THE PRESIDENCY

MINISTRY OF DEVOLUTION AND ASALs

National Drought Early Warning Bulletin

June 2018

Summary

Early onset of the March-April-May (MAM) 2018 seasonal rainfall coupled with the good rainfall performance during the months of April and May have impacted positively on crop and livestock production in most ASAL counties. In the pastoral counties, livestock body condition has improved significantly as a result of availability of forage and water which has led to increased milk availability and household income from higher livestock prices. In the marginal agricultural counties, crops are in fairly good condition and harvesting of beans, pigeon peas, cow peas and green grams has started in some areas.

1.0. Drought status

1.1 Drought indicators

Rainfall

During the long rains season, most ASAL counties recorded enhanced rainfall that was also fairly distributed both in time and space. In a number of counties the cumulative amount of rainfall received in May 2018 was above normal. For instance in Kwale, Kilifi, Makueni, Marsabit, Garissa, Baringo and Turkana the rainfall exceeded 110 percent of the long term mean for May. Short lived and very intense rainfall storms significantly contributed to the enhanced rainfall that led to flash floods in isolated areas in some of the counties such as Baringo, Marsabit, Turkana and Makueni.

Vegetation condition

Figure 1 compares the vegetation condition index (VCI) in late May 2017 with that in late May 2018. The good performance of the March-April-May (MAM) 2018 seasonal rainfall is evident as it has resulted to high vegetation regeneration with all arid and semi-arid counties recording vegetation greenness values that are within normal to above normal ranges.

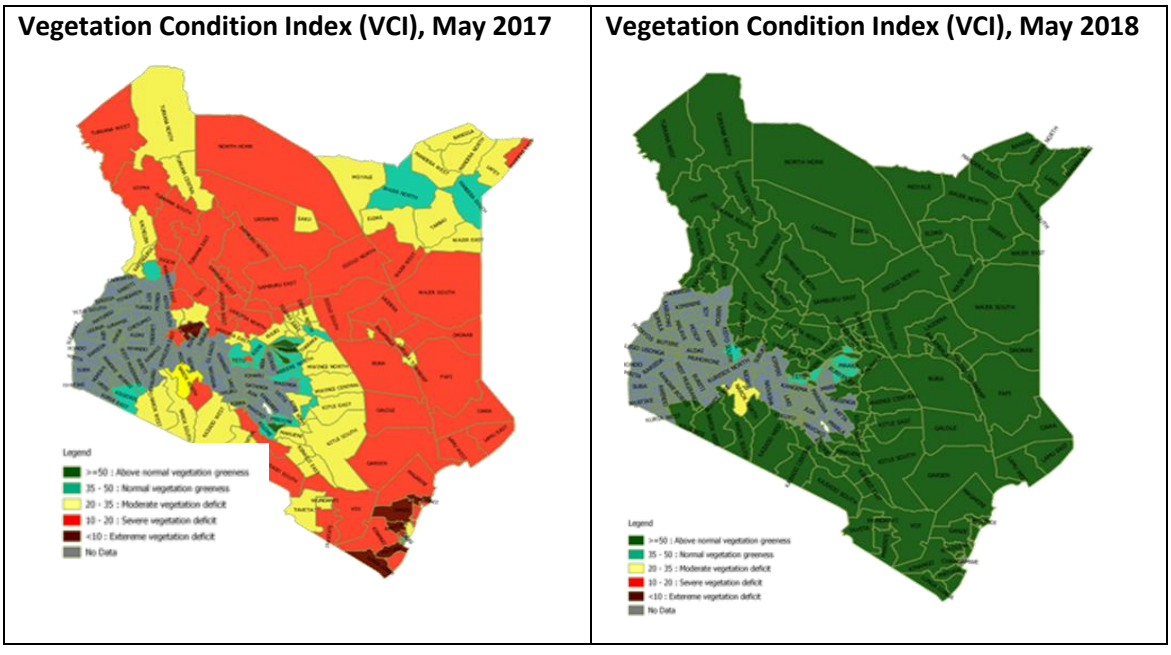

Figure 1: Comparison of Vegetation Condition Index (VCI), May 2017 and May 2018

Water sources

The rainfall has been sufficient to recharge most of the open water sources, improving the quantity and quality of water and reducing distances and waiting time. For example, 97 percent of the surface water sources in Marsabit have been fully recharged, while most pans and dams in Narok have also impounded water to above normal levels. In most ASAL counties, majority of the main water points are likely to last for more than four months.

