AFRICA: Monthly Climate Outlook
August to May

Issued: November 2021

Overview

Africa Current Status and Outlook – Temperature

Africa Current Status and Outlook – Rainfall

Global Outlook – Temperature

Global Outlook – Rainfall

Africa Current Status and Outlook - Temperature

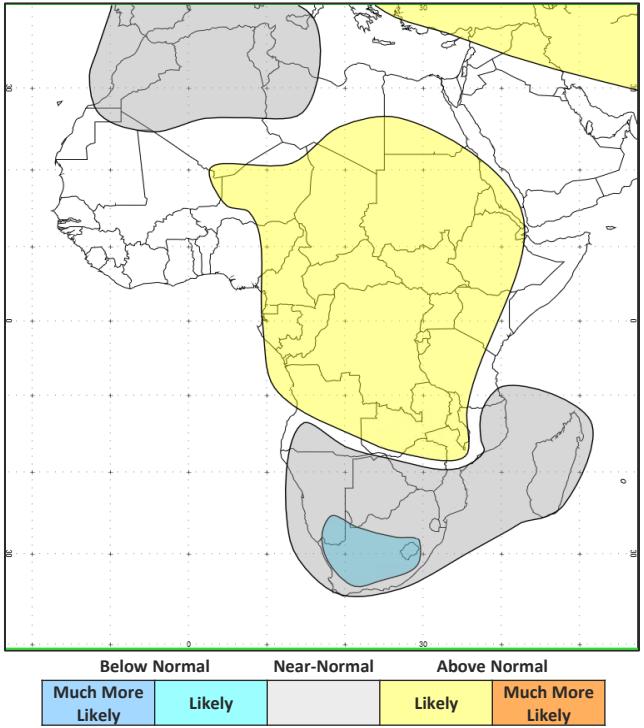
Current Status:

Most of Africa has experienced warm or hot conditions over the past three months, apart from the far south, and especially Madagascar which has been cold.

Outlook:

For the next three months, much of central Africa is likely to be warmer than normal. Temperatures are likely to be near-normal in the north-west and much of southern Africa. The only areas likely to be colder than normal are South Africa, Lesotho and southern Namibia.

3-Month Outlook December to February - Temperature



Africa Current Status and Outlook - Rainfall

Current Status:

Parts of East Africa experienced drier than normal conditions particularly in August and October.

Wet or Very Wet conditions have been observed across parts of West Africa, in association with an active West African Monsoon. Localised Wet or Very Wet conditions were also experienced across parts of northern Nigeria and southern Chad.

Outlook:

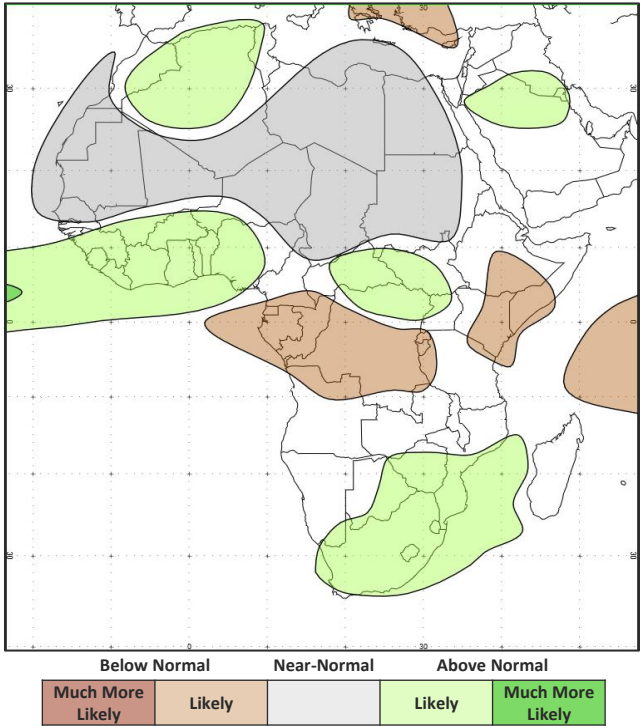
La Niña typically increases southern hemisphere summer rainfall in southern Africa. During the next three months, it is likely to be wetter than normal in the southern Africa, particularly for South Africa, Botswana, Mozambique and Zimbabwe.

