralists, adversely affecting a critical source of food and income for most households. Although the 2006 long rains resulted in mixed improvements in some food security indicators such as pasture and water availability, drought-affected communities are just starting recover from a humanitarian and livelihood crisis. These households will require several successive seasons to recover their livelihoods.

The long rains season is the minor season in the drought affected marginal agricultural communities in the coastal and southeastern lowlands. The long rains improved pasture, browse and water availability for livestock and domestic use but harvest from the little crop planted was affected by unreliable rainfall. Food security of the marginal agricultural livelihoods is still under pressure and their medium term scenario depends critically on the outcome of the October to December short rains season.

Communities affected by the drought still remain extremely vulnerable and require short-term assistance to recover their livelihoods together with long term strategies to reduce vulnerability. There still is an urgent need for emergency and non-food assistance including food aid, non-food aid and medium to long term interventions.

### **1.1 FOOD AID INTERVENTION**

At the height of the drought last year, 3.5 million people received food aid. As a result of the recent rains, the number of people fed under the general food distribution is now reduced from 3.1 million to 2.4 million. However, school feeding programmes, covering about 550 thousand children, would remain the same.

Kenya expects a good harvest of maize this year. Therefore, KFSSG recommends considering local purchases of food aid where possible. An improved single food pipeline concept and a community based targeting (CBTD) approach were very effective instruments in providing food to deserving households between February and August 2006. The KFSSG and its partners stress the importance of maintaining both the single pipeline and the CBTD approach.

The total food requirement for the period 1<sup>st</sup> September 2006 to 1<sup>st</sup> March 2007 for all programmes is 188 thousand MT. There is a net requirement of 75.5 thousand MT at a cost of US\$ 44 million. As the monthly food need will be close to 30 thousand MT, the KFSSG

urges donors, including the Government of Kenya, to provide in-kind or cash resources as a matter of urgency.

## **1.2 NON-FOOD AID INTERVENTION**

### **1.2.1 Agriculture and Livestock**

Activities in the agriculture and livestock sector have focused mainly on the provision of seed to drought affected farming communities; de-stocking and re-stocking vulnerable pastoralists; provision of fodder; and emergency animal health projects in both farming and pastoral areas. The Agriculture and Livestock Sector Working Group of the KFSM is currently working on the development of a recovery strategy for the sector, to take into account the easing of the drought conditions in most areas, and adjusting the focus of activities more towards activities that will help communities to recover their livelihoods.

The priorities of such a strategy would include: the promotion and marketing of drought resistant crop varieties, together with rain water harvesting in the dry rain-fed agricultural areas (seed provision to the eastern lowlands and coast is a particular priority for the main short rains season); expanding existing animal health activities to allow surviving livestock to reach optimal production and value in the market; reseeding rangelands that have become extremely degraded; research and develop alternative rain water harvesting in pastoral areas and link water provision with range management and marketing; increasing fodder production in riverine areas; expand the livestock marketing information system; and strengthening conflict prevention and management. The development of marketing infrastructure alongside disease control will be a longer-term strategy that will increase the value of livestock in the ASAL areas and reduce price fluctuations. In both drought-prone farming and pastoral areas, there is a need to diversify livelihoods: in the former through the introduction of new high value crop varieties such as aloe and vanilla; and in the pastoral areas to address the problem of destitute families who have lost all their livestock and have settled around towns and trading centers, including the potential for instituting safety nets/social protection programmes.

The details of the recovery strategy, including projects, implementing agencies and budgets will be collated by the Sector Working Group and submitted to the Government of Kenya and international donors in the near future.

### **1.2.2 Health and Nutrition**

Interventions will continue addressing health and nutrition needs of 76 thousand pregnant and lactating mothers and 460 thousand vulnerable children under five years old in pastoral areas. An additional US\$ 4.4 million<sup>1</sup> are required over the next six months for the following key interventions:

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<sup>1</sup> This figure does not include all planned NGO activities.

Targeted supplementary feeding: Resources are required to sustain and expand Supplementary and Therapeutic feeding programs targeting malnourished children. WFP and UNICEF and implementing partners will ensure close collaboration between supplementary feeding and general food distributions.

Improved Access to Basic Health Services: There is an urgent need to support essential health services in the northern areas. Funds are required to deploy 84 health personnel across marginal districts to support: outreach services, train health workers on IDSR and Kala azar, and implement new malaria treatment policy.

Nutrition and disease surveillance: In order to prioritize interventions and act on early warning information, the Ministry of Health will continue disease and nutrition surveillance which can be used in conjunction with routine data collected through Arid Lands and the Health Information Management System.

### **1.2.3 Water and Sanitation Sector**

Despite some improvement in water availability and access, there is still an urgent need for interventions in the water and sanitation sector in most areas. Required interventions include: reducing distances to water sources for both livestock and humans, providing water to schools and health facilities, timely repair of boreholes, water tankering and improving domestic water quality. Additional funding is required for expansion of water supplies and rehabilitation of existing ones; enabling communities to operate and maintain their own water supply systems; improving water quality through education on hygiene and sanitation as well as protecting water points from contamination.

### **1.2.4 Education**

The Education Sector Working Group will continue to support the more than 500,000 children in ASAL districts most affected by the recent drought: Garissa, Wajir, Ijara, Mandera, Moyale, Marsabit, Turkana, West Pokot, Samburu and Isiolo. The intervention will include: provision of meals for additional schools through the expanded school feeding programme; provision of sufficient water to 915 schools; and building the capacity of education stakeholders at national, district and community levels in contingency planning, emergency preparedness and mitigation.

## **1.3 MEDIUM AND LONGER TERM INTERVENTIONS**

The KFSSG believes there is still an urgent need for continued emergency food and non-food assistance, and that social safety nets (food-based and cash-based), which provide more continuous and predictable support to vulnerable groups, should also be considered. The KFSSG also believes there is an equally urgent need to address the causes of chronic food insecurity that undermine the ability to mitigate cyclical droughts and other hazards. In Kenya, the high malnutrition rate among vulnerable groups is usually due to a combination of food and non-food factors. There is a real fear that recurrent food security emergencies in the ASAL Districts sidetrack both the Government and donors from focusing on development initiatives aimed at making people less vulnerable to food crises.

While emergency food and non-food assistance, including implementation of a social safety net system, would facilitate stabilization of food security in the short term, development initiatives promote livelihoods (including asset building) and ensure long term food security.

KFSSG strongly recommends that the underlying causes of food insecurity be addressed concurrently with emergency interventions in order to break the cycle of emergency responses to address a fundamentally chronic problem. Additional investment needs to be directed to marginal areas urgently in order to reduce levels of poverty and vulnerability.



## **2.0 INTRODUCTION**

### **2.1 ASSESSMENT BACKGROUND**

Eighty four percent of Kenya's land is classified as arid and semi-arid and is prone to successive droughts. In the last hundred years, Kenya has experienced 28 major droughts. The latest drought, spanning four years, has resulted in significant loss of livestock. As a response, food and non-food interventions by the Government, UN and NGOs continue. The impact of the drought and consequent interventions require periodic assessments. Since 2004, the Kenya Food Security Steering Group (KFSSG) has coordinated bi-annual assessments corresponding to the two rain seasons: short rains and long rains. The most recent being the Long Rains Assessment conducted in July and August of 2006.

### **2.2 SCOPE**

The Long Rains Assessment 2006 was conducted to determine the impact of the long rains season, in conjunction with the impact of previous rains, on the food security situation of drought prone districts. Considering the broad, multi-sectoral definition of food security, teams were composed of government and non-government experts from both food and non-food sectors. The non-food sectors included water, health, education, agriculture and livestock. Government of Kenya (Office of the President; Arid Lands Project; Ministries of Agriculture, Livestock, Water, Health), United Nations (WFP, UNICEF, UNDP, UNOCHA) and NGOs (FEWSNET, World Vision) participated in the assessment. Since detailed nutrition surveys could not be conducted, teams were provided with results of the most recent nutrition surveys. Similarly, rain and moisture estimates from satellite imagery were provided. Population data, livelihood classifications and maps of the districts were compiled in a briefing kit for each district. The assessment covered 26 arid and semi-arid districts<sup>2</sup> prone to successive drought and low productivity. The Long Rains Assessment was carried out in July and August of 2006 and consisted of Rapid Assessments and Detailed Food Security Assessments. Rapid Assessments, covering 26 districts, began on 14th July and continued till the 12th of August. The 29 Rapid Assessment members were grouped into seven teams. Detailed Food Security Assessments, covering seven districts<sup>3</sup>, commenced on 15<sup>th</sup> July and ended on 10<sup>th</sup> of August. The nine members of Detailed Food Security Assessment formed four teams. In addition to utilizing existing studies and surveys, the teams conducted transect and field interviews. Analysis and results were discussed in detail with district authorities. These discussions formed the basis of final recommendations for each district.

### **2.3 APPROACH AND METHODOLOGY**

A checklist of both food and non-food indicators was compiled through consultations with KFSSG partners. A briefing kit on each district was compiled. The kit included all relevant background information available on the district. This included:

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<sup>2</sup> Baringo, Garissa, Isiolo, Kajiado, Kilifi, Kitui, Kwale, Laikipia, Machakos, Makuani, Malindi, Mandera, Marsabit, Mbeere, Moyale, Mwingi, Narok, Nyando, Samburu, Suba, Taita Taveta, Tana River, Tharaka, Turkana, West Pokot, Wajir.

<sup>3</sup> Kwale, Makuani, Marsabit, Mwingi, Samburu, Turkana, Wajir.

- District base Maps
- Percentage of population targeted with food Aid
- Livelihood Zone Maps
- WRSI (for Ag districts)
- Pasture Current (LEWS)
- Pasture Projection (LEWS)
- NDVI Difference
- Summary of ALRMP reports
- ALRMP reports
- SR District Assessment reports
- Trend Analysis for Sectoral Working Groups

Teams were formulated with preference for members with previous assessment experience. As a result, over 80% of the team members had previous assessment experience. The teams went through an intense two day training session in which the approach, methodology, background information, reporting format and logistical arrangements were explained. Team composition was finalized based on the principle of multi-disciplinary teams so that each team consisted of both food and non-food professionals.

The Assessment Teams conducted initial briefings with the DSG to explain the objectives and methodology of the assessment and to obtain impressions and information on the current situation. In consultation with the technical DSG, teams identified the geographical extent and focus areas for fieldwork to be carried out by the field enumeration teams. Teams were guided by a checklist of indicators to collect district level data. The teams and the technical DSG then performed a thorough analysis of the collected data to verify and assess the impact of the Long Rains season. In districts where community and household data were collected, the Assessment Teams conducted and oversaw several community interviews as necessary together with the field survey teams. This provided quantitative data to support qualitative analysis. The Assessment Teams reviewed and triangulated data collected at the household level by the field enumeration teams. Transect drives/walks, visual inspections and focus group interviews were conducted in each livelihood group to assess human, crop and livestock status. For each district, field work was followed by a de-briefing session with the DSG on the findings of the assessment. Since this was a technical assessment based on empirical evidence, consensus on the overall food security levels of each division was often achieved. Draft reports were reviewed by a Report Writing Committee and comments on content, recommendations, format and presentation were communicated to Team Leaders. Revised reports underwent editing and format standardization and inclusion of area maps.

## **2.4 KFSSG AND PARTNERS**

The Kenya Food Security Steering Group acts as a technical think tank and advisory body to all relevant stakeholders on issues of drought management and food security. The steering group provides guidelines on methods and approaches for the coordination of both information and appropriate response measures. KFSSG promotes, strengthens and supports the multi-agency approach to drought management and food security which has evolved in Kenya. Specifically, the terms of reference for the KFSSG are as follows:

- Coordinate information flow on drought management and food security
- Coordinate the effective management of information and reporting for the KFSM and the Inter Ministerial Committee on Drought and Food
- Coordinate stakeholders mitigation and early response activities
- Develop and manage a geographical targeting and distribution system for food and non-food responses to food insecurity
- Provide technical advice and guidance to all relevant agencies on matters of food security and drought management.

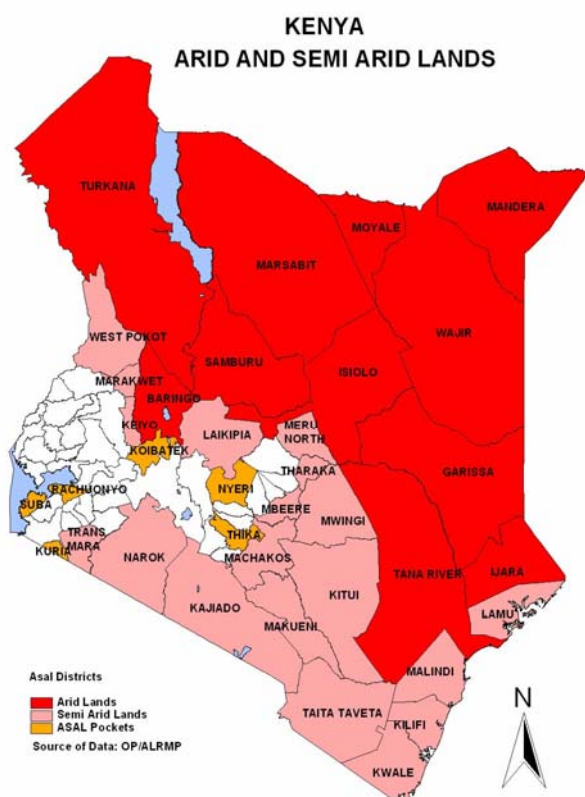
## **2.5 KFSM**

The Kenya Food Security Meeting (KFSM) is the main coordinating body that brings together food security stakeholders in a forum where information is exchanged, options debated and decisions on activities formulated for referral to the Government of Kenya and donors. It is an open forum of high level representation of a broad grouping of organizations at the national level with interest in food security. The KFSM meets once a month, and is chaired by the Office of the President and World Food Programme. Information on membership and updated bulletins are accessible through the website [www.kenyafoodsecurity.org](http://www.kenyafoodsecurity.org).

### 3.0 ANALYSIS OF FOOD INSECURITY IN KENYA

#### 3.1 CHRONIC NATURE OF FOOD INSECURITY

Food insecurity as assessed in this report needs to be put in the context of the chronic vulnerability experienced by Kenyans, especially those living in the arid and semi-arid regions (ASAL) of the country. In national terms, over 50%<sup>4</sup> of Kenyans live below the poverty line. It is however in the ASAL that chronic poverty and vulnerability to external events such as drought is most severe, due to a variety of factors including rapid population growth in the absence of concomitant improvements in services and amenities, conflict, HIV/AIDS, environmental degradation, and the lack of viable alternative livelihoods especially for poor people. In this regard, poor performance of rains is a trigger that tips people who are chronically poor into an acute food security crisis. It follows that responses that merely address acute symptoms of food insecurity, are not effective at building people's capacity to withstand external 'shocks'. The cyclical nature of drought in marginal arid and semi arid lands means that acute food insecurity returns with depressing regularity (about every 3-5 years) as a direct consequence of failures in the past to adequately invest in poverty and vulnerability reduction.



Drought and poorly distributed rains have affected large areas of Kenya since 1999. The pastoral north and marginal agricultural areas of Eastern Province have been the hardest hit, resulting in lost assets and increased vulnerability. These regions are in the arid and semi arid regions of Kenya as shown in figure 3.1.1. Successive poor rainy seasons have limited the ability of households – especially the poorest – to recover assets and expand coping mechanisms. This has increased vulnerability across a wide swath of Kenya from the pastoral north to the southern rangelands and parts of the coastal province. While short-term emergency food aid has been the primary response to mitigate drought impacts, there have been limited non-food interventions to reduce vulnerability to shocks, such as drought.

The longer-term consequences of the prolonged drought are not limited to reduced livestock holdings. In some

<sup>4</sup> *Geographic Dimensions of Wells-being in Kenya*. Central Bureau of Statistics, Ministry of Planning and National Development. 2003.

areas, forest resources have been reduced due to large numbers of people seeking to augment their incomes through firewood collection and charcoal burning. There is also a sizeable community of people who have abandoned the pastoral livelihood system hence swelling the numbers of unemployed and poor households in urban areas. Land pressure has also forced farming households especially in Ukambani, to move further and further into marginal agro-ecological zones that are too risky for subsistence farming. In addition as families strive to barely preserve livelihoods or search for alternative sources of income, investments in basic social services, important for survival, growth and development, have dwindled or been 'sacrificed'. The environmental impact of overgrazing, farming marginal lands and the trend towards increased charcoal burning as a main source of income cannot be overstated as vegetation loss is increasing rates of soil erosion and this is leading rapidly towards and expansion of arid areas and desertification.

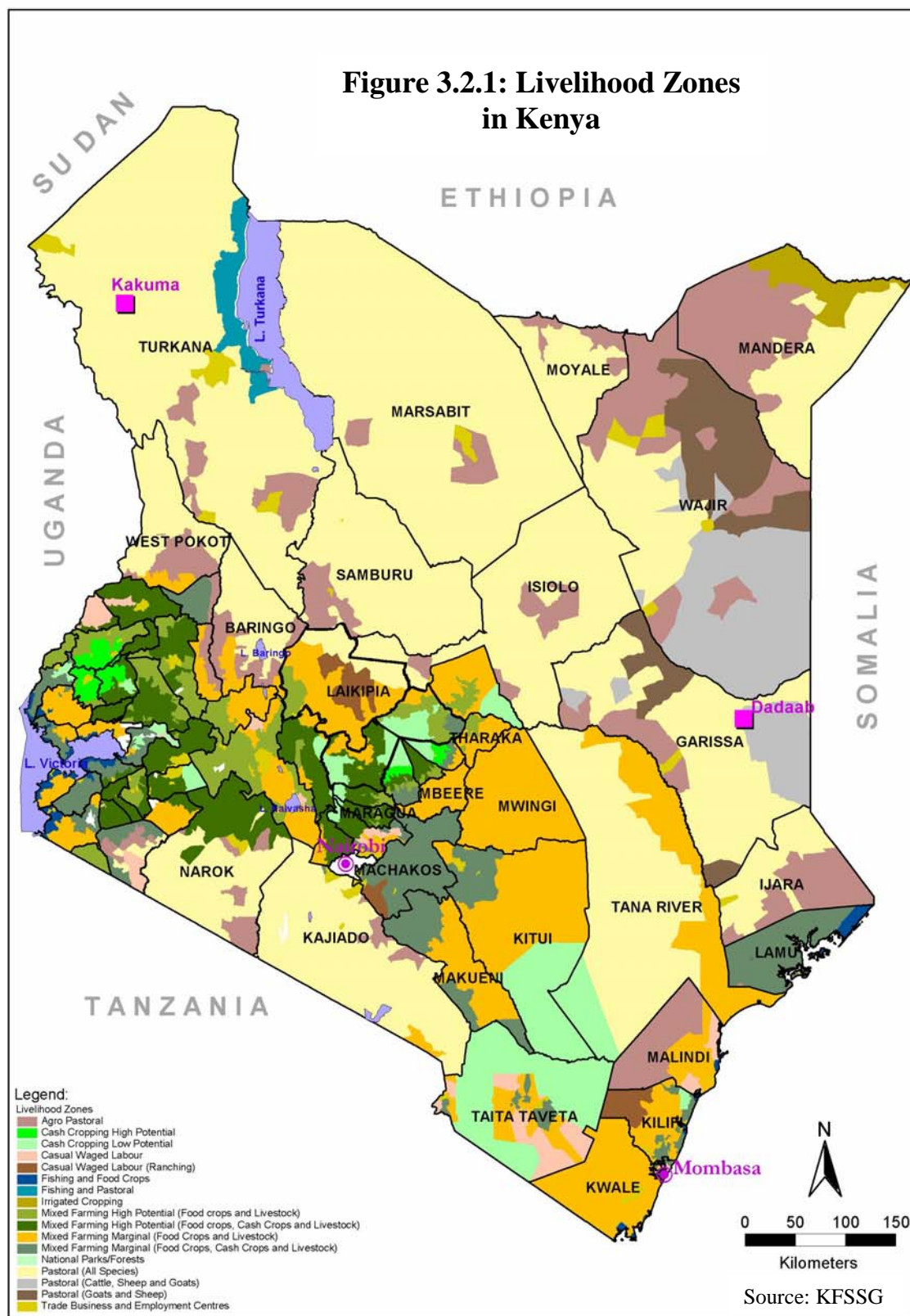
The Assessment recommends that the underlying causes of food insecurity be addressed in the medium and longer term in order to break the cycle of emergency responses to address a fundamentally chronic problem. Investment needs to be directed to marginal areas in order to reduce levels of poverty and vulnerability. The implementation of the ASAL Policy would provide one suitable framework for this.

In the meantime, there are policy gaps around providing assistance to meet immediate needs to protect livelihoods, other than through international emergency responses. Social safety nets (food-based and cash-based) which provide more continuous and predictable support to vulnerable groups should also be considered. This would facilitate stabilization of food security while development initiatives that promote livelihoods (including asset building) are designed and implemented.

## **3.2 VULNERABLE LIVELIHOODS**

### **3.2.1 Pastoral Livelihood Zones**

There are several livelihoods in Kenya. Figure 3.2.1 is an illustration of the generalized livelihood zones in different parts of the country. Pastoralists have developed extremely effective livelihood strategies to manage arid environments typified by low and erratic rainfall. However, a number of factors have combined to make pastoralism a very marginal livelihood for all but the wealthier segment of the community. These factors include: reduced per capital livestock holdings as a result of population growth, environmental degradation, low investment in marketing infrastructure and veterinary services, low access to health services, very limited alternative livelihood options, poor educational opportunities and insecurity that limits movement. Perhaps the most two important issues in the pastoralist LZ are, firstly, the marketing and disease control infrastructure (including roads), which ultimately has an influence on the value of livestock to the producer and secondly, the lack of opportunities to diversify livelihood strategies, affected both active pastoralists and those who have effectively dropped out of the system.



An associated issue with the latter is the tendency for the poorest groups to adopt coping strategies that have a negative long-term impact, such as charcoal burning and firewood collection, reduction in the number of meals per day, leading to chronic under-nutrition (stunting), sending school-going children into the labor-force among others.

### **3.2.2 Marginal Agriculture Livelihood Zones**

People living in the semi-arid rain-fed agricultural areas are also well accustomed to living with erratic rainfall patterns and cyclic drought. The principal chronic underlying factors contributing to their vulnerability include: poor crop husbandry/ lack of extension services; declining soil fertility; an over-reliance on maize/ disincentives to traditional and drought resistant crops such as millet and sorghum; poor access to appropriate seeds; access to health services; conflict with wildlife especially near to parks; few and poorly paid income opportunities; HIV/AIDS; land tenure issues (ranches and game parks); poor marketing infrastructure; access to education and keeping children enrolled in school.

### **3.2.3 Agro Pastoral Livelihood Zones**

Generally defined as pastoralists who also practice limited subsistence agriculture, these communities are affected by a combination of the same factors that prevail for the other two livelihoods.

### **3.2.4 Formal/Non-formal/ Employment/Business**

Formal/Non-formal/ Employment/Business livelihoods are people living in and around urban centers and derive most of their income from sources not directly linked to farming and keeping livestock. This group derives most of its income from the informal sector and or casual jobs, petty or small businesses. Chronic poverty increases the vulnerability of many households in this livelihood especially children.

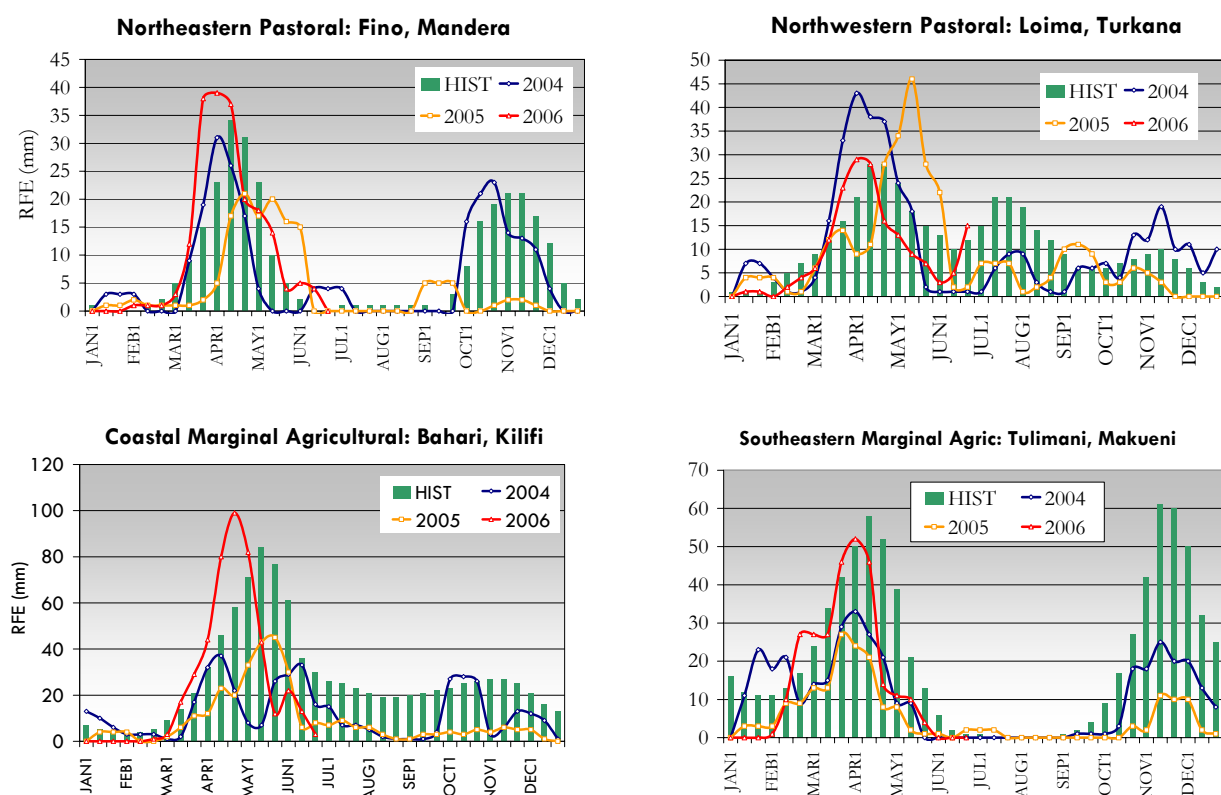


## 4.0 FOOD SECURITY SITUATION

### 4.1 PERFORMANCE OF THE MARCH TO JULY 2006 LONG RAINS

The performance of 2006 long rains of February to June was varied. Figure 4.1.1 shows the comparative rainfall performance in four divisions representing four main livelihood zones that experienced drought in the past season.

**Figure 4.1.1: Comparative rainfall amount and distribution in selected Livelihoods**



Source: FEWS NET/USGS

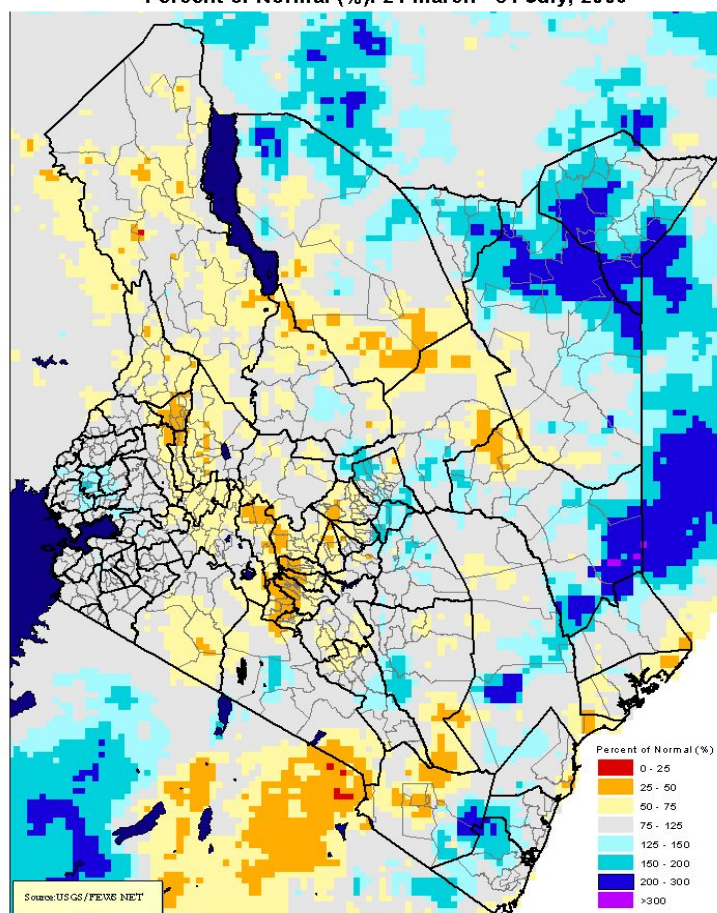
The rains were inadequate, poorly distributed and short in northern and northwestern pastoral areas and in the marginal agricultural zones. The rains were good in most agro-pastoral livelihood zones in the northwest and south; and in the northeast pastoral areas. In the southeastern marginal agricultural zones, the rainfall performance was fair when compared to the long term average. Although the amount of precipitation was slightly lower than the long term average but better than in the 2005 long rains season in some areas, the rains started early, were poorly distributed and ended early. Most of the marginal agricultural areas in the southwest and coast received adequate and well-distributed long rains. However, the rains ended early in the interior marginal agricultural regions of the Coast Province.

