National Drought Management Authority
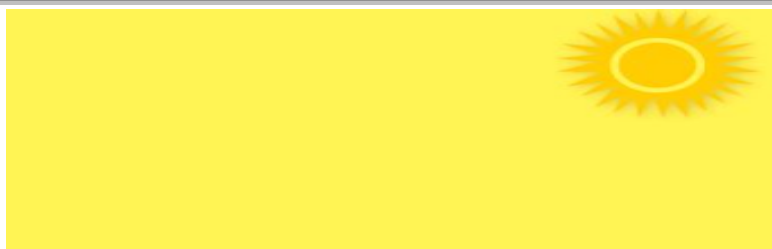## MAKUENI COUNTY
DROUGHT EARLY WARNING BULLETIN FOR JULY 2017

A Vision 2030 Flagship Project

KENYA VISION 2030

JULY EW PHASE

Drought Situation & EW Phase Classification
Biophysical Indicators
- Generally the month was dry characterized by cold nights and sunny days.
- The County recorded normal vegetation greenness (Avg. 3 month VCI of 54.62)
- The quantity and quality of pasture ranged from fair to poor in the Mixed farming zone while in the Marginal mixed farming zone it was poor.
- The state of surface water sources was declining across all livelihood zones in the county

Socio Economic Indicators (Impact Indicators)
- Livestock body condition ranged from fair to good across all the three livelihood zones body score of 2-3.
- Compared to the long term, Terms of trade were unfavorable at 57 which is below normal.
- The percentage of children at risk of malnutrition was 5.7 which is within the normal range.
- CSI for the County was 12.2 implying high coping mechanisms for most households.

Early Warning (EW) Phase Classification

Livelihood Zone	Phase	Trend
Mixed farming coffee/dairy	Normal	Stable
Mixed farming Food Crop/Livestock	Normal	Worsening
Marginal Mixed Farming	Alert	Worsening
County	Alert	Worsening

Biophysical Indicators	Value	Normal Ranges
VCI-3Month	54.62	>35
State of Water Sources	4	5

Production indicators	Value	Normal
Crop Condition	Harvesting	Fair
Livestock Body Condition	5-4 Moderate	6-Normal
Milk Production	1. 8L	1.8 Litres
Livestock Migration Pattern	Normal	Normal
Livestock deaths (from drought)	No death	No death

Access Indicators	Value	Normal
Terms of Trade (ToT)	57	>80
Milk Consumption	0.8 L	1.2 litres
Return distance to water sources	4.0 Km	3.4 Km
Cost of water at source (20 litres)	KSh 3-5	KSh 3

Utilization indicators	Value	Normal
Nutrition Status, MUAC (% at risk of malnutrition)	5.7	<12.9
Coping Strategy Index (CSI)	12.2	<10

Seasonal Calendar

▪ Short rains harvests ▪ Short dry spell ▪ Reduced milk yields ▪ Increased HH Food Stocks ▪ Land preparation	▪ Planting/Weeding ▪ Long rains ▪ High Calving Rate ▪ Milk Yields Increase	▪ Long rains harvests ▪ A long dry spell ▪ Land preparation ▪ Increased HH Food Stocks ▪ Kidding (Sept)	▪ Short rains ▪ Planting/weeding

