



NATIONAL DROUGHT MANAGEMENT AUTHORITY

National Drought Early Warning Bulletin

August 2019

1.0 Drought status

1.1 Drought indicators

Rainfall

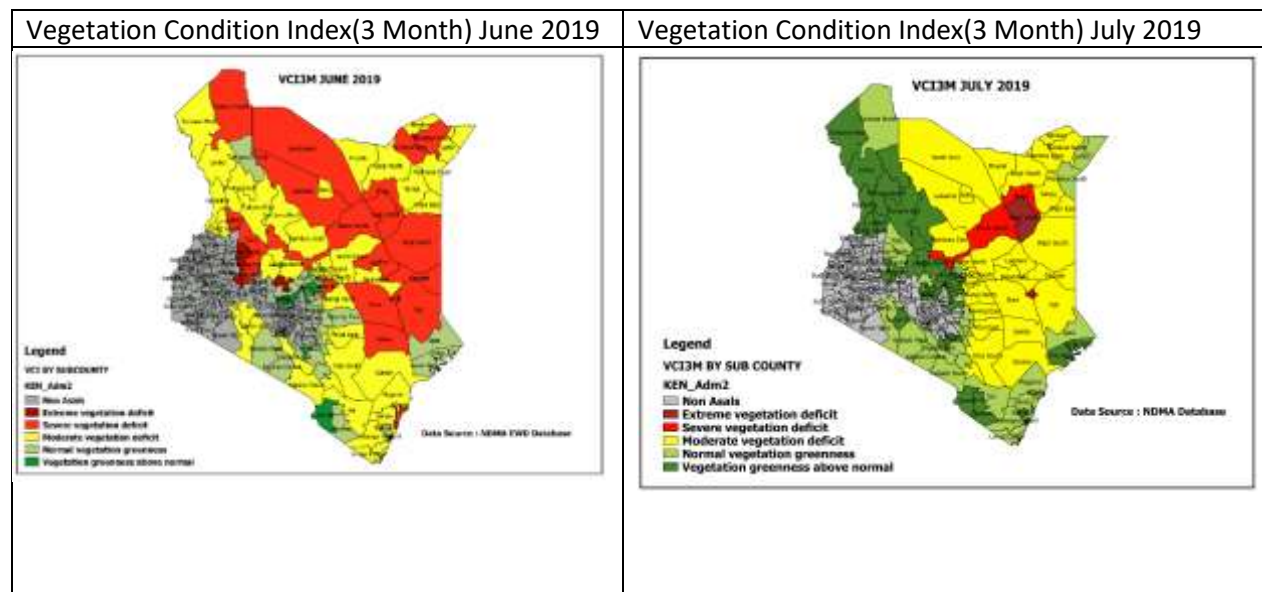
Generally, most ASAL areas experienced dry and cloudy weather condition during the month of July. However, counties mainly in the north western part of the country such as Baringo, West Pokot, Turkana and Samburu recorded substantial amounts of rainfall during the month under review.

Counties in the north eastern (Mandera, Garissa and Wajir), south east (Kitui, Makueni) and parts of coast (Tana River, Kilifi) remained dry for most of the month.

Vegetation condition

Figure 1 compares the vegetation condition index (VCI) in July 2019 with that in June 2019. The map shows that as result of light to moderate rainfall received in late June and early July the condition of vegetation in most ASAL counties is on an upward trend compared to last month. However, one (1) counties: Isiolo recorded severe vegetation deficit while six (6) counties including: Mandera, Marsabit, Tana River, Garissa, Kitui, and Wajir, recorded moderate VCI. Nine (9) counties including: Baringo, Kilifi, Kwale, Makueni, Meru, Narok, Samburu, Tharaka Nithi and Kajiado recorded normal VCI values and another seven (7) counties comprising: Embu, Laikipia, Lamu, Nyeri (Kieni), Taita Taveta, Turkana and West Pokot recorded above normal VCI values implying that the current state of vegetation greenness in these counties is close/at seasonal ranges. Detailed VCI values for July 2019 disaggregated by sub-county is provided in Annex 1.

Figure 1: Comparison of Vegetation Condition Index (VCI), June 2019 and July 2019



Livestock production

Livestock production indicators recorded a slight improvement during the month of July. Body condition and milk production in some ASAL counties worsened when compared with the previous month and the LTA. The stable trend in livestock body condition was attributed to a slight

increase in pasture and browse availability and reduction in the trekking distances from grazing fields to water points.

Pasture and browse condition

Pasture and browse condition in most ASAL areas is fair to poor compared to fair to good expected normally at this time of the season (Table 1). The poor rainfall performance of both October to December 2018 short rains and the long rains in 2019 has impacted negatively on regeneration of pasture and browse in most counties. For instance, in Garissa County, availability of pasture and browse is significantly below average in Lagdera (Benane Ward): Balambala (Danyere and Balambala Ward) and Garissa Township owing to early withdrawal of the MAM season and above average land surface temperatures.

