



**THE PRESIDENCY
MINISTRY OF DEVOLUTION AND PLANNING**

National Drought Early Warning Bulletin

February 2018



Summary

The drought situation in almost all the ASAL counties persisted in January. Currently, four counties: Isiolo, Garissa, Kajiado and Tana River are classified in the alarm phase. Ten counties have moved into the alert drought phase up from six in December, with most counties reporting a worsening trend. Only four counties out of the 23 ASAL counties recorded a stable trend.

The offseason rainfall received at the beginning of the month in a small number of counties were largely insufficient and its distribution both in time and space was generally poor. Pasture and browse is poor and declining fast especially in areas with high livestock concentration. The average distances to water sources for households and livestock has increased compared to the month of December across the ASAL counties. The prevailing dry weather condition is expected to accelerate drying up of the available water sources.

The rainfall outlook for March to May 2018 season indicates increased likelihood of normal to above normal rainfall in the western parts of Kenya and increased possibility of normal to below normal rainfall in the eastern parts of Kenya. As a result, the long rains season may not support sufficient recovery in some of the ASAL counties. All actors should, therefore, prepare to scale up their response capacities in case drought conditions persist in some of the ASAL counties beyond the next long rains season.

1 Drought status

1.1 Drought indicators

Rainfall

Sunny, dry and hot weather conditions prevailed in most ASAL counties in January 2018. In few counties such as Baringo, Samburu, Laikipia and West Pokot some little rainfall was received at the beginning of the month which were generally poorly distributed, both in time and space.

However, some areas in Narok, Kwale, Taita Taveta and Kajiado counties received some significant amounts of rainfall in mid-January which, to some extent, resulted in recharge of open water sources and pasture regeneration. For instance, in Kwale, pans and dams which are the main sources of water in the livestock farming livelihood zone are now 60 percent full and are projected to last for approximately 3 months. Also, in Kajiado, because of the offseason rains received in January, the average return distance that people travelled to fetch water for domestic use reduced by a margin of 16 percent to 4.9 km from 5.8 km in December.

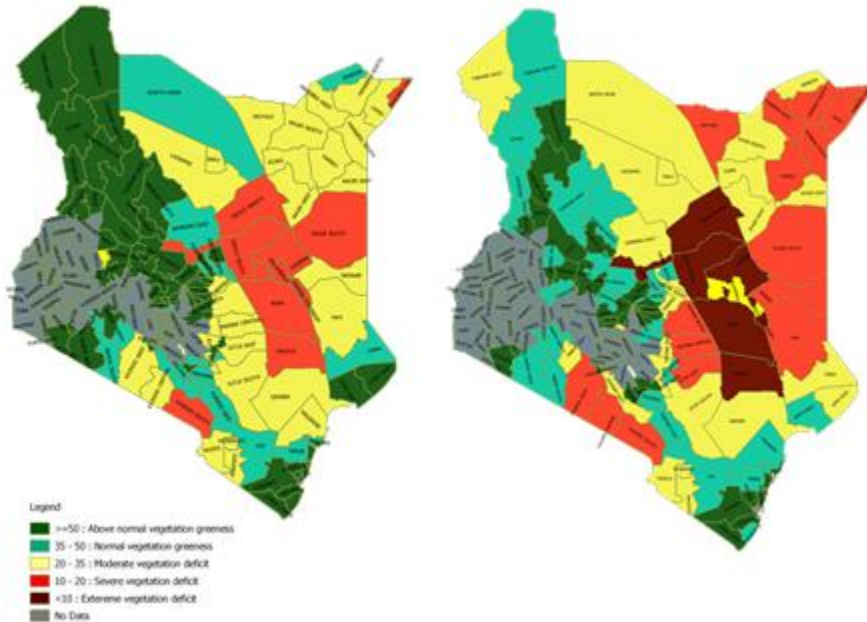
Generally, in many ASAL areas, the October-November-December (OND) 2017 seasonal rainfall started late, had poor temporal and spatial distribution, were below average in total amount and ceased earlier than usual.