Figure 4.1.2 is a spatial representation of the long rains performance in the country from 21<sup>st</sup> March to 31<sup>st</sup> July 2006 bringing out clearly critical intra-district variabilities. The red,



yellow and brown colored areas received below normal rainfall. The other colors represent normal to above normal rainfall. Generally, the performance of the long rains in the northeast, most of the Coast Province and in some areas in the south was normal to above normal. However rainfall performance was 50-75 percent below normal in large areas in the north and northwest of the country.

**Figure: 4.1.2**  
Percent of Normal (%): 21 March - 31 July, 2006



## 4.2 IMPACT OF THE 2006 LONG-RAINS ON FOOD SECURITY

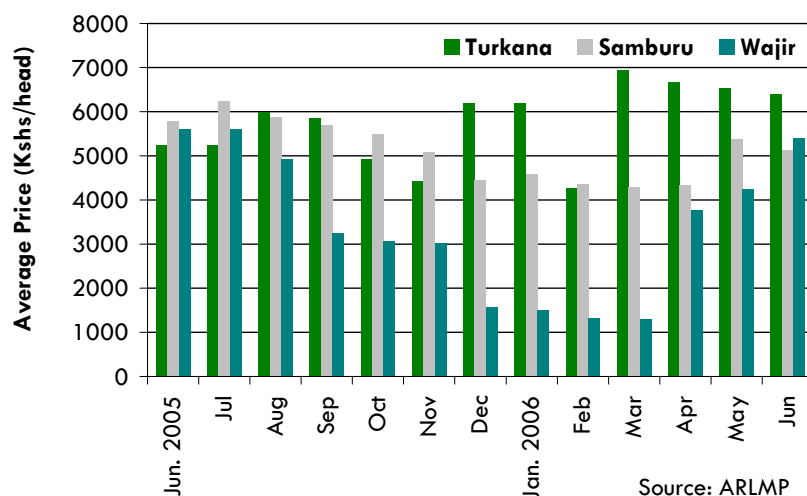
There were mixed improvements in food security indicators ranging from marginal to a little better for drought-affected pastoralists and farmers after the March to July long rains.

The failure of the 2005 short rains adversely affected pastoral and agro-pastoral livelihoods where livestock is the major source of both food and income. The performance of the 2006 long rains was varied, ranging from below average to good in the arid and semi arid regions of the country.

Although the long rains started early or late (depending on location), were erratic and ended early, pasture and browse regenerated in large areas in the pastoral and agro-pastoral zones.

However in some areas, grazing was affected by poor distribution of watering points, increased area under unpalatable plants and insecurity. These constraints led to high concentration of livestock in some locales and early migration of livestock from wet to dry season grazing areas.

**Figure 4.2.1: Trend in Livestock prices in Selected Pastoral Districts**



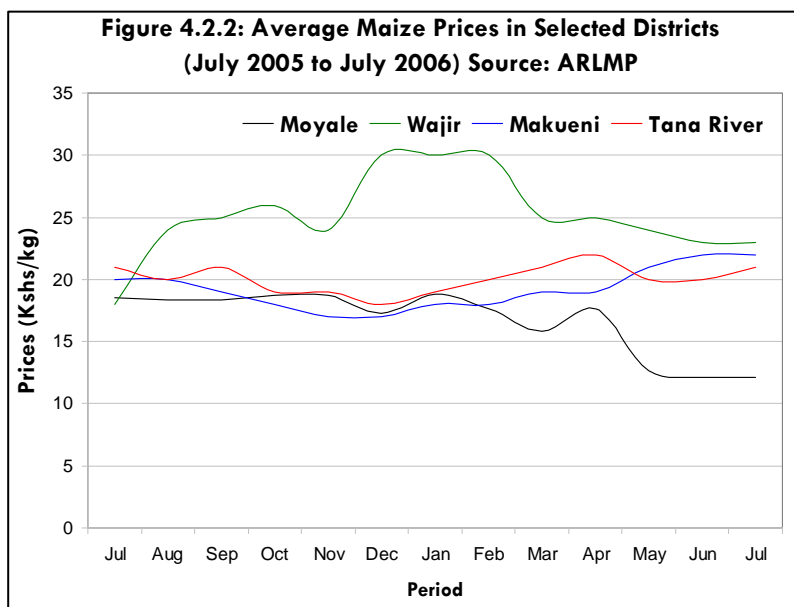
The main water sources including dams, pans and boreholes were recharged to between 80 and 40 percent of normal capacity, reducing distance to water sources when compared to the first quarter of 2006. Emergency water tankering to schools eased in some areas as the institutions resorted to their normal sources of water.

Between January and April 2006, the body condition of shoats, cattle and camels was poor and livestock prices low. Availability of pasture and water from April led to an improvement in livestock body conditions from poor to between fair and good in the second trimester of 2006. Livestock prices have been rising since April in many markets in the pastoral and agro-pastoral areas. Figure 4.1.1 shows the trend in livestock prices in the pastoral areas of Turkana, Samburu and Wajir which are in the northwestern, northern and northeastern parts of the country respectively.

Herd size per household in different areas has declined substantially since 2004, due to drought. However, livestock mortality reduced significantly between January and July 2006. As most households restock, there is limited supply of large stock into the market further contributing to the rising prices of cattle and camels. The terms of trade for pastoral and agro-pastoral communities has improved as a result of increasing animal prices and stable cereal prices, but because of reduced herd sizes, they do not have enough animals to trade and pastoralists would normally try to rebuild their herds at this time.

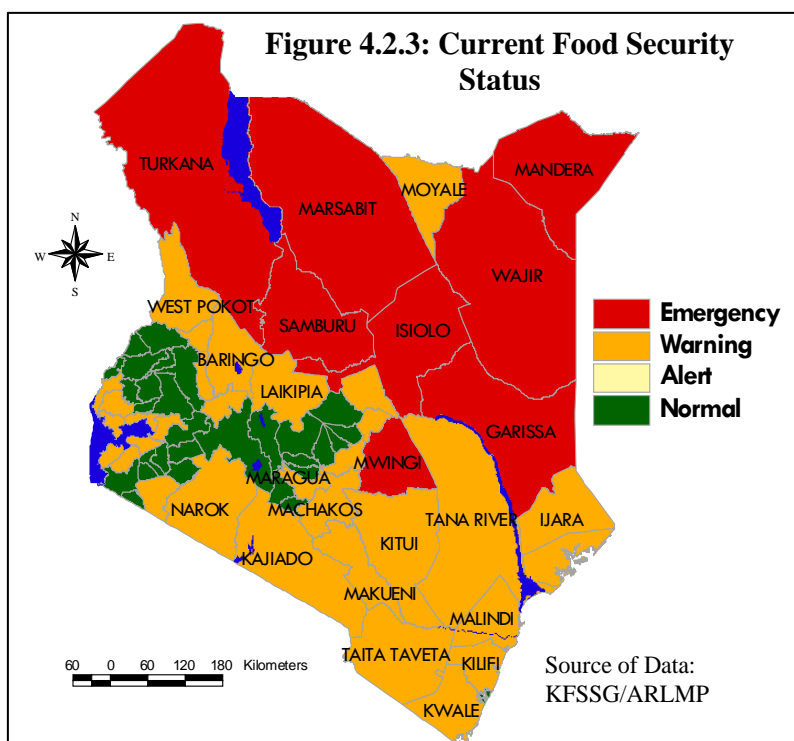
The percentage of children under five years old that have a MUAC below 135mm has declined by up to 10 percent between January and July 2006 in most of the pastoral and agro-pastoral communities due to scaled up supplementary and therapeutic feeding programs; and slight improvement in milk availability. Milk production has been limited by poor calving because of the past drought. Calving is expected to pick up in the first quarter of 2007.

The 2006 long rains crop production in the agro-pastoral, southwestern and coastal marginal agricultural livelihoods, was below normal. The long rains accounts for 30 percent of annual



crop output in these marginal agricultural livelihood zones. Although the rains were fair to good, crop output is estimated to have declined by an average of 65% from the normal output due to untimely start of the season, irregular distribution, and early cessation of the rains; poor crop husbandry, pest infestation, wildlife damage and displacement of farmers due to insecurity in different areas. Increased relief maize supply affected prices in most pastoral areas such as

Wajir and Moyale Districts between May and July while prices remained firm in the lowlands of Eastern and Coast Provinces. Figure 4.2.3 shows the average maize prices in selected districts. Maize prices are expected to decline in the southwestern and coastal marginal agricultural with the start of harvest in the main maize producing areas from October, and with increased but normal imports from neighboring countries



Generally, there has been marginal improvement in some food security indicators when compared to the first quarter of 2006 but the overall food security situation in the country remains precarious. Figure 4.2.4 is national map showing the various levels of food insecurity across the country. It should be noted that there are variations in the level of food insecurity within a district and more details are available in the District Reports.

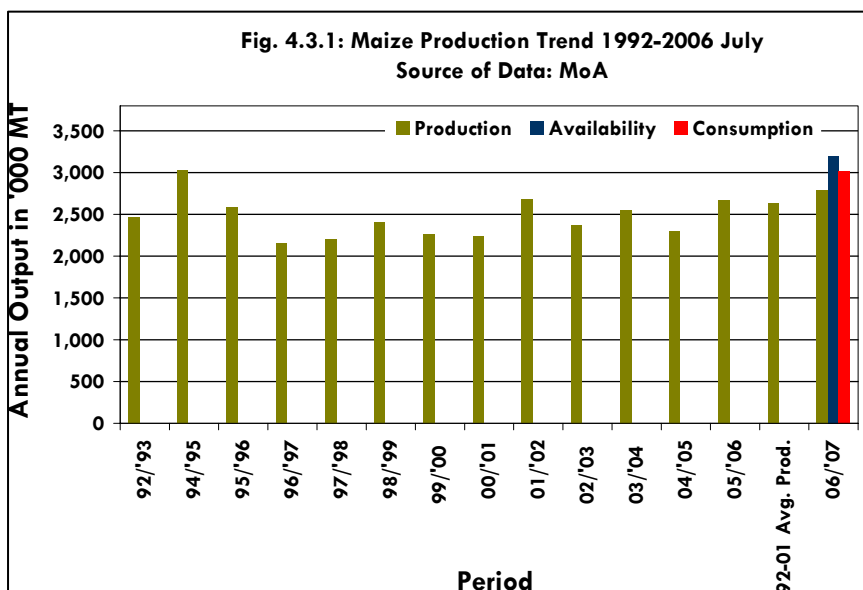
Although some households affected by drought in late 2005 and early 2006 are

gradually resorting to moderately severe from distress coping strategy, they remain highly vulnerable to food insecurity. As depicted in figure 4.2.4, most pastoral areas of the country

remain under either emergency or warning phases of food insecurity. If the October-December short rains are adequate, the recovery process is expected to pick up. Conversely, the revitalization of agro-pastoral and pastoral livelihoods may be interrupted until the onset of the long rains in March if the short rains fail. A poor short rains season in the marginal agricultural livelihoods will result in deterioration of the food security situation for a prolonged period until the onset of the 2007 short rains.

### 4.3 NATIONAL FOOD SITUATION

Maize is the main staple for the majority of Kenyan population and accounts for over 80 percent of total cereal output. About 85 percent of the total maize output in the country is produced in the long rains season. The Rift Valley and western highland districts of Trans Nzoia, Uasin Gishu, Nandi, Bungoma, Nakuru and Kericho produce about 40 percent of the total national maize output.



The estimated long rains maize production is 2.52 million MT which is about 15 percent above the 1992 to 2001 average and will compensate for the poor production in the southern and coastal lowlands as in the past seasons. Over 50 percent of the maize crop has been harvested, from the lowlands of Nyanza, Western and Rift Valley; southern areas

of the Rift Valley, coastal and southeastern areas of the country. Most of these areas have two seasons and are expected to produce a second crop in February 2007. Figure 4.3.1 shows maize production trend between 1992 and 2007. Although the 2006 total national maize output from both the long and short rains is expected to be 2.79 million MT, it is still below the estimated consumption of 3.02 million MT between August 2006 and June 2007.

The crop harvested in July, together with cross-border imports during the same month, brought the domestic maize supply to an estimated 1.62 million MT. The total consists of 1.26 million MT held by farmers; 204,000 MT by traders; 131,500 MT by the NCPB and 88,000 MT held by millers. The total supply is expected to last through January and probably a little longer if the maize imports from Uganda Tanzania and Ethiopia continue through the period.

Table 4.2.1 illustrates the projected maize supply situation between August 2006 and June 2007 marketing cycle. Carryover stocks and cross-border trade is expected to increase maize

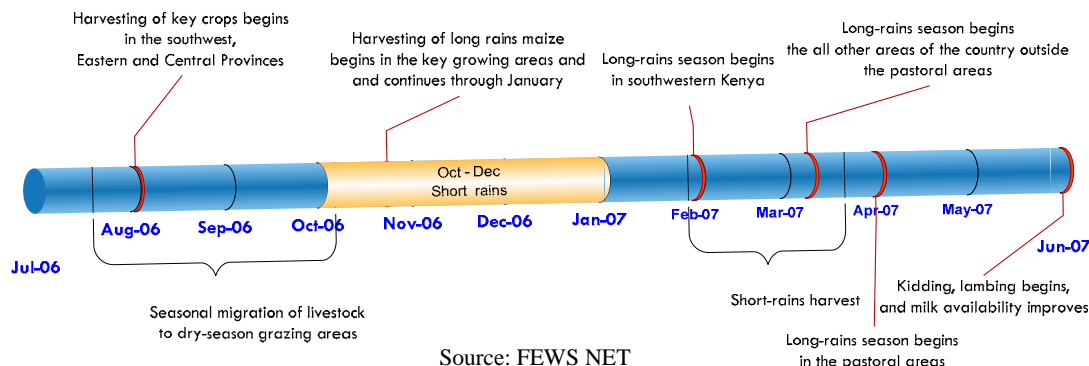
<b>Table 4.3.1: Maize Balance Sheet:Aug 2006-June 2007: Source of Data: MoA, KARI, NCPB, Millers</b>		
<b>Period</b>	<b>Source</b>	<b>Quantity (MT)</b>
Aug. 2006	Opening stocks (millers, traders, on-farm stocks, NCPB)	1,792,000
Aug. 2006-Jun. 2007	Imports (Uganda/Tanzania)	243,000
Aug. 2006-Jan. 2007	Long rains output - remaining	890,000
Feb. – Mar. 2007	Short rains output	270,000
<b>Aug. 2006-Jun. 2007</b>	<b>Total Availability</b>	<b>3,195,000</b>
Aug. 2006-Mar. 2007	Post harvest losses	127,000
Aug. 2006-Jun. 2007	Seed, animal feed, industrial	120,000
Oct. - Dec. 2006	Export (Tanzania)	23,000
Aug. 2006-Jun. 2007	Total Consumption	2,750,000
<b>Aug. 2006-Jun. 2007</b>	<b>Total Demand</b>	<b>3,020,000</b>
<b>Aug. 2006-Jun. 2007</b>	<b>Surplus</b>	<b>175,000</b>

supply and meet demand in the same period. Most of the remaining maize crop which is just under half the national long rains output should be harvested between October and December. The October-December harvest together with the short rains harvest will determine the country's maize-sufficiency through the marketing cycle that ends in June 2007.

#### 4.4 TRENDS AND PROSPECTS

There were mixed improvements in food security indicators ranging from marginal to a little better for drought-affected pastoralists and farmers after the March to July long rains. However, a succession of poor seasons before the 2006 long rains, led to significant livestock losses among the pastoralists, adversely affecting a critical source of food and income for most households. Although the terms of trade for pastoralists has improved, most households are restocking and are unable to participate in the livestock market because of a depleted livestock asset base. Pastoralist will require several successive seasons to recover their livelihoods.

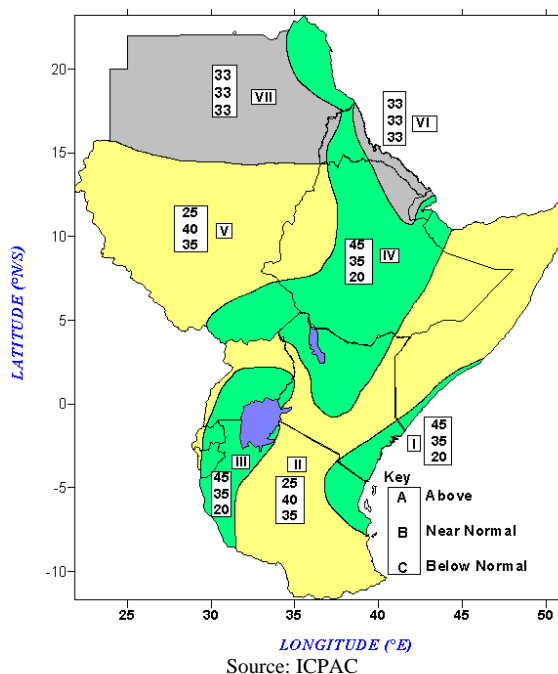
Figure 4.4.1 shows a timeline of critical events between July 2006 and June 2007. The next major annual food production cycle is the September to December short rains season. The performance of the short rains will be critical in determining the recovery of pastoral, agro-pastoral and marginal farming and livelihoods in the arid and semi-arid areas.

**Figure 4.4.1: Kenya Critical Events Timeline**

The long rains season is the minor season in the drought –affected marginal agricultural communities in the coastal and southeastern lowlands. The long rains improved pasture, browse and water availability for livestock but the output of the little crop planted was affected by unreliable rainfall. Maize prices are expected to start declining with harvest of the remaining long rains crop from November and increased regional imports. However, consecutive droughts in the past seasons have reduced the purchasing power of most farmers in the marginal agricultural zones. Consequently, most farmers will still be unable to purchase enough quantities of grain that can sustain their household food security. The food security scenario of the marginal agricultural livelihoods depends critically on the outcome of the October to December short rains season.

## 4.5 SHORT RAINS OUTLOOK

The consensus climate outlook is that the short rains may be favorable. There is high likelihood of normal to above normal rainfall between September and December 2006 in most parts of Kenya where the short rains are critical for livestock and crop production. Figure 4.4.1 shows the probability of precipitation in various parts of the country from the IGAD Climate Prediction and Application Center (ICPAC). Different parts of Kenya fall in zones I to IV. The numbers for each zone indicate the probabilities (chances of occurrence) of rainfall in each of the three categories: above-, near-, and below normal. The top number indicates the probability of rainfall occurring in the above-normal category; the middle number is for the near normal and the bottom number for the below-normal category. For example, in case of western

**Figure 4.4.1: Probability of September to December 2006 Rainfall in the Greater Horn of Africa**

Ethiopia as well as central and southwestern Sudan (zone V), there is 25% probability of rainfall occurring in the above normal category; 40% probability of rainfall occurring in the near-normal category; and 35% probability of rainfall occurring in the below normal category. It is emphasized that boundaries between zones should be considered as transition areas.

The western pastoral areas, coastal marginal agricultural zones and parts of western Kenya, are likely to get normal to above normal rainfall. This would be a critical in supporting the recovery of livelihoods in areas that were previously affected by drought.

There is a weak El-Nino signal in the eastern marginal agricultural zone and southern agro-pastoral areas and eastern pastoral zones. Consequently, there's a high likelihood of normal to below normal rainfall these areas. Favorable rainfall is expected to support the recovery of agro-pastoral, pastoral livelihoods and marginal agricultural livelihoods in these areas who were adversely affected by drought.

The start of the season and distribution of rainfall will be critical in determining the performance of crop and livestock production in all zones. Close monitoring is necessary for prompt intervention during and after the short rains season.



## 5.0 SITUATION ANALYSIS BY LIVELIHOOD CLUSTERS

### 5.1 PASTORAL EASTERN REGION

The eastern pastoral region comprises of Garissa, Isiolo, Tana River, Wajir and Mandera Districts as shown in figure 5.1.1. The region covers an area of 180,372 sq. kms with a population of almost 1.5 million. District populations and administrative units are presented in Table 5.1.1.1. The region falls under the area categorized as arid and semi-arid lands (ASAL), which are generally typified by erratic and unevenly distributed rainfall in both spatial and temporal terms. Temperatures in the region range between 20°C in winter to 42°C in summer.

Figure 5.1.1: Livelihoods in Mandera, Wajir, Garissa, Isiolo and Tana River

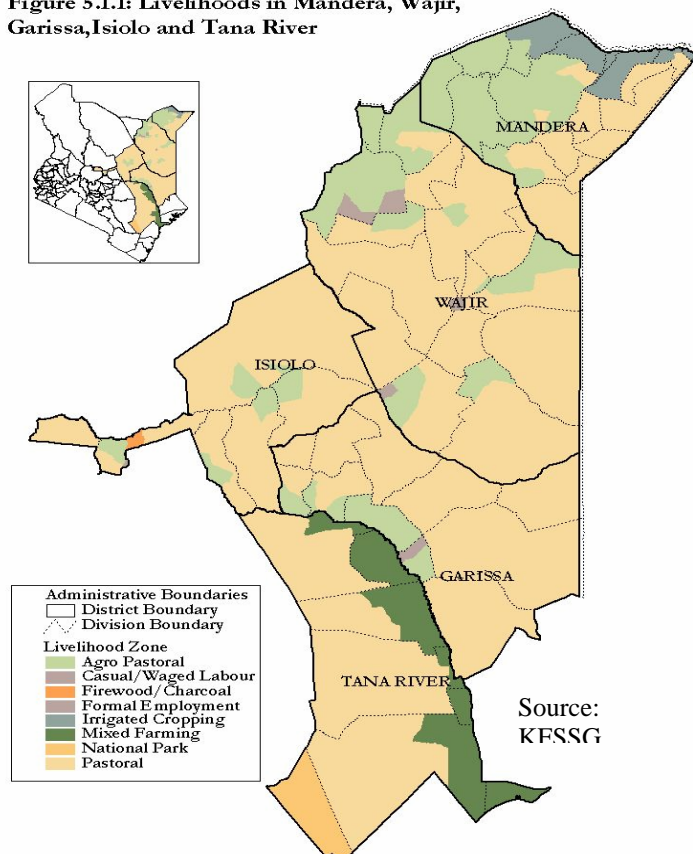


Table 5.1.1.1: Cluster demographic and rainfall data

District	Area Km <sup>2</sup>	Population	Administrative Units (divisions)	Annual Average Rainfall mm
Mandera	26,470	312,000	18	255
Wajir	56,500	407,00	13	295
Garissa	33,620	427,389 (>130,000 refugees)	11	250 - 300
Isiolo	25,000	120,241	6	150 - 600
Tana River	38,782	221,511	7	250 (Bangale) – 1250 (Kipini)
Total	180,372	1,081,548 (>130,000 refugees)	55	-

The main livelihood in the region is pastoral nomadism, with the majority of the communities depending on livestock production, comprising camel, sheep, goats and cattle. Agro-pastoral, mixed, marginal mixed and irrigated agriculture are practiced more typically along the banks of the Rivers Ewaso Nyiro, Daua and Tana. There are a few households



whose livelihood depends on casual labor, formal and informal employment, charcoal and firewood business in the urban/peri-urban areas of the region.

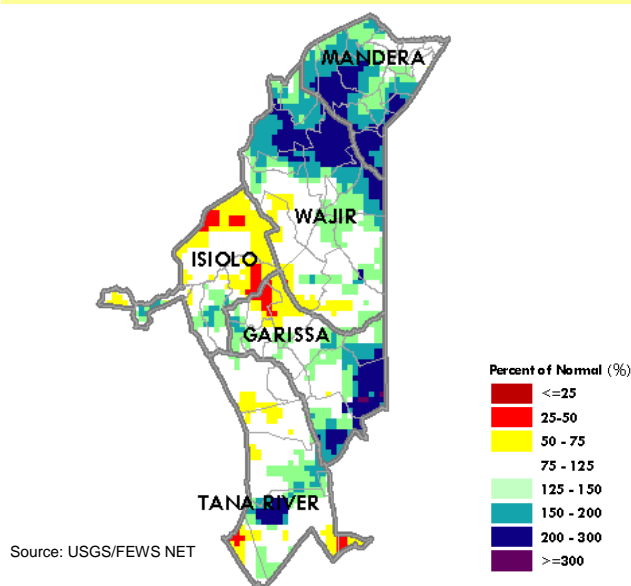
The region has low employment, poor school enrolment, high illiteracy, high poverty, a relatively high level of insecurity as well as unexploited economic opportunities such as the rich River Tana Delta. Communities often keep large herds of animals. Rangeland management practices require significant improvement. Overstocking has led to overgrazing and consequently quick and destructive environmental de-gradation.

## 5.1.2 Situation Analysis

### Rainfall Performance

The districts in this region have suffered between two and four consecutive seasons of severe drought. Rainfall was slightly below normal with only isolated pockets of the districts receiving normal to above normal rainfall. Figure 5.1.1.1 shows the percentage of normal rainfall that was received in the eastern pastoral region during the long rains season. Above normal rainfall was received along the Wajir Mandera district boundary, and the Kenya/Somalia border in Garissa. The area along the Isiolo, Wajir and Garissa district boundary received less than 50% of the annual average rainfall.

**Figure 5.1.1.1: Rainfall Estimate: Percentage of Normal : Mandera, Wajir, Garissa, Isiolo and Tana River Districts**



Where rainfall was above normal, its intensity was extremely high, which did not encourage normal pasture growth. The long rains have given a short-term reprieve in water supply to many areas where pans have collected water. However, most of the pans, except for those in the central and south Tana River District, are expected to dry out before the onset of the short rains.

### Access to Water

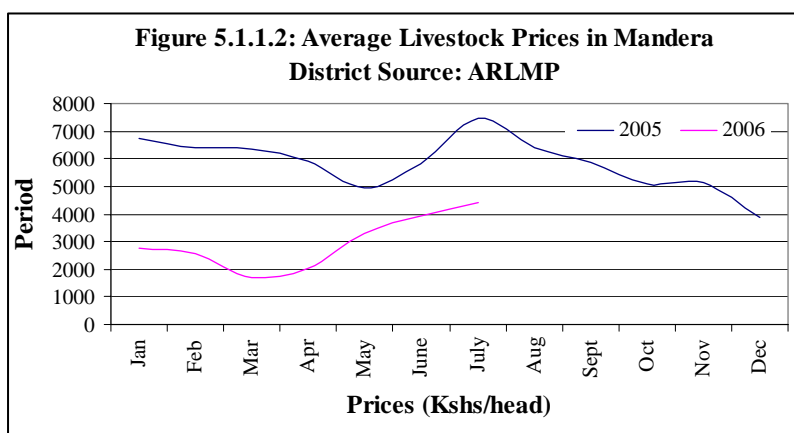
The main water sources that are normally used in the region are rivers Ewaso Nyiro, Tana, Benane Spring, and Daua; seasonal streams (laggas), boreholes pans, shallow wells, rock and roof catchments, and sub surfaces tanks. Most of the deeper boreholes in Tana River are saline and unfit for human consumption. Currently the sub-surface tanks and rock catchments are dry. Pans are either dry or contaminated, and shallow wells are drying up, contaminated or have low yields. Flash floods in Mandera and Wajir led to the collapse, silting, and water contamination of pans and dams. Poor disposal of livestock carcasses had already

compromised the quality of water in the pans and dams. Household interviews conducted by the Field Survey Team revealed that the average time taken to water animals using boreholes, rain water catchments, and water tap ranges from twenty minutes to over one hour, while the waiting time at the same water points was less than fifteen minutes. The cost of water ranges between 40cts and Ksh 3.01 per 20lts jerry can. However, it takes between one to eight hours to reach sources of water for domestic use and the water costs KES 1 to 2 for 20lts. It is expected that the trekking distances to watering points will be doubled before the onset of the long rains. No conflict was reported over water after the long rains.

## Livestock Production

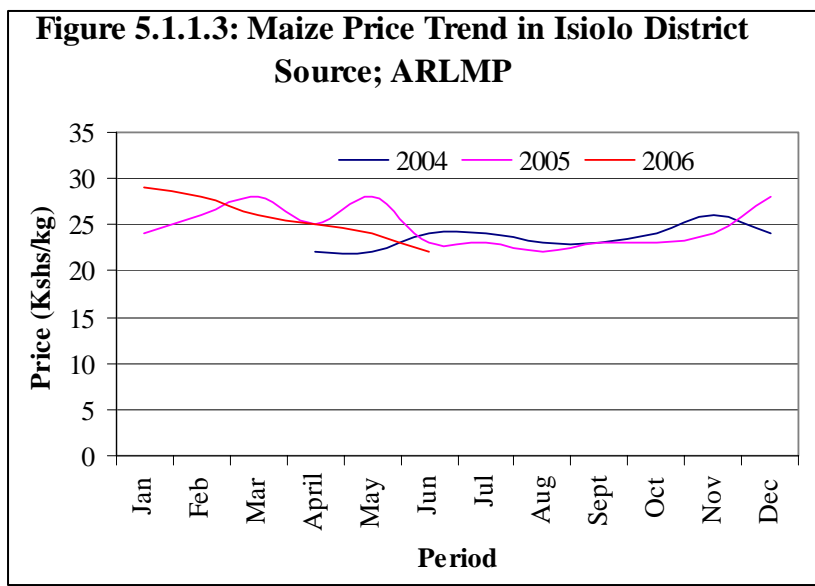
Perennial grasses remain 'exhausted' because of overgrazing and previous successive rainfall failures. Forage supply has improved for browse. There has been pasture improvement in areas where there are no permanent water sources. Of significance is the poor regeneration of the grasses and emergence of severely denuded plains and sand dunes where open grasslands used to dominate. The low livestock levels may lead to a faster re-generation of pasture.