However, in parts of Turkana and West Pokot pasture condition is fairly good because although rainfall onset was late there has been a general improvement in the rejuvenation of pasture and browse in areas that received off-season rainfall during the months of June and July. In Samburu, pasture and browse situation has improved in Samburu Central and parts of Samburu North due to intermittent showers received in July. However, the amount of pasture available is declining rapidly since it did not get sufficient time to reach maturity and continuous heavy grazing due to high concentration of livestock.

Table 1.0: Pasture and browse condition, July 2019

<i>Pasture</i>			<i>Browse</i>		
<i>Poor</i>	<i>Fair</i>	<i>Good</i>	<i>Poor</i>	<i>Fair</i>	<i>Good</i>
Embu	Baringo	Kilifi	Garissa	Baringo	Kajiado
Garissa	Kajiado	Kwale	Isiolo	Kitui	Kilifi
Isiolo	Laikipia	Lamu	Mandera	Embu	Turkana
Kitui	Narok	West Pokot	Tana River	Makueni	West Pokot
Mandera	Nyeri(Kieni)		Tharaka Nithi	Meru	Samburu
Tana River	Samburu		Wajir	Laikipia	Kwale
Tharaka Nithi	Turkana			Marsabit	
Wajir	Makueni			Narok	
	Marsabit			Taita Taveta	
	Meru			Nyeri(Kieni)	
	Taita Taveta			Lamu	

Livestock body condition

Body condition for most livestock is currently fair compared to good normally as summarized in Table 2. However, in a number of counties such as Garissa, Isiolo, Kitui, Mandera, Tana River, Wajir, Tharaka Nithi (Tharaka) and Embu (Mbeere) poor body condition for sheep and cattle was witnessed in July which was associated with reduced pasture availability. Low availability of crop residues that would have substituted the depleted pastures, in the mixed farming and agro pastoral areas has also contributed to the deterioration in livestock body condition.

Table 2.0: Livestock body condition, July 2019

Cattle			Goats		
Poor	Fair	Good	Poor	Fair	Good
Embu Garissa Tharaka Nithi	Isiolo Kajiado Kilifi Kitui Lamu Mandera Makueni Laikipia Marsabit Meru Nyeri(Kieni) Turkana Wajir Samburu Tana River Baringo	Narok Taita Taveta West pokot Kwale		Isiolo Kilifi Kitui Lamu Mandera Laikipia Makueni Marsabit Tana River Wajir Turkana Tharaka Nithi Meru Samburu Garissa Baringo	Embu Narok Kajiado West Pokot Nyeri(Kieni) Kwale Taita Taveta

Milk production

Generally, milk production across all ASAL counties is below normal and has declined compared to same period last year. For example, in Kilifi average milk production per household per day decreased by 42 percent compared to June which was also 10.8 percent below LTA for July. In Kajiado, current milk production was 39 percent below the long term mean of 6.2 litres while in Marsabit the average milk production recorded in July was 63 percent below LTA. Overall, below normal milk production was attributed to reduced pasture availability and increased distance to water sources and early livestock migration to drought fall back areas.

Table 3.0: Milk production, July 2019

Indicator	Current status			Trend		
	Above LTA	At LTA	Below LTA	Improving	Stable	Worsening
Milk Production	Meru Samburu Taita Taveta Kwale	West pokot	Lamu Isiolo Embu Baringo Kajiado Kilifi Kitui Laikipia Makueni Mandera Marsabit Narok Tana River Wajir Tharaka Nithi Turkana Garissa Nyeri Kieni	Laikipia Embu Baringo Kajiado Samburu Meru Taita taveta Narok Tana river Tharaka Nithi West pokot Turkana Kwale	Embu Kajiado Meru Narok Tharaka Nithi Turkana Kwale	Isiolo Lamu Kilifi Kitui Makueni Mandera Marsabit Wajir Garissa Nyeri Kieni

Cattle prices

In majority of the ASAL counties cattle prices remained stable owing mainly to the fact that cattle are still in fair body condition. However, below average cattle price was recorded in Turkana, Wajir, Kitui, Makueni, Marsabit, Garissa, Tharaka Nithi (Tharaka), Embu, (Mbeere) and Nyeri

(Kieni) which was occasioned by deteriorating cattle body condition and lack of ready buyers in the major livestock markets.

