AFRICA: Monthly Climate Outlook March to December

Issued: June 2021

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Overview

Africa Current Status and Outlook – Temperature

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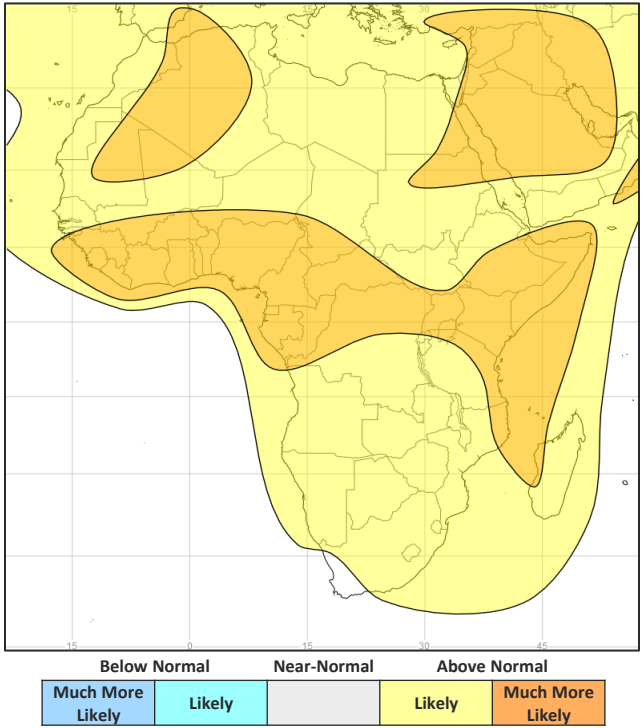
Africa Current Status and Outlook - Temperature

Current Status:
In the last three months, most of Africa has seen above normal temperatures. The main exceptions are parts of southern Africa and the Sahara where temperatures have been near or below normal. Below normal temperatures have been observed across Madagascar for the last three months.

Outlook:
Conditions are likely or much more likely to be warmer than normal across nearly all of the African continent during the next three months.

3-Month Outlook July to September - Temperature



Africa Current Status and Outlook - Rainfall

Current Status:

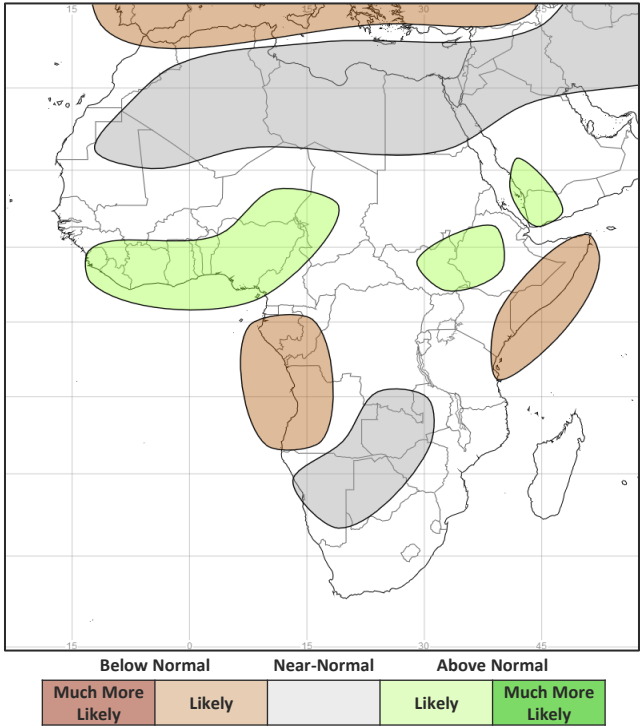
Over the last three months rainfall has been quite variable compared to seasonal normal across the continent. Most recently during May above normal rainfall was observed over parts of Tanzania, Kenya, South Sudan, Central African Republic, Nigeria and Gabon. Parts of West Africa, including Liberia, Ivory Coast, Ghana, Togo and Benin as well as Madagascar have seen below normal rainfall.

