



**NATIONAL DROUGHT MANAGEMENT AUTHORITY**

---

## **National Drought Early Warning Bulletin**

**March 2019**

## KEY HIGHLIGHTS

- Currently, majority of the counties, that is 16 out of the 23 arid and semi-arid (ASAL) counties are classified in the alert phase.
- More counties have moved into the alert drought stage, from nine (9) in January to sixteen (16) in February, with 16 counties reporting a worsening trend and 7 counties currently recording a stable trend.
- Poor October to December rains, followed by abnormally high temperatures since January 2019 have contributed to rapid deterioration of water and forage resources which has started affecting livelihoods.
- The sunny and dry weather conditions that prevailed in February resulted in loss of crops that were yet to mature and drying up of pasture as well as dams and water pans in most ASAL areas.
- Access to water has deteriorated in almost all ASAL counties with average return distances to water for both households and livestock increasing compared to those recorded in January.
- Current distances trekked by households to access water are also above the five-year average in most ASAL areas indicating that water scarcity had increased this February compared to similar periods in recent years.
- The situation is projected to improve in April after the onset of the long rains.
- However, the projected late onset and poor distribution of the March - April - May (MAM) seasonal rainfall are likely to affect the start of planting activities in the marginal agricultural counties.
- The overall impact of March to May rains on water availability, pasture and food security situation across the ASAL region might be below the usual ranges. It is therefore critical to monitor the performance of the MAM season.

Drought phase classification - February 2019

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

## **1.0. Drought status**

### **1.1 Drought indicators**

#### ***Rainfall***

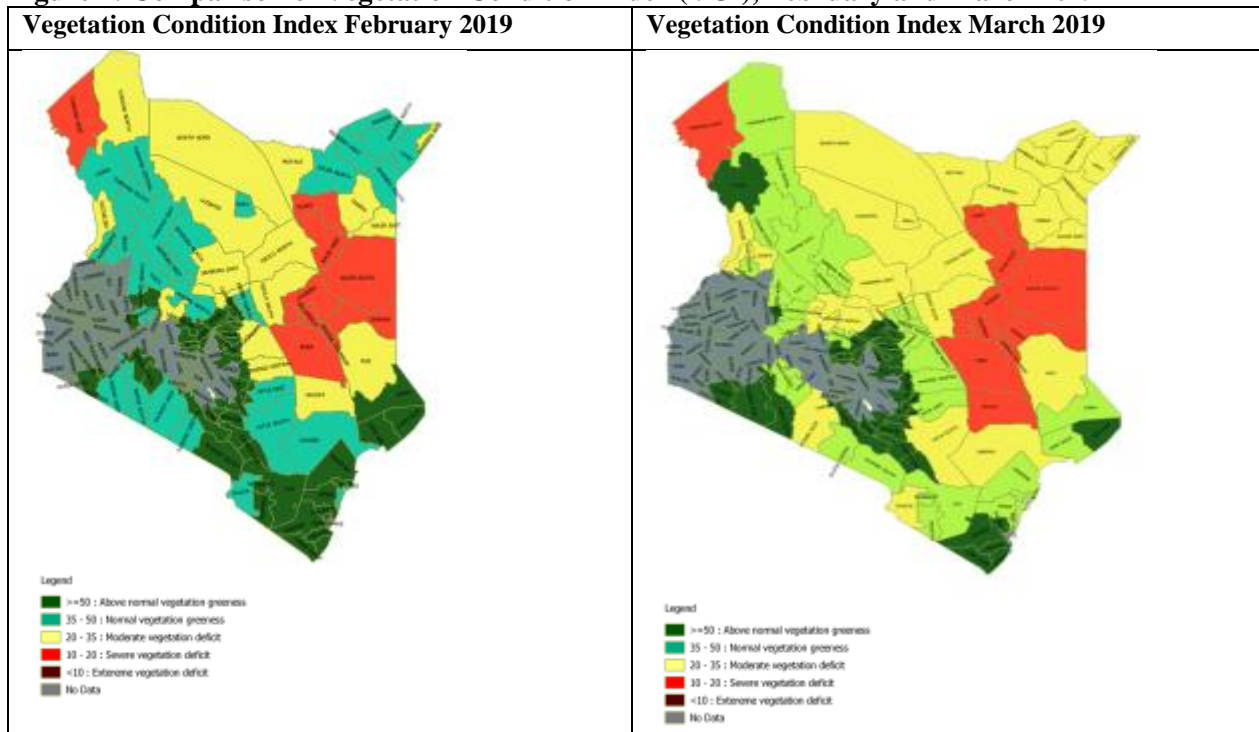
Generally sunny and dry weather conditions prevailed in most parts of the ASAL region during the month of February. In addition, most ASAL counties recorded higher than average daytime temperatures during the month. This was more noticeable in the Northwestern, Northeastern and the Coastal regions. The sunny and dry conditions coupled with higher than average daytime temperatures experienced in some of the counties such as Wajir, Mandera, Marsabit, Garissa, Tana River, Isiolo, Turkana, West Pokot and Laikipia resulted in high rates of evaporation exacerbating fast drying of pasture and open water sources in these areas.

