AFRICA: Monthly Climate Outlook March to December

Issued: June 2022

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

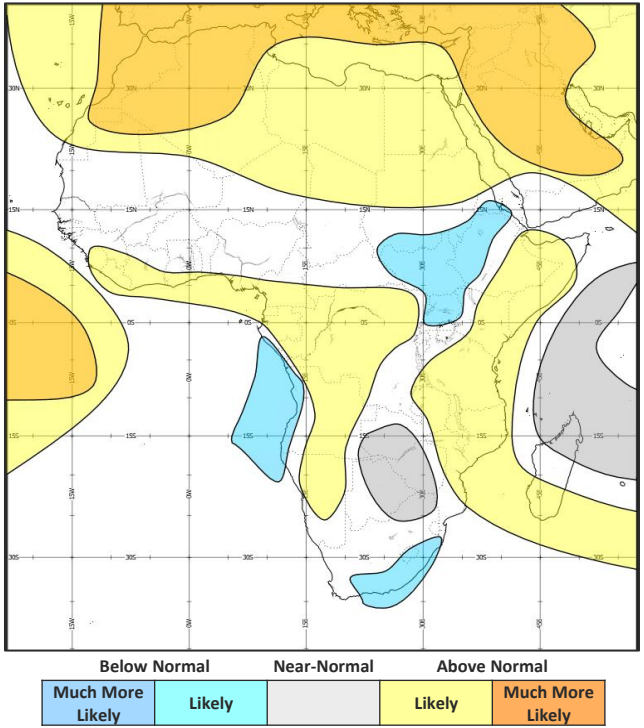
Current Status:

Over the last three months, tropical parts of the continent have had mostly hot conditions. Parts of southern Africa have experienced near- or below normal temperatures, particularly Madagascar. Across northern Africa temperatures have been near- or below normal widely in March. In April and May, much of North Africa experienced warm or hot conditions, with the exception of colder conditions across parts of central and southern Libya and Algeria.

Outlook:

For the next three months, a continuation of the pattern seen over the last three months is most likely, with it likely to much more likely to be warmer in Northern Africa. It is likely to be cooler than normal in parts of East Africa, particularly South Sudan, Ethiopia, Rwanda and Uganda as well as parts of coastal west Africa, and the southeast of South Africa.

3-Month Outlook July to September - Temperature



Africa Current Status and Outlook - Rainfall

Current Status:
During March to May, many parts of East Africa experience dry or very dry conditions during their seasonal 'Long Rains'; for some regions this was the fourth failed or poor rainy season. On 30 May 2022, the Food and Agriculture Agency of the United Nations (FAO) released a joint statement from meteorological agencies, including the UK Met Office, and humanitarian partners – "*The latest long-lead seasonal forecasts, supported by a broad consensus from meteorological experts, indicate that there is now a concrete risk that the* ***October-December (OND) rainy season could also fail.***" The full statement can be seen here.

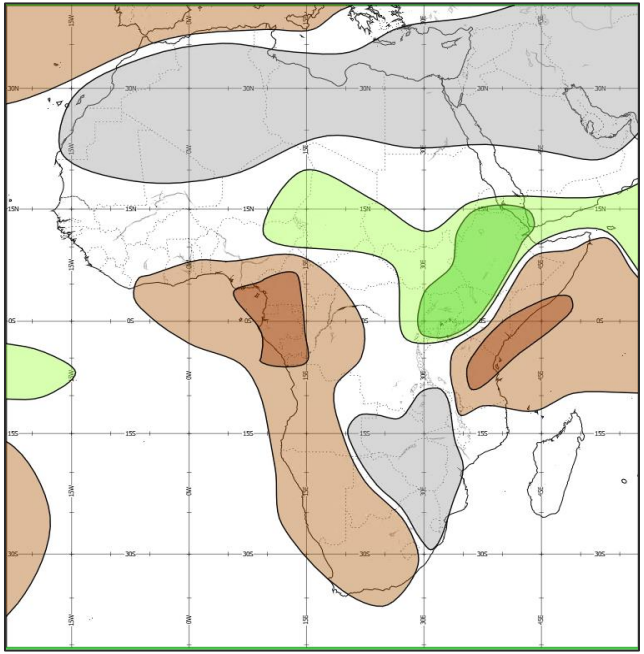
Conversely, in parts of southeast Africa, particularly eastern South Africa, as well as Lesotho and Eswatini, were wet or very wet during April. These areas also experienced wet conditions into May, although less widespread than April. Parts of central Africa, including the southern Sahel also experienced wet to very wet conditions in April and May.