Vegetation condition

The condition of vegetation in most counties has declined, with the Vegetation Condition Index (VCI) in January 2018 showing a faster than expected negative trend in almost all ASAL counties. The unusual deterioration in the vegetation status was attributed to the sunny, dry and hot weather conditions that prevailed during the month together with overgrazing in some of the areas that received better rainfall.

Figure 1 compares the VCI in December 2017 with that in January 2018 while Annex 1 contains the VCI data as at January 27, 2018. On the basis of VCI, counties with the highest vegetation deficit at present include: Isiolo, Garissa, Tana River, Mandera, Kajiado, Wajir, Marsabit, Kitui, Taita Taveta, Samburu and Tharaka. Other areas where vegetation greenness is on a rapid worsening trend are: Turkana (Turkana West), Lamu, Meru (Igembe South and Central) and Narok (Narok East).

Vegetation Condition Index (3 Month) : December 2017 & January 2018



In almost all counties the vegetation situation is worse in January than it was in December.

Extreme vegetation deficit: Isiolo County is now in the extreme vegetation deficit category. Counties which have some of their sub-counties in the extreme vegetation deficit band include; Garissa (Balambala, Ladgera and Dujis) and Tana River (Bura and Galole).

Severe vegetation deficit: Counties in this class are; Wajir, Tana River and Garissa. Other are sub-counties like Mandera East, Mandera North, Mandera South, Mandera West, Lafey (Mandera), Kajiado Central, Kajiado South, Kajiado West, Moyale (Marsabit), Kitui East, Mwingi Central and Mwingi North (Kitui).

Moderate vegetation deficit: Counties in the moderate vegetation deficit band are; Mandera, Kajiado, Marsabit, Kitui, Lamu and Taita Taveta. Counties with vegetation greenness in the normal ranges which have some of their sub-counties in the moderate vegetation deficit band include; Turkana West, Igembe Central and Igembe South (Meru), Samburu East, Tharaka and Narok East.

Water sources

Compared to the previous month, water volumes in most dams, water pans and other open water sources have decreased.

For example in Isiolo, many earth dams, sand dams and water pans and shallow wells have dried up which compelled county government to start water trucking to settlements in Merti and Garbatulla sub counties during the month of January.

In Kitui, the volumes in over 50 percent of the open water sources are at minimal while some rivers and water pans have completely dried up.

Livestock production

The current livestock body condition in many parts of the ASAL counties has deteriorated when compared with the previous month which was attributed to diminishing pasture, increase in trekking distances from grazing fields to water points and the subsequent drop in watering frequencies.

The livestock body condition is fair for cattle and sheep in most pastoral and agro pastoral livelihood zones and good for goats and camels in both zones. The body condition of livestock in all livelihoods is expected to deteriorate in the next two months with depletion of pastures and increased trekking distance to water sources

However, in Kajiado, cattle are in poor body condition with most of them being thin and their fore ribs visible. In Isiolo, the pastoral livelihood zone was the most affected area while in Garissa, the pastoral all species livelihood zone has the highest percentage of livestock with poor body condition.

Crop production

Crops in the marginal agricultural counties such as Makueni, Kilifi, Kajiado, Meru (Meru North), Taita Taveta, Nyeri (Kieni), Kitui, Kwale, Embu (Mbeere) continued to experience moisture stress and adverse effects of pest invasion.

In Embu (Mbeere), the projected harvest is likely to be below normal. In Kitui, majority of rain-fed crops are likely to register total failure in the marginal mixed farming livelihood zone. In Meru North, wilting of maize crop in the agro pastoral livelihood zone has occurred with minimal harvests expected as it has been the case over the previous four seasons

Access to water

The average distances to water sources for households and livestock recorded an increase compared to the month of December across the ASAL counties. Some of the largest increase in distances to the main water points during the month were in the following counties:

Distance to water sources for households			Distance to water sources for livestock		
County	Percent increase on previous month	Percent above LTA	County	Percent increase on previous month	Percent above LTA
Baringo	89	71	Tana River	55	110
Lamu	186	207	Isiolo	4	30
Marsabit	83	17	Wajir	93	19
Meru North	15	68	Kwale	41	25
Kitui	13	22	Kilifi	29	42

Increase in the average trekking distance to water sources for household and livestock is mainly attributed drying up of open water sources. Distances are expected to increase further in February.