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec

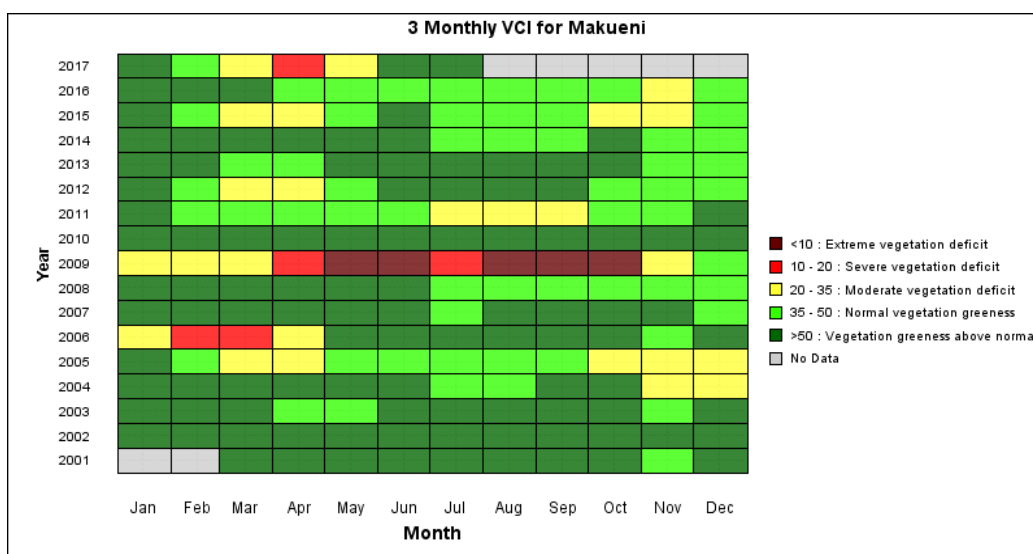# 1. CLIMATIC CONDITIONS

1.1 RAINFALL PERFORMANCE

- Very minimal off-season showers were recorded during the month of July and this is normal for this time of the year.
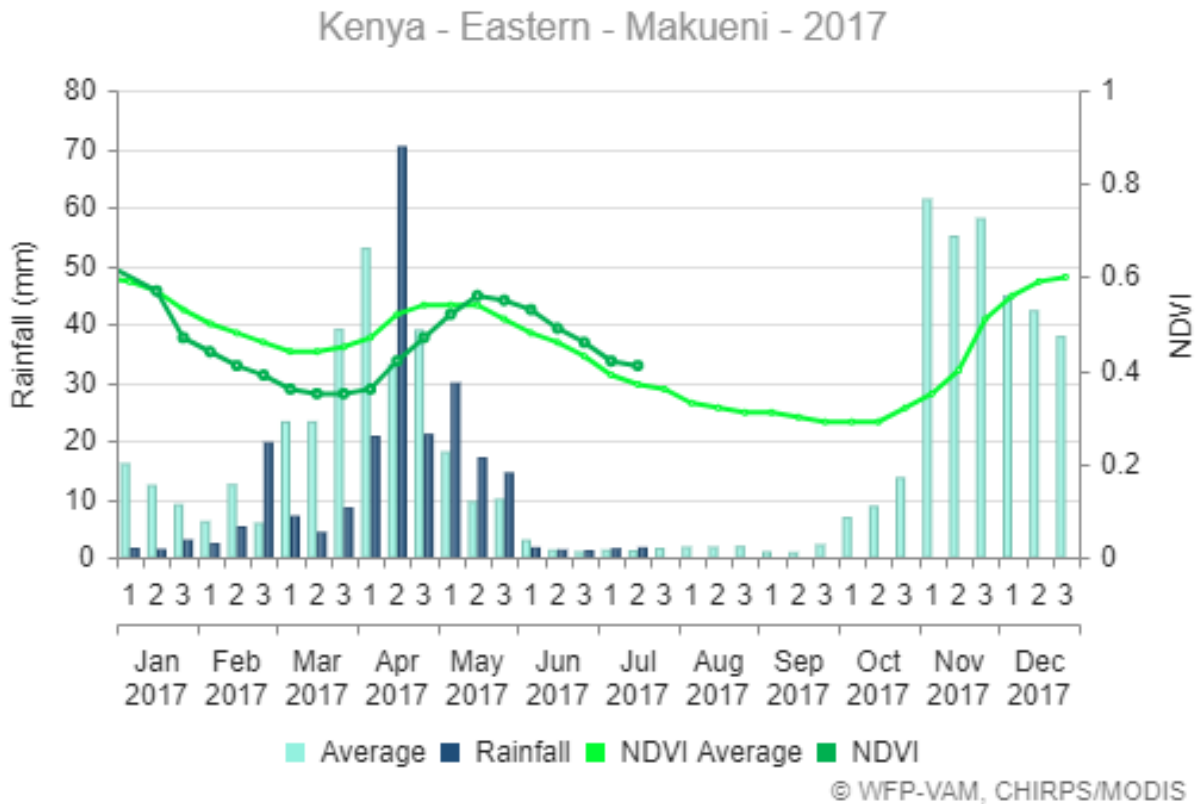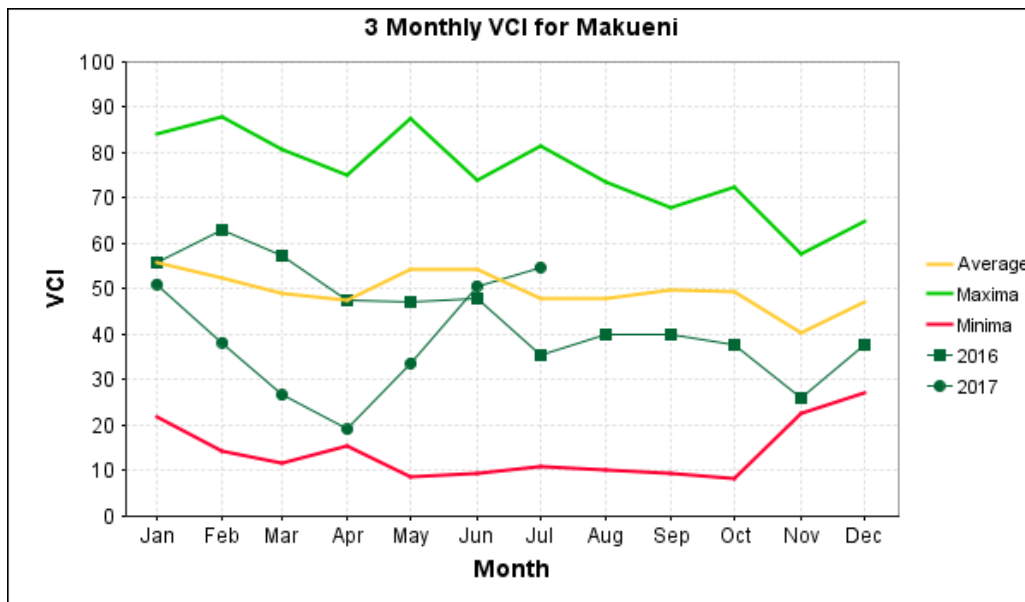

2. IMPACTS ON VEGETATION AND WATER

2.1 VEGETATION CONDITION

### 2.1 1 Vegetation Condition Index(VCI)

3 Monthly VCI for Makueni

- The average 3-month VCI for the County was 54.62 from 50.53 that of last month.
- The average 3-monthVCI for Makueni, Kibwezi West and East was 57.5 from 47.9, 45.1 from 42.53 and 47.96 from 46.74 respectively implying normal vegetation greenness for the County.

2.1.2 Pasture and Browse
- In both mixed farming (Coffee/Dairy) and mixed farming (Livestock/Food Crop) livelihood zone the quantity and quality of Pasture and browse condition was fair while in the marginal mixed farming zone pasture condition was poor and in some areas completely depleted like Syotuvali in Kalawa.
- There was deterioration of pasture across all the three livelihood zone since there was inadequate rain to trigger regeneration.
- Browse condition was fair in both mixed farming (Coffee/Dairy) and mixed farming (Livestock/Food Crop) while in Marginal mixed farming livelihood zones it ranged from fair to poor.

Makueni Pasture Condition
(Jul 2017 - Jul 2017)
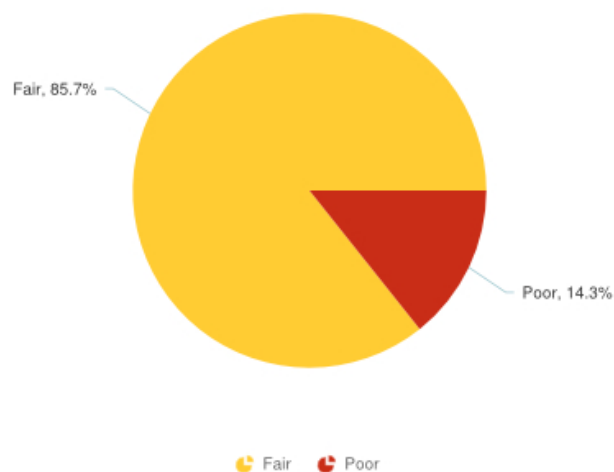
Makueni Browse Condition
(Jul 2017 - Jul 2017)

Fair, 90.5%

Poor, 9.5%

◔ Fair   ◔ Poor
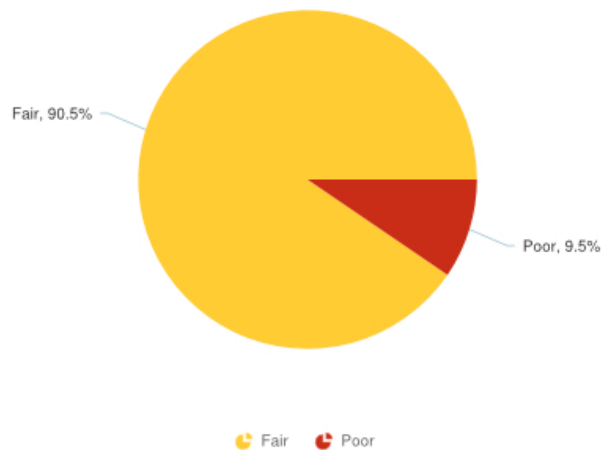
2.2 WATER RESOURCE

2.2.1 Sources

- Three main sources of water for the month were: Rivers accounting for 23.3% of all water sources, shallow wells at 20.9% pans and dams at 14% and piped water schemes at 14%
- Other sources were traditional river wells, springs, boreholes and natural ponds each accounting for 7%.