Massive livestock deaths that occurred from Nov 2005 to April 2006 have reduced livestock holdings. The body condition of livestock has improved and can be considered as fair for the grazers and good for the browsers. However, calving intervals have lengthened because of drought. Milk availability is limited since livestock herds have only just begun to recover



from the extremely poor conditions during the dry season that caused a very low proportion of animals lactating. There has been an overall improvement (since February, 2006) in livestock prices for all species, but they still remain below the seasonal norm. The terms of trade have marginally improved for pastoralists with an increase in cattle

prices since February 2006 as shown in Figure 5.1.1.2.



## Crop Production

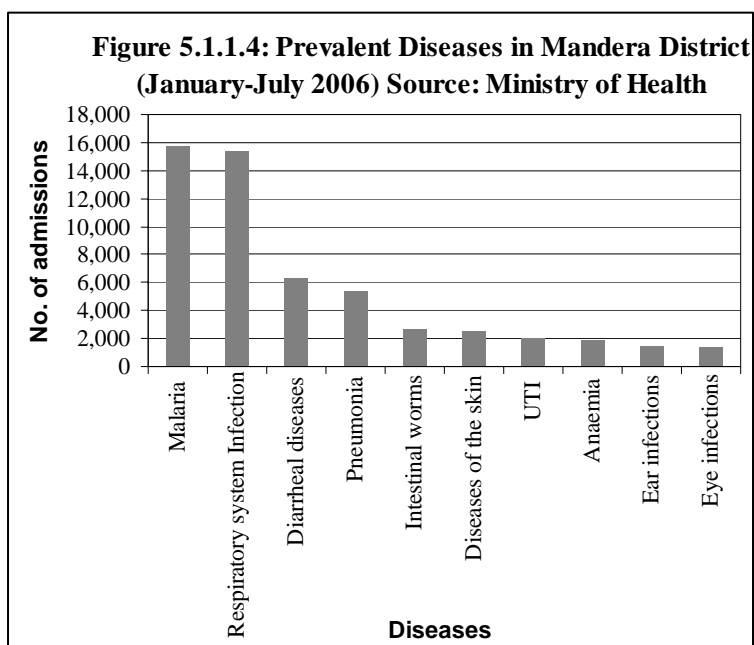
Crops grown under irrigation are maize, beans, rice, cowpeas; vegetables such as tomatoes, onions, kales; oil crops, such as. Simsim; and fruits including pawpaw, mangoes, citrus, bananas

and guavas. In the delta of river Tana, rice, mangos, bananas, maize, cashew nuts, coconut and bixa crops that had been planted during the long rains were at different stages of production. Some crops were tasselling while others were still at knee height. Some farmers along the riverine had just planted maize. The condition of rain-fed crops was not good due to poor temporal distribution of rain. There is no output expected.

The prices of maize, rice and wheat have increased in the last 5 years (for details see District reports). However, there has been a drop in maize prices since February 2006 as can be observed in Figure 5.1.1.3. Food aid interventions in 2006 are depressing cereal prices. In Garissa however, maize price has been on the increase since May 2006.

## Health and Nutrition

The absence of pan protection measures has resulted in serious water contamination and subsequent outbreaks of water borne diseases, especially in Mandera district. Measles and diarrhoea outbreaks have worsened infant/child malnutrition.



The food aid pipeline in Wajir broke down, in May 2006 exacerbating infant/child malnutrition; there was a 50% increase in the TFCs. In the region, the Global Acute Malnutrition rates range between 19% and 32% and severe acute malnutrition is at 2.1%. Immunisation rates remain low between 38% and 58% however there is 100 percent vitamin A coverage in Garissa District.

Morbidity rates caused by malaria, respiratory infections and diarrhoea as presented in Figure 5.1.1.4 for Mandera

district. These trends will undoubtedly undermine infant health. Mortality rates are already very high in relation to national rates. Generally, there is poor health seeking behavior.

**Table 5.1.1.2: Nutritional status Mandera District**

Month	Nutritional status	Agency	Methodology	Areas assessed
January	GAM: 29.8%	MSF-B	MUAC MUAC	Wargadud, Shimbir Fatuma, Kotulo, Lafey,
	SAM: 2.3%			
March	GAM: 23.9%	Action Against Hunger	Weight for Height	Entire District
	SAM: 2.5%			

Source: Ministry of Health, Mandera

The results of nutritional assessments carried out during the period of January to June 2006 in Mandera and Isiolo Districts are summarized in tables 5.11.2 and 5.1.1.3 respectively.

**Table 5.1.1.3: Nutritional Status of Isiolo District**

Indicator	Merti and Sericho divisions	Kinna, Garbatulla, Kinna and Central divisions
<b>Malnutrition</b>		
GAM (<-2 SD)	28.5 %	13.2 %
SAM (<-3 SD)	2.7 %	1.7 %
<b>Mortality Rates</b>		
Under five mortality rate	0.68 deaths/10000/day	2 deaths/10000/day
Crude mortality rate	0.44 deaths/10000/day	0.6 deaths/10000/day

Source: Ministry of Health, Mandera

## Education

According to the National Enrolment rates (MoEST) 2004, the region has one of the lowest gross enrolment rates in the country, the various educational incentives notwithstanding. There has been a marginal increase in enrolment of pupils in primary and ECDs especially in the more urbanized settlements as a result of migration. It has been evident from the end of term 2, 2006 returns that the pupil teacher ratios remain high (at 1:50 in Garissa district for example). Visits to some schools have indicated that food was delivered late to schools in the northern parts of the region. The storage and handling of the food, as well as poor water supply and sanitation, remain a challenge for the schools. The lack of fuel wood and water has intermittently interfered with the smooth running of the school feeding programme. Low education levels as exemplified by the low gross enrolment rates have continued to retard development of the pastoralist communities.

## Shocks and Hazards

There have been acknowledged security improvements, but there remain concerns about instability in Somalia. A large influx of refugees from Somalia is imminent should the political situation deteriorate. The Dadaab refugee camp is already under stress. A large influx of pastoralists from Somalia would encroach on already stressed pasture and browse. With the shortage of water, there is great potential for conflict.

## Coping Mechanisms

Coping strategies include the reduction of meals (even with food aid), the sharing of food, migration to other areas including Ethiopia, kinship support and remittances, and the movement of children to “richer” relatives. The results of the enumeration survey in Wajir indicate that just under 30% of the respondents (400 households interviewed) send households members to eat elsewhere, about 2% individuals have out-migrated, 49% have to skip meals for an entire day to enable the food reserve to reach the next distribution cycle date, 53% restrict consumption of adults to allow more children, 78% borrow food from a friend or relative, 84% have had to swap to a less preferred commodity type (relief commodities), and 88% have reduced the size of their meals. It is important to note, however, that none of the respondents reported the sale of milking livestock or household migration

from the area. In some parts of the Isiolo, charcoal burning and increased search for casual waged labor was reported.

### **5.1.2 Food Security Trends**

Food security in the region is fundamentally unchanged in all areas except for central and south Tana River district, and within some parts of Isiolo and Garissa districts. The damaging legacy of the massive livestock losses, especially amongst grazing animals, has severely compromised the livelihoods of the pastoralists and agro-pastoralists. Livestock holdings have significantly declined. Consequently, there has been reduced household income that has severely eroded the purchasing power of the majority of the pastoralists. Livestock stress has continued to affect animal cycles with calving and kidding intervals being lengthened with a significant decline in the availability of milk. This distress is experienced to a smaller extent by the camel pastoral communities. The terms of trade have marginally improved for pastoralists.

Late planting, poor agricultural practices and insufficient availability and use of certified seed, as well as the intermittent flooding of the perennial rivers, has resulted in crop yield decline in the riverine areas. In the rain-fed areas, there is nearly a total crop failure and negligible yields are expected. However, this is not the case in the delta area of Tana River where sufficient subsistence yields are expected. Food aid interventions are depressing cereal prices and even discouraging farmers in the riverine areas from cereal production.

The long rains have replenished the rehabilitated pans and dams. However, these improvements will be ephemeral in many areas, as the pans are evaporating and there are problems of water contamination. Water scarcity will increase with substantially longer trekking distances and waiting times at water points. Food aid, livestock support, emergency health, water and nutrition/special feeding interventions will remain critical in sustaining livelihoods during the short rains period.

### **On-Going Interventions**

The region has experienced three successive drought periods and has been receiving emergency relief assistance since 2003. Relief assistance was intensified after the President of the Republic of Kenya declared a national disaster in July 2004, as a result of drought. In October 2004, WFP started an emergency food aid programme in the region. Relief food aid was distributed at various centers under the EMOP programme but the quantities were inadequate and towards the end of the drought period the beneficiary numbers were adjusted to cover about 78%, 80%, 55%, 46% and 43% of the population in Mandera, Wajir, Garissa, Isiolo and Tana River districts, respectively. The entire area has been placed under General Food Distribution (GFD) except for Isiolo District and some areas of Tana River District, which are placed under Food for Work (FFW). This initiative has been complemented by emergency water provision, health/nutrition programmes for vulnerable groups and livestock intervention programmes implemented and supported by the Kenyan Government, international donors, UN agencies and NGOs. The interventions include:

- Water trucking
- overhauling of gensets
- improvement and rehabilitation of pans, boreholes and shallow wells
- drilling of boreholes
- provision of plastic tanks
- Njaa Marufuku Kenya programme for poverty eradication
- setting up of supplementary and therapeutic feeding centers
- mass immunizations
- control of diarrhoea
- provision of water disinfectants and drug kits
- provision of mineral supplements and Ranch/Afya meals
- livestock off takes
- provision of hay

However, food aid and nutrition interventions are not being sufficiently complemented by improvements in health and water provision.

#### 5.1.4 Summary of Recommendations

##### Non- food interventions

**Table 5.1.1.4: Non-Food Interventions**

Sector	Interventions
Water and Sanitation	<ul style="list-style-type: none"> <li>• Rehabilitation/protection of surface water facilities.</li> <li>• Fuel subsidies/spares for boreholes</li> <li>• Water tankering.</li> <li>• Support of rapid response teams.</li> <li>• Monitoring quality of domestic water supplies to forestall water related diseases.</li> <li>• Comprehensive hydro-geological surveys in all districts and hydraulics (land and water) engineering survey in the River Tana Delta area.</li> <li>• Introduction of pilot solar/wind water pumps.</li> </ul>
Livestock Production	<ul style="list-style-type: none"> <li>• Investment in livestock markets.</li> <li>• Investment in market information.</li> <li>• Livestock re-stocking/re-distribution for the most vulnerable households, particularly pastoralist “drop-outs”.</li> <li>• Improved animal disease control</li> <li>• Re-seeding of pasture in some de-generated areas.</li> </ul>
Health and Nutrition	<ul style="list-style-type: none"> <li>• A comprehensive nutrition survey to be carried out in Garissa and Tana River to determine the magnitude of malnutrition and a better course of action.</li> <li>• Expansion of primary health care services, particularly immunization, Vitamin A, de-worming, malaria control, nutrition education, FANC, hygiene and breast feeding promotion.</li> <li>• Increased qualified health staffing, especially nutritionists and clinical officers.</li> </ul>

	<ul style="list-style-type: none"> <li>Improving sanitation at dispensaries and in settlements.</li> <li>Posting a TFC is required at Hola Hospital.</li> </ul>
Agriculture	<ul style="list-style-type: none"> <li>Provision of certified crop seeds (horticultural and drought tolerant cereals and pulses) to farmers both in the riverine and the upland/plain areas.</li> </ul>
Education	<ul style="list-style-type: none"> <li>Increasing teacher staffing to improve the quality of education.</li> <li>Enhancing enrolment of girls especially in available day schools.</li> <li>Expansion of mobile/informal schools and boarding facilities.</li> <li>Monitoring of the school feeding programme.</li> <li>Improving sanitation and water availability in schools.</li> <li>De-worming tablets have to be distributed through ECD and primary schools.</li> </ul>

### Food Aid

- General food distribution for six months in all divisions of Mandera, Wajir, Isiolo Garissa and Tana River (except Kipini in Tana River); food needs/ration levels to be re-evaluated by FAS in riverine areas and Central Division. Supplementary and therapeutic feeding to continue in current locations. School feeding to continue.
- Food aid and special feeding programmes to continue for six months with improved targeting of vulnerable groups. Supplementary feeding programmes to be expanded to specifically target pregnant and lactating mothers.
- Cash for work and cash transfers should be encouraged for those households who have dropped out of pastoralism.

**Table: 5.1.1.5: Food Security Status**

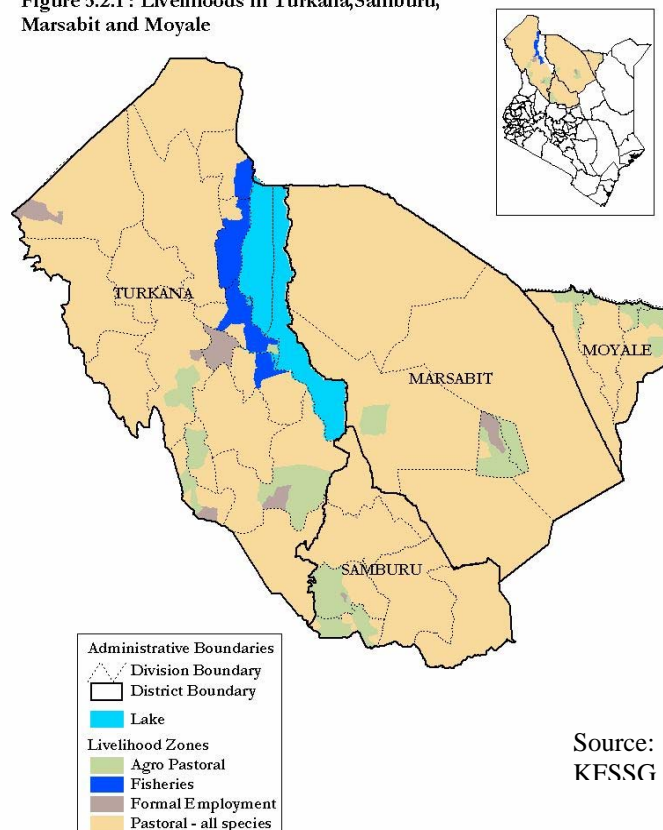
District	Overall Food Insecurity	Population	Population requiring food aid	% of pop. requiring aid	Modality
Mandera	High	312,955	204,469	65	GFD
Wajir	High	391,731	280,935	72	GFD
Garissa	Very High	251,802	119,831	48	GFD
Isiolo	High	120,241	52,331	44	GFD
Tana River	Medium	215,661	88,794	41	GFD
<b>Total</b>		<b>1,292,390</b>	<b>746,360</b>		



## 5.2 PASTORAL WESTERN REGION

The pastoral western cluster is shown in figure 5.2.1. It has an estimated population of 900,000 with Turkana being the largest of the four districts in size and population. The region is mainly pastoral as indicated in the map, and communities in these areas largely depend on pastoralism for their livelihood and keep mixed herds (goats, sheep, cattle and camels). Pockets of agro pastoral zones are also found in the districts and subsistence farming is mainly practiced around the high potential areas of the cluster. Crops mainly grown are: maize, beans, sorghum, cowpeas and green grams. Formal employment is also found in major town centers within the districts. Fishing is a major source of income for people living along the coast of Lake Turkana.

Figure 5.2.1 : Livelihoods in Turkana, Samburu, Marsabit and Moyale



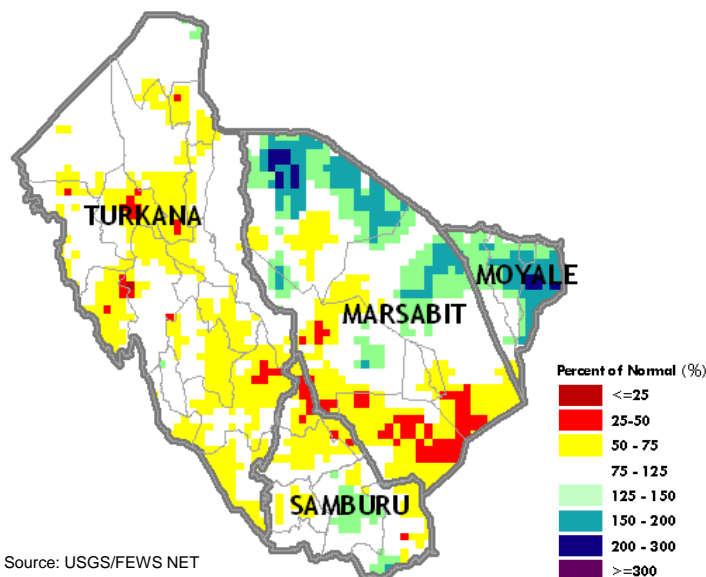
Source:  
KFSSG

### 5.2.1 Situation Analysis

#### Rainfall Performance

The 2006 long rains season was unreliable, inadequate as there were only short rainfall patterns in different parts of the region except for Moyale district that had good amounts of rains. The season's rains were poorly distributed and were limited to very short periods, with some areas recording between only one to four days of rain. The worst affected areas were the lowlands, where little or no rains were recorded. The Meteorological Department in

Figure 5.2.1.1: Rainfall Estimate: Percentage of Normal in Marsabit, Samburu, Turkana and Moyale Districts



Source: USGS/FEWS NET

Turkana recorded only 80.5mm of rainfall as received in the whole district against expected long rains average of between 100mm to 200mm in a bad year and 200mm-300mm in a good year.

The high elevation areas and various pockets of the region on average recorded good rains in terms of quantities received but



the amounts were still below normal. In parts of Marsabit and Samburu, unseasonable rains were experienced in early August and have benefited pasture, browse and surface water sources in those areas after an unusually early cessation of the long rains in May. The following graphics compare rainfall across the region.

### **Access to Water**

The main water sources in the cluster are boreholes, shallow wells, dams and pans and rain water harvesting both for domestic and livestock use. Water accessibility has improved as compared to the 2006 short rains season but availability still remains below normal. Most pans and dams have less water than their normal capacity and are over 50 percent silted especially in Samburu and Moyale districts. Surface water sources already started drying up and are expected to be at extremely low levels before the onset of the next rains. In Turkana most surface water sources have dried up. In all districts, livestock have begun converging at boreholes consequently overstressing performance and yields. As more water sources dry up, competition for these scarce water resources may lead to conflict. The waiting time at boreholes has increased especially where the borehole is not motorized. Excess demand has resulted in some boreholes operating for very long hours leading to frequent breakdown of pumps. Average distance to water sources for domestic and livestock use is steadily increasing as migrations continue into dry season grazing areas.

### **Livestock Production**

Availability of forage in the region has generally improved, particularly browse. However, in Turkana, pasture and browse availability is poor due to insufficient rainfall realized during the 2006 long rains season. In Kalokol, Central, Turkwel, Kerio, Lokichar and Lokitang divisions, near total depletion or total absence of pasture and browse was evident. However, in parts of Kakuma, Oropoi, Lokichoggio and Kibish divisions, the condition of pasture and browse improved after some rain was received in April. In Marsabit, Moyale and Samburu, parts of the districts that have adequate forage may be underutilized due to earlier than normal migration of animals as a result of insecurity and search for water.

Livestock body conditions are fair to good. In Samburu, the south western parts of Marsabit and parts of Turkana that did not receive sufficient rains, body conditions of cattle range from poor to fair. Herd sizes per household significantly reduced following massive livestock deaths after the 2006 short rains. Productivity of livestock is low, after normal reproductive patterns were disrupted. Currently, birth rates are very low. There is a slight increase in milk availability but quantities remain much below normal and only camels have any significant milk output. Prices of livestock have increased and are expected to continue increasing due to improved body conditions. Pastoralists are also holding on to the few livestock remaining as they restock. In Turkana, for example, around urban centers like Lodwar, Kakuma and Lokichoggio, goat and camel prices range between KES1000 and 2500 and KES20, 000 respectively. Most households are expected to benefit from the improving terms of trade.

No major disease outbreaks were reported and the main livestock diseases reported were CCPP in shoats and CBPP in cattle. However, in Isiolo trypanosomiasis and east coast fever remains a problem. In parts of northern and western Turkana, *Peste Des Petits Ruminants* (PPR disease has killed some shoats. Table 5.2.1.1 shows the percentage of herds affected by diseases as reported by households in Samburu district.

**Table 5.2.1.1: Samburu District: Main Diseases and Percentage of Livestock Affected (January to July 2006)**

Livelihood Zone	Livestock	CCPP	East Coast Fever	Foot and Mouth	Trypanosomiasis
<b>Agro Pastoral</b>					
	Cattle	-	60	0	20
	Goat	67	0	0	0
	Sheep	67	0	0	0
<b>Pastoral</b>					
	Cattle	-	14	14	14
	Goat	73	0	0	0

Source: 2006 District Survey Team, Samburu District

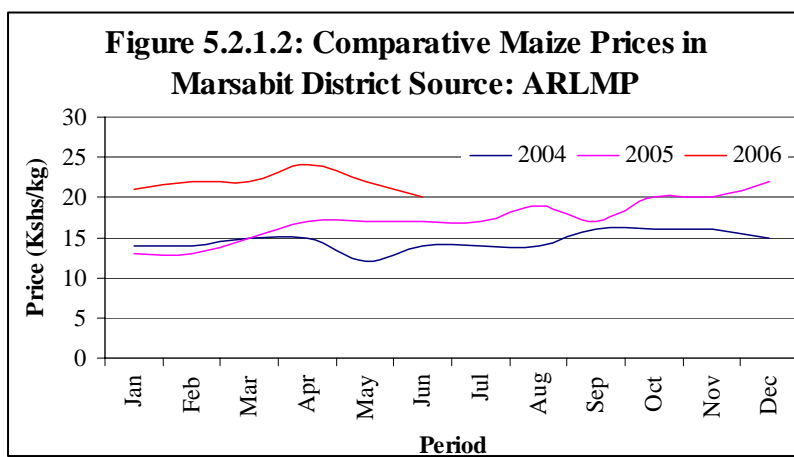
In Turkana district, communities living around the lake reported that the lake has significantly receded causing a decline in fish production. Fish harvesting from the lake fluctuates throughout the year depending on the extent of ebbing and receding of water in the lake

### Crop Production

Crop performance was poor because of inadequate rainfall and between 50 percent to 80 percent crop failure is expected across the region. In Moyale, Marsabit and Samburu, only a small area was planted due to lack of means for land preparation, limited access to

seed, and insecurity that resulted in farms being abandoned. In Moyale army worm attacks destroyed crops and replanted crops did not reach maturity stage. Due to early cessation of rains, crops in rained areas had reached permanent wilting point and in Turkana only 50 percent of sorghum yields are expected. In irrigated areas of Turkwel, Lokori, Kerio, Katilu and Kainuk divisions in Turkana district, between 33 and 50% yields are expected. Reduction in yields in these areas is mainly attributed to the low water volumes in rivers Turkwel and Kerio. In both rivers, water levels were below canal intake level for most of the cropping season hence reducing water availability for irrigated crops in the field.

Prices of cereals have been on a downward trend except in Samburu and Turkana, where they remain high especially in the far flung market centers. Despite high livestock prices, most



households do not have enough animals to sell. The households cannot therefore participate fully in the commercial market and rely on relief supplies. This has dampened the demand for

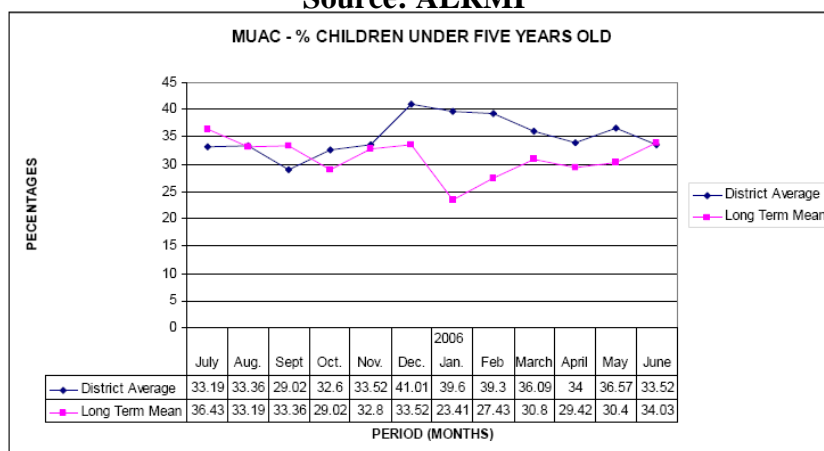
maize from Ethiopia and Meru into the Moyale and Marsabit markets. Consequently maize prices have been steadily declining since the onset of the long rains in April. Demand for maize is expected to remain depressed while supply from Ethiopia remains stable between August and December. Consequently, maize prices are expected to remain low in the same period. Figure 5.2.1.2 shows comparative maize prices in Marsabit district. In Samburu, Maize and bean supply in most markets is stable but prices remain high due to reduced supply in local markets from Laikipia and beyond. Prices of maize and beans are expected to decrease between August and October with the start of harvest in the main supply areas outside the district. In the far flank market centers such as Kaeris, Lokitaung, Lokori and Turkwel in Turkana, maize currently retails at KES 40 per kilogram while sorghum sells at KES 60 per kilogram. High food prices in the interior markets have a negative effect on household food security, especially on the pastoralist households whose purchasing power is compromised due to low livestock productivity.

## Health and Nutrition

Malnutrition rates have reduced over the last six months but still remain high in some divisions within the region. For example in Moyale, MUAC statistics for children under 5 years has been decreasing since May 2006 as shown in Figure 5.2..3. Reduced rates can be attributed to improved milk availability, access to water, provision of general rations and selective feeding programmes. Since

**Figure 5.2.1.3: Trends of Nutritional Status in Moyale District July 2006 to June 2007)**

Source: ALRMP



June 2006 corn soya blend (CSB) has been included in the general food ration targeting the whole household as a means to improve nutritional quality. Malnutrition rates are expected to increase as availability of milk and water declines, incidences of disease increase and movements in search of water and pasture increase. The main prevalent diseases are malaria, anaemia, measles, diarrhoea and vomiting. Most health centers are understaffed and lack adequate facilities and supplies. Health seeking behavior was also reported as poor in most communities.

## Education

Enrolment and attendance rates in the region increased during the drought period except in Turkana district. Despite a number of interventions to promote school enrolment and attendance in primary schools in Turkana District, the drop out rate is reported to be as high as 75 per cent, which is attributed to low appreciation of the value of education among the communities. The transition rate from primary school to secondary school is still low at only

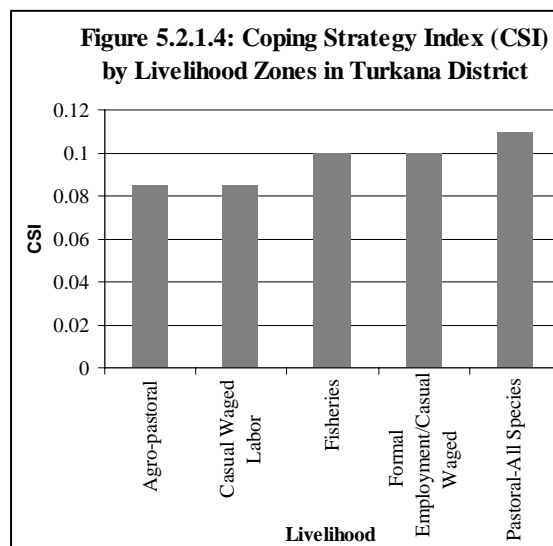
27 per cent. In Samburu district, five schools were closed due to insecurity and in Turkana insecurity has also affected enrolment as parents relocate. Water supply to most primary and secondary schools is poor due to limited water sources, low capacity and leaking tanks. Most secondary schools have incurred huge debts due to households' inability to pay fees.

### Shocks and Hazards

In Marsabit and Moyale there is potential conflict due to increased influxes from neighboring districts. Incidences of insecurity have also increased along the Kenya-Ethiopia border in both districts and remain a major concern. There is a high likelihood that normal migration to the dry season grazing areas will be interrupted. Clashes in these districts have affected grazing patterns, water acquisition, food supply and also education sector in some areas. In Samburu, the Pokots have continuously raided Lorroki, Kirisia and parts of Baragoi divisions since March. Farms were abandoned, crops destroyed and household food stocks stolen. Raids have subsided significantly since mid-May but tensions remain high adversely affecting crop production initially and later on, access to dry season grazing areas in the Lorroki plateau and parts of eastern lowlands. In Turkana, insecurity in areas like Kibish, Oropoi and Kapendo in Lomello Division has led to poor enrolment at schools, migration of families and no/low utilization of pasture/browse.

### Coping Mechanism

Household interviews conducted by the District Survey Teams revealed that majority of the households were not practicing severe coping mechanisms within the cluster. Figure 5.2.1.4 shows the coping strategy index by livelihoods in Turkana District. Frequently used coping mechanisms reported by over 50 percent of households interviewed include: borrowing and sharing of food, reduction in size and number of meals, swapping consumption to less preferred or cheaper foods and purchasing food on credit. The graph illustrates the coping strategies index by livelihood zone in Turkana district, where values of 0.25 and below are non-critical whereas values of 0.4 and above suggest that



households are practicing severe coping mechanisms. A smaller proportion of the households (20 to 30 per cent) applied moderately severe coping strategies like restricting consumption of food by adults to allow more for children, begging or engaging on degrading jobs or sending household members to eat elsewhere. In Turkana a few households were practicing severe coping strategies like household/individual migration from an area, sale of milking livestock or sale of household goods was reported (1 to 10 per cent). In some parts of the region, charcoal burning and increased search for casual labor was also reported.

