AFRICA: Monthly Climate Outlook November to August

Issued: February 2024

Overview

Africa Current Status and Outlook – Temperature

Africa Current Status and Outlook – Rainfall

Global Outlook – Temperature

Global Outlook – Rainfall
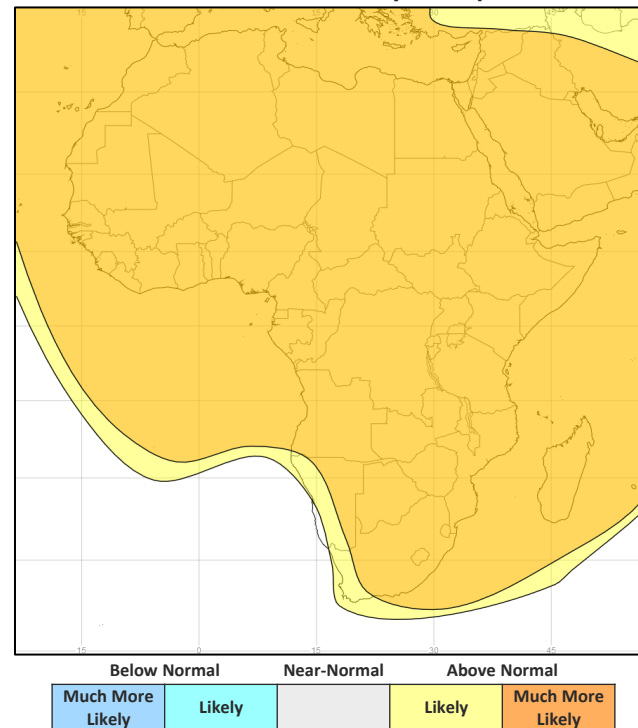
Africa Current Status and Outlook - Temperature

Current Status:

Most of western Africa was hot over the last three months. Central and eastern Africa were also mainly hot over the last three months though a few areas were normal or cold in December and January. Southern Africa was more mixed, many parts were cool or cold in November before nearly all areas became hot in December but with some cold areas returning in January.

Outlook:

Consistent with a warming climate and the ongoing El Niño event, it is much more likely to be warmer than normal across the continent over the next three months.

3-Month Outlook March to May - Temperature

Below Normal		Near-Normal	Above Normal	
Much More Likely	Likely		Likely	Much More Likely

Africa Current Status and Outlook - Rainfall

Current Status:

In western Africa most places have been near-normal over the last three months. Exceptions include Ghana which was very wet in November, Nigeria which was wet in November, and Liberia and Cameroon which were very dry in December and January respectively.

The Short Rains season (October to December) in East Africa brought above average rainfall to many areas in November with most parts very wet. December was mostly near-normal while January was wet in many areas. During November, South Africa, Zambia, Zimbabwe and parts of Mozambique were dry or very dry. December was dry in Zambia, Malawi and Madagascar while parts of South Africa and Mozambique were wet. In January, most areas were near-normal with Malawi being wet.

Outlook:

Over the next three months, consistent with the current El Niño, it is likely be wetter than normal in East Africa, and much wetter along some coastal parts with the long rains (March to May) expected to be more active than normal.

In much of southern Africa, consistent with the current El Niño, it is likely to be drier than normal. Parts of western Africa are also likely to be drier than normal.

