AFRICA: Monthly Climate Outlook
January to October

Issued: April 2021

Overview

Africa Current Status and Outlook – Temperature

Africa Current Status and Outlook – Rainfall

Global Outlook – Temperature

Global Outlook – Rainfall

Africa Current Status and Outlook - Temperature

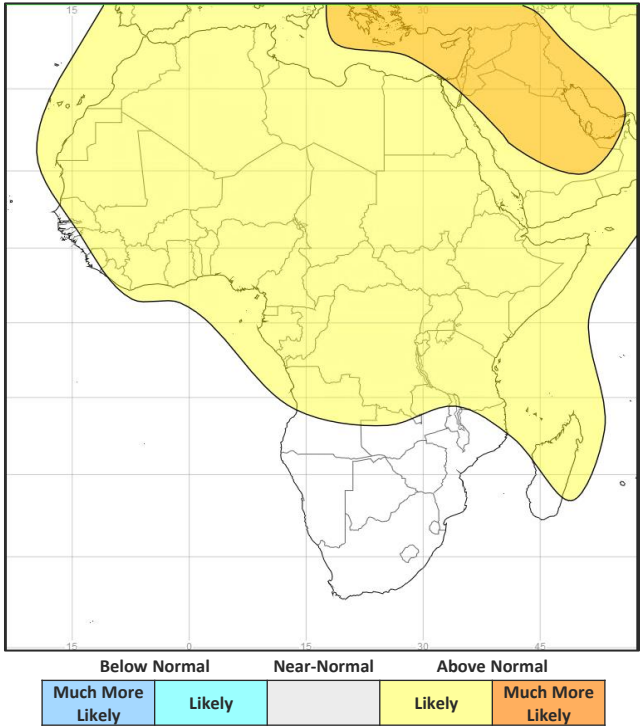
Current Status:

Large parts of Africa have been warmer than normal. The main exception to this is parts of southern Africa, particularly Namibia and Madagascar where cool to cold conditions have been experienced.

Outlook:

For many central and northern parts of Africa, conditions are likely to be warmer than normal for the next three months. Elsewhere, climatological odds are most likely.

3-Month Outlook May to July - Temperature



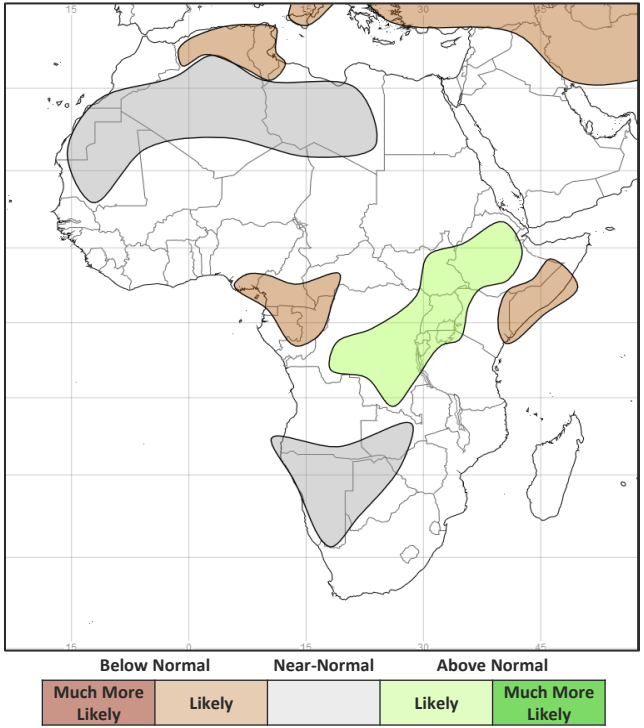
Africa Current Status and Outlook - Rainfall

Current Status:

Many parts of central and southern Africa have seen above normal rainfall through January and February but were generally drier through March. Conversely, parts of eastern Africa, and areas near the Gulf of Guinea coast saw above normal rainfall in March.

Outlook:
Forecasts for rainfall across Africa for the next three months are generally mixed, with some signals apparent. Parts of Tunisia and northern Libya as well as parts of the Horn of Africa, Gabon, Nigeria, Central African Republic and the far west of the DRC are likely to be drier than normal. However, In the area stretching roughly from Ethiopia, through South Sudan and western Kenya, to Uganda, Rwanda, Burundi and much of the east of the DRC, it is likely to be wetter than normal. Rainfall is likely to be near-normal for northern parts of Saharan Africa.