Makueni County Water sources
(July 2017)

Traditional Water Wells, 7%

Natural Ponds, 7%

Rivers, 23.3%

Pans and dams, 14%

Piped Water System, 14%

Shallow wells, 20.9%

Springs, 7%

Boreholes, 7%

◔ Rivers   ◔ Traditional Water Wells   ◔ Natural Ponds   ◔ Pans and dams
◔ Shallow wells ◔ Boreholes   ◔ Springs   ◔ Piped Water System

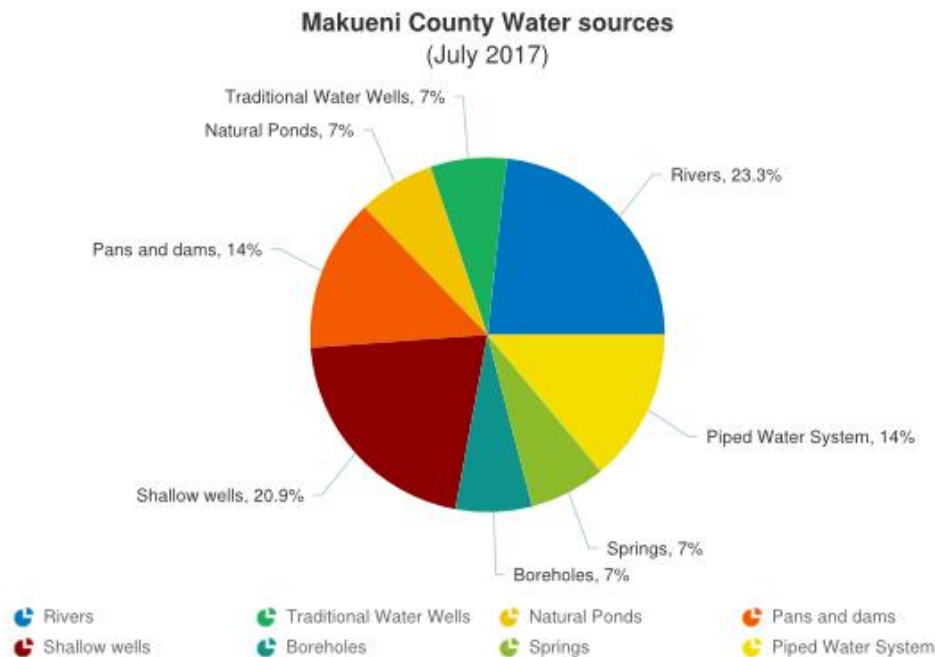- State of water sources was 4 to 5 in the mixed farming (Coffee/Dairy) and mixed farming (Livestock/Food Crop) livelihood zones implying the availability of water at the moment is normal while in the marginal mixed farming livelihood zone the situation is below normal.
- Households along the Athi belt had to walk for longer distances (6 to 15Km an increase from 5-10Km) in search of water for both livestock and domestic use.
- The average cost of a 20 litre Jerry can at the water kiosks ranged from Ksh 3 to 5.

2.2.2 Household access and Utilization of water

Distances to water sources for household consumption

Makueni County water source distance 2017
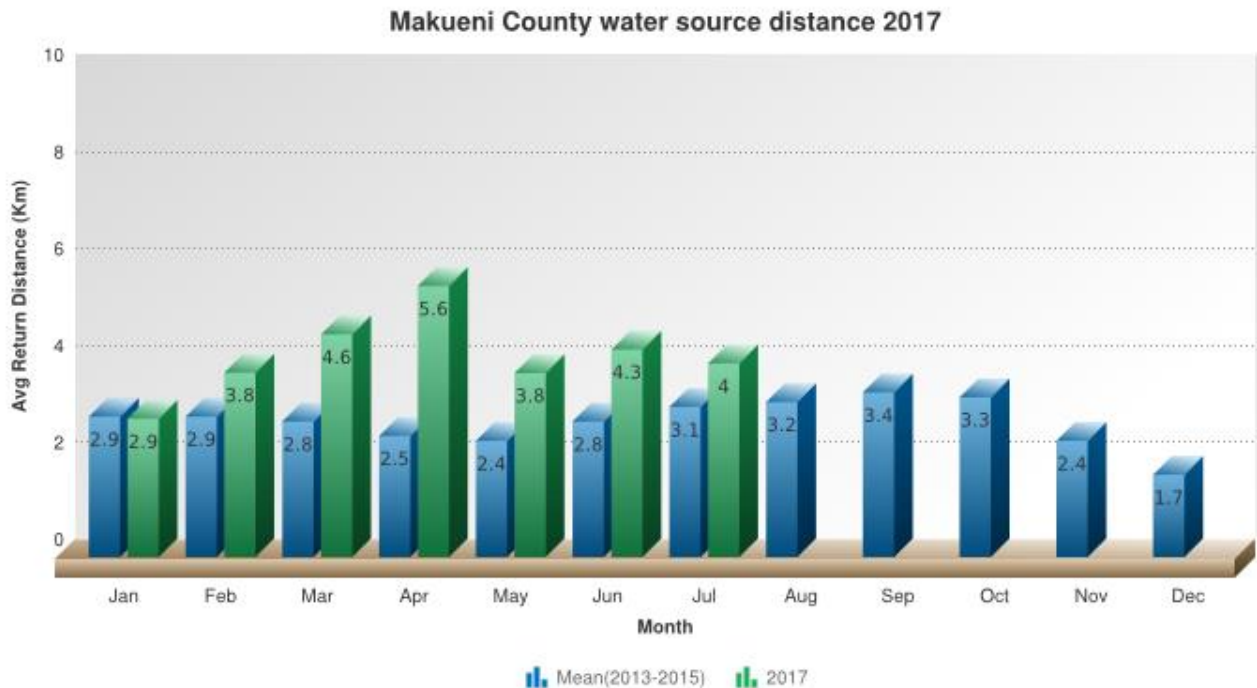
- The average household return distances was 4.0Km compared to the long term mean of 3.1 km the distances had slightly increased.
- For the two months June and July the distances remained higher.