Outlook:

For the next three months parts of West Africa are likely to see above normal rainfall. Above normal rainfall is also likely for parts of South Sudan and Ethiopia.

It is currently the dry season in areas where below normal rainfall is indicated which may reduce the impact of any drier than normal conditions.

3-Month Outlook July to September - Rainfall



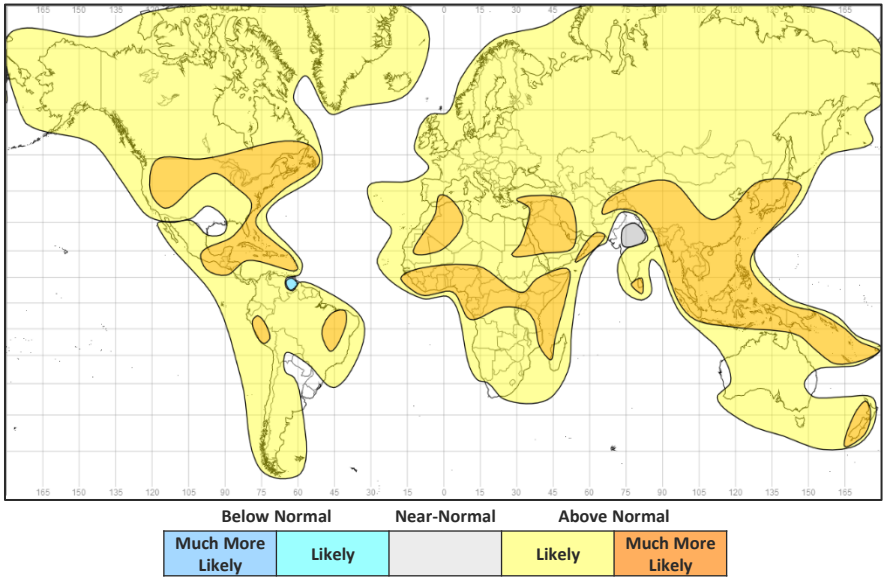
Global Outlook - Temperature

Outlook:

The El Niño–Southern Oscillation (ENSO) remains neutral and is most likely to remain so for at least the next three months. Later this year, there is small chance of La Niña redeveloping. However, predictions made at this time of year have lower skill than at other times and therefore the confidence in the evolution of ENSO over the coming months is low. With ENSO in its neutral phase, predictability will be relatively low.

Despite a neutral ENSO state some consistent signals are apparent. Many parts of the globe are likely to see warmer than normal conditions through the next three months with only a few limited exceptions; for example, parts of India and northern South America. Many tropical regions are very likely to see above normal temperatures, this is also the case for many parts of North America.

3-Month Outlook July to September - Temperature



Global Outlook - Rainfall

Outlook:
As described in the temperature section, ENSO is now neutral which reduces predictability compared to when it is in an active phase. However, there are still some common themes from seasonal predictions systems.

