

# **SHORT RAINS ASSESSMENT 2004**

**Inter-agency Report**

**KFSSG**

**March 2004, Nairobi**

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## 1. Introduction

The poor performance of the 2003/2004 short rains has heightened food insecurity in most of the pastoral, agro-pastoral and marginal agricultural districts. Maize prices in most key markets are already well above average and are on the increase due to a tight supply situation and an expected national shortfall of 86,000 metric tons (MT) by end of June 2004. The high prices and precarious supply are undermining the already eroded purchasing power of the vulnerable populations.

Currently, the National Cereals and Produce Board (NCPB) is holding about 1.3 million bags of Government of Kenya (GoK) maize stocks that can only cater for relief requirements. In absence of additional maize for the Strategic Grain Reserve (SGR) and NCPB's commercial stocks, the GoK will not be in a position to carry out the functions of maize price stabilization (sell off SGR stocks to stabilize prices) this year.

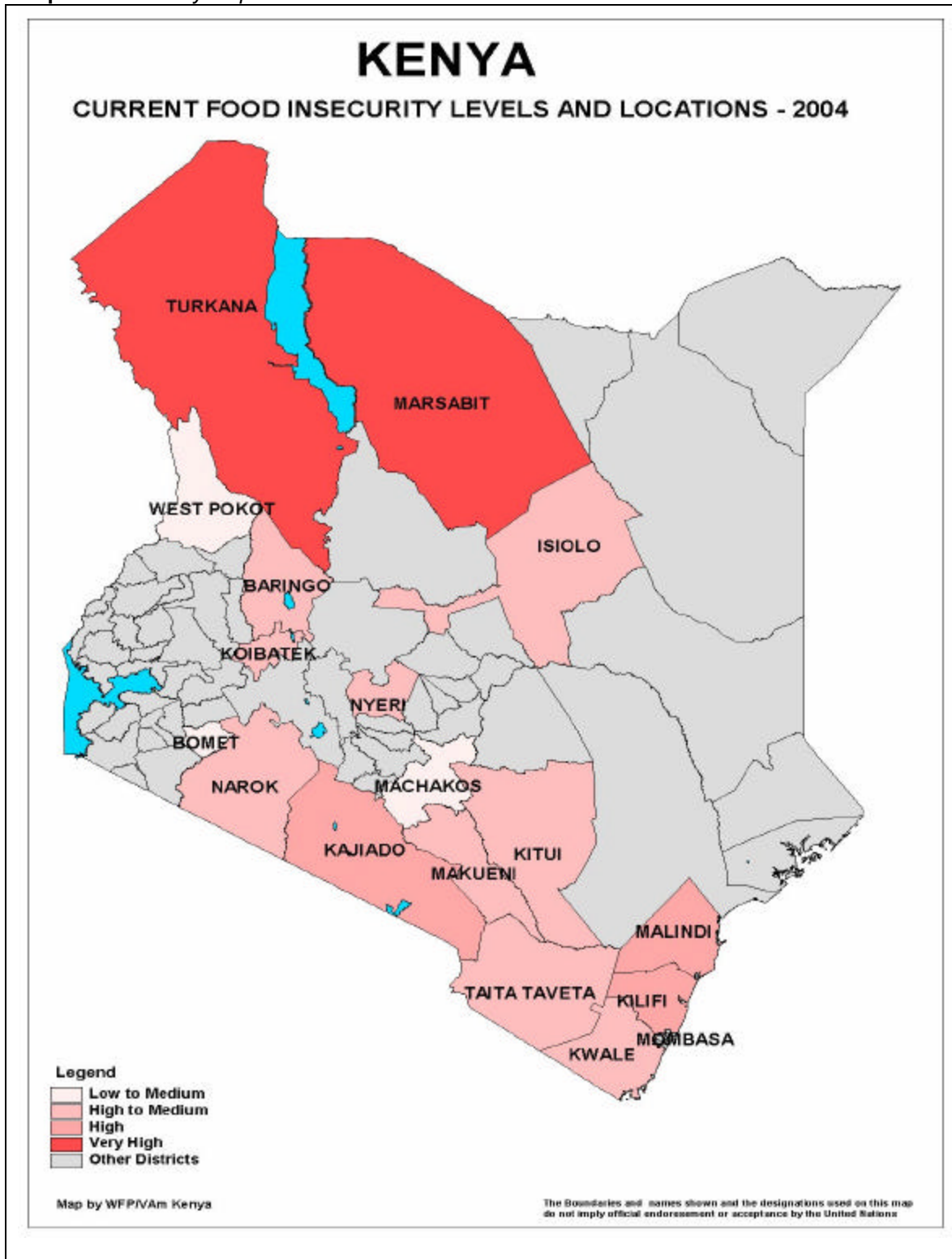
An estimated **one million persons will require assistance of some kind between April and December 2004. The most vulnerable people are estimated to be 100,000 in Turkana, requiring 683 MT per month from April to June and in Marsabit, 84700 persons requiring 585 MT per month.** These are arid districts, where the livelihoods of the majority of households depend on livestock farming or mixed farming activities. In these districts, malnutrition rates among children under five years have increased over the course of the last year. Most livestock have migrated in search of water and pasture, while the remaining livestock were observed to be in poor condition. A summary of target districts is presented in the following table. A detailed breakdown can be found in Annex 1a and 1b.

**Table 1** Population in need and food requirements

ASSESSMENT DISTRICT	NON-ASSESSMENT DISTRICTS	LIVELIHOOD of AFFECTED POPULATION	RANGE OF PERCENTAGES IN NEED OF ASSISTANCE	MODALITY	TIME FRAME
Kilifi Malindi Kwale Taita Taveta Kitui Makueni Kajiado Narok Bomet	Turkana Isiolo Baringo West Pokot Machakos Koibatek Nyeri Marsabit	Ranching, Pastoral, Agro- Pastoral, Food Cropping, Mixed Farming, Horticulture	10% to 27%	Relief Food Seeds Food-for-Work Supplemental- Feeding School Feeding	<b>3 to 9 Months</b> Mar-Jun Mar-Jul Mar-Aug Apr-Sept Apr-Dec Jun-Dec

Among the districts covered by the assessment, the priority areas will be Kilifi, Malindi and Kajiado. Field monitoring and nutrition survey reports suggest that Loiyangalani, Maikona and North-Horr divisions within Marsabit District and Lokitaung, Kibish, Turkwel, Kalokol, Katilu, and Lokori in Turkana should also receive urgent attention, as conditions there are critical. The priority districts and divisions are illustrated on the following vulnerability map, which indicates the current food insecurity ranking for each area.

Map 1 Vulnerability map



## **2. Objectives of the assessment**

As early as November 2003, monthly monitoring reports from the districts indicated a negative trend in rainfall and crop development in arid and semi-arid areas of Kenya. These critical early warning reports prompted a rapid emergency food security assessment covering the areas likely to be worst affected.

From 1st through 14<sup>th</sup> February 2004, an interagency group<sup>1</sup> formed field teams to assess the impact of the 2003/2004 Short Rains on communities in Kwale and Taita Taveta, Kilifi and Malindi, Makueni and Kitui, Kajiado, Narok and Bomet. The teams conducted interviews with key informants, community groups, and a few selected households. During these interviews they verified the impact of the rains on crop and livestock conditions, assessed the food insecurity of different vulnerable groups (i.e. by relative wealth, gender, age), determined target groups and modality and length of assistance, assessed non-food programming priorities.

In addition, a desk study of secondary source data and informal interviews provided information on the national context for the assessment and findings. The desk review also helped identify problem districts and divisions that were not covered in the assessment.

## **3. The meteorological picture**

### **3.1 2003/04 Short Rains Season**

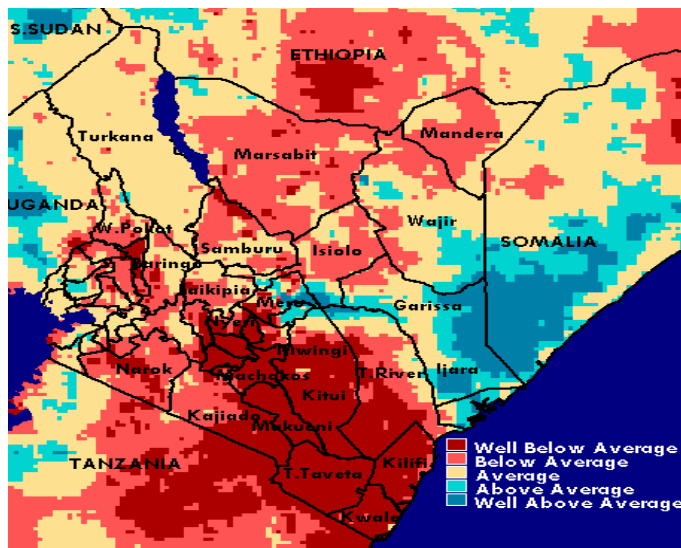
The short rainy season was variable with some areas receiving normal to above normal rainfall and other areas, particularly marginal areas, receiving first below average rainfall and then above average rainfall in January. The January rains have significantly improved pasture, but had little impact in areas where crops had failed (RATIN, Feb 2004)

Satellite images of rainfall cover showed that compared to normal, the 2003/2004 Short rains were well below average in Coast, parts of Eastern and South Rift and Central Provinces. Specific areas of concern were Kilifi, Kwale, Taita Taveta, Eastern, Kitui, Mwingi, Makueni, Machakos, Nyeri, Kajiado and Narok. Other areas in which rainfall was below average were in North Rift Valley and Eastern Province, namely Marsabit, Isiolo, Mandera and parts of Samburu (Figure 1). Short Rains assessment and monthly field monitoring reports confirm that rainfall was erratic, low or completely failed in these areas.

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<sup>1</sup> The Office of the President's (OP), Relief and Rehabilitation department, the Ministry of Agriculture (MoA), Arid Lands Resource Management Program (ALRMP), Ministry of Livestock, World Concern, Oxfam GB, UNICEF, World Vision, and World Food Program (WFP)

Fig. 1: Cumulative Rainfall: October-December Short rains, Compared to Normal. Source: NOAA/FEWS NET



Source: FEWS NET

### 3.2 2003 Long rains

In a number of places the failure of the short rains followed a dismal 2003 long rainy season. Consequently, in parts of Kilifi, Kwale, Kitui and Kajiado there has been a greater impact on food security and livestock conditions.