#### ***Vegetation condition***

Fast deterioration of the vegetation greenness occurred in February and as a result most counties are currently in the moderate vegetation deficit category. Figure 1 compares the vegetation condition index (VCI) in January with that of February 2019. The VCI maps show that the state of vegetation in most ASAL counties is on a declining trend compared to last month.

The downward trend in the state of vegetation in most ASAL counties can be explained by sunny, dry and hot weather conditions that prevailed during the month. The higher than average daytime temperatures experienced in many ASAL areas led to high rates of evapotranspiration which caused faster withering and deterioration in vegetation condition. For example, in Wajir county, 3 sub-counties: Eldas, Wajir South and Wajir West are currently in the severe vegetation deficit category while the three other sub-counties (Wajir East, Tarbaj and Wajir North) are recording deteriorating conditions. Other counties with sub-counties in the severe vegetation deficit status include: Garissa (Balambala, Daadab, Lagdera and Dujis); Tana River (Bura and Galole) and Turkana (Turkana West)

**Figure 1: Comparison of Vegetation Condition Index (VCI), February and March 2019**



***Livestock production***

The body condition of livestock ranges from good to fair across ASAL counties except for a few areas especially in the arid counties. For instance, in Wajir County, despite most of the livestock species being in good to fair state, livestock in some pockets in Wajir South, Wajir West, and Eldas are in fair to poor condition. In Turkana, body condition of all livestock species is generally fair with isolated cases in the pastoral livelihood zone like Turkana West where sheep and cattle are in poor body condition. Similarly in Marsabit, livestock body condition ranges from good to fair across all the livelihood zones, apart from North Horr sub-county, where goats in Elhadi, Barambate, Elbesso, Elgade and Dukana have poor body condition due to long trekking distances and disease challenges such as sheep and goat pox. In Garissa, livestock in the pastoral-all-species livelihood zone are in fair to poor body condition as a result of increase in trekking distances from grazing areas to water sources.

In comparison to the long-term average; current milk production in ten counties is above LTA while in eleven counties which includes: Garissa, Turkana, Kajiado, Samburu, Tana River, Laikipia, Kitui, West Pokot, Narok, Kilifi and Nyeri (Kieni) the current amount is below LTA. The below normal milk production is attributed to poor quality of pasture and browse and water scarcity.

**Table 2.0: Milk production, February 2019**

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

Most livestock were within their normal grazing areas during the month of February and no county reported livestock deaths associated with drought.

***Crop production***

Harvesting and land preparation in advance of the long rains are the main farming activities being undertaken in the marginal agricultural counties. For instance in Makueni, harvesting of maize was ongoing in the mixed farming livelihood zone while in the marginal mixed farming areas; green gram and cow peas were at the physiological maturity stage, sorghum was at the head formation stage while pigeon peas were at the maturity stage.

Overall, the cumulative acreage for maize achieved in the marginal agricultural areas during the short rains season was 10-25 percent below average. Meru North and Makueni achieved higher than average acreage, while Kilifi and Tharaka achieved only 34 and 10 percent of average respectively.

Maize production in the marginal agricultural areas declined by 55-70 percent; in Kilifi, there was total maize failure. This decline was attributed to a number of factors, including poor distribution and below-normal rainfall which affected maize at the critical cob formation stage. Other factors included crop diseases and pests. The short rains season accounts for 60-70 percent of annual maize production in the marginal agricultural areas, so this reduction will have a significant impact on household food security. Yields of other staples such as cowpeas, green grams and beans were also affected, with below-average production of between 30-40 percent, despite the area under cultivation being near-average. However, Kitui recorded 16 percent above-average production of both cowpeas and green grams.

***Access to water***

In the month of February the average return distances to water for both households and livestock increased compared to those recorded during the previous month and were also above the five-year average in most ASAL areas. The increase in distances was mainly attributed to drying up of most open water sources, breakdown of boreholes and high concentration of people and livestock in the few functioning water points. The trend in distances walked by households to access water is provided in Table 2.

