NATIONAL DROUGHT MANAGEMENT AUTHORITY

National Drought Early Warning Bulletin

January 2022

Drought indicators

Rainfall Performance for December, 2021

The month of December marked the cessation of the October to December (OND) seasonal rainfall. An analysis of rainfall by Kenya Metrological Department (KMD) of up to 29th December 2021 indicates that enhanced rainfall (>120%) was experienced over the eastern sector of the country while depressed rainfall (<25%) was experienced over the western sector of the country. December was characterized by isolated severe storms over the South-eastern lowlands (Makueni, Kitui and Kajiado) and the Coastal strip (Taita Taveta, Kwale, Kilifi and Tana River). The highest monthly total rainfall of 315.2 mm (200.7%) was recorded in Meru station. The distribution both in time and space was fairly good over the eastern sector and poor over the western sector. Figure 1 shows the December 2021 rainfall performance (%).

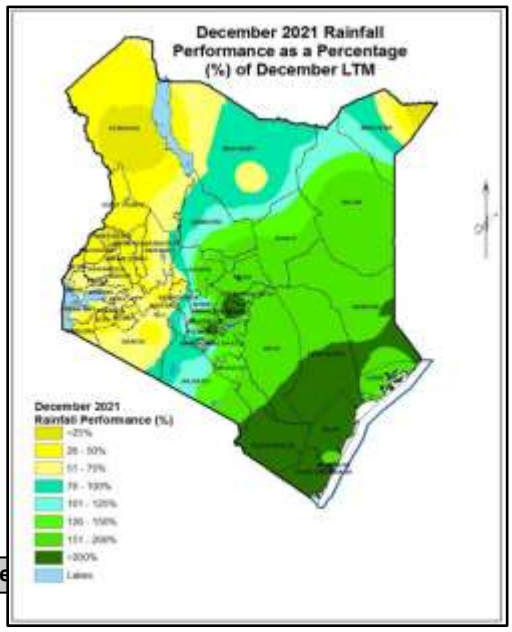


Figure 1. De

Rainfall Forecast for January 2022

According to Kenya Metrological Department (KMD), the rainfall forecast for January 2022 indicates that; a few parts of the country will experience occasional rainfall during the first and second weeks of January and remain generally sunny and dry towards the end of the month. These include a few areas in; Southern Rift Valley (Narok), south eastern lowlands (Kajiado, Kitui, Makueni, Machakos and Taita Taveta) and parts of the Highlands East of the Rift Valley (Meru and Embu). Figure 2 portrays the expected rainfall pattern during January 2022.

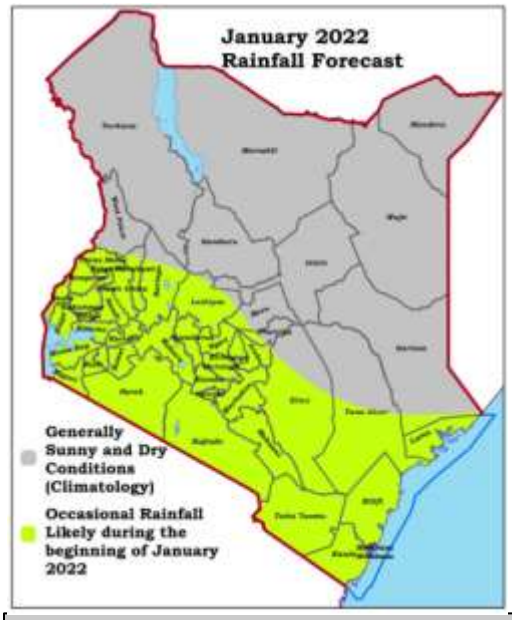
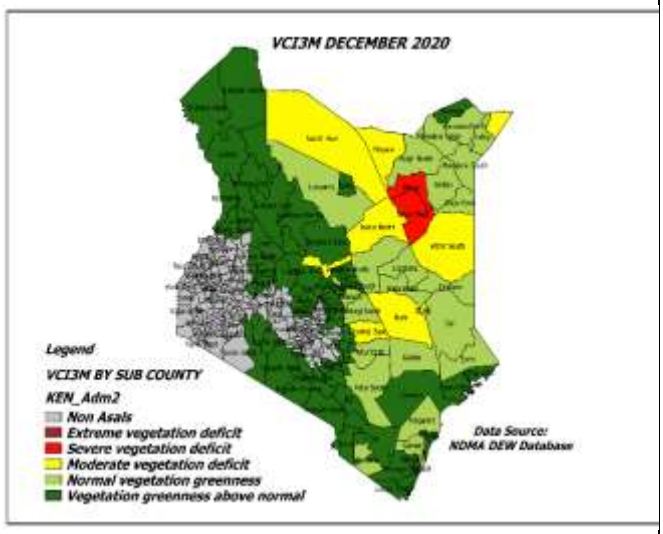
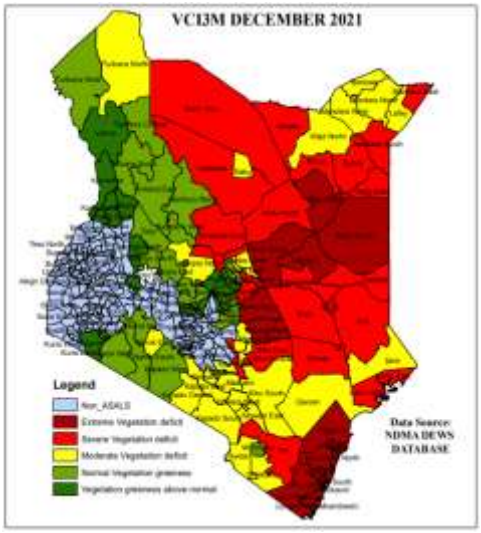