3-Month Outlook May to July- Rainfall



Global Outlook - Temperature

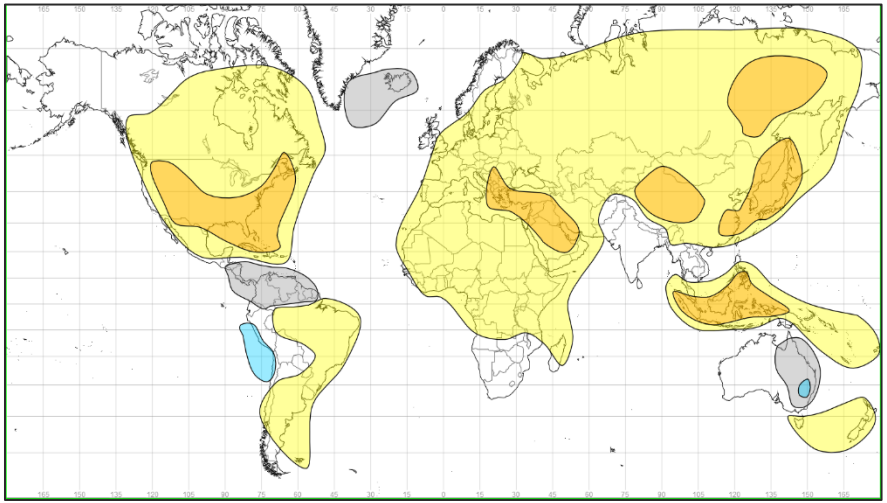
Outlook:

With the high likelihood of the El Niño–Southern Oscillation reverting to neutral in the next month or so, its influence is less significant over the next three months. This is reflected in signals from longer range forecast systems which offer mixed, and at times conflicting, forecasts for this period.

However, some consistent signals are apparent. Many parts of the globe are likely to see warmer than normal conditions through the next three months. Parts of the southern USA, much of the Caribbean, Middle East, China and Indonesia are much more likely to be warmer than normal.

Eastern Australia, as well as some western areas of South America are likely to be cooler than normal, with the residual influence from La Niña

3-Month Outlook May to July - Temperature



Global Outlook - Rainfall

Outlook:

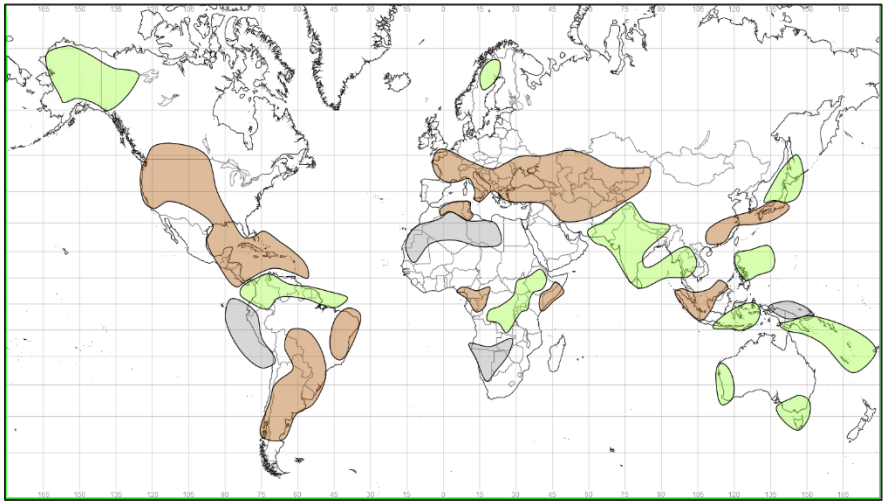
As described in the temperature section, the recent La Niña is in decline; residual La Nina influences are mainly related to reduced rainfall in the tropical Pacific.

