Global: Monthly Climate Outlook October to July

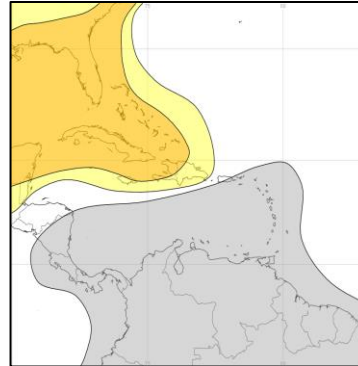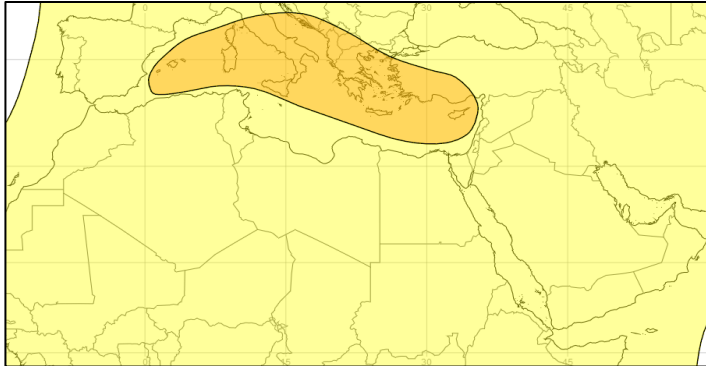**Issued: January 2023**

Overview

MENA, Caribbean and British Overseas Territories Current Status and Outlook - Temperature
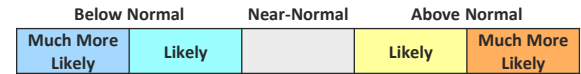
Current Status:

Over the last three months, it has been warm or hot across MENA and southern Europe, with the main exception being Libya and Egypt which were more mixed in November. In the Caribbean, temperatures have been mixed, and British Oversea Territories in the Pacific and Indian Ocean were cold.

Outlook:

Over the next three months, it is likely or much more likely to be warmer than normal across MENA, southern Europe and the northern Caribbean. Near-normal temperatures are likely across the southern Caribbean.

3-Month Outlook February to April - Temperature

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

Left: Middle East and North Africa
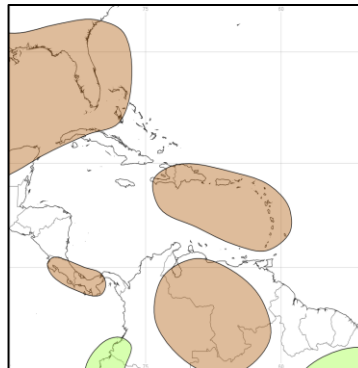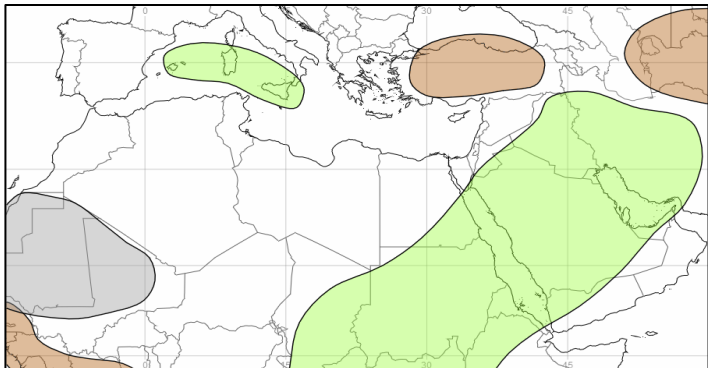Right: Caribbean region

MENA, Caribbean and British Overseas Territories Current Status and Outlook - Rainfall

Current Status:

Near-normal or drier than normal conditions have been observed across most of the MENA and Caribbean regions over the past three months. Some parts of the Levant were wetter than normal in November.

Outlook:

The northern hemisphere winter tends to be the wettest time of the year for the Levant, whilst it tends to be driest for the southern Arabian Peninsula. Over the next three months, it is likely to be drier than normal in parts of Turkey and likely to be wetter than normal Iraq, Iran and the broader southern Arabia region. For most of the Caribbean region it is likely to be drier than normal.

3-Month Outlook February to April - Rainfall

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

Left: Middle East and North Africa
Right: Caribbean region

Global Outlook - Temperature

Outlook:

The ongoing La Niña will be the dominant driver of conditions at the start of this forecasting period, albeit within the context of background warming trend. This influence is likely to reduce later in this period as the El Niño Southern Oscillation (ENSO) is expected to become neutral during the northern hemisphere spring.

Over the next three months, many regions are likely to be warmer than normal. However, there are exceptions as a result of La Niña, including mainland Southeast Asia and parts of Canada where near-normal or colder than normal conditions are more likely.

