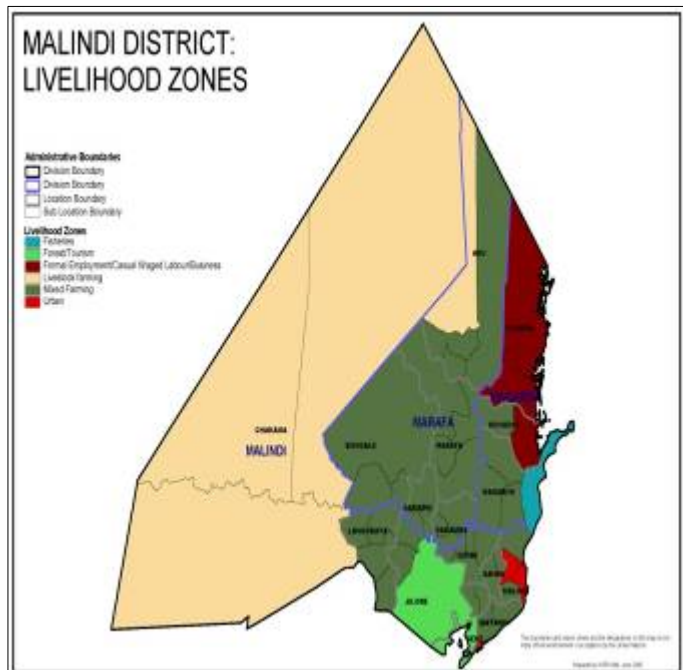




**OFFICE OF THE PRIME MINISTER
MINISTRY OF STATE FOR THE DEVELOPMENT OF NORTHERN KENYA AND OTHER ARID LANDS
ARID LANDS RESOURCE MANAGEMENT PROJECT II**

DROUGHT MONITORING BULLETIN, AUGUST 2009

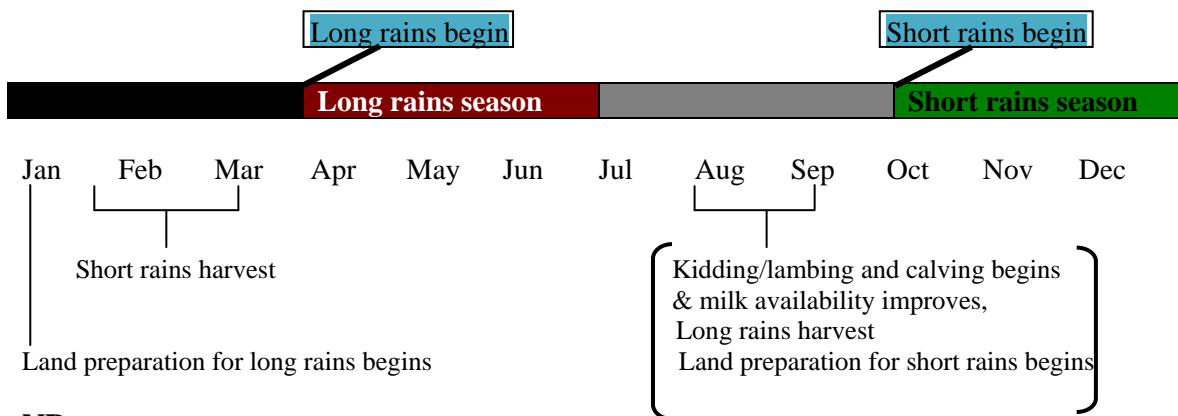
Malindi & Magarini Districts



Warning Stages

| Livelihood Zone | Stage | Trend |
|-------------------------------------------|-------|-----------|
| Mixed farming | Alarm | Worsening |
| Ranching/Livestock | Alarm | Worsening |
| District | Alarm | Worsening |
| * Livelihood zones monitored by EWS Data. | | |

Seasonal Calendar



NB:

- Malindi district has a bimodal rainfall pattern
- Long rains fall between April and July while short rains fall between October and December

Situation overview

- The amount of rainfall received during the month declined from an average of 43.6mm in July to 16.9mm in August, representing a 61.3% drop. The temporal distribution of the rainfall was 7 days. Most of the rains were received along the coastal belt of the district.
- Following the low amounts of rains received, the quality and quantity of natural vegetation and pasture deteriorated in the district. This was more evident in the livestock farming areas of Chakama and parts of the mixed farming zone bordering the livestock farming zone i.e. Bungale, Langobaya and Adu locations.
- River Sabaki, boreholes, shallow wells and the main Baricho – Malindi pipeline were the main water sources during the month across the district. However, the average distance to the nearest water source increased from 5.4 km in July to 6.7km in August.
- Despite long distances to grazing areas, coupled with shortages of water, the general body condition of all livestock types was fair in many areas of the mixed farming zone as animals were able to access pasture and water in varied distances.
- Enforcement of the quarantine which was imposed by the Veterinary department on movement of animals following an outbreak of foot and mouth disease (FMD) in Goshi, Fundissa (Msumarini) Magarini (Mambrui) and Sabaki (Prison farm) locations in the mixed farming zone continued during the month.
- The long rains maize harvesting season reached its peak during the month. Harvesting of maize was only evident along the coastal belt in the mixed farming zone. However, the Department of Agriculture has indicated that the yields were below average in the district.
- There was an increase in the district average livestock prices. Cattle price increased by 15% from Ksh7,902 in July to Ksh9,092 in August, while that of goats increased by 10.9% from Ksh901 in July to Ksh 999 in August. This was attributed to low number of animals offered for sale by households particularly in the livestock farming zone as most animals were driven towards Tsavo National Park for pasture.
- The average district maize price decreased by approximately 50% i.e. from Ksh39.85 in July to Ksh20. The drop was attributed to improved maize stocks at the household level following the harvesting of the long rains maize crop during the month, particularly along the coastal belt. No maize was sold in the livestock farming zone.
- Casual labour was the major source of income for many households across all livelihood zones, followed by sale of charcoal and formal employment.
- The number of children who were at risk of malnutrition during the month decreased from 12.4% in the previous month to 9.7% in August 2009. In the livestock farming zone 15.5% sampled children were at risk of malnutrition during the month compared to 3.8% in the mixed farming zone.
- Flagged areas include Chakama location (livestock farming zone) and Adu, Bungale, and Langobaya locations (mixed farming zone). Other areas include Chamari (inhabited by the Watha community) in Mambasa sub location in Marafa location in the mixed farming zone.