Over the next three months, the seasonal northward shift of rains will see the onset of the South Asian Monsoon (SAM). Wetter than normal conditions for much of the Indian subcontinent, Sri Lanka, as well as parts of southeast Asia are likely over the next three months. This may reflect either an early onset of the SAM, or a more intense SAM as compared to normal. The Philippines, particularly the east, is likely to be wetter than normal, perhaps indicative of enhanced tropical storm activity.

Elsewhere, it is likely to be wetter than normal for parts of central and eastern Africa This is also the case in northern parts of South America, where a northward displaced Intertropical Convergence Zone means conditions are likely to be wetter than normal across areas which have already seen impacts from flooding over the last few months.

Much of the rest of South America, as well as the contiguous USA, Caribbean, central and eastern Europe and the Middle East are likely to be drier than normal. This is also true for eastern China, southern Japan and parts of western Indonesia and Malaysia.

3-Month Outlook May to July - Rainfall



Current Status

Current Status maps

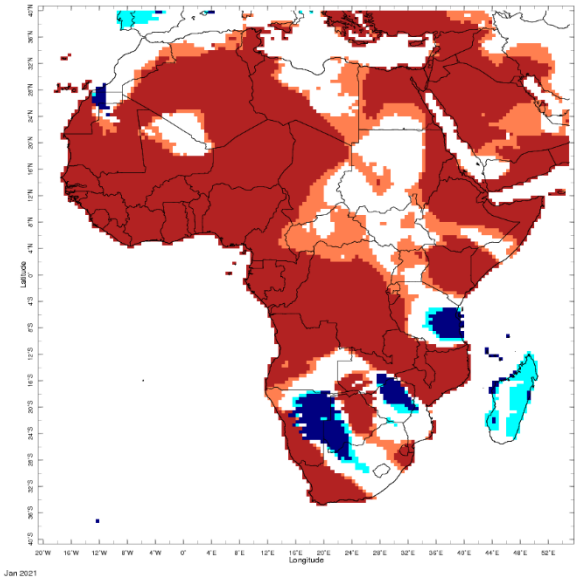
Western Africa

Central Africa

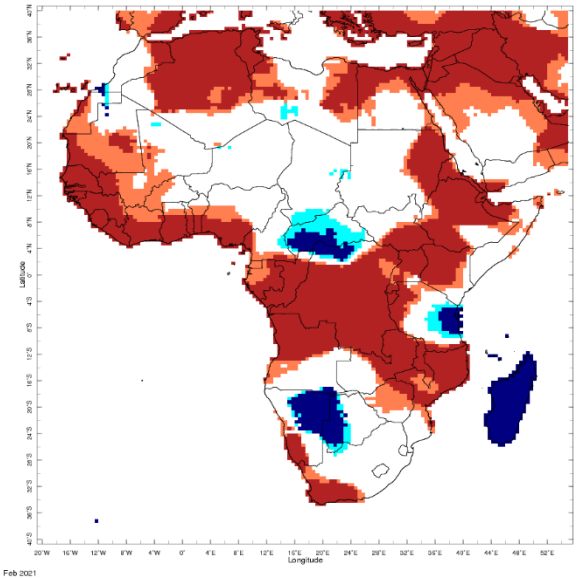
Eastern Africa

Southern Africa

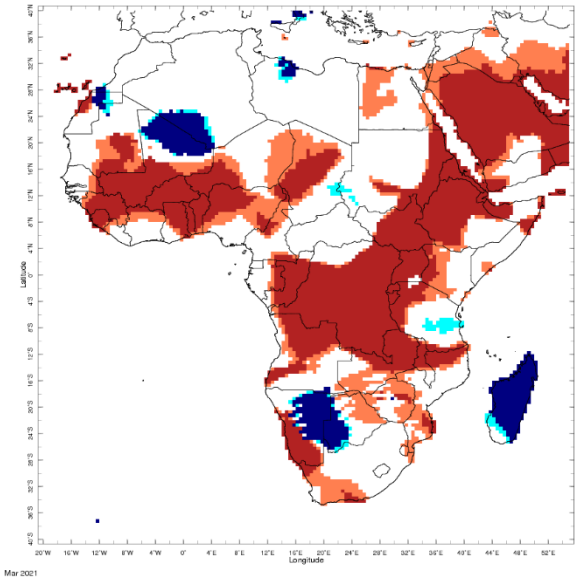
Current Status – Temperature percentiles