Figure 1. January Rainfall forecast

Vegetation condition

The vegetation condition index in most of the ASAL counties was either severe or extreme deficit even for the coastal and eastern sector that received above average rainfall in the month of December. This is attributed to late onset and poor performance of rainfall in the month of November. Figure 3 matches the vegetation condition index (VCI) in December 2020 with that in December 2021.When compared to similar period last year and the long-term average, the current condition of vegetation is considerably below that of December 2020 attributed to poor performance of the previous season.

Figure 3: Comparison of Vegetation Condition Index (VCI), December 2020 and December 2021

December 2020	December 2021
	

The month of December 2021 showed alarming deterioration in vegetation condition across the Arid and Semi-Arid Counties (ASAL) as compared to the previous month of November 2021.The deteriorating of vegetation condition was due to below average SON/OND short rains. The following (2) counties Kilifi and Kwale county are in the Extreme vegetation deficit band. The following 17 sub counties; Kilifi (Ganze, Kaloleni, Malindi, Magarini, Kilifi-North, Rabai, Kilifi-South) Kitui (Mwingi central, Mwingi North) Garissa (Lagdera) Isiolo (Isiolo South) Wajir (Wajir South, Wajir West) Kwale (Kinango, Lungalunga, Matuga, Msambweni) are in Extreme vegetation deficit band hence in dire need of humanitarian assistance. The following seven (7) counties including; Garissa, Isiolo, Kitui, Lamu, Tana River, Wajir and Marsabit are in severe

vegetation deficit. The following Six (6) counties namely; Kajiado, Makueni, Mandera, Samburu, Taita taveta and Tharaka Nithi are in Moderate vegetation deficit hence close monitoring and response plans. The following Five (5) counties namely; Embu, Laikipia, Meru, Narok and Turkana recorded Normal vegetation greenness. The following Three (3) counties;- Baringo, Nyeri and West Pokot, recorded above normal vegetation greenness. The current vegetation condition in December 2021 has deteriorated as compared to the same period the previous year, December 2020, figure 3 above.

Table 1: Vegetation Condition Index (VCI), December 2021

Category	County	Sub Counties (No)
Extreme		(8) Kilifi (Ganze, Kaloleni, Malindi, Kilifi-North, Rabai, Kilifi-South) Kitui (Mwingi North) Kwale (Msambweni)
Severe vegetation deficit	(3) Isiolo, Kilifi, Kwale	**(11)** Garissa (Lagdera) Isiolo (Isiolo North, Isiolo South) Kilifi (Magarini) Kwale (Kinango, Lungalunga, Matuga) Lamu (Lamu West) Wajir (Wajir South, Wajir West)
Moderate vegetation deficit	**(8)** Garissa, Kitui, Lamu, Mandera, Marsabit, Taita Taveta, Tana River, Wajir	**(31)** Garissa (Balambala, Fafi, Ijara, Township, ,Dadaab) Kilifi (Magarini) Kitui (Kitui East, Mwingi Central, Mwingi West, Kitui-Rural, Kitui-South) Kwale (Lungalunga, Matuga, Msambweni, Kinango) Lamu (Lamu East) Mandera(Mandera East, Lafey, Mandera South, Mandera West) Marsabit (Laisaimis, Moyale, North Horr) Meru(Igembe North, Igembe South), Samburu (Samburu East) Taita Taveta(Voi, Mwatate)Tana River (Bura, Galole, Garsen) Tharaka Nithi (Tharaka) Wajir (Wajir East, Wajir North, Eldas, Tarbaj)
Normal vegetation greenness	**(7)** Embu, Kajiado, Laikipia, Makueni, Meru, Samburu, Tharaka Nithi	**(24)** Embu (Mbeere North, Mbeere South) Kajiado (Kajiado-Central, Kajiado-East, Kajiado-South) Kitui (Kitui Central, Kitui West) Laikipia (Laikipia North) Lamu (Lamu East) Makueni (Kibwezi East, Kibwezi West, Kilome, Makueni) Mandera (Banissa, Mandera North) Marsabit (Saku) Meru (Igembe Central, Tigania East, Tigania west) Narok (Narok-East), Nyeri (Township) Samburu (Samburu North) Taita Taveta (Taveta, Wundanyi) Tharaka Nithi (Chuka) Turkana (Turkana North) Wajir (Wajir East, Tarbaj, Eldas)
Vegetation greenness Above normal	**(5)** Baringo, Narok, Nyeri, Turkana, West Pokot	**(39)** Baringo (Baringo Central, Eldama Ravine, Mogotio, Baringo North, Baringo South, Tiaty) Embu (Manyatta, Runyenjes) Kajiado (Kajiado-West, Kajiado-North) Kitui (Kitui Central, Kitui South, Kitui West) Laikipia(Laikipia East, Laikipia West) Makueni (Kaiti, Mbooni) Mandera (Mandera South) Marsabit (Saku) Meru (Buuri, Central Imenti, North Imenti, South Imenti) Narok (Emurua Dikirr, Kilgoris, Narok North, Narok South, Narok-West) Nyeri (Kieni, Mukurweini, Mathira, Othaya, Tetu) Samburu (Samburu West)Tharaka Nithi (Maara) Turkana (Turkana Central, Turkana East, Loima, Turkana West, Turkana South) Wajir (Wajir North) West Pokot (Kacheliba, Kapenguria, West-Pokot South, Sigor)