Recommendations to DSG and KFSM

- Continued EMOP GOK/WFP relief food operations. Food-for-asset (FFA) aid distribution to target more beneficiaries
- The department of Agriculture to encourage farmers to increase acreage under food crops to take advantage of the expected above normal El-nino like short rains

Current interventions

Food aid

- Supplementary feeding for under-5s through 17 government health facilities i.e. 16.425 metric tons of Unimix and 1.643 metric tons of vegetable oil was distributed during the month.

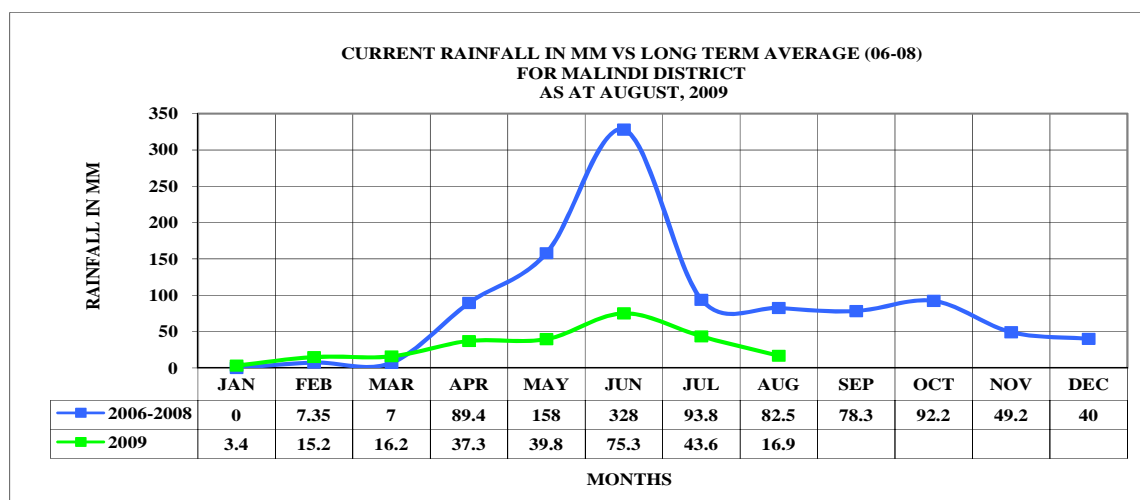
- Supply of relief food to 31,910 beneficiaries in Marafa, Langobaya and Magarini divisions in the EMOP programme. A total of 270,003 metric tons of assorted food items was distributed by Kenya Red Cross.
- School feeding programme targeting 94 primary schools during the August holidays as directed by the government.

Non food interventions

- Quarantine on movement of livestock in Magarini & Sabaki locations to control foot and mouth disease.
- Water trucking to schools in Marafa division to support school feeding programme.

1.0 Environmental indicators (Stability)

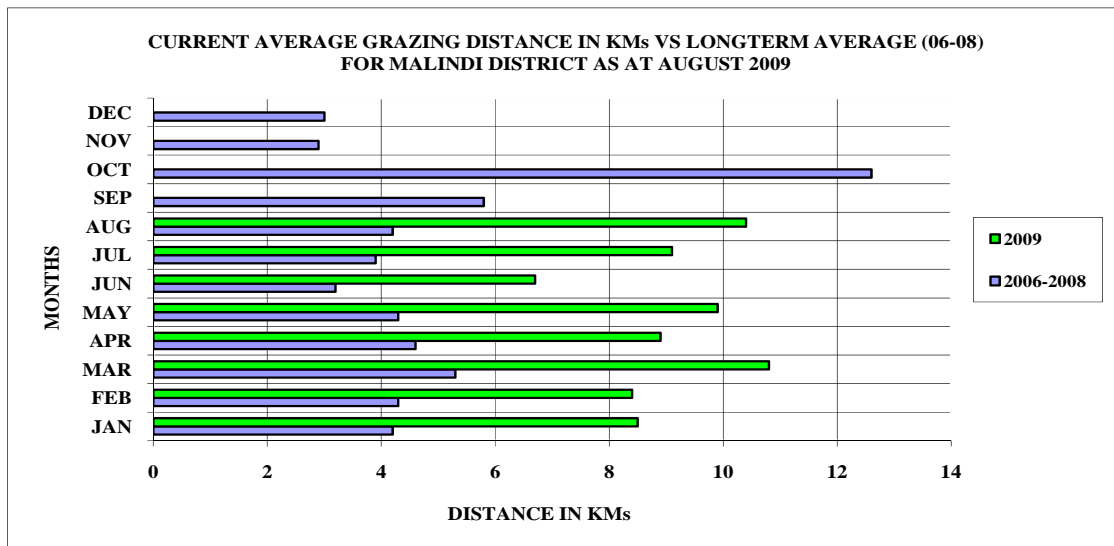
1.1 Rainfall



Source: ALRMP sample sites. Total sample size (n) – 12 sites

- There was a decline in the amount of rainfall received during the month from an average of 43.6mm in July 2009 to 16.9mm in August 2009, representing a 61.3% drop. The temporal distribution of the rainfall was 7 days. Most of the rains were received along the coastal belt of the district.
- The amount received was 79.5% below the long term mean of 82.5mm
- The meager rains were however important for the growth of pulses, vegetables and late planted maize along the coastal belt.
- The livestock farming zone recorded the lowest amounts of rainfall during the month i.e. Kisiki cha Wagirama – 3.5mm.