January



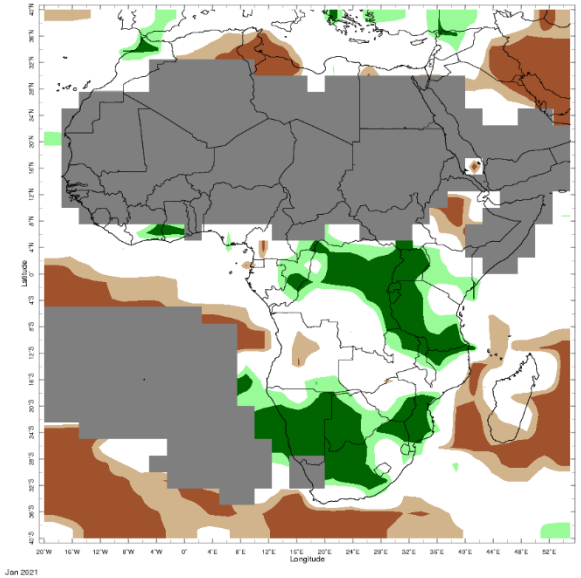
February



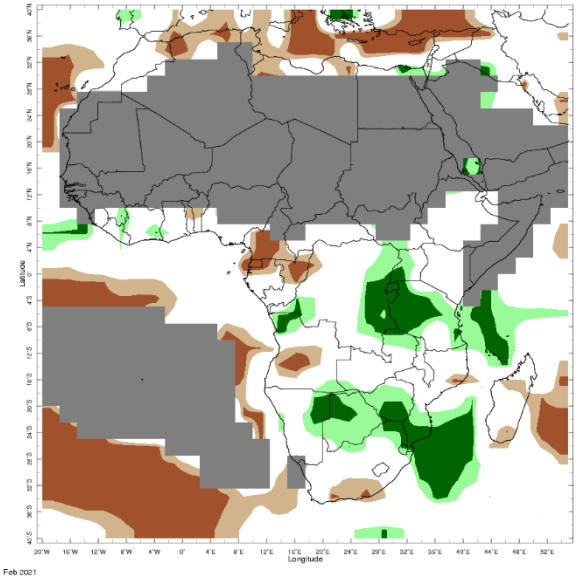
March

Notes: The percentiles shown in the map indicate a ranking of temperature, with the 0th percentile being the coolest and the 100th percentile being the warmest in the 1981-2010 climatology. Orange and red shading represent values above the 80th (Warm) and 90th (Hot) percentile, respectively; regions shaded in light and dark blue indicate values below the 20th (Cool) and 10th (Cold) percentile, with respect to the 1981-2010 climatology. The data used in this map are from the NOAA Climate Prediction Center.

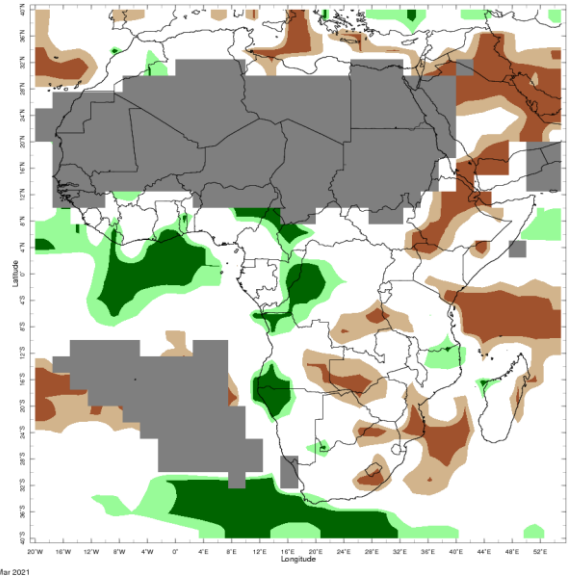
Current Status – Precipitation percentiles



January



February



March

Notes: The percentiles shown in the map indicate a ranking of rainfall, with the 0th percentile being the driest and the 100th percentile being the wettest in the 1981-2010 climatology. Green and dark green shading represent values above the 80th (Wet) and 90th (Very Wet) percentile, respectively; regions shaded in light and dark brown indicate rainfall below the 20th (Dry) and 10th (Very Dry) percentile, with respect to the 1981-2010 climatology. Grey areas on the map mask out regions that receive less than 10 mm/month of rainfall on normal in the 1981-2010 climatology for the month. The data used in this map are from the NOAA Climate Prediction Center.