Livestock production

Pasture and browse condition

The pasture and browse condition in most of the arid and semi-arid counties was generally fair to poor except in Taita-Taveta that reported good browse condition attributed to the minimal OND rainfall showers, as shown in Table 2. Further, the pasture and browse condition are on worsening trend as result of poor performance of the previous long rains season and poor rains experienced in OND across ASAL counties.

Table 2.0: Pasture and browse condition, December 2021

Pasture condition			*Browse condition*		
Poor	***Fair***	***Good***	***Poor***	***Fair***	***Good***
Baringo	Embu		Garissa	Baringo	Taita Taveta
Garissa	Kajiado		Isiolo	Embu	
Isiolo	Kilifi		Mandera	Kajiado	
Kwale	Kitui		Marsabit	Kilifi	
Mandera	Laikipia		Turkana	Kitui	
Marsabit	Lamu		Wajir	Kwale	
Samburu	Makueni Meru			Laikipia	
Tharaka Nithi	Narok			Lamu	
Turkana	Nyeri			Makueni Meru	
Wajir	Taita Taveta			Narok	
West Pokot	Tana River			Nyeri	
				Samburu Tana River	
				Tharaka Nithi	
				West Pokot	

Livestock body condition

Overall, the current body condition of most livestock is below normal in comparison to similar periods during a normal year. Most counties reported livestock body condition as fair to poor with exception of Taita-Taveta and Lamu which reported good body conditions as shown in Table 3. The fair to poor condition is as result of the poor performance of the 2021 long and short rains season that resulted to poor regeneration of pasture and browse. The livestock body condition is on a declining trend as compared to previous month.

Table 3.0: Livestock body condition, December 2021

Cattle			*Goats*		
Poor	***Fair***	***Good***	***Poor***	***Fair***	***Good***
Garissa	Baringo	Taita Taveta	Isiolo	Baringo	Lamu
Isiolo	Embu		Kwale	Embu	Taita Taveta
Kwale Laikipia	Kajiado		Mandera	Garissa	
Mandera	Kilifi		Marsabit	Kajiado	
Marsabit	Kitui		Tana River	Kilifi	
Samburu	Lamu		Turkana	Kitui	
Tana River	Makueni		Wajir	Laikipia	
Turkana	Meru			Makueni	
Wajir	Narok			Meru	
	Nyeri			Narok	
	Tharaka Nithi West			Nyeri	
	Pokot			Samburu	
				Tharaka Nithi	
				West Pokot	

Milk production

Milk production was below average. However, some counties are on an improving while others are in a worsening trend as compared to the previous month. The below normal milk production is attributed to poor rainfall performance for the 2021 short rains season and persistent dry period being experienced. The current milk production status is below average as compared to normal year. Milk production trends in the 23 ASAL counties is presented in table 4.0.

Table 4.0: Milk production, December 2021

Indicator	***Current status***			***Trend***		
	Above LTA	***At LTA***	***Below LTA***	***Improving***	***Stable***	***Worsening***
Milk Production	Makueni	Narok	Baringo	Embu	Garissa	Baringo
	Tana River		Embu	Isiolo	Laikipia	Kwale
			Garissa	Kajiado	Marsabit	Narok
			Isiolo	Kilifi	Samburu	Turkana
			Kajiado	Kitui	Taita Taveta	Wajir
			Kilifi	Lamu		West Pokot
			Kitui	Makueni		
			Kwale	Mandera		
			Laikipia	Meru		
			Lamu	Nyeri		
			Mandera	Tana River		

			Marsabit Meru Nyeri Samburu Taita Taveta Tharaka Nithi Turkana Wajir West Pokot	Tharaka Nithi		

Cattle prices

In majority of the counties, cattle prices are on declining trend as compared to the last month mainly to the fact that the state of cattle body condition is poor as illustrated in Table 5.The current cattle prices are below normal in most of the counties in comparison to similar periods during a normal year. However, Tana River, West Pokot and Tharaka Nithi reported above normal LTA as illustrated in Table 5.