3-Month Outlook March to May - Rainfall

Below Normal		Near-Normal	Above Normal	
Much More Likely	Likely		Likely	Much More Likely
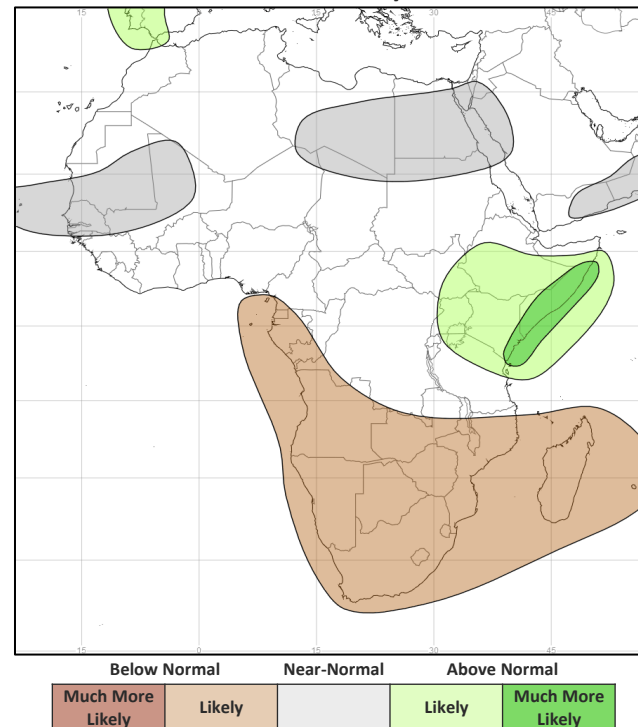
Global Outlook - Temperature

Outlook:

With the backdrop of a warming climate and the current ongoing (although weakening) El Niño event, nearly all land areas are likely or much more likely to be warmer than normal during March to May. The main exception to this being the southeast Pacific region, the result of colder than normal sea surface temperatures in this area due to El Niño.

3-Month Outlook March to May - Temperature

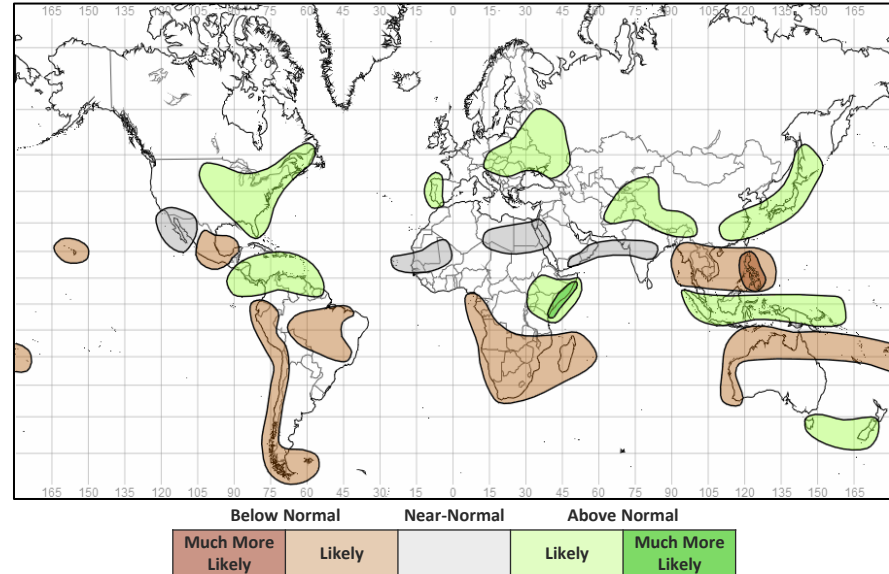| Below Normal		Near-Normal	Above Normal	
Much More Likely	Likely		Likely	Much More Likely
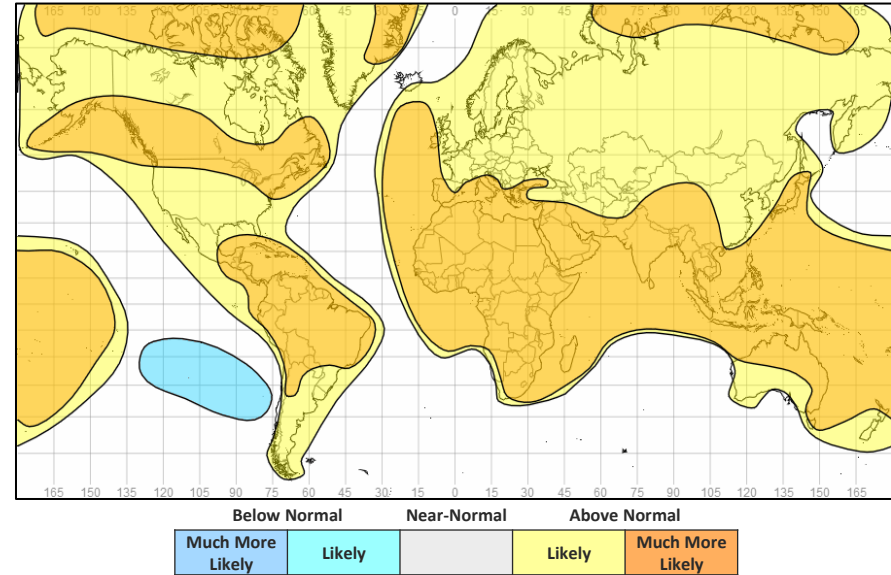
Global Outlook - Rainfall