Current Status – Western Africa

	Current Status: Temperature			Current Status: Rainfall		
	January	February	March	January	February	March
Sierra Leone	Hot	Hot	Hot	Normal	Normal	Wet
Liberia	Hot	Hot	Normal	Normal	Normal	Wet
Mali	Hot	Warm	Warm (1)	Normal*	Normal*	Normal*
Ghana	Hot	Hot	Hot	Very Wet (2)	Normal	Mixed (3)
Nigeria	Hot	Normal	Warm	Normal	Normal*	Normal
Cameroon	Hot	Normal	Normal	Normal	Very Dry	Mixed (4)

Notes:

The table gives an assessment of whether temperature and rainfall across each country have been above normal, normal or below normal over the past three months, using data from the NOAA Climate Prediction Center and the IRI Map Room: http://iridl.ldeo.columbia.edu/maproom/.

* Region usually experiences less than 10mm/month rainfall during the month (dry season).

Additional Information:

(1) Note: Hot across central and southern Mali; cold elsewhere.
(2) Note: Very Wet in the south
(3) Note: Wet in the far south, normal elsewhere.
(4) Note: Wet in the northeast; normal elsewhere.

Current Status – Central Africa

	Current Status: Temperature			Current Status: Rainfall		
	January	February	March	January	February	March
Niger	Hot	Normal	Warm	Normal*	Normal*	Normal*
Chad	Hot	Normal	Warm	Normal*	Normal*	Normal*
DRC	Hot	Hot	Hot	Mixed (1)	Mixed (2)	Mixed (3)

Notes:

The table gives an assessment of whether temperature and rainfall across each country have been above normal, normal or below normal over the past three months, using data from the NOAA Climate Prediction Center and the IRI Map Room: http://iridl.ldeo.columbia.edu/maproom/.

* Region usually experiences less than 10mm/month rainfall during the month (dry season).

Additional Information:

(1) Note: Very wet in the north, normal in the south
(2) Note: Very wet in the far east, normal elsewhere
(3) Note: Wet in parts of the west; normal elsewhere

Current Status – Eastern Africa (1)

	Current Status: Temperature			Current Status: Rainfall		
	January	February	March	January	February	March
Sudan	Normal (1)	Mixed (3)	Normal	Normal*	Normal*	Normal*
South Sudan	Normal	Mixed (4)	Hot	Mixed (2)	Normal*	Normal*
Uganda	Warm	Hot	Hot	Very Wet	Wet	Normal
Rwanda	Warm	Hot	Hot	Very Wet	Very Wet	Normal

Notes:

The table gives an assessment of whether temperature and rainfall across each country have been above normal, normal or below normal over the past three months, using data from the NOAA Climate Prediction Center and the IRI Map Room: http://iridl.ldeo.columbia.edu/maproom/.

* Region usually experiences less than 10mm/month rainfall during the month (dry season).

Additional Information:
(1) Note: Hot in parts of the east
(2) Note: Very Wet in the far south. Largely dry elsewhere
(3) Note: Hot in the far east, normal elsewhere
(4) Note: Hot in the south, normal in the north.

Current Status – Eastern Africa (2)

	Current Status: Temperature			Current Status: Rainfall		
	January	February	March	January	February	March
Tanzania	Mixed (1)	Mixed (1)	Mixed (1)	Very Wet	Wet	Normal
Ethiopia	Hot	Hot	Hot	Dry	Normal	Dry
Kenya	Hot	Hot	Mixed (2)	Wet	Normal	Dry
Somalia	Hot	Warm	Normal	Normal*	Normal*	Normal

Notes:

The table gives an assessment of whether temperature and rainfall across each country have been above normal, normal or below normal over the past three months, using data from the NOAA Climate Prediction Center and the IRI Map Room: http://iridl.ldeo.columbia.edu/maproom/.

* Region usually experiences less than 10mm/month rainfall during the month (dry season).