Table 5.0: Cattle prices, December 2021

Indicator	***Current status***			***Trend***		
	Above LTA	***At LTA***	***Below LTA***	***Improving***	***Stable***	***Worsening***
Cattle Prices	Tana River Tharaka-Nithi West-Pokot	Baringo Kajiado Lamu Makueni Isiolo Taita-Taveta Wajir	Embu Garissa Kajiado Kilifi Kitui Laikipia Mandera Marsabit Meru Nyeri Narok Samburu Turkana	Embu Kajiado Isiolo Kilifi Meru Narok Nyeri Tana River Tharaka-Nithi Wajir West-Pokot	Baringo Garissa Laikipia Lamu Makueni Mandera Marsabit Samburu Taita-Taveta Turkana	Kitui Narok

Goat prices

Table 6 summarizes the trends in goat prices in ASAL counties. During the month of December, goat prices in majority of the ASAL counties were below LTA except in Embu, Kilifi, Narok,

Taita Taveta and West Pokot counties that recorded above LTA. The goat prices are declining as result of poor body condition and thus need for close monitoring.

Table 6.0: Goat prices, December 2021

Indicator	*Current status*			*Trend*		
	Above LTA	*At LTA*	*Below LTA*	*Improving*	*Stable*	*Worsening*
Goat Prices	Embu Kilifi Narok Taita-Taveta West Pokot	Makueni Laikipia Tharaka-Nithi	Baringo Garissa Isiolo Kajiado Kitui Kwale Lamu Mandera Marsabit Meru Tana-River Turkana Wajir Nyeri Samburu	Embu Isiolo Kajiado Kilifi Lamu Makueni Narok Nyeri Tharaka-Nithi	Kitui Laikipia Mandera Meru Samburu Taita Taveta Tana River West Pokot Wajir	Baringo Garissa Kwale Marsabit Turkana

Livestock Mortality

During the reporting period, Baringo,Turkana,Garissa,Isiolo,Kitui,Laikipia, Narok ,Mandera, Samburu and Marsabit counties reported livestock mortality as result of starvation and diseases as shown in table 7 below;

Table 7 showing Livestock Mortality

County	**Cause of mortality**	**Hot spots**
Baringo	Diseases	Baringo North and Tiaty sub counties
Garissa	Dehydration and starvation	Whole county
Isiolo	Dehydration and starvation	Oldonyiro, Kinna, Sericho and Cherab wards
Kitui	East Coast Fever (ECF). Anaplasmosis	Nzambani, Zombe and Kanyangi wards
Laikipia	Drought	Mukogodo West, Sosian and Olmoran wards

Turkana	Starvation, dehydration and disease	Pastoral and Fisheries sites like Kaeris, Kalokol and Kalapata
Mandera	Starvation and diseases	Entire county
Marsabit	severe drought and livestock disease	Entire county
Narok	Predation	Ntuka and oldonyo Narasha
Samburu	Starvation, Diseases	Entire county

Crop production

March to May (MAM) long rains season performed poorly in the marginal agricultural areas however, land preparations and planting were ongoing in Kitui, Tharaka Nithi, Makueni, Embu (mbeere), and Taita taveta, Kilifi, Lamu and Kwale. Farmers have been advised to plant early maturing crops.

Maize prices

In most counties, the price of maize remained stable in December as compared to the previous month of November as demonstrated in Table 8, the current maize prices are above or close to LTA and increasing as compared to the previous month due to depletion of stocks that has resulted to increase in maize prices.

Table 8.0.Maize prices

Indicator	***Current status***			***Trend***		
	Above LTA	***At/close to LTA***	***Below LTA***	***Improving***	***Stable***	***Worsening***
Maize Prices	Baringo Embu Garissa Isiolo Kitui Kwale Laikipia Makueni Mandera Marsabit Narok Samburu Taita Taveta Tharaka Nithi Wajir West Pokot	Kilifi Lamu Meru Nyeri Turkana	Kajiado Tana River	Embu Kilifi Tana River	Baringo Garissa Isiolo Kajiado Kitui Kwale Mandera Marsabit Meru Narok Nyeri Samburu Taita-Taveta Tharaka-Nithi Turkana Wajir	Laikipia Lamu Makueni West Pokot

WATER ACCESS

Access to water for households

Distances to household water points in 15 counties were above the LTA. In comparison with the previous month, there is a slight decrease in distance to household water source. The decrease in average distances to water points for households is due to the slight rains received during the month of December. However, the delayed short rains onset and the poor rainfall performance is the reason behind the above LTA trekking distances. The trend in distances walked by households to access water is provided in Table 9.

Table 9.0: Distance from households to main water sources, December 2021

Indicator	*Current status*			*Trend*		
	Above LTA	*At LTA*	*Below LTA*	*Improving*	*Stable*	*Worsening*
Distance from households to main water sources	Embu Kajiado Kilifi Kwale Laikipia Lamu Mandera Marsabit Meru Narok Nyeri Taita Taveta Turkana Wajir West Pokot	Baringo Samburu Tana River	Garissa Isiolo Kitui Makueni Tharaka Nithi	Embu Garissa Isiolo Kajiado Kilifi Kitui Lamu Makueni Meru Nyeri Samburu Taita Taveta Tharaka Nithi Tana River Wajir	Baringo Kwale Laikipia Mandera Marsabit Narok	Turkana West Pokot

Access to water for livestock

The trend in the distance walked by livestock in search of water is presented in Table 9. Compared with the previous month, the current trekking distance to water source from grazing areas has improved across the counties. 97 percent of counties livestock trekking distance to water point is above LTA in ASALs with most counties being at stable and worsening trend as shown in table 10.0.