### 5.2.2 Food Security Prognosis

While modest improvements in food security indicators have been reported in the region, household food security still remains precarious. Despite an increase in livestock prices, productivity still remains low due to the devastating drought earlier in the year. A sizeable proportion of pastoralists lost substantial herds and their purchasing power has been significantly compromised. Most households are dependent on food aid. Significant gaps exist in other non-food sectors and food security indicators are expected to deteriorate as the dry season peaks. Close monitoring is required in the 2006/07 short rains season which will be critical in determining recovery levels of food insecure households.

### 5.2.3 On-Going Interventions

Table 5.2.3.1 below shows the ongoing interventions put in place after the poor performance of the 2005/06 short rains season.

**Table 5.2.3.1: Interventions by Sector**

Water	<ul style="list-style-type: none"> <li>• Water tankering to the most vulnerable communities as need arises.</li> <li>• Installation of plastic storage tanks in institutions and communities.</li> <li>• Construction/rehabilitation of shallow wells, riverbeds and underground tanks.</li> <li>• Drilling and equipping of boreholes.</li> <li>• Fuel subsidy to run motorized pumps.</li> <li>• Repair of broken pumps and replacement of equipment. Desilting of pans and dams, Chlorination of shallow wells</li> </ul>
Livestock	<ul style="list-style-type: none"> <li>• Vaccination of goats against CCPP and tick borne diseases</li> <li>• Reseeding and re-establishment of pasture and browse due to overstocking.</li> <li>• Distribution of feed supplement.</li> <li>• Provision of boats for fishing by Constituency Development Fund (CDF) and NGOs.</li> <li>• Cash for work</li> <li>• Livestock restocking/destocking.</li> </ul>
Agriculture	<ul style="list-style-type: none"> <li>• Drought emergency seed distribution.</li> <li>• Technical backstopping and capacity building covering topics including water harvesting, management of irrigation schemes, water use, training of water users' associations, conflict resolution on use of water resources, pests and disease control and organic tillage; targeting farmers in both irrigated and rain fed-farming areas.</li> </ul>
Health	<ul style="list-style-type: none"> <li>• Community Based Therapeutic Feeding Programmes (CBTF), supplementary feeding in targeted divisions and blanket supplementation under the general food rations.</li> <li>• Disease surveillance.</li> <li>• Diocese of Lodwar is providing health care services through nine health facilities in central, Kainuk, Turkwel and Kakuma and conducting 105 mobile outreach clinics</li> </ul>
Education	<ul style="list-style-type: none"> <li>• School feeding programme for pre-primary and primary school children that has increased retention of children in school, improved nutritional</li> </ul>

	status and contributed to improved performance in examinations <ul style="list-style-type: none"> <li>• Provision of CSB to ECD centers.</li> </ul>
Food Aid	<ul style="list-style-type: none"> <li>• Provision of a monthly general ration to targeted households consisting of cereals, pulses and vegetable oil</li> </ul>

## 5.2.4 Recommendations

### Non Food Interventions

Table 5.2.4.1 is a summary of recommended non-food interventions. For detailed recommendations, see district reports.

**Table 5.2.4.1: Interventions by Sector**

Water	<ul style="list-style-type: none"> <li>• Drilling, equipping and rehabilitation of boreholes.</li> <li>• Provision of fuel subsidy and spare parts for borehole maintenance.</li> <li>• Construction and desilting of pans and dams.</li> <li>• Provision/repair of high capacity water tanks to institutions. Purchase of water bowsers. Provision of fresh water to fisher folks due to high content of minerals in the lake and ground water sources. Water testing, purification and/or disinfection. Community sensitization on hygiene and improving sanitation at water points.</li> </ul>
Livestock	<ul style="list-style-type: none"> <li>• Livestock restocking/destocking.</li> <li>• Reseeding and re-establishment of high quality pasture in degraded pasture land.</li> <li>• Facilitating procurement of livestock feed supplement for use when there is drought.</li> <li>• Supporting livestock disease control and surveillance.</li> </ul>
Agriculture	<ul style="list-style-type: none"> <li>• Provision of high quality drought emergency seed by mid September.</li> <li>• Capacity building on better farming practices, organic tillage technique, management of irrigation schemes, water resource management and land reclamation. Provision of chemicals for crop treatment.</li> </ul>
Health	<ul style="list-style-type: none"> <li>• Expanding coverage of the targeted feeding programmes to cover more divisions. Continuation and expansion of nutrition surveillance in all the divisions to identify the malnourished children for Therapeutic and Supplementary feeding care. Provision of therapeutic feeds and enhancing the capacity of district hospitals to conduct targeted feeding programmes. Logistic support for mobile outreaches including maintenance of the cold chain to improve immunization coverage.</li> <li>• Strengthening disease surveillance and supporting medical care through provision of drugs and non pharmaceuticals.</li> </ul>
Education	<ul style="list-style-type: none"> <li>• Continuation of school feeding programme for pre-primary and primary.</li> <li>• Provision of adequate sanitation facilities (toilet for boys and girls) and sanitary towels for the girl child.</li> <li>• Water tankering and provision of water storage tanks in worst affected schools. MOEST and local administration to undertake mobilization/sensitization campaigns to educate the communities on the value of education to enable them benefit from the free primary education programme. Facilitating secondary schools to offset outstanding fees and resume normal operations. Building boarding</li> </ul>

	schools in insecure areas as they remain open during periods of conflict.
Conflict Management	<ul style="list-style-type: none"> <li>• Continuation of peace initiatives especially along the borders to reduce conflict.</li> <li>• Maintenance of security surveillance, rapid response and access roads in the main grazing areas due to potential conflict between indigenous and migrant pastoralists.</li> </ul>

### Food Aid Interventions

Table 5.2.4.2 summarizes the proposed number of beneficiaries and modalities for the continuation of provision of food aid by district. For detailed recommendations, see district reports

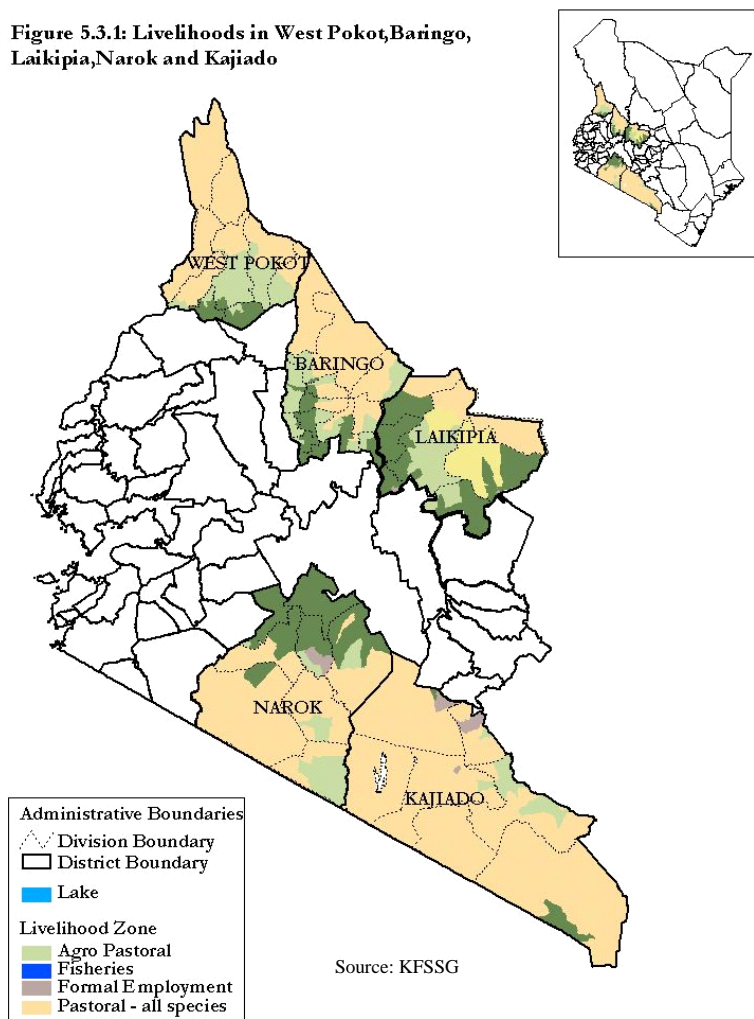
**Table 5.2.4.2: Food Security Status**

District	Overall Food Insecurity	Total Population	Population requiring food aid	% of pop. requiring food aid	Modality
Marsabit	High	144,820	80,758	56	GFD
Samburu	Medium	171,130	69,490	41	GFD
Turkana	High	448,013	263,010	59	GFD
Moyale	Moderate	63,755	21,935	34	FFW
<b>Total</b>		<b>827,718</b>	<b>435,193</b>		

### 5.3 AGRO-PASTORAL

The agro-pastoral livelihoods assessed in this report were in Baringo, Kajiado, Laikipia, Narok and West Pokot Districts as shown in Figure 5.3.1. The five districts cover an area of 142,438 square kilometers and with a population of 1,890,196 people. Pastoral livelihood is dominant in all the districts except Laikipia. The pastoralists keep all species of livestock – cattle, goats and sheep and to a smaller extent, some camels. Marginal mixed farming and agro-pastoral areas is mainly at subsistence level in all the districts, except in Narok where people from outside the district practice large scale wheat production on leased land. In Baringo and West Pokot there is commercial production of maize seed and some horticulture in the Perkerra and Sigor irrigation schemes respectively. Formal employment/business/trade is carried out in the major towns in all the districts.

**Figure 5.3.1: Livelihoods in West Pokot, Baringo, Laikipia, Narok and Kajiado**



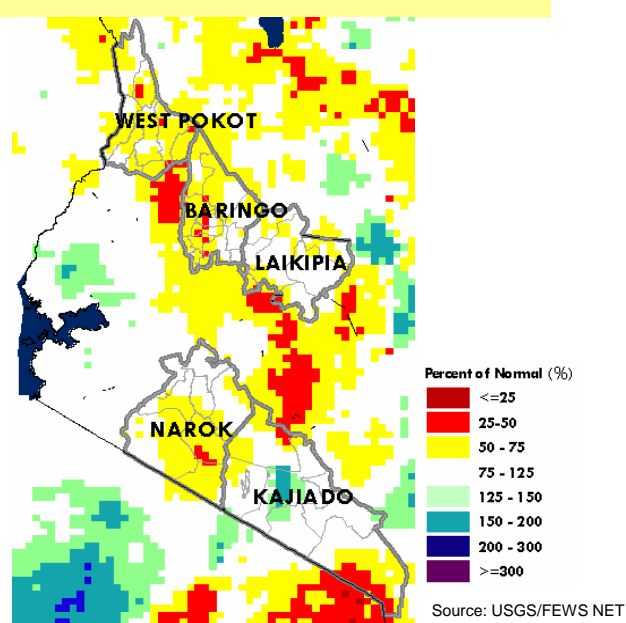
#### 5.3.1 Situation Analysis

##### Rainfall Performance

The 2006 long rains started in late February in most parts of Baringo, Laikipia, Kajiado, Narok and West Pokot. The rains stopped by the end of May except in West Pokot where the rains lasted until July/August (with a break between February and mid March, and between mid May and mid June). Figure 5.3.1.1 shows the percentage of normal rainfall in the agro-pastoral area. Most parts of the five districts, especially the highlands, received rainfall amounts between 75 percent and 125 percent of normal (satellite imagery). In West Pokot, the mixed farming highland divisions of Kapenguria, Lelan and Tapach received mean rainfall of between 300mm and 400mm, with some pockets of those divisions receiving up to 500mm.



**Figure 5.3.1.1: Rainfall Estimate: Percentage of Normal in Baringo, West Pokot, Narok & Kajiado Districts (March 21 to July 31<sup>st</sup> 2006)**



Rainfall performance was however poor in some pockets of the five districts, located mainly in pastoral and agro-pastoral areas. In parts of Loitokitok, Ngong and Magadi in Kajiado, pastoral areas of Osupuko, Loita and Eastern Mara in Narok, most parts of Kollowa and Nginyang in Baringo, parts of Mukogodo and Olmorani in Laikipia and parts of Alale and Kasei in West Pokot the amount of rainfall was only 50 per cent to 75 percent of normal. In Kollowa (Baringo), the rains were normal to above normal from end of February to mid April, but dipped abruptly and remained below normal thereafter.

## Access to Water

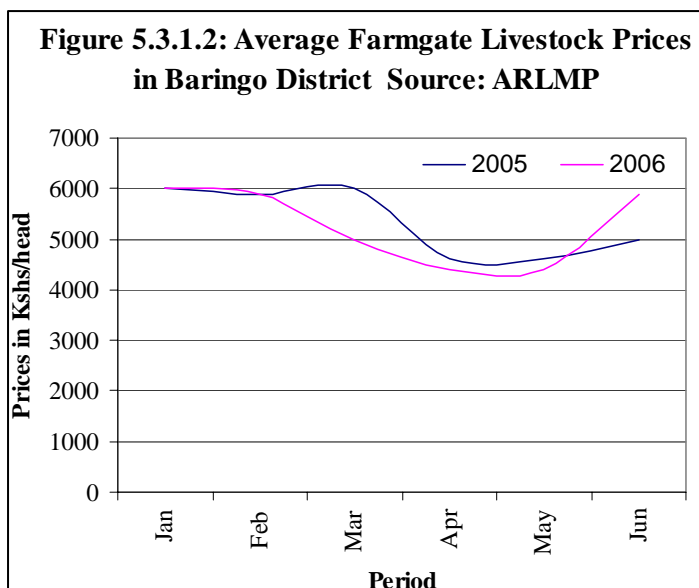
Water availability improved in nearly all parts of the districts, with the highlands receiving the best recharge. In Narok, Kajiado and West Pokot pans and dams impounded enough water and water availability is expected to last until September (just before the short rains). Distances to water sources for both humans and livestock have reduced to less than 5 km (from as far as 30 km) in most parts of the above districts. However, in lowland pastoral areas of Mukogodo in Laikipia and Nginyang, Marigat, Mukutani and Tangelbei in Baringo the recharge of most water sources was poor and walking distances to water points remained high (7 to 10 km); queuing time at water points were in excess of four hours especially at boreholes located in dry season grazing areas where livestock have concentrated.

## Livestock Production

Generally, livestock production improved in all the districts, but at varying degrees depending on the agro-climatic conditions and the performance of the long rains. In the highlands there was adequate pasture with normal livestock production. In the pastoral/agro-pastoral areas there were differences between districts. In Narok and Kajiado livestock were in the wet season grazing areas; however early migration had already started in pockets of Ngong and Magadi where rainfall was poor. Milk availability also improved in the two districts but the levels are still below normal, due to the mortality of in-calf cattle and the loss of calves to the drought. Milk prices are still higher than normal due to limited supply. Pasture regeneration was good in the above two districts and body condition of cattle was fair to good while body condition of sheep was good. Pasture and browse is expected to last until

the short rains in the two districts. In Kacheliba and Kongelai of West Pokot, livestock were also in the wet season grazing areas along River Suam and body condition of all species of livestock was good.

In the pastoral/agro-pastoral areas of Kollowa and Nginyang of Baringo, Mukogodo and Ol Moran divisions of Laikipia and lowland areas of Chesegon, Sigor, Alale and Kasei in West Pokot, however, livestock either remained in the dry season grazing areas or migrated there earlier due to poor availability of pasture. Body condition of cattle was poor and there was minimal milk production. The body condition of sheep and goats was good.



Livestock prices, particularly for goats, improved in all the districts. In Narok and Kajiado cattle prices were high as pastoralists held back their animals to restock. The volume

of animals on sale was also low in West Pokot for the same reason. In Baringo cattle prices were on a downward trend between February and May, as pastoralists tried to dispose of their animals due to lack of pasture, and then increased slightly between May and June. (See Figure 5.3.1.3)

Cattle prices in West Pokot varied between divisions, depending on accessibility to markets. Prices were about normal in the more accessible markets of Kapenguria and Chepareria, but below long term average in interior markets like Alale and Kasei, as shown in Table 5.3.1.1 below.

**Table 5.3.1.1: Livestock Prices (2002-2006)**

Division	Species	2002	2003	2004	2005	2006	Average
Kapenguria	Cattle	7500	8000	6500	8000	8000	7600
	Goats	700	850	600	850	800	760
	Sheep	650	700	500	750	700	660
Chepareria	Cattle	7500	7750	6500	8250	7250	7450
	Goats	700	850	650	850	1000	810
	Sheep	650	700	500	750	650	650
Alale	Cattle	5500	6000	5000	6500	4600	5520
	Goats	625	700	550	600	600	615
	Sheep	575	650	400	500	600	545
Kasei	Cattle	5500	6000	5000	6500	5500	5700
	Goats	625	700	550	650	750	655
	Sheep	575	650	400	500	600	545

Source: District Livestock Production Officer, West Pokot

In terms of reduction in livestock ownership, the highest losses occurred in Kajiado followed by Narok. There were no significant livestock deaths in the remaining three districts. In addition to drought, livestock the five districts is threatened by changing lifestyles. In Narok more pastoral land is turned to farms and leased out for maize and wheat cultivation, forcing livestock to move to other areas for pasture. Wildlife/livestock conflict over pasture and high infestation of trypanosomias due to large outflow of wildlife from the Mara reserve to Mara, Osupuko and Loita is also affecting livestock keeping in Narok. In Kajiado the Ipomea invader weed is suppressing pasture growth and causing denudation of land. In pastoral areas of Baringo, West Pokot, and Laikipia cattle rustling is a major threat to livestock ownership. Seed bulking and conservation of pasture is low in all the districts.

There was no quarantine in force in any of the five districts, and this facilitated free livestock movement and trade. However, some diseases were prevalent in some districts and affected livestock health. In parts of Mara, Osupuko and Loita in Narok, recovery in cattle is impeded by heavy tick and tsetse fly infestation due to free movement between wildlife and livestock. In Marigat, Kollowa, and Tangelbei of Baringo a substantial number of goats were reported to have died from the Contagious Caprine Pleuro Pneumonia (CCPP), although pastoralists in the above areas were reluctant to take their livestock for vaccinations due lack of sensitization. The common diseases reported per district are as shown in Table 5.3.1.2 below.

**Table 5.3.1.2: Common Livestock Diseases by District**

District	Diseases
Kajiado	Black Water, Foot and Mouth Disease (FMD), Contagious Caprine Pleuro Pneumonia (CCPP), Contagious Bovine Pleuro Pneumonia (CBPP)
Narok	East Coast Fever (ECF), Sheep/goat Pox, worms, Diarrhoea, Bloat, CCPP, CBPP, Malignant Catarrh Fever (MCF), Ephemeral Fever
Laikipia	FMD
Baringo	CCPP
West Pokot	ECF, Tetanus, Lumpy Skin Disease, Brucellosis, Helminthiasis, Sheep/Goat Pox

Source: District Livestock Production Officers, West Pokot, Laikipia, Baringo, Narok and Kajiado

## Crop Production

The highlands of these districts received good rainfall and are expecting normal to above normal harvest. In Narok, highland areas like Olokurto, Mulot, Ololunga and East Mau expect good harvest of 89% for maize, 93% for wheat, and 75% for beans. Horticultural crops are expected to achieve 80-90% yield. In Kajiado, irrigated crop also performed well due to availability of adequate water flow in the canals. However, in the pastoral/agro-pastoral and mixed farming areas crop performance is expected to be poorer due to erratic rainfall. In Narok and Baringo people in the above livelihood zones who planted in early, may achieve 30-50% of the expected harvest; crops that were planted late dried at tasseling stage. In West Pokot, agro-pastoral areas like lowland Kacheliba expect only 40% of normal harvest, while the pastoral areas of Alale and Kasei will experience more than 95% crop loss. In Lamuria and Central divisions of Laikipia frost attack in June aggravated the situation and

crop losses are estimated at over 60% for maize, 70% for beans and 50% for wheat. Reluctance of farmers to plant drought resistant crops in the pastoral/agro-pastoral/marginal mixed farming areas also contributed to low yields. Poor harvest in the pastoral/agro-pastoral areas is aggravated by over-reliance on maize and reluctance by farmers to plant drought resistant crops. In Laikipia district, emergency sorghum seeds from the Government were not planted. Food prices were slightly higher than the seasonal average in all districts. Tables 5.3.1.3 and 5.3.1.4 below illustrates the situation in Baringo and Laikipia districts.

**Table 5.3.1.3: Comparative Food Prices in Baringo**

	Commodity	Unit weight	2004	2005	2006	% Increase in Commodity Prices since 2004
	Maize	90kg	1320	1570	2070	36%
	Millet	90kg	3150	3150	4050	22%
	Beans	90kg	3400	3100	4500	24%

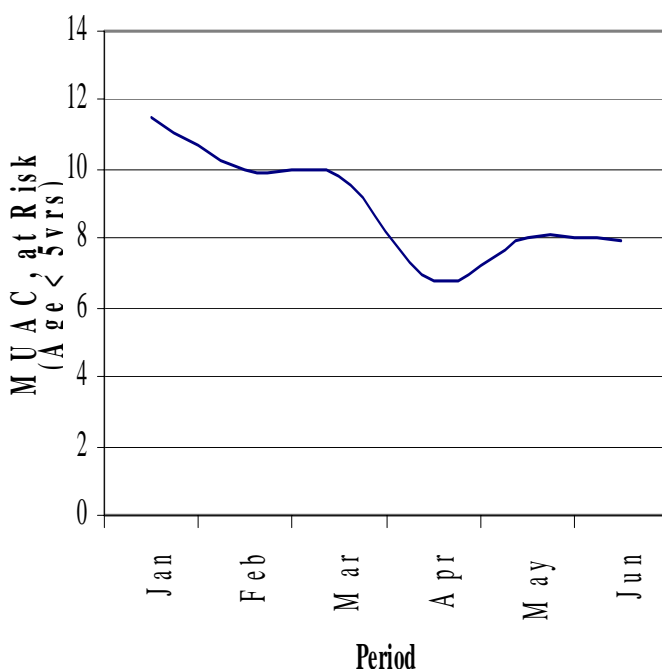
Source: Ministry of Agriculture, Baringo

**Table 5.3.1.4: Comparative Food Prices in Laikipia**

Commodity	Unit Weight	2002	2003	2004	2005	2006
Maize	90kg	800-850	800-900	800-1000	800-1000	1400-1600
Beans	90kg	1600-1800	1600-1800	1600-1800	1800-3000	2500-3600
Wheat	90kg	1500-1700	1800-2000	1500-1700	1800-2200	1400-1800

Source: Ministry of Agriculture, Laikipia

**Figure 5.3.1.4: Percent Children at Risk of Malnutrition in Laikipia District (Jan-June 2006) Source: ARLMP**



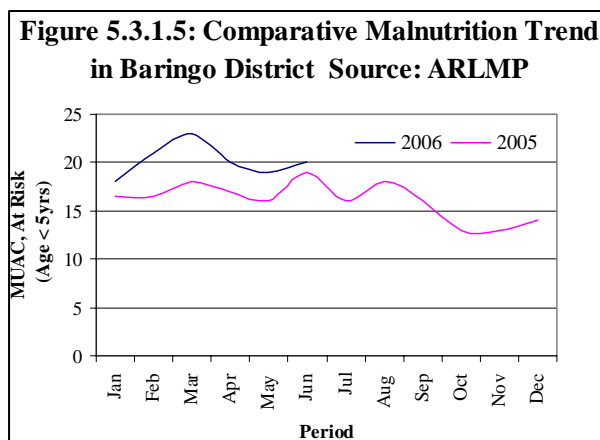
Market access has a big influence on livestock and crop prices. In areas like Rumuruti in Laikipia, Marigat in Baringo, Chepareria in West Pokot, and Ololunga in Narok there is vibrant trade with neighboring districts and commodity prices are more competitive. For example, livestock traders come from as far as Busia in western Kenya. In the more accessible markets, pastoralists earned more from livestock sales, while food prices were cheaper. In the interior, predominantly pastoral areas, livestock prices were lower and food prices higher due to poor infrastructure. For example, while a mature bull costs KSH 10,000 to 15,000 in Chepareria market, a similar bull costs KSH about 5,000 at Alale market. Inversely, maize costs KSH 20 per Kg in Chepareria and

KSH 40 per Kg in Alale. Purchasing power of pastoral communities in the interior was thus further compromised by poor access to markets.

## Health and Nutrition

In Narok and Laikipia, as shown in figure 5.3.1.4, the percentage of children at risk of malnutrition declined between January and June 2006. In Kajiado the percentage of children at risk peaked between January and March, but later declined steadily between April and June 2006. In West Pokot the percentage of children at risk was lower for the period January to June 2006 as compared to a similar period in 2004-2005. Factors contributing to the above decline are: a relative increase in milk availability, and a relative increase in food availability (including food aid). In contrast, Baringo had slightly higher levels of children at risk of malnutrition (18-20%) between January and June 2006, compared to the same period in 2005 (17-19%). Figure 5.3.1.5 shows the malnutrition trend in Baringo District. The main contributing factors were decline in milk consumption due to migration of livestock, diseases due to poor access to health facilities and poor hygiene/poor feeding practices.

The common diseases in nearly all the districts were: respiratory tract infections, malaria, diarrhoea, skin infections and intestinal worms. However, in Baringo and West Pokot there was an increase in cases of Kalazar. Due to high cost of treatment of the disease locally, patients were travelling to Amudat in Uganda for cheaper treatment. Poor distribution of health facilities, inadequate staff and lack of equipment affected health care in all the districts, particularly in the more remote pastoral areas.



## Education

In all the five districts, introduction of Free Primary Education by the Government has helped in increasing enrolment at primary schools. The WFP-assisted School Feeding Programmes (both regular and expanded) are implemented in all the districts and have helped to stabilize attendance, especially during the drought period. Inadequate physical facilities and limited access to water hinder full access to primary education. Drought has affected attendance in secondary schools as most parents were unable to pay fees due to reduced purchasing power. The Government intervened through the School Bursary Scheme, and by providing food to the schools to enable fee waiver for the most needy children. However, due to the magnitude of the problem only a few children benefited.

## **Shocks and Hazards**

Insecurity and cattle rustling is a serious hazard affecting three of the five districts. Serious conflict was reported in Baringo and Laikipia districts. In Laikipia, conflict between the Pokots from East Baringo and the Samburu/Maasai in Ol Moran resulted in migration of people and livestock to Rumuruti and Central divisions. Households who had lost all livestock were living as squatters in Central division, depending only on charcoal burning and food aid. In Baringo, conflict between the Pokots and Il Chamus (Njemps) caused displacement of people from Mukutani and disrupted the livelihood of the Il Chamus. Due to frequent conflict and cattle rustling in areas like Nginyang, Tangelbei and Mukutani, traders from major centers fear to venture into those areas, thus denying the pastoralists in the interior the benefits of competitive prices for their livestock. Free inflow of food from other areas is also hampered, leading to high food prices, affecting the food security of the poorer households.

There are a lot of peace initiatives being brokered between the communities, which are helping to check the situation. In Mukutani, after a peace deal between the Pokots and Il Chamus, some households are starting to resettle, but others are still afraid to return. In West Pokot, the north-eastern border with Turkana which is often volatile was quiet, but movement into areas like the dry season grazing area of Nasolot had to be accompanied by heavily armed herders.

## **Coping Mechanisms**

The coping strategies like charcoal burning, selling of firewood, skipping meals and consumption of wild fruits/vegetables are being applied in all the five districts. In Laikipia, Narok and Kajiado petty trade and sale of handicraft along tourist routes is also practiced. All the above strategies are normal for this time of the year. Due to some improvement in household food security after the long rains, and as a result of availability of food aid, less severe coping strategies were applied.

### **5.3.2 Food Security Prognosis**

In the highlands there were good rains and good harvest is expected in all the districts. In the pastoral, agro-pastoral and marginal mixed farming areas there was marginal improvement in the food security situation in Narok, Kajiado and West Pokot. Farmers who planted early expect up to 50% harvest. However, in Baringo and Laikipia maize did very poorly and only 30-40% harvest is expected. There was also an improvement in earnings from sale of livestock, especially shoats in all the districts except Mukogodo in Laikipia. The volume of cattle in markets was less than normal as pastoralists were restocking. The decline in percentage of children under five years at risk of malnutrition in most of the districts indicated an improvement in level of milk availability in the households.

Timely arrival and good performance of the October-November short rains is critical for the full recovery of households in pastoral, agro-pastoral and marginal mixed farming areas, because it will facilitate cultivation of short rains crop, and promote calving, lambing and

kidding in livestock. If the short rains are good, significant recovery is expected by January/February 2007 when harvesting is expected and livestock productivity will improve due to improved livestock body condition.

### 5.3.3 On-going Interventions

Some interventions carried out in the five districts since January 2006 were not very effective. In livestock, emergency hay was ineffective due to their inadequacy and late arrival. Livestock off-take carried out in all the districts was appreciated but benefited very few pastoralists, especially Kajiado district, which experienced very high livestock deaths. Vaccinations (against CCPP and FMD) and other disease control efforts helped prevent disease outbreaks. Introduction of new livestock breeds like Galla goats, Doper sheep and camels in different parts of the five districts will help improve livestock production. However, the numbers introduced are very small compared to the demand. Seed bulking demonstration plots were established in Baringo, Kajiado and Narok; these require time to be adopted by the communities. In agriculture, emergency seeds arrived late in most districts; sorghum seeds provided in Laikipia were unpopular and not planted. Control of armyworms in Baringo and West Pokot helped check the spread of the worms and saved some crop. Pans and dams were desilted in parts of all the five districts and this helped improve water availability. However, the impact was small since most dams in the districts had not been desilted since the El Nino rains of 1998. Boreholes in the drier pastoral lowlands were repaired. This improved water availability and reduced distances to water points. In health there was widespread immunization against measles and polio, coupled with Vitamin A supplementation in all the districts.

