



**THE PRESIDENCY
MINISTRY OF DEVOLUTION AND PLANNING**

National Drought Early Warning Bulletin

October 2017



Summary

Drought conditions remain critical in the following counties: **Garissa, Isiolo, Kajiado, Kilifi, Marsabit, Narok, Samburu (East), Tana River, and Wajir (South and West)**. Here, water stress is acute, milk production and livestock prices are well below normal, and livestock mortality is rising. In some other ASAL areas, particularly in the north-west and in parts of the coast, conditions have returned to normal following significant off-season rainfall in August and September. However, in all ASAL counties, staple food prices remain well above normal, at a time when market dependence is also high in the wake of successive poor seasons.

There are three possible scenarios for the months ahead:

1. **The short rains start on time and are above normal, in line with the forecast.** Under this scenario, drought-affected areas will recover, but will need continued support for some weeks to facilitate this. The risks of enhanced rainfall will need preparing for and managing.
2. **The short rains start late but then perform well.** The late onset will aggravate existing conditions, such that drought response will be needed well into November. Livestock mortality will increase significantly.
3. **The short rains perform poorly, influenced by La Niña conditions.** The drought situation will become acute and reach emergency levels during the next dry season in early 2018. Additional resources for enhanced response will become necessary.

1 Drought status

1.1 Drought indicators

Rainfall

The quantity and distribution of rainfall in September varied significantly across ASAL counties. There were broadly four categories of rainfall performance:

- i. **Rainfall that was above normal and well distributed:** Baringo, West Pokot, Kwale, and the agro-pastoral livelihood zones of Laikipia and Samburu.
- ii. **Rainfall that was either above normal or of reasonable intensity but not well distributed:** Kilifi, Lamu, Taita Taveta, Turkana, and parts of Marsabit (in Laisamis, Moyale, and the northern parts of North Horr).
- iii. **Light or isolated showers:** Embu (Mbeere), Kajiado, Meru, Narok, Nyeri, parts of Mandera (West and Banisa), the southern parts of Garissa, and the coastal parts of Tana River.
- iv. **No rainfall:** Isiolo, Kitui, Makueni, Tharaka Nithi, Wajir.

Heavy rainfall in the Ethiopian highlands also caused flash flooding along the River Daua in Mandera.

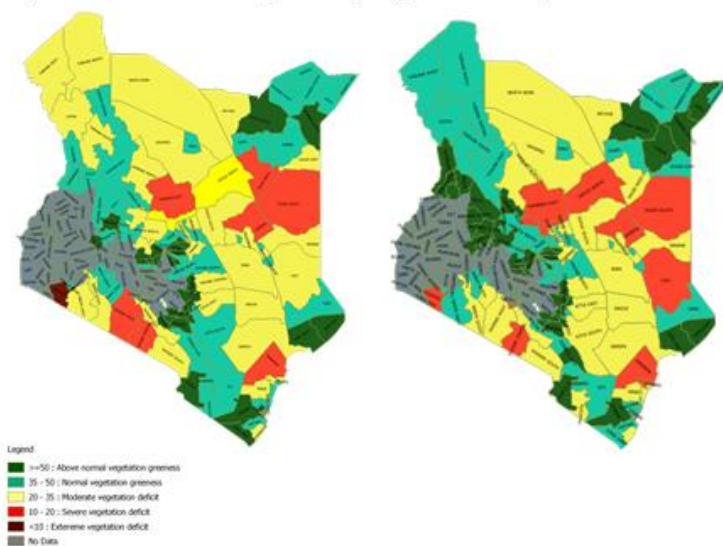
Vegetation condition

Figure 1 compares the vegetation condition in August and September 2017. Off-season rainfall has improved environmental indicators in the northern Rift Valley, but elsewhere a critical drought situation

persists, particularly in Garissa, Isiolo, Kajiado, Kilifi, Marsabit, Narok, Samburu (East), Tana River, and Wajir (South and West).

Figure 1:

Vegetation Condition Index (3 Month) : August 2017 & September 2017



Community interviews and observations provide further detail. In Kajiado, for example, 100% percent of respondents noted that pasture is now either poor or depleted in both the pastoral and agro-pastoral livelihood zones; any remaining pasture in dry-season grazing areas has also deteriorated quickly due to the concentration of livestock. In Kitui, the proportion of those describing browse as ‘poor’ increased from 24 percent in August to 70 percent in September. As usual, insecurity is a critical factor: Garissa’s drought fall-back areas along the border with Somalia and in the Boni Forest are now inaccessible, while Samburu North still has significant amounts of pasture and browse in areas affected by conflict.