Table 4.0: Cattle prices, July 2019

Indicator	Current status			Trend		
	Above LTA	At LTA	Below LTA	Improving	Stable	Worsening
Cattle Prices	Lamu Isiolo Baringo Kajiado Kilifi Laikipia Mandera Meru Narok Samburu Taita Taveta Tana river West pokot		Tharaka Nithi Turkana Wajir Embu Kitui Makueni Marsabit Garissa Nyeri Kieni	Baringo Laikipia Samburu Tana river Turkana Nyeri Kieni	Meru Narok Taita Taveta Tharaka Nithi West pokot Embu Kajiado Marsabit Lamu Isiolo	Kilifi Kitui Makueni Mandera Wajir Garissa

Goat prices

Goat prices in the month of July were above average in a number of counties including: Baringo, Kajiado, Kilifi, Laikipia, Narok, Samburu, Taita Taveta, Isiolo and Kwale as a result of the fact that goats in these areas were still in good body condition.

However, in Garissa, Mandera, Marsabit, Tana River, Turkana, West Pokot and Wajir low demand coupled with large volumes of livestock being offered for sale in order to meet food and other non-food requirements for households had contributed to low goat prices. In the marginal agricultural counties such as Tharaka Nithi (Tharaka), Makueni and Embu (Mbeere) the unfavourable goat prices was associated with the progressive increase in sales by household in the absence of crop sales, to bridge food gaps and as a source of income for other non-food items.

Table 5.0: Goat prices, July 2019

Indicator	Current status			Trend		
	Above LTA	At LTA	Below LTA	Improving	Stable	Worsening
Goat Prices	Lamu Baringo Kajiado Kilifi Laikipia Meru Narok Samburu Taita Taveta Isiolo Kwale	Kitui	West Pokot Wajir Embu Garissa Makueni Mandera Marsabit Tana River Tharaka Nithi Turkana Nyeri(Kieni)	Lamu West Pokot Embu Laikipia Meru Samburu Turkana Nyeri(Kieni)	Baringo Kajiado Kilifi Kitui Marsabit Narok Taita Taveta Kwale	Garissa Makueni Mandera Tana River Tharaka Nithi Isiolo

Livestock migration

Due to decline in forage resources, earlier than normal migration of livestock was witnessed in July. The movements were towards the traditional dry season grazing areas and drought reserves. For example, in Turkana, livestock migrated through Karamoja border route due to availability of pastures and water. Other livestock moved through Loriu Hills to Lorinotom in Turkana North. Influx of livestock was reported in Samburu from Marsabit. Majority of livestock from Samburu East migrated to agro-pastoral areas while others moved towards Kirimun plains in Laikipia County and Kipsing and Oldonyiro in Isiolo County.

Migration was also reported in Marsabit where livestock moved from Laisamis to Gudas, Kom (Isiolo) and Sabarwawa (Samburu), others from North Horr moved to Hurr Hill, Waso (Wajir) while livestock from Moyale moved to Wajir North, Southern Ethiopia and Waso in Isiolo County and some from Saku moved to Jaldesa, Sololo and Dukana.

In addition, livestock from Mandera and Garissa, migrated to areas bordering Ethiopia and Somalia. In Tana River County, unusual migration of camels into the Tana Delta belt was observed for the first time despite the fear of Tsetse flies. As pasture continue to get depleted elevated livestock migration in most ASAL areas which might lead to resource based conflict and spread of livestock diseases.

Livestock mortalities

Haemorrhagic Septicaemia outbreak in camels was reported in Turkana, Baringo, Samburu and Marsabit. Occurrence of tick-borne diseases such as East Coast Fever (ECF) was also reported across the ASAL region while in Marsabit County, outbreak of Pasteurellosis in cattle resulted in 16 livestock deaths. However, there were no unusual cases of livestock deaths experienced during the month of July.

Crop production

The March-April-May rainy season was characterized by delayed start, poor spatial and temporal distribution and below average cumulative amounts. A long dry spell was experienced in April after planting in late March which exposed crops to extreme moisture stress and further led to delay in planting and replanting in most parts of marginal agricultural areas such as Kitui, Makueni, Kwale, Embu (Mbeere), Kilifi, Tharaka Nithi (Tharaka), Meru (Meru North), Narok, and Nyeri (Kieni). This has resulted to a drop in the total area planted and consequently production. It is projected that the expected yields for the 2019 MAM season will be below average with maize production estimated to be as low as 20 – 25 percent of LTA.

Maize prices

The price of maize has increased remarkably from March through to July, driven by depleting household stock and the subsequent increase in market demand. In Kitui, the retail price of a kilogram of maize was kshs 45, which was 14 percent above the five-year average and 48 percent above those of 2018. In Kwale, a kilogram of maize was retailing at kshs 48 a 9 percent margin above kshs 44 in the 2014-2018 LTA. In Makueni, the average price of a kilogram of maize in July 2019 was kshs 45 which was above LTA and a 36 percent increment compared to price reported in a similar period in 2018. In Tharaka a kilogram of maize was retailing at kshs 48 which was 25 percent above the five-year average and 56 percent above those of 2018.