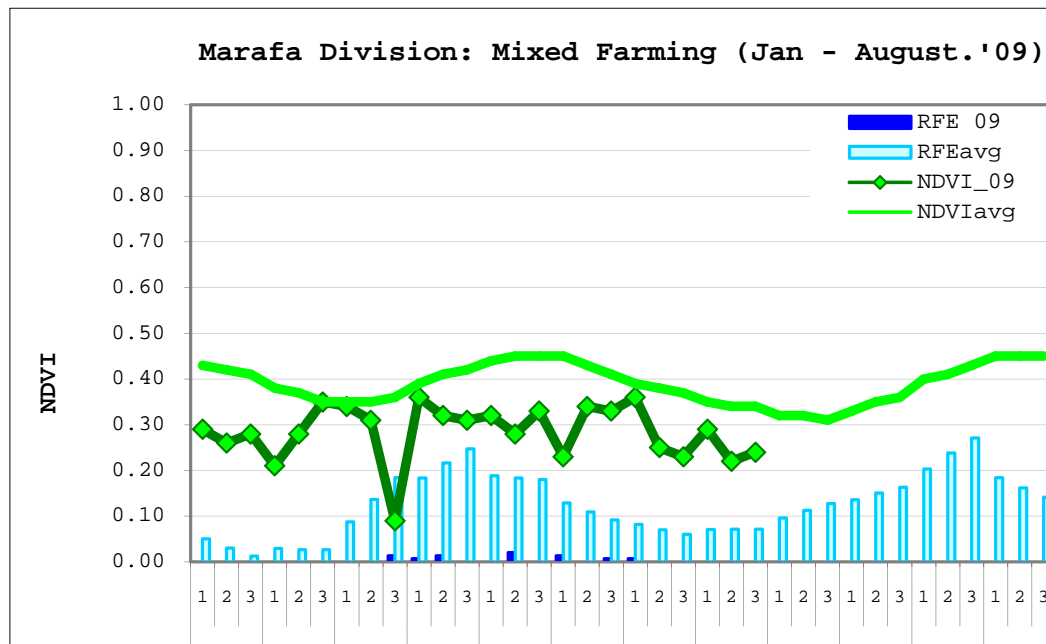
1.2 Condition of natural vegetation and pasture



Source: ALRMP sample sites. Total sample size (n) 240 households

- There was a marked deterioration in the natural vegetation and pasture condition in the district during the month under review owing to poor moisture.
- The quality and quantity of the available pasture and natural vegetation in the mixed farming and livestock farming livelihood zones was poor.
- As a result, the average distance to the nearest grazing fields increased from 9.1km in July 2009 to 10.3km in August 2009.
- The worst hit areas include the livestock farming areas of Chakama and mixed farming areas of Marafa, Bungale and Adu.
- The scenario was not normal during the time of the year as the average grazing distance was longer than the long term mean.

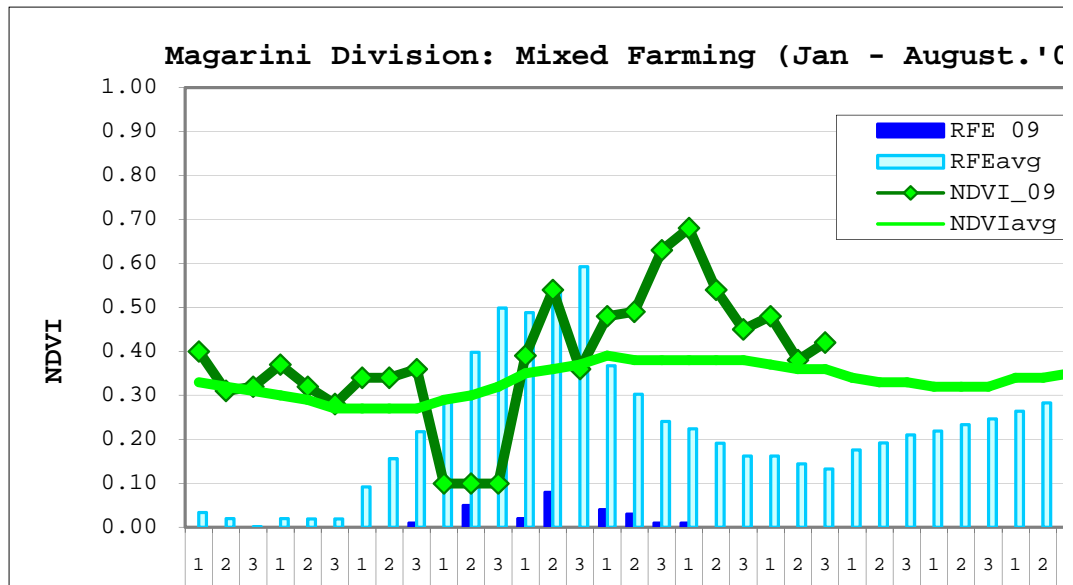
**Normalized Difference Vegetation Index (NDVI) & Rainfall Estimate (RFE)
Marafa Division - Comparatively Worst Case Scenario**



- The quantity of pasture and browse in Marafa division in the upper part of the mixed farming zone bordering the livestock zone slightly deteriorated during the month as shown in the graph above. The division borders the livestock farming zone where pasture and natural vegetation was very poor.