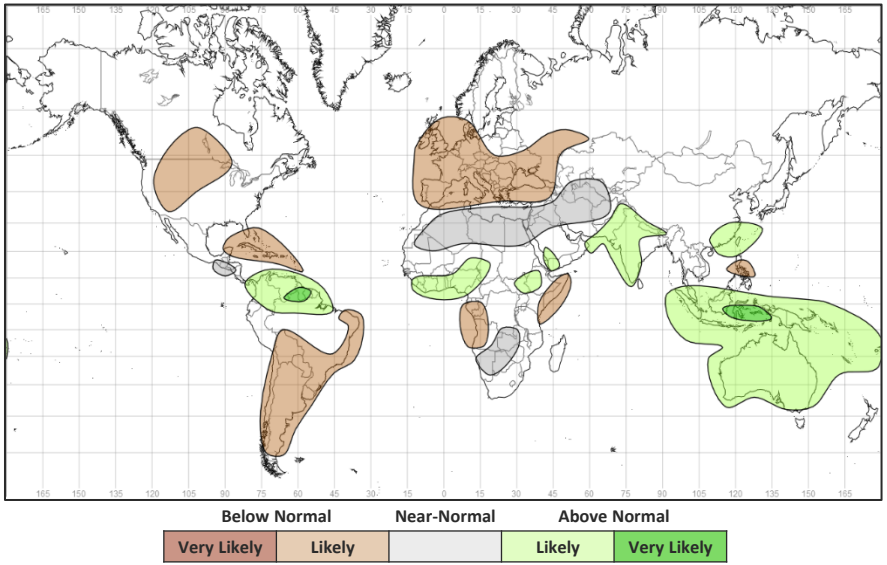
The Indian Ocean Dipole (IOD) is still neutral but the pattern of sea surface temperatures in the Indian Ocean are indicative of a negative phase developing. This is reflected in most of the climate prediction systems, which are suggesting a negative IOD emerging over the next two months. Over the next three months, this results in above normal rainfall being likely across parts of Southeast Asia and Australia; conversely parts of East Africa are likely to be drier than normal, though these areas of East Africa normally see little rainfall during this period.

The South Asian Monsoon (SAM) is underway with the northward shift of rains close to climatology in terms of timings. Predictions for the SAM remain finely balanced with mixed signals from longer range forecast systems. Overall, wetter than normal conditions are more likely for many parts of Pakistan, India and Nepal.

Parts of West Africa are likely to experience above normal rainfall associated with an active West Africa Monsoon season. In northern South America a southward shifted and active Intertropical Convergence Zone (ITCZ) makes above normal rainfall likely or very likely across much region with some o areas already being wetter than normal over recent weeks and months.

Many parts of southern South America, North America and Europe, as well as the Caribbean are likely to see below normal rainfall. This is also true for parts of the Philippines.