• **Table 2.0: Distance to water sources for households, February 2019**

<i>Indicator</i>	<i>Current status</i>			<i>Trend</i>		
	<i>Above LTA</i>	<i>At/close to LTA</i>	<i>Below LTA</i>	<i>Improving</i>	<i>Stable</i>	<i>Worsening</i>
<b>Distance from households to main water sources</b>	Garissa Mandera Marsabit Samburu Isiolo Tana River West Pokot Kajiado Baringo Laikipia Makueni Kwale Wajir Nyeri (Kieni) Embu Kitui Isiolo Taita Taveta Narok Meru	Turkana	Tharaka Nithi Lamu	Lamu Tharaka Nithi	Taita Taveta Samburu Garissa Kajiado Laikipia Makueni Mandera	Wajir West Pokot Marsabit Tana River Turkana Isiolo Kwale Kitui Narok Baringo Embu (Mbeere) Meru Kilifi Nyeri (Kieni)

- In Marsabit, average return distances from households to water sources increased to 4.9 km in February from 4.5 km in the previous month. North Horr sub-county (Dololo Boji, Diid Gola, Kubiadhi, Tullu Qarsa, Yaa Gara, Forolle, Yaa Garbo, Tigo, Kalesa, Anchacha and Bisik) and Laismais sub-county (Namarei, Faraokoen and Kangeisa-Kargi and Ririma) recorded the highest trekking distance for households at 15 km.
- The average distance to water sources for households in Baringo County increased from 5 km in January to 6.2 km during the month under review. Compared to the long term average of 5.5 km, current distances are 13 percent above the usual distances for February.
- In Wajir, current average return distance from household to main water source increased from 5.0 km in January to 7.0 km in February 2019 primarily as a result of drying up of water pans. Areas currently experiencing severe water stress in Wajir include: pastoral cattle livelihood zone in Wajir South and pastoral all species livelihood zone in Wajir West and Eldas.
- In Kwale, access to water for domestic consumption was more challenging in February as households had to walk an average of 4.3 km compared to 3.8 km in January. The increase in the distance was attributed to the reduction in the number of water sources. The current distances are 65 percent above the long term average distance for the month.

The trend in the distance trekked by livestock in search of water is illustrated in Table 3. Compared with the previous month, the current trekking distance to water source from grazing areas increased in all counties except Meru. In addition, access to water for livestock was more challenging in February compared with normal times across ASAL counties as the average trekking distances from the main water sources to

grazing areas for livestock recorded in February was above the 2014 - 2018 long-term average (LTA). The increase in trekking distances was attributed to diminishing pastures and drying up of water sources.

**Table 3.0: Distance to water sources for livestock, February 2019**

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

### Terms of trade

During the month under review the livestock to cereal terms of trade (ToT) were favourable in most counties. For instance, in Baringo, Kitui, Marsabit, West Pokot, Laikipia and Isiolo the current ToT were higher than the long term average for February by 64, 54, 50, 49, 48 and 34 percent respectively. The relatively favourable situation for livestock keepers in these ASAL counties was attributed to high goat prices while maize prices had remained fairly low.

On the other hand, terms of trade were unfavourable in Tana River and Lamu counties where the current ToT were lower than the long term average for February by 19 and 9 respectively. The poor terms of trade were due to decrease in the goat prices as a result of a downward drift in the body condition of goats, increase in volumes of livestock offered for sale and also increase in maize prices. Table 1 shows the trend in the terms of trade (ToT) in ASAL counties.

**Table 4.0: Terms of trade, February 2019**

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

## Health and nutrition

In most counties the proportion of children aged 6 to 59 months at risk of malnutrition, determined by a mid-upper arm circumference (MUAC 125 – 134 mm) measurement increased in February in comparison with the situation in January. The worsening nutrition status recorded in February was attributed to decrease in household food availability and poor child feeding and care practices. Table 5 summarizes the trend in MUAC rates across the ASAL counties.

**Table 5.0: Children at risk of malnutrition (MUAC), February 2019**

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

## 1.2 Drought phase classification

On the basis of the range of indicators monitored above, most counties are currently categorized in the ALERT drought phase. Compared to the situation in January, the drought status in most ASAL counties deteriorated in February. More counties have moved into the alert drought stage, from nine (9) in January to sixteen (16) in February, with 16 counties reporting a worsening trend and 7 counties currently recording a stable trend. Six counties are in normal drought status while Wajir is in the alarm phase. The worsening drought situation is mainly attributed to persisting dry conditions and unusually high temperatures.