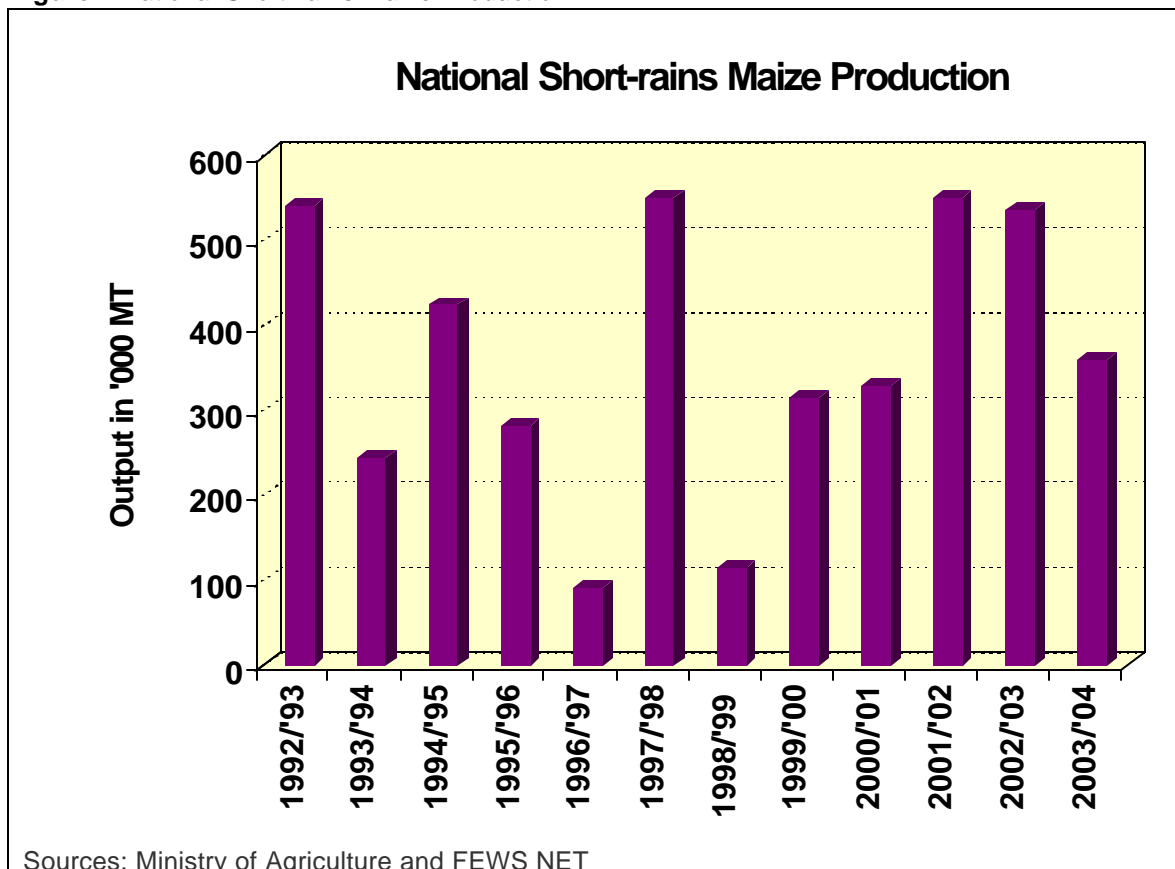
## 4. Production and Prices

### 4.1 National and district production

According to the Ministry of Agriculture, the short rains harvest will be in the region of 360,000 MT (4 million 90 kg bags) compared with an average short rains crop of more than 450,000 MT (5 millions bags). In Nyanza, Western Province and parts of South Rift Province 70% of their harvest is in, and expected to be completed by mid February. Eastern and Central Province's crops have reached about 60% maturity and harvesting is expected to begin by the end of February beginning of March. (RATIN, Feb 2004)

Nonetheless, with the advent of unexpected rainfall in January 2004, short rains maize crop production this year is estimated to be higher than production in some of the most critical years since 1992. The lowest recorded production in this time frame was the 1996/1997 harvest which came to 97,000 MT, followed by 1998/1999 when production was around 100,000 MT and 1993/1994 with production around 250,000 MT (Figure 2).

**Figure 2** National Short-rains Maize Production

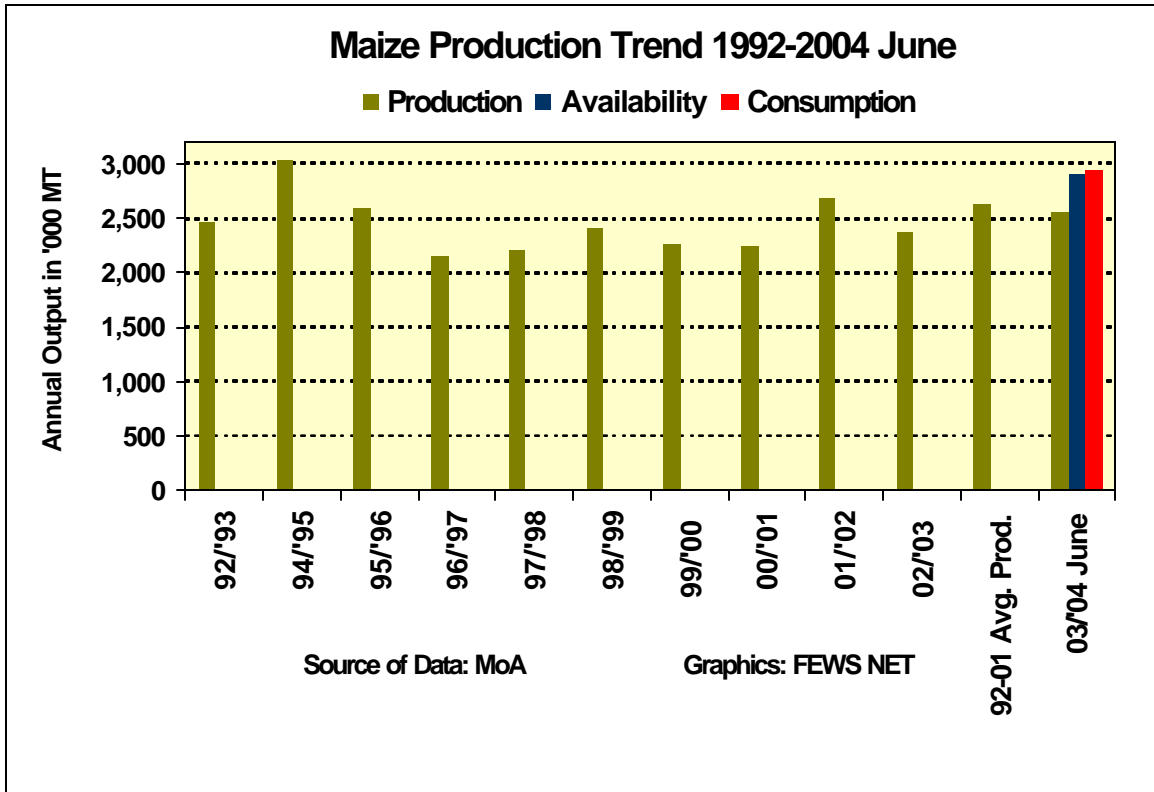


The Ministry of Agriculture reports that the short rains bean harvest was also badly affected. The harvest is estimated at around 141,000 MT (1,567,000 million bags), which is approximately 50% less than the long-term average.

**Cereal Deficit and Food Balance Sheet**

By the end of June, an estimated deficit of 86,000 MT (920,000 bags) is expected (Table 2). The NCPB has approximately 117,000 MT (1.3 million bags) in storage, of which about 81,000 MT (900,000 bags) are for Famine Relief and 36,000 MT (400,000 bags) for Strategic Grain Reserve.

Figure 4 Maize Production 1992-2004



Around this time last year the government held around 270,000 MT (3 million bags) of stocks, which were nearly completely consumed by October 2003. This year the government has only around 36,000 MT (400,000) bags for SGR, which will not significantly affect prices. Last year, Kenyan millers imported about 48,000 MT from South Africa, paid full duty and had a price in Nairobi of around \$240 / MT (Ksh 1650 / 90 kg bag), this year with no duty, Indian maize would be around the \$234 / MT (kasha 1610 / bag) (with only small quantities available and poorer quality) compared to US maize at around \$249 (kasha 1715 / bag)(RATIN, Feb 2004).

### Wheat Imports

Kenyan millers have imported 85,150 MT of Argentine wheat this year, with ~120,000 MT expected within the next month.