Elsewhere in Africa, the influence of La Nina is typically less strong during November to January. However, it is likely to be wetter than normal for countries on the north coast of the Gulf of Guinea, (especially Sierra Leone and Liberia) as well as western parts of South Sudan, CAR and northern DRC.

It is likely to be drier than normal for parts of eastern Africa and across tropical regions of western Africa, including parts of the DRC, Angola and Cameroon.

For north Africa, it is likely to be wetter than normal in the northwest, particularly eastern Morocco and much of Algeria.

3-Month Outlook December to February - Rainfall



Global Outlook - Temperature

Outlook:

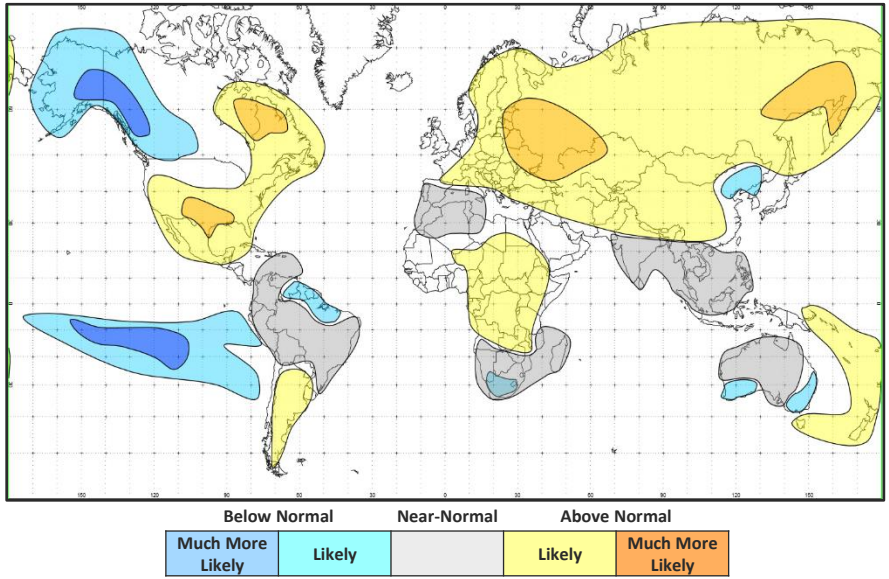
Consistent with the gradual warming of the climate, many parts of the globe are likely to see warmer than normal conditions through the next three months.

However, sea surface temperatures in the tropical Pacific Ocean are cooler than average at present - a phenomenon known as La Niña. This can influence climatic conditions on a global scale.

With La Niña conditions expected to persist into 2022, parts of Australia, southern Africa, the northern half of South America and parts of north-eastern North America are likely to be colder than normal.

La Niña is not the only driver of global weather and its effects on global weather vary each time it occurs. This means for many parts of Africa, Europe and Asia, mixed or conflicting signals from seasonal models are apparent.