Terms of trade

Terms of trade (ToT) in counties such as Kilifi, Kwale, Turkana, Lamu, Taita Taveta, West Pokot, Tharaka Nithi and Laikipia remained favourable, implying that livestock producers in these counties could purchase quantities of maize above seasonal averages from the sale of a medium size goat. This was attributed to rising goat prices as a result of their good body condition while maize prices were stabilizing or declining.

However, terms of trade in Tana River, Marsabit, Isiolo, Nyeri, Wajir, Kitui and Meru are still below their long term mean (LTM) and it is likely that the situation will remain unfavourable until the next rainy season. Table 1 shows the trend in the terms of trade (ToT) in ASAL counties.

Table 1.0: Terms of trade, January 2018

<i>Terms of trade (ToT)</i>	<i>Trend</i>		
	Improving	Stable	Worsening
Below long-term average (LTA)	Meru (Meru North)	Wajir Kitui	Tana River Marsabit Isiolo Nyeri (Kieni)
At / Close to LTA	Embu (Mbeere)	Narok Garissa Makueni Kajiado	Samburu Mandera Baringo
Above LTA	Turkana Taita Taveta	Kilifi Laikipia Kwale	Lamu West Pokot Tharaka Nithi

Health and nutrition

The bulletins monitor the proportion of children under five at risk of malnutrition, determined by a mid-upper arm circumference (MUAC) measurement. The nutrition status of children in most counties dropped slightly this month with seven counties now on a worsening trend, compared to three in December 2017. This was attributed to declining milk consumption and a reduction in the number of meals per day.

The highest MUAC rate in January was in Mandera, at 28.5 percent, while the proportion of children at risk of malnutrition in six other counties was above the 15 percent threshold: Isiolo – 26.8, Marsabit – 20.8, Samburu – 19.9, Baringo – 17.6, Kajiado – 17 and Wajir at 16.5 percent. Table 2 summarizes the trend in MUAC rates across the ASAL counties.

Table 2.0: Children at risk of malnutrition (MUAC), January 2018

MUAC	Trend		
	Improving	Stable	Worsening
Below long term average (LTA)	Tharaka Nithi Laikipia Meru (Meru North)	Taita Taveta Turkana	West Pokot Kilifi Samburu
At / Close to LTA	Embu (Mbeere) Nyeri (Kieni)	Tana River Wajir Makueni Narok	
Above LTA	Garissa Isiolo	Lamu Kajiado Kwale	Baringo Marsabit Mandera Kitui

1.2 Drought phase classification

Since last month, more counties have moved into the alert drought phase, from six in December to ten in January. In addition, most counties are reporting a worsening trend with only four counties currently recording a stable trend. Table 3 shows the trend in drought status in the 23 ASAL counties.

Table 3.0: Drought phase classification, January 2018

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

2 Other food security challenges

Three people died in what is suspected to be a cholera outbreak in Tana North Sub County in Tana River County, while about 100 other cases are yet to be confirmed. Affected areas include Matagala village, Bura, Bilbil, Anole, Dukanotu and Madogo

Resource based conflicts have reduced significantly during the month of January. This was as a result of reduction in livestock migrations outside their home counties which was a major cause of conflict in the preceding months.

An incident of cattle rustling in Samburu North led to two deaths, three people were injured and unspecified number of livestock lost. In Garissa, one person was killed and herds of camels lost. Tension is still high at the Garissa/Isiolo border as the animals are yet to be recovered.