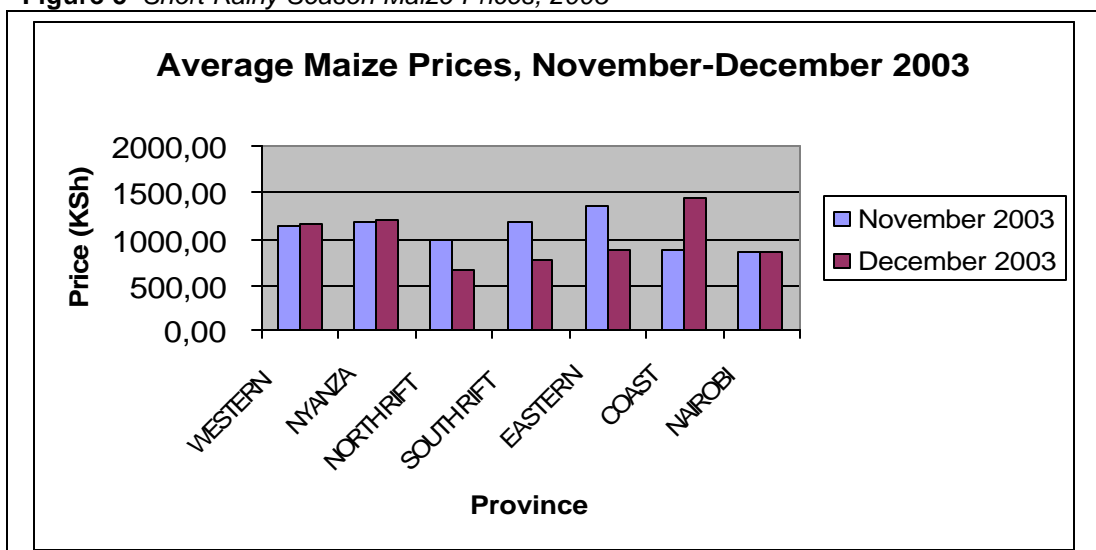
**Table 2** National Maize Availability: July 2003 – June 2004 Production Period

Period	Source	Quantity in MT
July 2003	On-Farm stocks (mainly Rift Valley Province).	180,000
July-September 2003	Imports from Uganda, Tanzania and Southern Africa	150,000
October '03 – February '04	Projected imports from Uganda and Tanzania.	100,000
October – December '03	Projected Exports to Tanzania	80,000
July – December 2003	Long-rains harvest - all regions.	2,196,000
February – March 2004	Short-rains harvest - Eastern, Central and Nyanza Provinces.	360,000
<i>Estimated Availability</i>	National Cumulative.	2,986,000
<i>Other Uses</i>	Seed, Animal Feed, Industrial Uses	- 52,000
<b>Consumption - July '03 to June '04 (@ 245,000 MT/Month)</b>	National Consumption. [Population – 30 million persons. Consumption per capita/year – 98 kg].	<b>- 2,940,000</b>
<i>Surplus/Deficit</i>	All Sources	<b>(86,000)</b>

## 4.2 Prices

The current increase in prices was evident during the course of 2002-2003. As a comparison to last year's prices, the price of a 90kg bag of maize in February 2003 ranged between Kenya Shillings (Ksh) 850 and 1100. In February 2004, a 90kg bag ranged between 500 and 1400 Ksh. However, price rises were not equal across the country. As illustrated in Figure 5, early in the season, prices in Coast Province, one of the target districts for assessment, showed the greatest increases.

**Figure 5** Short Rainy Season Maize Prices, 2003





## 5. Health

An objective of the assessment was to evaluate the effect of the drought on children using nutritional indicators such as Weight-for-Height (expressed in z-scores). This tells us about current nutritional status. Z scores express a child's weight as a multiple of the standard deviation (a measure of the spread values round the mean), also known as standard deviation scores. Z-scores are a little more complicated to calculate than the percentages of the reference median weight-for-height and less easy to understand, but they are statistically more correct.

Low weight-for-height is an indication of acute malnutrition (wasting), as a result of a recent weight loss caused by a reduction in food intake resulting from food shortage or illness. A child may be classified as adequately nourished, moderately malnourished, or severely malnourished. Another measurement given here is Mid/Upper Arm Circumference or MUAC. MUAC is the circumference of the left upper arm, measured at mid-point between the tip of the shoulder and the tip of the elbow. It is useful for assessment of nutritional status in children. It is increasingly being used to assess adult under-nutrition during famine as well as for estimating prevalence of under-nutrition at population level. It is better at predicting mortality than most other anthropometric indices (ACC/SCN (2000) *Anthropometric Assessment of the Nutrition Status of Adults in Emergency*, Geneva, July). However, it must be said that a direct comparison with MUAC and weight for height in z scores for measuring malnutrition is not possible as they are two different indicators, but MUAC can be used for monitoring trends in nutritional status.

Table 3 gives the cut-off points for defining levels of malnutrition for the different indices.

**Table 3** *Classification of Malnutrition Status*<sup>2</sup>

<b>Classification</b>	<b>Wt/Ht % of the median</b>	<b>Wt/Ht Z-scores</b>	<b>MUAC cm</b>
Adequately nourished	>79.9	>-1.9	>13.4
Moderately malnourished	<80 and >69.9	<-2 and >-2.9	<13.5 and >12.4
Severely malnourished	<70	<-3	<12.5

### 5.1 Child malnutrition in assessment areas

For those areas where there was a nutritionist on the team and/or where UNICEF nutrition surveys were undertaken (Kwale, Malindi, Kilifi), the finding was that the observed child malnutrition rates were related to chronic issues (i.e social concerns, such as single mothers, mother mentally disabled), rather than an absolute lack of food or acute food insecurity. A UNICEF/Ministry of Health survey conducted between 5 and 12 February 2004, showed that in Samburu and Kinango divisions of Kwale District, the prevalence of Global Acute Malnutrition (GAM), which is indicative of wasting, was 5.8% (< -2 Z scores). Although wasting prevalences of 5 to 10% are usual in African populations, the internationally acceptable rates as proposed by the World Health

<sup>2</sup> Helen Young. Food Scarcity and Famine Assessment and Response. Oxfam Practical Health Guide N0.7

Organisation<sup>3</sup> are those below 5%. Although an emergency intervention is not warranted, in the case of Kwale, the WHO guidelines emphasise that corrective action is still important when such rates indicating a poor situation are recorded. In addition, the high rate of stunting at 44.7% calls for concerted efforts to address the underlying and basic causes of malnutrition.

### 5.3 Child Malnutrition in non-assessment areas

The Arid Lands Resource Management Program (ALRMP) field monitoring reports for October 2003 through January 2004 showed increased child malnutrition rates in Baringo, Isiolo, Marsabit and Turkana.

Baringo malnutrition rates, especially for children under the age of five based on mid upper arm circumference (MUAC), indicated that 15% were classified as at risk and 3.4% were moderately at risk.

Malnutrition rates in Isiolo showed an increase, however the rates are not directly related to inadequate food intake. A total of 936 children under five years were examined to establish their nutritional status. The result of a January household survey indicates that 6.8% were at risk of malnutrition, 0.9% were moderately malnourished and 0.5% were severely malnourished. Compared to the results of the December household survey, malnutrition rates figures have increased. The trend is mainly attributed to increased diarrhoea cases due to use of untreated water sources.

In Marsabit, there are many cases of malaria reported in mountain and lowland areas. Cases of anaemia and under weight are reported among breast feeding and pregnant mothers, especially in lowland areas. The malnutrition rates of children aged between 1-5 years in January showed the percentage of children at risk of malnutrition at 25.14%. The percentages that were moderately malnourished were 3.04%, the percentage severely malnourished was 0.08 % and the GAM rate was 0.77%. This was an increase by 5.92% for the moderately malnourished, and 0.89% for the severe group compared to the previous month. The situation is particularly serious in North Horr, Maikona and Loiyangalani divisions. UNICEF/Office of the President/Oxfam surveys<sup>4</sup> carried out in February showed that Loiyangalani division was worst of the three. The GAM rates for the surveyed divisions (Loiyangalani and Maikona) were around 23.0%. **These results indicate a critical nutritional situation in the area and international standards warrant intervention. Loiyangalani Division is considerably worse off than Maikona. Results from both divisions demand an immediate need for broad-based interventions to prevent the nutritional and mortality situations from deteriorating.**

In Turkana, the situation worsened between 2002 and 2003. During that time frame, the increase in global acute malnutrition (GAM) ranged between 7.5 and 16.5 % points, the highest increases were recorded in Lokitaung, Kibish, Lapur and Kaaleng and Kalokol,

<sup>3</sup> Field Guide on Rapid Nutritional Assessment in Emergencies, 1995

<sup>4</sup>UNICEF (2004) *Nutrition and Health Survey: Loiyangalani and Maikona Divisions, Marsabit District*. February 15-22, UNICEF, with Arid Lands, Resource Management Project, the Ministry of Health and Oxfam GB: Nairobi.

Central and Kerio. Severe acute malnutrition rates also increased in all survey zones (UNICEF (2003:13) *Turkana Health and Nutrition Surveys*). A February 2004 Oxfam survey<sup>5</sup> now shows GAM rates of 34.4% and severe malnutrition at 5.6% in the Northeast alone. **This indicates a crisis situation. There has been a marked deterioration in the nutritional status of the children from this time last year, and even then levels were unacceptably high at 27.4%.**

In sum, the nutritional status of children in Turkana, Marsabit and parts of Baringo reflected immediate and acute food insecurity, while the other areas show chronic malnutrition requiring long term interventions.

## **6. Vulnerability to food insecurity**

Vulnerability to food insecurity was evaluated with specific reference to livelihood zones (LZ). Livelihood zones are geographic delineations created to classify socio-economic activities of a population. Time and resource limitations did not allow for a full livelihoods analysis, however the use of livelihood zones as a reference point in these vulnerability and food security analyses was useful for defining needs and targeting assistance to the most needy populations.

The livelihood zones covered in both the assessment and non-assessment areas were generally:

- Pastoralists
- Agro-pastoralists
- Mixed farming activities
- Agriculture
- Ranching
- Horticulture
- Cash Cropping
- Livestock
- Fisher folk
- Urban

Definitions for these zones are presented in Annex 2.

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<sup>5</sup> Oxfam (2004) *Nutritional Anthropometric Survey and Food Security Assessment: North Western Zone and North Eastern Zone, Turkana District*. February 22-29, Oxfam with the Ministry of Health: Nariobi

## **6.1 Profiles of assessment areas**

The following summaries of the assessment reports describe the impact of the 2003/2004 short rains performance on current livelihood and food security in the assessment areas.

### ***Coast Province, Kilifi District***

Since 2001, Kilifi District has been experiencing a drastic weather pattern change with erratic and poorly distributed short and long rains. The 2003/2004 short rains in Kilifi District were almost a total failure. They started on time in October with storms for three days, then disappeared for three months. During the dry spell, crops (mainly maize, beans, green grams, and cowpeas) withered. The teams observed dried out maize stalks on farms. The dry spell also affected the performance of cassava, which is the main drought crop that is planted. Elephants that damaged the surviving crop exacerbated the effects of poor short rains in Vitengeni Division.

The short rains were preceded by poor yields from the long rains of 2003. Due to the poor rains, the yields of most crops (maize harvested in August, June for pulses) were reduced to around 50% of what was expected. Investigations revealed that households run out of their own maize produce in November/December. In a normal year, people survive on the long rains maize harvests up to February of the following year, followed by a short rains harvest in February and food stocks until the next long rains. The hungry period is generally in May/June. This year, however, the hungry period will come earlier around April/May 2004---one month early.

