



**NATIONAL DROUGHT MANAGEMENT AUTHORITY**

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## **National Drought Early Warning Bulletin**

**December 2019**

## KEY HIGHLIGHTS

- All ASAL counties received higher than average rainfall amounts during the month of November 2019.
- Overall the seasonal rains have significantly contributed towards the improvement of pasture and browse as well as increasing water availability in the ASAL areas, hence enhancing livestock productivity in terms of both livestock body condition and milk production.
- The condition of crops in the agricultural marginal counties such as Kitui, Makueni, Kwale, Embu (Mbeere), Kilifi, Tharaka Nithi (Tharaka), Meru (Meru North), Lamu and Nyeri (Kieni) is good owing to the above average rainfall. Consequently, it is projected that the 2019 October to December short rains are likely to impact positively on crop performance and therefore households expect to realize a normal to slightly above normal harvest.
- Despite the generally favourable production prospects, the heavy rainfall received in November were associated with episodes of severe storms that led to flooding, destruction of property and infrastructure and also loss of lives and livelihoods.
- Some of the counties that were seriously affected by floods include: Wajir, Marsabit, Mandera, Wajir, Kitui, Garissa, Tana River, Isiolo and Taita Taveta.
- In West Pokot County, occurrence of a massive landslide incidence resulted in the death of at least 50 people and displacement of more than 10,000 people.
- The Government, the Kenya Red Cross Society (KRCS), UN Agencies and other humanitarian partners provided humanitarian assistance to local communities in the flood-affected areas across the country. Provision of food and non-food items (NFI), emergency medical teams, supply of potable water to marooned communities, regular aerial reconnaissance to locate communities that may be cut-off and assessment of the status of flooded roads are among the main activities undertaken during the month under review.

**Drought phase classification, November 2019**

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

## 1.0. Drought status

### 1.1 Drought indicators

#### *Rainfall*

Most ASAL counties experienced above average rainfall during the month of November 2019 with a number of counties such as Narok, Marsabit, Mandera, Lamu, Laikipia, Garissa, Turkana, Kilifi, and Wajir receiving rainfall that was above 100 percent of their November long term average. While the ongoing seasonal rains are likely to result in improved pasture condition as well as increase recharge of water sources in the ASAL areas, on the other hand the enhanced rainfall received in November were associated with episodes of heavy storms that led to flooding, destruction of property, roads and bridges and loss of lives and livelihoods.

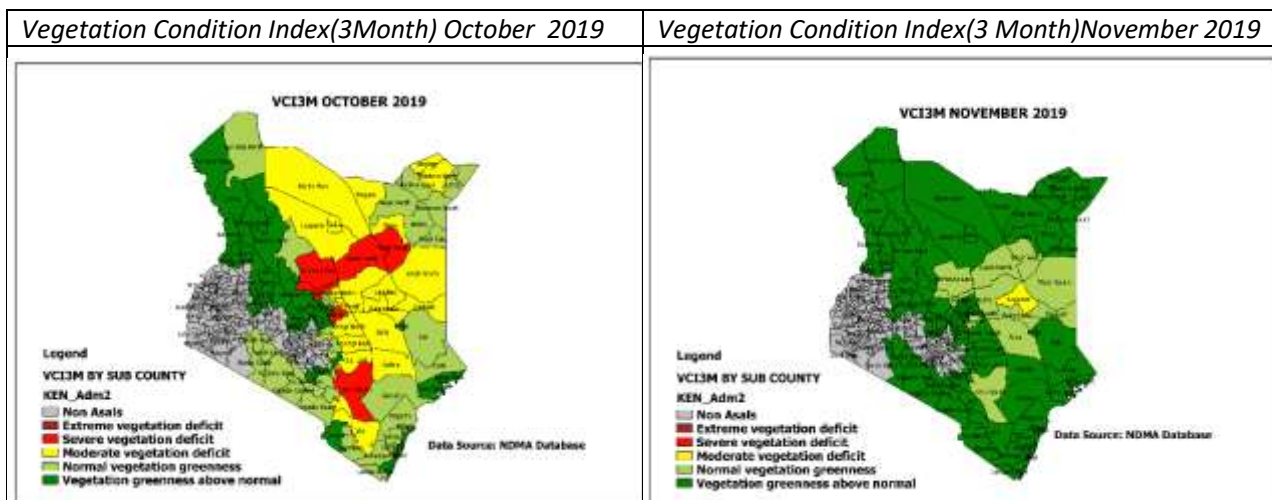
Some of the counties that were affected by floods include: Wajir, Marsabit, Mandera, Wajir, Kitui, Garissa, Isiolo and Taita Taveta. In West Pokot County, massive landslide incidences were reported in Parua, Nyarkulian and Muino areas where over 50 lives were lost and more than 20 people were injured. About 10,000 people were displaced during the tragedy. In Taita Taveta County flash floods caused havoc in Voi Sub County, where four villages (Kaloleni, Tanzania, Msambweni and Gimba) were adversely affected and people displaced after Voi River burst its bank. Mudslides were also reported in Taita Sub County (Wumingu-Kishushe and Wundanyi-Mbale Wards) where a total of 457 households were affected.