In Isiolo, earlier than usual migration to dry season grazing areas was reported with high livestock concentration observed in Ngare Mara, Garbatulla, Kula Mawe, Kinna and along Ewaso Nyiro river flood basin.

Human wildlife conflicts continued affecting food security in Baringo, Laikipia and Taita Taveta during the month under review.

3 Projected food security situation

February is normally a dry month over most parts of the country. The forecast for February 2018 indicates that nearly all arid and semi-arid counties are expected to be sunny and dry for much of the month. There is also an increased likelihood for hotter-than-normal temperatures in February which could result in high evapotranspiration rates hence a faster than normal drying up of open water sources.

Pasture and browse are likely to reduce both in quantity and quality as the dry season advances which is expected to impact negatively on livestock body condition and production. Resource based conflicts are likely to occur along county borders as livestock migration takes place while high concentration of livestock in some of the dry season grazing is anticipated.




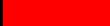

A large number of the few and reliable water sources in different ASAL counties are likely to experience increased pressure from livestock, wildlife and human beings in the next one month. Breakages of boreholes and long waiting time will probably follow.

Maize prices are expected to increase as the prices for goats continue to decline and therefore terms of trade for livestock keepers are likely to take a downward trend.

Annex 1.0: Vegetation Condition Index (VCI) as at 29th January 2018

ADMINISTRATIVE UNIT		VEGETATION GREENNESS		DROUGHT CATEGORIES/REMARKS		
COUNTY	Sub County	VCI-3 month as at 27 th Dec 2017	VCI-3 month as at 29 th Jan 2018	Color	VCI values (3-month)	Drought Category
					≥50	Vegetation greenness above normal
					35 to 50	Normal vegetation greenness
					21 to 34	Moderate vegetation deficit
					10 to 20	Severe vegetation deficit
					<10	Extreme vegetation deficit
BARINGO	County	75.84	52.39	The vegetation greenness is within/above the normal ranges for the period in all sub-counties		
	Central	75.07	60.29			
	Eldama	64.46	49.22			
	Mogotio	68.1	42			
	North	70.09	49.14			
	South	78.91	56.04			
	Tiaty	81.5	54.57			
MANDERA	County	27.69	20.06	All sub-counties shifted to the severe deficit band except for Banissa, which is almost in the normal ranges although with a fast deterioration of the vegetation greenness (high concentration of animals in the rangelands). Overall the VCI is on a fast worsening trend. With this situation, the county will probably face severe drought impacts in February-March 2018.		
	Banissa	45.92	34.96			
	M East	19.6	17.36			
	Lafey	21.3	16.24			
	M North	25.73	19.64			
	M South	29.08	17.91			
	M West	24.28	17.29			
TURKANA	County	69	45.56	The good rainfall received since July increases the VCI, which is currently above the normal ranges for the period in all sub-counties except for T. West. However, a fast worsening trend is seen across all sub-counties that will likely result in some vegetation deficit in February/March		
	T Central	68.47	61.03			
	T. East	75.62	49.97			
	T. Loima	63.23	47.27			
	T. North	77.83	43.27			
	T. South	63.26	53.86			
	T. West	59.12	33.55			
MARSABIT	County	37.37	24.68	The trend is negative and currently all sub-counties have shifted to the moderate vegetation deficit except for Moyale that is in the severe band. It is anticipated that significant drought impacts will be felt in February/March		
	Laisaimis	30.53	21.51			
	Moyale	26.23	18.76			
	N. Horr	44.54	27.93			
	Saku	28.42	25.48			
WAJIR	County	23.17	19.05	W. South and Torbaj are already experiencing a severe vegetation deficit. Also this county will face significant drought risks in the course of the dry season, especially in W. South and West which were already badly affected during 2017 drought.		
	W East	32.29	28.52			
	W. Eldas	24.9	22.61			
	W. North	32.69	27.4			
	W. South	16.95	12.43			
	W. Torbaj	23.7	17.2			
	W West	21.53	20.79			
SAMBURU	County	51.19	36.11	There has been a good recovery with vegetation greenness in the normal ranges in S. West and North. However, S. East is experiencing a moderate deficit which will probably become more acute in February/March		
	S East	38.16	26.8			
	S. North	60.75	41.9			
	S. West	71.51	54.25			
ISIOLO	County	12.26	9.03	This county is one of the worst drought-affected since the short rains performed very poorly. Both sub-counties are currently in the extreme deficit band. Also in this case, it is necessary to activate the drought response plans ASAP so as to prevent some of the worst drought impacts expected in Feb-March		
	I. North	12.79	9.57			
	I. South	11.44	8.2			