3-Month Outlook July to September - Rainfall



Current Status

Current Status maps

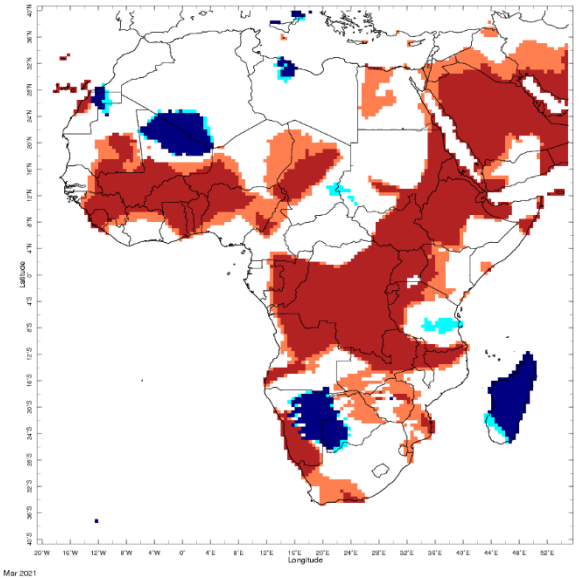
Western Africa

Central Africa

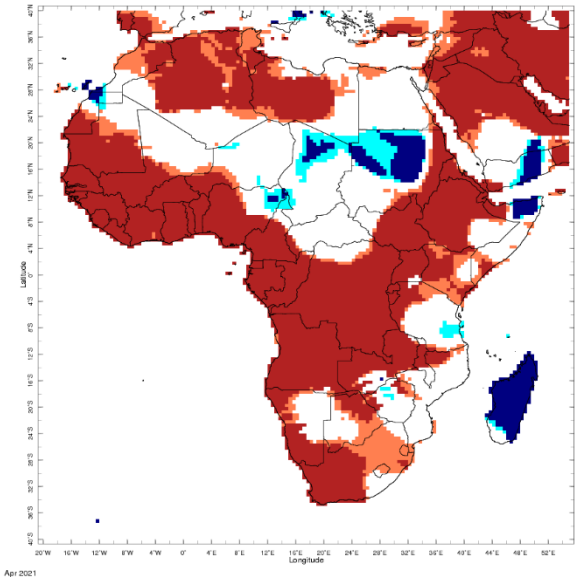
Eastern Africa

Southern Africa

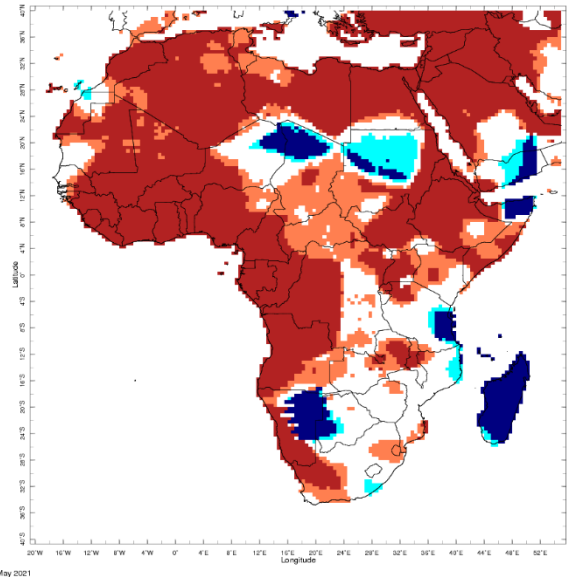
Current Status – Temperature percentiles



March



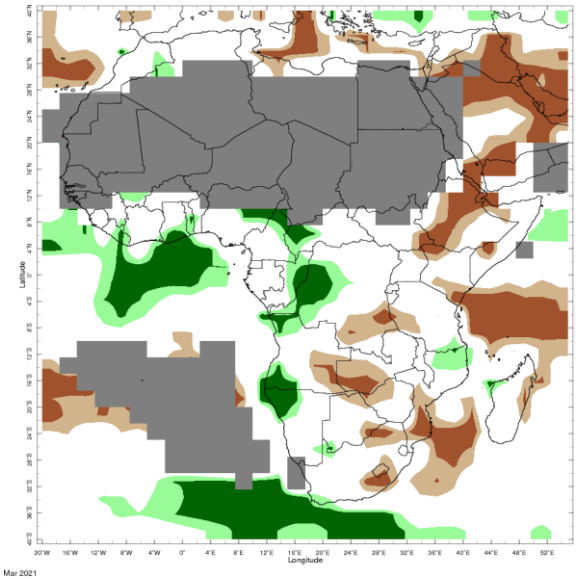
April



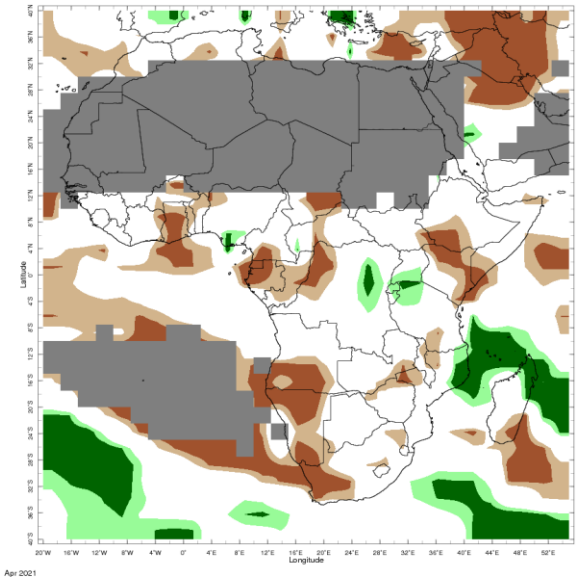
May

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.