Additional Information:

(1) Note: Hot in the far west, cold in parts of the east, normal elsewhere
(2) Note: Hot in the far west. Normal elsewhere.

Current Status – Southern Africa

	Current Status: Temperature		
	January	February	March
South Africa	Mixed (1)	Mixed (1)	Mixed (1)
Zambia	Hot	Mixed (4)	Hot
Zimbabwe	Mixed	Warm	Warm
Mozambique	Hot	Mixed (5)	Mixed
Malawi	Hot	Hot	Hot
Madagascar	Cool	Cold	Cold

Current Status: Rainfall		
January	February	March
Very Wet	Normal	Normal
Mixed (2)	Normal	Dry
Very Wet	Wet	Normal
Mixed (3)	Mixed (6)	Mixed
Wet	Normal	Normal
Normal	Normal	Normal

Notes:

The table gives an assessment of whether temperature and rainfall across each country have been above normal, normal or below normal over the past three months, using data from the NOAA Climate Prediction Center and the IRI Map Room: http://iridl.ldeo.columbia.edu/maproom/.

* Region usually experiences less than 10mm/month rainfall during the month (dry season).

Additional Information:

(1) Note: Hot in the southwest
(2) Note: Very wet in the far northeast.
(3) Note: Very wet in the south and far north, normal elsewhere
(4) Note: Hot in the east, normal in the west
(5) Note: Hot in the north, normal in the south
(6) Note: Very wet in the far south, normal elsewhere.

Outlooks

Outlooks: Notes for use

Outlooks for months 4 to 6:

As forecast uncertainty generally increases with longer range **the 4-6-month outlook is less reliable than the 1-3 month outlook**. Outlook information will only be provided when the model data signals likely outcomes. Additionally, the longer range outlook utilises fewer models because not all seasonal models are available for the extended range.

Information provided in this presentation should be used to raise early awareness of potential hazards only and should be updated with the 3-month outlook when available.

Climatological odds:

A forecast is only provided in the outlooks where there is information in the model data about likely outcomes. Therefore, where the likelihoods for above, near and below normal conditions are evenly balanced the phrase 'climatological odds' will be used. This means the outcome could fall anywhere within the possible climatological range. Near-normal conditions should not necessarily be assumed, and users should update with shorter-term forecasts when available.

Outlook: May to October – Western Africa (1)

		Forecast summary		
		May	May to July	August to October
Sierra Leone	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be near-normal	Likely to be near-normal	Likely to be near-normal
Liberia	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be near-normal	Likely to be near-normal	Likely to be near-normal
Mali	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be near-normal	Likely to be near-normal	Likely to be wetter than normal
Ghana	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be near-normal	Likely to be near-normal	Likely to be near-normal

Outlooks for months 4 to 6: As forecast uncertainty generally increases with longer range **the 4-6-month outlook is less reliable than the 1-3 month outlook**. Outlook information will only be provided when the model data signals likely outcomes. Additionally, the longer range outlook utilises fewer models because not all seasonal models are available for the extended range. Information provided in this presentation should be used to raise early awareness of potential hazards only and should be updated with the 3-month outlook when available.

Outlook: May to October – Western Africa (2)

		Forecast summary		
		May	May to July	August to October
Nigeria	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be drier than normal in the far southeast, likely to be near-normal elsewhere	Likely to be drier than normal in the far southeast, likely to be near-normal elsewhere	Likely to be wetter than normal in the far south, climatological odds elsewhere
Cameroon	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be drier than normal	Likely to be drier than normal	Climatological odds

Outlooks for months 4 to 6: As forecast uncertainty generally increases with longer range **the 4-6-month outlook is less reliable than the 1-3 month outlook**. Outlook information will only be provided when the model data signals likely outcomes. Additionally, the longer range outlook utilises fewer models because not all seasonal models are available for the extended range. Information provided in this presentation should be used to raise early awareness of potential hazards only and should be updated with the 3-month outlook when available.