Livestock production

The rains have positively impacted on the pasture and browse condition. This has reduced distances covered between water points and grazing fields which has resulted to improvement in overall livestock productivity including livestock prices.

Livestock body condition has continued on an improving trend which is largely attributed to the increased availability of forage and water. Significant improvement in milk production was also reported across the ASAL areas. In Marsabit, for example, the current milk production is 5 percent above the long term average.

Crop production

Generally the season has been favourable to crop production and the condition of crops especially in the marginal agricultural counties is promising hence households expect to get a good harvest. For instance, in Embu (Mbeere) green grams, beans and cow peas are ready for harvesting while maize is at the grain filling stage, while in Kitui harvesting of green grams, sorghum and cow peas has already started. In Taita Taveta households in the mixed farming livelihood zone are harvesting beans and green grams while maize is at different stages of development ranging from tasseling to grain filling. Similarly in Tharaka, harvesting of green grams, cow peas and pigeon peas is ongoing while sorghum, millet and maize are in the final stages of maturity.

Access to water

Return distances to water for both households and livestock reduced in May as most parts of the ASAL region continued to receive significant amounts of rainfall. For instance, in Baringo, the average return distance from household to water sources reduced from 3.7 km in April to 3.1 km in May, while the average distance for livestock declined by 15 percent from 6.8 to 5.8 km. Likewise, the average distance to watering points for households in Turkana reduced by 38 percent, while return distances from grazing zones to water points remained stable at 4.1 km. However, compared to the long term average trekking distance for the month of May the current average distance for livestock in Turkana is shorter by 49 percent.

In Marsabit, the average trekking distance to water points for households of 1.1 km is 56 percent shorter than the normal distance of 2.5 km. Current household water consumption has also increased to 20 litres per person per day across all the livelihood zones against the normal water consumption of 15 litres per person per day. In addition, the average distance to main water sources from grazing areas of 4.5 km recorded in May is 53 percent shorter than the normal trekking distance of 9.5 km.

Terms of trade

Table 1 shows the trend in the terms of trade (ToT) in ASAL counties.

Table 1.0: Terms of trade, May 2018

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

In nearly all ASAL counties the terms of trade (ToT) improved in May 2018. An indication that households could obtain more kilogrammes of maize from the sale of a goat than they did during the previous month. The lagest improvements were in Garissa, Tharaka and Marsabit, where terms of trade appreciated by 46, 20 and 15 percent respectively. In 17 counties, the current ToT are above the long term average for the month implying a favourable situation for livestock producers. The improvement in ToT recorded in many counties during the month under review is generally a reflection of rising goat prices.

In Wajir the terms of trade decreased since the sale of a goat purchased 74 kg of maize in April but only 63 kg in May indicating that pastoralists were trading livestock for cereals at a less favourable rate. The decline in ToT was linked to a reduction in goat prices. However, ToT for livestock producers are expected to improve in the next one to two months since goat prices are projected to rise while maize prices are likely to drop.

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 (Table 2). The nutrition status of children in most counties improved this month with 20 counties now on a stable or improving trend. This improvement was attributed to higher milk consumption in pastoral counties and improved dietary diversity due to availability of green vegetables and pulses in the marginal agricultural counties.

Deterioration in nutrition status of children under 5 years was however observed in a few counties such as Samburu and Lamu. In Samburu, the proportion of sampled children under 5 years at risk of being malnourished increased from 19.5 percent in April to 21.8 in May which was associated with a rise in cases of diarrhoea in children as a result of contamination of water sources due to floods. In Lamu, the average MUAC rate increased to 5.3 percent in May from 5.0 percent recorded in April. This increase was attributed to low milk availability and consumption.

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

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

1.2 Drought phase classification

Table 3 shows the trend in drought status in the 23 ASAL counties. Following the good rains received since March 2018, environmental indicators in all counties have returned to normal with the trend improving in 8 counties and remaining stable in 15 counties.

Table 3.0: Drought phase classification, May 2018

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

2.0. Other food security challenges

- Flooding was reported in Tana River, Embu (Mbeere), Laikipia and Mandera. This caused loss of lives, destruction of infrastructure and disruption of livelihoods.

- Floods also damaged roads in many ASAL areas such as Isiolo, Samburu, Makueni, Tana River, Kitui, and Garissa which affected access to markets and inter county commerce.