### 5.3.4 Recommended Interventions

#### Non-Food Interventions

Table 5.3.4.1 is a summary of the short and medium term non-food interventions.

**Table 5.3.4.1: Recommended Non-Food Interventions**

Sector	Type of Intervention	Districts
Water	Desilting of dam & embankment repair	West Pokot (5 No.), Narok (20 No.), Laikipia (6 No.), Baringo
	Repair/rehabilitation of boreholes	West Pokot (11No.), Kajiado (22 No.), Narok (3 No.), Baringo (6 No.)
	Drilling new boreholes	Kajiado (20 No.), Narok (3 No.), Laikipia (2 No.), Baringo,
	New pans/dams	Kajiado (20 No.),
	Fuel subsidy in drought areas	Baringo
	Springs development	Kajiado (19 No.), Narok (7 No)
	Provision of plastic tanks	Kajiado (70 No.), Baringo,
	Water bowser	Kajiado (1 No.)
	Creation/support water user associations to regulate use of river water	Baringo, Laikipia
Livestock	Restocking (8 sheep/goats or 5 young cows)	Kajiado (6300 HH),

	Supply hay baling equipment	Kajiado
	Grass seed bulking	W. Pokot, Narok, Baringo (1,350 Kgs)
	Improvement of strategic holding grounds	W. Pokot
	Provision of vaccines	W. Pokot (45,000 doses-LSD), Laikipia (200,000 doses FMD), Baringo,
	Address livestock/wild life conflict	Narok
	Provision of improved beehives	W. Pokot (105 N.), Baringo,
	Destocking	Laikipia, Narok
	Disease surveillance/tsetse control	Narok
Agriculture	Promote drought tolerant crops	All districts
	Emergency seeds	Kajiado, W. Pokot, Laikipia (244 MT maize, 244 MT beans, 24,000 bags fertilizer), Baringo,
	Intensify irrigation	Kajiado, W. Pokot,
	Promote water harvesting techniques	W. Pokot, Narok
Health/ Nutrition	Provision of treated nets	W. Pokot, Kajiado,
	Mobile outreach clinics to increase access to health care/immunisation	W. Pokot, Kajiado,
	Measles vaccinations	Kajiado
Education	Continuation of SFP	All districts
	Increased physical/toilet facilities in schools	W. Pokot,
	Promote 4K clubs/junior farmer schools	Baringo, Narok

### Food Interventions

Although the food security situation has improved slightly following fair to good rainfall in parts of the five districts, continued food assistance will be required until February 2007 when significant recovery will be realized if the 2006 short rains are good. The long absence of livestock in the dry season grazing areas of districts like Baringo, Laikipia and West Pokot, and high livestock deaths experienced in Kajiado, has resulted in reduction of milk availability and has affected the food security of pastoral households. Below average crop production in the agro-pastoral and marginal mixed farming areas (for example, losses in maize crop of up to 60% in parts of Laikipia) will result in reduced household food stocks and less income from sale of crops. Provision of food aid for an additional six months would help save livelihoods and cushion the vulnerable households until after the 2006 short rains season.

Table 5.4.1.1 is a summary of the recommended food aid interventions by district/divisions/locations. For detailed recommendations please see district reports.



**Table 5.4.1.1: Recommended Food Aid Interventions**

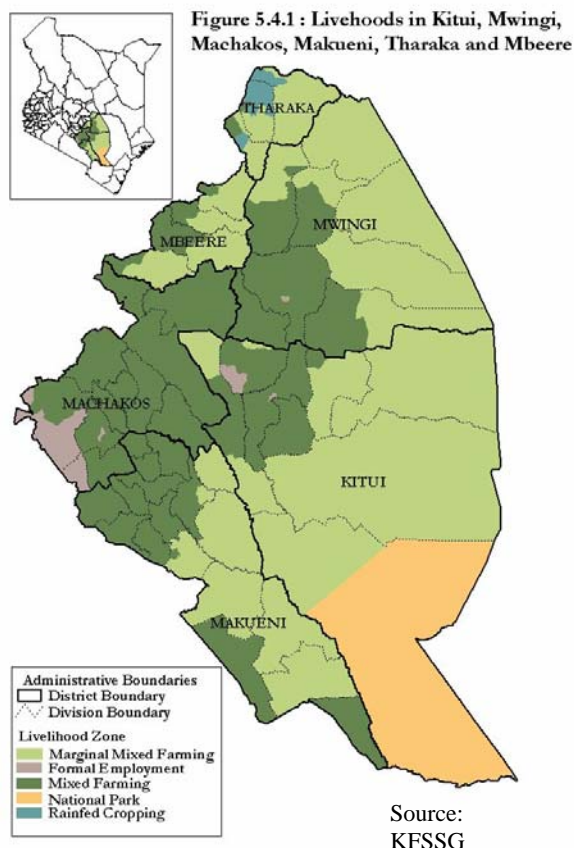
<b>District</b>	<b>Overall Food Insecurity</b>	<b>Total Population</b>	<b>Population requiring food aid</b>	<b>% Of population requiring food aid</b>	<b>Modality</b>
West Pokot	Moderate	367,285	30,100	8	GFD
Baringo	Moderate	315,894	41,489	13	GFD
Laikipia	Moderate	384,095	59,677	16	GFD
Narok	Moderate	436,029	34,488	8	FFW
Kajiado	Medium	484,077	102,643	21	
<b>Total</b>		<b>1,987,380</b>	<b>268,397</b>	<b>14</b>	

## 5.4 MARGINAL AGRICULTURAL

The marginal agricultural region comprises of three main livelihood zones namely: a) Mixed Farming, b) Marginal Mixed Farming, c) Formal Employment/Business, (mainly found in the urban centers of Kitui, Mwingi, Machakos and Makueni districts). Tharaka district has a small area under Rain-fed Livelihood Zone while Machakos has a Ranching Livelihood Zone. Figure 5.4.1 shows the marginal agricultural livelihoods.

Mixed farming livelihood zones are located in the highlands area (higher potential areas) of the region and lie towards the western side of the region. The marginal mixed farming livelihood zones are located in the lowlands areas of these districts, which lie in the eastern side of the region. The latter zones receive less rainfall and hence have less agricultural potential.

Households in the mixed farming livelihood zone mainly depend on crop and livestock farming, with the former being more important than the latter. The marginal mixed farming areas also depend on crops and livestock with the latter contributing marginally more to the income than the former.

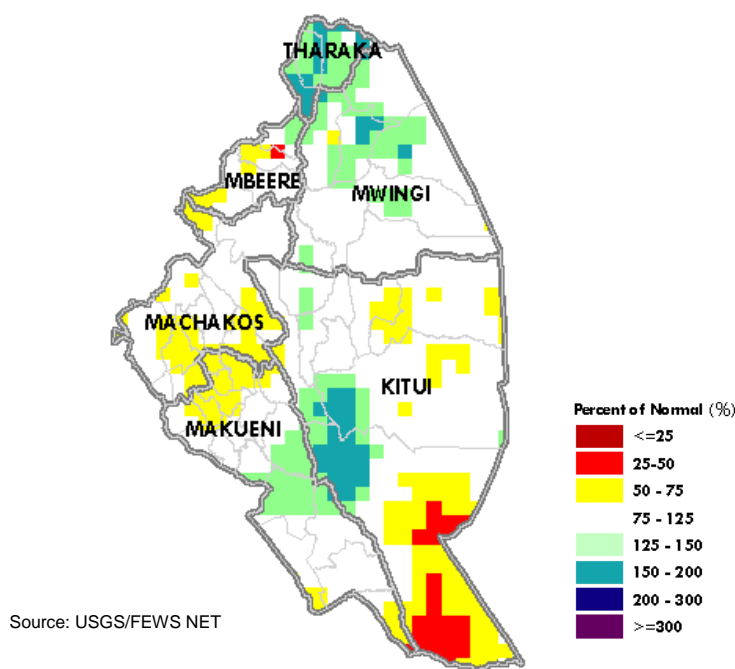


### 5.4.1 Situation Analysis

#### Rainfall Performance

This region receives rainfall in a bimodal pattern with the short rains (October to December) being more reliable than the long rains (March to June). Prior to the long rains season, the region experienced five consecutive seasons of poor rainfall. The performance of the 2006 long rains season was more favourable in the western side of the region, than the eastern lowland side. In general, the amounts received were near normal and higher than the previous seasons (2005 and 2006), but the temporal distribution was uneven, thus compromising the impact. The cumulative rainfall amounts were mainly between 75 and 125 percent of the long-term average in most parts of the region, except in southern Kitui, northwest Makueni, and parts of Machakos and Tharaka (See Figure 5.4.1.1). On the other

**Figure 5.4.1.1: Rainfall Estimate: Percentage of Normal in Kitui, Mwingi, Makueni, Machakos, Mbeere & Tharaka Districts**



hand the distribution was poor and uneven especially in the marginal lowland areas where heavy rainfall was received within very short periods.

The season was characterized with rain breaks of between two to four weeks. The long rains started earlier than normal in late February, instead of the expected date of mid-March. These early rains were torrential, coupled with a lot of runoff and little seepage into the soil. The February rains were followed by a dry spell of 2-3 weeks. The rains then resumed between mid to late March in the form of showers.

Consistent rains were received in April and the first week of May followed by showers in the second week of May. This was an early cessation as the rains normally end in June.

#### Access to Water

The main sources of water in the region are pans and earth dams, boreholes and shallow wells (in river beds). There are some permanent and season rivers, in the region. Some households and institutions also use water from roof catchments. Most surface water

sources recharged after the season but to varying extents, depending on the level of silt deposits and the amount of rainfall received during the season. The availability of surface water sources has reduced walking distances to water sources for both domestic and livestock consumption. Walking distances currently range from 2 to 7 km for both livestock and human consumption. This is down from 7 to 15 km during the peak of the drought in January and February. Apart from Mwingi, where the pans are already drying up, this water is expected to last until the end of August 2006, when walking distances will increase. Currently, the purchase of water, especially for domestic use, is limited due to the availability of surface water sources. About 20% of the dams in the Marginal Mixed farming areas were dry or almost dry by August. This is considered to be too early. The water availability in this zone will be a concern. Water tankering in Mwingi and Kitui will be required for community and institutions.

Pans and dams in the mixed farming areas were well recharged and water is expected to last until the commencement of short rains in October/November 2006.

In most parts of the region, a significant number of boreholes are not operational due to lack of repair and missing parts. These boreholes should be repaired, as they are an important source of water during dry spells. In the marginal areas walking distances are relatively long due to the sparse distribution of water sources. The quality of water in pans and dams is poor because it is used for both human and livestock consumption. There is a need for the exploration of more water sources to improve quality and availability.

### **Crop Production**

The major food crops grown in this region are maize, beans, cowpeas, pigeon peas, millet and sorghum, mainly under rain-fed production. The production of drought resistant crops is more significant in Tharaka. Irrigation schemes are found along permanent rivers; both food and horticultural crops are produced. The highland regions of Machakos and Makueni have cash crops like coffee, while in the lowlands cotton is grown in limited areas. It is important to note that in this region (especially Machakos, Makueni, Kitui and Mwingi) crop production is more dependent on the short rains season since rains in that season are more reliable.

Crop performance was consistent with the performance of the long rains. Due to the early onset of rains, farmers planted in two stages: a) Late February to the first week of March, b) Mid to late March. The distribution of the rainfall in the region was temporal, with two dry spells ranging between two and three weeks long. This uneven distribution was more pronounced in the marginal areas. The dry spell caused reduction in yield and wilting of crops.

There was a total maize and beans failure in the marginal lowlands, while the highlands registered from below normal to normal yields. It was a total crop failure for maize and beans. Farmers were able to harvest drought tolerant crops (green grams, cowpeas, millet and

sorghum) in June and July. Pigeon peas were still at the flowering and podding stage; a good harvest is expected in the medium to high potential areas, in contrast to the lowlands where the crop was under moisture stress. The crop was already being consumed on the farms therefore reducing the actual yields during harvest (in late August). The yields per farmer also varied quite widely. Some farmers in the marginal mixed farming areas and also those in the transitional zones between the two zones consumed the entire crop while green in the field. Others harvested a total of only two bags of cereals and two bags of legumes per farm. Farmers in the Mixed Farming areas had significant harvests ranging from three bags per hectare in Machakos Central to 15 bags per hectare in Kee division of Makueni district. Table 5.3.1.1 provides details on the performance of the main crops in the lowland and high potential divisions.

**Table 5.4.1.1: Hectarage and Yields of Selected Crops in Selected Divisions (March to July 2006)**

Crop	Mtito Andei Division (Lowland - Marginal Mixed Farming)					Kee Division (Highland - Mixed Farming)			
	Target (Ha)	Achieved (Ha)	Target (Bags/Ha)	Achieved (Bags/Ha)	Total Production (Bags)	Target (Ha)	Target (Bags/Ha)	Achieved (Bags/Ha)	Total Production (Bags)
Maize	7,000	2,475	12	0	-	2,700	15	14	36,400
Millet	750	1,270	8	0.5	635	100	9	8	240
Sorghum	1,200	2,300	8	1.5	3,450	100	12	10	500
Beans	3,000	2,000	6	0	-	1,000	10	9	8,550
Cow Peas	2,000	5,000	6	1.5	7,500	150	10	8	640

Source: Ministry of Agriculture, Makueni District

Some factors that influenced crop performance in the region include:

1. The time of planting (early or late planting)
2. Duration of the dry spell
3. Seed quality and availability - Most farmers did not have enough seeds since they had experienced a poor season during the 2005/6 short rains. Seed prices were very high (Kshs 120-150 for green grams compared to KShs 40 in a normal season). Some farmers did not replant after crops wilted in the dry spells due to lack of seeds and since they expected a bad season after experiencing a seasonal failure for 2005/06 short rains and that March-June season is normally unreliable. The government distributed seeds but these arrived too late for planting. Some farmers used relief maize as seed. In the highlands of Machakos and Makueni, the use of certified seed is fairly good.
4. Proximity to hills where they received more rain.
5. The extent of damage that were caused by armyworms.
6. Choice of crop in relation to the agro ecological zone. Farmers in this region consistently grow crops, which are not suitable for those agro ecological zones. For instance, maize will not do well in the marginal mixed farming areas, but farmers still grow it. However, farmers in Tharaka district concentrate more on drought resistant crops.
7. Availability of draught animals. Farmers who lost oxen during the drought had difficulties in preparing land for planting.

Prices for beans reduced slightly following harvest, while that of maize was expected to reduce after maize harvesting. The impact of harvest on prices was minimal due the below normal yields. Food prices are generally higher than normal for all crops (maize, beans,

cowpeas, green grams millet and sorghum). Farmers may be holding back their stocks for subsistence purposes. Table 5.4.1.2 below illustrates price disparities.

**Table 5.4.1.2: Food Prices in Kitui District**

<b>Crop</b>	<b>Maize</b>	<b>Beans</b>	<b>Cowpeas</b>	<b>G/Grams</b>	<b>Sorghum</b>
Current Price (Kshs/kg)	20-22	40-45	30-40	30-50	10-15
Normal season (KShs/kg)	14-16	20-30	15-25	15-25	5-15

Source: Ministry of Agriculture, Kitui

### **Livestock Production**

Most households in this region practice livestock rearing alongside agriculture. Livestock rearing in the mixed farming zone is more intensive than in the lowlands. The main livestock kept in this region include cattle, sheep, goats and poultry. The rainfall had a positive impact on livestock production.

The availability of pasture and browse improved markedly in the mixed farming areas. Dry stalks from the failed maize crop and harvests will also be used as livestock feed by some farmers. However, improvement in the marginal areas was short lived and started declining by early August. Households in the lowlands have significantly encroached agriculture onto pastureland. This was significant in lowland Makueni. Livestock in these areas are already experiencing pasture shortage. The situation will worsen in September. Pasture in the mixed farming areas is expected to start declining in September. Livestock migration in search of pasture has already started in the lowlands of Mwingi. Farmers have moved to the Mwingi/Tana River border and Meru creating the possibility of conflict over resources. Some farmers in Machakos district were harvesting and conserving hay. They were also harvesting grass seed. This activity should be encouraged in order to enhance feed availability.

Walking distances to water sources are currently within the seasonal norm (2 km to 7 km), but are expected to increase as the dry spell progresses. Households are currently spending less money on water due to the availability of surface sources. Livestock in parts of Mwingi district have already started trekking for long distances (from 4 km to 7 km) as pans in those areas have already dried up.

The livestock body conditions improved due to the availability of forage and can be described as good to fair. Livestock body conditions in some marginal areas e.g. Makueni district are already declining due to inadequate feed. The body condition for livestock in Mixed Farming areas is good and will be stable till September.

Among the livestock diseases, CCPP, CBPP are endemic in the region. In Mwingi district, there were sporadic anthrax outbreaks, while in Makueni it was reported on a private farm, which has since been quarantined. Anthrax may cause a food security concern especially if the district is quarantined, as households will not be able to sell livestock.

Livestock prices have been on the upward trend since May. This is attributed to the improved body condition and lower sales volume as households are consuming own crops. The volume of sales is expected to increase by early September as households will sell their animals in order to pay school fees.

### **Nutrition and Health**

Malnutrition started declining in May after being on an upward trend between January and May owing to the consumption of own crops and improved access to milk. This improvement may not be sustainable for long in the lowlands due to limited household food stocks. Malnutrition rates usually increase in August/September in the marginal areas and October/November in mixed farming areas. Food aid has continued to play an important role in improving the nutrition of households in the region.

Malaria, diarrhoea and respiratory tract infections are the most common diseases in the region. Immunization coverage was good in all districts apart from Tharaka. In general the incidence of disease and malnutrition was higher in the marginal areas as compared to the mixed farming zones.

### **Markets**

Markets in the districts were functioning well. It is important to note that maize bought for consumption originates from other districts, even as far as Trans Nzoia. Most of the divisions have a weekly market for food crops and livestock. Farmers who could harvest were selling their own produce, mainly green grams, cowpeas, sorghum and millets, which fetch a better price, in order to purchase maize, beans and other household goods.

Livestock markets were also functioning well. Some of these divisional markets are prime as they attract traders (sellers and buyers) from outside the district e.g. Ishiara market in Mbeere, Gatunga market in Tharaka, Nguni market in Mwingi and Emali Market. Livestock markets in Makueni and Machakos, bordering Kajiado district are also able to fetch good cattle prices because pastoralists from Kajiado are restocking.

### **Land Use and Range Management**

The lowlands of the Marginal Mixed areas have lost most of the perennial grasses due to repeated seasonal failures. Some of these areas have suffered drought since 2004. During this drought perennial grasses have dried up. Most of the districts plan to re-seed the pastoral areas with perennial grasses. The ground cover is also very thin due to poor regeneration of annual grasses. A lot of grass seeds have been lost during the droughts. The grasses germinate when there are showers and the rains are over before the grasses set seed. The seeds in the ground are almost exhausted leading to poor grass cover after the rains.

### **Current and Ongoing Hazards**

The region has experienced four to five failed seasons prior to the 2006 long rains season. Performance of this season was better but the impact varies with the highlands registering an improved food security situation as opposed to the lowland marginal zones. Crop production

in the region was affected significantly by the infestation of armyworms. The worms attacked cereal crops at an early stage of development, towards the end of March and early April. Aflatoxicosis is still a problem in the region. Between January and July thirteen people died in Kitui due to aflatoxin poisoning.

### **Coping Strategies**

The most frequent coping mechanisms reported in the region are those normally adopted in lean seasons of every year and are therefore not considered severe measures. These mainly revolve around reducing the size and frequency of meals. Very few households are employing severe coping mechanisms like withdrawal of children from school, sale of milking stock and sale of farm implements. Some of the coping mechanisms reported across the region are: skipping and/or reduction of meals, seeking employment, petty trade, sharing relief food, charcoal burning, brick making, sale of ballast, making handicrafts and remittances from relatives. The magnitude of selling charcoal especially in Kitui, Makueni and Machakos raises an environmental concern. The Kitui district is reported to be exporting around 200, thousand bags of charcoal per month to other districts.

#### **5.4.2 Food Security Trends**

Households in the region depend mainly on crop production and livestock farming for food and income. Income from crop production has been highly compromised by four to five successive season failures. This led to high levels of food insecurity in the region, necessitating food aid assistance to cover the gap. The 2006 long rains season provided measured relief only to households in the mixed farming (high potential) areas of the region where farmers were able to harvest a fair crop and therefore food security in this zone will be stable until next season.

On the contrary, farmers in the marginal areas experienced a near total crop failure. Livestock production prospects are also poor and livestock welfare indicators have already started declining. The meagre harvests that were realized and the slight improvement in milk availability may last the households only until the end of August. The food security situation for households in the marginal areas will begin to decline from September.

#### **5.4.3 On-Going Interventions**

Table 5.4.3.1 is a summary of emergency interventions that were implemented between January and July 2006 and others that are still going on.

**Table 5.4.3.1 Summary of Complete and On-going Emergency Interventions**

<b>Type of intervention</b>	<b>Comments</b>
<b>Food aid</b>	
Relief food Distribution	Oil and pulses were not available in February and June and some districts missed food for a whole month. Relief food is provided through general food



	distribution, food for work to communities and expanded school feeding programme.
<b>Agriculture</b>	
Relief Seeds Distribution	Seeds arrived late in the districts. Some of the maize and beans varieties were not appropriate for the districts. The cost of distribution was provided and districts had to struggle to distribute the seed.
<b>Water sector</b>	
Water tankering	The costs of operation were high costs due to long distances and poor quality roads
Storage tanks	Distributed to institutions. Some did not harvest water since because the tanks were received when rains were over.
Boreholes repair and drilling	Very useful.
Pans and dams (silting and excavation)	Useful but some did not harvest water since they were completed after the rains
<b>Livestock sector</b>	
Live stock Off-take	The response to off take was lower than expected livestock since the concept was new. Prices were fair compared to those offered by traders.
Hay Distribution	This was a new idea and there were problems of delivering to distant locations. The quantity of hay provided was insufficient and this intervention had minimal impact in moderating household food insecurity.
Feed Supplement Distribution	Arrived in 3 <sup>rd</sup> week of June in most districts and was not of much help for drought mitigation.
Acaricide Distribution	Arrived 3 <sup>rd</sup> week of June. The 20 L packaging was inappropriate; distribution was a problem since communal dips are not functioning.

#### 5.4.4 Recommended Interventions

##### Non-food Interventions

Table 5.4.3.2 is a summary of recommended of non-food interventions y sectors. Ore details are in the district reports.

**Table 5.4.3.2 Summary of Recommendations**

<b>Sector</b>	<b>Type of Intervention</b>
Agriculture	Farmers in the lowlands do not have the capacity to purchase certified seeds due the hazards and shocks experienced and will therefore require assistance. The seeds should be received in the districts in September before the onset of the rains. The varieties should be suitable for the specific agro ecological zones. Distribution costs should be provided.
Water	<ul style="list-style-type: none"> <li>• Water tankering mainly in Mwingi and Kitui Districts.</li> <li>• Repairing and equipping contingency and community boreholes in all districts.</li> <li>• Provision of water tanks to schools and health centers.</li> <li>• Development of roof catchments and storage to augment water tinkering in all districts.</li> </ul>
Livestock	<ul style="list-style-type: none"> <li>• Livestock Off-take mainly in Mwingi, Kitui, and Makueni. This should be carried out just before the rains in October/November 2006, January/February</li> </ul>

	<p>2007.</p> <ul style="list-style-type: none"> <li>• Control of notifiable diseases especially Anthrax in Mwingi. It is already a major threat to food security in Mwingi; CCPP and CBPP in all districts.</li> <li>• Monitoring CBPP, CCPP, LSD, Anthrax and other notifiable disease outbreaks in the districts for early intervention.</li> <li>• Monitoring livestock body conditions and market prices in the districts in the coming months in order to determine the right time for livestock off take.</li> </ul>
Health and Nutrition	<ul style="list-style-type: none"> <li>• Nutrition and child growth monitoring in government health centers and dispensaries should be enhanced. UNIMIX should be provided to malnourished vulnerable children through health centers.</li> </ul>

### Food Aid Sector

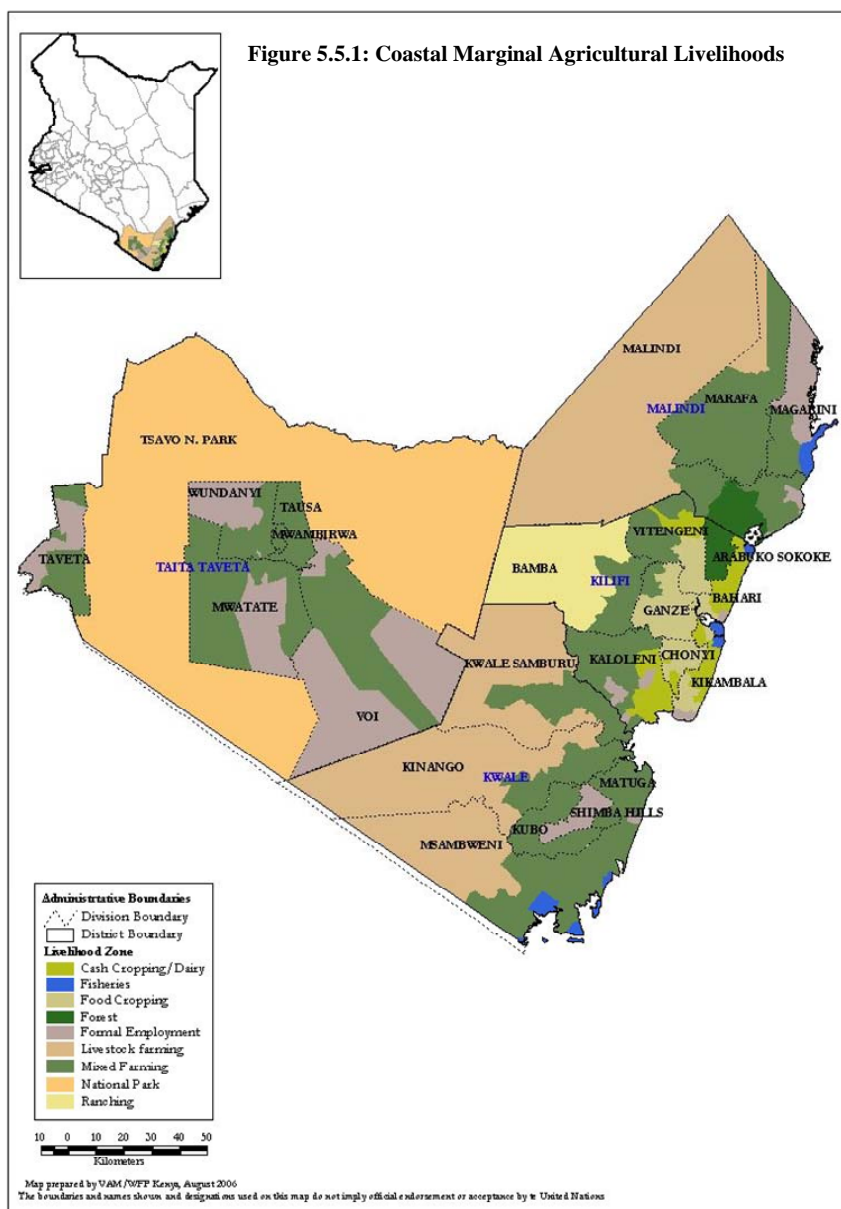
Food aid will be required in the marginal mixed farming and transition areas (between mixed farming and the marginal mixed farming zones) of all the districts. The distribution modality should be as follows:

- General (free) food distribution Makueni, Mwingi and Kitui.
- Food for Assets in Machakos Mbeere and Tharaka.
- Expanded school feeding programme in all the districts.

Many schools had not received food for the second term under the Regular School Feeding Programme. Food to these schools should be delivered on time as most of them are located in the worst affected areas.

## 5.5 COASTAL MARGINAL AGRICULTURAL REGION

The coastal marginal agricultural zones include Taita Taveta, Kwale, Kilifi, and Malindi Districts. These coastal districts are marginal agricultural areas with various livelihood zones but the most dominant are mixed Farming (crops and livestock), Fishing, Formal employment and tourism, Forest and national parks.



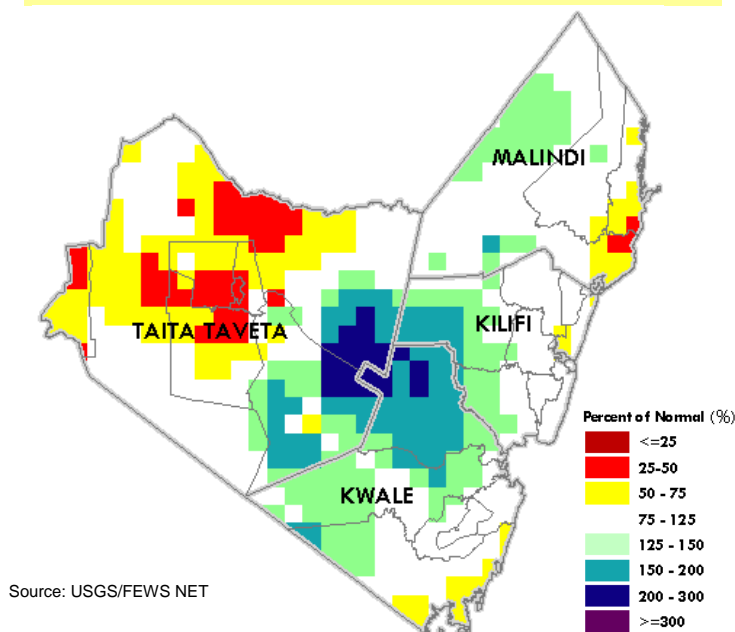
The potential agricultural areas are in the coastal strip of Malindi, Kilifi, and Kwale and the highlands of Taita Taveta districts where most of the population lives. The region has a population of 1,887,279 and covers over 22,000 square kilometers. Current caseload of beneficiaries is 446,858.

