



**THE PRESIDENCY
MINISTRY OF DEVOLUTION AND ASAL**

National Drought Early Warning Bulletin

April 2018



Summary

Onset of the March-April-May (MAM) 2018 occurred by mid-March and currently nearly all the ASAL counties have received favourable rainfall. The condition of pasture and browse in many ASAL areas has improved to some extent following the onset of long rains. Pasture and browse regeneration is expected to continue as the rainy season progresses and is projected to reach the normal ranges in terms of quantity and quality by end of April.

Water availability is steadily returning to normal with most of the existing open water sources such as dams, rock catchments and water pans now filled to approximately 50 to 70 percent capacity. Access to water for households and livestock has improved since distances to watering points has reduced significantly across all counties. Livestock body condition and milk production are starting to improve, although the effect of the season on livestock productivity should be more evident by end of April.

The early start to the current season and its performance so far suggests that most ASAL areas will probably experience near normal rainfall. Consequently, it is anticipated that the 2018 March to May long rains are likely to impact positively on both livestock and crop production.

1.0. Drought status

1.1 Drought indicators

Rainfall

Most ASAL counties started receiving un-seasonally early rains during the first week of March with several areas receiving highly enhanced rainfall that was characterized by heavy storms. The higher than normal rainfall received in March were also fairly well distributed, both in time and space. The cumulative rainfall amounts received in most counties in the month of March were above normal by a margin of over 30 percent. In Baringo, for example, 159 mm of rainfall was recorded in March compared with the long term average (LTA) of 29.00 mm. In the first and second dekad, Kajiado County received 115.8 mm and 132.1 mm compared with LTA of 26.1 mm and 26.2 mm respectively while during the same period, Narok County recorded more than double of its LTA.

Vegetation condition

The condition of vegetation has improved in almost all ASAL counties which is attributed to the good rains received in March. The positive trends observed in many areas point to a good regeneration of pasture during the month of March. However, in Garissa, Isiolo, Tana River and Kitui the VCI values are still indicating severe vegetation deficit since the rains received so far have not increased the vegetation greenness to the expected normal ranges for the period

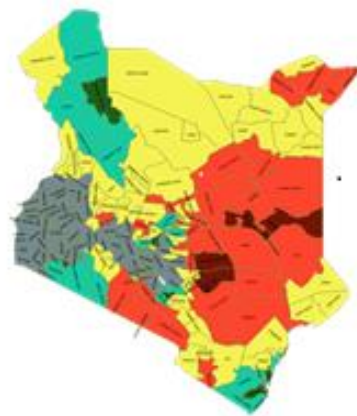


Figure 1: Vegetation Condition Index (3 month), March 2018

Figure 1 illustrates the current condition of vegetation in the ASAL counties. However, significant improvement in the vegetation greenness is expected to be seen in April as a result of the good rains received in the last half of March, but full recovery will depend on the rainfall performance in April and May. Detailed VCI values for March are in Annex 1.

Water sources

The water situation has significantly improved across the ASAL counties as a result of the off season rains received in March. The main water sources during the month, both for domestic and livestock use were pans and dams, shallow wells, boreholes and rivers. Households also reported using piped water and roof catchment system as water sources during the reporting period. Pans were mainly used by livestock while water for domestic use was mainly drawn from boreholes and other sources such as piped water, streams and rivers. Water levels have improved since most surface water sources were recharged to over 50 percent of their normal capacity. For instance, most pans and dams in Marsabit, Taita Taveta and Baringo are almost full to their normal levels.

Livestock production

In nearly all the 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. Currently, body condition for most livestock species is fair and on an improving trend. In Kwale, for example, the proportion of households who reported good body condition increased from 33.3 percent in February to 50 percent in March while in Garissa 100 percent of sampled households reported fair livestock body condition. In Kitui, 71 percent of the livestock had moderate; neither fat nor thin body condition with the remaining 17 and 12 percent having borderline and good smooth appearance respectively.

Milk production rose considerably in several counties during the month under review. In Tana River, milk production doubled up from 2 litres in February to 5.7 litres in March while household milk production per day in Marsabit County increased by 80 percent to 1.8 litres in March from 1 litre in February. In Narok, average milk production per household per day rose by 43 percent from 2.1 litres in February to 3 litres in March.