Water sources

Water stress has reduced in areas that received off-season rainfall. Open water sources in Baringo are at 100 percent of their capacity, while permanent and seasonal rivers in West Pokot are flowing at unusually high levels.

Elsewhere, water stress is deepening. Boreholes are running for 24 hours a day in Wajir; three rapid response teams have been strengthened to ensure that breakdowns are attended to within four hours of being reported. Waiting times at water sources in Kajiado’s pastoral livelihood zone are up to seven hours longer than normal, while in parts of Makueni they are now six hours. Wote town experienced water rationing for three weeks in September, caused by the drying of the rivers Kaiti and Muani which supply the town. Emergency water trucking to population centres and livestock continues in a number of counties, including Isiolo, Kajiado, Kilifi, Kitui, Mandera and Wajir.

Livestock production

Livestock body condition varies by species and livelihood zone but generally continues to worsen:

- Cattle in the pastoral livelihood zone of Kajiado are emaciated; some farmers in Magadi and Mosiro are disposing of their animals for as little as KSh. 500. There are signs of general mass wasting among livestock in Wajir, and poor body condition across Garissa and Isiolo.
- Milk production is still below normal in most counties. In Marsabit it fell by 42 percent on the previous month to below the minimum recorded.
- Drought-related livestock deaths were reported in six counties, two more than in the previous month: Isiolo, Kajiado, Marsabit (Saku and Moyale), Mandera (South), Samburu (East) and Wajir. Mortality will increase if the short rains delay or perform poorly.

Livestock migration has stabilised in areas of off-season rainfall: about 90 percent of livestock in Baringo, for example, are now back in their normal grazing areas. Elsewhere, migration patterns are far from normal. For example, Kitui, Lamu and Tharaka Nithi are hosting unusually large numbers of livestock from Tana River, Garissa and Isiolo, increasing inter-communal tension and the risk of resource-based conflict.

Crop production

Land preparation and planting are underway in advance of the short rains. The off-season rains in August and September have had mixed impacts. In West Pokot, mature maize is rotting under excessive rainfall, but in Laikipia, maize, beans and potatoes that were previously water-stressed have started to improve, particularly slow-maturing varieties or those that were planted late. In Turkana, both the rain-fed and irrigated crops are progressing well, but in Makueni, farmers practising irrigation in highland areas report cases of white flies, blight in beans, and powdery mildew.

Access to water

Access to water worsened significantly in September. In a majority of counties, the average return distance for both households and livestock was longer than in August and also above the long-term mean (Table 1). Return trekking distances for livestock in Kajiado's pastoral livelihood zone reached 40km, almost four times the county average, while the watering frequency reduced from daily to once every three days.

Table 1: Average household and livestock return distances to water, September 2017¹

	<i>No. counties where the distance was below, above or at the long-term mean</i>			<i>No. counties where the distance was shorter, longer or the same as the previous month</i>		
	Below	Above	At	Shorter	Longer	Stable
Household	4	13	3	6	11	3
Livestock	3	17	1	7	14	-

¹ Data from 20 counties for households and 21 counties for livestock.

Terms of trade

Table 2 illustrates the movements in the average prices of cattle, goats and maize on the previous month and their relationship to the long-term mean.

Table 2: Average cattle, goat and maize prices, September 2017

	<i>No. of counties where the price rose, fell or was stable on the previous month</i>			<i>No. counties where the price was above, below or at the long-term mean</i>		
	Rose	Fell	Stable	Above	Below	At
Cattle	8	15	-	6	17	-
Goats	11	12	-	10	11	2
Maize	10	12	1	22	-	1

Livestock prices remain low, largely due to poor body condition. Prices are further depressed by distress sales (such as in Kajiado) or a lack of buyers in the area (Samburu). Where prices have increased, this either reflects improved body condition or reduced supply, as owners hold on to their stock in expectation that their condition will improve with the forthcoming rains.

Maize prices, like other staple food prices, remain well above normal. Even though the average price fell in more counties than it rose, it is still above the long-term mean in all but one county. The falls in price are attributed to increased supply, either from local harvests (Laikipia and Taita Taveta) or from markets elsewhere in the country. The highest recorded price was in Mosiro, Kajiado, at KSh. 150 per kg.