### 5.5.1 Situation Analysis

#### Rainfall Performance

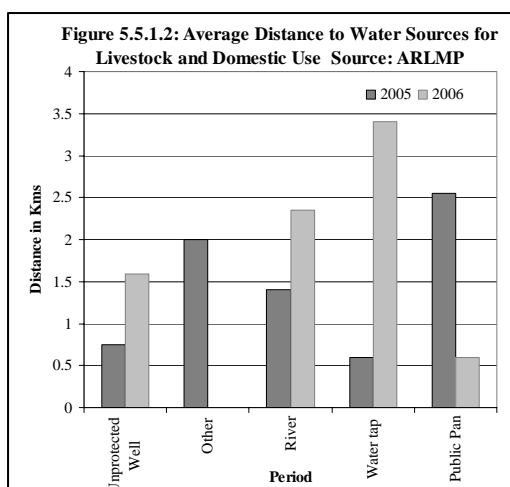
This region has a mean annual rainfall between 400 to 1300mm. It has experienced four past successive rain failures. However, this year's long rains were above normal. The rains were good in quantity and spread well along the Coastal strip and the highlands of Taita Taveta. Areas in the hinterland of Kilifi, Malindi and Kwale and lowlands of Taita Taveta received below normal rainfall impacting negatively on livelihoods in these areas.

**Figure 5.5.1.1: Rainfall Estimate: Percentage of Normal in Malindi, Kilifi, Taita-Taveta & Kwale Districts**



#### Access to Water

For water, the coastal region depends mainly on piped water schemes, roof harvesting, rivers, boreholes, shallow wells, dams and pans for both domestic and livestock use. Most dams and pans were full with water and rivers were flowing normally. Some of piped water schemes, boreholes and wells were operating below capacity because of breakdowns of pumps and small area coverage of pipeline. Generally, distances to water sources were reduced along the coastal strip and the average in Kwale was below 1.5 kilometer, as shown in Figure 1 below.



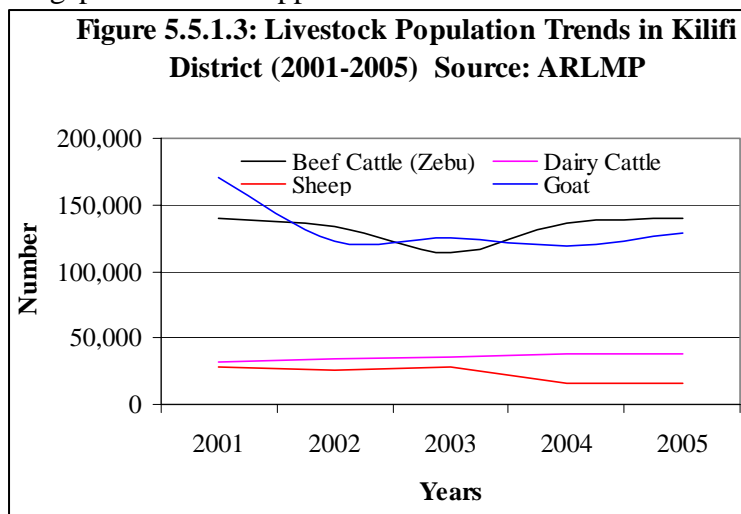
In lowlands of Taita Taveta, water accessibility was still a big problem as most of the Dams and pans were already dry and distances to water sources were increasing.

Institutions in the coast were still lacking proper and adequate water storage facilities particularly in hinterland areas of Kilifi, Kwale and Malindi. The distances to water sources were significantly reduced along coastal strip and average distances to water sources for domestic and livestock for Kwale was below 1.5 kilometer as shown in figure 5.5.1.2.

## Livestock Production

This region has adequate pasture. Water and browse conditions have improved significantly. However some parts of lowlands in Taita Taveta and hinter lands of Malindi, Kilifi and Kwale have, on account of inadequate rains, not fully recovered from over grazing during the drought. Livestock body condition was generally good and with plenty of water available, concentration of animals at watering points has disappeared. The numbers of animals are generally increasing due to the

influx from the neighboring districts of Tana River and North Eastern Province. This is putting undue pressure on the available grass and browse thus decreasing the rate of recovery. Figure 5.5.1.3 shows the livestock population trends in Kilifi District from 2001 to 2005. Currently there is no stress on the animals and prospects of good crop harvest have kept livestock prices stable. The average price for a mature animal was between Kshs. 8,000 and 10,000 which is a good price range at this time of the year. At the same time in previous years the price ranged between Kshs. 6,000 to 7,000.



No major disease outbreaks were reported except for CCPP in shoats and CBPP in cattle. This region did not report any unusual movements of animals and livestock deaths. Due to improved situation in the coastal areas, milk production increased above 30% from previous years.

## Crop Production

Most parts of this marginal agricultural region received above normal rains which were well distributed. This has significantly improved the food security situation particularly in coastal strip areas while smaller parts of hinterlands the rest of the districts and lowlands of Taita Taveta is still worse and is expected to worsen in the coming months. There are adequate food stocks in the main markets in the district although the purchasing power of the communities was eroded by four successive crops failures. The main food crops are maize, cassava, cowpeas and green grams. Cash crops are coconut, cashew nuts, citrus fruits and mangoes. Food crops were planted towards the end of March. Maize is at various stages of growth ranging from grain filling to maturity. The early planted cowpeas and beans are being harvested and others are at pod filling stage. Cassava is doing well in most parts of the region.

Wildlife menace in these districts negatively affects food production. For example, in Kwale, elephants caused the most damage to farmer's crops. In Taru, farmers prematurely harvested the little maize to avert total destruction by elephants from Tsavo national Park.

The price for maize has been generally low compared to the long term average and this was attributed to the relief food. Generally, prices for legumes (mainly beans) have been higher compared to the long term average mainly due to the effect of drought during the last year making the beans as the only source of protein. The prices however went down in July due to up country harvesting resulting in high supply. Currently most cereals and pulses in markets come from neighboring districts and Tanzania

### **Health and Nutrition**

No hunger related deaths were reported in this region. Malnutrition rates have reduced significantly. The average Kilifi District Mid Upper Arm Circumference (MUAC)<sup>5</sup> for June stood at 10.1%. This implies a significant improvement in the nutrition levels of under fives during the month compared to May which had 15.4% MUAC. This percent MUAC was much better than the seasonal long – term average MUAC (2002 – 2005) for June that stood at 22%. (The percentages quoted refer to the number of children with a MUAC below 13.5cm.)

Malnutrition cases were attributed to poverty, unbalanced diet, lack of safe drinking water, intestinal worm's infestation, disease prevalence, belief in traditional treatment/witchdoctors, and lack of knowledge of family planning, early marriages and poor nutrition among breast feeding mothers.

### **Education**

There were a number of interventions like regular and expanded school feeding programmes put in place in the four districts to promote school enrollment and attendance. These interventions have increased enrolment; sustained pupil attendance improved academic performance and enhanced good health and nutrition of pupils. It is on record in Kilifi that schools benefiting from these interventions have been leading in academic performance in the district for the last three years. However, there has been higher school drop out rates among girls than boys which is attributed to early pregnancy, poverty, early marriages, tourism, poor access to family planning information and cultural beliefs. It is unfortunate supporting documents could not be accessed.

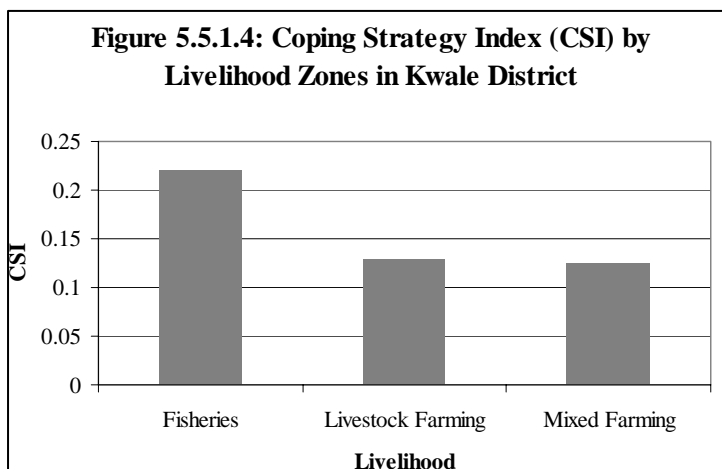
### **Shocks and Hazards**

There was no major conflict in this region apart from wildlife that continued to destroy crops and cause fear among communities living near the forests and national game reserves. Flooding was reported in Coastal region. It displaced about 3,000 people in Marafa division of Malindi and an unknown number in Kilifi district. Crops and other belongings were also

destroyed. In Malindi district, pastoralist communities from neighboring districts are still coming to the district in search of pasture and water. These pastoralists normally water their animals along the river destroying the community farms. This can be a potential source of conflict.

### Coping Mechanisms

In all district reports and household interviews conducted in Kwale district revealed that the communities were frequently using coping mechanisms like burning of charcoal, selling firewood, hunting and poaching, casual labor, skipping of meals, selling/disposing of assets,



marrying away of young girls, women engage in degrading activities, consumption of wild fruits and vegetables and relatives sharing out the little harvest with one another. Over 60 percent of livelihoods are engaged in non-critical coping strategies due to the overall good performance of the 2006 long-rains. A small percentage of households in the region are still employing moderate to severe coping strategies particularly in the

hinterland areas of Malindi, Kilifi and Kwale and lowlands of Taita Taveta district.

### 5.5.2 Food Security Prognosis

Due to good performance of rains, food security situation has significantly improved.

The prices of crops and livestock are expected to reduce and increase respectively.

Food aid support will still be required to cushion those few households whose purchasing power was eroded by the past droughts. Intervention on non food sector and performance of short rains 2006/07 remains critical for full recovery of the region. Therefore close monitoring is required to determine the levels of recovery.

### 5.5.3 On-Going Interventions

Due to poor performance of short rains, a summary of the following ongoing interventions were put in place:

- Food distribution to 447,000 beneficiaries.
- School feeding programme for primary school children leading to increased retention of children in school, improved nutritional status and performance in examinations.
- Seed distribution to farmers with positive impacts.
- Water tankering to vulnerable communities and institutions.
- Rehabilitation of piped water schemes and repair of boreholes.

- Construction and de-siltation of water dams and pans
- Livestock disease surveillance.
- Vaccination of goats, sheep and cattle.
- Capacity building of communities in CBTD principles and managing relief operations.
- Monitoring activities by DSG teams.

#### 5.5.4 Recommended Interventions

##### Non Food Interventions:

Table 5.5.3.1 is a summary of recommended non-food interventions. More details are in the District Reports.

**Table 5.5.3.1: Non-Food Interventions**

<b>Sector</b>	<b>Intervention</b>	<b>Term</b>
Agriculture	<ul style="list-style-type: none"> <li>• Relief Seed distribution and promotion of drought resistant crops</li> <li>• Further support in provision of certified seeds totaling 1,375 MT.</li> <li>• Supply and distribution of Fertilizers</li> <li>• Establishment of Farmer field schools</li> <li>• Drought monitoring by DSG and other stakeholders will be needed in all the districts</li> </ul>	Immediate
Livestock	<ul style="list-style-type: none"> <li>• Rehabilitation of non operational dips and crushes.</li> <li>• Vaccination campaigns against pneumonia, and FMD.</li> <li>• Formation of land use committees to resolve conflict between pastoralist and farmers.</li> <li>• Rehabilitation of infrastructures</li> <li>• Development of livestock market yards in feeder markets and rehabilitation of livestock related processing plants.</li> <li>• Livestock market information collection and dissemination</li> </ul>	Long term
Education	<ul style="list-style-type: none"> <li>• Continuation of ESFP and inclusion of other schools.</li> <li>• Continuous sensitization of parents to participate in provision of water, firewood, utensils and upkeep of cooks.</li> </ul>	Immediate
Water	<ul style="list-style-type: none"> <li>• Drilling, repair, rehabilitation of boreholes and piped water systems, installation of roof catchments tanks in schools and construction of dams and pans</li> </ul>	Immediate



## Food Aid Interventions

The table below summarizes the proposed number of beneficiaries and modalities for the continuation of provision of food aid by district

**Table 5.5.4.1: Food Security Status**

District	Overall Food Insecurity	Total population	Population requiring Food aid	%of population requiring food aid	Modality
Malindi	Moderate	346,773	30,787	9	FFW
Kilifi	Moderate	648,891	47,416	7	FFW
Kwale	Moderate	583,329	101,748	17	FFW
Taita Taveta	Medium	294,069	67,011	23	GFD
<b>Total</b>		<b>1,873,062</b>	<b>246,962</b>		

## 5.6 FORMAL/NON-FORMAL/ EMPLOYMENT/BUSINESS LIVELIHOODS

### 5.6.1 Introduction

Food insecurity in Kenya's Arid and Semi Arid Lands (ASALs) is increasingly challenged by frequent droughts. A complete or partial failure of long or short rains is likely to occur on average every three years in any arid part of the country, with a flood on average every five years. It is estimated that desertification and drought adversely affect about 8-10 million people in the country and that the populations in the ASALs are also afflicted by widespread and acute poverty, and have often become dependent for their survival on food aid<sup>6</sup>.

Having experienced two to three consecutive seasons of failed/unreliable rains, majority of the populations in Kenya's ASALs lost their livelihoods through livestock morbidity and crop failure. This called for emergency interventions to prevent deaths and further loss of productive assets among the affected communities. The drought operation so far covers 25 districts and directly provides food rations to over three million drought-affected people within the rural ASAL areas through Community Based food aid Targeting and Distribution (CBTD) system. Based on success of CBTD in the rural areas it has been widely perceived that similar interventions would be extended to urban and peri-urban settlements within the ASALs where there is chronic food insecurity. However:

- Livelihoods in urban/peri-urban areas are not chiefly dependent on the rains but depend on other factors, particularly, employment.
- The CBTD system draws its strength from the social capital existing in the rural areas which is limiting or totally lacking in the urban/peri -urban settlements.

It is obvious that a broader based approach ought is required to address the underlying issues of urban peri-urban food insecurity. A methodology should be designed for targeting urban and peri-urban assistance.

### 5.6.2 Situation Analysis

At present the ASAL districts supported with food aid intervention in Kenya incidentally also have the highest record of absolute poor people who (90% living in the rural areas) fall in the category of small farmers, pastoralists in arid and semi arid lands, agricultural laborers, unskilled workers, and the emerging pastoralist dropouts (pastoralists in transition). This lot derives its income from the informal sector, subsistence farming, or casual jobs. Table 5.6.2 provides estimates of this category in selected districts.

**Table 5.6.2: Percentage of Formal/Non-formal/ Employment/Business Livelihoods in Selected Districts**

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<sup>6</sup> Country Programme Action Plan 2004-2008 (GoK, UNDP) , pp. 35

District	Estimated Population	Est. population in (Formal/non Formal/casual labor category) % of district pop.	Description
Turkana	435,386	60,956 (14%)	Formal Employment/Casual waged labor/Business
Samburu	166,307	10,558 (6%)	Formal Employment/Casual waged labor/Business
Marsabit	136,772	15,566 (11%)	Formal Employment/Business/Trade
Wajir	380,691	81,867 (21%)	Informal Employment/Business
Garissa	244,706	99,741 (40%)	Formal Employment/Casual waged labor/Business
Isiolo	116,853	41,229 (35%)	Casual waged labor
Kajiado	470,437	162,510 (35%)	Formal Employment/Business/Trade
Kitui	592,372	26,661 (5%)	Formal Employment/Casual waged labor/Business
Machakos	1,050,394	75,605 (7%)	Formal Employment/Casual waged labor/Business
Malindi*	337,000	78,488 (23%)	Formal Employment/Business/Trade
Kilifi	630,603	85,475 (13%)	Formal Employment/Casual waged labor/Business
Taita Taveta	266,325	80,514 (30%)	Casual waged labor: sisal farms
Kwale	566,889	28,003 (5%)	Formal Employment: Tourism

Source: KFSSG,

\*Except for Malindi, according to the NPEP (1999) the rest fall in the category of most affected districts

The Economic Recovery strategy of the Kenya government urges that strategies geared towards reduction of poverty in this belt of high incidence of poverty be comprehensive and targeted where the majority poor live. The overall framework or starting point for such strategies is the leading principle that it is necessary and possible to reduce poverty through the human development<sup>7</sup> approach that addresses the income, basic needs and capability perspective of a citizen. The issue at stake is essentially the attainment (or non attainment) of the millennium development goals ranging from eradication of extreme hunger and poverty and halving the proportion of people living on less than 1USD, and achievement of universal primary education and health care.

The Kenya government's Equity and social-Economic Agenda in the Economic Recovery Strategy acknowledges that education is a key determinant of earning and therefore an important exit route from poverty. As such the GoK and its donor partners have invested heavily in efforts towards achieving Universal Free Primary Education so far with improvements in Gross Enrolment Rates in most of the ASAL districts. The lack of opportunity for gainful employment has reduced private returns from education, generated a sense of hopelessness, and dispossessed poor households the liquidated assets to raise school fees for their children. HIV/AIDS menace has further exacerbated this situation compromising Kenya's ability to tap its resources to achieve its human development outcomes.

The human capital of the poor can be improved by improving their access to basic healthcare and nutrition. Latest nutrition data obtain from UNICEF and its health and nutrition partner's surveys (2002-2006) are indicative of high malnutrition rates in Central divisions of

<sup>7</sup> Linking Industrialization with Human Development-UNDP, 2005 pp 8

Turkana, Marsabit and Isiolo. From the Long Rains Assessments 2006 findings, it was noted that malnourished children from the pastoral zones of the ASALs are being treated in the main districts hospitals of Lodwar in Turkana, Marsabit, Garissa, Wajir, and as far as Malindi for those coming from Tana River. This partly explains the high number of malnutrition cases recorded at district hospitals. The reason advanced for this is that most local health facilities are either dilapidated and have a shortage of qualified health personnel because the government is either not posting them or those posted are demotivated by the poor working environment as established by the Long Rains Assessment mission.

Infrastructure development is also a major limiting factor that has slowed industrial development in most of the ASAL districts in Kenya. At the provincial level, North Eastern Province, which has poor accessibility also has the lowest concentration of industrial establishments, and has the highest proportion of moderate to severely underweight children (34%), while Nairobi which is the most industrialized, has the lowest proportion (6%). The implication is that cases of undernourished children in such areas will prevail even if the rains were to improve.

### **5.6.3 Conclusions**

The Kenya government has been implementing deliberate initiatives to encourage investments in the less attractive ASALs. This is geared towards improving on opportunities for improving welfare of the inhabitants and overall reducing poverty and chronic food insecurity. For this reason the country and its development partners should not support projects and programmes that undermine this goal. Introduction of nutritional screening in all major settlements should therefore be used as a guide to selective feeding of the malnourished children. This is in a bid to strike a balance in addressing the health and nutrition needs of the vulnerable families within the urban/peri-urban LZ while at the same ensuring that other livelihood sources e.g. business, livestock marketing among others, are strengthened. The UN-World food Programme, international agencies like UNICEF, UNDP and governmental donor agencies must promote the above at the national levels. With the conviction that all children should and can have their nutritional needs met, the right of children to good health will become a reality.

### **5.6.4 Recommendations and Way Forward**

#### Immediate

- 1) A review for all the districts indicate that there is an underlying poverty datum fact hence;
  - There is need for reverse food aid targeting through Institutions in urban/peri-urban settlements for households with children identified for Therapeutic Feeding as well as supplementary feeding programmes should automatically be considered for general rations.

- Health workers have to be prepared to carry the extra burden of additional children who are brought into the health facilities. Planning together with nurses, asking the government, other agencies and community for additional resources, training and employing additional health workers, and backing up with community support through Community Therapeutic Centers are some of the measures that can create the mutual vision and confidence needed to cater for all the children.
- 2) There is also need to institutionalize a multisectoral interdisciplinary approach that combines experts/expertise from different sectors (health, social services and administration) in order to integrate cultural and social perceptions into health and nutritional Programmes to ensure more effective use of the supplementary food issued and also raise awareness on health seeking behavior.
  - 3) For the coastal districts broader nutritional indicators of malnutrition should be adopted within the analytical framework to cater for stunting and underweight rates at district level.
  - 4) In order to address broader issue of water and sanitation, adequate water and sanitation facilities should be in areas inhabited by squatters, harnessing/harvesting of rain water as well as other natural resources should be supported to improve access to clean water for both human and livestock

Future missions should further review below indicators:-

- Hardcore/Absolute poverty rates
- Net Enrolment Rates and Gross Enrolment Rates for Males and females in schools
- % of people (group) with access to water and sanitation facilities
- Maternal Mortality rates

## **6.0 SECTORAL ANALYSIS**

### **6.1 FOOD AID**

#### **6.1.1 Overview**

The October-December 2005 short-rains season in Kenya failed. In January 2006, a joint Government of Kenya, UN and NGO multi-sectoral Short-Rains Assessment Mission assessed the impact of the failed short rains on food security among drought-affected households. The almost total lack of rain in many parts of the country had exacerbated the effects of previous poor seasons. The resulting drought killed unprecedented numbers of livestock in the pastoral areas of North Eastern and Eastern Provinces. Following four consecutively failed or poor seasons, vulnerable populations had few remaining coping options. Anecdotal evidence from many discussions with pastoralists in these areas strongly suggested that this was the worst drought in the past 50 to 60 years. Child malnutrition rates, from surveys conducted in the first half of 2006, in the pastoral districts, have been above the emergency level of 15% and are typically found to be between 18 to 30% of Global Acute Malnutrition. The populous marginal areas of Eastern and Coast Provinces experienced their third very poor season and food security conditions continued to deteriorate. The assessment results indicated that 3.5 million rural pastoral and farming people, including 500,000 school children, in 25 districts were in need of emergency food assistance to sustain lives and protect livelihoods.

An appeal for assistance was launched on 8<sup>th</sup> February 2006 by the Government of Kenya and the UN Agencies<sup>8</sup>. A preliminary alert had been issued on 16<sup>th</sup> December 2005 by WFP and the Government of Kenya announcing an increase in the number of people needing urgent food aid, based on the overwhelming evidence that the situation was rapidly deteriorating.

#### **6.1.2 Review of Interventions January to August 2006**

In January 2006, WFP was assisting 1.1 million people through the general food distribution (GFD) over 17 districts. In light of the rapidly deteriorating situation in many parts of Kenya, and following the finalization of the assessment, WFP scaled up its operation from 1.1 million beneficiaries in January to 2.9 million people over 25 districts under the general food distribution and 500 thousand school children under expanded school feeding between February and March. For the April, May and June distribution cycles slightly over three million people were reached through GFD. The July/August distribution cycle was largely delayed due to a lack of cereals; this distribution also targeted 3.1 million people beneficiaries under the GFD. In addition, 535,000 school children were provided with school meals for the second school term (May-August).

Every month, WFP prepares a distribution plan based on beneficiary caseload and food available, as outlined in Tables 6.1.2.1 and 6.1.2.2 below. The difference between planned

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<sup>8</sup> Including substantial NGO efforts.

and actual tonnage is due to over and under-distributions, based on last minute adjustments to the ration. Also note that a distribution may not always fall in a calendar month.

**Table 6.1.2.1: Beneficiaries of Food Aid from January to August 2006**

	January	February	March	April	May	June	July*	August
<b>Planned</b>	1,161,107	2,424,650	3,006,275	3,006,275	3,113,087	3,113,087		3,119,119
<b>Actual</b>	1,081,776	2,357,553	2,862,730	3,010,773	2,690,571	3,035,412		TBC
<b>Percentage</b>	93%	97%	95%	100%	86%	98%		TBC

\*The June cycle spilled over into July and finished in mid-July. Due to a non-availability of cereals, there was a delay of a month and the August distribution began in the 3<sup>rd</sup> week of that month. For August, the figures are still being compiled.

**Table 6.1.2.2: Quantity of Food Distributed from January to August 2006.**

	January	February	March	April	May	June	July*	August
<b>Planned</b>	12,570	23,105	29,653	28,059	33,982	32,740		36,521
<b>Actual</b>	8,802	24,155	28,517	25,591	32,658	32,236		TBC
<b>Percentage</b>	70%	105%	96%	91%	96%	98%		TBC

\*as above.

### 6.1.3 Planned interventions September-March 2007

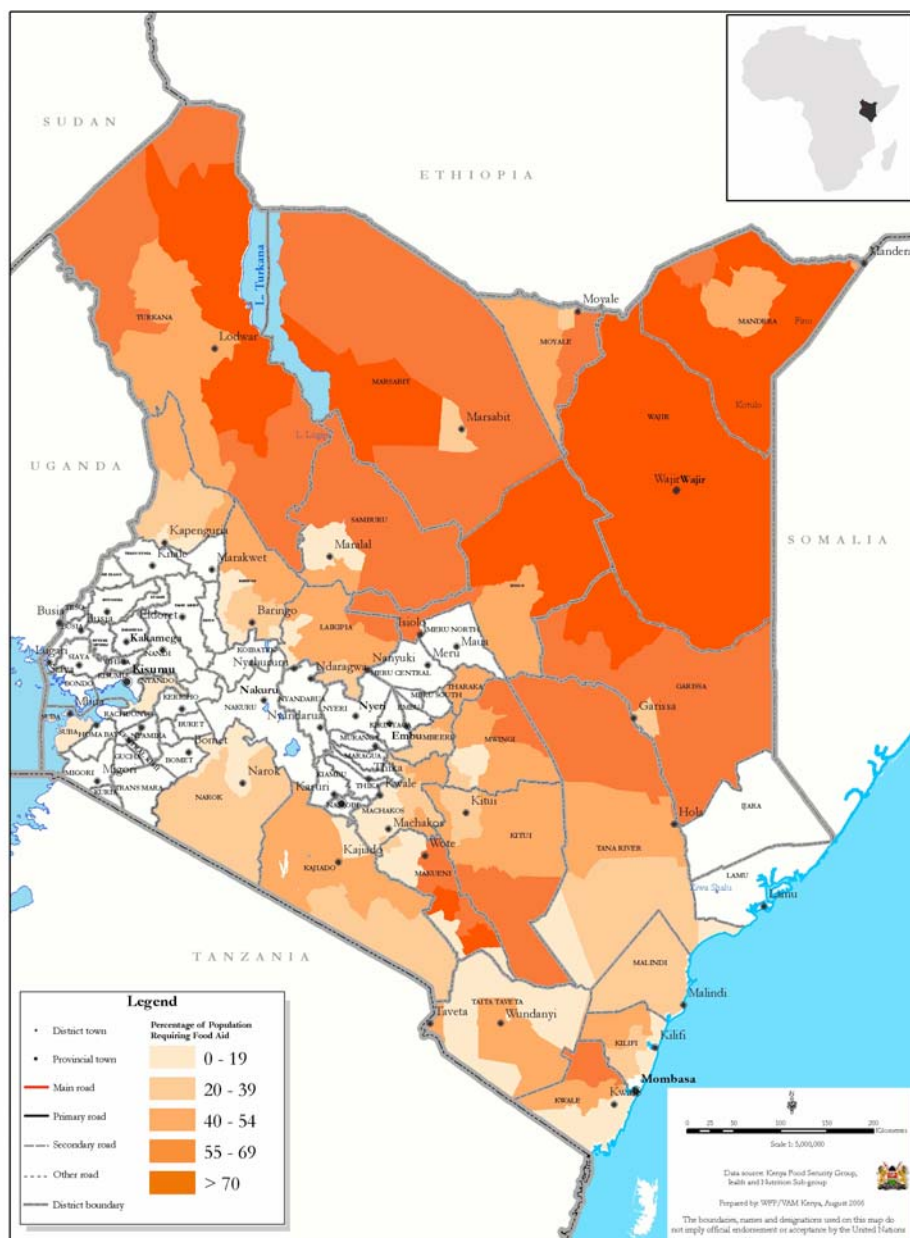
Based on the July-August 2006 long-rains assessment, the overall picture is that there have been some improvements in the food security situation as a function of the rains received. However, there is little consistency between the different livelihood zones in terms of the extent of the impact of the rains. In addition, and particularly for the pastoralist areas, the loss of livelihoods was so overwhelming that one rainy season is clearly not enough to announce that the crisis is over. The beneficiary caseload has now been reduced to 2.96 million. This includes about 2.4 million under the general food distribution, and where applicable food for work, and about 550 thousand school children under the expanded school-feeding programme. The beneficiary caseload by district is listed in annex 8.1.

The beneficiary numbers are generated by the district level assessment reports. Each report contains a table that rates the food security level of the district and provides a percentage range for coverage by food aid. These proposals are then reviewed by the Food Aid Estimates Subcommittee of the Kenya Food Security Steering Group; Office of the President, line Ministries, NGO representatives and the UN agencies form a part of this committee. The job of the FAS is to ensure that the recommendations made by the assessment team marry with the findings contained within the report.