However, milk production in some ASAL areas is still below normal, attributed to the fact that livestock had not fully recovered from the effects of the December to February dry spell coupled with the slow recovery in rangeland conditions. In Turkana, for example, the current household milk production recorded in March is lower than the level normally attained for the month by 30 percent while in Isiolo milk production per household was 25 percent lower than LTA of 1.6 litres. In Kajiado, household milk production was still insignificant while in a normal year, households would be producing four to five litres of milk per day during this time of the year. Average daily milk production per household in Mandera County fell by 44 percent from 2.5 litres in February to 1.4 litres in March

Crop production

During the month of March most households in the marginal agriculture counties were engaged in land preparation and planting.

In many counties, the offseason rains which were received from the first week of March had varied impact on crop production largely because farmers were not sure whether the unseasonal rains would continue. For example:

- In Embu, crops are at different stages of growth for the reason that the rains came early and some farmers planted while others waited to see the progress of the rains. In Kitui, Nyeri and Isiolo, farmers were caught off-guard as they were yet to prepare their land and purchase seeds and other inputs hence planting was delayed.
- In Mandera County, floods destroyed crops along River Daua and also washed away farm implements. Similarly, in Kilifi, flash floods swept away crops on farms situated along River Sabaki. Subsequently, because farms are presently water logged, minimal cropping activities are taking place along the river bank and other low lying areas.
- On the other hand, In West Pokot, horticultural production is booming with increased farm activity being witnessed in the mixed farming areas in Sebit, Wakorr, Wei Wei and Lomut.

Access to water

Return distances to water for both households and livestock have generally reduced in all ASAL counties which was attributed to the out of season rains that recharged most of the surface water sources such as rivers, ponds, dams, rock catchments, water pans and shallow wells. For instance:

- The average return distance for households in Mandera decreased from 13 km in February to 8 km in March which is a decrease by 60 percent while distance to grazing areas from the main source of water reduced by 17 percent from 21.6 to 18 km. However, the current average trekking distance for livestock are above normal by a significant margin of 61 percent.
- In Baringo, the average distance to water sources for households reduced by 23 percent to 4.8 km in March from 6.2 km in February which is also below the long term mean of 6 km by 20 percent while the average distance for livestock fell by 13 percent from 8.8 to 7.7 km.
- The average return distance from household to water sources reduced from 7.1 km in February to 1.5 km in Isiolo County while distance to livestock watering points from grazing areas decreased considerably by a proportion of 84 percent from 18.5 to 3 km.
- In Kajiado, the average distance covered by households in search of water reduced from 5.2 km in February to 3.7 km in March while the distance covered by livestock to water points dropped by 53 percent from 5.1 km in February to 2.4 km in March.
- In Turkana, household return distance to water source reduced significantly from the 12 km recorded in February to 7 km in March while return distance for livestock from grazing sites to water source decreased significantly to 8.4 km from 14 km.

However, in a few counties, household distances to water remain above the long term average. In Kilifi, for example, the average distance to water sources for households in March was 3.3 km which is 15 percent higher than normal

Terms of trade

Table 1 summarizes the trend in the terms of trade (ToT) in ASAL counties. The trend in 12 counties is improving while ToT in 11 counties are showing a stable trend. The improvement in ToT across the counties is mainly attributed to increasing goat prices and stability in maize prices. The largest shift in terms of trade were:

- Tharaka: ToT were favourable since the proceeds from the sale of a goat could purchase 138 kg of maize in March compared with the LTA of 80 kg which is 73 percent above the long term mean.
- Wajir: ToT increased from 56 in February to 67 kg of maize in March, a 20 percent rise. Terms of trade were favourable and were 22 percent higher than LTA.
- Isiolo: Households could purchase 46 kg of maize from the sale of one goat in March compared with 40 kg in February. However, ToT were 28 percent lower than the long term average.
- Turkana: Maize and goat prices did not experience any significant variation in March thus translating to a stable ToT. Terms of trade were 36 percent above LTA.
- West Pokot: ToT improved by seven percent in March as households could purchase 79 kg of maize compared with 74 kg in February. ToT were 26 percent higher than the long term average.
- Narok: ToT had a stable trend and were 19 percent above LTA.
- Kilifi: ToT were stabilizing and remained 28 percent higher than the long term average.

