



**THE PRESIDENCY
MINISTRY OF DEVOLUTION AND PLANNING**

National Drought Early Warning Bulletin

March 2018



Summary

Severe drought situation continued to be experienced in some counties which was associated with the poor performance of the October-November-December (OND) 2017 short rains season. In most of the counties the rains were poorly distributed in space and time. The OND season ended early, by as much as one month in some areas, with the month of December receiving below than normal amounts across the ASAL areas.

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 water pans in several ASAL areas in the Northwestern, Northeastern and Southeastern Kenya where the 2017 short rains performance was generally poor coupled with the high land surface temperatures that occurred in February.

Consequently, recovery has been less complete in a number of ASAL counties where the lower than average performance of the 2017 short rains season failed to sufficiently rejuvenate forage and recharge water sources. As at the end of February, Isiolo, Kajiado, Tana River and Garissa were the counties most affected by the ongoing drought.

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 and Northeastern parts of the country. The sunny and dry conditions coupled with higher than average daytime temperatures experienced in some of the counties such as Wajir, Mandera, Marsabit, Turkana, Kilifi, West Pokot; Baringo and Makueni resulted in high rates of evapotranspiration which caused pasture and open water sources in these areas to dry up at an unusually fast rate.

Vegetation condition

Fast deterioration of the vegetation greenness occurred in February and as a result a number of counties are currently in the extreme and severe vegetation deficit category. The rapid rate of depletion of the vegetation greenness across the ASAL region was attributed to the dry sunny conditions and high temperatures that occurred in several ASAL areas, with consequent higher than normal evapotranspiration. Therefore, it is expected that forage will continue to be depleted faster and the remaining operational open water sources are likely to dry up too thereby increasing distances from grazing fields to water sources.

Vegetation Condition Index (3 Month) : February 2017 & February 2018

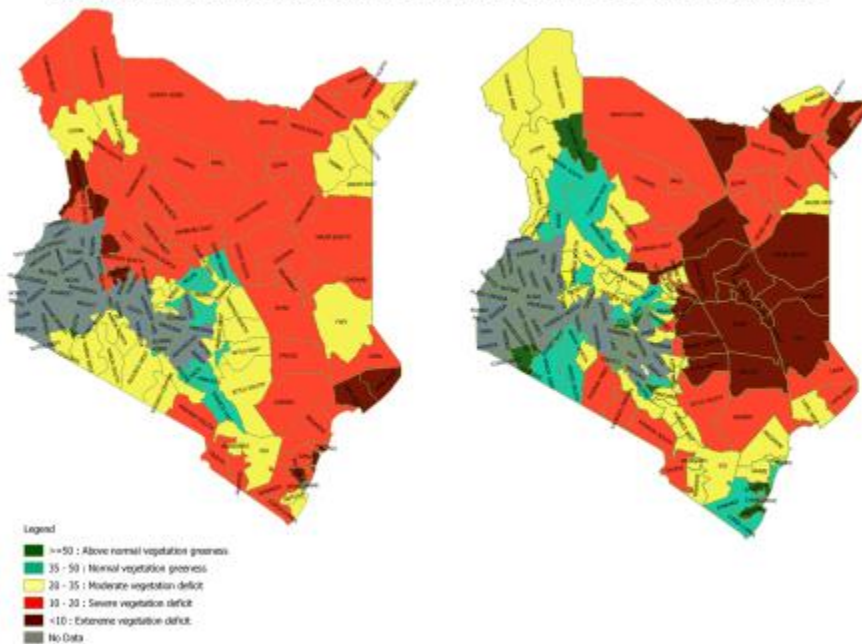


Figure 1 compares the vegetation condition index (VCI) in February 2017 with that in February 2018. The February 2018, VCI map illustrates the current condition of vegetation in the ASAL counties as follows:-

- The most drought affected counties were: Garissa, Isiolo, Tana River and Kitui which by end of February had sub-counties in the extreme vegetation deficit class.
- Counties which have some of their sub-counties with extreme or severe vegetation deficit include: - Wajir, Mandera, Marsabit, Kajiado, Samburu (Samburu East), Lamu (Lamu East); Meru (Igembe South); Embu (Mbeere North); Tharaka Nithi (Tharaka); Taita Taveta (Taveta).
- Turkana, Kilifi (Magarini, Ganze and Malindi); West Pokot; Baringo; Makueni counties are experiencing moderate vegetation deficit but with a faster than expected negative trend.
- In Narok County, all sub counties were within or above normal ranges for the period except Narok East which recorded a mild vegetation deficit.