The trend of maize price from March has been on the increase which is attributed to depleted household stocks following the below average 2018 short rains season and the poor performance of the 2019 long rains.

Table 6.0: Maize prices, July 2019

Indicator	Current status			Trend		
	Above LTA	At/close to LTA	Below LTA	Improving	Stable	Worsening
Maize Prices	Embu Isiolo Kitui Mandera Nyeri (Kieni) Tharaka Nithi Wajir West pokot Makueni Marsabit Taita Taveta Tana River	Garissa Kilifi Narok Meru Kwale Lamu Baringo Kajiado	Laikipia Samburu Turkana	Lamu Garissa Kajiado Laikipia Mandera Marsabit Samburu Turkana West Pokot Isiolo	Kwale	Embu Baringo Kilifi Kitui Makueni Meru Narok Taita Taveta Tana River Tharaka Nithi Wajir

Access to water

Recharge levels for the open water sources varied across ASAL counties, ranging from 10 - 30 percent in Marsabit and 45 - 60 in Turkana, while in Samburu the recharge level was 80 percent in the agro pastoral livelihood zone and 40 - 60 percent in the pastoral zone.

During the month of July, parts of Marsabit, Turkana, Samburu, Isiolo, Tana River and agro-pastoral areas of Wajir recorded return trekking distances for domestic water of between 1 and 6 kilometres which were within the seasonal range. At the same time exceptionally long trekking distances of 10 - 15 kilometres were reported in Samburu (Nachola, Nyiro and Ndoti) and Marsabit (Moyale and Laisamis). In addition, remarkably longer distances of up to 30 kilometres were observed in Lekushu, Lependera in Laisamis Sub County, Hurri Hills, Kubi Adhi, Konon Gos Malabot and Kalesa in North Horr Sub-County and Elledimtu in Moyale Sub-County.

Intensification of drought was demonstrated by the high concentration of human and livestock at water sources observed in a number of counties such as Isiolo (Sericho, Duse, Oldonyiro, Cherab and Chari); Garissa (Elkambere, Kulubow, Sarirah, Handaro, Mathaamarub, Welmerel, Baraki, Santa Abaq, Dadaab, Hamaey and Dertu) and parts of Wajir West and Wajir South.

Table 7.0: Distance from households to main water sources, July 2019

Indicator	Current status			Trend		
	Above LTA	At LTA	Below LTA	Improving	Stable	Worsening
Distance from households to main water sources	Embu Garissa Baringo Kajiado Kilifi Kitui Laikipia Makueni	Meru Narok Samburu	Lamu Isiolo Tharaka Nithi Turkana West pokot Nyeri Kieni	Tana river Turkana West Pokot Baringo	Lamu Isiolo Embu Garissa Kitui Laikipia Makueni Tharaka Nithi	Meru Narok Samburu Taita Taveta Wajir Kajiado Kilifi

	Mandera Taita taveta Tana river Wajir Marsabit Kwale					Mandera Marsabit Kwale Nyeri Kieni
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In almost 70 percent of counties, the average distance to water for livestock is longer than normal for the time of year largely attributed to pasture scarcity which has made livestock to graze further from operational water points. For example, in Marsabit County return distance for livestock from grazing areas to watering points increased considerably by a proportion of 30 percent to 19.3 km in June from 14.8 km in May which is also above the long term mean of 12.6 km by 53 percent. Likewise, in Kajiado, distance covered by livestock to water sources increased by 29 percent from 4.2 km in May to 5.4 km in June while in Tana River return distance for livestock from grazing sites to water sources increased to 15.5 km from 13.1 km. The trend in the distance trekked by livestock in search of water is illustrated Table 8.

Table 8.0: Distance from livestock grazing area to main water sources, July 2019

Indicator	Current status			Trend		
	Above LTA	At LTA	Below LTA	Improving	Stable	Worsening
Distance from livestock grazing area to main water sources	Lamu Embu Baringo Kilifi Laikipia Makueni Marsabit Samburu Taita taveta Tana river Tharaka Nithi Wajir West pokot	Isiolo Garissa Kajiado Kitui Narok Mandera Meru Kwale	Turkana	Turkana West pokot Baringo Garissa	Embu Kitui	Lamu Isiolo Kajiado Kilifi Laikipia Makueni Mandera Marsabit Meru Narok Samburu Taita Taveta Tana river Tharaka Nithi Wajir Kwale

Terms of trade

Table 4 summarises the terms of trade between goats and maize, for which in almost 70 percent of the counties the terms of trade (ToT) are below the long term average for the month while in eight counties the ToT are showing a downward trend. For instance, In Garissa, a goat exchanged for 41 kg of maize compared to 55 kg in the same period in 2018. The terms of trade were 22 percent below the long term average for July which was associated with declining goat prices and increasing maize prices. In Wajir, 55 kilogrammes of maize could be purchased from the sale of a goat compared to the long term average of 72 Kilograms, current ToT were 24 percent below LTA. In Mandera, households were able to purchase 36 kilogrammes of maize from a sale of a goat which was 33 percent below LTA while in Laikipia proceeds from the sale of a goat could purchase 76 kg of maize, a significant decrease compared to the previous month at 107 kg. The decline in ToT was attributed to the decrease in goat prices while prices of maize increased.