In a normal year, the communities in the affected areas purchase around 50-70% of their food and they rely on 30-50% production depending on their LZ. Communities in the Ranching LZ are higher purchasers, followed by the Agro-Pastoralists, and least purchases by the Food crops LZ. Currently people are relying on purchasing up to 80-90% of their food.

### Coping Mechanisms

The assessment found that communities are adopting some coping mechanisms (charcoal burning, cutting fire wood, casual labour, normal sale of livestock, sale of crop products, sale of local fibres, etc). Despite this, there is concern that some of these coping mechanisms are not sustainable and if maintained may impact on the agricultural production and land preparation of these households, thus could potentially increase vulnerability in the near future.

### ***Coast Province, Malindi District***

Malindi District has been experiencing a drastic weather pattern change since 2002. The climatic change is characterised by erratic and poorly distributed short and long rains. Like Kilifi, the short rains in Malindi District were almost a total failure. Farmers planted, but the crops (maize, beans, green grams, cowpeas and cassava) withered during the three months dry spell. Furthermore, the current drought follows a dismal long rain season. Due to the poor short rains and low harvest of long rains of 2003, the hunger period will come sooner than normal, most likely around April/May 2004.

### Coping Mechanisms

The assessment revealed that currently people are relying on purchasing up to 70% of their food. In a normal year, (the last one recorded was in 2000), the population purchase around 30-40% of their food and they rely on 60-70% from their own production.

Even if the short rains performed dismally throughout the district, thus increasing the food deficit, the mission found that the communities are adopting sustainable coping mechanisms. Despite this there is concern that some of these coping mechanisms are not sustainable and if maintained may impact on the agricultural production and land preparation of these households, thus could potentially increase vulnerability in the coming months.

A rapid food assessment conducted in September 2003 in Malindi District indicated that 30% of the population required a food aid intervention between November and December 2003. In the event that the short rains failed, the percentage was expected to rise to 60% in the period between January and June 2004.<sup>6</sup>

### ***Coast Province, Kwale District***

The Long Rains (LR) season (March/July) is the main agricultural production season producing up to 70 % of the total annual production. However, the short rains are predominant in the short rains-dependent and drought prone areas of Kinango and Samburu divisions. The major crops grown in the district are maize, beans and cassava. These three major crops are grown mainly for subsistence purposes. Maize production is predominantly in the southern divisions of Msambweni and Kubo. A quite significant proportion of the household food and income is derived from tree crops such as cashew nuts, coconut, citrus, bixa and mango. Inter cropping food crops with tree crops is the most commonly applied farming practice. The 2003 long rains season was exceptionally poor in most areas of the Coast Province, with the exception of the coastal strip. The rain began up to 40 days late in several areas. The rains were also erratic, poorly distributed and generally had a short duration. To compound the long rainy season, the short rainy season, expected to begin in September, had not started toward the end of October 2003.

Failure of the short rains has impacted negatively on food security. One critical outcome was the loss of seed for next planting season. The most affected livelihood is the agro-pastoral zone. These zones realized no harvest and expect no yield from the farms until after the anticipated April long rains. Most water pans have dried up and the few that are holding water have the surrounding pasture exhausted. Animals have moved far from watering points to look for pasture leading to stress and emaciation. Milk production has also gone down significantly due to poor feeding of animals.

### Coping mechanisms

Negative coping strategies are evident in the agro-pastoral areas, especially Samburu. There is a rise in charcoal burning and trade in palm wine. Both are illegal activities. Charcoal stations and bicycles transporting palm wine on the Mombasa – Nairobi highway have increased. In addition, people are selling maize at higher prices. For example, 2 kilograms of maize flour that would normally cost Ksh 45 is now costing Ksh

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<sup>6</sup> Reference to *Food Security Report, January 2004*, Submitted by DC of Malindi,

60. In the market of Samburu many women were selling maize brought from Kitale by long distance drivers. This was being sold at Ksh 340 for 20 Kg grain while the price for the normal year is Ksh 250. The poorest households resort to skipping meals to cope with the inaccessibility of maize.

In the agro-pastoral zones, the main source of income is livestock sales. The current price of livestock is low. A cow that would in normal times go for Ksh 12,000 is now going for Ksh 7,000. Also highly affected are pockets of the agricultural livelihood zone, for example, Mbuguni. In the mixed farming areas of Kubo the access roads are generally bad. Farmers cannot access markets during the wet season due to the bad roads. This has led to fruits rotting in the field.

### ***Coast Province, Taita Taveta District***

Taita Taveta is one of the Coast Province's marginal agricultural districts. The total population of the district is estimated to be 252,000 people. Only an estimated 11 percent of the district is arable and thereby suitable for crop production. The district is divided into six administrative divisions, namely, Wundanyi, Mwatate, Voi, Taveta, Mwambirwa and Tausa. Twenty five percent of the land is considered rangeland. There are two rain seasons in the year – long and short. The October-December short rain season is the predominant production period while the March/May rain season (normally referred to as long rains in other areas) is unreliable and erratic. According to the district agricultural office's (DAO) weather report, most meteorological stations in the district recorded inadequate rainfall both for long and short rainy seasons. Both seasons were inadequate and erratic, leading to low crop yields and total crop failure in most areas.

The main crops grown in the district are maize, beans, cowpeas, green grams and cassava. The crops are grown mostly for subsistence. However, some proportion of the household food and income is derived from coffee, cotton and horticultural production. Limited irrigation is undertaken in Taveta where horticultural crops are grown. Land is sub-divided in the highly productive hilly areas of the district (Wundanyi, Sagalla and Mwatate divisions) to accommodate the increase in population.

#### Coping mechanisms

As a result of inadequate/erratic rains in both seasons last year, most households have depleted their food stocks and heavily rely on purchases. The poorest and poor to medium households are the most affected since their purchasing power is normally low. Food prices, especially maize, are on the increase and readily available all over the district. The aforementioned food insecure groups have turned to charcoal burning and illegal brews as coping mechanism.

### ***Eastern Province, Kitui District***

The current 2003/04 rainy season has been poor and in general most parts of the district received below normal rainfall. The district relies mostly on the short rains season and the long rains is often unreliable for meaningful harvests for most farming households. The below normal rains have affected agro pastoral divisions found in the eastern, southern and parts of western areas of the district. The worst affected divisions include Ikutha, Mutha, Mutomo, lower Yatta, Mwitika, Mutitu and parts of the marginal agricultural areas that border the agro-pastoral livelihood Zone. Some of the above divisions have faced a total crop failure translating into an imminent acute food shortage.



However, most divisions found in the Marginal Agriculture zone had a fair season although yields will be below normal.

Livestock body conditions were found to be generally good and pasture and browse adequate. The upcoming long-rains if good is expected to boost the regeneration of livestock feed. However, prices for livestock were very low in the affected divisions. The watering points had dried up and trekking distances to alternative points had increased tremendously from an average of 5 kilometers to 12 kilometers. The current food insecurity situation is expected to be worsening from the month of April in the most affected areas and the situation is expected to continue until the next short rains season. The elderly, children and women will be particularly vulnerable during this period.

### ***Eastern Province, Makueni District***

The 2003/04 short rains season was poor and the cumulative rainfall was below normal in most parts of the district. In most parts of the Agro-pastoral livelihood zone of the district they experienced 90 % to total crop failure. The mixed farming zone experienced about 50% crop failure. Livestock body condition was good and availability of pasture and browse was adequate. Accessibility of water for both human and livestock was found to be a major problem and trekking distances to water points had increased considerably.

The district has had recurrent droughts caused by poor rainy seasons. The situation in the current season has been compounded by similarly poor rainfall in the previous two to three seasons. In addition to erratic rainfall patterns, food insecurity problems have been worsened by poor crop husbandry practices, declining soil fertility, accessibility of suitable seeds and widespread poverty. The worst affected divisions of the district are Mtito-Andei, Kathonzweni, Kalawa, Nguu, Makindu and Kibwezi. The food insecurity situation is expected to be severe from the month of April and the situation is expected to continue until the next short rains season. The situation is expected to worsen for the divisions that are facing very poor prospects and the warning status may move from alarm to emergency as food security prospects deteriorates in a few months to follow. The elderly, children and women will be particularly vulnerable during this period.

### ***South Rift Valley Province, Kajiado District***

In Kajiado district more than half of the households depend on pastoral/agro pastoral activities for their livelihoods. Since the drought of 1999/2000, in which more than 50% of the herds were lost, no recovery has been achieved to an extent that any further failure of rain is very devastating. A number of households do not have any animals. The district is visibly overgrazed. Visual outlook showed most of the district with bare/patchy ground. Cows are in poor condition. Although some calves were seen, there is virtually no milk as a result of lack of water/forage.

From the interviews, the mission learned that the 2003 long rains were dismal and the short rains totally failed. Since August 2003, the situation continued to deteriorate at an alarming rate in some areas, causing livestock movement since August 2003 towards Chyulu Hills, Mtito and Kiboko. The pasture situation was made worse by the wild fires. Some livestock are reported to have died in Metto. The situation was further complicated by an outbreak of foot and mouth disease (F&MD), Anthrax & ECF in August 2003. This has not been easy to control due to livestock movement in search of

pasture/water. Supply of vaccines, particularly for F&MD, has been wanting. Some urgent intervention is required.

It was only until 16, 17 & 18<sup>th</sup> January 2004 that some drizzle was reported. This was a big relief to pastoralists in particular, who were returning (Imbirikani location) at the time of this assessment. Sprouting grass was evident but not enough to support the large herds and wildlife. For rain-fed farming, the wilting crop situation cannot be reversed. Furthermore, rather than being a relief, the showers were actually confusing: farmers were not sure whether these were the delayed short rains or the long rains having come early. They are not sure whether to start planting for next season or not.

Due to below normal rains during the main planting season, the expected yield (from the 25,000 ha planted) has dropped from 20 to about 10, and from 10 to about 3 bags of maize and beans respectively. Additionally, most food crops are treated as cash crops that are bought by traders from Mombasa, Nairobi and Machakos. Tanzanians have also contracted a number of these farms at Ksh 4,000 per season. Currently a 'debe'<sup>7</sup> of maize is going for Ksh 350, against a normal price of between 130 and 150.