Table 10.0: Distance from livestock grazing area to main water sources, December 2021

Indicator	*Current status*			*Trend*		
	Above LTA	*At LTA*	*Below LTA*	*Improving*	*Stable*	*Worsening*
Distance from livestock grazing area to main water sources	Baringo Embu Garissa Isiolo Kajiado Kwale Laikipia Lamu Makueni Mandera Marsabit Meru Narok Nyeri Samburu Taita Taveta Tana River Turkana Wajir West Pokot	Kilifi Kitui	Tharaka Nithi	Embu Garissa Isiolo Kajiado Kilifi Kitui Kwale Lamu Makueni Meru Nyeri Samburu Taita Taveta Tharaka Nithi Tana River Wajir	Laikipia Mandera	Baringo Marsabit Narok Turkana West Pokot

Terms of trade

Table 11 shows the trends in terms of trade (ToT) between the relative price of goats and maize in ASAL counties. In most counties, ToT values are below the long-term average (LTA). The below average TOT is as result of increasing maize prices compared to decreasing livestock prices(goat prices) as result of poor livestock body condition

Table 11.0: Terms of trade, December 2021

Indicator	*Current status*			*Trend*		
	Above LTA	*At LTA*	*Below LTA*	*Improving*	*Stable*	*Worsening*
Terms of trade (ToT)		Kilifi Kwale Makueni Narok Tana-River	Baringo Embu Garissa Isiolo Kajiado	Embu Isiolo Kajiado Kilifi Kwale	Garissa Makueni Narok Samburu Taita-Taveta	Baringo Kitui Laikipia Lamu Marsabit

			Kitui Laikipia Lamu Mandera Marsabit Meru Nyeri Samburu Taita-Taveta Tharaka-Nithi Turkana Wajir West-Pokot	Mandera Meru Nyeri Tana-River Tharaka-Nithi	Wajir	Turkana West-Pokot

Health and nutrition

Table 12 shows the trend in the proportion of children at risk of malnutrition (MUAC) across the ASAL counties. In comparison to the previous month,the trend of MUAC was stable in most counties. Baringo, Garissa, Mandera, Marsabit, Narok, Samburu and Tana River have MUAC above long-term average. The observed above long-term negative trend in malnutrition of the five counties was attributed to the continued reduction in milk consumption, decline in terms of trade and fewer number of integrated health outreaches delivering essential nutrition services as result of Covid-19 pandemic. Kilifi, Narok, Samburu, Tharaka-Nithi, and Turkana counties reported worsening trend as shown in table 12.0 that requires close monitoring. Kajiado, Makueni, Mandera, Meru, Nyeri and Tana River counties recorded an improvement in trend

Table 12.0: Children at risk of malnutrition (MUAC), December2021

Indicator	***Current status***			***Trend***		
	Above LTA	***At LTA***	***Below LTA***	***Improving***	***Stable***	***Worsening***
MUAC	Baringo Garissa Mandera Marsabit Narok Samburu Tana River	Embu Kilifi Laikipia Lamu Meru Taita-Taveta	Isiolo Kajiado Kwale Makueni Tharaka-nithi Turkana Wajir	Kajiado Makueni Mandera Meru Nyeri Tana River	Baringo Embu Garissa Kitui Kwale Laikipia Lamu	Kilifi Narok Samburu Tharaka-nithi Turkana

			West-Pokot		Taita-Taveta Wajir West-Pokot	

Drought phase classification

Table 13 sums up the trends in drought phase classification as at end of December 2021. On the basis of the range of indicators monitored above, eleven (11) counties; Embu, Meru-North, Nyeri (Kieni), Taita-Taveta, Tana-River, Tharaka-Nithi, Laikipia, Baringo, Kajiado, Narok and Samburu are in the alert drought phase. Two (2) counties; Makueni and West-Pokot are in in the normal drought phase, whereas Garissa, Kilifi, Lamu, Wajir, Isiolo, Kwale, Mandera, Marsabit, and Turkana are at an alarm phase however Kitui recorded the recovery phase. During the month under review, eleven (11) counties reported an improving trend, two (2) counties recorded stable trend while ten (10) counties reported a worsening trend. The deteriorating display is as result of poor rains received during this season.