**Table 6.0: Drought phase classification, February 2019**

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



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

ADMINISTRATIVE UNIT				DROUGHT CATEGORIES/REMARKS		
COUNTY	Sub County	VCI-3 month as at 28 <sup>th</sup> Jan 2019	VCI-3 month as at 25 <sup>th</sup> Feb 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
<b>BARINGO</b>	<b>County</b>	<b>49.56</b>	<b>42.83</b>	<b>The vegetation greenness is normal for the county and all the sub-counties with B. Central above normal.</b>		
	Central	65.08	54.54			
	Eldama	61.66	49.03			
	Mogotio	48.46	37.46			
	North	47.36	39.95			
	South	52.1	47.84			
	Tiaty	44.74	40.36			
<b>MANDERA</b>	<b>County</b>	<b>37.84</b>	<b>27.89</b>	<b>The county as well as all sub-counties in moderate vegetation deficit</b>		
	Banissa	38.8	27.06			
	M East	32.7	27.71			
	Lafey	35.92	28.1			
	M North	35.42	24.87			
	M South	41.59	31.52			
	M West	38.73	27.49			
<b>TURKANA</b>	<b>County</b>	<b>33.46</b>	<b>36.71</b>	<b>Entire county in moderate vegetation deficit. Turkana West in severe vegetation deficit.</b>		
	T Central	45.22	49.56			
	T. East	39.64	42.61			
	T. Loima	43.1	52.19			
	T. North	31.79	35.73			
	T. South	39.47	40.86			
	T. West	16.57	15.64			
<b>MARSABIT</b>	<b>County</b>	<b>25.73</b>	<b>23.78</b>	<b>The county and all sub-counties are experiencing moderate vegetation deficit.</b>		
	Laisaimis	24.97	23.75			
	Moyale	32.88	23.34			
	N. Horr	23.69	23.38			
	Saku	37.71	33.58			
<b>WAJIR</b>	<b>County</b>	<b>24.87</b>	<b>18.95</b>	<b>County in severe vegetation deficit with 3 sub-counties in severe vegetation deficit and the three others recording deteriorating conditions.</b>		
	W East	32.77	25.07			
	W.Eldas	16.26	12.28			
	W. North	41.09	30.31			
	W. South	19.77	14.26			
	W.Torbaj	32.4	24.45			
	W West	13.18	14.06			
<b>SAMBURU</b>	<b>County</b>	<b>37.89</b>	<b>35.35</b>	<b>Normal vegetation condition across entire county with moderate vegetation deficit for Samburu East.</b>		
	S East	29.88	28.59			

	S. North	46.42	42.82			
	S. West	41.04	37.12			
ADMINISTRATIVE UNIT				DROUGHT CATEGORIES/REMARKS		
COUNTY	Sub County	VCI-3 month as at 28 <sup>th</sup> Jan 2019	VCI-3 month as at 25 <sup>th</sup> Feb 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
GARISSA	County	28.68	23.29	Moderate deficit conditions for entire county but with severe deficit recorded for Balambala, Daadab, Lagdera and Dujis. Need to evaluate impact of sustained severe conditions in the sub-counties.		
	Balambala	17.32	18.03			
	Daadab	16.91	12.94			
	Fafi	30.49	22.95			
	Ijara	53.47	43.31			
	Lagdera	15.02	14.59			
	Dujis	17.88	17.15			
ISIOLO	County	23.84	23.7	Moderate vegetation deficit condition across the entire county and for all sub-counties.		
	I. North	21.17	22.02			
	I. South	27.92	26.25			
TANA RIVER	County	27.64	24.6	Moderate conditions for the county but with severe conditions for Bura and Galole sub-counties. Need for targeted drought response.		
	Bura	16.58	17.15			
	Galole	20.09	19.45			
	Garsen	41.76	34.15			
KAJIADO	County	47.32	43.05	Entire county above normal/above normal in vegetation conditions except for Kajiado West that is experiencing moderate vegetation deficit.		
	K. Central	48.88	42.66			
	K. East	57.26	52.55			
	K. North	57.24	52.76			
	K. South	53.07	49.17			
	K. West	37.27	34			
LAIKIPIA	County	39.21	34.02	Moderate vegetation deficit for the county and sub-counties except for Laikipia East that is within normal vegetation conditions.		
	L. East	52.08	47.57			
	L. North	39.84	34.97			
	L. West	31.83	25.71			
THARAKA NITHI	County	44.97	48.44	Normal to above normal vegetation conditions across the county and all sub-counties. Tharaka sub-county is however just marginally within normal conditions.		
	Chulga	64.18	65.46			
	Maara	71.57	70.38			
	Tharaka	29.23	35.01			
WEST POKOT	County	38.09	30.72	Moderate vegetation deficit across the entire county except for Pokot-South that is within normal conditions for the period.		
	Kacheliba	32.82	28.3			
	Kapenguria	38.9	30.07			
	Pokot South	49.81	36.87			
	Sigor	40.04	32.01			