Outlook: May to October – Central Africa

		Forecast summary		
		May	May to July	August to October
Niger	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be near-normal	Likely to be near-normal	Likely to be wetter than normal
Chad	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Climatological odds	Climatological odds	Likely to be wetter than normal
Democratic Republic of Congo	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be drier than normal in the far west, likely to be wetter than normal in the east and southeast	Likely to be drier than normal in the far west, likely to be wetter than normal in the east and southeast	Likely to be drier than normal

Outlooks for months 4 to 6: As forecast uncertainty generally increases with longer range **the 4-6-month outlook is less reliable than the 1-3 month outlook**. Outlook information will only be provided when the model data signals likely outcomes. Additionally, the longer range outlook utilises fewer models because not all seasonal models are available for the extended range. Information provided in this presentation should be used to raise early awareness of potential hazards only and should be updated with the 3-month outlook when available.

Outlook: May to October – Eastern Africa (1)

		Forecast summary		
		May	May to July	August to October
Sudan	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Climatological odds	Climatological odds	Climatological odds
South Sudan	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Likely to be wetter than normal
Uganda	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Likely to be wetter than normal
Rwanda	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Likely to be wetter than normal

Outlooks for months 4 to 6: As forecast uncertainty generally increases with longer range **the 4-6-month outlook is less reliable than the 1-3 month outlook**. Outlook information will only be provided when the model data signals likely outcomes. Additionally, the longer range outlook utilises fewer models because not all seasonal models are available for the extended range. Information provided in this presentation should be used to raise early awareness of potential hazards only and should be updated with the 3-month outlook when available.

Outlook: May to October – Eastern Africa (2)

		Forecast summary		
		May	May to July	August to October
Tanzania	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Climatological odds	Likely to be wetter than normal in the far northwest, climatological odds elsewhere	Likely to be drier than normal
Ethiopia	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds
Kenya	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be drier than normal in the far east, likely to be wetter than normal in the far west, likely to be near-normal elsewhere	Likely to be drier than normal in the far east, likely to be wetter than normal in the far west, likely to be near-normal elsewhere	Climatological odds
Somalia	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be drier than normal	Likely to be drier than normal	Likely to be drier than normal

Outlooks for months 4 to 6: As forecast uncertainty generally increases with longer range **the 4-6-month outlook is less reliable than the 1-3 month outlook**. Outlook information will only be provided when the model data signals likely outcomes. Additionally, the longer range outlook utilises fewer models because not all seasonal models are available for the extended range. Information provided in this presentation should be used to raise early awareness of potential hazards only and should be updated with the 3-month outlook when available.

Outlook: May to October – Southern Africa (1)

		Forecast summary		
		May	May to July	August to October
South Africa	*Temperature*	Climatological odds	Climatological odds	Likely to be warmer than normal
	Rainfall	Climatological odds	Climatological odds	Likely to be drier than normal
Zambia	*Temperature*	Climatological odds	Climatological odds	Climatological odds
	Rainfall	Climatological odds	Climatological odds	Likely to be drier than normal
Zimbabwe	*Temperature*	Climatological odds	Climatological odds	Climatological odds
	Rainfall	Climatological odds	Climatological odds	Likely to be drier than normal
Mozambique	*Temperature*	Likely to be near-normal	Climatological odds	Likely to be warmer than normal
	Rainfall	Climatological odds	Climatological odds	Likely to be drier than normal

Outlooks for months 4 to 6: As forecast uncertainty generally increases with longer range **the 4-6-month outlook is less reliable than the 1-3 month outlook**. Outlook information will only be provided when the model data signals likely outcomes. Additionally, the longer range outlook utilises fewer models because not all seasonal models are available for the extended range. Information provided in this presentation should be used to raise early awareness of potential hazards only and should be updated with the 3-month outlook when available.

Outlook: May to October – Southern Africa (1)

		Forecast summary		
		May	May to July	August to October
Malawi	*Temperature*	Climatological odds	Climatological odds	Much more likely to be warmer than normal
	Rainfall	Climatological odds	Climatological odds	Likely to be drier than normal
Madagascar	*Temperature*	Likely to be near-normal	Likely to be warmer than normal	Much more likely to be warmer than normal
	Rainfall	Climatological odds	Climatological odds	Climatological odds

Outlooks for months 4 to 6: As forecast uncertainty generally increases with longer range **the 4-6-month outlook is less reliable than the 1-3 month outlook**. Outlook information will only be provided when the model data signals likely outcomes. Additionally, the longer range outlook utilises fewer models because not all seasonal models are available for the extended range. Information provided in this presentation should be used to raise early awareness of potential hazards only and should be updated with the 3-month outlook when available.