- In Baringo, incidences of banditry attack were reported along Tiaty - Turkana border where a vehicle carrying students was ambushed which triggered a series of retaliatory attacks in Marigat area. Tension remains high in Kagir, Chemoe, Natan and Ng'aratuko in Baringo North Sub County.

- There were reports of locust infestation in Bulesa location in Merti Sub County. Isiolo County Government and UN Food and Agriculture Organization (FAO) have embarked on spaying and conducting other locust control operations.

Annex 1.0 Vegetation Condition Index (VCI-3 month) as at 28th May 2018

ADMINISTRATIVE UNIT				DROUGHT CATEGORIES/REMARKS
COUNTY	**Sub County**	**VCI-3 month as at 30th April 2018**	**VCI-3 month as at 28th May 2018**	

Colour	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**	56.71	80	**Vegetation has improved across all the sub counties with vegetation greenness above normal in most parts of the county.**
	Central	46.7	72.49	
	Eldama	27.92	47.47	
	Mogotio	49.97	77.2	
	North	58.11	80.99	
	South	61.32	83.91	
	Tiaty	63.96	86.99	
MANDERA	**County**	48.55	65.49	**Good recovery from previous month especially in Mandera East. Vegetation greenness above normal.**
	Banissa	53.88	66.92	
	M East	24.93	53.82	
	Lafey	39.63	59.85	
	M North	47.88	65.11	
	M South	56.16	73.16	
	M West	51.81	64.77	
TURKANA	**County**	61.68	82.73	**Following some rains received in March, April and May the vegetation greenness in all sub-counties above normal.**
	T Central	85.82	97.47	
	T. East	62.75	84.27	
	T. Loima	68.99	92.06	
	T. North	78.86	76.18	
	T. South	43.75	100.76	
	T. West	48.78	68.71	
MARSABIT	**County**	68.93	99.96	**Following some rains received in March, April and May, the vegetation greenness in all sub-counties above normal.**
	Laisaimis	67.85	103.84	
	Moyale	74.76	86.35	
	N. Horr	67.93	101.34	
	Saku	71.1	97.92	
WAJIR	**County**	49.27	74.82	**Following some rains received in March, April and May, the vegetation greenness in all sub-counties above normal. Improvement in Wajir south.**
	W East	48.05	76.01	
	W.Eldas	57.34	83.87	
	W. North	73.85	85.86	
	W. South	31.06	59.13	
	W.Torbaj	65.55	84.49	
	W West	47.42	88.12	
SAMBURU	**County**	59.21	75.14	**Following some rains received in March, April and May, the vegetation greenness in all sub-counties above normal.**
	S East	51.4	68.23	
	S. North	67.88	83.14	

	S. West	61.1	75.65	

ADMINISTRATIVE UNIT				DROUGHT CATEGORIES/REMARKS
COUNTY	**Sub County**	**VCI-3 month as at 30th April 2018**	**VCI-3 month as at 28th May 2018**	
GARISSA	**County**	45.51	74.97	**Following some rains received in March, April and May, the vegetation greenness in all sub-counties above normal.**
	Balambala	53.3	100.79	
	Daadab	33.51	62.38	
	Fafi	35.89	60.92	
	Ijara	49.84	63.91	
	Lagdera	71.71	119.44	
	Dujis	51.64	84.78	
ISIOLO	**County**	71.68	110.61	**Following some rains received in March, April and May, the vegetation greenness in all sub-counties above normal**
	I. North	70.13	109.4	
	I. South	74.06	112.46	
TANA RIVER	**County**	56.3	83.76	**Following some rains received in March, April and May, the vegetation greenness in all sub-counties above normal**
	Bura	50.97	88.52	
	Galole	52.12	82.39	
	Garsen	63.43	80.58	
KAJIADO	**County**	55.06	82.78	**Following some rains received in March, April and May, the vegetation greenness in all sub-counties above normal**
	K. Central	52.46	79.16	
	K. East	56.52	82.1	
	K. North	44.94	71.23	
	K. South	59.91	89.68	
	K. West	52.18	79.78	
LAIKIPIA	**County**	50.02	71.97	**Following some rains received in March, April and May, the vegetation greenness in all sub-counties above normal**
	L. East	58.01	85.14	
	L. North	48.61	68.45	
	L. West	48.81	72.22	
THARAKA NITHI	**County**	47.38	58.04	**The county has slight improvement with some deterioration in Maara.**
	Chuka	49.39	49.94	
	Maara	51.72	46.81	
	Tharaka	45.23	64.68	
WEST POKOT	**County**	54.51	76.55	**Following some rains received in March, April and May, the vegetation greenness in all sub-counties above normal**
	Kacheliba	59.03	82.72	
	Kapenguria	51.29	72.09	
	Pokot South	40.79	64.75	
	Sigor	57.12	76.07	
EMBU	**County**	58.74	64.19	**Slight improvement recorded with deterioration in two sub counties: Manyatta and Runyenjes.**
	Manyatta	59.21	36.88	