2.2.3 Livestock access to water

Makueni County water source distance from grazing area - 2017
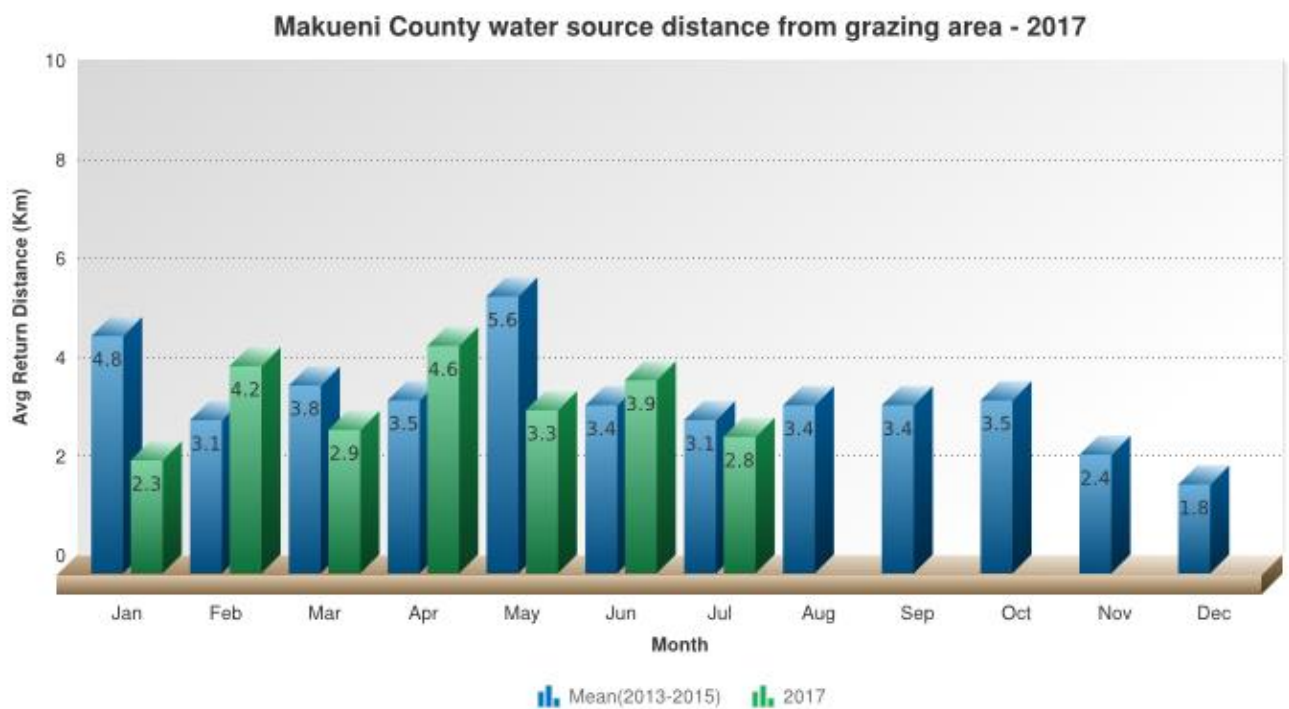
- Average one way distances to water sources for livestock were relatively low at 2.8 Km mostly in the mixed farming zones while in the Marginal mixed farming zone the distances were high.
- The distances are expected to increase more in the next one month as the available volume of water in open water sources continues to decline.

3.0   PRODUCTION INDICATORS
3.1   LIVESTOCK PRODUCTION
3.1.1   Livestock Body Condition
- The current livestock body condition for cattle was at the borderline; fore-ribs not visible to moderate and good for shoats across all the livelihood zones.

3.1.2 Livestock Diseases
- No major livestock disease outbreaks reported.

3.1.3 Milk Production
Milk availability
- Milk availability in all the livelihood zones was low but normal.
- The trend in milk availability is declining attributed to the poor pasture conditions.

Marginal mixed Farming zone:
- Households in this zone were more reliant on goat milk whose yield was between 0.1-0.4lts per day. Local Zebu also produced0.2-0.5lts but the situation is expected to decline in the next 1 to 2 months as the pastures decline more.

Mixed farming (Food Crop/Livestock):
- In this zone Zebu cattle and crossbreeds accounted for most milk produced. Availability was approximately 0.4-0.6lts compared to a normal of 0.5lts.

Mixed Farming (Coffee/Dairy):
- The production of milk per day per household ranged from 0.75-1.5 lts per day against a normal of 1litre.

3.2 RAIN-FED CROP PRODUCTION
3.2.1   Stage and Condition of food Crops
- Main crops that were planted in the marginal mixed farming zone were cowpeas and green grams while in the mixed farming (Coffee/Dairy)and Mixed Farming (Food Crop/ Livestock) livelihood zone was maize, beans and cowpeas.
- Crops were at their various stage of production. Cereals like maize in the hilly masses were at the harvesting stage.
- In the marginal mixed farming zone Crops (legumes) had performed fairly to poorly that is for green grams and cowpeas.
- High Cases of Elephants invading and destroying legumes (Cowpeas and green grams) were reported in areas bordering Kyullu and Tsavo National Park.
- Below normal harvest is expected across all the livelihood zones.

4.0 MARKET PERFORMANCE

4.1 LIVESTOCK MARKETING

4.1.1 Cattle Prices

Average Cattle Price

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	oct	Nov	Dec
Max	31000	29500	24150	22500	22000	27875	26500	25000	24400	21000	17500	21670
Min	14000	16800	15000	16000	14500	16670	15000	15000	15000	16500	15000	15000
Mean(2013-2016)	19688	21305	19913	18875	17769	21411	20725	20000	19975	17950	15625	17043
2017	13000	15000	19000	20750	22350	23200	20900					
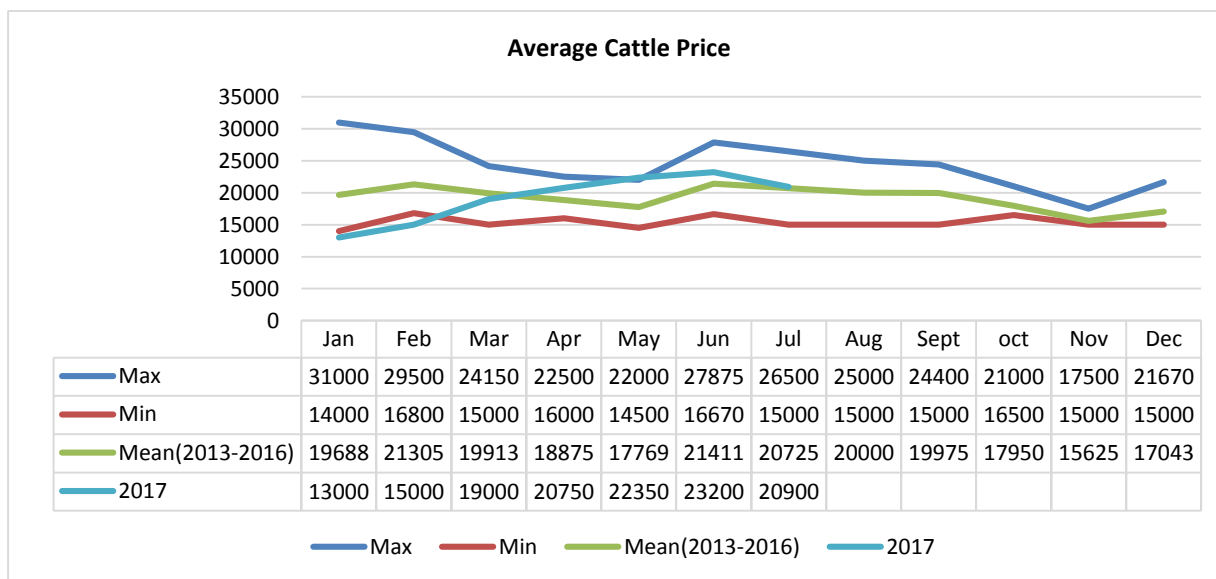
- Average farm gate prices of cattle decreased by 9.9% from KSh23,200 to Ksh20,900. The price is not far from the (2013-2016)long term average of KSh 20,725. This was attributed to the decline in body condition due to the decline in availability of pasture and water for livestock mostly in the mixed farming livelihood zones.
- The price of cattle at different markets was as follows.