Table 13.0: Drought phase classification, December 2021

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

Recommended Interventions

Table 14 showing recommended interventions for scale up across various sectors

Sector	Interventions	Counties
Food and safety nets	• Provision of food assistance and scaling up of cash transfers targeting households which are currently food insecure as a result of the prevailing drought stress • Upscale cash transfer programs	Isiolo, Marsabit, Turkana, Wajir, Samburu, Garissa, Mandera and Tana River
Livestock	• Vaccination against, CCPP, LSD and PPR. • Provision of livestock feeds and supplements. • Pasture seeds for rangeland reseeding • Voluntary destocking • Upscale of livestock insurance programme	Baringo, Embu, Garissa, Isiolo, Kajiado, Kilifi, Kitui, Kwale, Laikipia, Lamu, Makueni, Mandera, Taita Taveta, Tana River, Tharaka Nithi
Water	• Water trucking • Water treatment drugs • Purchase new water boozers	Baringo, Garissa, Isiolo, Kajiado, Kilifi, Kitui, Kwale, Laikipia, Lamu, Meru (North), Narok, Nyeri, Taita Taveta, Tana River, Tharaka Nithi
Health and nutrition	• Support on hygiene and sanitation promotions. • Supply of essential drugs • Provisions for severe acute malnutrition - Ready to Use Therapeutic Food (RUTF). • Supplies for moderate acute malnutrition - Ready to Use Supplementary Food (RUSF). • Surge kit activation • SMART Survey to ascertain the level of malnutrition	Baringo, Embu, Garissa, Isiolo, Kajiado, Kilifi, Kitui, Kwale, Laikipia, Lamu, Makueni, Mandera, Meru (North), Narok, Nyeri, Taita Taveta, Tana River, Tharaka Nithi, Turkana, Wajir, west Pokot
Agriculture	• Support household with water harvesting skills • Relief food/cash transfer • Support expansion of area under irrigation	Embu, Baringo, Garissa, Isiolo, Kajiado, Kilifi, Kitui, Kwale, Laikipia, Lamu, Makueni, Mandera, Meru (North), Narok, Nyeri,
Education	• Enhance hygiene promotion in learning institutions. • Provision of food to subsidize school fees in boarding secondary schools • Timely provision of school meals •	Kajiado, Kitui, Kwale, Laikipia, Makueni, Mandera, Meru (North), Narok, Nyeri
Peace and security	• Facilitating intra/inter communities peace dialogues and resource use agreements. • Coordination of peace and security activities in conflict prone counties • Support local peace building and conflict resolution mechanisms	Isiolo, Baringo, Mandera, Marsabit, Garissa, Tana River, West Pokot, Lamu
Coordination	• Update contingency plan • Close monitoring of drought situation	Garissa, Kilifi

Table 15: Vegetation Condition Index (VCI-3 month) as at 26th December 2021

ADMINISTRATIVE UNIT		VEGETATION GREENNESS		DROUGHT CATEGORIES/REMARKS
COUNTY	**Sub County**	**VCI-3 month as at 28th Nov 2021**	**VCI-3 month as at 26th Dec 2021**	
BARINGO	**County**	69.16	52.34	The entire county and three of its sub counties recorded above normal vegetation greenness which was a stable trend during the month of December. The rest of the sub-counties deteriorated from above normal to normal vegetation greenness as compared to the previous month of November.
	Central	87.43	74.64	
	Eldama	83.15	76.47	
	Mogotio	62.88	41.92	
	North	72.34	56.36	
	South	55.1	41.44	
	Tiaty	69.33	49.37	
MANDERA	**County**	34.18	24.19	The county and four of its sub counties recorded moderate vegetation deficit during the month under review. Mandera East and South deteriorated from moderate to severe vegetation deficit during the month of December.
	Banissa	36.87	33.79	
	M East	28.13	16.68	
	Lafey	30.35	20.25	
	M North	37.1	28.36	
	M South	34.11	19.65	
	M West	34.54	24.12	
TURKANA	**County**	56.03	42.89	The county and almost all of its sub counties recorded Above Normal and normal vegetation greenness in the month of December which was a decline for most areas. Turkana North deteriorated from normal greenness to moderate vegetation deficit.
	T Central	59.46	49.32	
	T. East	52.46	39.02	
	T. Loima	78.63	63.88	
	T. North	42.19	30.1	
	T. South	57.9	46.63	
	T. West	59.74	44.31	
MARSABIT	**County**	25	17.32	The county and three of its sub-counties recorded a severe vegetation deficit during the month of December which is a deteriorating trend as compared to the previous month. Saku deteriorated from normal to moderate vegetation deficit.
	Laisaimis	23.39	16.48	
	Moyale	23.13	17.1	
	N. Horr	25.78	17.45	
	Saku	36.14	24.63	

Colour	VCI values (3-month)	Drought Category
	≥50	Vegetation greenness above normal
	>=35 - <50	Normal vegetation greenness
	>=20 - <35	Moderate vegetation deficit
	>=10 - <20	Severe vegetation deficit
	<10	Extreme vegetation deficit