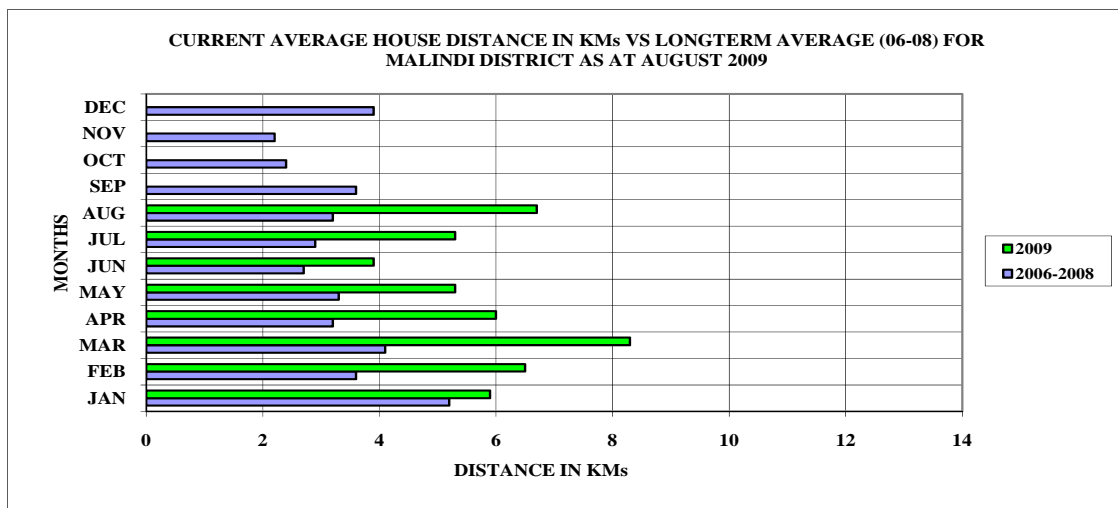
- This was attributed to a prolonged dry spell in the livestock farming zone and areas bordering it. The overall pasture condition in these areas was therefore below the average.

**Normalized Difference Vegetation Index (NDVI) & Rainfall Estimates
Magarini Division - Comparatively Best Case Scenario**



- The mixed farming areas of Magarini division along the coastal belt received most of the rains in the district during the month under review. The pasture and natural vegetation condition in this division improved significantly in the first dekad of the month but deteriorated in the second and third dekads as indicated in the above graph, owing to reduced amounts of rainfall.
- However, the overall scenario was still way above the long term average.

1.3 Distance to water sources



Source: ALRMP sample sites. Total sample size (n) 240 households

- As in the previous month, River Sabaki, boreholes, shallow wells and the main Baricho – Malindi pipeline were the main water sources during the month across the district.
- The number of community earth dams and pans which provided water to households during the month dwindled as a result of poor rains. Most of them did not accumulate adequate amounts of water during the just ended long rains.

- Marafa borehole which serves most of Marafa location broke down. Areas affected by water shortages during the month included Marafa, Magarini, Chakama, Bungale and Adu locations. The average distance to the nearest water source increased from 5.4 km in July to 6.7km in August. Schools implementing the school feeding programme in Marafa division were hit by water shortages. Distances were shorter in the mixed farming zone than in the livestock farming zone
- The above scenario was not normal at the time of the year since the distance was longer than the long term mean.

1.4 Emerging issues

- Poor rains received during the month were detrimental to the development and sustenance of pasture and natural vegetation in the district.
- Shortage of pasture led to migration of cattle from Kisiki sub location in the livestock farming zone to Tsavo National Park where there is pasture .
- Shortage of water in Marafa, Magarini, Chakama, Bungale and Adu locations. This has affected the school feeding programme in a number of schools.

1.4.1 Insecurity/Conflict/Human displacement

- Conflicts were reported between pastoralists and crop farmers along the riverine areas of Chakama location in the livestock farming zone.

1.5 Implications on food security

- The rains received during the month along the coastal belt were crucial for the growth of legumes and late planted maize. This had a positive impact on food security along the region.
- Poor pastures and natural vegetation and increased distances to grazing fields in the livestock farming poses a threat to the overall food security situation in this zone.

2.0 Rural economy indicators (Food availability

2.1 Livestock production

2.1.1 Livestock body condition

- The general body condition of all livestock types was fair in many areas of the mixed farming zone as animals were able to access pasture and water.
- However, livestock in the livestock farming zone have started exhibiting signs of deteriorating body condition owing to diminishing pastures and natural vegetation, long distances to grazing areas and shortages of water.
- The observed livestock condition was not normal during the time of the year.

2.1.2 Livestock diseases

- The quarantine that was imposed on movement of animals in some parts of the district in the previous month following reports of a foot and mouth disease outbreak continued to be enforced during the month under review. Areas affected include Goshi, Fundissa (Msumarini) Magarini (Mambrui) and Sabaki (Prison farm) locations in the mixed farming zone.

2.1.3.1 Milk production

- There was a sharp reduction in the amount of milk produced by sampled households during the month i.e. from an average of 139 bottles of 750ml capacity the previous month to a measly 69 bottles.
- Mixed farming registered the greatest reduction in the amount of milk produced. In this zone, milk production reduced by 66%, from 221 bottles in July to 75 bottles, while in the

livestock farming zone milk yields slightly increased to an average of 63 bottles compared to 57 bottles in July .

