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AFRICA: Monthly Climate Outlook January to October

Issued: April 2024

Overview

Africa Current Status and Outlook – Temperature

Africa Current Status and Outlook – Rainfall

Global Outlook – Temperature

Global Outlook – Rainfall

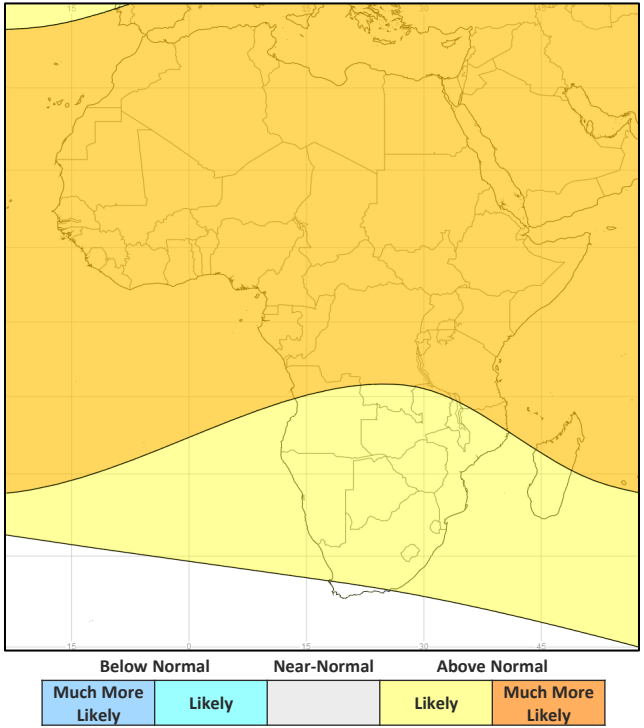
Africa Current Status and Outlook - Temperature

Current Status:
Apart from South Africa, above normal temperatures were experienced across the continent in January.

Through February and March, much of central, then northern Africa experienced widespread below normal temperatures. In March much of southern and eastern Africa experienced above normal temperatures.

Outlook:
Over the next three months, much of Africa is likely or much more likely to experience above normal temperatures, apart from the far south of Africa.

3-Month Outlook May to July - Temperature



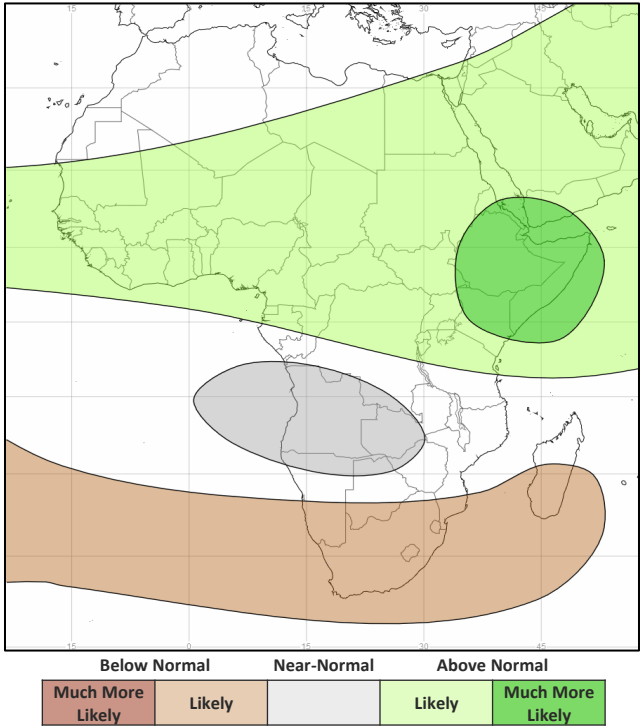
Africa Current Status and Outlook - Rainfall

Current Status:
Over the last three months, many parts of central and southern Africa have been drier than normal. In eastern Africa, it has been normal or wetter than normal.

Outlook:
Over the next three months, consistent with the current El Niño, it is likely to be wetter than normal in East Africa and much more likely to be wetter than normal in some coastal regions with the remainder of the long rains in May expected to be more active than normal. Should the Indian Ocean Dipole move into its positive phase in the coming months, as climate models suggest, the effects of El Niño in this region may be enhanced.