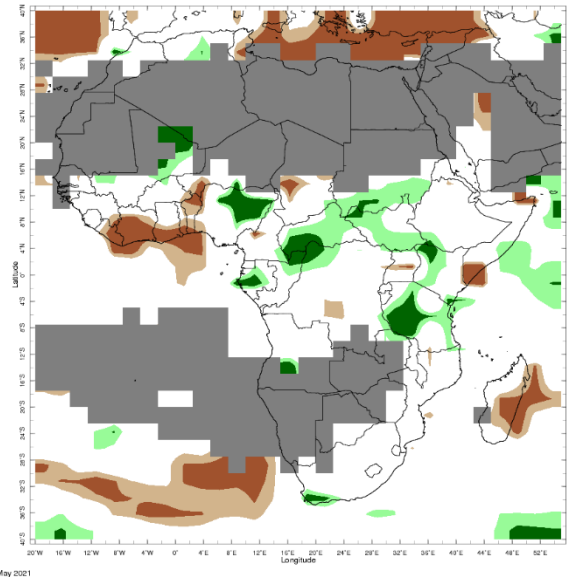
Current Status – Precipitation percentiles



March



April



May

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		
	March	April	May	March	April	May
Sierra Leone	Hot	Hot	Hot	Wet	Normal	Normal
Liberia	Normal	Hot	Hot	Wet	Normal	Dry
Mali	Warm (1)	Hot	Hot	Normal*	Normal*	Normal*
Ghana	Hot	Hot	Hot	Mixed (2)	Very Dry	Normal (4)
Nigeria	Warm	Hot	Hot	Normal	Normal	Normal (5)
Cameroon	Normal	Hot	Hot	Mixed (3)	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 across central and southern Mali; cold elsewhere.
(2) Note: Wet in the far south, normal elsewhere.
(3) Note: Wet in the northeast; normal elsewhere.
(4) Note: Very dry in far south
(5) Note: Wet or very wet in parts of the north

Current Status – Central Africa

	Current Status: Temperature			Current Status: Rainfall		
	March	April	May	March	April	May
Niger	Warm	Normal	Mixed (3)	Normal*	Normal*	Normal*
Chad	Warm	Cool	Mixed (4)	Normal*	Normal*	Normal*
DRC	Hot	Hot	Hot	Mixed (1)	Mixed(2)	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: Wet in parts of the west; normal elsewhere
(2) Note: Very Dry in the northwest
(3) Note: Hot in southwest, cold in northeast
(4) Note: Warm in south, cold in north

Current Status – Eastern Africa (1)

	Current Status: Temperature		
	March	April	May
Sudan	Normal	Cool	Cool
South Sudan	Hot	Hot	Hot
Uganda	Hot	Hot	Hot
Rwanda	Hot	Hot	Hot

Current Status: Rainfall		
March	April	May
Normal*	Normal*	Normal* (1)
Normal*	Normal	Wet
Normal	Normal	Normal
Normal	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: Wet in far south

Current Status – Eastern Africa (2)

	Current Status: Temperature			Current Status: Rainfall		
	March	April	May	March	April	May
Tanzania	Mixed (1)	Normal (3)	Normal (6)	Normal	Normal (4)	Normal (4)
Ethiopia	Hot	Hot	Hot	Dry	Normal (5)	Normal
Kenya	Mixed (2)	Warm	Warm	Dry	Dry	Normal
Somalia	Normal	Normal	Warm (7)	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.
(3) Note: Hot in the west.
(4) Note: Wet near Lake Victoria
(5) Note: Very Dry in the south
(6) Note: Hot in far northwest, cold in far southeast
(7) Note: Cold in far northeast