- The overall decline in milk production was attributed to dwindling pastures and natural vegetation in both livelihood zones.

2.2 Crop production

2.2.1 Timeliness and status of various crop production activities

- The month under review marked the beginning of the long rains crop harvesting season in the district. However, only farmers along the coastal belt harvested maize during the month.
- There were no cereals to harvest in the livestock farming zone i.e. Chakama location and parts of the mixed farming zone i.e. Langobaya, Bungale and Adu locations.
- Late planted maize along the coastal belt was at tussling stage during the month.
- The following were the main field activities in the mixed farming zone during the month;
 - Weeding in pulses i.e. cowpeas and beans along the coastal belt.
 - Transplanting of vegetables in both irrigated farms along the riverine areas.
 - Harvesting and marketing of mangoes and green leafy vegetables along riverine areas.
 - Pest and disease control in irrigated crops in vegetables and perennial crops
 - Nursery management for vegetables

2.2.2 Pests and diseases

- Maize aphids affected tussling maize in the mixed farming zone. Farmers were advised accordingly by the department of Agriculture.

2.2.3 Harvest

- Maize and mangoes were harvested during the month, mostly along the coastal belt of the mixed farming zone. No harvests were realized in the livestock farming zone.
- Green vegetables were also harvested from farms along the river (Sabaki) and rain-fed areas in the mixed farming zone.

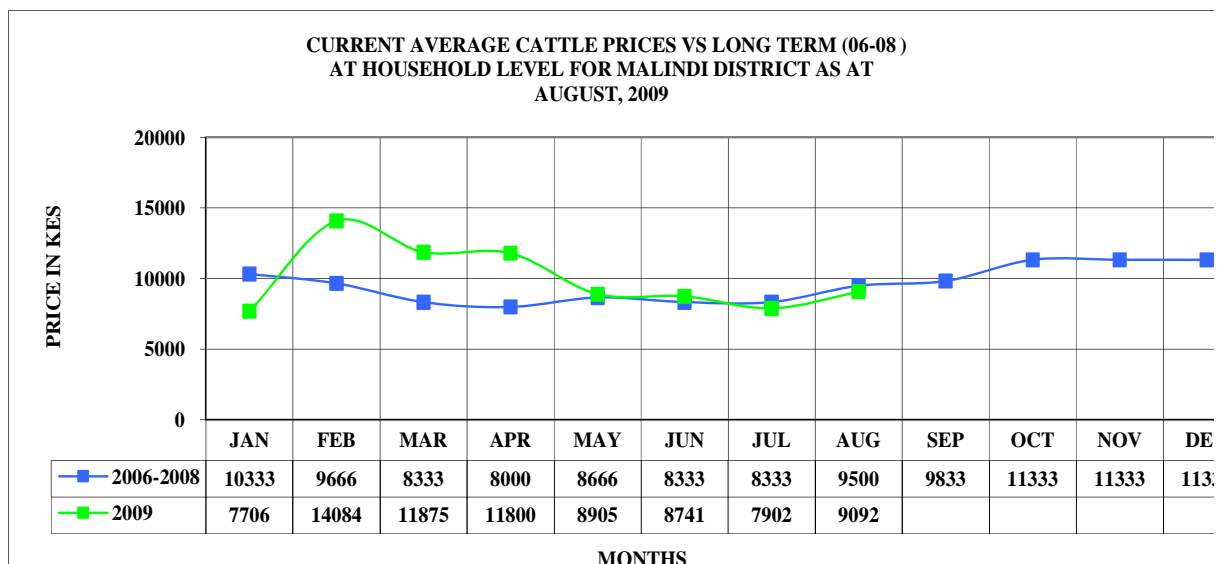
2.2.4 Implications on food security

- The food security status of most households along the coastal belt in the mixed farming zone significantly improved during the month owing to the onset of the main harvesting season, although yields were below normal according to the department of Agriculture.
- Low milk production among livestock keeping farmers in both livelihood zones affected food security as less amount of milk was available for consumption and sale.