Outlook:

El Niño-Southern Oscillation (ENSO) – Sea surface temperatures (SSTs) across the equatorial Pacific remain indicative on an ongoing El Niño event.

Now past its peak, the current El Niño event is likely to weaken further with a transition ENSO-neutral likely by April-June 2024 (79% chance). There are also increasing odds of La Niña developing in June-August 2024 (55% chance).

El Niño impacts regional weather patterns around the world, leading to some regions experiencing wetter than normal conditions and other regions drier than normal conditions. Its influence tends to be most dominant across the tropics. Although weakening, El Niño will continue to impact global weather patterns over the next few months.

Indian Ocean Dipole (IOD) – The recent positive Indian Ocean Dipole has now come to an end, with conditions expected to remain near-neutral for the next few months.

3-Month Outlook March to May - Rainfall

Below Normal		Near-Normal	Above Normal	
Much More Likely	Likely		Likely	Much More Likely

Current Status

Current Status – Temperature percentiles
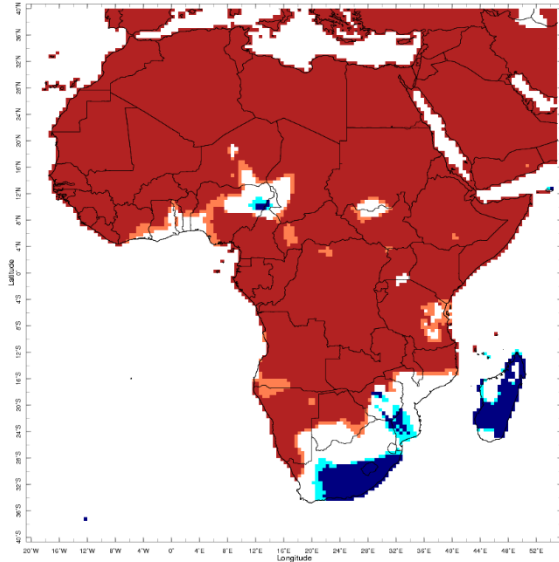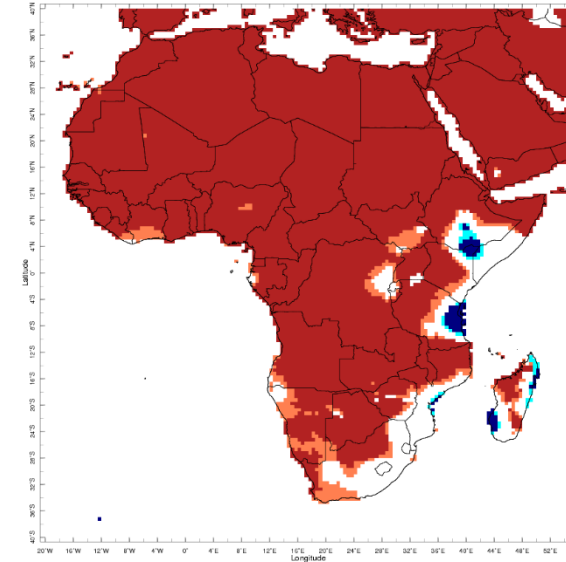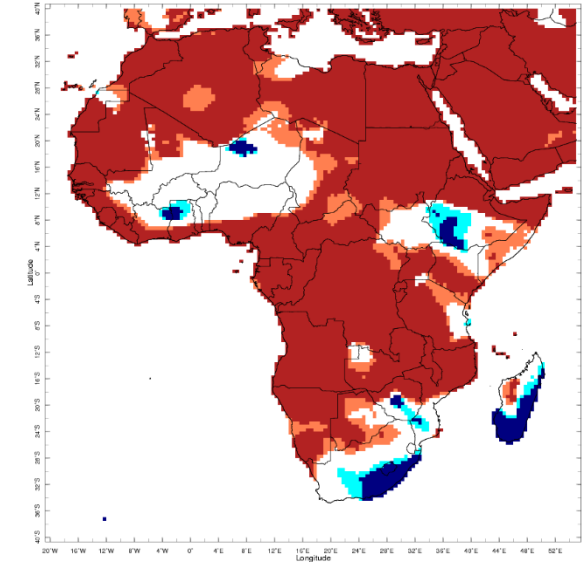
| November | December | January |