Across many parts of Southern Africa, and the south of Madagascar, it is likely to be drier than normal over the next three months.

3-Month Outlook May to July - Rainfall

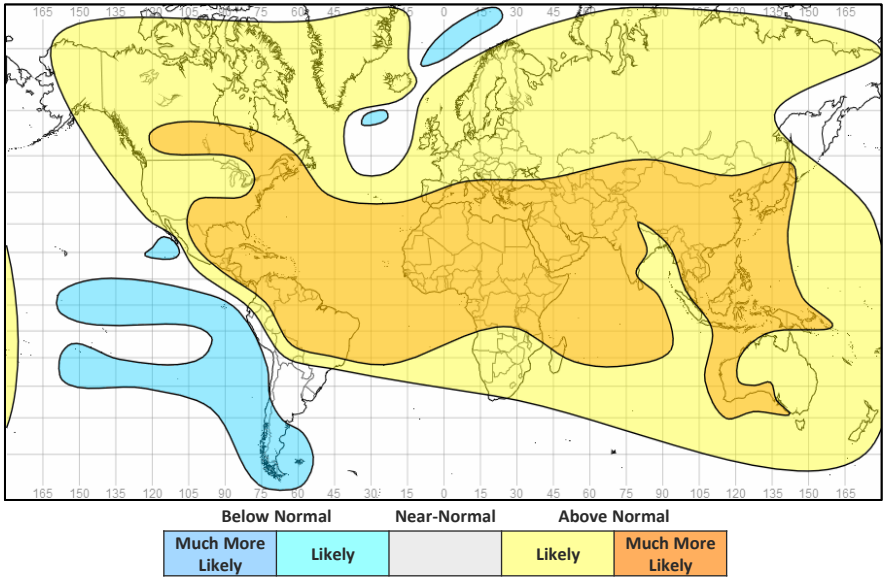


Global Outlook - Temperature

Outlook:

Consistent with a warming climate, over the next three months almost all land areas are likely to see above normal temperatures. However, the cooling in parts of the South Pacific associated with the expected development of La Niña conditions will have an increasing impact in surrounding areas, especially southern South America.

3-Month Outlook May to July - Temperature



Global Outlook - Rainfall

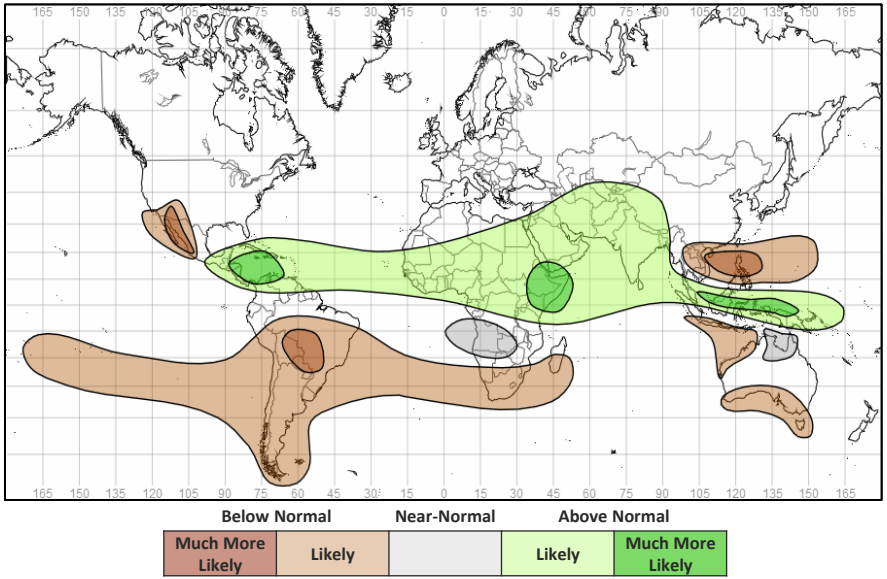
Outlook:

El Niño-Southern Oscillation (ENSO) - Although now declining, 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 to ENSO-neutral very likely (85%) in April-June. There continues to be a likely (60%) transition to La Niña in June-August. The reducing sea surface temperatures (SSTs) in parts of the Pacific mean that areas such as South America are likely to be drier than normal.