ADMINISTRATIVE UNIT		VEGETATION GREENNESS		DROUGHT CATEGORIES/REMARKS
WAJIR	**County**	24.03	12.73	The County and five of its sub counties recorded severe and extreme vegetation deficit during the month under review. Wajir North remained stable at moderate vegetation deficit.
	W East	26.96	13.26	
	W. Eldas	22	12.12	
	W. North	34.76	21.21	
	W. South	18.63	9.03	
	W. Tarbaj	31.88	16.47	
	W West	17.56	8.74	
SAMBURU	**County**	39.15	29.05	The county was at moderate vegetation deficit while Samburu East deteriorated from moderate to severe vegetation deficit. Samburu North and West recorded normal vegetation greenness during the month of December.
	S East	28.13	18.92	
	S. North	47.63	37	
	S. West	54.95	42.99	
ADMINISTRATIVE UNIT				
COUNTY	**Sub County**	**VCI-3 month as at 28th Nov 2021**	**VCI-3 month as at 26th Dec 2021**	
GARISSA	**County**	25.01	17.45	The county and four of its Sub counties were at Severe vegetation deficit band during the month under review. Lagdera worsened from severe to extreme vegetation deficit. Ijara remained stable at moderate vegetation deficit.
	Balambala	20.5	11.21	
	Daadab	25.69	16.77	
	Fafi	25.83	19.11	
	Ijara	30.24	25.11	
	Lagdera	18.99	9.09	
	Dujis	22.07	13.53	
ISIOLO	**County**	18.51	10.28	The county and Isiolo North recorded a severe vegetation deficit while Isiolo South recorded Extreme vegetation deficit during the month of December.
	I. North	19.28	11.04	
	I. South	17.34	9.11	
TANA RIVER	**County**	24.61	19.14	The county and two of its sub-counties were at severe vegetation deficit during the month under review. Garsen remained stable at moderate vegetation deficit.
	Bura	22.19	15.44	
	Galole	23.73	18.98	
	Garsen	27.21	22.38	

Colour	VCI values (3-month)	Drought Category
	≥50	Vegetation greenness above normal
	>=35 - <50	Normal vegetation greenness
	>=20 - <35	Moderate vegetation deficit
	>=10 - <20	Severe vegetation deficit
	<10	Extreme vegetation deficit

ADMINISTRATIVE UNIT		VEGETATION GREENNESS		DROUGHT CATEGORIES/REMARKS
KAJIADO	**County**	44.79	34.79	The County and three of its sub-counties recorded a moderate vegetation deficit during the month under review. Kajiado North remained stable at above normal greenness while Kajiado West deteriorated from above normal to normal vegetation greenness.
	K. Central	37.48	28.29	
	K. East	41.63	34.14	
	K. North	52.01	51.04	
	K. South	42.18	32.45	
	K. West	52.22	40.25	
LAIKIPIA	**County**	46.71	35.35	The County and two of its sub-counties remained stable at normal vegetation greenness, while Laikipia North deteriorated from normal greenness to moderate vegetation deficit during the month under review.
	L. East	50.1	47.64	
	L. North	38.67	29.45	
	L. West	60.13	40.47	
THARAKA NITHI	**County**	35.83	29.54	The county recorded moderate vegetation deficit which was a decline when compared to the previous month of November. Chuka and Maara remained stable at normal and Above normal vegetation greenness. Tharaka deteriorated from moderate to severe vegetation deficit during the month under review.
	Chuka	49.07	45.75	
	Maara	56.32	62.5	
	Tharaka	24.29	12.9	
WEST POKOT	**County**	72.27	56.91	The vegetation greenness was above normal for all the sub-counties. This was a notable stable trend in comparison to the previous month with declining VCI values.
	Kacheliba	69.2	50.44	
	Kapenguria	78.93	64.23	
	Pokot South	82.71	77.55	
	Sigor	66.08	50.31	
EMBU	**County**	46.99	48.57	The county and two of its sub-counties remained stable during the month of December with Normal vegetation greenness. Manyatta and Runyenjes sub-counties remained stable at above normal vegetation greenness with improving VCI values.
	Manyatta	55.72	63.82	
	Mbeere North	45.83	44.07	
	Mbeere South	41.31	41.94	
	Runyenjes	61.06	66.38	

ADMINISTRATIVE UNIT				
COUNTY	**Sub County**	**VCI-3 month as at 28th Nov 2021**	**VCI-3 month as at 26th Dec 2021**	

Colour	VCI values (3-month)	Drought Category
	≥50	Vegetation greenness above normal
	>=35 - <50	Normal vegetation greenness
	>=20 - <35	Moderate vegetation deficit
	>=10 - <20	Severe vegetation deficit