Temperature Percentiles (BLUE below 20th and RED above 80th)

| 0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 |

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
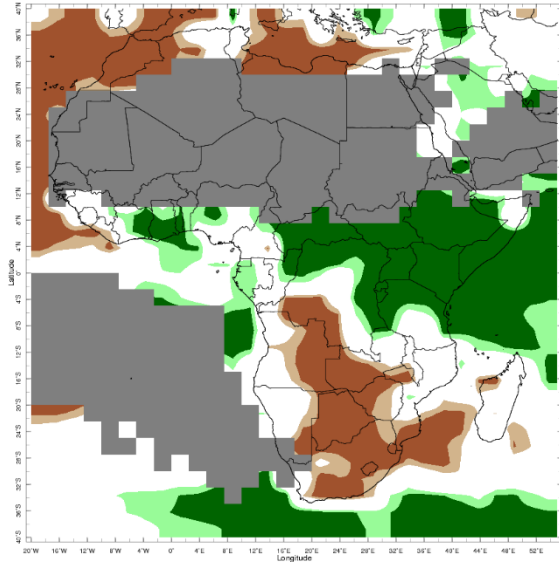
November

December

January

Rainfall Percentiles (BROWN below 20th and GREEN above 80th)

0   0.1   0.2   0.3   0.4   0.5   0.6   0.7   0.8   0.9   1.0
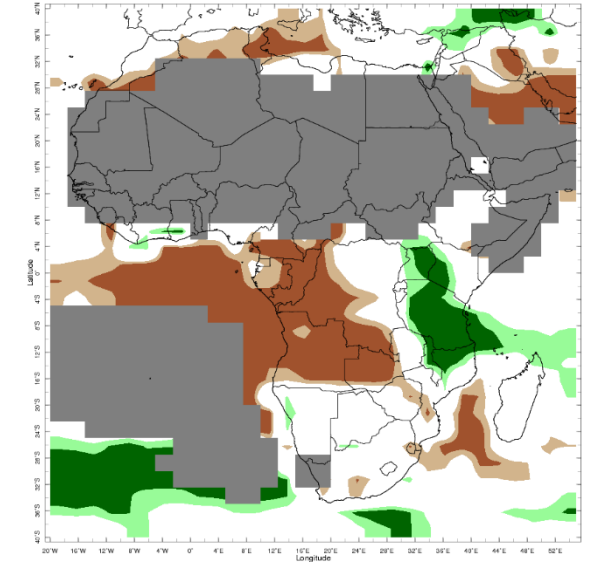
Notes: The percentiles shown in the map indicate a ranking of rainfall, with the 0th percentile being the driest and the 100th percen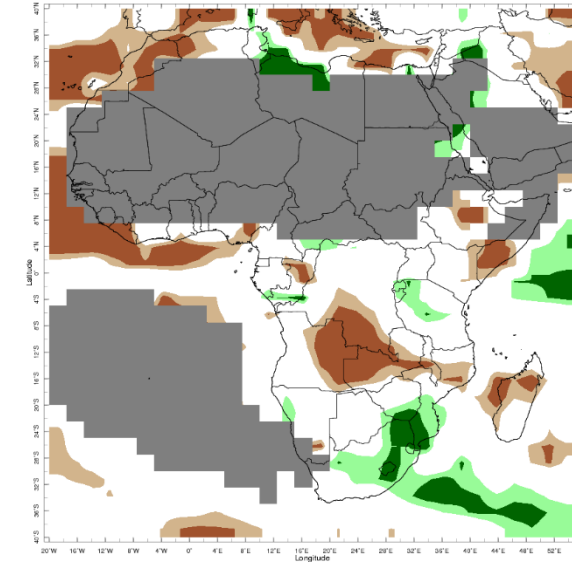tile being the wettest in the 1981-2010 climatology. Green and dark green shading represent values above the 80th (Wet) and 90th (Very Wet) percentile, respectively; regions shaded in light and dark brown indicate rainfall below the 20th (Dry) and 10th (Very Dry) percentile, with respect to the 1981-2010 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		
	November	**December**	**January**
Sierra Leone	Hot	Hot	Hot
Liberia	Hot	Hot	Hot
Mali	Hot	Hot	Normal (2)
Ghana	Hot	Hot	Mixed (3)
Nigeria	Mixed (1)	Hot	Hot (4)
Cameroon	Hot	Hot	Hot

	Current Status: Rainfall		
	November	**December**	**January**
Sierra Leone	Normal	Normal*	Normal*
Liberia	Normal	Very Dry	Normal
Mali	Normal*	Normal*	Normal*
Ghana	Very Wet	Normal	Normal
Nigeria	Wet	Normal	Normal
Cameroon	Normal	Normal	Very Dry

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, normal in the northeast
(2) Note: Hot in the north
(3) Note: Hot in the south, cold in the north
(4) Note: Normal in the north