Maize, Beans, Tomatoes and Onions are produced from the irrigation farms in Rombo. Farmers prefer horticultural crops like Okra and Brinjals because of the income, but the difficulty in accessing markets is their undoing. It was further reported that elephants have also resorted to tomatoes of late.

The potential for (irrigated) food production has been greatly reduced by the impact of wildlife menace. This has also impacted negatively on the interest that was developing with the pastoral community. Irrigation also takes place at Olkirimatian, & Nguruman villages/Olkirimatian Location and in Pagasi village/Shombole Location of Magadi division.

### ***South Rift Valley Province, Narok District***

The district is 70% semi-arid, thus the inhabitants are mainly pastoralists. Under current circumstances, pastoralist households are worst affected, showing total crop failure in some areas. These households are also facing a number of constraints on access to land for their livestock. Presently, 60,000 hectares (ha) of potential grazing land has been hired out for wheat farming and a large portion was carved out for the Mara reserve, the remaining areas are over grazed and highly eroded. A further constraint is that a significant portion of the district has been reserved for wildlife. Large herds of Wildebeests, Antelopes, Buffalo and Zebras (in thousands) compete for the open grasslands that are patchy and have been seriously denuded.

Failure of the September/November 2003 rains has caused a further strain on livelihoods. This has been the result of water resources drying out. People have to walk for over 15 kilometers in search of drinking water. Around Suswa in Mau division, a 20-litre container of water is selling at Ksh 20.

Over 76% of the cattle have migrated out of their home areas, mainly to Suswa, Mau forest and Loita Escarpment. This denies children access to milk. The situation got worse with the closure of all livestock markets as a result of the outbreak of foot and mouth disease (F&MD). There is not a regular vaccination schedule; therefore migrating

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<sup>7</sup> 1 Debe is equal to 25 kilograms

animals do not have the protection they require. Tick borne diseases have also become a problem, with the scarcity of water further hampering conventional tick control measures such as dipping and spraying.

The livestock/wildlife conflict is pronounced in Mara. Unless a clear policy is developed, and urgently so, a catastrophe is in the making.

### ***South Rift Valley Province, Bomet District***

Bomet District is largely an agro-pastoral area with high poverty and food insecurity on a regular basis. The 2003 long rains failed and the short rains were inadequate. There were some drizzles in late November /early December 2003 (6 & 5 days respectively), and in late January/early February 2004 (7 & 3days respectively). Recent poor rainy seasons have had some impact on food production, however the food stress as acute as it could be since there is some milk available, particularly for the young. .

Nevertheless, the assessment team learned that the current situation is exacerbated by several factors: Over the years, unjustified food relief had previously been provided, thus creating a 'dependency syndrome' and reinforcing the already the low farm productivity; Land ownership is in the hands of surviving parents, as a result, food production is not taken seriously by the younger generation; Women are responsible for most of the farming, including crop production. For the last three years, an unscrupulous trader sold 'fake' seeds to farmers, which lowered productivity; and finally, a quarantine caused by an outbreak of foot and mouth disease (F&MD) as well as the poor condition of the livestock has destroyed further the economic resource base of the affected communities. A cow that normally fetches Ksh 5,000 is currently being sold for Ksh 7,000.

The major food crop producing areas are Longisa, Sigor, Ndanai & parts of Siongirai divisions; the remaining being covered mainly by Tea Estates and some dairy farming. The major cropping season is November/December. Under normal conditions, the maize crop would be under weeding, ready for harvesting again in August/September. However, because the rains were below normal, only about 50 % of the expected maize crop was planted; 30% in December and 20% in late January. Presently, the crop is in two major stages but it was observed to be moisture-stressed and wilting. The farmers expressed the desire to plant anytime the 'normal' rains resumed, as they were expected. However, a number of farmers exhausted their seed by planting seed, which never germinated. Unless it rains within the next two weeks (between the time of the assessment and 20<sup>th</sup> February) the crop will fail.

Pastures have dried, except in parts of Ndanai division where some scattered grasses could be found. Quite a sizeable herd has migrated to the upper parts of the district as well as the neighboring TransMara district. However, most livestock may access water from the by the River Nyangores, which traverses the district, and another permanent river, Mara, which forms the boundary between it and Narok district. To reach these waters animals would have to trek less than 10 kilometers. The rains have had less an impact on water resources than the fact that most dams have silted.

Due to food and water stress, milk production has plummeted in some households from an average of 7 litres, to barely a litre per day. This is also corroborated by the falling intake of milk at collection centers. The payout to farmers remained fair and on time.

### Coping mechanisms

In normal circumstances, the community consumes three maize and milk based meals a day, and some vegetables. Currently, they hardly consume one meal in a day. The majority of the households are forced to depend on porridge taken once a day.

Most people can hardly afford the current maize price of Ksh 45 since January 2004, which is expected to rise to more than 50 per 2 kilograms. During last season's harvesting time (September, 2003), the price was Ksh 15.

There are a small number of families covertly selling charcoal to earn extra income.

## **6.2 Profiles of non-assessment areas**

Field reports indicate pockets of food insecurity in Central, North Rift and Eastern provinces.

### ***Central Province, Nyeri District***

This year, Nyeri District is experiencing unusual constraints on food security directly resulting from the performance of the short rains. The short rains commenced in October and continued steadily until December, when rainfall subsided drastically. Throughout December, rain fell below normal while temperatures rose to abnormal levels. Unlike other areas where there was unseasonable January rainfall, there was no such reprieve in Nyeri. The major crops were at their critical water requirement stages (tareselling and silking) when the dry spell occurred. As a result, the expected yields declined. Current food available at farm level is therefore below normal, with little harvesting of beans, Irish potatoes, green maize, vegetables and fruit.

Families in divisions where crops are diversified are likely to cope. The areas that will require assistance, however, are the marginal areas of Mathira, Mukurweini, Municipality, Kieni East and Kieni West where crop failure is visibly evident.

### ***Eastern Province, Machakos District***

According to a 1995 study of vulnerability in Kenya<sup>8</sup>, Machakos District is generally among those classified as chronically vulnerable to food insecurity. The 2003 short rains output has caused current insecurity and the situation will require monitoring.

Rainfall during the 2003 short rainy season was erratic. Low and poorly distributed rainfall particularly at the onset of the season adversely affected crops, especially pulses, beans, cowpeas and green grams, which are only grown during the short rainy season. A dry spell occurred during the most critical period for pulses because they were at the flowering stage. Very high daytime temperatures caused flowers to wilt. The cowpeas and green grams yields were reduced, but not by as much as beans. Beans saw a reduction of 80% in the lower divisions and 50% on hillsides. Early planted maize was also affected. An estimated 40% of the area under maize production produced plants that did not cob. Some of the late planted and medium-maturing varieties benefited from the January rains. They revived from wilting and produced a crop.

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<sup>8</sup> USAID/Kenya (1995) *Vulnerability Assessment* FEWS Project, Tulane/Pragma Group: Arlington, Virginia

### ***Eastern Province, Isiolo District***

Most parts of the district remained dry and hot with the exception of the southern part of the district, which received light showers. The condition of pasture has worsened in most parts of the district due to overgrazing. The condition of water sources is within normal ranges. The health condition of livestock is normal in most sample areas except for the localized problem of black quarter and foot and mouth diseases in Sericho. The body condition of livestock is fair in most sample areas. The average prices of livestock reduced due to an over supply of animals in the local livestock market. The terms of trade have worsened for local pastoralists due to reduced livestock prices and increased cereal prices. Mortality rates have declined along with livestock diseases rates. Wild animals have affected agricultural production.

### ***Eastern Province, Marsabit District***

Unseasonable short showers were reported on hilly parts of the district, while lowland areas recently experienced two days of rainfall, which was neither adequate nor within the normal range. Agro/Pastoral households are engaged in the first phase of harvesting of beans, Teff and barley, while maize crops are expected next month. The current crops on the farms are moisture-stressed. Generally, the lowland communities are most affected by the current dry conditions. For example, Arid Lands Resource Management Project monitors registered 66.3% as food insecure in Loiyangalani division followed by Korr, North Horr and Maikona sample areas. The dry weather conditions have forced livestock to migrate and consequently regular access to milk has been limited. **Recent nutrition surveys show a serious situation that is deteriorating.**

The water situation remained satisfactory on Mt. Marsabit, Kulal, Ndoto and Hurri hills, and range conditions on these elevated areas in the district remained good with green pastures evident. However, in the lowland parts of Maikona, North Horr and Loiyangalani divisions, there has been an increase in the distances travelled to water and pasture (up to 150kms at Buluk and Darade). Livestock concentrations are also reported along fringes of foothills of Mt. Marsabit, Kulal, Mathew ranges, Hurri hills and sparsely along Lake Turkana eastern shores. Currently, rain fed pans and pools are declining as a result of minimal and irregular rains.

In general, livestock sales declined due to low and unstable prices. District records show prices of sheep at Ksh 557.90, goats at Ksh 794.3 and cattle at Ksh 9,180.00. This indicates a current decline in average sheep prices by Ksh 34.10 and goat prices by 99.00 compared to the previous month.

Food insecurity in Marsabit has been further accentuated by similarly poor conditions in neighbouring areas, thereby reducing options for migration.

### ***Rift Valley Province, Baringo District***

The month of January was hot and dry and pastures quality declined with livestock grazing in the dry season grounds. However, there were three rain days in the month. The milk consumption intake has continued to decline with 47.7% of the households sampled reported that only children drank milk. Food for work was received by 42.7% of the sampled households. Each household received an average of 11.9 kg of cereals. Movement of the sampled communities mainly in search of pasture and water was very high throughout the month. None of the households in the sampled area moved as a result of insecurity. Malnutrition rate especially for the children under the age of five based on mid upper arm circumference (MUAC) indicated that 15% were classified as at

risk and 3.4% were moderate. Those households with lactating camels had children that were well nourished.