Water sources

The main water sources in the month of February for both domestic and livestock use were water pans, dams, boreholes, sand dams, rivers, shallow wells and piped water systems. In comparison to January, the quantity and quality of water obtained from open water sources such as dams, water pans, sand dams, rivers and shallow wells reduced significantly due to the prevailing hot and dry weather and congestion at water points by both people and livestock. The water situation deteriorated rapidly in February and by the end of the month almost all water pans in Turkana, Lamu, Isiolo, Tana River and Kajiado had dried up. In Taita Taveta, water levels in strategic water sources like Mwatate dam and Manoa water pan have fallen to below normal levels while Ziwa la Ngo'mbe water pan has dried up. Water trucking is currently ongoing in 70 centres in Lafey, Mandera East and North sub counties.

Permanent water sources such as boreholes are expected to have water continuously until the onset of the next rainy season. However, boreholes are experiencing increased pumping hours leading to frequent breakdowns. For instance, in Turkana about 15 percent of generator sets have broken down while in Garissa County, approximately, 60 percent of the water pans in the pastoral livelihood zone had dried up and households were relying on the boreholes, of which 20 percent had broken down and were in need of repairs. Water points serving high population in Turkana County include Lorengkipi and Nakurio in Loima Sub County where there has been high concentration of herders who are migrating to Uganda in search of pasture. In Marsabit County high concentration of people and livestock from Wajir and Mandera counties was observed around boreholes and water pans in the pastoral zone in Badenrero area Moyale Sub County.

Livestock production

Pasture and browse condition was fair to poor across the ASAL counties compared to good to fair normally. Livestock body condition for cattle and sheep was poor to fair while that of goats and camel was fair across counties. The current livestock body condition has slightly declined compared to last month due to the increase in trekking distances in search of pasture and water coupled with reduction in pasture and browse quantity and quality. Overall, the current body condition of most livestock is below normal when compared with a similar period of the year. Counties where livestock body condition shows signs of worsening include: Mandera, Kajiado, Isiolo, Wajir, Garissa, Tana River and Lamu. In the mixed farming livelihood zone, in Kitui County, availability of crop residues that are used as supplementary livestock feed has helped in maintaining livestock in fair body condition.

Cases of rabies were reported in Wajir, Narok and Baringo while an outbreak of blue tongue disease occurred in Narok County. Other major diseases reported in the ASAL areas were foot and mouth disease (FMD), contagious caprine pleuro pneumonia (CCPP) lumpy skin disease (LSD), PPR, sheep and goat pox, black quarter (BQ) and contagious bovine pleuro pneumonia (CBPP). No unusual livestock deaths were reported during the month under review.

Progressive drying of water sources as well as pasture and browse depletion are driving herders into earlier than normal migration. In Turkana County, livestock were reportedly migrating abnormally from Uganda to Nakitong'o and Nawonots due to conflicts over grazing fields and water. In Marsabit County, in-migration from Wajir, Mandera Counties and parts of Southern Ethiopia to Moyale Sub County was reported. In Samburu County, out migration was reported towards Baragoi, Sereolipi, Kom and Waso in Isiolo County. The current migration patterns are unusual and are expected to continue as livestock search for water and pasture/browse as the dry spell continues.

Crop production

During the month of February most farmers in the marginal agricultural areas were clearing their farms in preparation of the long rains planting season. In Kilifi, harvesting of maize, cow peas and green grams along the coastal strip and irrigated crops along Galana/Sabaki River was reported while in Makueni, harvesting of maize in mixed farming livelihood zone was going on, but maize had failed in the marginal mixed farming livelihood zone and farmers in these areas only managed to harvest some small amounts of green grams and beans.

Farming activities undertaken in Narok during the month included weeding in Narok North and Narok East sub-counties and harvesting of green maize in Transmara East and Kilgoris Sub-counties. In Tharaka, harvesting of cereal crops such as sorghum, millet and maize was going on but land preparation for the long rains season had also started in most areas.

Generally, crop performance in the short rains season was poor in almost all ASAL counties with an average of 30 – 40 percent of normal maize production realised in the mixed farming areas and as little as 10 – 20 percent yield achieved in the marginal mixed farming and agro pastoral zones.

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.