Current Status – Central Africa

	Current Status: Temperature				Current Status: Rainfall		
	November	**December**	**January**		**November**	**December**	**January**
Niger	Hot	Hot	Normal		Normal*	Normal*	Normal*
Chad	Hot	Hot	Hot (1)		Normal*	Normal*	Normal*
DRC	Hot	Hot	Hot		Mixed (2)	Normal (3)	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:** Normal in the west
(2) **Note:** Very wet in the north and east, very dry in south and west
(3) **Note:** Very dry in far south
(4) **Note:** Normal in the east, very dry in the west

Current Status – Eastern Africa (1)

	Current Status: Temperature				Current Status: Rainfall		
	November	December	January		November	December	January
Sudan	Hot	Hot	Hot		Normal*	Normal*	Normal*
South Sudan	Hot	Hot	Normal		Very Wet	Normal*	Normal*
Uganda	Hot	Hot	Hot		Very Wet	Normal	Wet
Rwanda	Hot	Warm	Hot		Very Wet	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:

Current Status – Eastern Africa (2)

Current Status: Temperature				Current Status: Rainfall		
	November	December	January	November	December	January
Tanzania	Hot	Hot (2)	Hot (7)	Normal (1)	Normal (5)	Very Wet
Ethiopia	Hot	Hot (3)	Mixed (8)	Very Wet	Normal	Normal
Kenya	Hot	Hot	Mixed (9)	Very Wet	Normal	Normal (10)
Somalia	Hot	Hot (4)	Hot	Very Wet	Normal (6)	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:** Very wet in the north and west
(2) **Note:** Cold in the far east
(3) **Note:** Cold in the southeast
(4) **Note**: Normal in the south
(5) **Note**: Wet in the northwest
(6) **Note**: Very dry in the far south
(7) **Note**: Normal in the east