3.0 Access to food

3.1 Livestock marketing

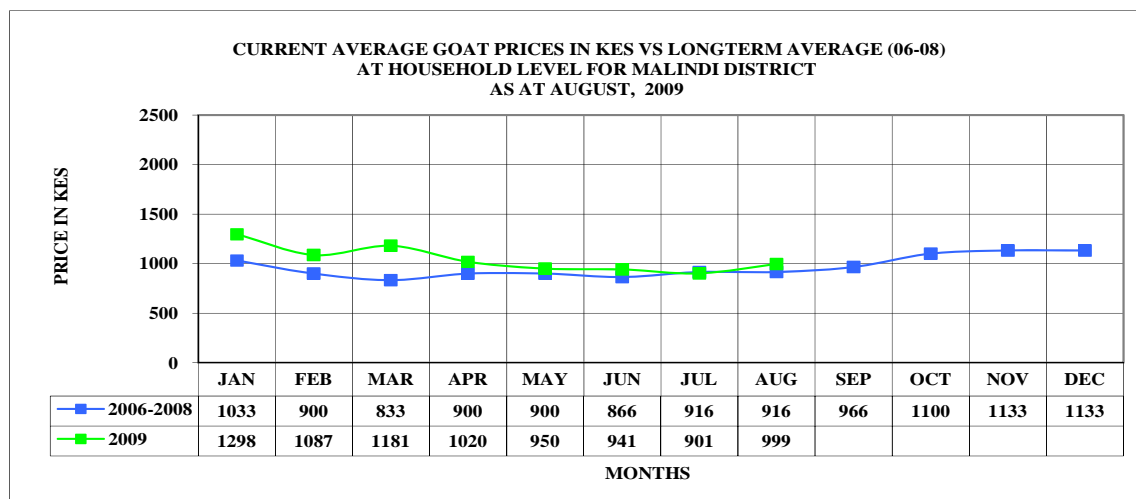
3.1.1 Cattle prices



Source: ALRMP sample sites. Total sample size (n) 240 households

- The district monthly average cattle price increased by 15% from Ksh7,902 in July to Ksh9,092 during the month under review. However, the monthly average price was also 4.3% below the long term average. The increase in the monthly district average price could be attributed to low supply of animals offered for sale by households particularly in the livestock farming zone as most animals were driven towards Tsavo National Park for pasture.
- Due to improved pasture, livestock keepers in the mixed farming zone are now holding onto their animals in anticipation of better prices. Prices were higher in the livestock farming zone at Ksh10985 and lower in the mixed farming zone at Ksh 7,400.
- The above scenario was normal during the time of the year.

3.1.2 Goat prices



Source: ALRMP sample sites. Total sample size (n) 240 households

- There was an increase in the district average goat price, from Ksh 901 in July to Ksh 999 during the month under review. This represents a 10.9% appreciation in the average price for August 2009. As in average cattle price, the increase could be attributed to a slump in supply of goats offered for sale in the local markets by households, particularly in the mixed farming zone where there is improved pasture and therefore farmers are holding onto their goats in anticipation of better prices.

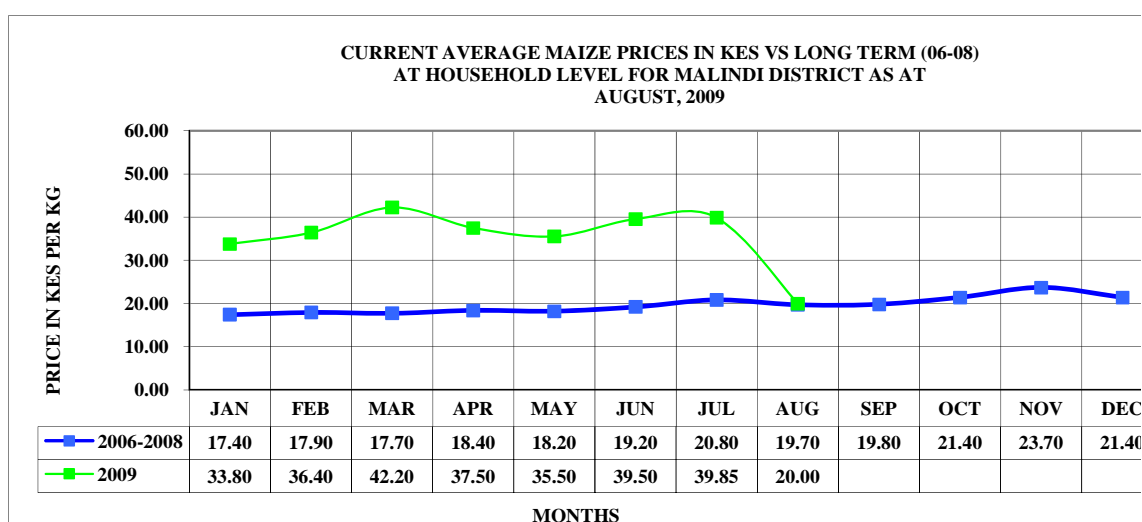
- Salient inter-livelihood price differences were noted during the month with the livestock farming zone recording the highest average price at Ksh1092 compared to Ksh916 in the mixed farming zone. The price was within the acceptable seasonal ranges and therefore normal during this time of the year.

3.2 Milk consumption

- The average milk consumption at household level in the district declined during the month compared to July.
- Sampled households consumed an average of 43 bottles of 750mm capacity in August 2009, down from 73.5 bottles in the previous month, thereby representing a 41.5% reduction.
- More milk was consumed in the livestock farming zone than in the mixed farming zone at 63 bottles and 23 bottles respectively. However, more milk was produced in the mixed farming zone.