***Rift Valley Province, Koibatek District***

The district is characterised by frequent poor weather conditions. An estimated 60 % of the district is arid and semi-arid land. The major economic undertaking is livestock production. The crop farmers plant to meet their family's food requirements. Any surplus produce is sold. Good production can be expected only three out of every five years. This year, the short rainy season was good. However, there were periodic dry spells in the month preceding the short rains; there was frost in the highlands; and heavy downpours in various places, which caused flooding, water logging and destruction of infrastructure as well as low productivity throughout the district. Farmers will have food supplies until May 2004. Thereafter, a relief intervention will be required.

***Rift Valley Province, Turkana District***

During the 1<sup>st</sup> and 3<sup>rd</sup> dekad of the month, moderate but sporadic rains were reported across the district with slightly heavier showers realized at the high upper rangelands in the northern and southern parts of the district. Recent showers experienced during the early part of January recharged some underground water sources, thus slightly improving access to water both for livestock and domestic use. However, the erratic rains has not been significant in terms of improvement of the grazing conditions.

Overall, there is a decline in the body condition of all livestock species, with an apparent rise in both morbidity and mortality rates, especially among the immature small stock. Livestock prices have remained unusually low: this situation is linked mainly to increased supply of animals, especially the small stock, to market. Furthermore, as livestock continued to move into areas of high security risks in search of pasture and water, there was resurgence of livestock raids and thefts.

Most pastoralist households are experiencing increasing food shortages and acute malnutrition attributed largely to very low availability of animal-based food sources and incomes. Access to milk has decreased, with only 17.5% of the households being able to provide milk to every member of the household. During January 2004, 50.6% of the households had no milk for members of the household. **In February, nutritional surveys indicate no significant improvements and in fact a deteriorating situation.**

***Rift Valley Province, West Pokot***

In West Pokot, the short rains were lower than expected which led to poor maize yields in the highlands. The areas most affected were the agro pastoral farming zones.

## 7. Recommendations/Conclusions

The erratic and low performance of the short rains has had a critical impact on crop production and livestock conditions in several divisions of each district discussed in this report. The distribution of relief food is urgently needed in Turkana and Marsabit, where the child malnutrition rates and livestock body conditions point to a serious problem. While the distribution of relief food is not recommended for the other districts, some form of intervention will be required to offset the impact of poor harvests and to raise the level of food security. Most of the short-term recommendations are for food-for-work (FFW) activities, seeds and school feeding. In many of the districts, the necessity to intervene will depend on the government's current delivery of relief food and the performance of the long rains. The time frame for intervention ranges from a minimum of four months to a maximum of nine months. Specific recommendations are described in the following sections.

### Assessment areas

#### *Kilifi*

##### Short term

For the short term, the mission estimated that around 52,000 hungry people (8 % of the total population of the district) would require a food aid intervention between March and June at 50% ration in the form of FFW activities. This recommendation assumes that the long rains will arrive in time (April) and follow a normal pattern between April-June and those farmers will start consuming green maize by the first week of July.

Performance of the 2004 long rains will need to be closely monitored. Depending on the results of the long rains, alternative food needs projections will need to be developed. If the rains delay beyond May 2004, more people (around 40 % of the total population) will require relief food with half of it going as free food distribution. Farmers require seed distributions especially for early maturing maize. District staff should be trained on Early Warning systems so as to provide accurate information for timely interventions.

##### Long term

Additional suggested interventions which do not fall in the emergency sphere but are related to development activities are: distribution of relief seeds, ox-ploughs, income generating activities, credit schemes, and livestock marketing Cooperatives, and Poultry and zero-gazed animals

#### *Malindi*

##### Short term

###### Food for Work:

The affected population will require a food aid intervention between March and June at 50% ration in the form of Food for Work activities.

###### Drought recovery seeds programme:

A further concern is the poor quality seeds that the local farmers use when planting. These seeds produce low yields and this could be enhanced through the distribution of

certified seeds, which provide a higher and better quality yield. One possible limitation is the high growth rate of the certified seeds demands good rains. An alternative would be the distribution of hybrid seeds, which require less rain though the possibility for replanting these at the same output is not feasible. Despite these limitations a distribution of seeds has been highlighted as a priority from the communities and with the establishment of a seed bank with a revolving distribution a more sustainable approach could be achieved.

The situation will need to be closely monitored over coming months and recommendations are based on the assumption that the long rains will arrive as expected. The majority of the population are dependent on the long rains for their main maize harvest and a further poor harvest is likely to create increased stress and destructive coping mechanisms which are beginning to feature in the current time. In addition to monitoring rain patterns other food security indicators such as land cultivated, availability of casual labour and market prices should also be monitored. Through this monitoring reorientation of the recommendations from this assessment will be possible.

#### Long term

##### School feeding programme:

In order to enhance the effectiveness of the free primary education and on the performance of the children, school feeding programmes are strongly recommended. At present school feeding activities are conducted in a small number of schools using Government of Kenya food and have demonstrated very positive results, thus the possibility of expansion to other schools where feasible is recommended. Ministry of Education should be encouraged to target the WFP sponsored School Feeding Programme for some schools in the Ranching livelihood zones of Malindi.

##### Agricultural diversification of drought resistant crops including enhanced extension support:

Maize as a highly water dependent crop is very vulnerable to poor and erratic rains. Thus has not been an effective crop in the recent years. The introduction of more drought tolerant crops such as sorghum, millet and enhanced cassava production could be developed with an enhanced agricultural extension support. This could then lessen the impact with poor rains and subsequent food insecurity.

In addition, enhanced agricultural extension support to develop and improve storage facilities for harvested maize, improve pest management control, encourage intercropping, use of ox ploughs and other innovative sustainable agricultural activities to enhance overall agricultural yield would be recommended.

##### Improved irrigation systems:

Although water is available from the Sabaki River, the team noted the lack of appropriate irrigation techniques. It was felt that a much further exploitation of these systems could enhance the agricultural productivity substantially in the Riverine communities.

##### Re-Afforestation and Agro-forestry programmes:

Charcoal and wood harvesting production has been identified as a major source of income (contributing up to 30% in most households). Thus in spite of the fact that charcoal burning is illegal it must be assumed that it will continue for some time. The impact on the environment cannot be underestimated and therefore an opportunity to



replant should be encouraged at the earliest possible stage in all relevant parts of the district.

#### Livelihood diversification:

The most vulnerable group identified were the agriculturalist population in the ranching zone. This was primarily due to the dependence on the rain or the river, for a minority, with limited opportunity to diversify livelihood. For that reason it was felt that further opportunities to provide income, such as identified in the areas closer to the ocean, could reduce their vulnerability to poor rains. Such activities as improved irrigation to enhance their agricultural production, micro finance to enhance their own market systems or agricultural diversification to cash cropping could be recommended.

#### Market support at micro level:

As many communities are involved in cash cropping to some extent (pineapples, cassava, cashew nuts, mangoes, cow peas and green grams) the opportunity to support and enhance community level market systems such as establishment of cooperatives and micro finance activities (to purchase fertilisers, better quality seeds, sprays etc) should be encouraged. Although the market systems appear well organised in the district more empowerment of the community to develop their income generation possibilities would reduce their vulnerability to poor rains in the future. In addition the promotion of local markets with accompanied improved transport facilities to the villages could also be encouraged.

### *Kwale*

#### Short term

- Food assistance in Kwale district will be needed for a period of six months. Food for work is the best approach without overlooking the needs of the aged and disabled. This is in anticipation of adequate long rains and subsequent good harvest, otherwise the period could be extended and the numbers increased.
- There should be an emphasis on providing seeds for the next planting season.
- Retargeting and scaling up of school feeding programs will be necessary.
- Although the local population will decide on priorities, development/desilting of pans will be most beneficial in the agro-pastoral areas of Samburu, Kinango and Msambweni.
- Some of the places visited lacked safe drinking water. The situation was worst in Kiwegu village in Msambweni divisions. The locals reported that they rely on stagnant floodwater that has led to high prevalence of bilharzia. Through Food for Work programs, communities could be engaged in improving water pumps.

#### Long term

- Improved monitoring and early warning capacity
- Construction of strategic boreholes and pans in pasture areas
- Provision of water from the Mzima pipeline
- Confine wildlife to the park

- Construction of all weather roads to take produce from the farms to urban markets
- Create markets for the agricultural produce (bixa, coconut, cashew nut)
- Provision of modern fishing gear and access to sea (Mushrooming hotels deny access)
- Provision of electricity and cold storage facilities
- Rehabilitation of access roads from Lunga Lunga highway to Vanga and Kiwegu
- Provision of safe drinking water for Wasini, Vanga and Kiwegu

### *Taita Taveta*

#### Short term

Food assistance should be considered for a total population of 43,700 from March to July 2004 when the harvest from the long rains is expected. Participation of community food-for-work should be mandatory to access food. The concept is popular with the community. Targeting should be done to ensure only the needy benefit from the exercise.

In addition, national parks occupy more than half the district landmass. Animals stray out into people's fields, destroying an average of 25% of the planted crops each season. Immediate measures to confine the wild game to the park should be undertaken. Compensation scheme for such losses is reintroduced and payment made promptly.

Certified seeds should be provided and drought tolerant crops need to be introduced in the lowland areas where rainfall is inadequate. Storage pests (Great Grain Borer) need to be eradicated. The community will need training in community based targeting and distribution.

Finally, improvement to access roads will enhance access to markets.

#### Long term

- It is important to open up more land for irrigation where the potential exists. There are large water masses in the District (lakes Chala and Jipe) which can be used to irrigate land that is currently rain fed.
- Fence off the Game parks to avoid human-wildlife conflict
- Improve livestock marketing.
- Provision of soft loans and farm inputs subsidies to enhance food security
- Development of affordable/appropriate methods of fodder preservation especially the agropastoral livelihood zones.

### *Kitui*

The main identified priorities for intervention are food aid in form of food for work, expansion of the school feeding programme, provision of seeds and interventions in the water sector. The affected populations will require interventions up to December when the impact of the next short rains season will be evident.

#### Short Term

- Food Aid: Food for Work was identified as an immediate intervention that will alleviate the current situation and in the long term will improve food insecurity through creation of more water sources, improvement of infrastructure etc

- Continuation and phase in of previously phased out schools under the School Feeding Programme: SFP would maintain enrolment and attendance rates and ensure that at least children received meals in school and reduce the burden on parents who will save on the cost of providing lunch.
- Water tankering: Provision of water for both domestic and livestock use will reduced the walking distances to alternative sources.
- Provision of seeds: Most farmers depend on part of their harvests for seeds to plant during the next season. Drought resistant and high quality seeds are normally expensive and are not affordable to most households. Provision of seeds will maintain quality and enough seed stocks for households with no access to seeds.