Makueni County Cattle Prices by Markets
(Jul 2017 - Jul 2017)

Market	Cattle Avg Price
Nunguni	16,000
Matiliku	17,500
Masumba	17,500
Kathonzweni	17,500
Kilala	18,000
Sultan	20,000
Kasekeu	20,000
Ulilinzi	29,333
Mbumbuni	32,333

4.1.2 Goat Prices

MAKUENI GOAT PRICE

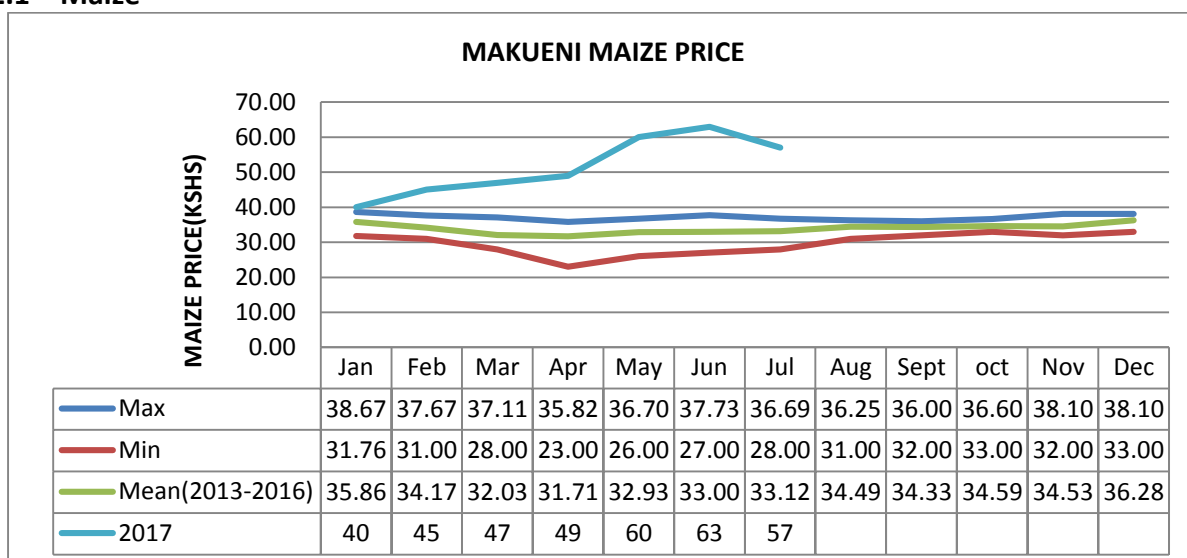|	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	oct	Nov	Dec
Max	4200.	4100.	3400.	3402.	3185.	3316.	3405.	3236.	3200.	2913.	3039.	3318.
Min	2967.	2823.	2522.	2752.	2665.	2788.	2703.	2495.	2741.	2756.	2250.	2944.
Mean(2013-2016)	3404.	3415.	3017.	3128.	3006.	3039.	3058.	2876.	2955.	2832.	2740.	3095.
2017	2700	3800	3200	3300	3500	3600	3250					

- The average farm-gate price of a goat decreased by 9.7% from Ksh3600 to Ksh3250 and was higher than the (2013-2016) long-term mean but lower than that of last month. This was attributed to the high influx of shoats at the market.
- Average goat market price was as follows in various markets across the county.
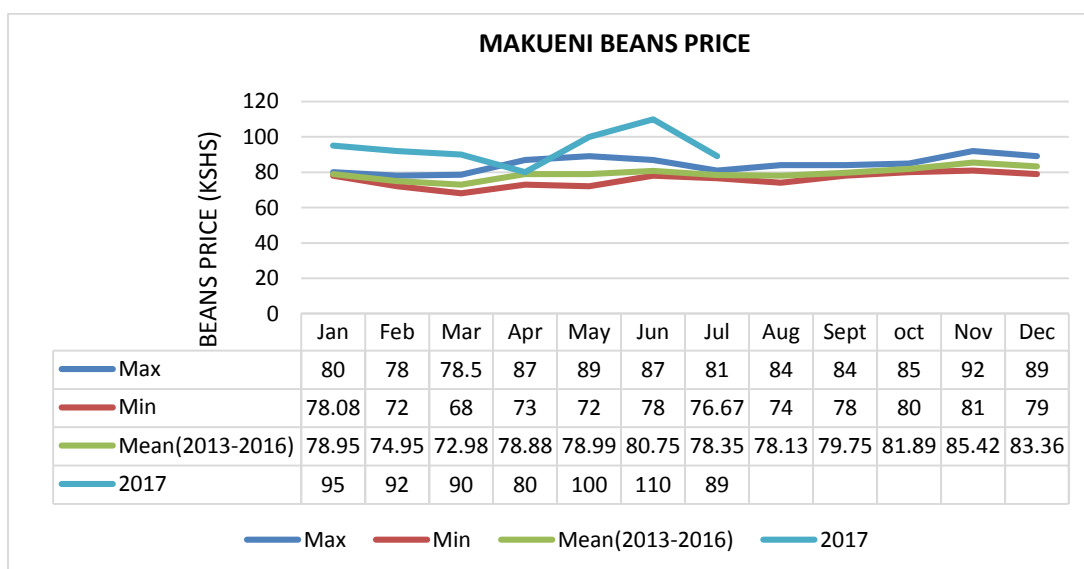

Makueni County Goat Prices by Markets
(Jul 2017 - Jul 2017)