ADMINISTRATIVE UNIT		VEGETATION GREENNESS		DROUGHT CATEGORIES/REMARKS		
COUNTY	Sub County	VCI-3 month as at 27 th Dec 2017	VCI-3 month as at 29 th Jan 2018	Color	VCI values (3-month)	Drought Category
					≥50	Vegetation greenness above normal
					35 to 50	Normal vegetation greenness
					21 to 34	Moderate vegetation deficit
					10 to 20	Severe vegetation deficit
					<10	Extreme vegetation deficit
GARISSA	County	28.83	16.31	The drought situation is continuing to worsen with three sub-counties entering the extreme deficit band. It is anticipated that significant drought impacts will be experienced in this county during the current dry season, which will require the early implementation of sectoral mitigation activities		
	Balambala	12.01	7.51			
	Daadab	21.23	12.03			
	Fafi	34.45	17.27			
	Ijara	49.21	31.35			
	Lagdera	10.33	7.14			
	Dujis	19.31	3.35			
TANA RIVER	County	20.02	12.97	Together with Garissa and Isiolo, this county is one of the most drought-affected especially in Bura and Galole sub-counties which are now in the extreme deficit band. This situation requires a close follow up and implementation of early drought mitigation initiatives		
	Bura	12.58	6.03			
	Galole	16.31	5.77			
	Garsen	28.66	23.36			
KAJIADO	County	24.55	20.85	Three out of 5 sub-counties are in the severe vegetation deficit band while K. North received good rains and there the vegetation is within/above normal ranges. Overall the county is in a drought status that requires close follow up and early response		
	K. Central	20.23	18.47			
	K. East	37.15	32.37			
	K. North	54.04	50.02			
	K. South	19.98	18.87			
	K. West	24.58	18.17			
LAIKIPIA	County	62.62	44.17	The vegetation greenness is within normal ranges for the period although it is not quite fast deterioration of the vegetation conditions, especially in L. North		
	L. East	52.47	39.19			
	L. North	58.23	41.4			
	L. West	75.75	51.76			
THARAKA NITHI	County	43.48	35.27	Vegetation greenness within normal ranges for the period except for Tharaka sub-county that is in the moderate vegetation deficit band with worsening trend		
	Chulga	58.36	50.16			
	Maara	60.12	58.59			
	Tharaka	32.55	22.21			
WEST POKOT	County	70.71	49.44	The vegetation greenness is within/ above normal ranges for the period in all sub-counties but with worsening trends		
	Kacheliba	68.81	44.93			
	Kapenguria	66.57	47.5			
	Pokot South	72.44	57.4			
	Sigor	76.66	54.57			
EMBU	County	57.38	46.36	Vegetation greenness within/ above normal ranges for the period but with fast negative trend in Mbeere North, which is now close to the moderate vegetation deficit band		
	Manyatta	60.32	53.79			
	Mbeere North	54.56	36.84			
	Mbeere South	57.07	47.78			
	Runyenjes	61.61	54.24			