#### *Vegetation condition*

All ASAL counties received good rains in November which stimulated remarkable improvement in the condition of vegetation and as a result the vegetation greenness in virtually all counties is within normal and above normal ranges for the period.

The good performance of the October - November - December (OND) 2019 seasonal rainfall is evident as it has resulted to high vegetation regeneration with all the 23 arid and semi-arid counties currently classified in the normal and above normal vegetation greenness category as shown in Figure 1 which compares the vegetation condition index (VCI) in late October 2019 with that in late November 2019. In addition, the situation for each county disaggregated by sub-county is provided in Annex 1.

**Figure 1: Comparison of Vegetation Condition Index (VCI), October 2019 and November 2019**



#### *Water sources*

In nearly all ASAL areas the most relied upon sources of water for both domestic and livestock consumption in November were pans, dams, shallow wells and rivers. The current water situation is remarkably better compared to the one normally witnessed during the month of November. For instance, in Turkana County all the seasonal rivers recorded huge volumes with the available water within these sources anticipated to last until end of February next year. Across the ASAL counties, most surface water sources are recharged to between 75 and 100 percent of their full capacity.

### ***Livestock production***

The above average rainfall received in November has brought about significant recovery and regeneration of pasture and browse resources across most of the pastoral areas and currently, body condition and productivity for most livestock species is on an improving trend.

### ***Pasture and browse condition***

As presented in Table 1, the state of pasture and browse in most of the arid and semi-arid counties in November was good. The improvement in pasture and browse condition was attributed to the above average rainfall received during the month. However, in Embu, Nyeri and Tharaka Nithi pasture situation was categorized to be below normal owing to the prolonged dry spell experienced before the start of the rainy season.

**Table 1.0: Pasture and browse condition, November 2019**

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

### ***Livestock body condition***

In a good number of counties, livestock body condition is better compared to last month due to increase in pasture availability, both in terms of quantity and quality coupled with reduction in trekking distances in search of pasture and water. As shown in Table 2, during the month under review, over 60 percent of the ASAL counties reported that body condition for cattle and goats is good and on an improving trend.

**Table 2.0: Livestock body condition, November 2019**

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

**Milk production**

As a result of good availability of forage and water for livestock coupled with some calving and kidding realized during the month, milk production increased considerably in majority of the ASAL counties during the month of November. For example, in Isiolo County average milk production per household per day increased by 300 percent to 2.4 litres in November from 0.6 litres in October while household milk production per day in Garissa increased by 70 percent from two litres in October to 3.4 litres in November. In Marsabit, current milk production level is 80 percent above LTA for similar period of the year. Average milk production per household per day in Marsabit County rose by 165 percent from 1.7 litres in October to 4.5 litres in November.