ADMINISTRATIVE UNIT		VEGETATION GREENNESS		DROUGHT CATEGORIES/REMARKS
				<10 Extreme vegetation deficit
KITUI	**County**	29.68	19.03	The county and four of its sub-counties were at severe and extreme vegetation deficit which was a decline when compared to the previous month of November. The rest of the sub-counties were at moderate vegetation deficit.
	Kitui Central	45.22	22.93	
	Kitui East	30.96	16.15	
	Mwingi Central	22.59	8.31	
	Mwingi North	17.38	8.48	
	Mwingi West	33.76	21.01	
	Kitui Rural	24.96	10.17	
	Kitui South	33.79	26.99	
	Kitui West	39.62	23.75	
MAKUENI	**County**	44.59	29.99	The county and five of its sub-counties recorded moderate vegetation deficit during the month of December. Kaiti and mbooni deteriorated from above normal to normal greenness.
	Kaiti	66.58	43.03	
	Kibwezi East	39.61	26.21	
	Kibwezi West	42.64	32.14	
	Kilome	49.82	34.42	
	Makueni	38.79	24.66	
	Mbooni	56.0	33.5	
MERU	**County**	42.43	41.62	The county and six of its sub-counties were at normal and above normal vegetation greenness during the month under review. Igembe North remained stable at moderate vegetation deficit while Igembe Central deteriorated from normal to moderate vegetation deficit. Igembe South deteriorated from moderate to severe vegetation deficit during the month under review.
	Buuri	51.23	54.5	
	Central Imenti	53.33	54.5	
	Igembe Central	35.14	25.58	
	Igembe North	28.94	22.92	
	Igembe South	26.7	12.83	
	North Imenti	55.99	61.77	
	South Imenti	60.66	68.16	
	Tigania East	40.31	42.23	
	Tigania West	44.2	45.74	
NYERI	**County**	56.82	52.15	The county and almost all of its sub counties remained stable at above normal

ADMINISTRATIVE UNIT		VEGETATION GREENNESS		DROUGHT CATEGORIES/REMARKS
	Kieni	51.65	47.27	vegetation greenness. Tetu remained stable at normal greenness. Kieni deteriorated from above normal to normal greenness during the month of December.
	Mathira	60.05	50.57	
	Mukurweini	62.77	60.55	
	Town	69.13	65.67	
	Othaya	68.84	66.17	
	Tetu	47.6	43.1	
KILIFI	**County**	10.17	2.15	The vegetation condition in the county and all its sub-counties was at extreme vegetation deficit during the month under review.
	Ganze	6.5	-0.31	
	Kaloleni	7.48	1.68	
	Magarini	14.19	4.67	
	Malindi	1.7	-4.45	
	Kilifi-North	9.93	5.02	
	Rabai	-0.48	-5.27	
	Kilifi-South	-8.75	-14.22	
KWALE	**County**	13.58	3.85	The county and all its sub-counties deteriorated from severe to extreme vegetation deficit during the month under review.
	Kinango	12.36	5.32	
	Lungalunga	15.97	4.99	
	Matuga	16.82	1.05	
	Msambweni	8.23	-12.21	
LAMU	**County**	20.88	13.47	The County and its sub-counties recorded severe vegetation deficit during the month of December which was a deteriorating trend as compared to the previous month of November.
	Lamu East	28.41	18.81	
	Lamu West	16.53	10.38	

ADMINISTRATIVE UNIT				
COUNTY	**Sub County**	**VCI-3 month as at 28th Nov 2021**	**VCI-3 month as at 26th Dec 2021**	
TAITA	**County**	34.05	22.22	The County and two of its sub-counties were at moderate vegetation deficit during

Colour	VCI values (3-month)	Drought Category
	≥50	Vegetation greenness above normal
	>=35 - <50	Normal vegetation greenness
	>=20 - <35	Moderate vegetation deficit
	>=10 - <20	Severe vegetation deficit
	<10	Extreme vegetation deficit

ADMINISTRATIVE UNIT		VEGETATION GREENNESS		DROUGHT CATEGORIES/REMARKS
TAVETA	Mwatate	31.61	20.78	the month of December. Wundanyi remained stable at normal vegetation greenness while Voi deteriorated from moderate vegetation deficit to severe deficit during the month under review.
	Taveta	39.87	26.39	
	Voi	31.08	19.71	
	Wundanyi	48.39	35.97	
NAROK	**County**	56.72	46.9	There was a decline in vegetation cover as the county and three of its sub-counties deteriorated from above normal to normal greenness. Emurua Dikirr and Kilgoris remained stable at above normal greenness during the month under review. Narok East deteriorated from normal greenness to moderate vegetation deficit during the month of December.
	Narok-East	42.22	33.63	
	Emurua Dikirr	84.65	75.03	
	Kilgoris	74.86	68.29	
	Narok-North	52.28	49.13	
	Narok-South	50.6	40.32	
	Narok-West	60.18	45.44	

Table 16.0: Indicators monitored by the drought early warning system

Type of indicator	Examples of indicators monitored	Types of impact
Biophysical	Rainfall data	Environmental
	Vegetation condition	
	State of water sources	
Production	Livestock body condition	Livestock production
	Milk production	Crop production
	Livestock migration	
	Livestock mortality	
	Crop production	
Access	Terms of trade (meat/maize)	Markets
	Milk consumption	Access to food and water
	Distances to water	
Utilization	MUAC (Mid-Upper Arm Circumference)	Nutrition
	Coping strategies	Coping strategies
	Food consumption score	

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 indicators are monitored, capturing different kinds of impact (Table 16).The combined analysis from all four indicator groups then determines the particular drought phase: normal, alert, alarm, emergency or recovery (Figure 4). Identifying the correct drought phase helps to guide the most appropriate response for that stage in the drought cycle.

Figure 4.0: Drought Phase Classification