3.3 Crop prices

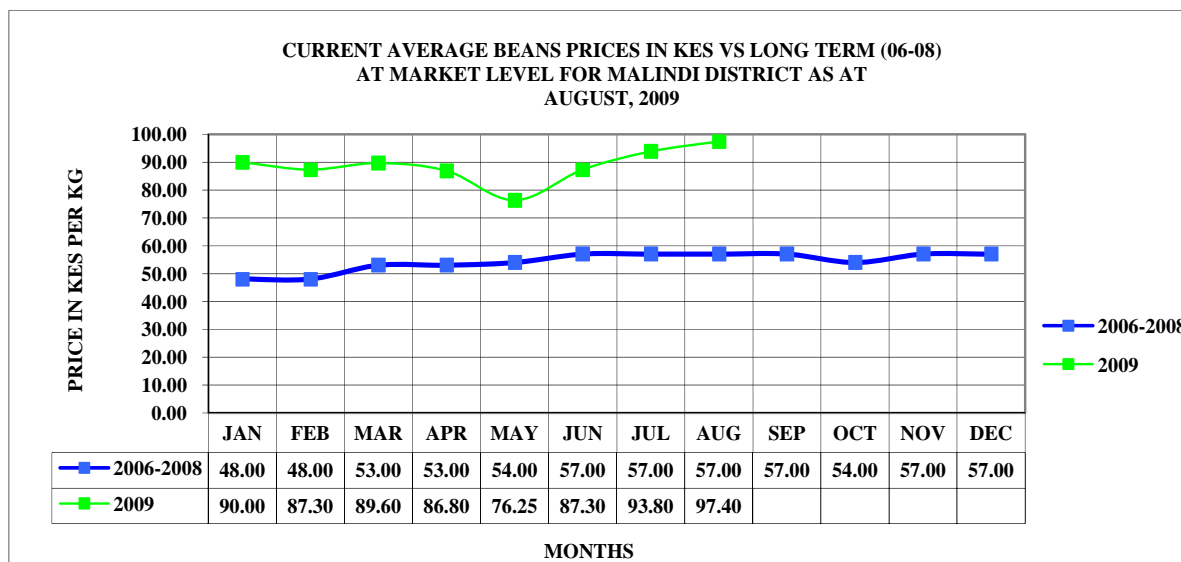
3.3.1 Maize prices



Source: ALRMP sample sites. Total sample size (n) 240 households

- The average district maize price decreased by approximately 50% during the month under review from Ksh39.85 per kilo in July to Ksh20. The scenario depicted in the above graph was in tandem with the long term trend. The drop in average maize price was attributed to improved maize stocks at the household level following the harvesting of the long rains maize crop during the month, particularly along the coastal belt. No maize was sold in the livestock farming zone.
- At the market level, most local markets in sample areas did not have maize stocks.

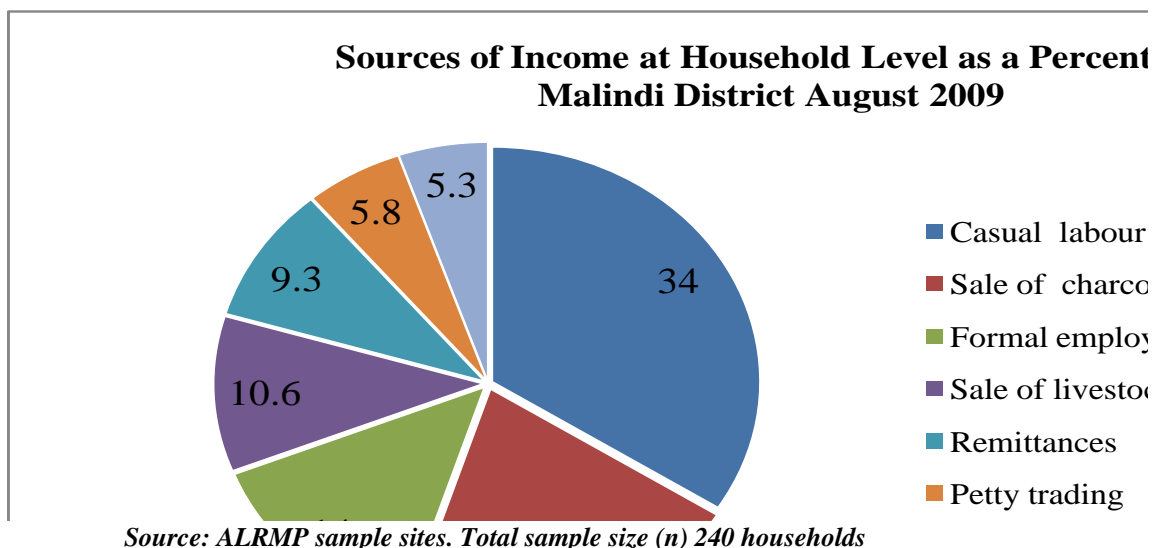
3.3.2 Beans prices



Source: Retail markets in 8 EWS sample areas

- There was an increase in the district average price of beans during the month. On average the price increased by 3.8% from Ksh 93.80 per kilo the previous month to Ksh 97.40 in August. Local farmers did not harvest any beans during the month. Besides, the district does not produce significant amounts of beans. The increase in the monthly average price is, therefore, attributed to dwindling supply of beans in local markets.
- Beans were sold in the mixed farming livelihood zone only whereas the livestock farming zone did not record any sales.

3.4 Income



3.5.1 Income

- As in the previous month, casual labour was the major source of income for many households across all livelihood zones, followed by sale of charcoal and formal employment. There was a decline in the proportion of households which engaged in casual labour from 42.9% in July 2009 to 34% in August 2009. In total, 53 households in the mixed farming derived their income from casual labour compared to 25 in the livestock farming zone. This was a drop from 64 and 36 households in the mixed farming and livestock farming zones

respectively in the previous month. The drop could be attributed to decreased farming activities in the mixed farming zone.

- The number of households which traded in charcoal increased from 15.9% in July 2009 to 21% in August 2009, mostly in the livestock farming zone. Charcoal burning activities increased in the livestock farming zone owing to the cessation of rains in this area.