However, milk production in some ASAL areas is still below normal, attributed to the fact that livestock have not fully recovered from the effects of the July to October dry spell coupled with the slow recovery in rangeland conditions. In Taita Taveta, for instance, average daily milk production per household fell by 13 percent from 3.8 litres posted in the previous month to 3.3 litres in November.

**Table 3.0: Milk production, November 2019**

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

**Cattle prices**

In majority of the ASAL counties cattle prices are improving or have remained stable which was attributed to the improvement in livestock body condition due to increase in both pasture and water availability. However, in spite of the recorded stability in cattle prices during the month of November, the prevailing price is lower than the three-year average price of cattle for the month

in three ASAL counties. For instance, in Kitui, Tharaka and Mbeere the current prices are below the price reported for the same period (LTA) by 15, 12 and 6 percent respectively implying that the situation has not returned to normal in these areas.

**Table 4.0: Cattle prices, November 2019**

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

### Goat prices

During the month of November goat prices in about 80 percent of the ASAL counties were close to LTA or above average except in few counties such as Mandera, Wajir and Nyeri where they were below the three-year average price due to market forces of supply and demand occasioned by the high volumes of small stock offered for sale. Table 5 summarizes the trend in goat prices in November in the 23 ASAL counties.

**Table 5.0: Goat prices, November 2019**

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

### Crop production

Crops are generally in favourable condition due to above average rainfall. Ongoing farm activities in the marginal agricultural counties such as Makueni, Kitui, Embu (Mbeere), Tharaka, Meru North and Nyeri (Kieni) include weeding and top dressing for maize which is at knee height to

tasselling stage while beans are at flowering stage.

Despite the generally favorable production prospects, heavy rainfall has caused flooding, damaged farms and crop losses in some areas like Kitui, Taita Taveta, Embu (Mbeere), Tana River, Garissa, Kilifi and Nyeri (Kieni). Cases of fall army worm infestation were also reported in some of the ASAL counties such as Embu (Mbeere), Kitui, Makueni, Nyeri (Kieni), Tharaka Nithi (Tharaka), and Taita Taveta.

### **Maize prices**

In over 70 percent of the counties, maize prices recorded in November were higher than normal compared with the 2016 - 2018 LTA. For example, in Meru, West Pokot, Embu (Mbeere), Kwale, Kitui and Tharaka Nithi (Tharaka) current prices are above LTA by 70, 46, 42, 34, 33 and 32 percent respectively. The higher than average maize prices in ASAL counties could be attributed to poor crop harvest in the previous season and limited maize stocks at household level. Maize price trends in the ASAL counties are illustrated in Table 6.

**Table 6.0: Maize prices, November 2019**

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

### **Access to water**

Return distances to water for households have generally reduced in nearly all ASAL counties. The reduction in the average distances to water points for households was occasioned by the increase in water availability as most open water sources were recharged by the rains received since the beginning of the OND season in October. However, in spite of the prevailing wet conditions which has resulted in recharge of most of the surface water sources, current average distances in Mandera, Tana River, Garissa, Embu (Mbeere), are still above the five-year average which was attributed to contamination of some of the water sources due to flooding. Table 7 shows the trend in distances walked by households to access water.

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

Indicator	Current status			Trend			
	Above LTA	At LTA	Below LTA	Improving	Stable	Worsening	
<b>Distance from households to main water sources</b>	Embu Garissa Kajiado Mandera Tana River		Baringo Kilifi Laikipia Makueni Marsabit Turkana	Isiolo Kitui Kwale Tharaka Lamu Meru	Turkana Wajir Baringo Embu Garissa Isiolo Kajiado Kitui Mandera Laikipia Makueni	Kilifi Kwale Lamu Meru Narok Nyeri	Tharaka

			Nyeri Samburu West Pokot Taita Taveta	Wajir Narok	Samburu Tana River West Pokot	Taita Taveta	
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The trend in the distance trekked by livestock in search of water is illustrated Table 8. In about 80 percent of counties, the average distance to water for livestock is shorter than normal for the time of year largely attributed to improved pasture availability and increase in the number of watering points following the recharge of most water sources including natural water holes, seasonal rivers, ponds, dams and water pans. For example, in Tana River County return distance for livestock from grazing areas to watering points decreased considerably by a proportion of 50 percent to 6.4 km in November from 12.7 km in October which is also below the long term mean of 7.1 km by 10 percent. Likewise, in Marsabit, distance covered by livestock to water sources decreased by 46 percent from 8.3 km in October to 4.5 km in November while in Samburu the distance trekked by livestock to access water decreased by 39 percent from 10.5 km in October to 6.4 km in November.