3-Month Outlook December to February - Temperature



Global Outlook - Rainfall

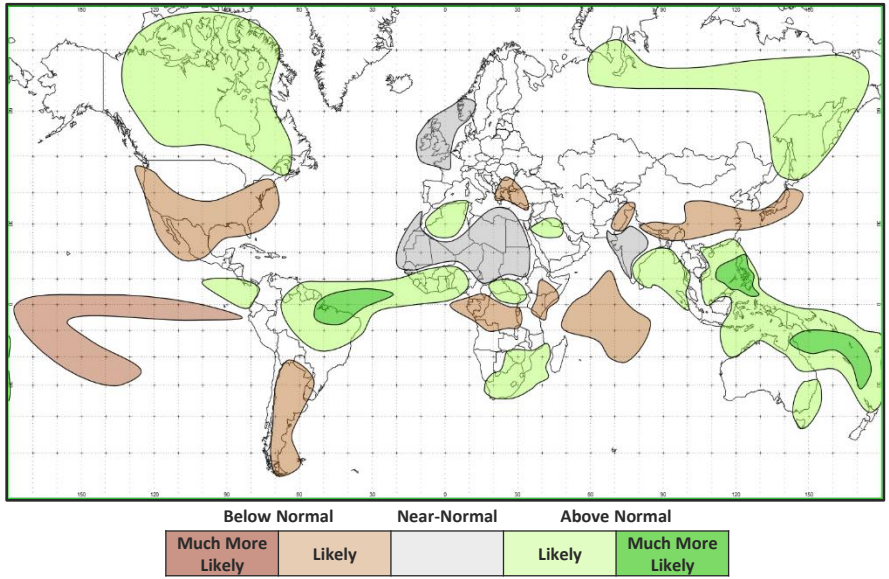
Outlook:

La Niña has a strong influence on global rainfall patterns. In broad terms it tends to increase rainfall totals in many land areas of the tropics, with reduced rainfall to the north and south of this. More information on typical impacts can be found here https://www.metoffice.gov.uk/research/climate/seasonal-to-decadal/gpc-outlooks/el-nino-la-nina/enso-impacts .

For the next three months and consistent with a typical La Niña influence, Asia, southern Africa and northern parts of South America are likely to be wetter than normal. Conversely, conditions are likely to be drier than normal for southern North America, southern South America and eastern China.

For areas where the link between rainfall patterns and La Nina is less apparent, such as parts of central and north Africa, Europe and Asia, seasonal models are showing mixed or conflicting signals. Only significant seasonal trends away from normal have been identified.