- In Garissa, average household return distances was 19.4 km compared to the long term mean of 4.1 km. The pastoral all species livelihood zone recorded the highest trekking distance for households at 21 km. This was attributed to breakdown of boreholes and drying up of over 60 percent of water pans in the area.
- The average distance to water sources from grazing areas, in Isiolo County increased from 16.3 km to 18.5 km during the month under review. The grazing distances are expected to increase further as herders migrate to the dry grazing areas such as Kom, Sabarwawa and Barchuma and across into neighbouring counties such as Meru and Laikipia.
- In Kajiado, households living in pastoral areas for example, Kunchu, Mbirikani, Mosiro and Torosei covered 5 – 10 km to get water. In addition, high concentration of livestock at strategic water sources was observed in Kunchu, Mbirikani and Magadi where livestock walked 20 km from grazing fields in search of water.
- Average return distances from households to water sources, in Kitui rose to 8.3 km in February from 6.1 km in the previous month with households in the marginal mixed farming area recording a higher distance of 9.6 km compared to 6.6 km in the mixed farming livelihood zone.
- In Mandera, average trekking distance from the main water sources to grazing areas for livestock was 21.6 km compared to the long term mean of 9 km which was attributed to depletion of pasture in most parts of the county.

Terms of trade

During the month under review the livestock-to-cereal terms of trade (ToT) were unfavourable in most counties. The highest terms of trade was recorded in Embu (Mbeere) where households could purchase 121 kg of maize from the sale of one goat, while Mandera recorded the lowest ToT at 37 kg of maize in exchange of an average sized goat. The favourable terms of trade in Mbeere was attributed to increase in goat prices resulting from good body condition while the average price for maize in the county remained stable. On the other hand, the low ToT recorded in Mandera was mainly as a result of a drop in the price of goats due to deterioration in body condition and also low market demand.

Terms of trade were favourable in a number of counties. For instance in Taita Taveta, Lamu, Turkana and Kilifi the current ToT were higher than the long term average for February by 46, 41, 39 and 36 percent respectively. The relatively favourable situation for livestock keepers in these areas was caused by increase in the price of goats while maize prices had decreased. Table 1 shows the trend in the terms of trade (ToT) in ASAL counties.

Table 1.0: Terms of trade, February 2018

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

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 summarizes the trend in MUAC rates across the ASAL counties.

Overall, the trend in most ASAL counties is worsening or stable. In the month of February, counties with MUAC rates above the 15 percent threshold were: Mandera - 28.6 percent, Isiolo - 26.9, Turkana - 23, Samburu - 21.5, Baringo - 20.7, Marsabit - 18.1, Meru (Meru North) - 18.1, Wajir - 17, and Kajiado - 16.8 percent

The largest increase in MUAC rate in February compared with January was in Turkana by 53 percent and by 42, 32 and 24 percent in Garissa, Laikipia and Meru North respectively. In Turkana, reduced milk consumption coupled with absence of integrated medical outreaches especially in the conflict hotspots were the factors contributing to the rise in the proportion of children at risk of malnutrition while in Garissa County, increase in malnutrition cases was attributed to inadequate food intake, upsurge of water borne diseases and other child related illness. The high MUAC rates in Meru North were as a result of an increase in the number of households with poor food consumption; especially in the agro pastoral livelihood zone.

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

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

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 with a worsening trend. Four counties: Garissa, Isiolo, Kajiado, and Tana River are still in the alarm phase.

Table 3.0: Drought phase classification, February 2018

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

2.0. Other food security challenges

Fewer counties reported incidences of insecurity and conflict in the month of February. Most cases of resource based conflicts were seen in Baringo Isiolo, West Pokot and Samburu. In Baringo, tension remained high along the Kerio River, Kapnai Cheptuimot Ptirik, Kagir and Kapendo due to high concentration of livestock in search of water and pasture. Similarly resource based conflicts were reported in Isiolo in areas with high livestock concentration such as Ngaremara, Garbatulla, Kula Mawe, Kinna and along the River Ewaso Nyiro flood basin

Rampant cattle rustling incidences were reported within the month mainly in Pokot Central along Pokot – Marakwet border at Chesegon where scores of people reportedly lost their lives and hundreds of livestock stolen with over 200 households displaced in Cheptulel area.

Insecurity attributed to cattle rustling was witnessed in Samburu North leading to loss of lives from the two warring communities residing there. Tension is still high as mediation to return stolen livestock continues.

In Taita Taveta, elephant menace continued to be reported in areas bordering Tsavo national park. Other counties where human wildlife conflict episodes occurred include: Laikipia, Baringo and Makueni.