Table 1.0: Terms of trade, March 2018

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

Health and nutrition

Table 2 shows the trend in MUAC rates across the ASAL counties. The situation in most counties is improving with most counties currently on either an improving or stabilizing trend.

The largest movements in the MUAC rate on the previous month were as follows:

Increase on the previous month		Decrease on the previous month	
County	Percent	County	Percent
Tana River	41	Embu (Mbeere)	24
Kilifi	13	Meru (Meru North)	18
Kitui	13	Taita Taveta	12
Kwale	8	Garissa	11
Makueni	8	Mandera	10
Narok	8	Isiolo	9

In Tana River County, the average MUAC rate increased from 13 percent in February to 18.3 percent in March, therefore rising by 41 percent. In addition, the current level of children at risk of malnutrition is 49 percent higher than the long term mean. This is attributed to the poor milk production and consumption as well as high food prices. In Kitui, the proportion of children at risk of malnutrition rose to 9.5 percent in March from 8.4 percent in February, which was attributed to poor dietary diversity and inadequate food at the household level.

On the positive side, a number of counties registered a general decline in the proportion of children at risk of malnutrition. For instance, MUAC rate fell in March compared with February by 24, 18, 12 and 11 percent in Embu (Mbeere), Meru North, Taita Taveta and Garissa respectively. The improving trend was attributed to increase in milk consumption and improvement in the households' purchasing power.

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

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

1.2 Drought phase classification

Table 3 shows the trend in drought status in the 23 ASAL counties. Although key drought indicators in a number of counties have not yet returned to normal, significant improvement has been observed in most of the counties with the trend improving and stable in 16 and 6 counties respectively. Currently there are seven counties in normal, 13 in alert and three in alarm, compared with three in normal, 16 in alert and four in the alarm drought phase in February.

Table 3.0: Drought phase classification, March 2018

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

2.0. Other food security challenges

Fewer cases of insecurity and conflict were reported in ASAL counties during the month under review. The worst incident was in Mandera where inter clan conflict in Banisa sub county resulted in six deaths. Cattle rustling was reported in Meru North where 250 herds of cattle and 170 goats were stolen. Turkana remained relatively calm except for a few incidents of banditry attacks along Kainuk – Lodwar highway.

There were cases of flooding that claimed lives in Embu (Kiambere ward) and Makueni (Makindu ward) as a result of heavy rainfall episodes. In Marsabit, 250 herds of cattle and 3,000 sheep and goats were swept away by floods in Maikona, North Horr, Dosa Wachu, Forolle and Balesa. In addition, 200 people from North Horr were displaced as a result of the ravages of floods. In Narok, 370 cattle were washed away by the floods in Narok East.

The heavy rains damaged farms in Embu (Kiambere and Mwea ward), Kilifi (River Galana) and Makueni (Kibwezi East and West). The highly enhanced rainfall that was characterized by heavy storms also led to flash floods which destroyed infrastructure including roads and bridges. For example, in Narok, flash floods disrupted transport along the Narok – Maai Mahiu road.

In Marsabit, about 10,000 asylum seekers from the Oromia region of Ethiopia have crossed to Moyale, Kenya following violence in the neighbouring country. The asylum seekers most of who are women and children, including some disabled and elderly persons are staying in two makeshift camps in the Somare and Sololo areas of Moyale. They are in urgent need of food, water, sanitation facilities, shelter, and some have medical needs.