Table 9.0: Terms of trade, July 2019

Indicator	Current status				Trend		
	Above LTA	At LTA	Below LTA		Improving	Stable	Worsening
Terms of trade (ToT)	Lamu Kajiado Kilifi Laikipia Samburu Taita Taveta	Turkana	Mandera Wajir Tana River Garissa Tharaka Kwale West Pokot Baringo	Marsabit Narok Isiolo Nyeri Embu Makueni Meru Kitui	Embu Kajiado Laikipia West Pokot	Turkana Tana River Samburu Narok Meru Marsabit Kilifi Lamu	Isiolo Baringo Kitui Mandera Taita Taveta Tharaka Wajir Kwale

Health and nutrition

The proportion of children aged below five years in ASAL counties who are at risk of malnutrition is estimated using the mid-upper-arm circumference (MUAC) method (Table 10). In July 2019, counties such as Mandera, Kwale, Samburu, Tana River, Lamu, Garissa and Baringo recorded MUAC rates above LTA implying that the nutritional status of children during the month was worse than normal times.

- In Kwale, the proportion of children at risk of malnutrition in July was approximated at 9.5 percent, which was higher than 6.0 and 7.3 percent recorded in the 2014-2018 LTA and July 2018 respectively.
- In Samburu, the percentage of children below five years at risk of being malnourished slightly increased from 28.9 percent in June to 29.1 percent in July. The current proportion of under-five at risk of malnutrition was 37 percent above LTA. Suguta ward recorded the highest proportion of children at risk of malnutrition at 48 percent followed by Ndotto at 31.8 percent, Wamba North at 30 percent, Wamba West at 28.7 percent, Nachola at 25.6 percent and Waso at 9.6 percent.
- In Tana River, the proportion of children at risk of malnutrition in the month of July 2019 was 16.2 percent which was above the LTA of 14.2 percent. Highest cases of malnutrition were reported in Bangale, Madogo and Nanighi wards.
- In Baringo, the proportion of children under five years with MUAC <135 mm was 20.2 percent in July 2019 and was noted to be 46 percent above the long term averages of 2014-2018. When compared to June 2018, the current proportion was 56 percent above. The highest proportion of children at risk of malnutrition were reported in Kapenguria, Komolion and Ribko wards in the pastoral livelihood zones where MUAC rates were 42.4, 32.4 and 31.7 percent respectively.

The high malnutrition rates in these wards are largely due to poor infant and child care feeding practices and high diseases prevalence.

However, in other areas such as West Pokot, Marsabit, Embu, Isiolo, Turkana, Kitui, Tharaka, Taita Taveta and Meru North the malnutrition rates recorded in July were below LTA. For instance, In Turkana, proportion of children considered as being at risk of malnutrition decreased from 18 percent reported in June to 15.7 in July. Declining proportion of under-fives at risk was attributed to food availability at household level facilitated by the on-going relief distribution by the national and county governments coupled with the expanded milk consumption band across all the livelihood zones.

Table 10.0: Children at risk of malnutrition (MUAC), July 2019

Indicator	Current status				Trend		
	Above LTA	At LTA	Below LTA		Improving	Stable	Worsening
MUAC	Mandera Samburu Garissa Lamu Tana River Narok Baringo Kwale	Makueni	West Pokot Isiolo Kitui Taita Taveta Kajiado Laikipia Marsabit Kieni	Embu Turkana Tharaka Meru Kilifi Wajir	Garissa Kilifi Makueni Marsabit Tana River Turkana West Pokot Kieni	Embu Baringo Kajiado Laikipia Meru Narok Samburu Taita Taveta Tharaka Wajir	Lamu Kitui Mandera Isiolo Kwale

1.2 Drought phase classification

Currently eight counties are categorized in the normal drought phase, ten are in alert and five in alarm, compared with four in normal, 14 in alert and five in the alarm drought stage in June. As at the end of July, seven counties were reporting a worsening trend, 12 counties recorded a stable trend with the trend improving in four counties as shown in Table 11.

