

# AFRICA: Monthly Climate Outlook

## August to January

**Issued: July 2023**

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# Overview

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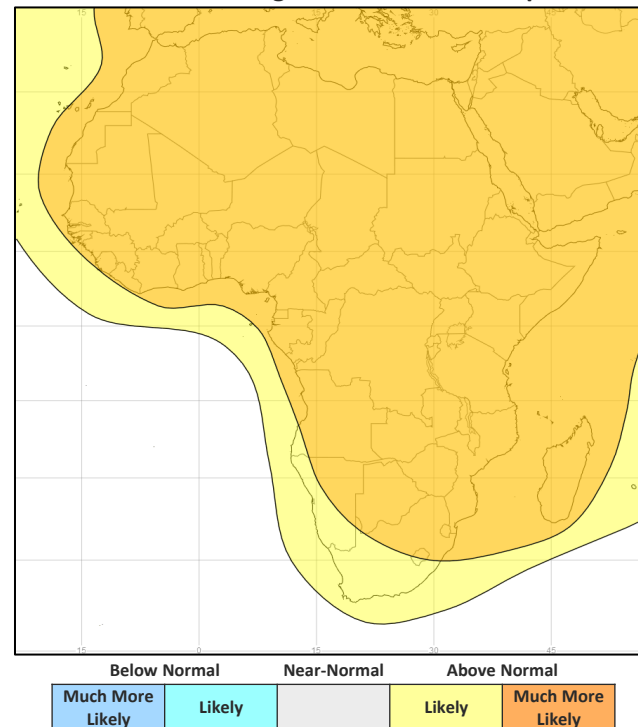
# Africa Current Status and Outlook - Temperature

**Current Status:** Over the last three months, many parts of central and western Africa have been cool or cold. The main exceptions in this region are Sierra Leone and DRC which were warm or hot.

In eastern Africa, Sudan has been cold over the last three months. Elsewhere, after mixed conditions in April, most areas in eastern Africa were warm or hot in May and June. Most of southern Africa was hot over the last three months. Madagascar has remained cold.

**Outlook:** Consistent with a warming climate, above average temperatures are very likely across the continent.

## 3-Month Outlook August to October - Temperature



# Africa Current Status and Outlook - Rainfall

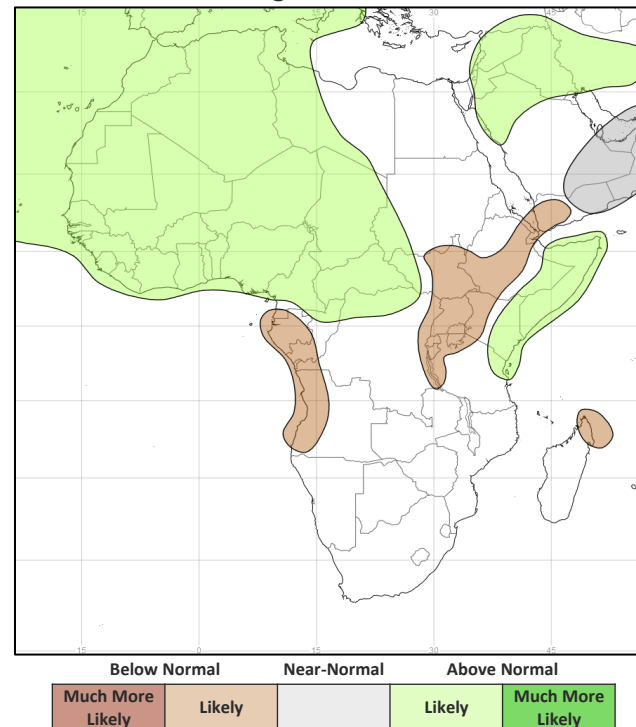
**Current Status:** During April and May, rainfall has been mostly near-normal across most of West and Central Africa, with conditions then turning wet or very wet during June. Many parts of Eastern Africa were wet or very wet in April before becoming dry in May. In June, rainfall was broadly near normal in East Africa. Mixed conditions in Southern Africa during April and June, while in May all areas were wet or very wet. Madagascar observed dry or very dry conditions in April and June, while in May rainfall was near-normal.