4.2   CROP PRICES

4.2.1   Maize

MAKUENI MAIZE PRICE

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	oct	Nov	Dec
Max	38.67	37.67	37.11	35.82	36.70	37.73	36.69	36.25	36.00	36.60	38.10	38.10
Min	31.76	31.00	28.00	23.00	26.00	27.00	28.00	31.00	32.00	33.00	32.00	33.00
Mean(2013-2016)	35.86	34.17	32.03	31.71	32.93	33.00	33.12	34.49	34.33	34.59	34.53	36.28
2017	40	45	47	49	60	63	57					
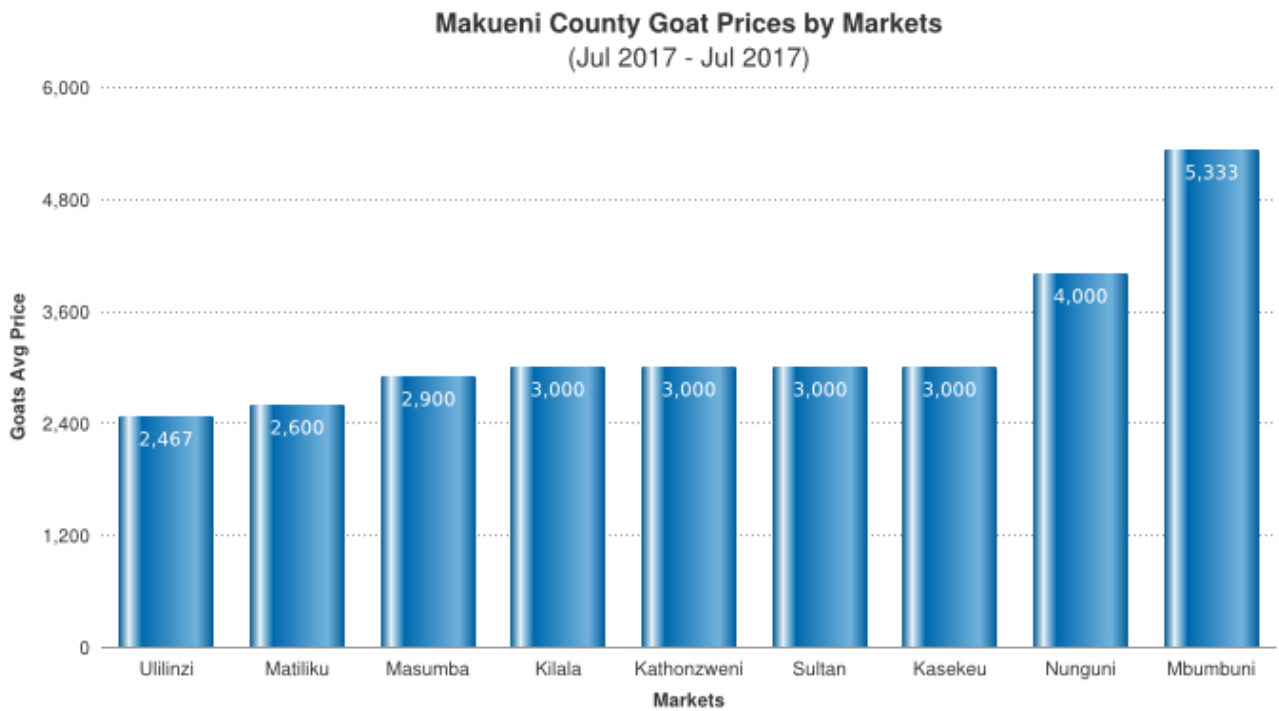
- The average market price of maize decreased to Ksh 57 from Ksh63 recorded the previous month. This was attributed to increase in imports that have stabilized the price as well as harvests from the Mixed farming livelihood zones. The price remained relatively high than the (2013-2016) long-term average and slightly lower than that of last month.
- The high prices were attributed to the depletion of stocks, restricted importation of the commodity from Tanzania and the high prices from traditional sources of North rift and western Kenya.
- Compared to the(2013-2016) long term mean of Ksh 33, the price was high
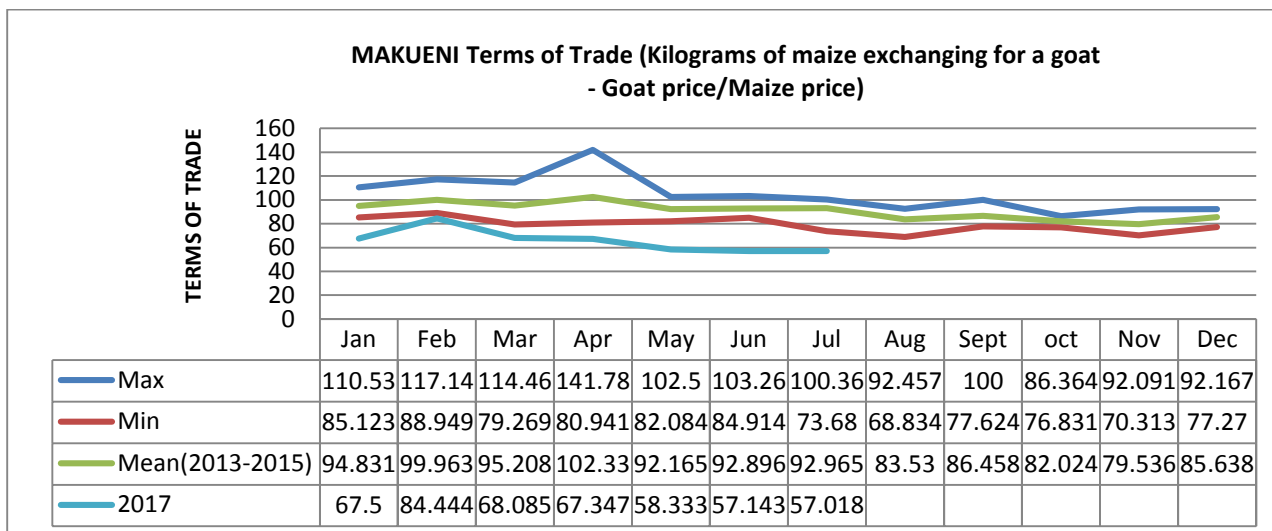
4.2.3   Beans

MAKUENI BEANS PRICE

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	oct	Nov	Dec
Max	80	78	78.5	87	89	87	81	84	84	85	92	89
Min	78.08	72	68	73	72	78	76.67	74	78	80	81	79
Mean(2013-2016)	78.95	74.95	72.98	78.88	78.99	80.75	78.35	78.13	79.75	81.89	85.42	83.36
2017	95	92	90	80	100	110	89					

Max   Min   Mean(2013-2016)   2017

- The average price of beans decreased to Ksh. 89 from ksh 110 reported the previous month. The decrease in price was a result of the harvests received .
- Compared to the mixed farming zone the prices were higher in the marginal mixed farming zone.

4.2.3.1 Other outstanding observations.

4.3   Livestock Price Ratio/Terms of Trade

MAKUENI Terms of Trade (Kilograms of maize exchanging for a goat - Goat price/Maize price)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	oct	Nov	Dec
Max	110.53	117.14	114.46	141.78	102.5	103.26	100.36	92.457	100	86.364	92.091	92.167
Min	85.123	88.949	79.269	80.941	82.084	84.914	73.68	68.834	77.624	76.831	70.313	77.27
Mean(2013-2015)	94.831	99.963	95.208	102.33	92.165	92.896	92.965	83.53	86.458	82.024	79.536	85.638
2017	67.5	84.444	68.085	67.347	58.333	57.143	57.018					

- Terms of trade(ToT) were unfavorable at 57 implying that from a sale of one goat, a farmer could purchase 57Kg of maize from the earnings of a goat. The ToT remained relatively low due to the high prices of maize.
- The below average in terms of trade can be attributed to the high prices of maize which has become a scarce commodity in the County.