3-Month Outlook December to February - Rainfall



Current Status

Current Status maps

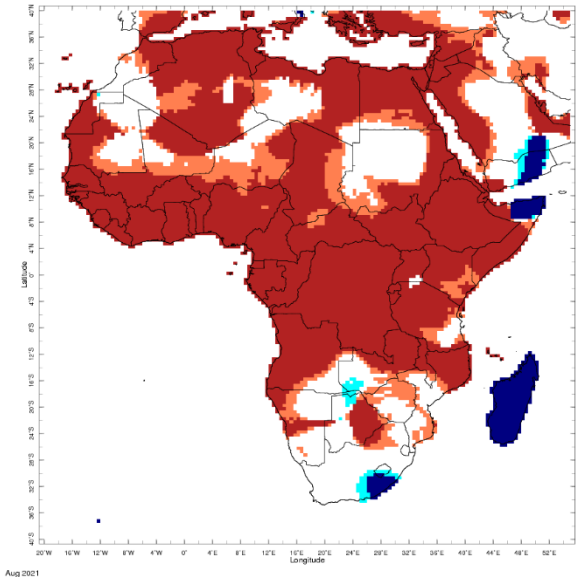
Western Africa

Central Africa

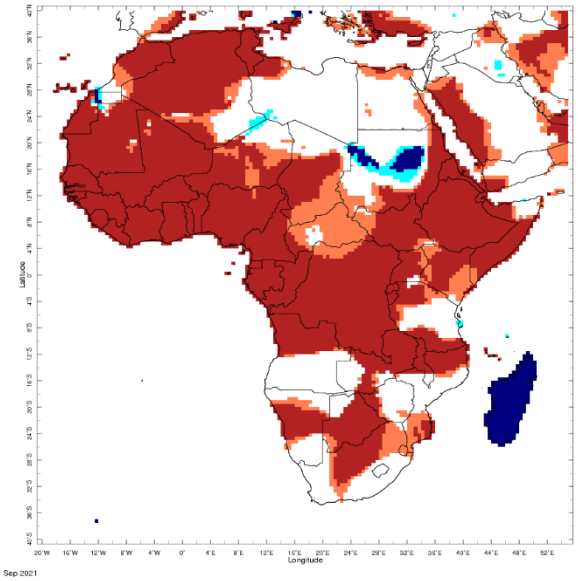
Eastern Africa

Southern Africa

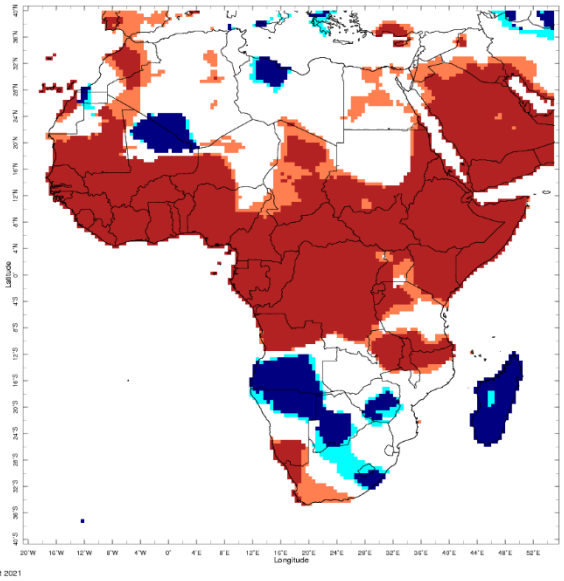
Current Status – Temperature percentiles



August



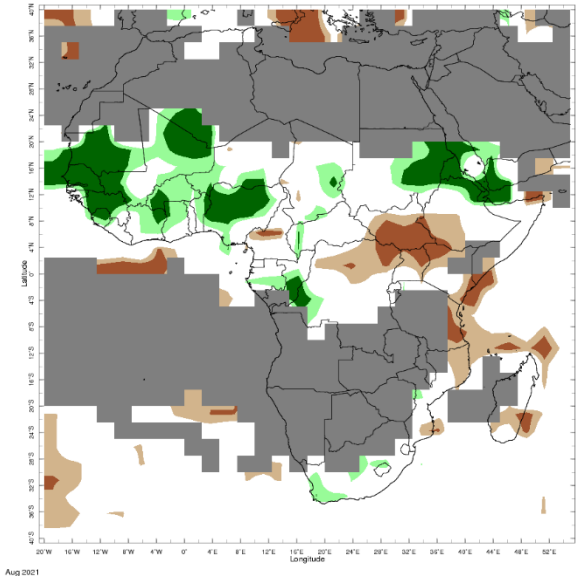
September



October

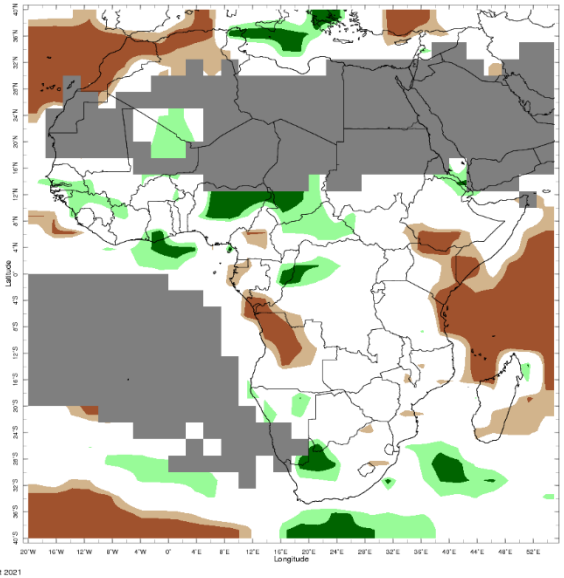
Notes: The percentiles shown in the map indicate a ranking of temperature, with the 0th percentile being the coolest and the 100th percentile being the warmest in the 1981-2010 climatology. Orange and red shading represent values above the 80th (Warm) and 90th (Hot) percentile, respectively; regions 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