Table 11.0: Drought phase classification, July 2019

Drought status	Trend		
	Improving	Stable	Worsening
Normal	Samburu	Meru (Meru North) Narok Taita Taveta Turkana West Pokot	Kajiado Kwale
Alert	Nyeri (Kieni) Lamu Baringo	Tana River Laikipia Embu (Mbeere) Kilifi	Isiolo Kitui Makueni
Alarm		Wajir Marsabit Tharaka Nithi (Tharaka)	Garissa Mandera
Emergency			
Recovery			

4.0 Recommendations

In view of the prevailing drought situation that is unfolding in most ASAL counties, the following recommendations have been made:

1. **Provision of relief food/cash** to the vulnerable households; considering that purchasing power in pastoral areas is declining, while in the marginal agricultural areas household food stocks are diminishing.
2. **Expand water trucking** to areas and institutions without water, and in order to reduce long trekking distances.
3. **Repair of strategic boreholes.** Procurement and stock piling of fast moving spare parts for strategic boreholes and rehabilitation of strategic water sources.
4. **Provision of livestock feed**, livestock disease surveillance, and vaccination where appropriate.
5. **Promote commercial livestock offtake** programmes, so that herders can destock before the value of their animals falls further.
6. **Expand integrated health outreach and nutrition services** and address Kala-azar, cholera and measles outbreaks comprehensively.
7. **Intensify peace building and conflict management**, particularly in areas experiencing unusual livestock concentration or migration.

Annex 1.0 Vegetation Condition Index (VCI-3 Month) as at 29th July 2019

ADMINISTRATIVE UNIT				DROUGHT CATEGORIES/REMARKS		
COUNTY	Sub County	VCI-3 month as at 26 th June 2019	VCI-3 month as at 29 th July 2019	Color	VCI values (3-month)	Drought Category
					≥50	Vegetation greenness above normal
					>=35 - <50	Normal vegetation greenness
					>=20 - <35	Moderate vegetation deficit
					>=10 - <20	Severe vegetation deficit
					<10	Extreme vegetation deficit
BARINGO	County	12.43	56.01	The county is in above normal vegetation greenness with all its sub counties in normal to above normal vegetation greenness. The county experienced offseason showers from June that has improved the vegetation condition for the county from severe vegetation deficit to above normal vegetation condition.		
	Central	1.17	39.37			
	Eldama	4.53	40.87			
	Mogotio	16.83	64.39			
	North	6.33	48.02			
	South	15.31	58.92			
	Tiaty	15.79	61.3			
MANDERA	County	23.69	30.68	The county has recorded slight improvement however it remains in moderate vegetation deficit with all of its sub counties recording an improvement. Significant improvement in Mandera North and Mandera West.		
	Banissa	25.1	25.44			
	M East	24.53	36.5			
	Lafey	32.39	40.95			
	M North	16.87	23.5			
	M South	26.23	36.08			
	M West	19.06	24.88			
TURKANA	County	27	50.32	Significant improvement for the county from moderate vegetation deficit to above normal vegetation deficit as result of offseason showers received during the month.		
	T Central	40.42	67.14			
	T. East	20.56	57.01			
	T. Loima	34.03	55.38			
	T. North	19.36	35.22			
	T. South	31.01	60.11			
	T. West	29.92	50.22			
MARSABIT	County	19.95	23.39	The county and its sub counties has significantly improved from severe vegetation deficit to moderate vegetation deficit.Impr0vement noted across the sub counties.		
	Laisaimis	16.78	22.83			
	Moyale	27.95	20.24			
	N. Horr	19.54	24.29			
	Saku	22.85	27.44			
WAJIR	County	17.59	23.11	Improvement noted across the county from severe vegetation deficit to moderate vegetation deficit however Wajir Eldas and Wajir West remained in severe vegetation deficit and Extreme vegetation deficit respectively.		
	W East	24.47	26.83			
	W.Eldas	14.34	15.78			
	W. North	27.14	31.9			
	W. South	12.54	22.45			