Colour	VCI values (3-month)	Drought Category
	≥50	Vegetation greenness above normal
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	Mbeere North	58.95	70.44
	Mbeere South	59.74	74.44
	Runyenjes	53.87	42.59

ADMINISTRATIVE UNIT				DROUGHT CATEGORIES/REMARKS
COUNTY	**Sub County**	**VCI-3 month as at 30th April 2018**	**VCI-3 month as at 28th May 2018**	
KITUI	**County**	51.37	78.65	**Following some rains received in March, April and May, the vegetation greenness in all sub-counties above normal**
	Kitui Central	58.39	75.53	
	Kitui East	50.71	79.44	
	Mwingi Central	46.35	75.69	
	Mwingi North	47.15	72.34	
	Mwingi West	47.52	78	
	Kitui Rural	49.39	72.83	
	Kitui South	55.14	82.51	
	Kitui West	49.82	76.05	
MAKUENI	**County**	56.12	73.75	**Following some rains received in March, April and May, the vegetation greenness in all sub-counties above normal**
	Kaiti	70.4	63.78	
	Kibwezi East	52.74	78.67	
	Kibwezi West	50.56	68.84	
	Kilome	68.26	76.17	
	Makueni	54.02	71.62	
	Mbooni	63.17	78.23	
MERU	**County**	55.6	63.34	**Vegetation greenness above normal except in North and South Imenti.**
	Buuri	53.88	61.71	
	Central Imenti	53.03	53.06	
	Igembe Central	54.93	69.79	
	Igembe North	59.45	76.7	
	Igembe South	58.09	66.99	
	North Imenti	55.47	45.92	
	South Imenti	53.63	48.58	
	Tigania East	52.33	60.46	
	Tigania West	60.99	67.24	
NYERI	**County**	53.35	56.78	**Vegetation greenness above normal except in Mathira, Othaya and Tetu in moderate vegetation deficit.**
	Kieni	53.26	65.61	
	Mathira	57.1	43.7	
	Mukurweini	61.48	51.66	
	Town	63.87	72.96	
	Othaya	46.93	37.87	

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

	Tetu	46.29	40.83	
KILIFI	**County**	56.4	70.57	**The vegetation greenness is above normal across the sub counties**
	Ganze	61.75	79.08	
	Kaloleni	77.18	84.15	
	Magarini	52.92	68.31	
	Malindi	37.47	50.91	
	Kilifi-North	49.76	55.21	
	Rabai	72.31	76.17	
	Kilifi-South	72.15	77.86	
KWALE	**County**	74.68	80.42	**The vegetation greenness is above normal across the sub counties**
	Kinango	74.05	81.57	
	Lungalunga	80.66	88.26	
	Matuga	70.43	67.85	
	Msambweni	64.18	61.09	
LAMU	**County**	45.59	65	**The vegetation greenness is above normal across the sub counties**
	Lamu East	51.77	71.05	
	Lamu West	42.02	61.5	

ADMINISTRATIVE UNIT			**DROUGHT CATEGORIES/REMARKS**			
COUNTY	**Sub County**	**VCI-3 month as at 30th April 2018**	**VCI-3 month as at 28th May 2018**	**Colour**	**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**	62.87	83.44	**The vegetation greenness is above normal across the sub counties .**		
	Mwatate	51.51	66.25			
	Taveta	54.92	81.24			
	Voi	69.85	89.41			
	Wundanyi	58.9	82.69			
NAROK	**County**	54.49	61	**Vegetation greenness above normal with Narok North having moderate vegetation deficit.**		
	Narok-East	49.48	54.71			
	Emurua Dikirr	62.47	68.85			
	Kilgoris	56.73	63.87			
	Narok-North	34.15	27.09			
	Narok-South	56.9	62.89			
	Narok-West	62.87	76.85			

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 3). 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 4.0: 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