5.0   FOOD CONSUMPTION AND NUTRITION STATUS
5.1   MILK CONSUMPTION
Marginal mixed Farming zone
- Milk produced was equivalent to milk consumed in this zone, an average of 350-450mls (Which was below normal).
- Current milk price was between Ksh60 to Ksh70 per litre against the normal of Ksh55 and this has limited accessibility to majority of the households.

Mixed farming Zone (Food crop/Livestock).
- Milk consumption per day in this zone was between 300mls to 500mls which was below normal.
- The current milk price is between Ksh55 to Ksh60 against the normal of Ksh50.

Mixed Farming Zone (Coffee/Dairy)
- Milk consumption is about 500mls to 700mls which is below normal. The average milk price was between Ksh48 to Ksh60against the normal of Ksh45.

5.2 FOOD CONSUMPTION SCORE
- In the month of June 14% of households had an Acceptable food consumption score, 47% of households were at the borderline while 46% had a poor consumption score.
- This implies that the dietary diversity of most households comprised of maize and beans or any other legume.
- Figure below illustrates the food consumption score in the mixed farming and marginal mixed farming livelihood zone.
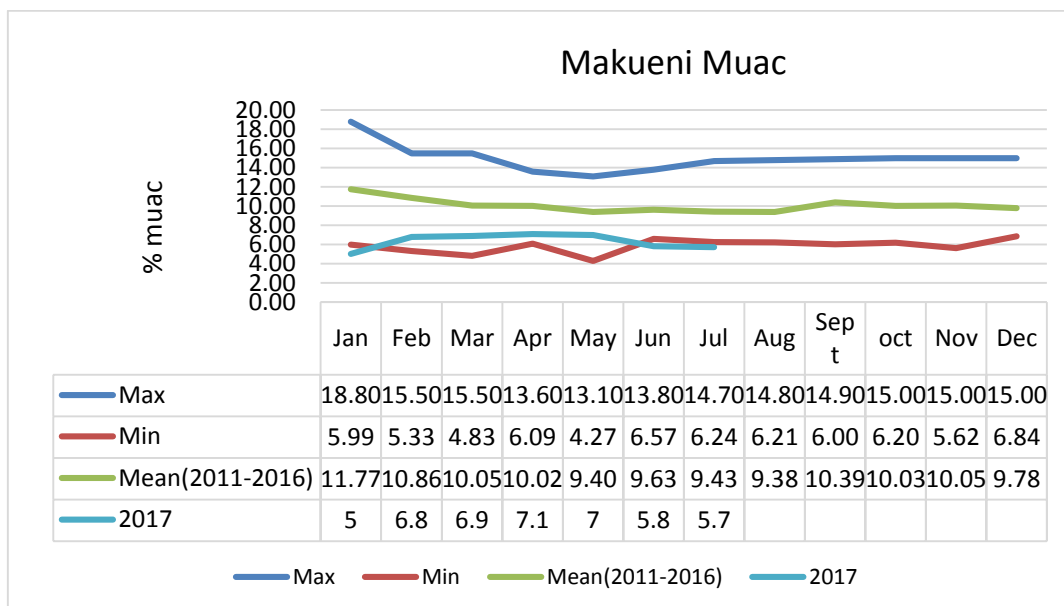
Makueni County Food Consumption Score by Livelihoodzones - July 2017

Poor | Borderline | Acceptable
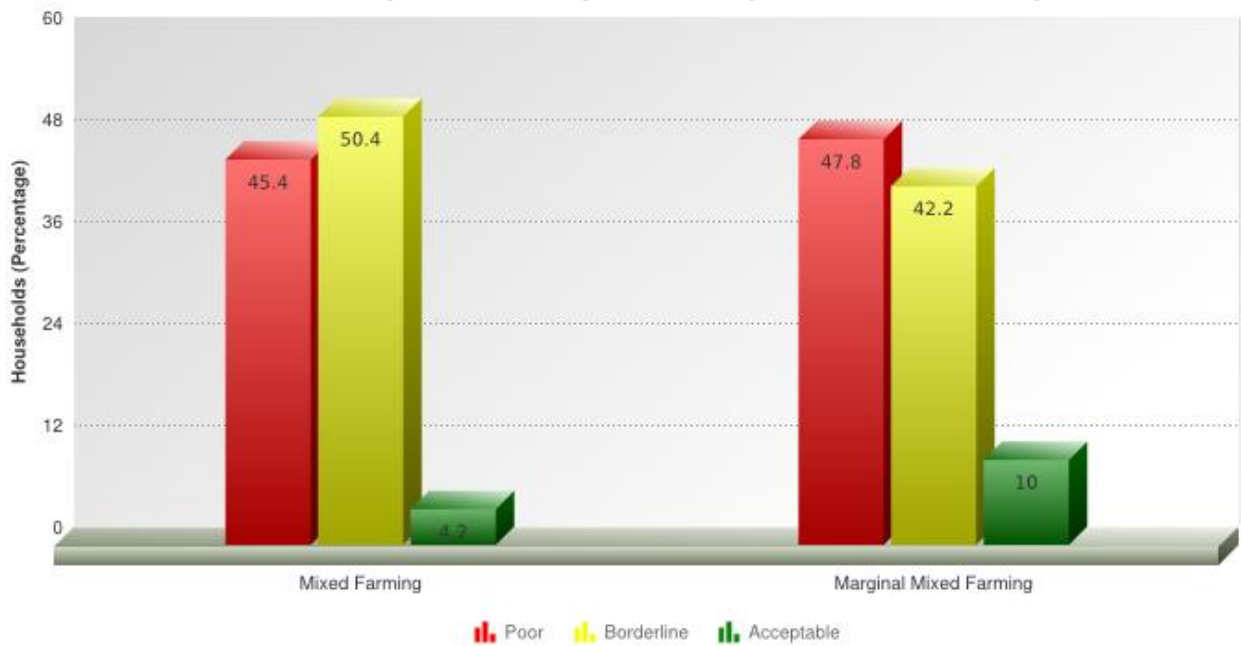
## 5.3 HEALTH AND NUTRITION STATUS

5.3.1 Nutrition Status

- The proportion of children at risk of malnutrition was 5.7% percent of the children sampled. This was relatively stable compared to the previous month which recorded 5.8%.
- The situation is expected to improve with the availability of 'kunde' and milk mostly in the mixed farming zone.
- The current proportion of children at risk of malnutrition is below the long term mean as indicated in the figure below.