Three people died in what is suspected to be cholera outbreak in Tana North in Tana River County. The area was experiencing water shortage which forced people to share the same water point with livestock leading to contamination. The outbreak was also blamed on poor hygiene practices by the residents.

3.0. Response

Since July 2017, the National Drought Management Authority (NDMA) has disbursed over Kshs 517 million of drought contingency funds (DCF) in 19 ASAL counties to assist local communities affected by drought (Annex 2).

In addition, in February 2018, the Government of Kenya (GoK) set aside Kshs 4 billion to mitigate the effects of the ravaging drought. Table 4 provides a breakdown on how the 4 billion allocation was distributed per sector.

Table 4.0: GoK drought response allocation, February 2018

Sector	Budget (Kshs)	Priority actions
Food & safety nets	2,505,217,391	Food and cash transfers
Water	305,988,555	Water trucking, maintenance, fuel subsidies
Livestock	619,046,170	Offtake, feeds, disease surveillance & control
Health & nutrition	100,452,351	Food supplements, health outreach
Peace & security	64,744,600	Promote social cohesion and conflict management
Education	113,691,658	Hygiene & sanitation, food for fees
Agriculture	84,939,550	Planting materials & inputs for long rains season
Coordination	37,071,000	Support national and county level coordination
Total (Kshs)	3,831,151,275	

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

ADMINISTRATIVE UNIT		VEGETATION GREENNESS		DROUGHT CATEGORIES/REMARKS		
COUNTY	Sub County	VCI-3 month as at 29 th Jan 2018	VCI-3 month as at 26 th Feb 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	52.39	33.1	Marked negative trend across all sub-counties, with four of them shifting to the moderate vegetation deficit category		
	Central	60.29	42.48			
	Eldama	49.22	31.84			
	Mogotio	42	21.52			
	North	49.14	30.62			
	South	56.04	36.98			
	Tiaty	54.57	34.59			
MANDERA	County	20.06	12.25	All sub-counties are in the severe/extreme vegetation deficit categories, except for Banissa, which is in the moderate band. The VCI is on a fast worsening trend.		
	Banissa	34.96	23.52			
	M East	17.36	12.82			
	Lafey	16.24	9.81			
	M North	19.64	11.36			
	M South	17.91	10.95			
	M West	17.29	9.29			
TURKANA	County	45.56	31.96	After many months with normal vegetation deficit in Turkana, in February three sub-counties have moved to the moderate deficit class with fast drop of VCI values across all sub-counties.		
	T Central	61.03	52.82			
	T. East	49.97	35.58			
	T. Loima	47.27	34.95			
	T. North	43.27	26.08			
	T. South	53.86	43.75			
	T. West	33.55	20.51			
MARSABIT	County	24.68	14.58	The trend is very negative and currently all sub-counties have shifted to the severe vegetation deficit except for Moyale that is in the extreme band. It is anticipated that significant drought impacts will be felt in March until the onset of rains		
	Laisaimis	21.51	13.18			
	Moyale	18.76	8.43			
	N. Horr	27.93	16.81			
	Saku	25.48	16.65			
WAJIR	County	19.05	11.89	Also in this county the VCI values show a marked decline across all sub-counties.		
	W East	28.52	21.18			
	W.Eldas	22.61	15.32			
	W. North	27.4	17.46			
	W. South	12.43	6.22			
	W.Torbaj	17.2	10.4			
	W West	20.79	14.38			
SAMBURU	County	36.11	21.8	Fast deterioration of the vegetation greenness occurred in February and as a result S. East is currently in the severe vegetation deficit class		
	S East	26.8	14.12			
	S. North	41.9	26.94			
	S. West	54.25	35.47			