Outlook:
During La Nina years, the Sahel is typically wetter than normal during the Northern Hemisphere summer. Most long-range forecasting models predict wetter than normal conditions for parts of the Sahel region during the next three months, however this is may vary depending on the persistence and likely strength of La Niña.

In the next three months, across Ethiopia, Chad, South Sudan, northern Somalia and regions around Lake Victoria, it is likely to be wetter than normal. Many parts of western and the west of southern Africa are likely to experience dry conditions, with parts of Cameroon and Gabon much more likely to be drier than normal.

Looking further ahead to September onwards, a drier than normal Short Rains season is likely across East Africa, particularly in coastal regions. Forecasts for concurrent La Niña and negative Indian Ocean Dipole, along with high-level agreement from long-range models support this outlook. Should this materialise, this would be the fifth consecutive poor or failed rainy season exacerbating the already severe humanitarian emergency in the region.

3-Month Outlook July to September - Rainfall



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

Global Outlook - Temperature

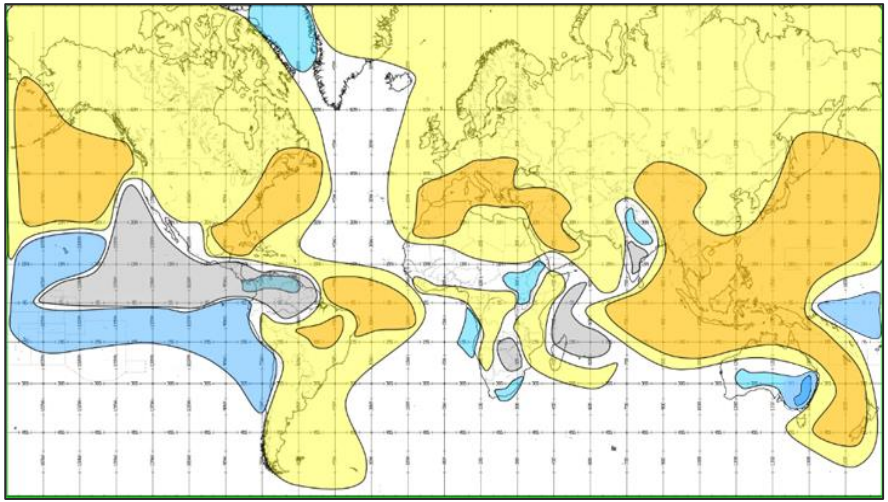
Outlook:

La Niña is likely to persist into the Northern hemisphere autumn. More details can be found in the precipitation section.

Many parts of the globe are likely to be warmer than normal during the next three months. However, consistent with La Niña, parts of Australia, the Indian sub-continent, The Sahel region in Africa and parts of southern Africa are likely to be colder than normal.

The tropical Pacific is also likely to be colder than normal, with these colder temperatures also affecting coastal and equatorial parts of South America.

3-Month Outlook July to September - Temperature



Global Outlook - Rainfall

Outlook:

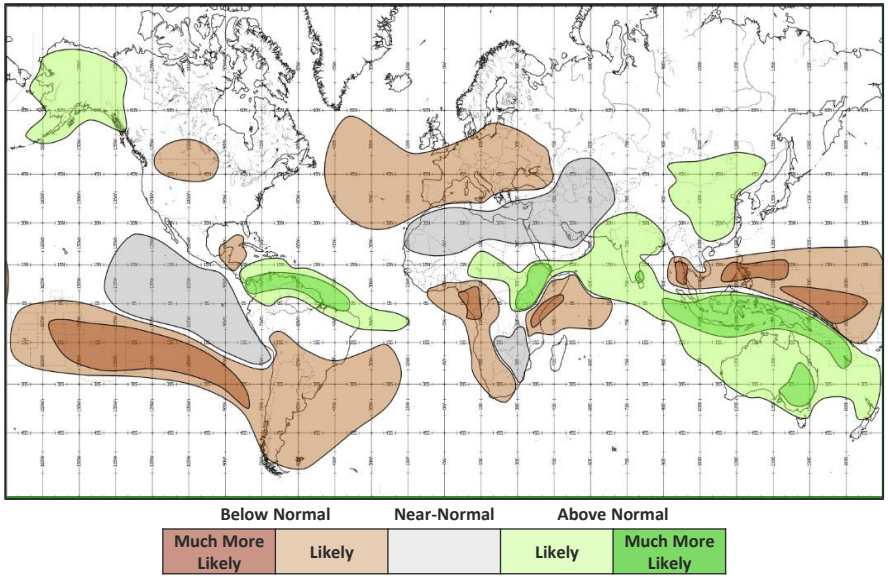
El Niño-Southern Oscillation (ENSO) – The 2021-22 La Niña event continues in the tropical Pacific Ocean. Both oceanic and atmospheric indicators have changed little over the past month.