Table 3 summarises the terms of trade between goats and maize which are generally well below normal.² The largest rise since August was in Laikipia (20 percent) and the largest fall in Embu (36 percent).

Table 3: Terms of trade, September 2017³

<i>Trend</i>	Improving	Stable	Worsening
Below long-term mean (LTM)	Baringo Kitui Laikipia Narok Tana River		Embu (Mbeere) Isiolo Kajiado Mandera Marsabit Meru (North) Samburu Tharaka Nithi
Above LTM	Garissa Kilifi Turkana West Pokot	Wajir	Lamu Taita Taveta

² The drought early warning system monitors the relative price of goats and maize, showing the number of kilogrammes of cereal that can be exchanged for one goat. These terms of trade are an important indicator of pastoralists' purchasing power. As drought stress increases, animals lose condition and more of them enter the market causing the price to fall. At the same time, the price of cereals tends to rise as stocks become depleted. Thus, livestock-keepers are caught in a pincer movement, as the value of their principal asset reduces and the price of the food they need rises.

³ Data from 21 counties.

Health and nutrition

The bulletins monitor the percentage of children under five at risk of malnutrition, determined by measuring their mid-upper arm circumference (MUAC). There are currently nine counties where the average MUAC rate exceeds 15 percent (Table 4). The largest movements on the previous month are captured in Table 5.

Table 4: Children at risk of malnutrition (MUAC), September 2017⁴

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

Table 5: Largest average movements in MUAC, September 2017

Increase on the previous month		Decrease on the previous month	
Nyeri (Kieni)	400%	Embu (Mbeere)	22%
Makueni	37%	Garissa	15%
Marsabit	23%	Turkana	11%

The factors presently influencing malnutrition include milk consumption, disease, and the nurses' strike. The fall in the MUAC rate in Turkana is attributed to the 43 percent rise in milk consumption between August and September. On the other hand, the rise in the MUAC rate in Baringo – despite an improvement in both environmental conditions and milk consumption – is attributed to the incidence of diarrhoea. The bulletins from Samburu, Kilifi and Kwale all highlight the impact of the nurses' strike on access to health services and supplementary feeding programmes.

Other health concerns include 20 deaths from a malaria outbreak in Dukana and North Horr, Marsabit.

1.2 Drought phase classification

The drought phase is determined by the indicators discussed in the previous sections (Table 6). The number of counties where drought conditions are considered normal has increased this month from four to six, given the improvement in Baringo and Turkana. However, in most counties the trend is worsening, as would be expected towards the end of the dry season.

⁴ Counties highlighted in bold have average MUAC rates above 15 percent. Meru (North) not included.

Table 6: Drought phase classification, October 2017

<i>Drought status</i>	<i>Trend</i>	Improving	Stable	Worsening
Normal		Turkana ⁵	Baringo ⁶ Kwale Lamu Taita Taveta ⁷ West Pokot	
Alert		Laikipia		Embu (Mbeere) Kitui Makueni Mandera Meru (North) Narok ⁸ Nyeri (Kieni) Samburu ⁹ Tharaka Nithi
Alarm				Garissa Isiolo Kajiado Kilifi Marsabit Tana River Wajir
Emergency				
Recovery				

2 Other food security challenges

The most serious security incidents reported in September were in Samburu, West Pokot, Meru and Narok. In Samburu North, clashes left four people dead, while in West Pokot, another four people died and around 60 livestock were stolen in bandit attacks. In Meru, more households were displaced following conflict with communities from Isiolo, while in Narok, there were deaths and injuries following skirmishes in the Esoit area of Kilgoris sub-county.

In several counties, worsening environmental conditions and abnormal patterns of migration are increasing inter-communal tension. These include:

- Isiolo: between Borana, Meru and Turkana in Gambela and Burat.
- Kilifi: conflict with livestock-keepers from Tana River in Magarini sub-county.

In Marsabit, there are fears of reprisals in Moyale following inter-ethnic clashes in Ethiopia. Tension is still high in Lamu following previous attacks by Al Shabaab, while families remain displaced and markets closed

⁵ Fisheries livelihood zone: alert

⁶ Pastoral livelihood zone: alert and improving

⁷ Mixed farming (food crops/livestock) livelihood zone and National Park: alert and worsening

⁸ Pastoral livelihood zone: alarm

⁹ Pastoral (East) livelihood zone: alarm

in parts of Laikipia. Four counties reported conflict between people and wildlife: Baringo, Laikipia, Makueni and Taita Taveta.