(8) **Note:** Hot in the northeast, cold in the southwest
(9) **Note:** Hot in the north, warm in the south
(10) **Note:** Very wet in the west

Current Status – Southern Africa

Current Status: Temperature				Current Status: Rainfall		
	November	December	January	November	December	January
South Africa	Cold (1)	Warm (4)	Mixed	Very Dry	Wet (6)	Normal
Zambia	Hot	Hot	Hot	Dry	Dry	Mixed (8)
Zimbabwe	Normal	Hot	Mixed (9)	Very Dry	Normal (7)	Normal
Mozambique	Mixed (2)	Hot (5)	Hot (5)	Normal (3)	Mixed (8)	Normal
Malawi	Hot	Hot	Hot	Normal	Dry	Wet
Madagascar	Cold	Mixed	Mixed (10)	Normal	Dry	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: Normal in the north
(2) Note: Cold in the south, hot in the north, normal elsewhere
(3) Note: Very dry in the far south
(4) Note: Normal in the east
(5) Note: Normal in the south
(6) Note: Normal in the southwest
(7) Note: Wet in the southeast

(8) Note: Dry in the north, wet or very wet in the south
(9) Note: Warm in the far north, cold in the southeast, normal elsewhere
(10) Note: Cold in the south
(11) Note: Normal in the northeast, very dry in the southwest

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: March to August – Western Africa (1)

		Forecast summary		
		March	March to May	June to August
Sierra Leone	*Temperature*	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Much more likely to be warmer than normal
	Rainfall	Likely to be drier than normal	Climatological odds	Likely to be drier than normal
Liberia	*Temperature*	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Much more likely to be warmer than normal
	Rainfall	Likely to be drier than normal	Climatological odds	Likely to be drier than normal
Mali	*Temperature*	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Much more likely to be warmer than normal
	Rainfall	Likely to be near-normal	Likely to be near-normal in northwest; Climatological odds elsewhere	Climatological odds
Ghana	*Temperature*	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Much more likely to be warmer than normal
	Rainfall	Likely to be drier than normal	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.

Outlooks

Outlook: March to August – Western Africa (2)

		Forecast summary		
		March	March to May	June to August
Nigeria	*Temperature*	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Much more likely to be warmer than normal
	Rainfall	Climatological odds	Climatological odds	Likely to be wetter than normal in the northeast; Likely to be drier than normal elsewhere
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	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: March to August – Central Africa

		Forecast summary		
		March	March to May	June to August
Niger	*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 near-normal	Climatological odds	Likely to be wetter than normal
Chad	*Temperature*	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Much more likely to be warmer than normal
	Rainfall	Likely to be near-normal	Climatological odds	Likely to be wetter than normal
Democratic Republic of Congo	*Temperature*	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Much more likely to be warmer than normal
	Rainfall	Likely to be drier than normal in the east; Climatological odds elsewhere	Likely to be drier than normal in the far west; climatological odds elsewhere	Likely to be drier than normal in the west; climatological odds elsewhere

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: March to August – Eastern Africa (1)

		Forecast summary		
		March	March to May	June to August
Sudan	*Temperature*	Likely to be warmer than normal	Much more likely to be warmer than normal	Much more likely to be warmer than normal
	Rainfall	Likely to be near-normal	Climatological odds	Likely to be wetter than normal
South Sudan	*Temperature*	Likely to be warmer than normal	Much more likely to be warmer than normal	Much more likely to be warmer than normal
	Rainfall	Likely to be wetter than normal in the east; Climatological odds elsewhere	Likely to be wetter than normal in the east; Climatological odds elsewhere	Likely to be wetter than normal
Uganda	*Temperature*	Likely to be warmer than normal	Much more likely to be warmer than normal	Much more 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	Much more likely to be warmer than normal	Much more 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: March to August – Eastern Africa (2)