**Outlook:** Over the next three months, it is likely that the West African Monsoon will be more active than normal across many areas. Above average rainfall is likely across northwestern parts of the continent including Morocco and northern Algeria. Meanwhile, further south, drier than normal conditions are most likely for Gabon, Republic of Congo and western Angola.

Eastern parts of South Sudan, Rwanda, Burundi, Uganda, central and southern Ethiopia and western parts of Tanzania and Kenya are likely to be drier than normal. In contrast, wetter than normal conditions are likely across Somalia, eastern parts of Kenya, coastal regions of northern Tanzania and western South Sudan.

The predicted positive IOD will lead to an increased chance of and wetter than normal “Short Rains” season over East Africa though this doesn’t tend to peak until October and November.

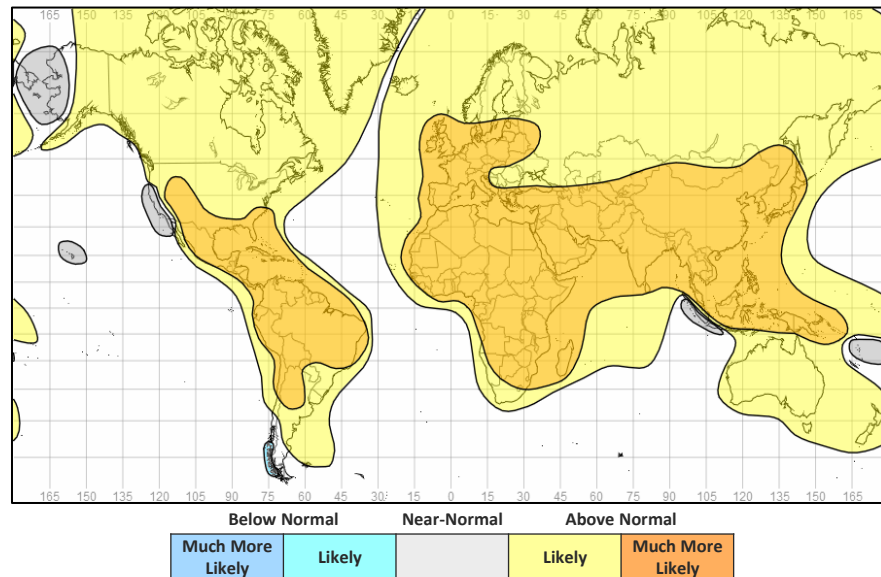
3-Month Outlook August to October - Rainfall



# Global Outlook - Temperature

**Outlook:** With the backdrop of a warming climate and the developing El Nino event, most land areas are likely to be warmer than normal with limited exceptions. These include northern Australia, southern parts of Indonesia and western Mexico/southwest USA where near normal temperatures are most likely

**3-Month Outlook August to October - Temperature**



# Global Outlook - Rainfall

## Outlook:

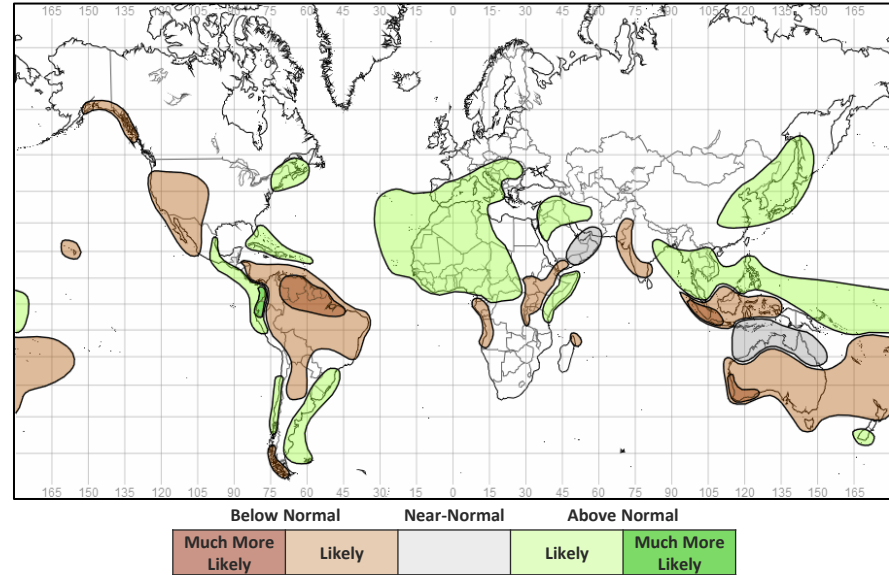
**El Niño-Southern Oscillation (ENSO)** – Sea surface temperatures across the equatorial Pacific are above average, in the Niño 3.4 region they are 1C above average. The atmospheric response has been slower but is now consistent with weak El Niño conditions. NOAA have declared El Niño to be underway.