3 Response

The National Treasury has released KSh. 3.98 billion for drought response interventions between September and December 2017, addressing priorities in water, food and safety nets, livestock, agriculture, health and nutrition, peace and security, and coordination. The national government has also constituted a weekly monitoring mechanism to ensure that the sectors fast-track delivery of their commitments.

In September, the National Drought Management Authority disbursed a further KSh. 88 million of drought contingency finance, bringing the total for the 2017-18 financial year to KSh. 169 million (Annex 2). A further KSh. 197 million has been committed, making a total allocation so far of KSh. 366 million.

KSh. 57 million of emergency cash transfers were also approved in September, triggered by the August Vegetation Condition Index. These are being paid to 21,064 households in Turkana and Wajir with the support of UKAid.

4 Projected food security situation

The Kenya Meteorological Department is forecasting enhanced rainfall over much of the country during the October-November-December short rains. However, there are also warnings of a possible La Niña event,¹⁰ which is typically associated with below-average rainfall in the Horn of Africa between October and December.

Given this, there are three possible scenarios:

<p>Scenario 1: the short rains will start on time and much of the country will experience enhanced rainfall.</p>	<ul style="list-style-type: none"> • Recovery will take place in most drought-affected areas. • Drought response will be required for the first few weeks of the rainy season to support recovery. • The risks of above-average rainfall (flooding, crop destruction, disease) will need managing.
<p>Scenario 2: the short rains will start late but with enhanced rainfall.</p>	<ul style="list-style-type: none"> • The late onset will further aggravate the drought situation in many areas, with more counties needed response measures during October and part of November. • Livestock mortality will increase significantly.
<p>Scenario 3: there will be a La Niña event with below-average rainfall.</p>	<ul style="list-style-type: none"> • Recovery will be insufficient. The drought situation will become acute and reach emergency levels during the next dry season (January-March 2018).

¹⁰ International Research Institute for Climate and Society, Earth Institute, Columbia University

5 Recommendations

In light of the three possible scenarios, the following recommendations are made:

- a) Fast-track the implementation of current drought response measures, particularly since the period just before the start of the rainy season is the most difficult time for the ASAL region. Special attention should be given to reducing malnutrition and mitigating further livestock mortality.
- b) Monitor the onset of the short rains closely and develop contingency measures for scenarios 2 and 3, ensuring that resources are available for enhanced response in early 2018 if necessary.
- c) Formalise the National Drought Emergency Fund without delay, to ensure continuity in the provision of drought contingency finance to affected counties.
- d) Ensure that drought risk reduction is adequately addressed within national and county development plans.

Annex 1 Vegetation Condition Index, 25th September 2017

ADMINISTRATIVE UNIT				Remarks		
COUNTY	Sub-County	VCI-3 month 28 st August 2017	VCI-3 month 25 th September 2017	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	50.78	66.72	This county received good off-season rains and as a result the vegetation greenness is now above the normal ranges for the period.		
	Central	48.64	61.25			
	Eldama	62.21	69.34			
	Mogotio	47.41	66.39			
	North	49.73	66.78			
	South	53.8	71.23			
	Tiaty	48.85	65.36			
MANDERA	County	47.39	48.58	The vegetation greenness is within the normal ranges for the period.		
	Banissa	45.16	47.35			
	Mandera East	38.8	41.89			
	Lafey	49.43	50.78			
	Mandera North	49.25	49			
	Mandera South	50.52	54.66			
	Mandera West	43.9	42.1			
TURKANA	County	35.06	40.41	Some off-season rains have improved the vegetation greenness, which is currently in the normal range for the period.		
	Turkana Central	40.36	48.17			
	Turkana East	37.87	47.55			
	Loima	34.16	38.33			
	Turkana North	34.75	36.81			
	Turkana South	34.06	36.58			
	Turkana West	32.31	40.06			
MARSABIT	County	31.08	31.45	The county faces a moderate vegetation deficit across all sub-counties, except for Saku which is in the normal range.		
	Laisaimis	31.85	29.66			
	Moyale	28.21	23.15			
	North Horr	30.92	34.24			
	Saku	39.4	37.45			
WAJIR	County	30.06	31.18	Wajir South and Wajir West continue to experience a significant vegetation deficit while all other sub-counties are in the normal ranges for the period.		
	Wajir East	29.52	36.76			
	Eldas	37.52	39.24			
	Wajir North	59.34	54.57			
	Wajir South	14.39	13.59			
	Tarbaj	44.52	51.14			
	Wajir West	16.43	21.3			
SAMBURU	County	28	26.77	Samburu East is still in the severe deficit band, while Samburu West is above the normal greenness for the period.		
	Samburu East	18.46	15.86			
	Samburu North	34.97	32.69			
	Samburu West	42.96	51.09			
GARISSA	County	28.15	24.18	The drought situation remains critical, especially in Lagdera and Fafi sub-counties.		
	Balambala	26.02	26.85			
	Daadab	28.52	23.24			
	Fafi	26.47	19.24			
	Ijara	39.9	37.83			
	Lagdera	17.18	16.61			
Dujis	37.72	36.87				