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

Indicator	Current status				Trend			
	Above LTA	At LTA	Below LTA		Improving		Stable	Worsening
<b>Distance from Livestock Grazing Area to Main Water Sources</b>	Baringo Embu Garissa Kwale	Mandera	Isiolo Kilifi Laikipia Makueni Samburu Taita Taveta Tana River Turkana West Pokot	Kajiado Kitui Lamu Marsabit Meru Nyeri Narok Wajir Tharaka	Taita Taveta Tana River Baringo Garissa Kajiado Laikipia Mandera Marsabit Samburu West Pokot	Meru Nyeri Embu Isiolo Kitui Lamu Makueni Narok Wajir	Kilifi	Kwale Turkana Tharaka

### **Terms of trade**

Table 9 shows the trend in terms of trade (ToT) between the relative price of goats and maize. In majority of the counties the terms of trade improved or remained stable in November, indicating that in most ASAL areas households could obtain more maize from the sale of a goat currently than they did in October. The increasing trend in ToT is owed to a general rise in goat prices, mostly credited to improvement in livestock body condition. For instance, In Garissa, proceeds from the sale of a goat could purchase 49 kg of maize compared to 37 kg in October an increase by 32 percent while in Kajiado County households could currently purchase 95 kg of maize which when compared with the 2016-2018 LTA of 60 kg translates to an additional 35 kg maize.

On the other hand, in Samburu County, ToT for the month under review were worsening since the proceeds from the sale of a goat could purchase 55 kg of maize in November compared with 57 kg in October which was attributed to a reduction in goat prices.



**Table 9.0: Terms of trade, November 2019**

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

### Health and nutrition

Mid upper arm circumference (MUAC) is used for the assessment of nutritional status of children between six and fifty-nine months of age. During the month of November, an increasing trend of children with MUAC less than 135 mm was reported implying that the nutritional situation in most counties is improving with 22 out of the 23 ASAL counties currently on either an improving or stabilizing trend. Increase in milk consumption level among the under-fives was the major driver of the declining proportion of children rated as being at risk of malnutrition.

However, eight counties: Kwale, Mandera, Meru, Tharaka, Baringo, Lamu, Samburu and Tana River reported proportions of children with MUAC less than 135 mm which are higher than the November long term average. The above normal malnutrition status in these counties was associated with inadequate food intake, high disease prevalence and poor maternal care such poor breastfeeding practices. Table 10 shows the trend in the proportion of children at risk of malnutrition across the ASAL counties.

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

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

### 1.2 Drought phase classification

Table 11 shows the trend in drought status in the 23 ASAL counties. In nearly all ASAL counties the key drought indicators are improving and are returning to normal. Significant improvement

has been observed during the month of November in most of the counties with the trend improving and stable in 11 and 12 counties respectively. Currently there are 21 counties in the normal phase and two in recovery, compared with 13 counties in normal, seven in alert, one in recovery and three in the alarm drought phase in October.

**Table 11.0: Drought phase classification, November 2019**

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

## **2 Projected food security situation**

The weather outlook for December 2019 by Kenya Meteorological Department (KMD) indicates that most ASAL counties are likely to experience above average rainfall during the month of December 2019. The rainfall distribution, both in time and space, is expected to be generally good. In addition, the forecast points to a possibility of a late cessation with most counties anticipated to continue receiving rainfall until the fourth week of December 2019.

Livestock productivity in terms of milk production will most likely go up owing to availability of adequate forage of good quality and water within reduced trekking distances thus translating to a better livestock body condition.