The impact of El Niño on some regional weather patterns around the world remains, 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, reflected in areas which experience monsoon rains in the Northern Hemisphere being likely to be wetter than normal over the next three months.

Indian Ocean Dipole (IOD) – Record warm temperatures in the north-west Indian Ocean and atmospheric indicators in the east are consistent with a developing positive IOD. Models suggest positive IOD conditions in May, though it should be noted that at this time confidence in IOD forecasts beyond the Southern Hemisphere autumn is low.

3-Month Outlook May to July - Rainfall



Current Status

Current Status maps

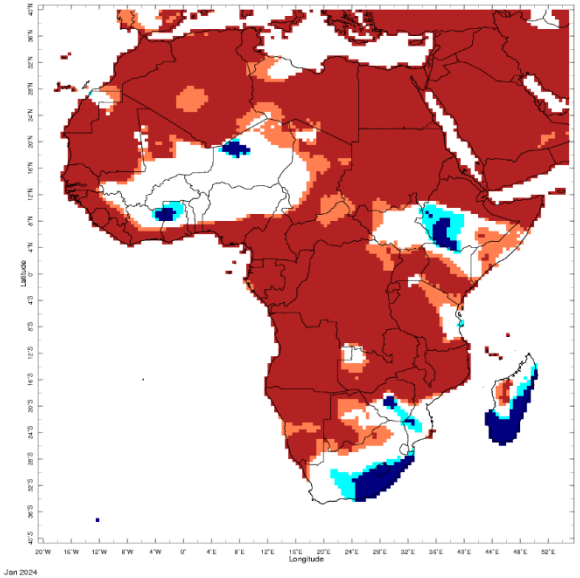
Western Africa

Central Africa

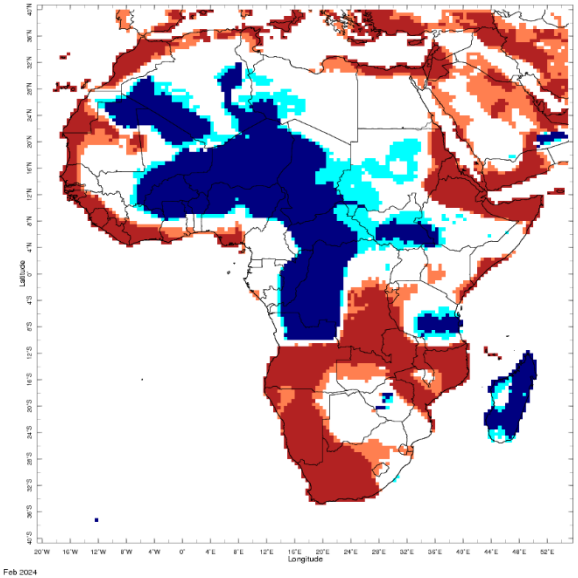
Eastern Africa

Southern Africa

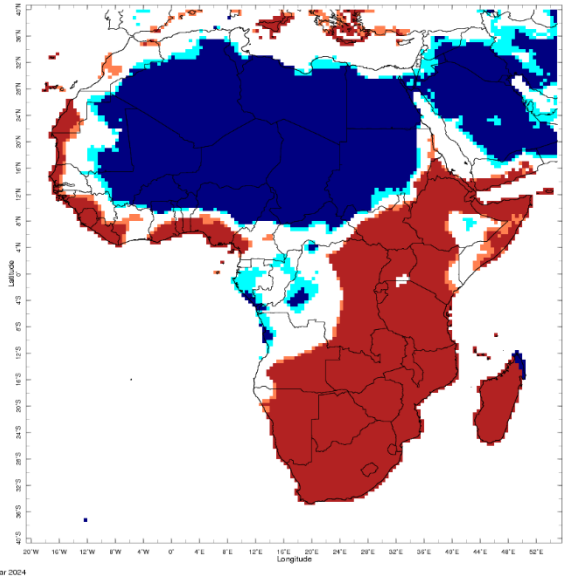
Current Status – Temperature percentiles