Temperatures are likely, or much more likely, to be warmer than normal for southern parts North America and most of Europe and Asia.

Globally, La Niña acts to cool temperatures and can often suppress rising temperatures due to climate change. Looking further into 2023, early predictions highlight an increased likelihood of El Niño conditions taking hold in the August to October period (51% likelihood in NOAA forecast). While forecasts looking this far ahead are inherently uncertain, particularly when issued at this time of year, there is a consistent message emerging from many international modelling centres.

3-Month Outlook February to April - Temperature

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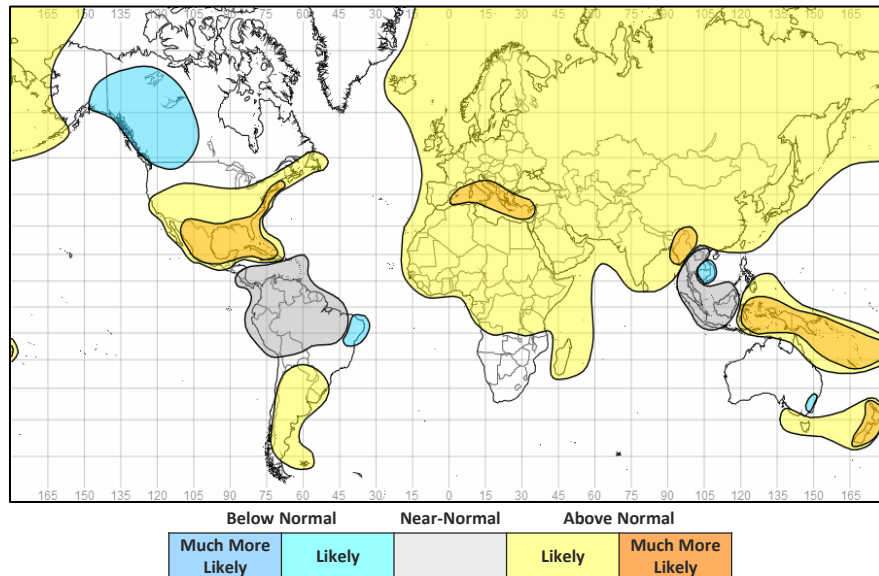
Global Outlook - Rainfall

Outlook:

El Niño-Southern Oscillation (ENSO) – The current La Niña event continues and is expected to remain the main global driver of weather patterns at the start of the forecast period. While ongoing, La Niña will continue to increase confidence in predictions on seasonal timescales, more especially in the tropics. Its longevity is still uncertain however, with NOAA suggesting an 82% chance of a return to ENSO-neutral during March-May 2023.

La Niña, very broadly speaking, tends to increase the likelihood of wetter than normal conditions across many land areas of the tropics with a couple of notable exceptions (e.g. East Africa). 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

Looking further ahead there is an increased chance of El Niño developing during the coming northern hemisphere summer – models are currently predicting the likelihood of El Niño developing during the period May to July at ~30% and in the August to October period ~50%. While forecasts looking this far ahead are inherently uncertain, particularly when issued at this time of year, there is a consistent message emerging from many international modelling centres.

Indian Ocean Dipole (IOD) – The Indian Ocean Dipole has returned to neutral conditions and is therefore not expected to be a driver of rainfall patterns around the Indian Ocean basin during this period.

3-Month Outlook February to April - Rainfall

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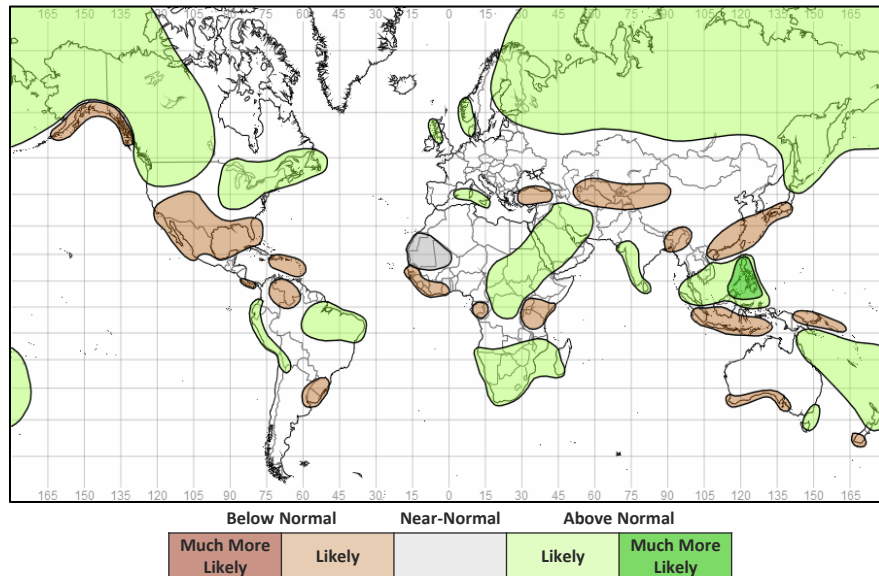
Current Status