Annex 1.0 Vegetation Condition Index (VCI-3 month) as at 26th March 2018

ADMINISTRATIVE UNIT		DROUGHT CATEGORIES/REMARKS			
COUNTY	Sub County	VCI-3 month as at 26 th Feb 2018	VCI-3 month as at 26 th March 2018	Color	VCI values (3-month)
					≥50
					35 to 50
					21 to 34
					10 to 20
					<10
BARINGO	County	33.1	27.31	Moderate vegetation deficit in all sub-counties except for Mogotio that has entered the severe deficit band	
	Central	42.48	32.64		
	Eldama	31.84	20.2		
	Mogotio	21.52	17.34		
	North	30.62	25.96		
	South	36.98	30.79		
	Tiaty	34.59	29.94		
MANDERA	County	12.25	20.49	Good recovery from previous month especially in Mandera South and West which recorded VCI-1 month of 58 and 42 respectively. This positive trends will continue in April if sufficient rains will be received	
	Banissa	23.52	22.7		
	M East	12.82	14.25		
	Lafey	9.81	18.14		
	M North	11.36	16.87		
	M South	10.95	26.87		
	M West	9.29	19.64		
TURKANA	County	31.96	39.36	Very good recovery with all sub-counties in the normal range for the period except for Turkana West that is still in the moderate band but with positive trend	
	T Central	52.82	62.18		
	T. East	35.58	35.67		
	T. Loima	34.95	41.09		
	T. North	26.08	37.44		
	T. South	43.75	49.02		
	T. West	20.51	29.33		
MARSABIT	County	14.58	26.94	The trend is now positive due to good rains received in March, which will allow to achieve a full recovery if normal rains will be received in April and May	
	Laisaimis	13.18	26.11		
	Moyale	8.43	29.62		
	N. Horr	16.81	26.64		
	Saku	16.65	28.41		
WAJIR	County	11.89	20.69	As above, although the deficit in W. South is still severe. Significant improvement in W. North and W. Torbaj with VCI-1 month above normal ranges for the period	
	W East	21.18	26.11		
	W.Eldas	15.32	23.69		
	W. North	17.46	32.9		
	W. South	6.22	11.6		
	W.Torbaj	10.4	27.35		
	W West	14.38	18.66		
SAMBURU	County	21.8	27.16	Moderate deficit in all sub-counties although with a positive trend	
	S East	14.12	21.15		

	S. North	26.94	33.17			
	S. West	35.47	30.88			
ADMINISTRATIVE UNIT		DROUGHT CATEGORIES/REMARKS				
COUNTY	Sub County	VCI-3 month as at 26 th Feb 2018	VCI-3 month as at 26 th March 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	6.24	12.63	Following some rains received in March the vegetation greenness in all sub-counties is slowly improving although the deficit is still severe especially in Balambala and Daadab. Only a good performance of rainfall in April and May will reverse the vegetation deficit experienced in 2017 and beginning of 2018		
	Balambala	2.04	8.05			
	Daadab	3.72	8.58			
	Fafi	4.87	10.21			
	Ijara	17.39	24.26			
	Lagdera	2.04	11.56			
	Dujis	-1.41	13.21			
ISIOLO	County	3.99	14.92	There has been a significant improvement from previous month (over 10 units' increase of VCI). The VCI-1 month values are normal, indicating a good regeneration of pasture during the month of March. However, unless the rains will continue to perform well in April and May, there will not be a full recovery at the end of the rainy season		
	I. North	4.82	15.78			
	I. South	2.74	13.59			
TANA RIVER	County	5.33	13.71	As above		
	Bura	0.34	10.05			
	Galole	-1.17	10.57			
	Garsen	13.63	18.78			
KAJIADO	County	15.75	18.24	The VCI values are still indicating severe deficit since the rains received so far have not increased the vegetation greenness within the expected normal ranges for the period. However, rains received in the third week of March should increase the VCI in the next weeks		
	K. Central	15.93	17.09			
	K. East	21.02	18.04			
	K. North	39.63	28.54			
	K. South	14.27	17.03			
	K. West	14.03	19.73			
LAIKIPIA	County	26.37	22.25	In this case the trend is not positive although some significant rains received in the 3 rd week of March should increase the VCI in the next weeks		
	L. East	21.3	18.22			
	L. North	24.26	21.75			
	L. West	32.76	25.15			
THARAKA NITHI	County	21.06	20.64	Only marginal improvement in Tharaka sub-county		
	Chuka	33.42	28.46			
	Maara	45.56	39.41			
	Tharaka	8.56	11.69			
WEST POKOT	County	32.02	28.06	The VCI values shows an insufficient recovery in March, with VCI-1 month in the moderate deficit band across all sub-counties		
	Kacheliba	27.26	25.78			
	Kapenguria	30.92	27.6			
	Pokot South	37.89	26.42			