#### Long Term

- Scooping of water pans and drilling boreholes where possible will form a permanent solution to the water problem and spur development for both crops and livestock.
- Improve on marketing strategies for livestock and livestock products.
- Educate livestock farmers on standing hay conservation, preservation of dry grazing zones, rehabilitation of rangelands and negative effects of uncontrolled livestock movements.
- Vaccinate and treat animals against major diseases that have severe effects on animal health, cause deaths and prohibit sale of animals.

#### *Makueni*

The main priorities for intervention are food aid in form of food for work, expansion and retention of the school feeding programme, provision of seeds and interventions in the water sector. Given the current situation, the expected populations to be affected will require interventions up to December when the impact of the next short rains season will be evident.

#### Short term

- Food for Work: Most communities identified food for work as an immediate intervention to mitigate the current effects of drought. Apart from building assets in the water sector, FFW will ensure high target efficiency as only those who were really needy would register to work.
- Continuation and phase in of previously phased out schools under the School Feeding Programme: SFP would maintain enrolment and attendance rates and ensure that at least children received meals in school and reduce the burden on parents who will save on the cost of providing lunch.
- Provision of seeds: Most farmers depend on part of their harvests for seeds to plant during the next season. Drought resistant and high quality seeds are normally expensive and are not affordable to most households. Provision of seeds will maintain quality and enough seed stocks for households with no access to seeds.

#### Long term

- Irrigation: Technical inputs, capacity building and structures to assist in practicing irrigation along the Athi River and available permanent water sources.
- Construction and desilting of water dams, and boreholes near communities to reduce distances trekked to water sources. Currently there are few water sources situated near settlements and when these dry up, households trek longer distances to alternative water points.

- Construction of more watering points inside the Tsavo national park to minimize the movement of wildlife out of the park in search of water.
- Environmental conservation. Charcoal burning as a coping strategy has had an effect on the environment over time.

### *Kajiado*

#### Short and long term

##### Food for Work

- Vaccine against Foot and Mouth Disease urgently required for 350,000 cattle (@ Ksh 46 /dose per animal = Kshs.16, 300,000).
- General relief, with added UniMix for Singiraini location (Central division)
- Electric fencing to restrain wildlife (from Tsavo & Amboseli parks) from destroying crops.
- Training of the community on water use

After an appeal, the Office of the President provided some 7,000 bags of maize, 1,300 bags of beans and 2,047 cartons of vegetables.

### *Narok*

#### Short and long term

- Immediate Food For Work until April
- Certified maize seeds for the Maji Moto irrigation scheme farmers
- Development of the Mosirro and Maji Moto irrigation Schemes for enhanced production (Costed proposals are with the local irrigation engineers).
- Nutritional surveys for children under age five (Mosiro location).
- Electric fencing for the irrigated farms.
- Vaccine against F&MD urgently required for 450,000 cattle (@ Ksh 46 /dose per animal = Kshs.21, 000,000).

School that were removed from the school-feeding program should be reconsidered.

### *Bomet*

#### Short and long term

- Food for Fees/Work until August 2004. Some of the food-for-work can be used in the de-siltation of dams urgently.
- Certified maize seed
- F&MD vaccines to cover 200,000 cows (@ Ksh 46/dose per animal = Ksh 9,300,000).
- Explore the possibility of availing hay to lactating dairy cows to cushion the shortfall until the rains resume (for an estimated 5,000 dairy cows).

## **Non-Assessment areas**

The recommendations for Machakos, Nyeri, Koibatek and West Pokot, were for the provision of relief food. In other non-assessment areas, the recommendations were as follows.

### *Turkana*

#### Immediate (March through May)

- Relief food
- Supplementary feeding (UniMix should be part of the household ration)
- Therapeutic feeding

#### Medium Term (After May)

- Food for Work, if people are able
- Scale up the number of water points
- Rehabilitate existing water points
- Support to the Ministry for improvements to water points
- Restocking

#### Long Term

- Livelihood recovery

There is a need to jointly re-assess the food security status of pastoralist communities, especially in areas which continue to report persistently high levels of malnutrition among the under fives.

Restrictions on livestock movements and access to grazing resources should be lifted, particularly within the key grazing areas. Improved animal health service delivery is needed. This may be achieved through continuing to train and strengthen local level community animal health service providers.

### *Baringo*

Food-for-work should continue especially as we approach the dry months of the year when the food is scarce and animal prices are low. Some communities are not receiving food-for-work rations. Drugs, especially for malaria should be supplied to all health institutions in the district. Some cases of ECF, diarrhoea of kids and lambs and CCPP were reported in the sampled areas.

### *Isiolo*

The district's public health office should carry out public health campaigns in Garfasa, Muchuro and Kombolla locations to educate residents on the use of simple domestic water treatment techniques to reduce water borne diseases. Conflict prevention meetings should be held in all divisions to encourage peace-building initiatives. Kenya wild life service should respond to the problem of crop destruction by wild animals in Garfasa and Kinna locations.

*Marsabit*

Immediate

- A targeted community-based food distribution together with supplementary food for vulnerable children for Loiyangalani, Maikona and North Horr
- Close monitoring of the food security situation over the next three months.

If the long rains are normal/good, programmes can be modified to food or cash for work.

## ANNEX 1a: POPULATION REQUIRING ASSISTANCE AND MODALITIES

DISTRICT	LIVELIHOOD of AFFECTED POPULATION	NUMBER IN NEED OF ASSISTANCE	MODALITY	TIME FRAME
<b>Kilifi</b>	Ranching, Agro-Pastoral, Food Cropping	<b>52763</b>	Seed FFW	Mar-Jun
<b>Malindi</b>	Mixed livestock and agriculture, Salt Farms, Ranching, Riverine	<b>30000</b>	Seed FFW	Mar-Jun
<b>Kwale</b>	Agro-pastoral, Mixed Farming, Agriculture	<b>116491</b>	Seed FFW School Feeding	Mar-Aug
<b>Taita Taveta</b>	Mixed farming-Crop/Livestock, Urban, Irrigation, Horticulture	<b>40666</b>	FFW SFP Seed	Mar-Jul
<b>Kitui</b>	Agro pastoral/Agriculture	<b>80213</b>	FFW SFP Seed	Apr.-Dec
<b>Makueni</b>	Agro pastoral/horticulture, mixed farming, Ranching	<b>86410</b>	FFW SFP Seed	Apr.-Dec
<b>Kajiado</b>	Mixed Farming, Agro Pastoral, Irrigated Cropping, Urban	<b>68760</b>	FFW Relief Food for Singiraini location	Mar-Jul
<b>Narok</b>	Pastoral, Agro Pastoral, Mixed Farming, Trading,	<b>77726</b>	FFW Seed	Mar-Apr
<b>Bomet</b>	Mixed Farming/Agro Pastoral	<b>42700</b>	FFW Seed	Mar-Apr

<b>DISTRICT</b>	<b>LIVELIHOOD of AFFECTED POPULATION</b>	<b>NUMBER IN NEED OF ASSISTANCE</b>	<b>MODALITY</b>	<b>TIME FRAME</b>
<b>West Pokot</b>	Agro-Pastoral, mixed farming, pastoral, livestock	<b>99155</b>	Food for Work	Apr-Jun
<b>Machakos</b>	Food Cropping, Livestock,	<b>59000</b>	Food for Work	Apr-Jun
<b>Koibatek</b>	Agro-Pastoral, Trading	<b>22800</b>	Relief Food	Jun-Dec
<b>Nyeri</b>		<b>77869</b>	Relief Food Seed	Feb-Jun
<b>Turkana</b>	Peri-urban, Agropastoral, pastoral, Fisher Folk, Peri urban	<b>99000</b>	Relief Food Supplement -- -Feeding Therapeutic Feeding	Mar-May
<b>Marsabit</b>	Pastoral, Agro Pastoral, Mixed Farming	<b>84776</b>	Relief Food Supplement -- -Feeding	Mar-April
<b>Baringo</b>	Agro Pastoral, Pastoral, Mixed Farming, Irrigated Cropping	<b>22,455</b>	FFW	Apr-Sept
<b>Isiolo</b>	Agro Pastoral, Pastoral	<b>32273</b>	FFW	Apr-Sept
<b>TOTAL</b>		<b>1082801</b>		



### ANNEX 1b: NEEDY POPULATION AND METRIC TON ESTIMATES

DISTRICT	DISTRICT POPULATION	% OF DISTRICT IN NEED OF ASSISTANCE	DIVISION	NUMBER IN NEED OF ASSISTANCE	MT per MONTH	MT for 4 MONTHS
<b>Kilifi</b>	598,467	0.09	Bamba	12156	83.88	336
			Ganze	6250	43.13	173
			Kaloleni	23925	165.08	660
			Vitengeni	10432	71.98	288
				<b>52763</b>	<b>364.06</b>	<b>1456</b>
<b>Malindi</b>	309,000	0.10	Magarini		0.00	0
			Malindi		0.00	0
			Marafa		0.00	0
				<b>30000</b>	<b>207.00</b>	<b>828</b>
<b>Kwale</b>	558,051	0.21	Msambweni	46578	321.39	1286
			Samburu	39027	269.28	1077
			Kinango	30886	213.11	852
				<b>116491</b>	<b>803.79</b>	<b>3215</b>
<b>Taita Taveta</b>	184,240	0.22	Tausa	5069	34.97	140
			Voi	16369	112.94	452
			Taveta	7956	54.89	220
			Mwatate	11273	77.78	311
				<b>40666</b>	<b>280.60</b>	<b>1122</b>
					0.00	0
<b>Kitui</b>	251,046	0.32	Ikutha	19138	132.05	528
			Mutha	17100	117.99	472
			Mutomo	20003	138.02	552
			Yatta	7733	53.36	213
			Mutitu	7818	53.94	216
			Mwitika	8421	58.10	232
				<b>80213</b>	<b>553.468044</b>	<b>2214</b>