Current Status maps

MENA – Middle East

MENA – North Africa

Caribbean

British Overseas Territories

Current Status – Temperature percentiles
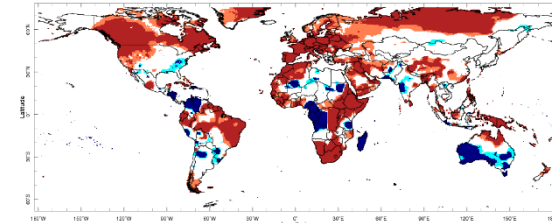
October

November

December

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

0   0.1   0.2   0.3   0.4   0.5   0.6   0.7   0.8   0.9   1.0
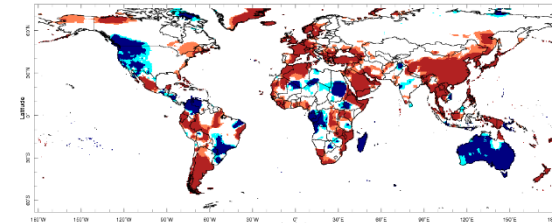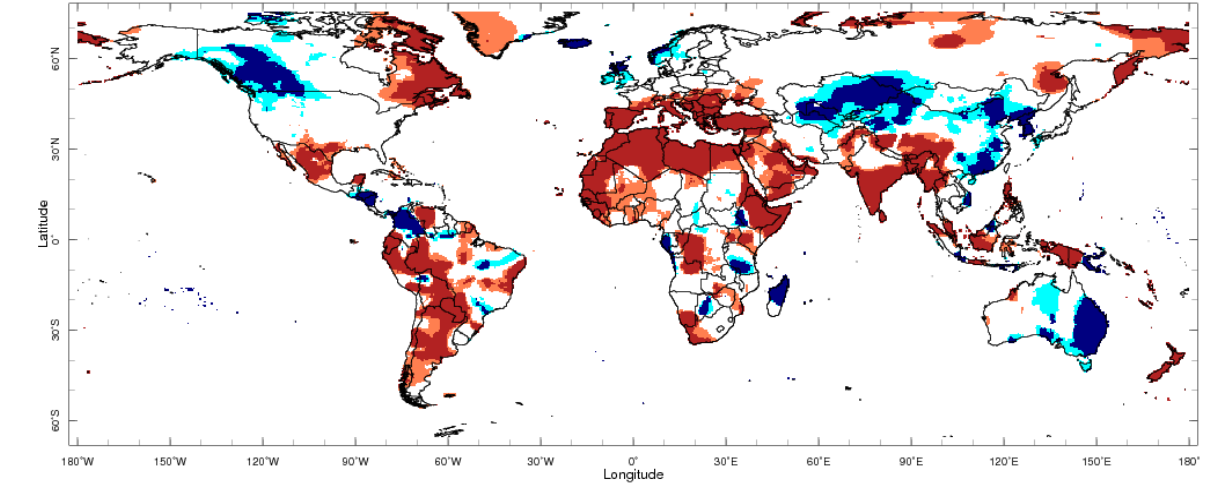
Notes: The percentiles shown in the map indicate a ranking of temperature, with the 0th percentile being the coolest and the 100th percentile being the warmest in the 1981-2010 climatology. Orange and red shading represent values above the 80th (Warm) and 90th (Hot) percentile, respectively; regions shaded in light and dark blue indicate values below the 20th (Cool) and 10th (Cold) percentile, with respect to the 1981-2010 climatology. The data used in this map are from the NOAA Climate Prediction Center.