Makueni Muac

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	oct	Nov	Dec
Max	18.80	15.50	15.50	13.60	13.10	13.80	14.70	14.80	14.90	15.00	15.00	15.00
Min	5.99	5.33	4.83	6.09	4.27	6.57	6.24	6.21	6.00	6.20	5.62	6.84
Mean(2011-2016)	11.77	10.86	10.05	10.02	9.40	9.63	9.43	9.38	10.39	10.03	10.05	9.78
2017	5	6.8	6.9	7.1	7	5.8	5.7					

Max | Min | Mean(2011-2016) | 2017

5.3 COPING STRATEGIES

- The CSI in Mixed farming livelihood zone was 5.6 while in the Marginal mixed farming zone it was 18.8 implying that more coping mechanisms were being employed in MMF zone than MF zone. The average CSI for the county was 11.28
- Most households across all the livelihood zones were employing food based coping strategies.
- Compared to last month there was an increase in both frequency and severity of coping mechanisms implying further reduction in food consumption in most households.
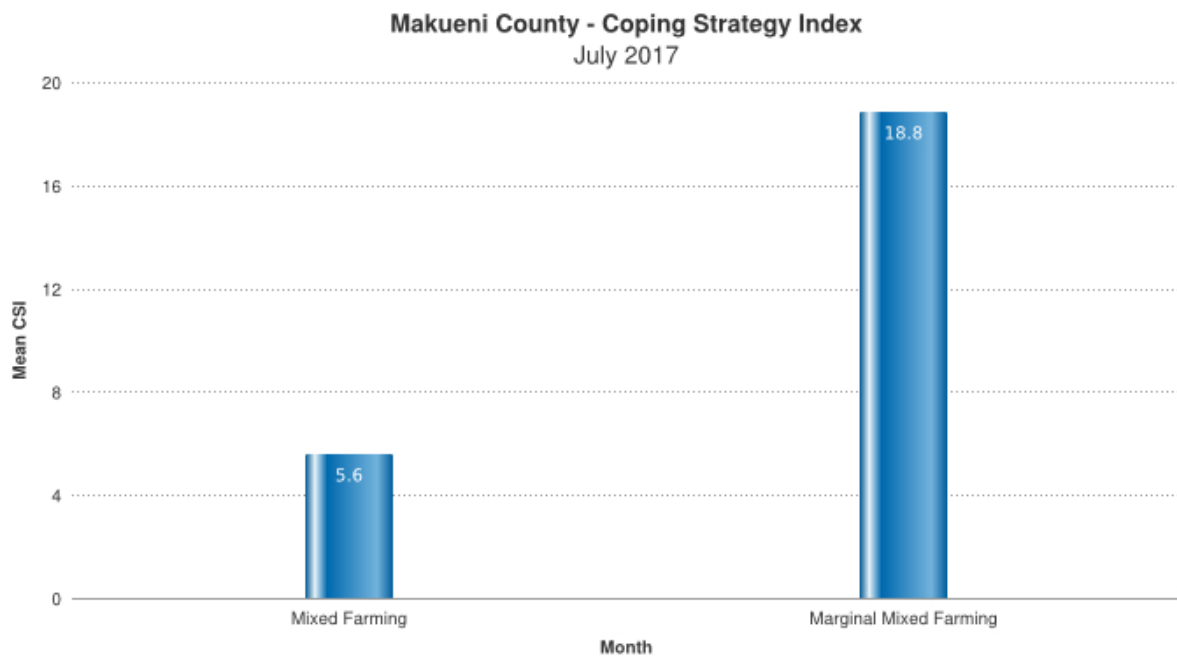
6.0 CURRENT INTERVENTION MEASURES (ACTION)

6.1 NON-FOOD INTERVENTIONS

- Asset Creation Projects by GoK/WFP/World Vision/Kenya Red Cross Society/NDMA in Makueni, Mbooni, Kibwezi East and West sub counties targeting 61,000 beneficiaries.
- Targeting of beneficiaries 'Chakula Kwa Jamii initiative'implemented by WFP and partners in Mbooni (selected wards), Makueni (Wote ward), Kilome (Kiu-Kalanzoni ward), Kibwezi East and West sub counties a total of 27,567 beneficiaries.
- Up scaling of irrigation along major rivers in the County by the county government.
- Post-harvest management (green grams and cowpeas in marginal mixed farming zone and Pulses in mixed farming zone) by the department of Agriculture
- Soil and water conservation by the County government
- Pest and Disease control for Horticultural and Citrus crops by the county government.
- Feed supplements and range cubes were given to livestock keepers by the department of livestock.

6.2 FOOD AID
- Food aid was received and distributed during the month under review. 200 bags (50 kg) bags of maize, 100(90kg) bags of beans, 300(50 kg) bags of rice, 50 bales of oil and 50 cartons(24× 0.5l)of cooking oil were received from the Ministry of Special Programmes to be distributed in all the 9 administrative units by the office of the County Commisioner.

7. EMERGING ISSUES

7.1   Insecurity/Conflict/Human Displacement
- Cases of elephants invading people's farms were reported in Masongaleni, Mtito and Makindu (Areas bordering Kyullu Hills and Tsavo park).

7.2   Migration.
- Cases of livestock migration from the neighbouring County of Kajiado were reported in Mukaa and Makindu (areas bordering Kyullu Hills). Large herds of Camels were also spotted in Makindu and surrounding areas**.**

7.3 Food security prognosis

With the pasture depleted especially in the Marginal-mixed livelihood zone, the body condition for the cattle is expected to deteriorate August through November when rains from the short rains are expected to have adequately regenerated pasture. This will affect the prices of the livestock. Milk production is expected to decline as a result of the deteriorated body condition of livestock. Maize prices are expected to remain stable but high. Most households are depending on markets for supply. Terms of trade are also expected to decline as goat prices are also expected to reduce due to influx of animals in markets as farmers rush to sell their animals as the season gets leaner. Water consumption in households is also expected to reduce as surface water sources dry up and waiting times increase at watering points. Majority of households sampled (93%) had borderline and poor food consumption scores. However, the short-term growing crops (green grams, cow peas) harvest from the long rains season are expected to offer a reprieve to most households since the crops performed well and stocks are available at household level. There is increased risk of conflict due to influx of livestock from Kajiado and neighboring counties.

8. RECOMMENDATIONS

Agriculture Sector
- Up scaling of current crop production.
- Promotion of water harvesting at household level.
- Promotion of conservation agriculture practices such as minimum tillage, crop rotation and zai-pitting.
- Promotion of drought tolerant crops(production, value addition and utilization)

Livestock sector
- Livestock improvement programme for goats, chicken and cattle.
- Range rehabilitation.

Water Sector
- Servicing and rehabilitation of broken down boreholes as well as stockpiling with spares.
- Advocate rain water harvesting and use of water treatment chemicals

Health Sector

- Improving Vitamin A supplementation for Children Under five years.
- Integrated health outreaches and mass screening of children under the age of 5 years
- Enhance advocacy on exclusive breastfeeding.

Education
- Expand HGSMP to cover more schools.