A moderate El Niño is likely over the next three months and this event is expected to persist throughout the rest of the year and into the northern hemisphere winter. There is a small chance (~20%) chance of this El Niño becoming a strong event, with similar or larger impacts than the 1997-98 and 2015-16 later this year.

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. During El Niño, temperatures around the globe are likely or much more likely to be higher than normal, and this is reflected in the current outlooks.

**Indian Ocean Dipole (IOD)** – The Indian Ocean Dipole is currently neutral and is not influencing regional conditions. Seasonal prediction systems are consistent in suggesting a positive IOD will develop over the next couple of months. Should this occur, this would help reinforce the influence of El Niño over southeast Asia, Africa and Australia.

## 3-Month Outlook August to October - Rainfall



# Current Status

[Current Status maps](#)

[Western Africa](#)

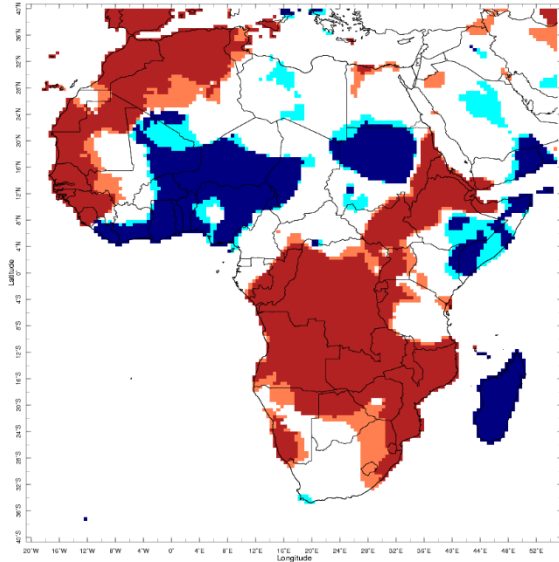
[Central Africa](#)

[Eastern Africa](#)

[Southern Africa](#)

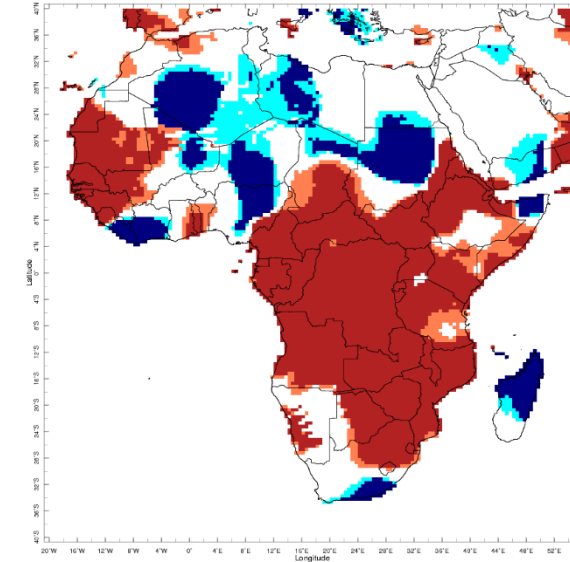
# Current Status – Temperature percentiles

In the absence of IRI's update, the June map has been created in-house at Met Office, using the same underpinning GHCN CAMS 2-metre temperature dataset processed into the identical quintile categories as shown for April and May.