In terms of beneficiaries by livelihood, in the August distribution, the emergency operation reached 1.3 million beneficiaries covering nine pastoralist districts, which has been reduced only marginally to 1.2 million beneficiaries following the assessment. For the marginal agricultural districts, in August the operation reached 1.4 million beneficiaries, now reduced to 1 million. For the agro-pastoral districts the August distribution reached 386 thousand beneficiaries, now reduced to 200 thousand. The largest reduction in the beneficiary numbers occurred in the coastal districts of Kilifi, Kwale, Malindi and Taita Taveta; beneficiary

numbers were reduced by 55% in these districts due to an overall improvement in the food security situation. Figure 6.1.3.1 shows the percentage population requiring food aid from August 2006 to March 2007.

**Figure 6.3.3.1: Percentage of Population Requiring Food Aid by Divisions (August 2006 to March 2007)**



General food distribution will continue in most of the districts; food-for-work (FFW) is being proposed in Kilifi, Kwale, Laikipia, Machakos (ongoing), Narok, Mbeere, parts of Mwingi, and Tharaka. Under the current phase of the EMOP, FFW targeted less than one percent of the beneficiaries. It is expected that FFW will eventually reach up to 400 thousand beneficiaries or seventeen fourteen percent; however, there will be a gradual phase out from



general food distribution to FFW, which will depend on the preparedness level of the community and the lead agency.

There has been no immediate change in the expanded school feeding beneficiary numbers. The assessment reports are positive in their reference to this programme and at least anecdotally found that the programme helped to retain children at school. Several districts have reported that not all eligible schools are covered under the ESFP; this issue will be discussed with the Ministry of Education as the list of schools to be included in the programme is generated by the Ministry.

#### **6.1.4 Food Aid Resource Requirements**

A budget revision of US\$225.4 million was approved on 13<sup>th</sup> February 2006 for the EMOP. The net food requirement for distribution in the period 1 March 2006 to 28 Feb 2007 is 395,026 MT. Monthly food needs exceeds 32,000 MT. Since the January assessment and the subsequent Government of Kenya/WFP appeal on 8<sup>th</sup> February 2006, WFP has received donations totaling US\$155 million (69 percent of the requirement); leaving a shortfall of nearly US\$72 million. Given the revised beneficiary caseload, the new requirement is 187,772 MT and the expected shortfall over the next six months is 75,483 MT that costs USD 44 million. Cereals are especially critical and are expected to be exhausted in October. On 19<sup>th</sup> July 2006, WFP issued a press release warning of the impending food aid crisis if new donor pledges are not received soon.

## **6.2 AGRICULTURE AND LIVESTOCK INTERVENTIONS**

### **6.2.1 Agriculture**

#### **6.2.1.1 Overview**

In general terms the long rains season is good in terms of national production, mainly from the high potential zones of the country. The Ministry of Agriculture (MoA) expect national cereal production to be 30 million bags of maize (94% of normal); 3.7 million bags of beans (93% of normal); 3.7 million bags of wheat (106% of normal); and 76,000 MT of rice (136% of normal).

However, agricultural production in marginal farming areas and agropastoral livelihood zones was very mixed. Particular areas of concern include the agropastoral areas of the southern rangelands (30-50% of normal harvest), and Northeastern with negligible harvests expected; lowland areas of West Pokot (40% of normal); and parts of Laikipia where frost damage reduced harvests by 60-70%. The riverine areas, including the delta region of Tana River in the ASAL zone, together with the coastal strip generally received adequate rainfall for crop production. The hinterland of the coast and lowlands of Taita Taveta are reported to have much below normal harvests (up to 80% below normal), exacerbating the high levels of chronic poverty of the Province. A similar picture is being experienced in Turkana, Marsabit and Samburu with an estimated 50-80% crop failure. Production in the irrigated areas of Turkana was also depressed to 33-50% of normal harvest due to low water levels in the Turkwel and Kerio rivers.

In Ukambani, there was a total maize and beans failure in the marginal lowland areas of the region, while the highland areas registered below normal, to normal yields. Farmers were able to harvest drought tolerant crops (green grams, Cowpeas, millet and sorghum), in June and July. Pigeon peas were still at the flowering and podding stage; a good harvest is expected in the medium to high potential areas, in contrast to the lowland areas where the crop was under moisture stress. The crop was already being consumed on the farms therefore reducing the actual yields during harvest (in late August). The yields per farmer also varied quite widely. Some farmers in the marginal mixed farming areas and also those in the transitional zones between the two zones consumed the entire crop while green in the field, while others harvested a total two bags of cereals and two bags of legumes. Farmers in the Mixed Farming areas had significant harvests ranging from 3 bags per hectare in Machakos Central to 15 bags per hectare in Kee division of Makueni District. Production was also affected by infestation of army worms in many areas (including Turkana), and aflatoxicosis remains a problem in the region. The availability of draught animals was also a constraint to farmers, especially in the lowland areas where livestock mortality was high during the peak of the drought. It should be noted that the long rains is not the main season for Ukambani, which relies primarily on the more reliable short rains season.

Poor production in marginal agricultural areas is attributed to erratic rainfall (which is not unusual); poor agricultural practices (especially agropastoral areas); low availability of certified seed, and related to this, planting of maize in areas where traditional drought resistant crops would perform better. In Ukambani, drought tolerant seeds were in short supply, and very highly priced (KSh.120-150 for green grams compared with KSh.40 in normal years) due to the poor short rains season. In many cases, MoA seed provision arrived too late for planting this season. While efforts are underway to promote drought resistant varieties, and to make seed available, more work is required in this area.

Market prices of cereals are generally on the decline as a result of good national production although they remain high in some areas such as Ukambani where prices are between 40-60% higher than normal.

In food security terms, the normal to above normal cereal production would suggest that the deficit in more marginal farming, agropastoral and pastoral areas is an issue of distribution and access to food, rather than a problem of availability. With cereal prices declining, it would make sense to support the market either through the local purchase of food in the bread-basket areas; or through the provision of cash in the deficit areas. The latter would allow markets to function normally and give beneficiaries more choice over relief resources. Cash can be provided as a grant, or as cash for work. Access to markets and employment would also greatly benefit from improvement of roads to remote areas.

#### **6.2.1.2 Review of Interventions March to August 2006**

The Agriculture and Livestock Sector Working Group (ALSWG) submitted a consolidated sector appeal to donors following the Short Rains Assessment and Joint Appeal (ALSWG). The ALSWG appeal totaled US\$ 16.7 million, of which nearly US\$ 5.6 million was secured from the GoK and international donors. A summary of interventions and funding by development partners is in Annex 7.2.2.1. The following activities have been put in place during the reporting period. It should be noted, however, that these activities are restricted to those reported by the members of the ALSWG: other interventions are known to be ongoing, but details are not known at the present time.

##### Provision of Seed

The Ministry of Agriculture provided emergency seed supplies to 50 districts in drought affected areas before the long rains season. Seeds provided were of drought tolerant varieties and totaled and benefited 550,000 farmers:

- 2000 MT of maize seed
- 330 MT of sorghum
- 103 MT of finger millet and
- 302 MT of common beans

Lucrative Legumes project (US\$ 150,000)

This is a two year pigeon pea and chickpea production and market linkage project covering Makueni, Machakos, Kitui and Mbeere Districts and implemented by ICRISAT, CRS and Technoserve. By targeting and working with producer-marketing groups (PMGs), it is projected that some 20,000 farmers will benefit directly and/or indirectly through improved seed access, training and improved grain pricing. About 10,000 pigeon pea and chickpea farmers will be linked to markets with better prices by end of October, 2006.

Diocese of Malindi/Concern World Wide has provided drought resistant seeds to communities in Malindi District.

**6.2.1.3 Impact of Interventions and Key Constraints**

Most of the interventions are ongoing and have yet to be evaluated for impact. However, where seeds were delivered early and rainfall adequate, the yields were good. Number districts, however, experienced inadequate rains and others floods leading to crop failure.

**6.2.1.4 Planned interventions September-March 2007**

Activities in the agriculture and livestock sector concentrated around: provision of seed to drought affected farming communities; de-stocking and re-stocking vulnerable pastoralists; provision of fodder; and emergency animal health projects in both farming and pastoral areas. The Agriculture and Livestock Sector Working Group of the KFSM is currently developing a recovery strategy to ease drought conditions and focus activities that will assist communities in recovering their livelihoods.

The priorities of such a strategy would include: the promotion and marketing of drought resistant crop varieties, together with rain water harvesting in the dry rain-fed agricultural areas (seed provision to the eastern lowlands and coast is a particular priority for the main short rains season). In both drought-prone farming and pastoral areas, there is a need to diversify livelihoods: in the former through the introduction of new high value crop varieties such as aloe and vanilla. Other interventions, some of which are on-going include:

Seed Provision by Ministry of Agriculture:

For the short rains, arrangements are in place to distribute the following quantities of seeds promptly:

- 489.4 MT of maize
- 85 MT of sorghum
- 4 MT of cowpeas

Seeds and transport cost is estimated at KSh 27 million

Improving the Market in Marginal Agricultural Areas:

An estimated US\$ 40,000 will be used by ICRISAT/FAO in the Seeds and Markets Project. The two year project aims at recommending seed market policy changes that would improve the supply and access of high quality dryland crop seeds in the local markets. Improved access of seed will improve both household welfare and on-farm biodiversity. The policy recommendations will impact all districts of Eastern Kenya. Preliminary work has been done with the main market survey scheduled for October, 2006 and household survey scheduled for June, 2007.

Seed Multiplication:

In an effort to promote food security in the ASALs, the Ministry of Agriculture in collaboration with Kenya Seed Company, KARI and KEPHIS shall undertake seed multiplication for sweet potatoes, cassava, pigeon peas, common beans, cowpeas, green grams, Dolicos lablab, chickpeas, sorghum and finger millet. The seeds will be available to farmers for the 2007 long rains. The programme will cost Ksh.200 million.

Other Interventions include:

- Promoting drought tolerant crops in ASALs, and ensuring availability of affordable seeds.
- Promoting water harvesting.
- Introduction of conservation agriculture.
- Encouraging locals in Narok District, to take up food crop production instead of leaving it to outsiders.
- Supporting Irrigation Engineers to carry out surveys to ascertain irrigable lands in the ASALs, draw irrigation designs, and request potential donors to finance identified projects.
- Introduction of cash crops like Vanilla, Aloe, Artemisia and cotton.
- Promotion of on-farm grain storage as way of discouraging wanton disposal of grains after harvest.
- Promoting the consumption of foods like sorghum, finger millet, cassava and sweet potatoes as alternatives to maize rice and wheat.
- Availing affordable credit facilities to farmers without land title deeds in ASALs.
- Developing infrastructure in ASALs to improve accessibility to markets for farm produce.
- Prompt delivery of seed aid to farmers.

## 6.2.2 Livestock

### 6.2.2.1 Overview

Livestock condition has generally improved in the livestock producing areas as a result of at least partially regenerated pasture and good browse conditions. However, it should be noted that in many areas, and especially North Eastern, rainfall was of short duration and intense, which did not favour pasture regeneration. Large areas of Turkana received much below normal rainfall, and consequent poor pasture, however, pastoralists are well adapted to move their herds to areas where there is sufficient fodder. In addition, pressure on pasture has been intense in recent years, resulting in considerable range degradation in some areas. In the mixed marginal farming areas, expansion of farming has led to scarcity of pasture in lowland areas. Insecurity in areas such as Turkana, Marsabit, Samburu and Moyale has restricted some pastoralists from accessing areas of pasture. As mobility is central to the resilience of the pastoral system, peace building efforts need to be increased.

Low levels of stock in the rangelands as a result of high mortalities will help in pasture regeneration. However some reseedling of especially degraded areas, together with work on range management would be beneficial. Dry season forage could also be enhanced by increased fodder production in irrigated riverine areas, such as along the river Dawa in Mandera, and Turkwel in Turkana.

While livestock have generally recovered condition (particularly browsers – goats and camels), calving and kidding cycles are delayed resulting in poor milk production for consumption and sale. This inevitably has a negative impact on food security among pastoralists. The biggest impact of the drought on pastoral economies has been the high mortality of livestock, estimated to be as high as 70 percent in some areas such as Kajiado and Northeastern Province. This represents a crippling blow to the livelihoods of many pastoralists, especially those who were relatively vulnerable with small livestock holdings before the drought. As a result, more pastoralist families have dropped out of the livestock economy and have settled as destitutes around towns and trading centers across the ASAL zone of the country, joining those from previous drought events. Helping these families to recover their livelihoods, or find alternative livelihoods as restocking is impractical for all, remains a particular challenge.

With population rising at over 3% in the pastoral zone and carrying capacity remaining constant within seasonal norms, it is inevitable that per capita livestock holdings will reduce over time. This tends to have a skewed effect, swelling the numbers of poorer pastoralists, and increasing their vulnerability to external events such as drought and conflict. It is not surprising, therefore, that an increased ‘drop out’ rate occurs during a prolonged drought. It is also clear that most of these people will be unable to restock themselves, and for the most part, will need to adopt new livelihoods.

There were no areas of the country that are reported to be quarantining livestock as a consequence of disease outbreaks. However, reports do suggest that both bovine and caprine contagious pleuro pneumonia (B/CCPP) are causing problems in some areas (such as West Pokot, North Eastern Province and northern Rift Valley Province), and will require focused vaccination campaigns to prevent the diseases from spreading. Typanosomiasis and East Coast Fever remain problem diseases in Isiolo. Pastoralists in Turkana reported a disease causing deaths among small ruminants that has been identified by the District Veterinary Officer as *Peste des Petits Ruminants* (PPR). Clearly, disease treatment and control is a priority to allow surviving livestock to reach optimal productivity, and thereby allow pastoralists to restock their herds.

Livestock prices are generally on the increase as a consequence of the high mortality, and the normal wish of pastoralists to avoid selling surviving stock while pasture and browse conditions are good. The relatively high livestock prices have improved terms of trade for herders. Improvements in livestock marketing infrastructure and disease control is a required long-term strategy for increase the value of livestock for herders and help to flatten price variation over seasons and good and bad years.

#### **6.2.2.2 Review of Interventions March to August 2006**

##### Ministry of Livestock and Fisheries Development Interventions:

The Ministry received KSh. 500 million towards drought interventions in the worst affected 22 ASAL districts of Eastern, North Eastern and Rift valley provinces. In November 2005, the Government released KSh 40 Million to mop up livestock that had converged at Isiolo over scarce pastures and water. From the said amount, the Agricultural Development Corporation (ADC), which had been identified as having the capacity, purchased 2,841 heads of cattle.

As the drought prolonged, the government declared the situation a National Disaster and consequently expanded the initial intervention efforts to other districts in the ASAL. An additional KSh. 360 Million was released to the Ministry of Livestock and Fisheries Development to implement a number of intervention measures, bringing the total to KSh. 400 million.

In April 2006, the government released a further KSh. 100 million to reseed denuded rangelands and veterinary disease control interventions.

The Summary of expenditure of KSh. 500 million disbursed to the Ministry is in table 6.2.2.2 below:

**Table 6.2.2.2: Summary of Ministry of Agriculture Interventions in Drought-Affected Areas**

<b>Item no.</b>	<b>Completed Activities</b>	<b>Amount (KSh.)</b>
1	Purchase and transportation of Cattle by Agricultural Development Corp.	198,000,000
2	Purchase of livestock by Ranchers through Loans from AFC	100,000,000
3	Purchase and Distribution of Hay	75,084,701
4	Range Grass Seeds for bulking	15,000,000
5	Purchase and distribution of animal feed Supplements	15,493,877
6	Purchase and Distribution of molasses	240,000
7	Purchase and Distribution of Acaricide	4 ,765,800
8	Water tankering	34,586,525
9	Supervision and Monitoring	3,829,097
10	Veterinary services; vaccines, drugs and branding	53,000,000
	<b>Grand Total</b>	<b>500,000,000</b>

Interventions by FAO and Other Partners:

FAO successfully applied for funding under the Central Emergency Response Fund (CERF) for two interventions:

- Emergency livestock destocking/redistribution in Mandera, Wajir and Turkana totaling US\$ 500,000 (KSh. 35 million), implemented by VSF (Suisse) in Mandera and Wajir, and VSF (Belgium) in Turkana. A total of 9,147 small ruminants were purchased and distributed to 618 families in the three districts.
- Emergency livestock health for thirteen districts (Mandera, Wajir, Garissa, Ijara, Tana River, Marsabit, Moyale, Turkana, Samburu, Baringo, Kitui, Makueni and Machakos) totaling US\$ 1 million (KSh. 70 million). This intervention focused on de-worming as a high impact post-drought activity in combination with treating opportunistic infections. Over 2 million head of livestock are targeted in the 13 Districts, and the project is on-going.
- Under the emergency livestock off take programme, 15,000 sheep and goats were de-stocked in Turkana.
- FAO in collaboration with the Arid Lands Resource Management Project (ALRMP) have implemented a project designed to strengthen the early warning and information management systems in Kenya. In collaboration with others, the project has expanded the early warning system into the Coast Province; developed and mapped livelihood zones for the country; developed an integrated application for enhancing food security analysis; designed and put online a website for the KFSM; and helped to develop a livestock marketing information system. Phase II of the project has been approved.
- Concern Worldwide has implemented a donkey relief (restocking and nutrition) project in Kajiado.



### 6.2.2.3 Impact of Interventions and Key Constraints

Most of the interventions are ongoing and have yet to be evaluated for impact. However, some initial observations follow:

Seed Provision: Where seeds were delivered early and rainfall adequate, the yields were good. A number of districts however, experienced inadequate rains and others floods leading to crop failure.

De-stocking/redistribution of livestock: The FAO CERF 1 Project, OSRO/RAF/604/CHA, 'immediate support to pastoralists as a drought mitigation project' was very well implemented, well received and highly successful. The exercise contributed to injection of cash into the local economy through the purchase of goats from individual households, and benefited greatly the beneficiaries receiving the animals. There were high levels of active community participation and ownership.

### 6.2.2.4 Planned interventions September-March 2007

Activities in the livestock sector have focused mainly on de-stocking and re-stocking vulnerable pastoralists; provision of fodder; and emergency animal health projects in both farming and pastoral areas. With the easing of drought conditions, interventions in the livestock sector will be adjusted towards activities that will help communities to recover their livelihoods. Priorities are as follows:

### 6.2.2.5 Short-term interventions:

#### Improving Livestock Health:

FAO has received US\$ 450 thousand (KSh 31.5 million) from the Netherlands Government for livestock health. This funding will be used for a second line of activity concentrating on vaccination of common diseases in pastoralists livelihood zones following the de-worming intervention (CERF II). This project is still in the planning phase, but anticipates vaccinating 620,000 head of livestock, primarily against bovine and caprine contagious pleuro pneumonia (B/CCPP).

#### Other priority recovery interventions:

- Expanding existing animal health activities to allow surviving livestock to reach optimal production and value in the market;
- Reseeding rangelands that have become extremely degraded;
- Researching and developing alternative rain water harvesting in pastoral areas and link water provision with range management and marketing;
- Increasing fodder production in riverine areas;
- Expanding the livestock marketing information system; and strengthening conflict prevention and management.

- In the pastoral areas to address the problem of destitute families who have lost all their livestock and have settled around towns and trading centres, including the potential for instituting safety nets/social protection programmes.

Annex 7.2.2.1 is a summary of interventions and funding by development partners.

#### **6.2.2.6 Long-term strategies**

- Livestock Improvement Management:
  - Maintenance of breeding herds.
  - Herd improvement through selection.
  - Marketing strategies including timely off take and mass education to effect of culture change.
  - Development of watering facilities and provision of water where there are no facilities.
- Resource management:
  - Conservation of pasture (hay baling).
  - Grazing reserve management with community participation.
  - Strengthening of resource use associations.
- Re-distribution of livestock:

To cover the last 6 years, beneficiaries to include victims of

  - Conflict.
  - Disasters, including coastal province currently heavily under-stocked.
- Conflict Management:
  - To be enhanced during and after the drought.
  - Strengthen peace committees and pastoral associations.
- Development of strategic feed reserve through:
  - Infrastructure development.
  - Pelletting hay.
  - Concentrate manufacture.
  - Conservation of stover from high potential districts and transfer to ASAL areas.
- The development of marketing infrastructure alongside disease control will be a longer-term strategy that will increase the value of livestock in the ASAL areas and reduce price fluctuations.

## 6.3 HEALTH AND NUTRITION SECTOR INTERVENTIONS

### 6.3.1 Overview

Malnutrition is a significant public health problem in most drought-affected districts, with notably high levels of malnutrition in areas dominated by pastoral livelihoods. Nutrition data obtained from UNICEF and its health and nutrition partners' surveys (2002-2006) are indicative of high malnutrition trends particularly in Turkana, Mandera, Wajir, Garissa, Tana River Samburu Moyale Marsabit and Isiolo districts.

In the north east and north rift regions, upward trends in admission to the selective feeding programmes were recorded over the past six months. In Wajir district, for example, the supplementary feeding centers (SFCs) saw about 4000 children admitted between January to June 2006. From the Long Rains Assessments 2006 findings, it was noted that malnourished children from pastoralist districts are being treated in the main districts hospitals. It was established by the LRA mission that most local health facilities which would otherwise ease the burden of diseases and malnutrition in the rural areas, are dilapidated and suffer from shortage of qualified health personnel because there are either no postings to these areas or those posted are de-motivated by the poor working environment. Malaria, ART, UTI, intestinal worm infestation, diarrhoea, nutritional anaemia and malnutrition are the most common diseases in these regions. Immunization coverage and Vitamin A provision is low except in Garissa district where there is 100% vitamin A coverage.

The north east and north rift region was also affected by a mass outbreak of measles in April/May 2006, and there still exist outbreaks, mainly at the border points with Somalia in Jarajila and Liboi. Despite the provision of a 75% food aid ration to between 47% and 80% of the population of these regions, improved nutritional status is being constrained by poor health seeking behavior, low immunization coverage, minimal exclusive breast feeding, poor hygiene practices, lack of nutrition personnel, poor water quality and availability, and limited sanitation facilities in most of the settlements.

Health and nutrition interventions of 2005 were scaled up by March 2006 following the prolonged drought that resulted in high malnutrition rates, especially among the pastoral districts which were unacceptably high (18 - 30%)<sup>9</sup>.

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<sup>9</sup> >15% is considered emergency level

**Table 6.3.1.1: Summary of Nutrition Survey Results Conducted in 2006**

District	Participating organisation	Total Population Surveyed	Severe acute malnutrition (Z-score)	CI	Global Acute malnutrition (Z-score)	CI	U5MR /10000 /day	CMR 10000/ day
Mandera	AAH-USA ACF-USA	955	2.1%	( 1.0% - 4.0%)	21.0%	(17.5% -	0.22	0.15
	AAH-USA ACF-USA	948	2.4%	(1.3% - 4.4%)	23.6%	( 19.9% -	0.33	0.30
	AAH-USA ACF-USA	952	3.0%	(1.7% - 5.2%)	27.0%	( 23.0% -	0.65	0.33
Marsabit	UNICEF GOK	922	3.6%	( 2.1% - 5.8%)	29.9%	( 25.8% -	0.49	0.26
Moyale	UNICEF GOK	1035	3.0%	(2.0% -4.3%)	18.0%	( 15.7% -	1.04	0.64
Turkana	OXFAM	870	3.4%	(1.7%-5.0%)	24.0%	(20.0%-27.9%)	0.62	0.68
	OXFAM	893	4.7%	(2.7%-6.7%)	26.6%	(22.4%-30.7%)	0.29	0.19
	CCF	859	3.1%	(1.5%-4.8%)	21.2%	(17.3%-25.1%)	0.08	0.15
	WVI	873	5.2%	(3.1%-7.2%)	26.6%	(22.4%-30.7%)	0.30	0.53
	WVI	851	3.3%	(1.6%-5.0%)	25.9%	(21.7%-30.0%)	0.08	0.15
	CCF	851	4.3%	(2.4%-6.3%)	23.6%	(19.6%-27.7%)	0.22	0.18
Isiolo	UNICEF GOK	952	1.7%	(1.0% -2.8%)	13.2%	(11.2% -	2.00	0.60
Samburu	UNICEF GOK	954	2.1%	( 1.3% - 3.3%)	19.2%	( 16.9% -	1.50	1.40

A rapid assessment carried out by a team from the Ministry of health showed that the situation was wanting and most of the children under five years old, pregnant and lactating women were malnourished and required both health and nutrition interventions. This was also confirmed by the short rains assessment report<sup>10</sup> and required the sector to respond immediately. An appeal was made of \$2,380,000 as a Gap for the period February – August 2006. The interventions were aimed at addressing the needs of 460,000 vulnerable children under five years and 76,000 pregnant and lactating mothers with access to basic health care, nutrition interventions as well as disease and nutrition surveillance.

### 6.3.2 Review of Interventions March – August 2006

- A total of US\$ 6.55 million was raised and used to support NGOs in carrying out health and nutrition programs and commodity supplies to marginalized districts of Northern Kenya.
- A total of 12 partners supported the sector in providing health and nutrition intervention programs i.e. extended fixed outreach services using a minimum health package, supplementary feeding and Therapeutic feeding programs in 8 marginalized districts (Mandera, Wajir, Marsabit, Moyale, Isiolo, Samburu, Turkana and Tana River) reaching slightly over 40 thousand children under five years.
- The Ministry of Health with support from UNICEF, WHO and partners carried out integrated measles and polio campaigns in all the districts countrywide.
- A total of 15 health and nutrition surveys were conducted in Mandera, Samburu, Moyale, Turkana and Isiolo districts to determine the levels of malnutrition.

<sup>10</sup> SRA Report 2006

- The Ministry of Health with support from partners conducted two trainings on management of severe malnutrition and disease surveillance in Wajir and Garissa districts targeting health workers in the four districts of Northeastern Province.
- The Ministry of Health and UNICEF supported extended fixed outreach services in nine districts.
- Emergency health kits and cold chain equipment were procured for the northern areas based on need.
- Ministry of health supplied Unimix to the affected districts through health facilities to target underweight children noted in the facilities.
- Partners supported the reopening of six health facilities in Wajir district thus improving access to health care to the communities.
- Partners supported MOH in procurement of 98 emergency health kits for North Eastern province.

### **6.3.3 Gaps**

There were gaps in terms of resource requirement to cater for moderately and severely malnourished children in terms of shelter, supplementary feeds, and outreach programs to access the affected population with medical care and identify the malnourished children.

Currently there are eight divisions of Turkana district, 3 divisions of Tana River and Garissa, Ijara and Samburu districts with no intervention programs on going with over 35 thousand children requiring immediate Supplementary and Therapeutic feeding programs.

To bridge the gap a total of US\$1,26 million is required for provision of therapeutic and supplementary feeds.

### **6.3.4 Recommendations**

1. Health facilities should be expanded and qualified health staffing increased, especially nutritionists and clinical officers. All pastoralist districts must have therapeutic feeding centres. Supplementary feeding programmes should be expanded to areas not currently covered and ensure proper targeting of the vulnerable groups.
2. Expansion of primary health care services, particularly immunization, Vitamin A, deworming, malaria control, nutrition education, Focused Antenatal Care (FANC), hygiene and breast feeding promotion.
3. There is also need to institutionalize a multi-sectoral approach that combines experts/expertise from different sectors (health, social services and administration) in order to integrate cultural and social perceptions into health and nutritional programmes

to ensure more effective use of the supplementary food issued and also raise awareness on health seeking behaviour.

4. For the coastal and eastern districts, broader nutritional indicators of malnutrition should be adopted within the analytical framework in order to address high stunting and underweight rates.
5. Adequate water and sanitation facilities should be constructed as a matter of poverty alleviation urgency in areas inhabited by squatters. Harvesting of rain water as well as other natural resources should be supported to improve access to clean water for both human and livestock.

### **Cross-Sectoral Recommendations**

6. Food security assessments concentrate more of their efforts on rural areas. Considering the levels of malnutrition and food insecurity, future food security assessment missions should delve deeper into the urban/peri urban settlements to recommend specific interventions.
7. WFP's Vulnerability Assessment and Mapping unit should develop a robust targeting methodology based on empirical/verifiable data.

### **6.3.5 Planned interventions September 2006-March 2007**

Between September 2006 and March 2007 the main interventions will include:

- Deployment of 84 health personnel to nine marginalized districts to support and strengthen health service delivery through expanded fixed outreach services.
- Filling gaps in the affected districts through Supplementary and Therapeutic feeding programs and increase coverage in areas where programs are ongoing.
- Continue disease and nutrition surveillance for appropriate and early action.
- The Ministry of Health and UNICEF will support training of health workers on IDSR, treatment of Kala azar and new malaria treatment policy in 9 districts.
- Continue supporting essential health services (fixed extended outreach services) using a minimum health package in the northern areas, in view of the chronic nature of emergency in the region.

### 6.3.5 Resource Requirements for Health and Nutrition Interventions

Table 6.3.5 below shows the type and cost of intervention in the health and Nutrition sector.

**Table 6.3.5: Resource Requirements for Health and Nutrition Interventions**

<b>Programmes</b>	<b>US\$</b>
Therapeutic and supplementary feeding	2,762,000
Support to essential health services	685,000
Accelerated outreach/fixed extended outreach services	850,000
Disease and nutrition surveillance	90,000
<b>Total</b>	<b>4,387,000</b>

## **6.4 WATER AND SANITATION SECTOR INTERVENTIONS**

### **6.4.1 Overview**

The 2006 long rains were erratic and unevenly distributed especially in the arid and semi arid areas. In spite of the uneven distribution, the rains helped to restore surface water sources and reduced distance to water for both livestock and domestic water for humans. The cost of water went down with increased quantities of water available reducing the burden to households. In addition time spent by women and girls to collect water was reduced.