The predicted above average rainfall is likely impact positively on crop production

Maize prices are likely to drop while goat price is expected to increase. As such, the terms of trade for livestock keepers are expected to remain favourable

Nutritional status of children is expected to gradually improve further in the month of December due to above normal milk consumption

## **3 Recommendations**



- Provision of food assistance and scale up of cash transfer targeting households currently food insecure as a result of the recent drought and those affected by floods.
- Awareness raising and support to households living in flood prone areas to move to safer grounds/area to avoid loss of lives and destruction of property.
- Promotion of rain water harvesting technologies.
- Treatment and vaccination against emerging livestock diseases.
- Promote pasture establishment and conservation including deferred grazing management and participatory rangeland management.
- Continue sensitization on, scouting for and monitoring of fall armyworm infestation in order to avert crop losses.
- Promotion of appropriate post-harvest management practices.
- Enhance hygiene promotion and provision of water treatment chemicals to control waterborne diseases.
- Intensify peace building initiatives to advocate for peaceful coexistence and sharing of resources.

Annex 1.0 Vegetation Condition Index (VCI-3 month) as at 25<sup>th</sup> November 2019

ADMINISTRATIVE UNIT				DROUGHT CATEGORIES/REMARKS		
COUNTY	Sub County	VCI-3 month as at 27 <sup>th</sup> Oct 2019	VCI-3 month as at 25 <sup>th</sup> Nov 2019	Colour	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	76.64	80.11	Vegetation greenness above normal due to good performance of 2019 long rains.		
	Central	84.66	85			
	Eldama	72.74	75.17			
	Mogotio	78.93	82.57			
	North	75.33	77.06			
	South	80.85	82.35			
	Tiaty	74.48	79.99			
MANDERA	County	38.14	73.23	Above normal vegetation greenness across the county and its sub counties as result of good short rains season performance.		
	Banissa	27.35	60.85			
	M East	47.07	75.14			
	Lafey	44.44	75.03			
	M North	26.99	66.53			
	M South	47.84	80.56			
	M West	38.15	78.15			
TURKANA	County	53.53	76.11	Above normal vegetation greenness across the county and its sub counties as result of good short rains season performance.		
	T Central	70.19	79.1			
	T. East	55.66	62.46			
	T. Loima	53.59	82.87			
	T. North	44.07	71.94			
	T. South	54.13	66.72			
	T. West	57.53	91.27			
MARSABIT	County	27.72	60.81	Above normal vegetation greenness across the county and its sub counties as result of good short rains season performance. Significant improvement observed.		
	Laisaimis	26.49	61.27			
	Moyale	23.01	67.29			
	N. Horr	29.4	57.79			
	Saku	31.54	81.2			
WAJIR	County	30.88	60.65	Normal to above normal vegetation greenness across the county and its sub counties as result of good short rains season performance		
	W East	48.61	83.51			
	W.Eldas	23.24	62.53			
	W. North	44.47	87.14			
	W. South	22.52	43.53			
	W.Tarbaj	46.61	83.2			