	W.Torbaj	24.33	30.64																			
	W West	11.51	9.69																			
SAMBURU	County	23.2	41.29	Significant improvement from moderate vegetation deficit to above normal vegetation greenness.																		
	S East	23.22	27.77																			
	S. North	24.6	54.72																			
	S. West	18.24	50.03																			
ADMINISTRATIVE UNIT				DROUGHT CATEGORIES/REMARKS																		
COUNTY	Sub County	VCI-3 month as at 26th June 2019	VCI-3 month as at 29th July 2019	<table border="1"> <thead> <tr> <th>Color</th> <th>VCI values (3-month)</th> <th>Drought Category</th> </tr> </thead> <tbody> <tr> <td>Dark Green</td> <td>≥50</td> <td>Vegetation greenness above normal</td> </tr> <tr> <td>Light Green</td> <td>>=35 - <50</td> <td>Normal vegetation greenness</td> </tr> <tr> <td>Yellow</td> <td>>=20 - <35</td> <td>Moderate vegetation deficit</td> </tr> <tr> <td>Red</td> <td>>=10 - <20</td> <td>Severe vegetation deficit</td> </tr> <tr> <td>Dark Red</td> <td><10</td> <td>Extreme vegetation deficit</td> </tr> </tbody> </table>	Color	VCI values (3-month)	Drought Category	Dark Green	≥50	Vegetation greenness above normal	Light Green	>=35 - <50	Normal vegetation greenness	Yellow	>=20 - <35	Moderate vegetation deficit	Red	>=10 - <20	Severe vegetation deficit	Dark Red	<10	Extreme vegetation deficit
Color	VCI values (3-month)	Drought Category																				
Dark Green	≥50	Vegetation greenness above normal																				
Light Green	>=35 - <50	Normal vegetation greenness																				
Yellow	>=20 - <35	Moderate vegetation deficit																				
Red	>=10 - <20	Severe vegetation deficit																				
Dark Red	<10	Extreme vegetation deficit																				
GARISSA	County	21.69	28.72	The county remains in moderate vegetation deficit with Dujis remaining in severe vegetation deficit.																		
	Balambala	23.7	30.56																			
	Daadab	16.45	28.33																			
	Fafi	18.89	25.78																			
	Ijara	36.56	39.27																			
	Lagdera	15.09	22.85																			
	Dujis	11.89	16.27																			
ISIOLO	County	17.15	18.3	No significant improvement within the county as it remained in severe vegetation deficit																		
	I. North	11.58	13.27																			
	I. South	25.68	26																			
TANA RIVER	County	19.22	26.94	The county slightly improved from severe vegetation deficit to moderate vegetation deficit.																		
	Bura	16.72	21.94																			
	Galole	14.78	23.77																			
	Garsen	24.12	33.16																			
KAJIADO	County	36.23	43.28	Improvement noted across the county with all sub counties moving moderate vegetation deficit to normal conditions.																		
	K. Central	44.56	47.71																			
	K. East	32.95	39.37																			
	K. North	24.56	42.64																			
	K. South	30.82	37.36																			
	K. West	37.6	47.27																			
LAIKIPIA	County	18.48	51.2	Significant improvement from severe vegetation deficit to above normal vegetation. Significant improvement noted in Laikipia West due to good off season showers received during the month of July																		
	L. East	30.48	58.31																			
	L. North	21.15	55.35																			
	L. West	7.71	40.01																			
THARAKA NITHI	County	29.93	39.02	The county slightly improved from moderate vegetation deficit to normal drought conditions with Tharaka significantly improving from Severe vegetation deficit to moderate vegetation deficit.																		
	Chuka	45.55	59.91																			
	Maara	50.13	60.58																			

	Tharaka	17.58	24.27																			
WEST POKOT	County	22.64	54.53	The county improved from moderate vegetation deficit to normal to above normal vegetation conditions. Significant improvement noted in Sigor from severe vegetation condition to above normal vegetation condition.																		
	Kacheliba	26.24	57.49																			
	Kapenguria	22.87	54.42																			
	Pokot South	24.5	50.51																			
	Sigor	14.77	51.59																			
EMBU	County	45.82	53.36	Slight improvement with the county moving from normal to above normal drought conditions.																		
	Manyatta	58.19	55.73																			
	Mbeere North	38.21	46.69																			
	Mbeere South	46.06	55.42																			
	Runyenjes	48.12	58.18																			
ADMINISTRATIVE UNIT		DROUGHT CATEGORIES/REMARKS																				
COUNTY	Sub County	VCI-3 month as at 26th June 2019	VCI-3 month as at 29th July 2019	<table border="1"> <thead> <tr> <th>Color</th> <th>VCI values (3-month)</th> <th>Drought Category</th> </tr> </thead> <tbody> <tr> <td style="background-color: #008000;"></td> <td>≥50</td> <td>Vegetation greenness above normal</td> </tr> <tr> <td style="background-color: #90EE90;"></td> <td>>=35 - <50</td> <td>Normal vegetation greenness</td> </tr> <tr> <td style="background-color: #FFFF00;"></td> <td>>=20 - <35</td> <td>Moderate vegetation deficit</td> </tr> <tr> <td style="background-color: #FF0000;"></td> <td>>=10 - <20</td> <td>Severe vegetation deficit</td> </tr> <tr> <td style="background-color: #800000;"></td> <td><10</td> <td>Extreme vegetation deficit</td> </tr> </tbody> </table>	Color	VCI values (3-month)	Drought Category		≥50	Vegetation greenness above normal		>=35 - <50	Normal vegetation greenness		>=20 - <35	Moderate vegetation deficit		>=10 - <20	Severe vegetation deficit		<10	Extreme vegetation deficit
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	>=10 - <20	Severe vegetation deficit																				
	<10	Extreme vegetation deficit																				
KITUI	County	28.15	31.17	The county remained in moderate vegetation deficit with some of its sub counties like Kitui Central, Mwingi West, Kitui Rural and Kitui west remaining in normal vegetation conditions.																		
	Kitui Central	36.88	49.28																			
	Kitui East	29.96	33.71																			
	Mwingi Central	27.11	27.62																			
	Mwingi North	33.95	28.8																			
	Mwingi West	42.25	46.8																			
	Kitui Rural	35.54	47.07																			
	Kitui South	22.72	28.25																			
	Kitui West	36.16	41.09																			
MAKUENI	County	37.18	45.88	Slight improvement with the county remaining in normal vegetation greenness except Kibwezi East that is in moderate vegetation deficit.																		
	Kaiti	50.74	65.82																			
	Kibwezi East	29.44	33.72																			
	Kibwezi West	35.83	41.4																			
	Kilome	46.27	60.96																			
	Makueni	35.69	47.29																			
	Mbooni	47.32	60.83																			
MERU	County	33.31	42.81	The county slightly improved from moderate vegetation deficit to normal drought conditions however some sub counties like Igembe central ,North and South remained in moderate vegetation deficit band																		
	Buuri	35.63	53.1																			
	Central Imenti	48.88	61.68																			
	Igembe Central	25.48	29.26																			
	Igembe North	25.19	27.53																			