The latest ENSO outlook issued by NOAA (27th June) states that although La Niña is likely to continue, the odds decrease into the late Northern Hemisphere summer (52% chance in July-September 2022) before slightly increasing during the Northern Hemisphere autumn and early winter 2022 (58-59% chance).

Therefore, it seems likely that La Niña will remain a dominant driver of global weather patterns over the next few months at least, more especially for tropical regions. With a couple of notable exceptions (e.g., East Africa) La Niña, very broadly speaking, tends to increase the likelihood of wetter than normal conditions across many land areas of the tropics. 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

Indian Ocean Dipole (IOD) – Seasonal forecast systems continue to suggest a negative IOD, potentially strongly negative, is likely to develop during the Northern Hemisphere summer. Should this occur, this would start to influence rainfall patterns both around the Indian Ocean basin and more widely. However, it should be noted skilful prediction of the IOD is limited at this time of year so forecasts of a negative phase still need to be treated with caution.

3-Month Outlook July to September - Rainfall



Current Status

Current Status maps

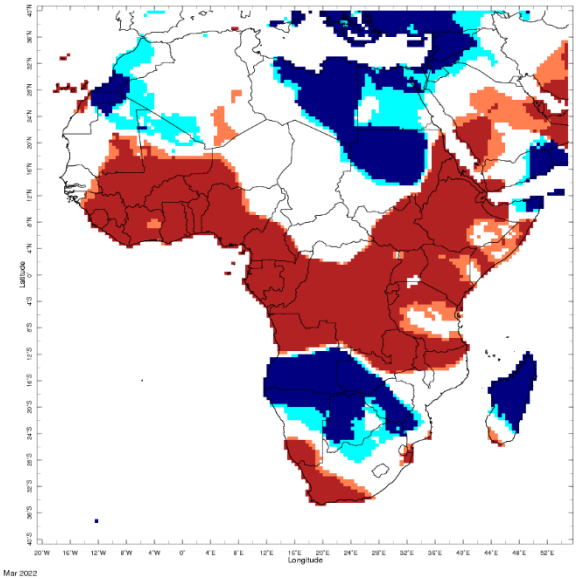
Western Africa

Central Africa

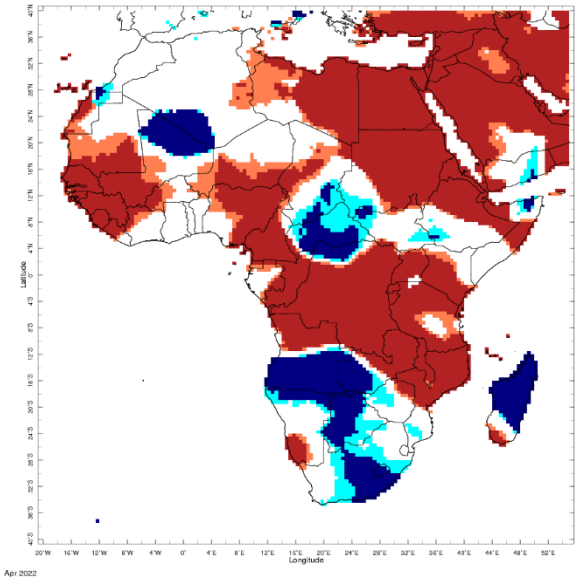
Eastern Africa

Southern Africa

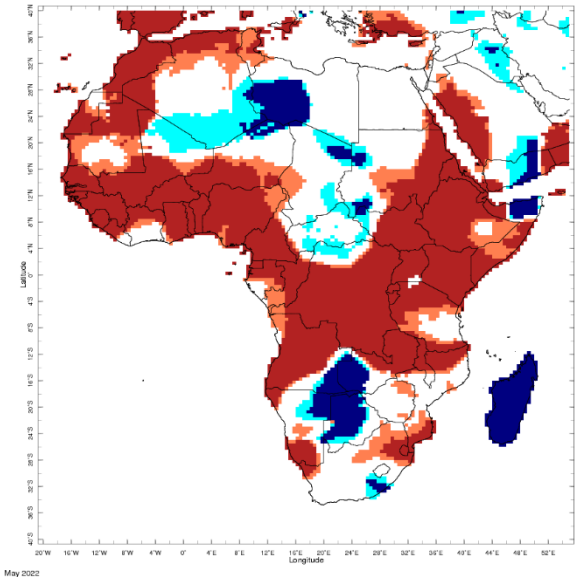
Current Status – Temperature percentiles



March



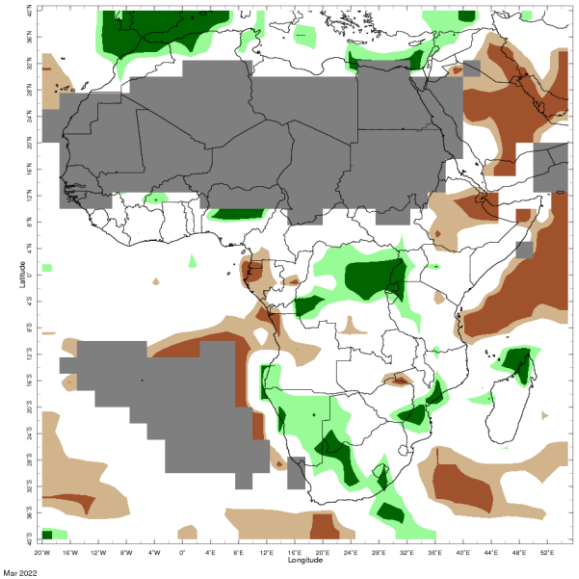
April



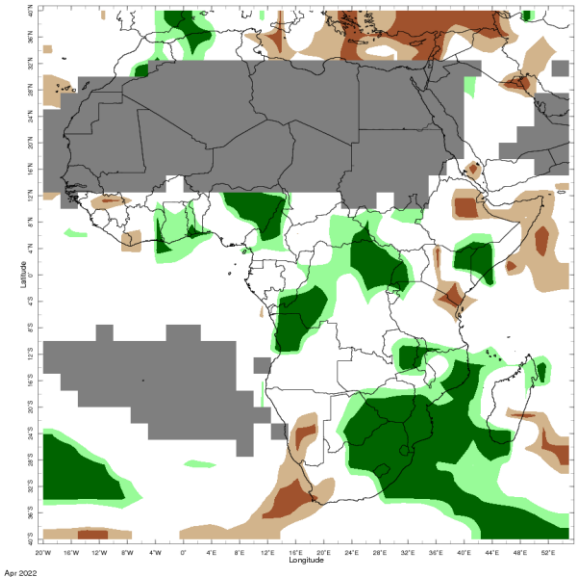
May

Notes: The percentiles shown in the map indicate a ranking of temperature, with the 0th percentile being the coolest and the 100th percentile being the warmest in the 1981-2010 climatology. Orange and red shading represent values above the 80th (Warm) and 90th (Hot) percentile, respectively; regions shaded in light and dark blue indicate values below the 20th (Cool) and 10th (Cold) percentile, with respect to the 1981-2010 climatology. The data used in this map are from the NOAA Climate Prediction Center.

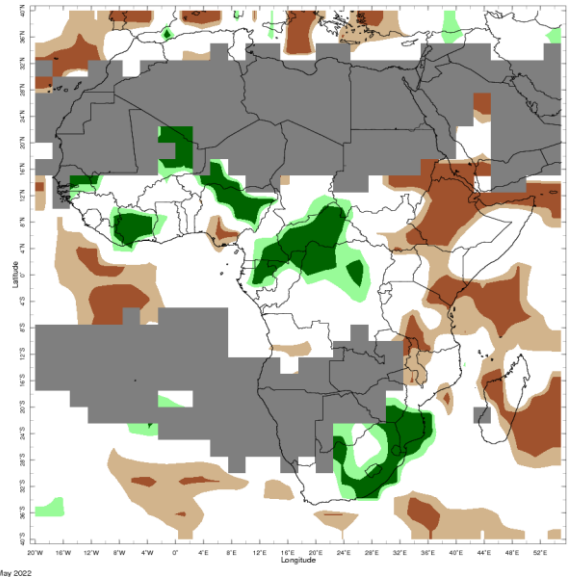
Current Status – Precipitation percentiles