	W West	17.33	37.78																			
<b>SAMBURU</b>	<b>County</b>	32.95	54.98	Normal to above normal vegetation greenness across the county and its sub counties as result of good short rains season performance																		
	S East	19.21	48.3																			
	S. North	40.56	58.56																			
	S. West	63.01	70.01																			
<b>ADMINISTRATIVE UNIT</b>		<b>DROUGHT CATEGORIES/REMARKS</b>																				
<b>COUNTY</b>	<b>Sub County</b>	<b>VCI-3 month as at 27<sup>th</sup> Oct 2019</b>	<b>VCI-3 month as at 25<sup>th</sup> Nov 2019</b>	<table border="1"> <thead> <tr> <th>Color</th> <th>VCI values (3-month)</th> <th>Drought Category</th> </tr> </thead> <tbody> <tr> <td>Green</td> <td>≥50</td> <td>Vegetation greenness above normal</td> </tr> <tr> <td>Light Green</td> <td>&gt;=35 - &lt;50</td> <td>Normal vegetation greenness</td> </tr> <tr> <td>Yellow</td> <td>&gt;=20 - &lt;35</td> <td>Moderate vegetation deficit</td> </tr> <tr> <td>Red</td> <td>&gt;=10 - &lt;20</td> <td>Severe vegetation deficit</td> </tr> <tr> <td>Dark Red</td> <td>&lt;10</td> <td>Extreme vegetation deficit</td> </tr> </tbody> </table>	Color	VCI values (3-month)	Drought Category	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																				
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																				
<b>GARISSA</b>	<b>County</b>	37.3	54.52	Normal to above normal vegetation greenness across the county and its sub counties except Lagdera sub county that is in moderate vegetation deficit.																		
	Balambala	33.92	42.28																			
	Daadab	24.14	37.52																			
	Fafi	41.97	67.06																			
	Ijara	49.56	69.22																			
	Lagdera	25.42	30.23																			
	Dujis	54.88	74.82																			
<b>ISIOLO</b>	<b>County</b>	23.05	42.49	Normal vegetation greenness across the county and its sub counties as result of good short rains season performance.																		
	I. North	18.66	43.32																			
	I. South	29.77	41.22																			
<b>TANA RIVER</b>	<b>County</b>	36.49	60.49	Normal to above normal vegetation greenness with significant improvement recorded across the county.																		
	Bura	33.82	48.63																			
	Galole	33.75	60.65																			
	Garsen	40.47	70.46																			
<b>KAJIADO</b>	<b>County</b>	42.8	64.96	Above normal vegetation greenness across the county and its sub counties as result of good short rains season performance.																		
	K. Central	35.34	59.31																			
	K. East	41.05	74.69																			
	K. North	43.19	60.55																			
	K. South	46.04	69.83																			
	K. West	45.14	60.1																			
<b>LAIKIPIA</b>	<b>County</b>	70.31	75.6	Above normal vegetation greenness across the county and its sub counties as result of good short rains season performance.																		
	L. East	63.2	74.32																			
	L. North	63.82	71.7																			
	L. West	85.87	83.53																			
<b>THARAKA NITHI</b>	<b>County</b>	31.93	47.16	Normal to above normal vegetation greenness with significant improvement recorded across the county.																		
	Chuka	52.73	61.59																			
	Maara	57.32	57.46																			
	Tharaka	15.98	38.43																			

<b>WEST POKOT</b>	<b>County</b>	76.09	78.63	Above normal vegetation greenness across the county and its sub counties as result of good short rains season performance.		
	Kacheliba	76.36	79.44			
	Kapenguria	85.34	85.39			
	Pokot South	74.44	77.46			
	Sigor	68.78	72.12			
<b>EMBU</b>	<b>County</b>	46.8	67.33	Above normal vegetation greenness across the county and its sub counties as result of good short rains season performance. Significant improvement recorded.		
	Manyatta	56.94	54.72			
	Mbeere North	43.4	67.28			
	Mbeere South	42.64	72.89			
	Runyenjes	58.67	60.95			
<b>ADMINISTRATIVE UNIT</b>						
<b>COUNTY</b>	<b>Sub County</b>	<b>VCI-3 month as at 27<sup>th</sup> Oct 2019</b>	<b>VCI-3 month as at 25<sup>th</sup> Nov 2019</b>	<b>Color</b>	<b>VCI values (3-month)</b>	<b>Drought Category</b>
					≥50	Vegetation greenness above normal
					>=35 - <50	Normal vegetation greenness
					>=20 - <35	Moderate vegetation deficit
					>=10 - <20	Severe vegetation deficit
					<10	Extreme vegetation deficit
<b>KITUI</b>	<b>County</b>	24.61	50.6	Normal to above normal vegetation greenness across the county and its sub counties as result of good short rains season performance.		
	Kitui Central	52.55	81.39			
	Kitui East	23.94	51.91			
	Mwingi Central	23.01	57.9			
	Mwingi North	25.81	50.1			
	Mwingi West	40.22	77.51			
	Kitui Rural	43.41	74.61			
	Kitui South	18.63	38.63			
	Kitui West	45.7	82.59			
<b>MAKUENI</b>	<b>County</b>	43.76	76.36	Above normal vegetation greenness across the county and its sub counties as result of good short rains season performance.		
	Kaiti	60.24	83.59			
	Kibwezi East	28.97	56.64			
	Kibwezi West	42.34	75.05			
	Kilome	55.49	91.77			
	Makueni	47.99	90.63			
	Mbooni	58.14	87.16			
<b>MERU</b>	<b>County</b>	44.44	61.77	Above normal vegetation greenness across the county and its sub counties as result of good short rains season performance. Significant improvement recorded.		
	Buuri	53.47	69.14			
	Central Imenti	57.47	62.04			
	Igembe Central	34.39	62.88			
	Igembe North	32.74	62.27			
	Igembe South	30.6	59.51			