January



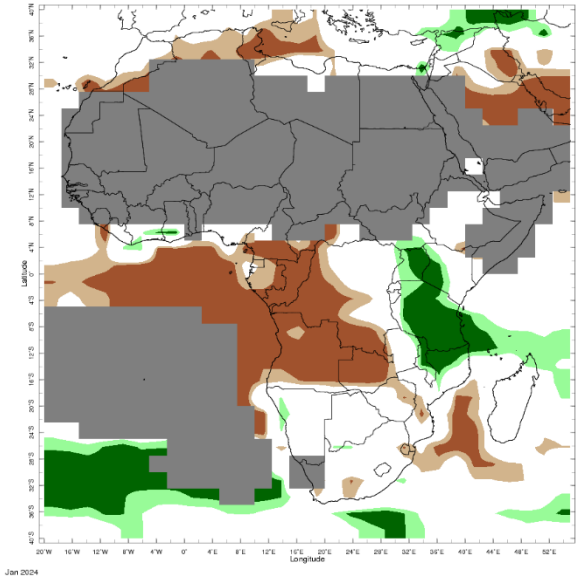
February



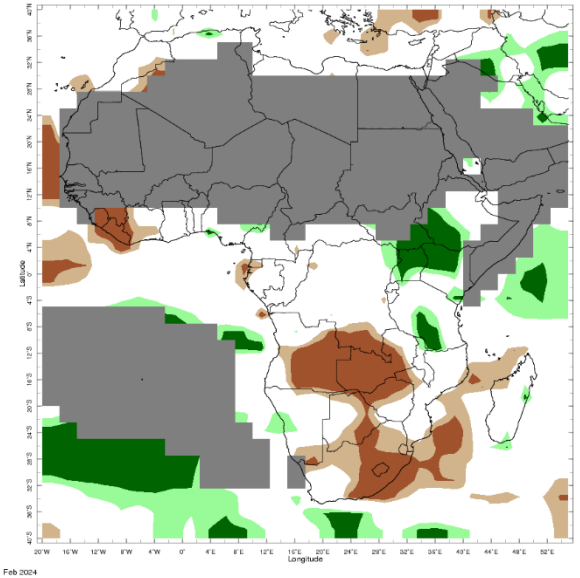
March

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.

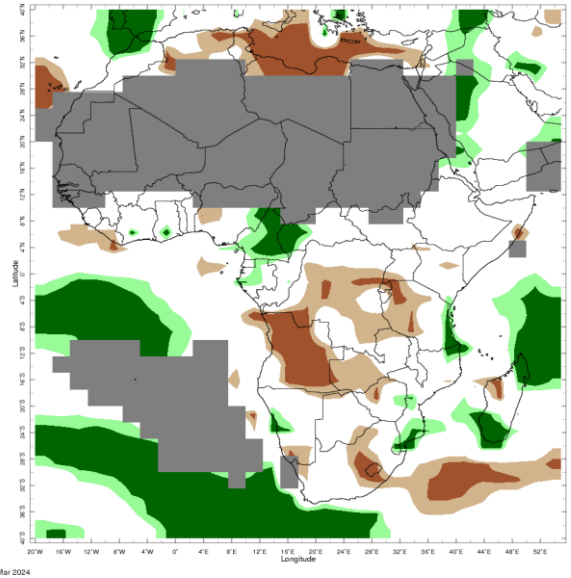
Current Status – Precipitation percentiles



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*	Very Dry	Normal
Liberia	Hot	Hot	Hot	Normal	Very Dry	Dry
Mali	Normal (1)	Cold	Cold	Normal*	Normal*	Normal*
Ghana	Mixed (2)	Mixed (2)	Mixed (2)	Normal	Normal	Normal
Nigeria	Hot (3)	Mixed (2)	Mixed (2)	Normal	Normal	Mixed (4)
Cameroon	Hot	Normal	Mixed (2)	Very Dry	Normal	Very Wet

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 north
(2) Note: Hot in the south, cold in the north
(3) Note: Normal in the north
(4) Note: Dry in the west, very wet in the east and normal elsewhere

Current Status – Central Africa

	Current Status: Temperature			Current Status: Rainfall		
	January	February	March	January	February	March
Niger	Normal	Cold	Cold	Normal*	Normal*	Normal*
Chad	Hot (1)	Cold	Cold	Normal*	Normal*	Normal*
DRC	Hot	Mixed (4)	Mixed (4)	Mixed (3)	Normal (2)	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: Normal in the west
(2) Note: Very dry in far south
(3) Note: Normal in the east, very dry in the west
(4) Note: Cool or cold in the west, hot in the east