ISIOLO	County	14.88	16.44	Isiolo county continues to experience a significant vegetation deficit, especially Isiolo North.
	Isiolo North	11.44	13.14	
	Isiolo South	20.13	21.48	
TANA RIVER	County	24.1	23.87	All sub-counties are experiencing a moderate but significant vegetation deficit.
	Bura	24.95	25.58	
	Galole	22.91	22.5	
	Garsen	24.13	23.28	
KAJIADO	County	22.18	24.86	Vegetation deficit across all sub-counties, with Kajiado Central and North in the severe band.
	Kajiado Central	16.26	18.32	
	Kajiado East	21.46	21.83	
	Kajiado North	20.75	19.09	
	Kajiado South	30.69	32.92	
	Kajiado West	18.97	23.46	
LAIKIPIA	County	31	42.85	Significant improvements recorded due to some off-season rains. As a result, all sub-counties are now within normal ranges for the period.
	Laikipia East	32.99	43.4	
	Laikipia North	27.77	35.72	
	Laikipia West	36.1	55.94	
THARAKA NITHI	County	37.93	37.47	Vegetation greenness is within normal ranges for the period except for Tharaka sub-county that is in the moderate vegetation deficit band.
	Chulga	48.4	47.26	
	Maara	55.29	56.33	
	Tharaka	28.44	27.76	
WEST POKOT	County	44.95	52.75	Due to significant off-season rains, the vegetation greenness is within normal ranges for the period in all sub-counties.
	Kacheliba	44.04	51.87	
	Kapenguria	47.05	54.52	
	Pokot South	48	56.61	
	Sigor	43.02	50.55	
EMBU	County	43.62	52.75	Vegetation greenness is within normal ranges for the period.
	Manyatta	52.14	51.87	
	Mbeere North	44.61	54.52	
	Mbeere South	37.32	56.61	
	Runyenjes	55.37	50.55	
KITUI	County	39.79	37.75	The vegetation greenness is almost within normal ranges with only Mwingi Central. Kitui South and East recording a mild deficit.
	Kitui Central	65.43	66.86	
	Kitui East	33.8	32.21	
	Mwingi Central	34.07	34.98	
	Mwingi North	38.6	37.02	
	Mwingi West	54.39	56.69	
	Kitui Rural	43.69	43.47	
	Kitui South	38.79	34.59	
Kitui West	60.63	59.98		
MAKUENI	County	53.39	52.54	Vegetation greenness is within /above normal ranges for the period.
	Kaiti	74.91	73.32	
	Kibwezi East	48.97	50.61	
	Kibwezi West	42.06	38.96	
	Kilome	50.84	44.91	
	Makueni	58.56	59.14	
MERU	County	43.16	41.22	Moderate deficit recorded in Igembe North and Tigania East while all other sub-counties are within normal ranges for the period.
	Buuri	45.06	40.83	
	Central Imenti	61	55.76	
	Igembe Central	39.76	39.5	
	Igembe North	29.17	31.12	