ADMINISTRATIVE UNIT		VEGETATION GREENNESS		DROUGHT CATEGORIES/REMARKS		
COUNTY	Sub County	VCI-3 month as at 29 th Jan 2018	VCI-3 month as at 26 th Feb 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	16.31	6.24	Extreme vegetation deficit in all sub-counties except for Ijara that is in the severe band		
	Balambala	7.51	2.04			
	Daadab	12.03	3.72			
	Fafi	17.27	4.87			
	Ijara	31.35	17.39			
	Lagdera	7.14	2.04			
	Dujis	3.35	-1.41			
ISIOLO	County	9.03	3.99	Extreme vegetation deficit in both sub-counties		
	I. North	9.57	4.82			
	I. South	8.2	2.74			
TANA RIVER	County	12.97	5.33	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 latter records a negative value for February		
	Bura	6.03	0.34			
	Galole	5.77	-1.17			
	Garsen	23.36	13.63			
KAJIADO	County	20.85	15.75	Three out of 5 sub-counties are in the severe vegetation deficit band while K. North is still within normal ranges but with a fast worsening trend.		
	K. Central	18.47	15.93			
	K. East	32.37	21.02			
	K. North	50.02	39.63			
	K. South	18.87	14.27			
	K. West	18.17	14.03			
LAIKIPIA	County	44.17	26.37	The vegetation greenness is fast deteriorating with all sub-counties shifting from normal to moderate vegetation deficit band.		
	L. East	39.19	21.3			
	L. North	41.4	24.26			
	L. West	51.76	32.76			
THARAKA NITHI	County	35.27	21.06	Tharaka sub-county experiences an extreme vegetation deficit which potential impact needs to be assessed on the ground.		
	Chulga	50.16	33.42			
	Maara	58.59	45.56			
	Tharaka	22.21	8.56			
WEST POKOT	County	49.44	32.02	The vegetation greenness is worsening, although relatively better than the situation in many other ASAL counties.		
	Kacheliba	44.93	27.26			
	Kapenguria	47.5	30.92			
	Pokot South	57.4	37.89			
	Sigor	54.57	38.15			
EMBU	County	46.36	28.87	Vegetation greenness deteriorated significantly especially in Mbeere North and South.		
	Manyatta	53.79	42.62			
	Mbeere North	36.84	16.8			
	Mbeere South	47.78	29.59			
	Runyenjes	54.24	37.92			

ADMINISTRATIVE UNIT		VEGETATION GREENNESS		DROUGHT CATEGORIES/REMARKS		
COUNTY	Sub County	VCI-3 month as at 29 th Jan 2018	VCI-3 month as at 26 th Feb 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	21.76	10.01	Another county experiencing a significant drought spell with extreme vegetation deficit in three sub-counties while additional three are in the severe deficit band		
	Kitui Central	49.05	30.79			
	Kitui East	13.41	1.01			
	Mwingi Central	13.92	3.5			
	Mwingi North	18.7	7.3			
	Mwingi West	26.17	15.63			
	Kitui Rural	37.59	18.36			
	Kitui South	24.65	12.8			
	Kitui West	34.3	24.01			
MAKUENI	County	44.29	33.9	The vegetation greenness is progressively deteriorating with three sub-counties shifting to the moderate vegetation deficit category		
	Kaiti	68.53	65.02			
	Kibwezi East	40.44	29.04			
	Kibwezi West	36.42	24.9			
	Kilome	59.34	48.53			
	Makueni	41.74	31.39			
	Mbooni	51.45	43.24			
MERU	County	44.27	28.4	Two sub-counties (Igembe Central and Igembe South) have shifted to the severe and extreme vegetation deficit bands		
	Buuri	57.28	44.2			
	Central Imenti	48.7	33.41			
	Igembe Central	31.71	12.85			
	Igembe North	40.12	20.58			
	Igembe South	27.56	7.5			
	North Imenti	38.31	21.79			
	South Imenti	59.48	49.17			
	Tigania East	41	25.49			
Tigania West	45.04	32.8				
NYERI	County	55.52	45.77	Vegetation greenness in Kieni within normal ranges for the period		
	Kieni	55.48	42.36			
	Mathira	55.83	57.48			
	Mukurweini	34.07	31.03			
	Town	53.7	45.83			
	Othaya	65.02	56.16			
	Tetu	57.84	46.19			