March



April



May

Notes: The percentiles shown in the map indicate a ranking of rainfall, with the 0th percentile being the driest and the 100th percentile being the wettest in the 1981-2010 climatology. Green and dark green shading represent values above the 80th (Wet) and 90th (Very Wet) percentile, respectively; regions shaded in light and dark brown indicate rainfall below the 20th (Dry) and 10th (Very Dry) percentile, with respect to the 1981-2010 climatology. Grey areas on the map mask out regions that receive less than 10 mm/month of rainfall on normal in the 1981-2010 climatology for the month. The data used in this map are from the NOAA Climate Prediction Center.

Current Status – Western Africa

	Current Status: Temperature			Current Status: Rainfall		
	March	April	May	March	April	May
Sierra Leone	Hot	Hot	Hot	Normal	Normal	Normal
Liberia	Hot	Hot	Mixed (2)	Normal	Normal	Normal
Mali	Mixed (1)	Mixed (1)	Mixed (3)	Normal*	Normal*	Normal
Ghana	Hot	Normal	Hot	Normal	Wet	Normal
Nigeria	Hot	Hot	Hot	Normal (3)	Normal (4)	Normal (5)
Cameroon	Hot	Hot	Hot	Normal	Wet	Normal (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: Cool in far north, hot elsewhere
(2) Note: Hot in the west, normal elsewhere
(3) Note: Hot in the south, cold in the north
(4) Note: Wet or very wet in some central areas
(5) Note: Very Wet in the northeast
(6) Note: Wet in the far southeast

Current Status – Central Africa

	Current Status: Temperature			Current Status: Rainfall		
	March	April	May	March	April	May
Niger	Mixed (1)	Mixed (1)	Mixed (1)	Normal*	Normal*	Normal*
Chad	Normal	Mixed (2)	Mixed (2)	Normal*	Normal*	Normal*
DRC	Hot	Hot	Hot	Mixed (3)	Mixed (4)	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 southwest, normal elsewhere
(2) Note: Cool/cold In the southeast; normal or warm elsewhere.
(3) Note: Normal for most areas, though very wet in the far east
(4) Note: Wet or very wet in central and northern areas, normal elsewhere
(5) Note: Wet in the far northeast

Current Status – Eastern Africa (1)

	Current Status: Temperature			Current Status: Rainfall		
	March	April	May	March	April	May
Sudan	Mixed (1)	Mixed (2)	Mixed (3)	Normal*	Normal*	Normal*
South Sudan	Hot	Normal	Mixed (3)	Normal	Normal	Normal*
Uganda	Hot	Hot	Hot	Wet	Wet	Normal*
Rwanda	Hot	Hot	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:

(1) Note: Normal in the south, cool or cold in the north
(2) Note: Cool in the southwest, hot elsewhere
(3) Note: Cool in the west, hot elsewhere

Current Status – Eastern Africa (2)

	Current Status: Temperature			Current Status: Rainfall		
	March	April	May	March	April	May
Tanzania	Warm	Hot	Mixed (3)	Normal	Normal	Mixed (6)
Ethiopia	Hot	Mixed (1)	Hot	Dry	Normal	Dry
Kenya	Hot	Hot	Hot	Normal	Mixed (5)	Dry
Somalia	Warm	Normal (2)	Mixed (4)	Normal	Mixed (6)	Normal (7)

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, cold in the far southwest, normal elsewhere
(2) Note: Hot in the far north
(3) Note: Normal in the southeast. Hot elsewhere
(4) Note: Hot in the west, very cold in the east
(5) Note: Very Wet in the northeast and dry in the southeast; Normal elsewhere
(6) Note: Very Wet in the south; Dry in the north; Normal elsewhere
(7) Note: Dry in the far north

Current Status – Southern Africa

	Current Status: Temperature			Current Status: Rainfall		
	March	April	May	March	April	May
South Africa	Mixed (1)	Cool	Mixed (4)	Mixed (6)	Mixed (7)	Mixed (7)
Zambia	Mixed (2)	Mixed (2)	Mixed (5)	Normal	Mixed (8)	Normal
Zimbabwe	Cold	Cool	Normal	Normal	Very Wet	Wet
Mozambique	Normal	Mixed (3)	Mixed (3)	Wet	Very Wet	Wet
Malawi	Hot	Hot	Hot	Normal	Wet	Dry
Madagascar	Cold	Cold	Cold	Normal (9)	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:

(1) Note: Hot in the southwest, cold in the northeast
(2) Note: Hot in the east, cold in the west
(3) Note: Hot in the northeast, normal elsewhere
(4) Note: Cold in the far southeast, hot in the northeast, normal elsewhere
(5) Note: Very cold southwest, hot northeast
(6) Note: Wet or very wet in parts of the south and southwest, normal elsewhere
(7) Note: Very dry to normal in the west, very wet in the east.
(8) Note: Very wet in the far north
(9) Note: Very Wet in the east; 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: July to December – Western Africa (1)

		Forecast summary		
		July	July to September	October to December
Sierra Leone	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Climatological odds	Climatological odds	Climatological odds
Liberia	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Climatological odds	Climatological odds	Climatological odds
Mali	*Temperature*	Climatological odds	Climatological odds	Climatological odds
	Rainfall	Climatological odds	Climatological odds	Climatological odds
Ghana	*Temperature*	Likely to be warmer than normal in the south; Likely to be near-normal elsewhere	Likely to be warmer than normal in the south; Likely to be near-normal elsewhere	Likely to be warmer than normal in the south; Likely to be near-normal elsewhere
	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

Outlooks for months 4 to 6: As forecast uncertainty generally increases with longer range **the 4-6-month outlook is less reliable than the 1-3 month outlook**. Outlook information will only be provided when the model data signals likely outcomes. Additionally, the longer range outlook utilises fewer models because not all seasonal models are available for the extended range. Information provided in this presentation should be used to raise early awareness of potential hazards only and should be updated with the 3-month outlook when available.

Outlook: July to December – Western Africa (2)

		Forecast summary		
		July	July to September	October to December
Nigeria	*Temperature*	Likely to be warmer than normal in the far south; Likely to be near-normal elsewhere	Likely to be warmer than normal in the far south; Likely to be near-normal elsewhere	Likely to be warmer than normal in the south; Likely to be near-normal elsewhere
	Rainfall	Likely to be wetter than normal far northeast; **Much more likely to be drier than normal** or Likely to be drier than normal south,; Climatological odds elsewhere	Likely to be wetter than normal far northeast; **Much more likely to be drier than normal** or Likely to be drier than normal south,; Climatological odds elsewhere	Climatological odds
Cameroon	*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	Likely to be drier than normal	Climatological odds

Outlooks for months 4 to 6: As forecast uncertainty generally increases with longer range **the 4-6-month outlook is less reliable than the 1-3 month outlook**. Outlook information will only be provided when the model data signals likely outcomes. Additionally, the longer range outlook utilises fewer models because not all seasonal models are available for the extended range. Information provided in this presentation should be used to raise early awareness of potential hazards only and should be updated with the 3-month outlook when available.

Outlook: July to December – Central Africa

		Forecast summary		
		July	July to September	October to December
Niger	*Temperature*	Climatological odds	Climatological odds	Climatological odds
	Rainfall	**Likely to be wetter than normal** in the southeast; Climatological odds elsewhere	**Likely to be wetter than normal** in the southeast; Climatological odds elsewhere	Climatological odds
Chad	*Temperature*	Climatological odds	Climatological odds	Climatological odds
	Rainfall	**Likely to be wetter than normal**	**Likely to be wetter than normal**	Climatological odds
Democratic Republic of Congo	*Temperature*	**Likely to be near-normal**	**Likely to be warmer than normal**	Likely to be warmer than normal
	Rainfall	**Likely to be wetter than normal** in the far east; **Likely to be drier than normal** in the west; Climatological odds elsewhere	**Likely to be wetter than normal** in the far east; **Likely to be drier than normal** in the west; Climatological odds elsewhere	Likely to be drier than normal

Outlooks for months 4 to 6: As forecast uncertainty generally increases with longer range **the 4-6-month outlook is less reliable than the 1-3 month outlook**. Outlook information will only be provided when the model data signals likely outcomes. Additionally, the longer range outlook utilises fewer models because not all seasonal models are available for the extended range. Information provided in this presentation should be used to raise early awareness of potential hazards only and should be updated with the 3-month outlook when available.