EMBU	County	62.18	61.51	Vegetation greenness above normal ranges for the period.		
	Manyatta	81.56	76.87			
	Mbeere North	54.47	52.74			
	Mbeere South	57.52	58.95			
	Runyenjes	75.07	73.62			
<b>ADMINISTRATIVE UNIT</b>				<b>DROUGHT CATEGORIES/REMARKS</b>		
<b>COUNTY</b>	<b>Sub County</b>	<b>VCI-3 month as at 28<sup>th</sup> Jan 2019</b>	<b>VCI-3 month as at 25<sup>th</sup> Feb 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
KITUI	County	40.4	40.08	Normal to above normal vegetation conditions for entire county except for Kitui South that is in moderate vegetation deficit.		
	Kitui Central	61.71	69.69			
	Kitui East	44.95	42.75			
	Mwingi Central	33.88	38.23			
	Mwingi North	34.01	37.3			
	Mwingi West	55.01	59.15			
	Kitui Rural	51.45	60.63			
	Kitui South	38.13	33.68			
	Kitui West	58.35	63.4			
MAKUENI	County	59.88	61.81	The vegetation greenness is above normal ranges for the period.		
	Kaiti	70.89	78.86			
	Kibwezi East	51.31	50.12			
	Kibwezi West	59.98	63.16			
	Kilome	69.42	68.11			
	Makueni	63.08	64.47			
	Mbooni	62.12	69.75			
MERU	County	59.02	55.05	The vegetation greenness is within/above normal ranges for the period		
	Buuri	64.32	59.61			
	Central Imenti	76.73	68.77			
	Igembe Central	48.42	44.4			
	Igembe North	48.73	45.1			
	Igembe South	49.53	45.99			
	North Imenti	73.68	67.5			
	South Imenti	78.4	73.45			
	Tigania East	52.27	49.34			
	Tigania West	58.4	61.22			
NYERI	County	66.86	62.83	The vegetation greenness is above normal across the entire county.		

	Kieni	57.3	54.64			
	Mathira	72.44	67.36			
	Mukurweini	82.22	75.68			
	Town	80.34	75.91			
	Othaya	81.42	76.1			
	Tetu	80.94	73.88			
KILIFI	<b>County</b>	<b>55.85</b>	<b>44.5</b>	The vegetation greenness is normal to above normal across the entire county		
	Ganze	54.77	43.07			
	Kaloleni	71.59	58.34			
	Magarini	55.68	44.76			
	Malindi	51.26	39.24			
	Kilifi-North	47.97	35.56			
	Rabai	67.31	56.24			
	Kilifi-South	54.25	44.38			
KWALE	<b>County</b>	<b>66.7</b>	<b>55.97</b>	The vegetation greenness is above normal ranges for the county for the period and also above normal across all the sub-counties.		
	Kinango	64.64	52.65			
	Lungalunga	68.62	57.1			
	Matuga	72.96	66.95			
	Msambweni	65.68	61.86			
LAMU	<b>County</b>	<b>61.07</b>	<b>50.25</b>	Normal to above normal vegetation conditions for the period for the county and across all the sub-counties.		
	Lamu East	65.13	53.73			
	Lamu West	58.72	48.24			
<b>ADMINISTRATIVE UNIT</b>				<b>DROUGHT CATEGORIES/REMARKS</b>		
<b>COUNTY</b>	<b>Sub County</b>	<b>VCI-3 month as at 28<sup>th</sup> Jan 2019</b>	<b>VCI-3 month as at 25<sup>th</sup> Feb 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>	<b>52.45</b>	<b>40.42</b>	Normal/ above normal vegetation conditions except for Taveta that is experiencing moderate vegetation deficit.		
	Mwatate	50.12	37.55			
	Taveta	42.25	34.06			
	Voi	56.98	43.16			
	Wundanyi	57.47	49.41			
NAROK	<b>County</b>	<b>48.93</b>	<b>54.15</b>	Normal to above normal vegetation conditions across the county.		
	Narok-East	51.97	47.41			
	Emurua Dikirr	55.44	67.42			
	Kilgoris	52.79	61.03			
	Narok-North	54.73	47.04			
	Narok-South	49.05	53.28			
	Narok-West	42.52	57.18			

## 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 7). The combined analysis from all four indicator groups then determines the particular drought phase: normal, alert, alarm, emergency or recovery (Figure 1). Identifying the correct drought phase helps to guide the most appropriate response for that stage in the drought cycle.

**Table 7.0: 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**