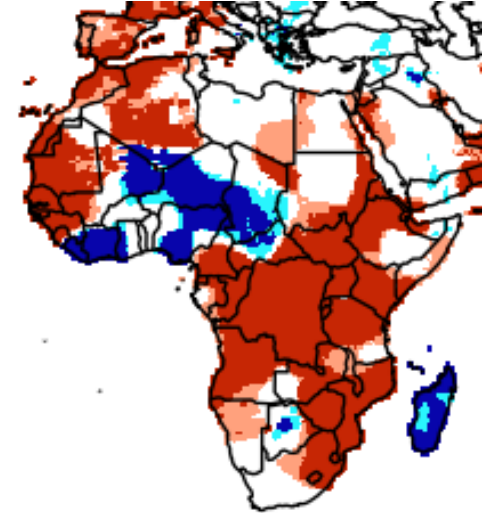
April 2023

April



May 2023

May



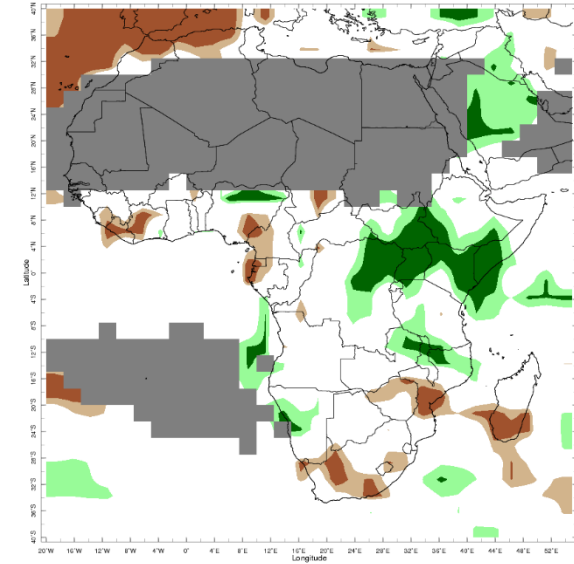
June



**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.

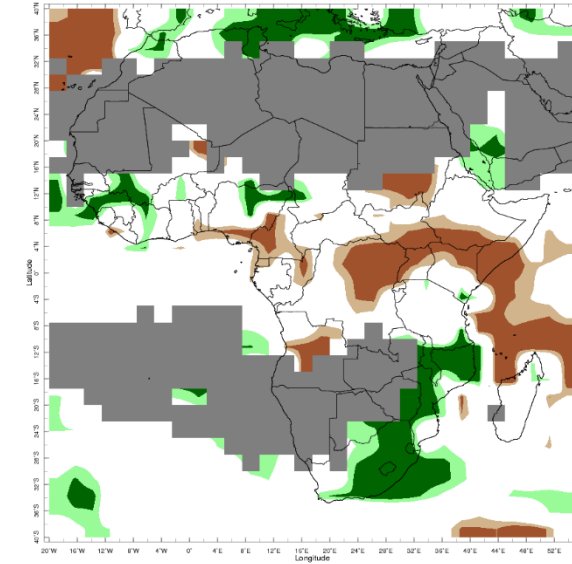


# Current Status – Precipitation percentiles



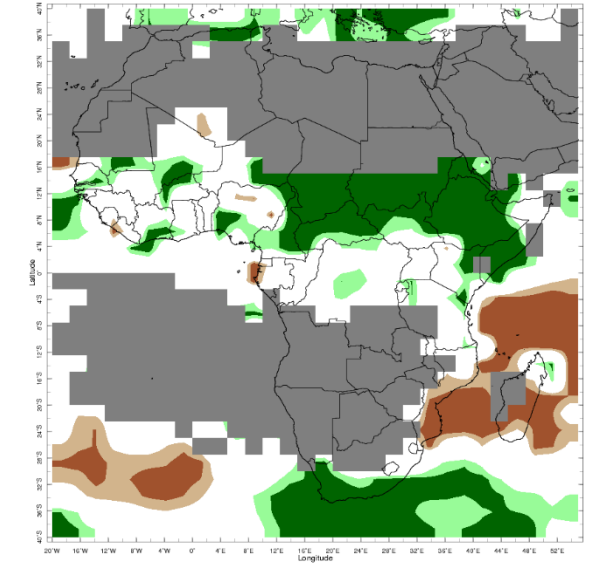
Apr 2023

April



May 2023

May



Jun 2023

June



**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

	April	May	June
Sierra Leone	Hot	Hot	Hot
Liberia	Cold	Cold	Cold
Mali	Mixed (2)	Mixed (2)	Mixed (2)
Ghana	Cold	Warm	Mixed (4)
Nigeria	Cold	Cool	Cold
Cameroon	Normal	Hot	Hot