	Igembe South	47.15	44.63	
	North Imenti	53.32	45.44	
	South Imenti	60.13	59.99	
	Tigania East	33.72	32.04	
	Tigania West	36.16	35.2	
NYERU	County	52.41	52.86	Vegetation greenness is within /above normal ranges for the period.
	Kieni	52.29	51.01	
	Mathira	54.66	53.27	
	Mukurweini	40.84	51.24	
	Town	50.74	61.41	
	Othaya	49.05	51.23	
	Tetu	60.13	60.29	
KILIFI	County	26.54	24.06	After a significant recovery recorded in the last couple of months, the drought situation is currently on a worsening trend, with Magarini and Malindi in the severe deficit band.
	Ganze	30.96	25.78	
	Kaloleni	49.95	46.93	
	Magarini	19.7	18.4	
	Malindi	25.38	19.72	
	Kilifi North	35.09	32.86	
	Rabai	50.39	48.38	
	Kilifi South	41.85	43.69	
KWALE	County	54.63	48.5	Significant improvements recorded in the arid part of the county (Kinango and Lungalunga) while Msambweni is still experiencing a moderate deficit.
	Kinango	60.36	51.3	
	Lungalunga	51.73	46.03	
	Matuga	44.56	47.98	
	Msambweni	27.04	28.83	
LAMU	County	56.27	55.01	Both sub-counties are experiencing above-normal vegetation greenness.
	Lamu East	55.35	57.81	
	Lamu West	56.81	53.38	
TAITA TAVETA	County	41.58	41.27	VCI is within normal ranges for the period across all sub-counties although a mild deficit is recorded in Mwatate.
	Mwatate	37.22	34.34	
	Taveta	51.92	52.1	
	Voi	38.57	38.54	
	Wundanyi	40.85	43.47	
NAROK	County	29.06	33.64	Kilgoris sub-county continues to experience a severe vegetation deficit.
	Narok East	39.15	33.49	
	Emurua Dikirr	43.82	39.43	
	Kilgoris	7.77	16.8	
	Narok North	45.18	42.68	
	Narok South	30.03	31.75	
	Narok West	25.43	38.67	

Annex 2 Drought contingency fund approvals and disbursements, 2017-18

Row Labels	FRF No.	Agriculture	Coordination	Education	Health & Nutrition	Livestock	Security	Water	Grand Total	Disbursements			Balance - Committed	
										Jul - Aug'17	Sep'17	Total	Kshs	
Baringo	544		947,600						947,600	947,600		947,600	-	
Baringo Total									947,600	947,600	-	947,600	-	
Garissa	540							1,593,700	1,593,700	1,593,700		1,593,700	-	
Garissa	552							3,442,400	3,442,400			-	3,442,400	
Garissa	571							349,200	349,200	349,200	2,520,000	2,869,200	-	2,520,000
Garissa	594		2,810,000			21,438,600		4,092,000	28,340,600		12,040,600	12,040,600	16,300,000	
Garissa Total									33,725,900	1,942,900	14,560,600	16,503,500	17,222,400	
Isiolo	565		1,466,600	4,368,150		19,652,500	1,732,800	4,301,900	31,521,950	22,319,900		22,319,900	9,202,050	
Isiolo	573					1,987,000			1,987,000			-	1,987,000	
Isiolo	576					1,520,800			1,520,800			-	1,520,800	
Isiolo	596							1,441,000	1,441,000		1,441,000	1,441,000	-	
Isiolo	606					9,336,000			9,336,000		1,336,000	1,336,000	8,000,000	
Isiolo Total									45,806,750	22,319,900	2,777,000	25,096,900	20,709,850	
Kajiado	591		1,079,000			19,323,600		543,600	20,946,200		6,258,200	6,258,200	14,688,000	
Kajiado Total									20,946,200	-	6,258,200	6,258,200	14,688,000	
Kilifi	578					1,764,200			1,764,200		1,764,200	1,764,200	-	
Kilifi	581		283,000						283,000		283,000	283,000	-	
Kilifi Total									2,047,200	-	2,047,200	2,047,200	-	
Kwale	583					1,115,790			1,115,790			-	1,115,790	
Kwale Total									1,115,790	-	-	-	1,115,790	
Laikipia	570		1,042,400		2,644,900	18,589,000	915,000	731,600	23,922,900		6,972,900	6,972,900	16,950,000	
Laikipia	607					4,124,350			4,124,350			-	4,124,350	
Laikipia Total									28,047,250	-	6,972,900	6,972,900	21,074,350	
Lamu	538					7,329,000			7,329,000	7,329,000		7,329,000	-	
Lamu	541					5,050,550			5,050,550	3,732,000		3,732,000	1,318,550	
Lamu	542					206,500			206,500	206,500		206,500	-	
Lamu Total									12,586,050	11,267,500	-	11,267,500	1,318,550	
Mandera	547							4,514,500	4,514,500	4,514,500		4,514,500	-	
Mandera	563	1,186,800	1,163,850			9,658,000		1,840,280	13,848,930		13,848,930	13,848,930	-	
Mandera Total									18,363,430	4,514,500	13,848,930	18,363,430	-	
Marsabit	525					15,011,600		2,320,000	17,331,600			-	17,331,600	
Marsabit	550		1,250,400						1,250,400	1,250,400		1,250,400	-	
Marsabit	582					1,120,000			1,120,000	1,120,000		1,120,000	-	
Marsabit	584		1,448,000		1,718,800	17,921,200		8,000,500	29,088,500	-	10,506,000	10,506,000	18,582,500	
Marsabit	604					340,000		2,703,000	3,043,000		3,043,000	3,043,000	-	
Marsabit Total									51,833,500	2,370,400	13,549,000	15,919,400	35,914,100	