Annex 1 – Supplemental Information

For further information

WMO Lead Centre for Long-Range Forecast Multi-Model Ensemble (LC-LRFMME)
https://www.wmolc.org/seasonPmmeUI/plot_PMME

International Research Institute for Climate and Society (IRI)
http://iridl.ldeo.columbia.edu/maproom/

NOAA El Niño technical info
https://www.ncdc.noaa.gov/teleconnections/enso/indicators/sst.php

Met Office
https://www.metoffice.gov.uk/services/government/international-development

Climate Outlook Fora (https://public.wmo.int/en/our-mandate/climate/regional-climate-outlook-products), including:

Greater Horn of Africa Climate Outlook Forum (GHACOF): https://www.icpac.net/ghacof-57/
PRÉvisions climatiques Saisonnières en Afrique Soudano-Sahélienne (PRESASS): English - https://urlz.fr/cuFo ; French - https://urlz.fr/cuFm
Southern African Regional Climate Outlook Forum (SARCOF): http://csc.sadc.int/en/news-and-events/310-announcement-sarcof-24
PRÉvisions climatiques Saisonnières en Afrique, pays du Golfe de Guinée (PRESAGG): http://acmad.net/rcc/atelier/bulletin_PRESAGG07_eng.pdf
South-West Indian Ocean Climate Outlook Forum (SWICOF) - https://www.commissionoceanindien.org/wp-content/uploads/2020/09/SWIOCOF-9_Statement.pdf

Technical notes

The WMO lead centre for long-range forecast multi-model ensemble (LC-LRFMME) produce a probabilistic multi-model mean forecast product in which the multi-model mean is based on uncalibrated model output with a model weighting system that accounts for errors in both the forecast probability and ensemble mean. The method used by LC-LRFMME separately computes a probabilistic forecast and calculates tercile probabilities with respect to climatology for each individual model, before creating the weighted multi-model mean. In seasonal prediction, shifts in the tercile probabilities are always closely associated with the shifts in the probability of extremes, and we can use the probability of terciles to provide information on the likelihood of above- or below- normal conditions. The thresholds used in the forecast summaries are defined below.

Seasonal forecasts rely on the aspects of the global weather and climate system that are more predictable, such as tropical sea-surface temperatures or the El Niño–Southern Oscillation (ENSO). However, whilst such forecasts may be able to show what is more or less likely to occur, they acknowledge that other outcomes are possible.

In addition, forecast uncertainty generally increases with longer range so the 6-month outlook is less reliable. It is also based on less information, because not all models are available to this range. Therefore the information presented here should be used to raise early awareness of potential hazards, and should be updated with the 3-month outlook when available.

In the report and tables precipitation is referred to as rainfall but in fact encompasses any form of water, liquid or solid, falling from the sky. Temperatures are the (2 metre) near-surface temperature.

Description	Definition
Much more likely to be below normal	When probability of lower tercile > 70%
More likely to be below normal	When probability of lower tercile is 40-70%
Likely to be near-normal	When probability of middle tercile is 40-70%
Much more likely to be near-normal	When probability of middle tercile > 70%
Likely to be above normal	When probability of upper tercile is 40-70%
Much more likely to be above normal	When probability of upper tercile > 70%
Climatological odds	When probabilities for all categories are roughly 33%

Global Producing Centres (GPC) forecasts used by WMO LC-LRFMME:

- GPC CPTEC (INPE),
- GPC ECMWF,
- GPC Exeter (Met Office),
- GPC Melbourne (BOM),
- GPC Montreal (CMC),
- GPC Moscow (Hydromet Centre of Russia),
- GPC Offenbach (DWD),
- GPC Pretoria (SAWS),
- GPC Seoul (KMA),
- GPC Tokyo (JMA),
- GPC Toulouse (Meteo France),
- GPC Washington (NCEP)

Enquiries

Email: internationaldevelopment@metoffice.gov.uk

Web: https://www.metoffice.gov.uk/services/government/international-development