	Igembe South	32.46	33.06			
	North Imenti	44.13	66.87			
	South Imenti	54.95	57.52			
	Tigania East	23.76	37.3			
	Tigania West	22.22	39.52			
NYERI	County	50.87	62.88	The vegetation greenness is above normal across the entire county.		
	Kieni	45.1	61.01			
	Mathira	58.91	63.18			
	Mukurweini	57.91	71.03			
	Town	58.08	79.12			
	Othaya	57.69	57.86			
	Tetu	56.99	65.24			
KILIFI	County	25.86	39.08	The county has slightly improved from moderate vegetation deficit to normal vegetation conditions. Significant improvement in Kilifi north from severe vegetation deficit to normal drought conditions.		
	Ganze	22.72	38.82			
	Kaloleni	40.86	55.45			
	Magarini	26.68	36.45			
	Malindi	30.58	49.52			
	Kilifi-North	16.09	38.91			
	Rabai	29.45	40.57			
	Kilifi-South	22.44	40.45			
KWALE	County	28.48	46.12	Significant improvement noted across the county from moderate vegetation deficit to normal drought conditions.		
	Kinango	29.96	47.23			
	Lungalunga	27.77	46.51			
	Matuga	24.78	42.95			
	Msambweni	23.74	39.03			
LAMU	County	39.79	51.27	Improvement noted across the county and its sub counties from normal drought conditions to above normal drought conditions.		
	Lamu East	41.44	51.77			
	Lamu West	38.84	50.99			
ADMINISTRATIVE UNIT				DROUGHT CATEGORIES/REMARKS		
COUNTY	Sub County	VCI-3 month as at 26 th June 2019	VCI-3 month as at 29 th July 2019	Color	VCI values (3-month)	Drought Category
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					>=35 - <50	Normal vegetation greenness
					>=20 - <35	Moderate vegetation deficit
					>=10 - <20	Severe vegetation deficit
					<10	Extreme vegetation deficit
TAITA TAVETA	County	38.58	53.08	Improvement noted from moderate vegetation deficit to above normal vegetation greenness with significant improvement noted in VOI.		
	Mwatate	43.25	60.53			
	Taveta	57.66	76.5			
	Voi	28.4	40.02			
	Wundanyi	48.35	65.3			

NAROK	County	30.11	49.89	The county improved from moderate vegetation deficit to normal drought conditions.
	Narok-East	32.97	50.33	
	Emurua Dikirr	39.14	73.54	
	Kilgoris	32.43	53.36	
	Narok-North	28.45	45.02	
	Narok-South	32.16	42.58	
	Narok-West	26.31	55.87	

Annex 2.0 Summary of the drought early warning system

Each month, Field Monitors collect data in a number of sentinel sites across 23 arid and semi-arid counties. This is then complemented by information from other sources, particularly satellite data. For all indicators, the current value is compared with the long-term average for the time of year in order to establish whether it falls within seasonal norms.

Four types of indicator are monitored, capturing different kinds of impact (Table 12). The combined analysis from all four indicator groups then determines the particular drought phase: normal, alert, alarm, emergency or recovery (Figure 2). Identifying the correct drought phase helps to guide the most appropriate response for that stage in the drought cycle.

Table 12.0: Indicators monitored by the drought early warning system

Type of indicator	Examples of indicators monitored	Types of impact
Biophysical	Rainfall data Vegetation condition State of water sources	Environmental
Production	Livestock body condition Milk production Livestock migration Livestock mortality Crop production	Livestock production Crop production
Access	Terms of trade (meat/maize) Milk consumption Distances to water	Markets Access to food and water
Utilisation	MUAC (Mid-Upper Arm Circumference) Coping strategies	Nutrition Coping strategies

Figure 2.0: Drought Phase Classification