	North Imenti	59.96	67.17			
	South Imenti	66.12	61.03			
	Tigania East	38.5	56.46			
	Tigania West	40.26	61.46			
NYERI	<b>County</b>	60.33	66.79	Above normal vegetation greenness across the county and its sub counties as result of good short rains season performance.		
	Kieni	57.23	65.93			
	Mathira	67.31	68.35			
	Mukurweini	65.7	75.07			
	Town	57.32	75.08			
	Othaya	64.93	61.45			
	Tetu	66.52	66.06			
KILIFI	<b>County</b>	44.51	66.91	Above normal vegetation greenness across the county and its sub counties as result of good short rains season performance. Significant improvement recorded.		
	Ganze	41.92	64.57			
	Kaloleni	49.55	68.44			
	Magarini	41.61	67.41			
	Malindi	43.89	59.64			
	Kilifi-North	60.62	71.39			
	Rabai	54.89	65.24			
	Kilifi-South	69.26	75.72			
KWALE	<b>County</b>	47.63	66.81	Above normal vegetation greenness across the county and its sub counties as result of good short rains season performance. Significant improvement recorded		
	Kinango	41.65	64.46			
	Lungalunga	49.01	70.19			
	Matuga	64.42	69.89			
	Msambweni	69.45	70.67			
LAMU	<b>County</b>	61.68	76.97	Above normal vegetation greenness across the county and its sub counties as result of good short rains season performance. Significant improvement recorded		
	Lamu East	58.78	88.68			
	Lamu West	63.37	81.03			
<b>ADMINISTRATIVE UNIT</b>				<b>DROUGHT CATEGORIES/REMARKS</b>		
<b>COUNTY</b>	<b>Sub County</b>	<b>VCI-3 month as at 27<sup>th</sup> Oct 2019</b>	<b>VCI-3 month as at 25<sup>th</sup> Nov 2019</b>	<b>Color</b>	<b>VCI values (3-month)</b>	<b>Drought Category</b>
					≥50	Vegetation greenness above normal
					≥35 - <50	Normal vegetation greenness
					≥20 - <35	Moderate vegetation deficit
					≥10 - <20	Severe vegetation deficit
					<10	Extreme vegetation deficit
TAITA TAVETA	<b>County</b>	39.08	77.08	Above normal vegetation greenness across the county and its sub counties as result of good short rains season performance. Significant improvement recorded		
	Mwatate	38.21	71.5			
	Taveta	55.13	95.94			
	Voi	31.93	69.96			
	Wundanyi	46.82	86.42			

<b>NAROK</b>	<b>County</b>	<b>53.52</b>	<b>62.19</b>	Above normal vegetation greenness across the county and its sub counties as result of good short rains season performance. Significant improvement recorded
	Narok-East	44.18	66.83	
	Emurua Dikirr	80.3	82.41	
	Kilgoris	66.65	66.31	
	Narok-North	47.61	55.56	
	Narok-South	45.88	62.2	
	Narok-West	59.48	60.53	



## 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	Mid-Upper Arm Circumference (MUAC) Coping strategies	Nutrition Coping strategies

Figure 2.0: Drought Phase Classification