August

September



October

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		
	August	September	October	August	September	October
Sierra Leone	Hot	Hot	Hot	Wet	Normal	Normal
Liberia	Hot	Hot	Hot	Normal	Normal	Normal
Mali	Hot	Hot	Mixed (1)	Wet	Normal	Normal
Ghana	Hot	Hot	Hot	Wet	Mixed (2)	Normal (4)
Nigeria	Hot	Hot	Hot	Very Wet	Mixed (3)	Mixed (5)
Cameroon	Hot	Hot	Hot	Normal	Mixed (3)	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 south, cold in the north
(2) **Note**: Very Wet in the south; Normal elsewhere
(3) **Note:** Very Wet in the northeast; Normal in the southwest
(4) **Note:** Very Wet along the coast; otherwise, normal
(5) **Note:** Very wet in the north; otherwise, normal

Current Status – Central Africa

	Current Status: Temperature			Current Status: Rainfall		
	August	September	October	August	September	October
Niger	Warm	Hot	Mixed	Normal	Wet	Normal
Chad	Hot	Hot	Mixed	Normal	Normal	Mixed (1)
DRC	Hot	Hot	Hot	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: Wet/Very Wet in the south; normal elsewhere

Current Status – Eastern Africa (1)

	Current Status: Temperature			Current Status: Rainfall		
	August	September	October	August	September	October
Sudan	Mixed (1)	Normal	Mixed	Mixed (1)	Very Wet	Normal
South Sudan	Hot	Hot	Hot	Dry	Normal	Normal
Uganda	Hot	Hot	Hot	Dry	Very Wet	Normal
Rwanda	Hot	Hot	Hot	Normal	Very Wet	Normal

Notes:

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

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

Additional Information:

(1) Note: Hot in the far east, normal elsewhere.
(2) Note: Very wet in the far east, normal elsewhere.
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Current Status – Eastern Africa (2)

	Current Status: Temperature			Current Status: Rainfall		
	August	September	October	August	September	October
Tanzania	Hot	Normal	Normal	Dry	Mixed (2)	Normal
Ethiopia	Hot	Hot	Hot	Mixed (1)	Normal	Mixed (3)
Kenya	Hot	Hot	Hot	Dry	Normal	Mixed (4)
Somalia	Hot	Hot	Hot	Normal	Normal	Mixed (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: Ranging from Very Wet in the far north, to Very Dry in the extreme south.
(2) Note: Very Wet around Lake Victoria; Normal elsewhere
(3) Note: Very Dry in the south; otherwise, normal
(4) Note: Very Dry in the north and northeast; otherwise, normal
(5) Note: Very Dry in the far south; otherwise, normal

Current Status – Southern Africa

	Current Status: Temperature			Current Status: Rainfall		
	August	September	October	August	September	October
South Africa	Normal	Mixed (2)	Mixed	Normal	Mixed (3)	Mixed (4)
Zambia	Mixed (1)	Hot	Mixed	Normal*	Normal*	Normal*
Zimbabwe	Warm	Normal	Cool	Normal*	Normal*	Normal*
Mozambique	Mixed (2)	Mixed (2)	Normal	Mixed (3)	Normal	Normal
Malawi	Hot	Hot	Hot	Normal*	Normal*	Normal*
Madagascar	Cold	Cold	Cold	Normal	Normal	Mixed (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 northeast, but Cold in the southwest
(2) Note: Hot in the north, normal in the south
(3) Note: Dry in the far north, normal elsewhere
(4) Note: Very Wet in the northeast; near normal elsewhere
(5) Note: Dry in the far south and far north; near 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: December to May – Western Africa (1)

		Forecast summary		
		December	December to February	March to May
Sierra Leone	*Temperature*	Climatological odds	Climatological odds	Likely to be near-normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds
Liberia	*Temperature*	Climatological odds	Climatological odds	Likely to be near-normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds
Mali	*Temperature*	Climatological odds	Climatological odds	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal in the south; Likely to be near-normal elsewhere	Likely to be wetter than normal in the south; Likely to be near-normal elsewhere	Climatological odds
Ghana	*Temperature*	Climatological odds	Climatological odds	Likely to be near-normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds

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Outlook: December to May – Western Africa (2)

		Forecast summary		
		December	December to February	March to May
Nigeria	*Temperature*	Mainly Likely to be near-normal, but Likely to be warmer than normal in the east	Mainly Likely to be near-normal, but Likely to be warmer than normal in the east	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds
Cameroon	*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 near-normal

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Outlook: December to May – Central Africa

		Forecast summary		
		December	December to February	March to May
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; Likely to be near-normal elsewhere	Likely to be wetter than normal in the far south; Likely to be near-normal 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 near-normal	Likely to be near-normal	Climatological odds
Democratic Republic of Congo	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal in the north, Likely to be drier than normal in the south	Likely to be wetter than normal in the north, Likely to be drier than normal in the south	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: December to May – Eastern Africa (1)

		Forecast summary		
		December	December to February	March to May
Sudan	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Climatological odds
	Rainfall	Likely to be near-normal	Likely to be near-normal	Climatological odds
South Sudan	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds
Uganda	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Likely to be wetter than normal
Rwanda	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Likely to be wetter than normal

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Outlook: December to May – Eastern Africa (2)

		Forecast summary		
		December	December to February	March to May
Tanzania	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be near-normal
	Rainfall	Climatological odds	Climatological odds	Likely to be near-normal
Ethiopia	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be drier than normal in the south; Climatological odds elsewhere	Likely to be drier than normal in the south; Climatological odds elsewhere	Climatological odds
Kenya	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be near-normal
	Rainfall	Likely to be near-normal	Likely to be drier than normal	Climatological odds
Somalia	*Temperature*	Climatological odds	Climatological odds	Likely to be warmer than normal
	Rainfall	Climatological odds	Climatological odds	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: December to May – Southern Africa (1)

		Forecast summary		
		December	December to February	March to May
South Africa	*Temperature*	Mainly Likely to be near-normal, but Likely to be colder than normal in the southeast	Mainly Likely to be near-normal, but Likely to be colder than normal in the southeast	Likely to be near-normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds
Zambia	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be near-normal
	Rainfall	Climatological odds	Climatological odds	Climatological odds
Zimbabwe	*Temperature*	Likely to be warmer than normal in the north; otherwise Likely to be near-normal	Likely to be warmer than normal in the north; otherwise Likely to be near-normal	Likely to be near-normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds
Mozambique	*Temperature*	Likely to be near-normal	Likely to be near-normal	Likely to be near-normal
	Rainfall	Likely to be near-normal	Likely to be wetter than normal	Climatological odds

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Outlook: December to May – Southern Africa (1)

		Forecast summary		
		December	December to February	March to May
Malawi	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be near-normal
	Rainfall	Climatological odds	Climatological odds	Climatological odds
Madagascar	*Temperature*	Likely to be near-normal	Likely to be near-normal	Likely to be warmer than normal
	Rainfall	Climatological odds	Climatological odds	Likely to be near-normal

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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/events/ghacof-59-climate-services-for-resilience/ (August 2021)
PRÉvisions climatiques Saisonnières en Afrique Soudano-Sahélienne (PRESASS): http://acmad.net/rcc/presassS.php (April 2021)
Southern African Regional Climate Outlook Forum (SARCOF): http://csc.sadc.int/en/news-and-events/326-climate-outlook-forum-2021-sarcof-25 (August 2021)
PRÉvisions climatiques Saisonnières en Afrique, pays du Golfe de Guinée (PRESAGG): http://acmad.net/rcc/presagg.php (February 2021)
South-West Indian Ocean Climate Outlook Forum (SWIOCOF) - https://www.commissionoceanindien.org/wp-content/uploads/2020/09/SWIOCOF-9_Statement.pdf (Sept 2020)

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 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