ADMINISTRATIVE UNIT		VEGETATION GREENNESS		DROUGHT CATEGORIES/REMARKS		
COUNTY	Sub County	VCI-3 month as at 29 th Jan 2018	VCI-3 month as at 26 th Feb 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
KILIFI	County	44.97	34.56	Vegetation greenness with moderate deficit in Malindi and Magarini		
	Ganze	47.84	34.37			
	Kaloleni	64.77	52.34			
	Magarini	39.74	30.84			
	Malindi	35.94	26.02			
	Kilifi-North	55.83	44.89			
	Rabai	59.34	47.49			
	Kilifi-South	63	53.84			
KWALE	County	59.26	47.01	The vegetation greenness is within normal ranges for the period		
	Kinango	61.15	47.18			
	Lungalunga	57.41	43.91			
	Matuga	58.15	53.64			
	Msambweni	48.26	42.7			
LAMU	County	34.98	20.71	Quite fast negative trend from December, with Lamu East experiencing now a severe vegetation deficit.		
	Lamu East	33.52	18.63			
	Lamu West	35.82	21.92			
TAITA TAVETA	County	33.78	23.06	Moderate deficit in all sub-counties except for Taveta, which is now in the severe class.		
	Mwatate	31.36	21.06			
	Taveta	27.12	18.49			
	Voi	37.56	25.63			
	Wundanyi	30.41	22.34			
NAROK	County	45.85	43.89	Only Narok East records a mild vegetation deficit while all other sub-counties are within/above normal ranges for the period.		
	Narok-East	31.78	29.1			
	Emurua Dikirr	80.57	71.43			
	Kilgoris	64.03	59.17			
	Narok North	48.24	40.89			
	Narok South	43.23	40.95			
	Narok West	42.17	45.23			

Annex 2.0 DCF Disbursements (disbursed & approved requests) from July 2017 to February 2018

Row Labels	FRF No.	Agriculture	Coordination	Education	Health	Livestock	Security	Water	Grand Total
Baringo	544		947,600						947,600
Baringo Total									947,600
Garissa	540							1,593,700	1,593,700
Garissa	552							3,442,400	3,442,400
Garissa	571							349,200	349,200
Garissa	594		2,810,000			21,438,600		4,092,000	28,340,600
Garissa	623					8,389,600			8,389,600
Garissa	641		1,147,200			16,989,000	1,325,500	651,000	20,112,700
Garissa Total									62,228,200
Isiolo	565		1,466,600			19,652,500	1,732,800	4,301,900	31,521,950
Isiolo	573			4,368,150		1,987,000			1,987,000
Isiolo	576					1,520,800			1,520,800
Isiolo	596							1,441,000	1,441,000
Isiolo	606					9,336,000			9,336,000
Isiolo	621					1,752,500			1,752,500

Isiolo	627					809,300			809,300
Isiolo	642					23,824,000			23,824,000
Isiolo	643		859,400				442,400	3,301,200	9,376,900
Isiolo Total				4,773,900					81,569,450
Kajiado	591		1,079,000			19,323,600		543,600	20,946,200
Kajiado	618					9,314,200			9,314,200
Kajiado	648		250,700			9,566,200			9,816,900
Kajiado Total									40,077,300
Kilifi	578					1,764,200			1,764,200
Kilifi	581		283,000						283,000
Kilifi Total									2,047,200
Kitui	640		1,307,200					2,945,760	5,958,960
Kitui Total					1,706,000				5,958,960
Kwale	583					1,115,790			1,115,790
Kwale Total									1,115,790
Laikipia	570		1,042,400			18,589,000	915,000	731,600	23,922,900
Laikipia	607					4,124,350			4,124,350

Meru	601		1,072,900			3,418,600	1,775,000	5,060,750	11,327,250
Meru Total									11,327,250
Narok	592		319,100						319,100
Narok	593				1,974,500				1,974,500
Narok	610					10,576,600			10,576,600
Narok	612					73,011			73,011
Narok	622					238,800			238,800
Narok Total									13,182,011
Nyeri	531					4,500,400			4,500,400
Nyeri	588		317,000						317,000
Nyeri Total									4,817,400
Samburu	526					9,900,100			9,900,100
Samburu	537					3,720,900			3,720,900
Samburu	579					984,200			984,200
Samburu	585		758,440			14,488,780			15,247,220
Samburu	598				2,088,400				2,088,400
Samburu	599					2,446,760			2,446,760

Samburu	600					536,700			536,700
Samburu	632		432,800			1,313,600			1,746,400
Samburu	649					9,407,500			9,407,500
Samburu Total									46,078,180
Taita Taveta	536		102,150						102,150
Taita Taveta Total									102,150
Tana River	553		1,040,400						1,040,400
Tana River	558							3,326,400	3,326,400
Tana River	569					23,988,800			23,988,800
Tana River	638		288,000						288,000
Tana River	639		842,200	2,886,500	878,500	17,773,400		1,789,200	24,169,800
Tana River Total									52,813,400
Turkana	532					1,177,450			1,177,450
Turkana	546		1,641,400						1,641,400
Turkana	549					6,934,230			6,934,230
Turkana	595		1,403,000					2,561,000	3,964,000
Turkana Total									13,717,080
Wajir	551					5,631,000			5,631,000

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