### Current Status: Rainfall

April	May	June
Normal	Normal	Normal
Dry	Normal	Normal
Normal*	Normal*	Normal (3)
Normal	Normal	Normal
Normal (1)	Normal (1)	Normal (3)
Dry	Dry	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:** Dry in the far south or southeast and Wet in the far north
- (2) Note:** Cold in the east, Warm or Hot in the southwest
- (3) Note:** Wet in the south
- (4) Note:** Cold in the West normal elsewhere

# Current Status – Central Africa

	Current Status: Temperature		
	April	May	June
Niger	Cold	Cool	Cold
Chad	Normal (2)	Mixed (3)	Mixed (5)
DRC	Warm	Hot	Hot

	Current Status: Rainfall		
	April	May	June
Niger	Normal*	Normal*	Very Wet (4)
Chad	Normal*	Normal*	Very Wet
DRC	Normal (1)	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:** Very Wet in the east
- (2) **Note:** Cold in the west
- (3) **Note:** Cool or Cold in the north, Hot in the south
- (4) **Note:** Normal in the west
- (5) **Note:** Cold in the South, Hot in the North East and normal elsewhere

## Current Status – Eastern Africa (1)

Current Status: Temperature

	April	May	June
Sudan	Cold	Cold	Mixed (3)
South Sudan	Warm	Hot	Hot
Uganda	Normal	Hot	Hot
Rwanda	Normal	Hot	Hot

Current Status: Rainfall

April	May	June
Normal*	Dry	Very Wet
Normal (1)	Dry	Very Wet (2)
Very Wet	Dry	Normal
Wet	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:** Very Wet in the southeast
- (2) Note:** Normal in the south
- (3) Note:** Hot in the far south and East, normal elsewhere

## Current Status – Eastern Africa (2)

Current Status: Temperature

	April	May	June
Tanzania	Normal	Warm	Hot
Ethiopia	Mixed (1)	Warm	Mixed (5)
Kenya	Normal	Hot	Hot
Somalia	Cold	Warm	Warm

Current Status: Rainfall

	April	May	June
	Normal	Normal	Normal
	Normal (2)	Dry	Very Wet
	Very Wet	Dry	Very Wet (4)
	Wet (3)	Dry	Wet (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:** Cold in the southeast, warm or hot in the northwest
- (2) **Note:** Wet in the south
- (3) **Note:** Very Wet in the south and normal in the north
- (4) **Note:** Normal in the Highlands.
- (5) **Note:** Hot in the North and West, normal elsewhere

# Current Status – Southern Africa

### Current Status: Temperature

	April	May	June
South Africa	Normal	Mixed (4)	Mixed (7)
Zambia	Hot	Hot	Hot
Zimbabwe	Hot	Hot	Hot
Mozambique	Hot	Hot	Hot
Malawi	Hot	Hot	Hot
Madagascar	Cold	Cold	Cold

### Current Status: Rainfall

April	May	June
Dry	Wet	Normal (5)
Normal (1)	Wet	Normal*
Dry	Wet	Normal*
Mixed (2)	Very Wet	Very Dry
Wet	Very Wet	Normal*
Normal (3)	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:** Very Wet in the north
- (2) Note:** Wet in the far northwest, Dry in central regions and normal elsewhere
- (3) Note:** Dry in the south
- (4) Note:** Hot in northeast, Cold far south, else normal
- (5) Note:** Very Wet in the south
- (6) Note:** Very Dry in the south
- (7) Note:** Hot in the Northeast, normal elsewhere.