Current Status – Eastern Africa (1)

	Current Status: Temperature			Current Status: Rainfall		
	January	February	March	January	February	March
Sudan	Hot	Cool	Cold	Normal*	Normal*	Normal*
South Sudan	Normal	Cool	Hot	Normal*	Very Wet	Normal
Uganda	Hot	Normal	Hot	Wet	Very Wet	Normal
Rwanda	Hot	Normal	Hot	Normal	Normal	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:

Current Status – Eastern Africa (2)

	Current Status: Temperature			Current Status: Rainfall		
	January	February	March	January	February	March
Tanzania	Hot (2)	Mixed	Hot	Very Wet	Normal (6)	Mixed (7)
Ethiopia	Mixed (3)	Mixed (3)	Hot (1)	Normal	Normal (6)	Normal
Kenya	Hot (4)	Normal	Hot	Normal (5)	Very Wet	Normal
Somalia	Hot	Normal (1)	Hot (1)	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: Normal in the south
(2) Note: Normal in the east
(3) Note: Hot in the northeast, cold in the southwest
(4) Note: Hot in the north, warm in the south
(5) Note: Very wet in the west
(6) Note: Very wet in the southwest
(7) Note: Very wet along the Coastal Plain, dry in the west and normal elsewhere

Current Status – Southern Africa

	Current Status: Temperature			Current Status: Rainfall		
	January	February	March	January	February	March
South Africa	Mixed	Hot (1)	Hot	Normal	Dry	Dry
Zambia	Hot	Hot	Hot	Mixed (3)	Very Dry	Dry
Zimbabwe	Mixed (4)	Normal	Hot	Normal	Dry	Normal
Mozambique	Hot (2)	Hot (2)	Hot	Normal	Normal	Mixed (6)
Malawi	Hot	Hot	Hot	Wet	Normal	Normal
Madagascar	Mixed (5)	Cold	Hot	Normal	Normal	Mixed (6)

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 east
(2) Note: Normal in the south
(3) Note: Dry in the north, wet or very wet in the south
(4) Note: Warm in the far north, cold in the southeast, normal elsewhere
(5) Note: Cold in the south
(6) Note: Very wet in the far north and 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*	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 wetter than normal	Climatological odds
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	Likely to be wetter than normal	Climatological odds
Mali	*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	Likely to be wetter than normal	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 near-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: May to October – Western Africa (2)

		Forecast summary		
		May	May to July	August to October
Nigeria	*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
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	**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: May to October – Central Africa

		Forecast summary		
		May	May to July	August to October
Niger	*Temperature*	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 wetter than normal	Likely to be near-normal
Chad	*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 wetter than normal	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**	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 (1)

		Forecast summary		
		May	May to July	August to October
Sudan	*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 near-normal	Likely to be wetter than normal	Likely to be near-normal
South Sudan	*Temperature*	**Much more likely to be warmer than normal**	**Much more likely to be warmer than normal**	Climatological odds
	Rainfall	Likely to be near-normal	Likely to be wetter than normal	Likely to be wetter than normal
Uganda	*Temperature*	**Much more likely to be warmer than normal**	**Much more likely to be warmer than normal**	Climatological odds
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Much more likely to be wetter than normal
Rwanda	*Temperature*	**Much more likely to be warmer than normal**	Likely to be warmer than normal	Likely to be near-normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Much more 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*	**Much more likely to be warmer than normal**	**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**	Climatological odds
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**	**Much more likely to be wetter than normal**	Much more likely to be wetter than normal
Kenya	*Temperature*	**Likely to be warmer than normal**	**Likely to be warmer than normal**	Much more likely to be warmer than normal
	Rainfall	**Likely to be wetter than normal**	**Likely to be near-normal**	Climatological odds
Somalia	*Temperature*	**Likely to be warmer than normal**	**Much more likely to be warmer than normal**	Much more likely to be warmer than normal
	Rainfall	**Much more likely to be wetter than normal**	**Much more likely to be wetter than 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 – Southern Africa (1)

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