3.5.2 Livestock Income

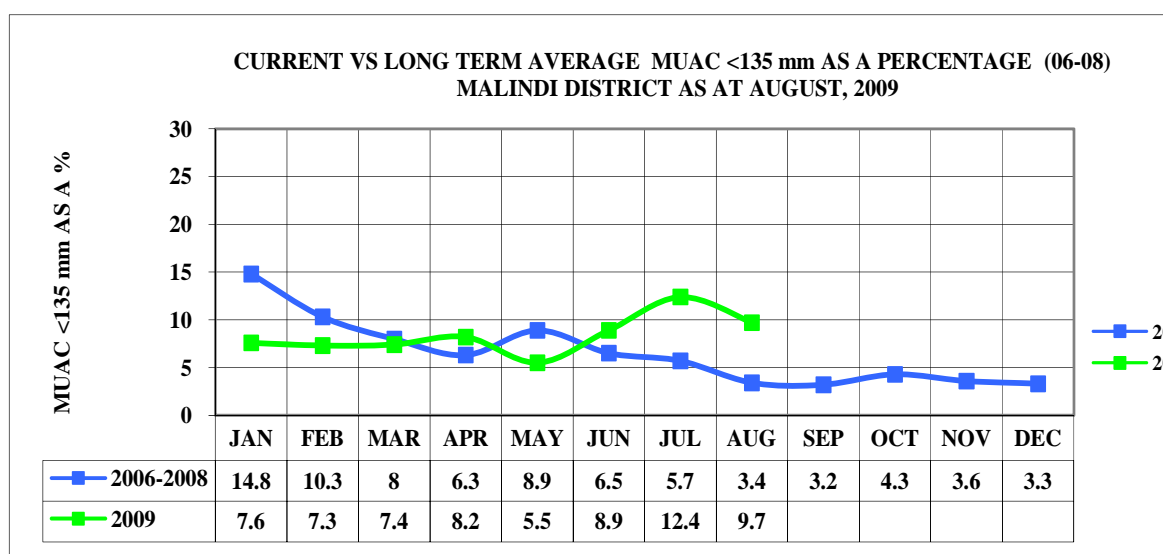
- The number of sampled households which traded in livestock and livestock products during the month declined from 14.2% in July 2009 to 10.6% in August 2009. This, therefore, indicates that there was a drop in household income derived from livestock and livestock products.
- Sampled households sold more heads of cattle but less number of goats and poultry in August 2009 (29, 76 and 37 respectively) compared to July 2009 (19 heads of cattle, 84 goats and 75 poultry). Most of the animals were sold in the livestock farming zone.

3.6 Implications on food security

- Although livestock prices were high during the month, a decrease in the number of livestock offered for sale by households impacted negatively on food security, particularly in the livestock farming zone. This was exacerbated by lack of crop harvests and high food prices.
- The decline in household incomes derived from the sale of crop produce, livestock and livestock products, casual labour and charcoal selling means that households had less disposable incomes for purchase of food during the month, more so in the livestock farming zone.

4.0 Human welfare indicators (Utilisation of food)

4.1 Nutritional status



Source: ALRMP sample sites. Total sample size (n) 240 households

- The nutrition status of children below five years improved during the month under review, with the percentage of children rated at risk of malnutrition dropping from 12.4% the previous month to 9.7%, representing a 21.7% decrease.
- In the livestock farming zone 15.5% sampled children were at risk of malnutrition during the month compared to 3.8% in the mixed farming zone. This scenario was attributed to a worsening food security situation in the livestock farming zone (Langobaya division) and some parts of the mixed farming zone (Marafa division).

- In the rest of the mixed farming zone, malnutrition rates dropped owing to availability of food both at home and in schools following the Government directive to schools to render tuition/lessons during the August school holidays so that pupils access food under the school feeding programme.

4.2 Human Health

- No human disease outbreak was reported during the month.

4.3 Flagged areas

- The following were the flagged areas during the month, Chakama location (livestock farming zone) and Adu, Bungale, and Langobaya locations (mixed farming zone). Other areas include Chamari (inhabited by the Watha community) in Mambasa sub location in Marafa location in the mixed farming zone.

5.1 Current interventions

| Type of Intervention | Donor/Implementing Agency |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| Quarantine on movement of livestock in Magarini, Sabaki locations to control foot and mouth disease (FMD) | Department Veterinary Services |
| Food for assets (FFA) activities in Langobaya, Marafa and Magarini divisions. 23 community water pans, 7 road projects and construction of zai-pits for water harvesting in 7 community farms undertaken by EMOP beneficiaries | Kenya Red Cross Society |
| Water trucking to schools in Marafa division to support school feeding programme | ALRMP |

5.2 Food aid

| Type of Intervention | Donor/Implementing Agency |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| Supply of relief food to 31,910 beneficiaries in Marafa, Langobaya and Magarini divisions in the EMOP programme. <i>i.e. Cereals/pulses – 216.974 MT, pulses – 32 MT, oil – 11.487 MT, salt – 9.572 MT. Total - 270,003 MT</i> | WFP/Kenya Red Cross Society |
| Supplementary feeding programme (SFP) in 17 government health facilities <i>i.e.</i> 16.425 metric tons of Unimix and 1.643 metric tons of vegetable oil. | WFP /ALRMP/MoH |
| Distribution of 130 metric tons of relief food to 2,317 households in Marafa, Adu and Bungale locations in Marafa division. <i>i.e.</i> maize, beans, vegetable oil and CSB | World Vision International |

5.3 Coping strategies

- Reduction in number of meals per day
- Purchase of food on credit
- Reducing size of meals
- Restricted consumption of food by adults to allow more for children
- Going for an entire day without a meal.

6.0 Recommendations for action to mitigate food insecurity in the district

Food aid

| Type of Recommendation | Action |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| Continued EMOP GOK/WFP relief food operations. Food for assets (FFA) aid distribution to target more beneficiaries | GoK/WFP |
| The department of Agriculture to encourage farmers to increase acreage under food crops to take advantage of the expected above normal El-nino like short rains, particularly along the coastal belt. | Dept. of Agriculture |

Non-food interventions

| Type of recommendation | Sector |
|----------------------------------------------------------------------------------------------------------------|--------------------|
| Promotion of irrigation agriculture in the district along river Sabaki | Water & Irrigation |
| Encourage farmers to plant drought tolerant crops in the next season in upper parts of the mixed farming zone. | Agriculture |
| Promotion of alternative livelihoods i.e. bee keeping and local poultry | Livestock |