# 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: August to January – Western Africa (1)

		Forecast summary		
		August	August to October	November to January
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 wetter 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 wetter than normal	Likely to be wetter than normal	Climatological odds
Mali	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	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 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: August to January – Western Africa (2)

		Forecast summary		
		August	August to October	November to January
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	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	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

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# Outlook: August to January – Central Africa

		Forecast summary		
		August	August to October	November to January
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 wetter than normal	Likely to be wetter than normal	Climatological odds
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	Climatological odds
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	Climatological odds	Likely to be drier than normal in the far east, Likely to be wetter than normal in the north, Climatological odds 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: August to January – Eastern Africa (1)

		Forecast summary		
		August	August to October	November to January
Sudan	Temperature	<b>Much more likely to be warmer than normal</b>	<b>Much more likely to be warmer than normal</b>	Likely to be warmer than normal
	Rainfall	Climatological odds	Likely to be wetter than normal in the southwest, Climatological odds elsewhere	Climatological odds
South Sudan	Temperature	<b>Much more likely to be warmer than normal</b>	<b>Much more likely to be warmer than normal</b>	Likely to be warmer than normal
	Rainfall	Likely to be drier than normal in the west, Likely to be wetter than normal in the east	Likely to be drier than normal in the west, Likely to be wetter than normal in the east	Likely to be wetter than normal
Uganda	Temperature	<b>Much more likely to be warmer than normal</b>	<b>Much more likely to be warmer than normal</b>	Likely to be warmer than normal
	Rainfall	Likely to be drier than normal	Likely to be drier than normal	Likely to be wetter than normal
Rwanda	Temperature	<b>Much more likely to be warmer than normal</b>	<b>Much more likely to be warmer than normal</b>	Likely to be warmer than normal
	Rainfall	Likely to be drier than normal	Likely to be drier 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: August to January – Eastern Africa (2)

		Forecast summary		
		August	August to October	November to January
Tanzania	Temperature	<b>Much more likely to be warmer than normal</b>	<b>Much more likely to be warmer than normal</b>	Likely to be warmer than normal
	Rainfall	<b>Likely to be drier than normal</b> near Lake Victoria, <b>Likely to be near-normal</b> elsewhere	<b>Likely to be drier than normal</b> in the west, <b>Likely to be wetter than normal</b> along the coast, Climatological odds elsewhere	Likely to be wetter than normal
Ethiopia	Temperature	<b>Much more likely to be warmer than normal</b>	<b>Much more likely to be warmer than normal</b>	Likely to be warmer than normal
	Rainfall	<b>Likely to be drier than normal</b>	<b>Likely to be wetter than normal</b> in the southeast, <b>Likely to be drier than normal</b> elsewhere	Likely to be wetter than normal
Kenya	Temperature	<b>Much more likely to be warmer than normal</b>	<b>Much more likely to be warmer than normal</b>	Likely to be warmer than normal
	Rainfall	<b>Likely to be drier than normal</b> in the Highlands, Climatological odds elsewhere	<b>Likely to be drier than normal</b> in the west, <b>Likely to be wetter than normal</b> in the east	Likely to be wetter than normal
Somalia	Temperature	<b>Much more likely to be warmer than normal</b>	<b>Much more likely to be warmer than normal</b>	Likely to be warmer than normal
	Rainfall	Climatological odds	<b>Likely to be wetter than normal</b>	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: August to January – Southern Africa (1)

		Forecast summary		
		August	August to October	November to January
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	Likely to be drier than normal
Zambia	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
Zimbabwe	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
Mozambique	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

**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: August to January – Southern Africa (1)

		Forecast summary		
		August	August to October	November to January
Malawi	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
Madagascar	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 in the far northeast, 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.

# 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](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>

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 64 Statement](#) (May 2023)

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

Southern African Regional Climate Outlook Forum (SARCOF): <http://csc.sadc.int/en/news-and-events/338-the-twenty-sixth-southern-africa-regional-climate-outlook-forum-sarcof-26> (August 2022)

PRÉvisions climatiques Saisonnières en Afrique, pays du Golfe de Guinée (PRESAGG): [https://agrhytmet.cilss.int/doss/tocharg/2023/02/COMMUNIQUE-FINAL\\_PRESAGG\\_2023\\_VF\\_Engl.pdf](https://agrhytmet.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](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 CPTC (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

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