Current Status – Southern Africa

	Current Status: Temperature			Current Status: Rainfall		
	March	April	May	March	April	May
South Africa	Mixed (1)	Warm	Normal (1)	Normal	Normal (2)	Normal (4)
Zambia	Hot	Hot	Hot	Dry	Normal	Normal
Zimbabwe	Warm	Normal	Normal	Normal	Normal	Normal*
Mozambique	Mixed	Normal	Normal	Mixed	Normal	Normal
Malawi	Hot	Hot	Hot	Normal	Normal	Normal
Madagascar	Cold	Cold	Cold	Normal	Normal (3)	Normal (5)

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 Dry in the west
(3) Note: Very Wet in the northeast
(4) Note: Wet in far southwest
(5) Note: Dry in the east

Outlooks

Notes for use

Western Africa

Central Africa

Eastern Africa

Southern Africa

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: July to December – Western Africa (1)

		Forecast summary		
		July	July to September	October to December
Sierra Leone	*Temperature*	Likely to be warmer than normal	**Much more 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 drier than normal
Liberia	*Temperature*	Likely to be warmer than normal	**Much more 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 drier than normal
Mali	*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
Ghana	*Temperature*	**Much more likely to be warmer than normal**	**Much more 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

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: July to December – Western Africa (2)

		Forecast summary		
		July	July to September	October to December
Nigeria	*Temperature*	Likely to be warmer than normal in the far north; **Much more likely to be warmer than normal** elsewhere	Likely to be warmer than normal in the far north; **Much more likely to be warmer than normal** elsewhere	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Likely to be drier than normal
Cameroon	*Temperature*	**Much more likely to be warmer than normal**	**Much more likely to be warmer than normal**	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.

Outlook: July to December – Central Africa

		Forecast summary		
		July	July to September	October to December
Niger	*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 in the far south; Climatological odds elsewhere	Likely to be wetter than normal in the far south; Climatological odds elsewhere	Climatological odds
Chad	*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 in the south; Climatological odds elsewhere	Likely to be wetter than normal in the south; Climatological odds elsewhere	Climatological odds
Democratic Republic of Congo	*Temperature*	Likely to be warmer than normal	Much more likely to be warmer than normal north; Likely to be warmer than normal south	Likely to be warmer than normal
	Rainfall	Climatological odds	Likely to be drier than normal in the far west; Climatological odds elsewhere	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: July to December – Eastern Africa (1)

		Forecast summary		
		July	July to September	October to December
Sudan	*Temperature*	Likely to be warmer than normal	**Much more 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	Climatological odds	**Likely to be wetter than normal**	Climatological odds
Uganda	*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
Rwanda	*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	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.

Outlook: July to December – Eastern Africa (2)

		Forecast summary		
		July	July to September	October to December
Tanzania	*Temperature*	Likely to be warmer than normal	**Much more likely to be warmer than normal**	Likely to be warmer than normal
	Rainfall	Climatological odds	Climatological odds in the west; Likely to be drier than normal in the east	Likely to be drier than normal
Ethiopia	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal in the northwest; **Much more likely to be warmer than normal** in the southeast	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal in the northwest; otherwise Climatological odds	Likely to be drier than normal far in the southeast; Likely to be wetter than normal elsewhere	Climatological odds
Kenya	*Temperature*	**Much more likely to be warmer than normal**	**Much more likely to be warmer than normal**	Likely to be warmer than normal
	Rainfall	Climatological odds in the west; Likely to be drier than normal in the east	Climatological odds in the west; Likely to be drier than normal in the east	Likely to be drier than normal
Somalia	*Temperature*	Likely to be warmer than normal	**Much more likely to be warmer than normal**	Likely to be warmer than normal
	Rainfall	Climatological odds in the north; Likely to be	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: July to December – Southern Africa (1)

		Forecast summary		
		July	July to September	October to December
South Africa	*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
Zambia	*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 drier than normal
Zimbabwe	*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	Climatological odds
Mozambique	*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 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: July to December – Southern Africa (1)

		Forecast summary		
		July	July to September	October to December
Malawi	*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 drier than normal
Madagascar	*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 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.

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-58/ (May 2021)
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