DISTRICT	DISTRICT POPULATION	% OF DISTRICT IN NEED OF ASSISTANCE	DIVISION	NUMBER IN NEED OF ASSISTANCE	MT per MONTH	MT for 4 MONTHS
<b>Makueni</b>	848000	0.10	Kibwezi	19744	136.24	545
			Mtito Andei	22404	154.59	618
			Kathonzweni	13971	96.40	386
			Makindu	15753	108.69	435
			Wote	4514	31.14	125
			Kilome	1550	10.70	43
			Nguu	6029	41.60	166
			Kalawa	6480	44.71	179
			Kisau	2260	15.59	62
			Mbitini	2725	18.80	75
			Kasikeu	1998	13.78	55
			Matiliku	2174	15.00	60
			Kaiti	2063	14.23	57
			Kilungu	1515	10.46	42
			Mbooni	1879	12.96	52
Tulimani	1097	7.57	30			
			<b>86410</b>	<b>596.23</b>	<b>2385</b>	
<b>Kajiado</b>	446000	0.15	Loitokitok	9543	65.85	263
			Magadi	8045	55.51	222
			Mashuru	12483	86.13	345
			Namanga	8918	61.54	246
			Ngong'	12420	85.70	343
			Central	17351	119.72	479
						<b>68760</b>
<b>Narok</b>	380099	0,20	Mara	15750	108.68	435
			Ololunga	19500	134.55	538
			Loita	4283	29.55	118
			Mau	16460	113.57	454
			Central	4527	31.24	125
			Mulot	1506	10.39	42
			Osupuka	15700	108.33	433
						<b>77726</b>
<b>Bomet</b>	427000	0.10	Ndanai	9828	67.81	271
			Sigor	10844	74.83	299
			Longisa	13556	93.53	374
			Siongiroi	8472	58.46	234
						<b>42700</b>

DISTRICT	DISTRICT POPULATION	% OF DISTRICT IN NEED OF ASSISTANCE	DIVISION	NUMBER IN NEED OF ASSISTANCE	MT per MONTH	MT for 4 MONTHS
<b>West Pokot</b>	380099	0.26	kacheliba	13947	96.23	385
			kongelai	13830	95.43	382
			alale	20139	138.96	556
			kasai	6655	45.92	184
			cheseгон	10770	74.31	297
			shepareria	33814	233.32	933
				<b>99155</b>	<b>684.17</b>	<b>2737</b>
<b>Machakos</b>	967694	0.06	Yathui	9600	66.24	265
			Katangi	7500	51.75	207
			Yatta	14000	96.60	386
			Masinga	11000	75.90	304
			Matungulu	10500	72.45	290
			Kalama	6400	44.16	177
				<b>59000</b>	<b>407.10</b>	<b>1628</b>
<b>Koibatek</b>	151000	0.15	Mumberes	3091	21.33	85
			Torongo	436	3.01	12
			E/Ravine	9275	64.00	256
			Esageri	1939	13.38	54
			Sirwa	334	2.31	9
			Kimng'orom	1017	7.02	28
			Emining	2268	15.65	63
			Mogotio	3144	21.70	87
			Kisanana	1297	8.95	36
	<b>22800</b>	<b>157.32</b>	<b>629</b>			
<b>Nyeri</b>	484,767	0.16	Kieni East	29842	205.91	824
			Kieni West	48027	331.39	1326
				<b>77869</b>	<b>537.30</b>	<b>2149</b>
<b>Turkana</b>	495000	0.20	Turkwel	10025	69.17	277
			Kalokol	4624	31.91	128
			Katilu	3550	24.50	98
			Lokori	6163	42.52	170
			Lokitaung	37319	257.50	1030
			Kibish	37319	257.50	1030
	<b>99000</b>	<b>683.10</b>	<b>2732</b>			

DISTRICT	DISTRICT POPULATION	% OF DISTRICT IN NEED OF ASSISTANCE	DIVISION	NUMBER IN NEED OF ASSISTANCE	MT per MONTH	MT for 4 MONTHS
<b>Marsabit</b>	133566	0.63	Loiyangalani	15683	108.22	433
			Maikona	15922	109.86	439
			North-Horr	17928	123.71	495
			Laisamis	18281	126.14	505
			Gadhamoji	6042	41.69	167
			Central	10920	75.35	301
				<b>84776</b>	<b>584.95</b>	<b>2340</b>
<b>Baringo</b>	291,346	0.08	Bartabwa	2576	17.77	71
			Kipsaraman	3391	23.40	94
			Kolloa	3732	25.75	103
			Nginyang	8210	56.65	227
			Tangulbei	4546	31.37	125
				<b>22455</b>	<b>154.94</b>	<b>620</b>
<b>Isiolo</b>	118222	0.27	Merti	5546	38.27	153
			GarbaTulla	2465	17.01	68
			Kinna	2508	17.31	69
			Oldonyiro	3400	23.46	94
			Central	18354	126.64	507
				<b>32273</b>	<b>222.68</b>	<b>891</b>
<b>TOTAL</b>	<b>7023598</b>	<b>0.15</b>		<b>1082801</b>	<b>7471</b>	<b>29885</b>

## ANNEX 2: LIVELIHOOD ZONE DESCRIPTION BY DISTRICT

Livelihood Zone	Description
<b>Turkana</b>	
Agro-Pastoral	- Practice pastoral and little crop farming
Pastoral	-
Fisher folks	-
Peri Urban	-
<b>Baringo</b>	
Agro-Pastoral	Practice pastoral and little crop farming
Mixed Farming	Depend on Crop and Livestock Entreprises
Pastoral	Depend wholly on livestock
Irrigated Cropping	Depend on Crops under irrigation
<b>Isiolo</b>	
Agro-Pastoral	Agro-pastoral
Pastoral	Pastoralists
Urban	Urban
Agricultural	Agriculture
<b>Marsabit</b>	
Agro-Pastoral	Agro - pastoral
Urban	township
Pastoral: Camels	Camel keeping
Pastoral:Cattles, sheep, goats and Camels	Pasturalist cattle and camels
<b>West Pokot</b>	
Agro-Pastoral	-
Mixed Farming	-
Pastoral	-
Livestock	-
<b>Machakos</b>	
Food Cropping	food crops zone
Urban	-
Ranching	ranching zone
Livestock	livestock
Coffee zone	Coffee zone
Livestock-Crop zone	-
<b>Koibatek</b>	
Agro-Pastoral	Crops & Dairy
Mixed Farming: FoodCrop/Livestock	Crops & Dairy
Trading	Around the Urban centres
Mixed Farming: Dairy	Crops & Dairy
<b>Kwale</b>	
Agro-Pastoral	-

Mixed Farming	maize & agricultural
Wildlife	National Reserve
Urban fishing	-
Agricultural	-
Lowland Farming	-
<b>Taita Taveta</b>	
Urban	-
Waged Labour	Ranches, mines and sisal estate
Mixed Farming: Horticulture/FoodCrops/Dairy	as well as dairy
Mixed Farming: FoodCrop/Livestock	-
Mixed Farming:IrrigatedHorticulture/FoodCrop/Livestock	Irrigated Horticulture, Livestock and Food Crops.
Agricultural	National Park
<b>Kilifi</b>	
Agro-Pastoral	Characterized by Mixed Farming, Timber and Firewood Harvesting and Charcoal Burning
Cash Cropping	Characterized by Rain fed Cropping, Irrigated Cropping, Casual Waged Labour and Trading of Farm Produce
Food Cropping	Characterized by Rain fed Food Cropping and Trade in Farm Produce
Urban	Characterized by Formal Employment, Casual Waged Labour, Trade of Non Farm Produce, Retailing and Petty Trade
Fishing and Harvesting	Characterized by Mangrove Harvesting, Fishing together with Boat Repairs
Ranching	Large Scale Commercial Ranching, Hunting and Gathering, Charcoal, Firewood and Bee Keeping
<b>Malindi</b>	
Urban	Formal employment and trade
Fishing and Harvesting	Marine fishing
Ranching	Livestock production and forest exploitation
Mixed Farming: FoodCrop/Livestock	crop and livestock production
Salt works	Casual workers in salt harvesting and formal waged labour
Forest/Tourism	Casual waged labours and forest exploitation.
<b>Makueni</b>	
Agro-Pastoral	Is a farming system biased towards livestock production complimented by subsistence crop farming.
Casual Waged Labour	People tried to work in farms/ranches.
Mixed Farming	Is a farming system where by crop and livestock compliment each other.
Ranching	Zone where by large scale rearing of animals in a well designed and

	developed area.
Trading	Zone where by characterized by exchanged goods and services.
Wildlife	Zone is exclusively inhabited by wildlife and gazetted as National Park
<b>Kitui</b>	
Agro-Pastoral	Agro-pastoral
Urban	Township
Wildlife	Wildlife
Agricultural	Agriculture
<b>Kajiado</b>	
Agro-Pastoral	agro-pastoral
Pastoral	pastoral
Urban	Urban
Wildlife	Game park
Irrigated Cropping	Agriculture rain fed / irrigated
Peri Urban	peri-urban
<b>Narok</b>	
Agro-Pastoral	Beef cattle, sheep and goats production, wheat, maize production, land leasing and game ranching.
Mixed Farming	Barley, wheat, pyrethrum, potatoes, vegetables, dairy cattle, sheep, beef cattle, bee keeping, and poultry products.
Pastoral	Beef cattle, sheep and goat productions eco-tourism wildlife trusts.
Trading	Mainly in towns and market centers, selling of food items, agro-chemical, clothes, household goods and hotels.
<b>Bomet</b>	
Mixed Farming:	Tea, Maize, Pyrethrum, Potatoes, Beans, 4-5 Dairy cows (crosses), 3-4 Acres land.
Mixed Farming: Lowlands	Maize, Finger Millet, Sweet Potatoes, 7-8 dairy Crosses, 5-8 Acres Land
Agro-Pastoral	Maize, Sweet Potatoes, 10 zebu, 5-8 Acres Land
Casual Waged Labour	Go to Buret, Kericho for work, 1-2 cows, 1-2 acres of land
Mixed Farming	Tea, maize, pyrethrum, potatoes, beans, 4-5 dairy cows/crosses and 3-4 acres of land