ADMINISTRATIVE UNIT		VEGETATION GREENNESS		DROUGHT CATEGORIES/REMARKS		
COUNTY	Sub County	VCI-3 month as at 27 th Dec 2017	VCI-3 month as at 29 th Jan 2018	Color	VCI values (3-month)	Drought Category
					≥50	Vegetation greenness above normal
					35 to 50	Normal vegetation greenness
					21 to 34	Moderate vegetation deficit
					10 to 20	Severe vegetation deficit
					<10	Extreme vegetation deficit
KITUI	County	27.08	21.76	The county received depressed rainfall in many areas and especially in the eastern area. As a result, K. east and Mwingi Central and Mwingi North have shifted to the severe deficit band. It is expected another meagre crop season in most areas		
	Kitui Central	53.2	49.05			
	Kitui East	20.26	13.41			
	Mwingi Central	20.46	13.92			
	Mwingi North	26.23	18.7			
	Mwingi West	33.28	26.17			
	Kitui Rural	41.87	37.59			
	Kitui South	28.9	24.65			
	Kitui West	34.12	34.3			
MAKUENI	County	40.56	44.29	The vegetation greenness is within normal ranges for the period.		
	Kaiti	52.77	68.53			
	Kibwezi East	37.3	40.44			
	Kibwezi West	35.64	36.42			
	Kilome	49.43	59.34			
	Makueni	41.01	41.74			
	Mbooni	45.53	51.45			
MERU	County	54.38	44.27	Two sub-counties (Igembe Central and Igembe South) have shifted to the moderate deficit band.		
	Buuri	60.59	57.28			
	Central Imenti	57.62	48.7			
	Igembe Central	47.2	31.71			
	Igembe North	55.8	40.12			
	Igembe South	45.54	27.56			
	North Imenti	51.03	38.31			
	South Imenti	62.22	59.48			
	Tigania East	52.14	41			
	Tigania West	49.09	45.04			
NYERI	County	62.66	55.52	Vegetation greenness in Kieni within normal ranges for the period		
	Kieni	63.75	55.48			
	Mathira	59.24	55.83			
	Mukurweini	41.7	34.07			
	Town	62.46	53.7			
	Othaya	68.84	65.02			
	Tetu	41.39	57.84			
KILIFI	County	41.39	44.97	Vegetation greenness within normal ranges for the period		
	Ganze	45.34	47.84			
	Kaloleni	62.58	64.77			
	Magarini	34.55	39.74			
	Malindi	35.34	35.94			
	Kilifi-North	54.3	55.83			
	Rabai	61.08	59.34			
	Kilifi-South	41.39	63			

ADMINISTRATIVE UNIT		VEGETATION GREENNESS		DROUGHT CATEGORIES/REMARKS		
COUNTY	Sub County	VCI-3 month as at 27 th Dec 2017	VCI-3 month as at 29 th Jan 2018	Color	VCI values (3-month)	Drought Category
					≥50	Vegetation greenness above normal
					35 to 50	Normal vegetation greenness
					21 to 34	Moderate vegetation deficit
					10 to 20	Severe vegetation deficit
					<10	Extreme vegetation deficit
KWALE	County	63.18	59.26	The vegetation greenness is above normal ranges for the period		
	Kinango	64.81	61.15			
	Lungalunga	63.05	57.41			
	Matuga	59.19	58.15			
	Msambweni	54.41	48.26			
LAMU	County	52.35	34.98	Quite fast negative trend from December, with Lamu East experiencing a mild vegetation deficit.		
	Lamu East	56.29	33.52			
	Lamu West	50.07	35.82			
TAITA TAVETA	County	36.27	33.78	Moderate deficit in all sub-counties except for Voi which is still in the normal band.		
	Mwatate	32.92	31.36			
	Taveta	30.42	27.12			
	Voi	40.28	37.56			
	Wundanyi	29.42	30.41			
NAROK	County	53.03	45.85	Only Narok East records a mild vegetation deficit while all other sub-counties are within/above normal ranges for the period.		
	Narok-East	39.61	31.78			
	Emurua Dikirr	77.77	80.57			
	Kilgoris	68.6	64.03			
	Narok-North	56.8	48.24			
	Narok-South	49.85	43.23			
	Narok-West	50.7	42.17			

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 5). 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 5: 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