		Forecast summary		
		March	March to May	June to August
Tanzania	*Temperature*	Likely to be warmer than normal	Much more likely to be warmer than normal	Much more likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Much more likely to be wetter than normal in the east; Likely to be wetter than normal elsewhere	Climatological odds
Ethiopia	*Temperature*	Likely to be warmer than normal	Much more likely to be warmer than normal	Much more likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Much more likely to be wetter than normal
Kenya	*Temperature*	Likely to be warmer than normal	Much more likely to be warmer than normal	Much more likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Much more likely to be wetter than normal in the east; Likely to be wetter than normal elsewhere	Much more likely to be wetter than normal in the north; likely to be wetter than normal elsewhere
Somalia	*Temperature*	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Much more likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Much more likely to be wetter than normal in the south ; Likely to be wetter than normal elsewhere	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: March to August – Southern Africa (1)

		Forecast summary		
		March	March to May	June to August
South Africa	*Temperature*	**Much more likely to be warmer than normal** in the northeast; **Likely to be warmer than normal** elsewhere	**Likely to be warmer than normal** in the far west; **Much more likely to be warmer than normal** elsewhere	Likely to be warmer than normal in the far west; Much more likely to be warmer than normal elsewhere
	Rainfall	**Likely to be drier than normal**	**Likely to be drier than normal**	Likely to be drier than normal
Zambia	*Temperature*	**Much more likely to be warmer than normal**	**Much more likely to be warmer than normal**	Much more likely to be warmer than normal
	Rainfall	**Likely to be drier than normal**	Climatological odds in the northeast; **Likely to be drier than normal** elsewhere	Likely to be near-normal
Zimbabwe	*Temperature*	**Much more likely to be warmer than normal**	**Much more likely to be warmer than normal**	Much more likely to be warmer than normal
	Rainfall	**Likely to be drier than normal**	**Likely to be drier than normal**	Likely to be near-normal
Mozambique	*Temperature*	**Much more likely to be warmer than normal**	**Much more likely to be warmer than normal**	Much more likely to be warmer than normal
	Rainfall	**Likely to be drier than normal**	**Likely to be drier than normal**	Climatological odds in the north; Likely to be drier than normal in south

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.

Outlooks

Outlook: March to August – Southern Africa (1)

		Forecast summary		
		March	March to May	June to August
Malawi	*Temperature*	**Much more likely to be warmer than normal**	**Much more likely to be warmer than normal**	Much more likely to be warmer than normal
	Rainfall	**Likely to be drier than normal**	**Likely to be drier than normal**	Likely to be near-normal
Madagascar	*Temperature*	**Likely to be warmer than normal** in the south; **Much more likely to be warmer than normal** elsewhere	**Much more likely to be warmer than normal**	Much more likely to be warmer than normal
	Rainfall	**Likely to be drier than normal** in the south; Climatological odds in north	**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.

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.ncei.noaa.gov/access/monitoring/enso/

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

For further information

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

- Greater Horn of Africa Climate Outlook Forum (GHACOF): GHACOF 66 Statement (Feb 2024)

- PRÉvisions climatiques Saisonnières en Afrique Soudano-Sahélienne (PRESASS): http://acmad.net/rcc/presassS.php (April 2022)

- Southern African Regional Climate Outlook Forum (SARCOF): https://www.sadc.int/sites/default/files/2023-09/SARCOF-27%20STATEMENT.pdf (September 2023)

- PRÉvisions climatiques Saisonnières en Afrique, pays du Golfe de Guinée (PRESAGG): https://agrhymet.cilss.int/doss/tocharg/2023/02/COMMUNIQUE-FINAL_PRESAGG_2023_VF_Engl.pdf (February 2023)

- South-West Indian Ocean Climate Outlook Forum (SWIOCOF) - https://www.commissionoceanindien.org/wp-content/uploads/2022/10/SWIOCOF11_Statement-EN-final.pdf (September 2022)

Technical notes

The [WMO lead centre for long-range forecast multi-model ensemble (LC-LRFMME)](link) 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