National drought early warning bulletin, October 2017

Meru	601		1,072,900			3,418,600	1,775,000	5,060,750	11,327,250			-	11,327,250
Meru Total									11,327,250	-	-	-	11,327,250
Narok	592		319,100						319,100	319,100		319,100	-
Narok	610					10,576,600			10,576,600		676,000	676,000	9,900,600
Narok	612					73,011			73,011			-	73,011
Narok Total									10,968,711	319,100	676,000	995,100	9,973,611
Nyeri	531					4,500,400			4,500,400	4,500,400		4,500,400	-
Nyeri	588		317,000						317,000		317,000	317,000	-
Nyeri Total									4,817,400	4,500,400	317,000	4,817,400	-
Samburu	526					9,900,100			9,900,100	9,900,100		9,900,100	-
Samburu	537					3,720,900			3,720,900	3,720,900		3,720,900	-
Samburu	579					984,200			984,200			-	984,200
Samburu	585		758,440			14,488,780			15,247,220	-	3,544,020	3,544,020	11,703,200
Samburu	598				2,088,400				2,088,400		2,088,400	2,088,400	-
Samburu	599					2,446,760			2,446,760			-	2,446,760
Samburu	600					536,700			536,700		536,700	536,700	-
Samburu Total									34,924,280	13,621,000	6,169,120	19,790,120	15,134,160
Taita Taveta	536		102,150						102,150	102,150		102,150	-
Taita Taveta Total									102,150	102,150	-	102,150	-
Tana River	553		1,040,400						1,040,400	1,040,400		1,040,400	-
Tana River	558							3,326,400	3,326,400	3,326,400		3,326,400	-
Tana River	569					23,988,800			23,988,800		11,538,800	11,538,800	12,450,000
Tana River Total									28,355,600	4,366,800	11,538,800	15,905,600	12,450,000
Turkana	532					1,177,450			1,177,450	1,177,450		1,177,450	-
Turkana	546		1,641,400						1,641,400	1,641,400		1,641,400	-
Turkana	549					6,934,230			6,934,230			-	6,934,230
Turkana	595		1,403,000					2,561,000	3,964,000			-	3,964,000
Turkana Total									13,717,080	2,818,850	-	2,818,850	10,898,230
Wajir	551					5,631,000			5,631,000	5,631,000		5,631,000	-
Wajir	557					1,411,100			1,411,100	1,411,100		1,411,100	-
Wajir	567		243,000				4,480,500		4,723,500	4,723,500		4,723,500	-
Wajir	597		198,000			28,782,000		5,388,800	34,368,800		9,048,800.00	9,048,800	25,320,000
Wajir Total									46,134,400	11765600	9,048,800.00	20,814,400	25,320,000
Grand Total									365,766,541	80,856,700	87,763,550	168,620,250	197,146,291

Annex 3 Summary of the drought early warning system

Each month, field monitors collect data in a number of sentinel sites across 23 arid and semi-arid counties. This is then complemented by information from other sources, particularly satellite data. For all indicators, the current value is compared with the long-term average for the time of year in order to establish whether it falls within seasonal norms.

Four types of indicator are monitored, capturing different kinds of impact (Table 7). The combined analysis from all four indicator groups then determines the particular drought phase: normal, alert, alarm, emergency or recovery (Figure 2). Identifying the correct drought phase helps to guide the most appropriate response for that stage in the drought cycle.

Table 7: 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: Drought Phase Classification