In the pastoral districts of Mandera, Wajir, Garissa and Tana River, sub surface tanks and rock catchments are dry, pans and shallow wells are either drying up or contaminated due to large number of decomposing carcasses and lack of disposal arrangements. Time taken to reach household water sources is between an hour to eight hours and costs between one and two shillings per 20lts jerrycan. It is expected that the trekking distances to watering points will be doubled before the onset of the short rains. No conflicts were reported over water after the long rains.

The performance of the long rains along the coastal strip was generally above normal and rains were continuing as this report was being compiled. However, some areas received below normal rainfall especially the hinterland areas of Malindi, Kilifi, and Kwale, in addition to the lowlands of Taita Taveta district. Due to good rainfall received in this region, water availability improved except in the hinterlands.

Water availability improved in nearly all parts of Narok, Kajiado, West Pokot, Baringo and Laikipia Districts, with the highland areas receiving the best recharge. In Narok, Kajiado and West Pokot the pans and dams impounded enough water and water availability is expected to last until September, just before the short rains. Distances to water sources for both domestic and livestock use reduced to less than 5Kms from as far as 30Kms in most parts of these districts. However, in the lowland pastoral areas of Mukogodo in Laikipia and Nginyang, Marigat, Mukutani and Tangelbei in Baringo the recharge of most water sources was poor and walking distances to water points remained high (7 to 10Kms); queuing time at water points were in excess of four hours especially at boreholes located in dry season grazing areas where livestock are concentrated.

### **6.4.2 Review of interventions March –August 2006**

A series of interventions, through government, UNICEF and NGOs, were carried during this period initially to stave the effects of the drought. These included water trucking in 10 districts for up to 330 thousand people. The Ministry of Water and Irrigation spent Ksh 100 million to support water trucking operations including maintenance of water supplies, vehicles and allowances to staff. Various equipments including water pumping equipment, generators and submersible pumps were supplied in addition to 600 water storage tanks of 5 thousand litres capacity with special emphasis on school water. The Rapid response Teams



attended to breakdowns of boreholes within 10 hours of reporting and reduced down time to an average of 10 hours.

The Ministry of Water and Irrigation further supported desilting of several pans in preparation for the rains and supported drilling of several new boreholes among other interventions. Seventy-seven new boreholes were drilled out of 142 planned while 49 pans were desilted out of 111 planned. Another 30 new pans were constructed.

Following massive losses of livestock and livelihoods during the drought, many of the affected communities were left with no capacity to pay for water for domestic and livestock use. As a result free fuel supply for the operation of community operated water supplies was put in place. A total 415, 420 litres of diesel at a cost of US\$ 465 thousand were supplied to 10 districts by UNICEF. Other agencies including ALRMP and RACIDA in Mandera also gave some fuel to subsidize community water operations. RACIDA delivered 10 thousand litres of diesel to Mandera district water supplies.

Identification and rehabilitation of water supplies was started in several districts during which spare parts were delivered and Rapid Response Teams that carry out rehabilitation funded. New generating sets and pumps were delivered to replace old and uneconomical ones. UNICEF procured 16 new generating sets to replace old ones in several districts.

Chemicals including chlorine and aqua tables for purification of water were supplied to various districts to deal with emerging diarrhea outbreak following the onset of the long rains. More than 250 water supplies received chlorine while 10 thousand households received water purification tabs. Table 6.4.2 below shows distribution of some UNICEF supplies by district.

**Table 6.4.2: Supplies delivered by UNICEF May- August 2006**

	District	Diesel fuel (lts)	Generating sets	Submersible pumps	20 lt. Jerry cans	Chlorine (45kg drums)	Spare parts/service parts	Water testing kits
1	Wajir	61486	2	2		30	x	1
2	Mandera	79212	3	2	1 908	40	x	1
3	Isiolo	43749		2	1000		x	1
4	Turkana	53061	1		1600	25	x	1
5	Marsabit	53269	2	2	1000		x	1
6	Kajiado							1
7	T/River	13443						1
8	Moyale	35000		3	1000			1
9	Samburu	20000			1000			
10	Garissa	56200		2		30		
11	Kwale							1
12	Ministry of water & Irrigation					320		
13	Ministry of Health HQ							1

x supplied

Supplies pending delivery and distribution include:

- Nine generating sets of 27 KVA which are being cleared at the port of Mombasa.
- Two gensets of 12 KVA for Isiolo District have been requisitioned.
- 12 submersible pumps.
- 16,000 buckets of 10lts each with muslin cloth and 480 thousand sachets of PUR.
- Funds for Mandera have been signed.

#### **6.4.3 Impact of Interventions and Key Constraints**

Sectoral intervention during the recent drought helped to prevent large scale population movement and displacement through sustained water supply operations and water trucking. Timely interventions helped to reduce the loss of human life and reduced livestock deaths due to lack of water; livestock death occurred mainly due to lack of pasture. Schools and health institutions remained open and functional. More than 700 schools benefited from installation of new water tanks while over 100 benefited from water trucking.

Sustained water supply operations through fuel subsidy to communities reduced consumption of contaminated water from open sources preventing major disease outbreaks such as cholera and dysentery. Diarrhea outbreaks in some districts were quickly dealt with through public awareness campaigns, supply of household water containers to the poorest, and supply of water treatment chemicals. Low levels of hygiene awareness and practices among the larger population still pose a threat.

Loss of pastoral livelihoods and a lack of capacity to pay for water in the long run also present a challenge to the operation and maintenance of safe water sources. Free supply of fuel may reverse gains made by communities in operating and maintaining their own water supplies in the long run. The proliferation of permanent settlements including creation of institutions in places without permanent water continues to create demand for unsustainable water trucking even where there is no emergency. The absence of a policy guideline on where permanent settlements may develop means settlements may continue to grow in places without water.

#### **6.4.4 Gaps in intervention**

A key gap in the drought emergency intervention is an Environmental Impact Assessment (EIA) on the effects of centers created for water trucking delivery points, development of additional boreholes and creation of more pans in ecologically fragile areas. Whereas these actions save lives in the short term, there will be longer term consequences particularly degradation of the pastures, soil erosion and creation of untenable settlements. The continued development of learning institutions in such unsustainable settlements poses a threat to the lives of the children and the dignity of the teachers.

Some gaps in funding still remain. Capacity building of communities will be required in the post the emergency period. Many water supply systems require improvement or

rehabilitation of physical facilities. Many schools and health facilities remain without safe drinking water.

#### **6.4.5 Planned Interventions September 2006 to March 2007**

UNICEF has US\$ 370 thousand for installation of solar powered water systems in 10 schools in North Eastern Province. Another 37 schools will benefit from extensions of existing pipe schemes including improved storage facilities, drinking points and water in the ablution blocks worth US\$ 62 thousand. Another US\$ 500 thousand is available to improve access to water of which US\$ 200 thousand will be used in schools. US\$ 400 thousand from Norway will be used for capacity building in hygiene and sanitation in Turkana district.

An additional US\$ 10 million is required in the next six months to undertake urgent interventions in the water and sanitation sector. The interventions include:

- Desilting of pans/protection/repair of embankments.
- Construction of new pans in the agro-pastoral districts.
- Repair/rehabilitation of boreholes.
- Drilling of new boreholes.
- Fuel subsidy.
- Provision of plastic tanks.
- Provision of spare parts for boreholes.
- Water tankering.
- Support to Rapid Response teams.
- Provision/maintenance of water bowsers.
- Rehabilitation of piped water schemes in the Coastal region.
- Hygiene and sanitation education.
- Capacity building of communities.
- Monitoring and evaluation.

## **6.5 EDUCATION SECTOR INTERVENTIONS**

### **6.5.1 Overview**

The Education Sector Working Group will continue to support the more than 500 thousand children in ASAL districts most affected by the recent drought: Garissa, Wajir, Ijara, Mandera, Moyale, Marsabit, Turkana, West Pokot, Samburu and Isiolo. These districts have not fully recovered in spite of the long rains.

### **6.5.2 Review of Interventions March to August 2006**

- An additional 500 thousand children were brought on board under expanded school feeding programme.
- Through Office of the President, food (maize, beans, oil, and powdered milk) was provided to secondary schools in the ASAL districts where there was a danger of schools not opening as a result of the drought.
- The office of the President (special programmes) also donated 10 thousand MT of cereals (Rice & maize) to support Regular School Feeding Programme.
- Each constituency in the country received Ksh. 1 million under the constituency bursary fund to ensure needy children continue their education. Additional money for the Bursary in the ASAL targeting bright and needy children was also granted.
- The Ministry disbursed Ksh 60m to secondary schools in drought affected districts.
- Funds amounting to Ksh. 200 million were disbursed to Low Cost Boarding Primary schools in the ASAL districts, where enrolments had gone up as a result of migrating families opting to leave their children behind.
- 556 schools received 556 water tanks benefiting more than 500 thousand children
- 48 Emergency Education Kits were provided to newly created primary schools in Mandera benefiting 2,396 children
- 1100 double decker beds, 2,200 mattresses and 2,200 pairs of bed sheets were provided to low cost boarding schools.

### **6.5.3 Impact of Interventions and Key Constraints**

Interventions in the educational sector stabilized school attendance and enrolment. For example in North Eastern Province, the primary schools enrolment increased from 80,045 in November 2005 to 91,528 as of June 2006; an increase of 13%. However, there were some constraints in the sector including:

- One of the major constraints in this sector is funding for the proposed activities.
- Continuous population migration is making it difficult to reach school aged children.

- Enrollment in secondary schools is affected by inability of most households to pay school fees for their children after suffering substantial degradation to their livelihoods.
- The capacities of the districts to monitor and prepare for emergency responses still need strengthening.

#### **6.5.5 Planned interventions September-February 2007**

Key inputs are needed to reduce drop-out rates and migration to urban areas. Specific inputs proposed include: training teachers to design and organize more inclusive child-friendly teaching/learning activities relevant to psychosocial and educational needs of children in conditions of crisis; equipment and learning materials for schools; procurement of boarding equipment for low cost boarding schools and repair of critical infrastructure such as water sources and latrines. Also, where water supply is improved, there will be renewal of the school gardens programme, with information to parents and pupils on drought tolerant crops, drip irrigation and improved nutrition.

Strengthening the capacity of local authorities to carry out rapid response appraisals, manage and maintain educational facilities, and accelerate response to crises. The education quality assurance and education officers will be trained and equipped to carry out rapid response appraisals of schools affected by drought and impart information to all stakeholders to ensure early targeted emergency response in the sector.

Community commitment and participation to safeguard education in emergency situations will be enhanced. The need for community involvement in all aspects of education programming is essential to ensure the sustainability of schools and improve parents' and caregivers' overall commitment to learning and education and protecting children in emergencies.

#### **6.5.5 Short-term interventions**

- Provision of meals for additional schools through the expanded school feeding programme as noted in the food targeting of over 500 thousand children.
- Provision of sufficient water for 915 schools in affected areas through provision of water tanks (566 tanks delivered so far) and water trucking for 798 schools.
- Purchase of 750 double deck beds and 1500 mattresses and bed sheets for the low cost boarding schools.
- Build capacity of Education Stakeholders at national, district and community levels in contingency planning, emergency preparedness and mitigation.
- Enhanced gardening initiatives/possibilities to offset the impact of low rainfall.

## 7.0 CONCLUSION

The long rains of 2006 have brought some respite to the drought stricken arid and semi-arid lands of Kenya. 19 of the 26 districts received normal rainfall levels. However, spatial and temporal distribution was uneven. Consequently, agricultural production in most ASAL districts is below normal. Pasture and browse in pastoral areas is expected to regenerate though the loss of livestock due to four successive seasons of drought requires time to recuperate back to normal. Families that lost all livestock are forced to abandon their traditional livelihood and squat on the peripheries of urban centers.

Chronic poverty is high in ASAL districts. Successive seasons of low rainfall exasperate perpetual poverty to breaking point. Families are forced to adopt extreme coping mechanisms. Farmers sell farm power and seed. Pastoralists cull or sell remaining livestock. These desperate measures deplete productive assets compromising the very livelihoods households depend upon. They are rendered helpless even if next season brings good rains. In the absence of alternative sources of income and livelihoods, the forces of nature exact a high toll on inhabitants of these arid lands.

Drought is a successive phenomenon. Whereas forecasts of rain levels for an oncoming season are full of assumptions and prone to error, it is with certainty that planners can predict drought will return. Therefore, mitigation efforts are not just a reaction to an emergency but should be perceived an integral part of planning for the future of these areas. The required interventions are well understood. For agriculture, timely distribution of improved variety of seeds, particularly drought prone species, desilting of dams and pans, and rehabilitation of boreholes and wells are recommended. Herders require vaccination of livestock and veterinary services. Grasslands require reseeding. But the greatest assets in these remote lands are the inhabitants. Their skills, enhanced through education, and their productive capacity, bolstered through health services, are keys to mitigating impacts of drought. An infrastructure of roads and markets, increased opportunities of employment in towns and better utilization of resources, such as land and water, are also critical mechanisms to protect and improve the lives of these people.

Conflict over resources is a constant and devastating threat in these remote, lawless areas. Clashes between clans, raiding, claims to water rights and grazing lands are extensive. With an annual population growth of three percent, this pressure on limited resources is increasing at an alarming rate. Settlements are increasingly encroaching on grazing land. Erstwhile traditionally communal lands are fenced and cordoned for private use. Areas accessible to free roaming nomads are receding. Resources, particularly water and land, must be managed. Rangeland management, where seasonal reserves and drought reserves are identified, managed and protected, is an essential requirement for pastoral districts. The enormous potential of rain water harvesting must be realized. Allocation of lands for settlement, stock corridors, roads and pasture require land use planning at the district level. Essential to the success of these plans is the mobilization and commitment of local communities. Community participation in decision making is the best insurance to implementation of such planning.

Nature is a major factor in sustaining life in these arid lands. However, a larger contributor could be the combined efforts of government, agencies and NGOs. Commitment to developing these areas is both a humanitarian obligation and an economic imperative. Investing in these areas would reverse the economy of arid lands from a dependency to a net producer. Food security is a basic human right and should be separated from political and regional considerations. The main finding of the Long Rains Assessment 2006 is that life in these areas need not be so harsh. There is a need and potential for development that could alleviate poverty and mitigate drought effects. What these lands need is political will and resource allocation.

## 8.0 APPENDICES

**Annex 8.1: Percentage of Population in Need of Food Aid LR Assessments 2006**

District	Division	% Pop. Req. Food Aid	Modality	Notes
<b>Turkana</b>	Lokichoggio	55%	GFD	Only rural locations outside municipality
	Kaaling	80%	GFD	
	Lapur	80%	GFD	
	Lokitaung	80%	GFD	
	Kibish	60%	GFD	
	Lokichar	80%	GFD	
	Oropoi	55%	GFD	
	Lokori	55%	GFD	
	Lomelo	60%	GFD	
	Katilu	50%	GFD	
	Kainuk	50%	GFD	
	Central	50%	GFD	
	Kerio	80%	GFD	
	Kalokol	80%	GFD	
	Turkwel	50%	GFD	
	Loima	50%	GFD	
	Kakuma	50%	GFD	
<b>Marsabit</b>	Central	30%	GFD	Only rural locations outside municipality
	Gadamoji	55%	GFD	
	Laisamis	65%	GFD	
	Maikona	65%	GFD	
	Loiyangalani	73%	GFD	
	North Horr	65%	GFD	
<b>Samburu</b>	Nyiro	55%	GFD	Only pastoral locations excl. Maralal town locations Only pastoral locations
	Baragoi	55%	GFD	
	Kirisia	17%	GFD	
	Lorroki	45%	GFD	
	Wamba	55%	GFD	
	Waso	55%	GFD	
<b>Moyale</b>	Central	30%	FFW	Only rural populations
	Golbo	55%	FFW	
	Obbu	50%	FFW	
	Uran	50%	FFW	
<b>Isiolo</b>	Oldonyiro	60%	GFD	Only Ngaremara and Isiolo West location
	Central	61%	GFD	
	Kinna	40%	GFD	
	Garba Tulla	50%	GFD	
	Merti	81%	GFD	
	Sericho	92%	GFD	



Mandera	Khalalio	80%	GFD	Only rural locations outside Elwak town
	Hareri	80%	GFD	
	Libehia	80%	GFD	
	Fino	80%	GFD	
	Lafey	80%	GFD	
	Rhamu	80%	GFD	
	Rhamu Dimtu	80%	GFD	
	Ashabito	53%	GFD	
	Banisa	55%	GFD	
	Malkamari	80%	GFD	
	Takaba	80%	GFD	
	Dandu	80%	GFD	
	El Wak	80%	GFD	
	Shimbir		GFD	
	Fatuma	80%		
	Wargadud	80%	GFD	
	Warankara	80%	GFD	
	Kotulo	80%	GFD	
Central	50%	GFD	Only rural locations outside municipality	
Wajir	Central	50%	GFD	Only rural locations outside municipality
	Habaswein	80%	GFD	
	Buna	80%	GFD	
	Tarbaj	80%	GFD	
	Wajir-Bor	80%	GFD	
	Kotulo	80%	GFD	
	Diff	80%	GFD	
	Gurar	80%	GFD	
	Griftu	80%	GFD	
	Bute	80%	GFD	
	Eldas	80%	GFD	
	Hadado	80%	GFD	
	Sebule	80%	GFD	
Garissa	Central	36%	GFD	Only rural locations outside municipality
	Sankuri	65%	GFD	
	Balambala	65%	GFD	
	Danyere	65%	GFD	
	Benane	65%	GFD	
	Modogashe	80%	GFD	
	Shant-Abak	80%	GFD	
	Dadaab	65%	GFD	
	Liboi	60%	GFD	
	Jarajilla	60%	GFD	
	Bura	60%	GFD	

<b>Tana River</b>	Bangale Madogo Bura Galore Wenje Garsen Kipini	65% 65% 65% 40% 40% 25% 0%	GFD GFD GFD GFD GFD GFD None	No Intervention
<b>West Pokot</b>	Alale Kasei Kacheliba Kongelai Chepareria Kapenguria Lelan Sigor Chesegon	45% 40% 35% 35% 35% 0% 0% 35% 40%	GFD GFD GFD GFD GFD None None GFD GFD	Only Kapchok location Only Misikwony location Only Endugh location No Intervention No Intervention Only Masol and Porkoyu location Only Sekerot location
<b>Baringo</b>	Salawa Kabarnet Sacho Tenges Marigat Mukutani Mochongoi Bartabwa Kabartonjo Kipsaraman Barwesa Nginyang Tangulbei Kollowa	0% 35% 0% 0% 35% 35% 0% 0% 35% 35% 0% 50% 40% 45%	None GFD None None GFD GFD None None GFD GFD None GFD GFD GFD	No Intervention Only kimondis and Ewalel Soi No Intervention No Intervention Only Sandai, Salabani and Marigat(Endao) Only Kisirian and Mukutani locations No Intervention No Intervention Only Bartum location Only Sibilo location No Intervention Only Korossi and Tangulbei locations
<b>Kajiado</b>	Ngong Magadi Mashuru Central Namanga  Loitokitok	47% 35% 40% 45% 35%  34%	GFD GFD GFD GFD GFD  GFD	North and Central Keekonyikie and Mosiro location  Only rural locations excl. Kajiado town  Excluding Entonet,Lollopon, Entarara, Rongena and Olchoro sub locations
<b>Laikipia</b>	Central Lamuria Ngarua Olmoran Nyahururu Rumuruti Mukogondo	40% 38% 0% 50% 0% 40% 60%	FFW FFW None FFW None FFW FFW	Only Ndaiga, Segera and Marura locations  No Intervention  No Intervention Kirimon,Sosian,Mutara,Salama,Rumuruti sub locs.

<b>Narok</b>	Central	0%	None	No Intervention Enoosupukia, Keekonyoike, Mosiro, Oletukat, Ongatanaado and Suswa All locations excluding Narosura location
	Mau	20%	FFW	
	Osupuko	25%	FFW	
	Mara	20%	FFW	
	Olokurto	0%	None	No Intervention
	Mulot	0%	None	No Intervention
	Ololulunga	23%	FFW	Only Lemek and Olkiriani locations
	Loita	20%	FFW	
<b>Machakos</b>	Central	0%	None	No Intervention
	Kalama	20%	FFW	Only Lumbwa and Kyangala locations
	Kangundo	0%	None	No Intervention
	Kathiani	0%	None	No Intervention
	Masinga	50%	FFW	Excluding Ekalakala and Katulie sub locations
	Matungulu	0%	None	No Intervention
	Mavoko	0%	None	No Intervention
	Mwala	30%	FFW	Only Vyulya, Mwala and Mbiuni locations
	Ndithini	20%	FFW	
	Yathui	50%	FFW	All locations excluding Muthetheni location
	Yatta	30%	FFW	All loc. excl. Mamba and Kithendu sub locations
<b>Makueni</b>	Tulimani	0%	None	No Intervention
	Mbooni	0%	None	No Intervention
	Kisau	0%	None	No Intervention
	Kalawa	65%	GFD	
	Kilome	0%	None	No Intervention
	Kilungu	0%	None	No Intervention
	Kaiti	0%	None	No Intervention
	Kasikeu	0%	None	No Intervention
	Mbitini	0%	None	No Intervention
	Wote	65%	GFD	Only Kako, Muvau and Kitonyoni sub locations
	Matiliku	0%	None	
	Kathonzweni	65%	GFD	No Intervention
	Nguu	65%	GFD	
	Makindu	70%	GFD	
	Kibwezi	60%	GFD	
	Mtito-Andei	70%	GFD	
	Tsavo West	0%	None	
	Chyulu		None	
	Reserve	0%		

<b>Kitui</b>	Central	25%	GFD	Only Maluku, Itoleka and Katulani locations Only Kisanai, Mbusyani and Nzangathi locations  Only Kanyangi and Ilika locations Only kakeini, Kauwa and Mtanda locations Only Kithumula, Kwa-mutonga & kathiyo locations
	Chuluni	25%	GFD	
	Mutitu	45%	GFD	
	Mutomo	50%	GFD	
	Yatta	50%	GFD	
	Mutonguni	25%	GFD	
	Matinyani	25%	GFD	
	Mwitika	50%	GFD	
	Mutha	55%	GFD	
	Ikutha	55%	GFD	
<b>Mwingi</b>	Central	11%	FFW	Only rural locations excluding municipality
	Migwani	35%	FFW	
	Muumoni	50%	GFD	
	Nuu	45%	GFD	
	Kyuso	50%	GFD	
	Tseikuru	65%	GFD	
	Nguni	45%	GFD	
	Mui	45%	GFD	
	Ngomeni	65%	GFD	
<b>Mbeere</b>	Siakago	25%	FFW	Only Kirie, Mutitu, Nguthi & Gangara sub locations Only Evurore, Kamarandi, Iriaitune, Thambu sub locations Only Gacabari, Riachina, Kiambere, Kindaruma, Gichiche, Mavuria sub locations Only Makima, Mbondoni, Mwea and Riakanau sub locations
	Evurore	40%	FFW	
	Gachoka	25%	FFW	
	Mwea	25%	FFW	
<b>Tharaka</b>	South Tharaka	45%	FFW	Only Kamanyaki and Kamarandi  Only Gituma Location Only Maragwa, Kathangacini and Kanjoro
	Central Tharaka	45%	FFW	
	North Tharaka	45%	FFW	
<b>Kilifi</b>	Bahari	0%	None	No Intervention No Intervention No Intervention Only Ganze, Tsantagalaweni, Dungicha locations  Only Tsangatsini location and Miyani and Viragoni sub locations No Intervention
	Chonyi	0%	None	
	Kikambala	0%	None	
	Ganze	25%	FFW	
	Bamba	40%	FFW	
	Vitengeni	40%	FFW	
	Kaloleni	25%	FFW	
	Arabuko		None	
	Soko	0%		
	Ke			

<b>Kwale</b>	Samburu	55%	GFD	No Intervention No Intervention Only Mwereni, Senga and Kisemeni locations No Intervention No Intervention
	Kinango	45%	GFD	
	Matuga	0%	None	
	Msambweni	0%	None	
	Lunga Lunga	25%	FFW	
	Kubo	0%	None	
	Shimba Hills	0%	None	
<b>Malindi</b>	Marafa	30%	FFW	Only Bungale and Addu locations and Mambassa  Only Chakama, Langobaya locations and Kakoneni and Girimacha sub locations
	Magarini	30%	FFW	
	Malindi	30%	FFW	
<b>Taita Taveta</b>	Taveta	40%	GFD	Only Mwaktau location and Madambogho, Sembe and Mwachambo sub locations Only Kishushe location and Mwaroko sub location  Only rural locations excluding kaloleni and Mwangea No Intervention No Intervention
	Mwatate	45%	GFD	
	Wundanyi	45%	GFD	
	Tausa	40%	GFD	
	Voi	50%	GFD	
	Mwambirwa	0%	None	
	Tsavo N. Park	0%	None	

**Annex 8.2: Summary of Projects and Required Funding**

<b>Project Title</b>	<b>Agency</b>	<b>Required Funding (US\$)</b>	<b>Funding Pledged/ Secured</b>	<b>Balance Required</b>
<b><u>Livestock Sub-Sector</u></b>				
Emergency Livestock Off-take in Wajir and Mandera	VSF (Suisse)	353,068	Through FAO	<b>Balance no longer required</b>
Emergency Livestock Off-take	FAO/ALRMP	3,490,850	500,000	<b>Balance no longer required</b>
Emergency Support to Drought-affected Smallholder Farming	VETAID	897,680	Part through FAO	<b>897,680</b>
Animal Health Emergency Intervention in Wajir and Mandera	VSF(Suisse)	453,295	Through FAO	<b>0</b>
Emergency Livestock Health	FAO/ALRMP/MoLFD	706,750	1,000,000	<b>0</b>
Turkana Drought Relief Response Intervention	VSF (Belgium)	916,819	Part through FAO	<b>916,819</b>
Drought Intervention Project in ASAL districts of Kenya	KLMC	235,857	0	<b>235,857</b>
Pastoral System, Settlements and Marketing in Northern Kenya: An Integrated Approach towards Food Security	Terra Nuova/ AMREF	1,040,152	Part through FAO	<b>1,040,152</b>
Emergency Water Resource Rehabilitation	FAO/ALRMP	329,560	0	<b>329,560</b>
Fodder Grass Seed Multiplication Project in Kajiado District	NIDRA/NMK	89,710	0	<b>89,710</b>
Support to Fodder Crop Production	FAO/ALRMP/MoA	426,360	0	<b>426,360</b>
Promoting Community-Based Forage Seed production in Semi-Arid Areas of Southern Kenya	LINKS/ KARI/ MOLFD	129,400	0	<b>129,400</b>
Baringo District Dairy Goats Project	SSDF/NMK	162,850	0	<b>162,850</b>
Rapid Pure Toggenburg Dairy Goats Breeding	MGBA/NMK	131,420	0	<b>131,420</b>
Emergency Livestock Health	FARM Africa	67,967	0	<b>67,967</b>
Drought relief (donkey nutrition, re-stocking, water & training) Kajiado to end Aug 2006	NIA/Concern WW	98,000	98,000	<b>0</b>
<b>Sub Total Livestock</b>		<b>9,529,738</b>	<b>1,598,000</b>	<b>4,427,775</b>

Table 7.2.2.5: Continued

Project Title	Agency	Required Funding (US\$)	Funding Secured	Pledged/	Balance Required
<b>Agriculture Sub-Sector</b>					
Rejuvenating dryland crop production in Eastern Province, Kenya	STAK/ICRISAT/KARI CRS/ MoA/ KEPHIS	342,891	0		342,891
2006 Emergency Response in Eastern Kenya	CRS	767,080	0		767,080
Daua River Irrigation Project – Mandera District	ISSG/NMK	418,530	0		418,530
Utangwa Irrigation Scheme in Makueni District	NMK/MoA/ Community	355,000	0		355,000
Kauti Irrigation Scheme in Machakos District	NMK/MoA/ Community	230,556	0		230,556
Thaana Drip Irrigation Project in Mwingi District	Thaana Irrigated/NMK	155,100	0		155,100
Water Harvesting and Small Scale Irrigation Project, Machakos District	NMK/ Community	42,700	0		42,700
Small Scale Group Based Irrigation Project in Wajir District	NMK/Community	62,880	0		62,880
Small Scale Horticultural Project – Tana River District	NMK/ Community	107,325	0		107,325
Drought resistant crop seeds& support Malindi to end Aug 2006	Dio of Malindi/Concern WW	139,962	139,962		0
Emergency provision of Seeds	MoA	3,857,143	3,857,143		0
<b>Sub Total Agriculture</b>		<b>6,479,167</b>	<b>3,997,105</b>		<b>2,482,062</b>
<b>Cross Cutting</b>					
Enhancing the Early Warning and Response System in Kenya	FAO/KFSM	630,048	0		630,048
Training on Access, Interpretation and use of early warning tools and information	CDM/LINKS	72,000	0		72,000
<b>Sub Total Cross Cutting</b>		<b>702,048</b>	<b>0</b>		<b>702,048</b>
<b>Grand Total</b>		<b>16,728,953</b>	<b>5,595,105</b>		<b>7,611,885</b>