	Sigor	38.15	33.57																			
EMBU	County	28.87	26.02	No improvement recorded but good rains recently received should increase the vegetation greenness significantly in the next weeks																		
	Manyatta	42.62	40.87																			
	Mbeere North	16.8	18.78																			
	Mbeere South	29.59	24.02																			
	Runyenjes	37.92	33.06																			
ADMINISTRATIVE UNIT				DROUGHT CATEGORIES/REMARKS																		
COUNTY	Sub County	VCI-3 month as at 26th Feb 2018	VCI-3 month as at 26th March 2018	<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: #90EE90;"></td> <td>≥50</td> <td>Vegetation greenness above normal</td> </tr> <tr> <td style="background-color: #90EE90;"></td> <td>35 to 50</td> <td>Normal vegetation greenness</td> </tr> <tr> <td style="background-color: #FFFF00;"></td> <td>21 to 34</td> <td>Moderate vegetation deficit</td> </tr> <tr> <td style="background-color: #FF0000;"></td> <td>10 to 20</td> <td>Severe vegetation deficit</td> </tr> <tr> <td style="background-color: #FF0000;"></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 to 50	Normal vegetation greenness		21 to 34	Moderate vegetation deficit		10 to 20	Severe vegetation deficit		<10	Extreme vegetation deficit
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	<10	Extreme vegetation deficit																				
KITUI	County	10.01	13.18	Only marginal improvement recorded although the county (especially K. Central) has received heavy rains in the third week of March that are expected to improve the situation in April																		
	Kitui Central	30.79	30.86																			
	Kitui East	1.01	9.1																			
	Mwingi Central	3.5	8.11																			
	Mwingi North	7.3	11.26																			
	Mwingi West	15.63	12.99																			
	Kitui Rural	18.36	15.41																			
	Kitui South	12.8	14.94																			
	Kitui West	24.01	21.7																			
MAKUENI	County	33.9	28.88	No significant changes from the previous month																		
	Kaiti	65.02	55.94																			
	Kibwezi East	29.04	22.75																			
	Kibwezi West	24.9	21.49																			
	Kilome	48.53	38.75																			
	Makueni	31.39	29.47																			
	Mbooni	43.24	38.6																			
MERU	County	28.4	25.95	Good rains recently received are expected to improve the vegetation greenness in April																		
	Buuri	44.2	35.35																			
	Central Imenti	33.41	29.68																			
	Igembe Central	12.85	15.55																			
	Igembe North	20.58	20.99																			
	Igembe South	7.5	14.24																			
	North Imenti	21.79	18.2																			
	South Imenti	49.17	44.02																			
	Tigania East	25.49	21.7																			
Tigania West	32.8	27.88																				
NYERI	County	45.77	37.56	Vegetation greenness in Kieni slightly declined but almost within normal ranges for the period																		
	Kieni	42.36	32.91																			
	Mathira	57.48	55.45																			

	Mukurweini	31.03	33.41			
	Town	45.83	40.68			
	Othaya	56.16	42.26			
	Tetu	46.19	35.3			
KILIFI	County	34.56	32.39	Vegetation greenness with moderate deficit in Malindi, Magarini and Ganze		
	Ganze	34.37	31.28			
	Kaloleni	52.34	49.41			
	Magarini	30.84	29.43			
	Malindi	26.02	22.08			
	Kilifi-North	44.89	39.33			
	Rabai	47.49	44.14			
	Kilifi-South	53.84	56.38			
KWALE	County	47.01	44.8	The vegetation greenness is within normal ranges for the period		
	Kinango	47.18	43.13			
	Lungalunga	43.91	42.44			
	Matuga	53.64	55.1			
	Msambweni	42.7	49.37			
LAMU	County	20.71	23.84	Some recovery observed but still with moderate deficit for the period		
	Lamu East	18.63	25.13			
	Lamu West	21.92	23.09			
ADMINISTRATIVE UNIT			DROUGHT CATEGORIES/REMARKS			
COUNTY	Sub County	VCI-3 month as at 26 th Feb 2018	VCI-3 month as at 26 th March 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
TAITA TAVETA	County	23.06	22.02	Moderate deficit in all sub-counties except for Mwatate, which is now in the severe class.		
	Mwatate	21.06	19.78			
	Taveta	18.49	20.18			
	Voi	25.63	23.31			
	Wundanyi	22.34	23.5			
NAROK	County	43.89	39.98	Only Narok East and North record a mild vegetation deficit while all other sub-counties are within normal ranges for the period.		
	Narok-East	29.1	31.43			
	Emurua Dikirr	71.43	58.01			
	Kilgoris	59.17	45.73			
	Narok-North	40.89	27.84			
	Narok-South	40.95	39.05			
	Narok-West	45.23	46.58			

Annex 3.0 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 5.0: 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