Outlook: July to December – Eastern Africa (1)

		Forecast summary		
		July	July to September	October to December
Sudan	*Temperature*	Likely to be warmer than normal in the north; Likely to be colder than normal in the south; Likely to be near-normal elsewhere	Likely to be warmer than normal in the north; Likely to be colder than normal in the south; Likely to be near-normal elsewhere	Climatological odds
	Rainfall	Likely to be wetter than normal in the south; Climatological odds elsewhere	Likely to be wetter than normal in the south; Climatological odds elsewhere	Climatological odds
South Sudan	*Temperature*	Likely to be colder than normal	Likely to be colder than normal	Likely to be warmer than normal
	Rainfall	**Much more likely to be wetter than normal**	Likely to be wetter than normal	Likely to be wetter than normal
Uganda	*Temperature*	Likely to be colder than normal	Likely to be colder than normal	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 wetter than normal
Rwanda	*Temperature*	Likely to be colder than normal	Likely to be colder 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: July to December – Eastern Africa (2)

		Forecast summary		
		July	July to September	October to December
Tanzania	*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
Ethiopia	*Temperature*	Likely to be warmer than normal in the southwest; Likely to be colder than normal in the northeast; Likely to be near-normal elsewhere	Likely to be warmer than normal in the southwest; Likely to be colder than normal in the northeast; Likely to be near-normal elsewhere	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 wetter than normal
Kenya	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	**Much more likely to be wetter than normal** in the northwest; Likely to be drier than normal or **Much more likely to be drier than normal** in the southeast	**Much more likely to be wetter than normal** in the northwest; Likely to be drier than normal or **Much more likely to be drier than normal** in the southeast	Climatological odds
Somalia	*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 drier than normal	Likely to be drier than normal	Climatological odds

Outlooks for months 4 to 6: As forecast uncertainty generally increases with longer range **the 4-6-month outlook is less reliable than the 1-3 month outlook**. Outlook information will only be provided when the model data signals likely outcomes. Additionally, the longer range outlook utilises fewer models because not all seasonal models are available for the extended range. Information provided in this presentation should be used to raise early awareness of potential hazards only and should be updated with the 3-month outlook when available.

Outlook: July to December – Southern Africa (1)

		Forecast summary		
		July	July to September	October to December
South Africa	*Temperature*	Likely to be colder than normal in the southeast; Climatological odds elsewhere	Likely to be colder than normal in the southeast; Climatological odds elsewhere	Climatological odds
	Rainfall	Likely to be near-normal in the east; Likely to be drier than normal in the west	Likely to be near-normal in the east; Likely to be drier than normal in the west	Likely to be near-normal in the east; Likely to be drier than normal in the west
Zambia	*Temperature*	Mainly Likely to be near-normal; Likely to be warmer than normal in the east	Mainly Likely to be near-normal; Likely to be warmer than normal in the east	Climatological odds
	Rainfall	Likely to be near-normal	Likely to be near-normal	Climatological odds
Zimbabwe	*Temperature*	Likely to be near-normal	Likely to be near-normal	Likely to be warmer than normal
	Rainfall	Likely to be near-normal	Likely to be near-normal	Climatological odds
Mozambique	*Temperature*	Mainly Likely to be warmer than normal; Likely to be near-normal or Climatological odds in the south	Mainly Likely to be warmer than normal; Likely to be near-normal or Climatological odds in the south	Climatological odds
	Rainfall	Climatological odds	Climatological odds	Climatological odds

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Outlook: July to December – Southern Africa (1)

		Forecast summary		
		July	July to September	October to December
Malawi	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Climatological odds	Climatological odds	Climatological odds
Madagascar	*Temperature*	Likely to be warmer than normal in the south, Likely to be near-normal in the north, Climatological odds elsewhere	Likely to be warmer than normal in the south, Likely to be near-normal in the north, Climatological odds elsewhere	Climatological odds
	Rainfall	Climatological odds	Climatological odds	Climatological odds

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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): GHACOF 61 Statement (May 2022)
PRÉvisions climatiques Saisonnières en Afrique Soudano-Sahélienne (PRESASS): BULLETIN PRESASS 10 2022.pdf (April 2022)
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): CENTRE AFRICAIN POUR LES APPLICATIONS DE LA METEOROLOGIE AU DEVELOPPEMENT (February 2022)
South-West Indian Ocean Climate Outlook Forum (SWIOCOF) - http://www.acmad.net/new/NEWSITEACMAD/wp-content/uploads/2021/10/SWIOCOF-10_Statement-EN.pdf (October 2021)

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)

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