Current Status – Precipitation percentiles

October

November

Dec 2022

November

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

| 0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 |
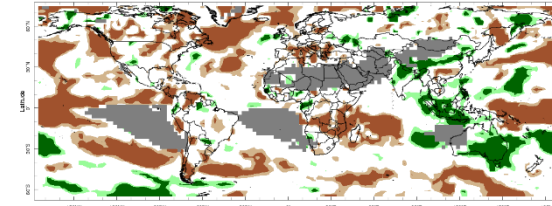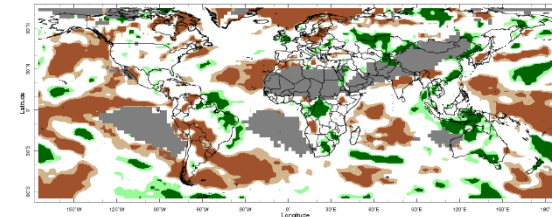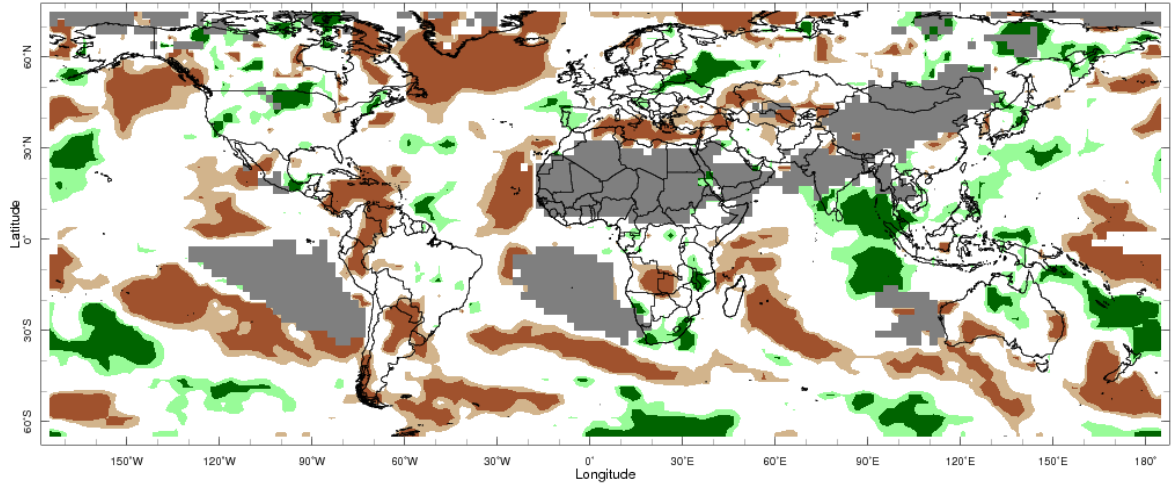
Notes: The percentiles shown in the map indicate a ranking of rainfall, with the 0th percentile being the driest and the 100th percentile being the wettest in the 1981-2010 climatology. Green and dark green shading represent values above the 80th (Wet) and 90th (Very Wet) percentile, respectively; regions 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 – MENA – Middle East

Current Status: Temperature				Current Status: Rainfall		
	October	November	December	October	November	December
Turkey	Warm	Hot	Hot	Normal	Normal	Dry
Palestine	Hot	Warm	Hot	Dry	Normal	Very Dry
Lebanon	Hot	Warm	Hot	Dry	Normal	Very Dry
Jordan	Warm	Hot	Hot	Normal*	Wet	Very Dry
Syria	Normal	Warm	Hot	Dry	Normal	Normal
Iraq	Hot	Warm	Warm	Normal	Normal	Normal
Yemen	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:

Current Status – MENA – North Africa

Current Status: Temperature				Current Status: Rainfall		
	October	**November**	**December**	**October**	**November**	**December**
Mauritania	Hot	Warm	Hot	Normal*	Normal*	Normal*
Morocco	Hot	Hot	Hot	Normal	Dry	Normal
Algeria	Hot	Mixed (1)	Hot	Normal	Dry	Very Dry
Tunisia	Hot	Hot	Hot	Very Dry	Normal	Very Dry
Libya	Normal	Mixed (2)	Hot	Normal*	Mixed(3)	Mixed(4)
Egypt	Normal	Mixed (2)	Hot	Normal*	Normal*	Normal
Eritrea	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: Cold in the far south, hot elsewhere
(2) Note: Cold in the far south, mainly normal elsewhere
(3) Note: Wet in parts of the north, normal* elsewhere
(4) Note: Very Dry in the north, normal* elsewhere

Current Status – Caribbean

	Current Status: Temperature				Current Status: Rainfall		
	October	November	December		October	November	December
Caribbean Region	Hot	Mixed (1)	Warm		Normal	Normal	Dry
Haiti	Cold	Normal	Normal		Normal	Dry	Very Dry
Guyana	Hot	Normal	Normal		Normal	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: Large variations across the region

Current Status – British Overseas Territories

Current Status: Temperature			
	October	**November**	**December**
Southern Europe	Hot	Hot	Hot
Central Indian Ocean	Cold	Normal	Cold
Central Pacific	Cold	Cold	Cold

Current Status: Rainfall			
	October	**November**	**December**
Southern Europe	Dry	Normal	Mixed (1)
Central Indian Ocean	Dry	Normal	Dry
Central Pacific	Normal	Normal	Very Dry

Notes:

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

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

Additional Information:

(1) Note: Wet in Gibraltar; very dry in Cyprus

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: February to July – MENA – Middle East (1)

Forecast summary			
		February	February to April	May to July
Turkey	*Temperature*	Likely to be warmer than normal	**Much more likely to be warmer than normal** in the southwest; Likely to be warmer than normal elsewhere	Likely to be warmer than normal
	Rainfall	Likely to be drier than normal	Likely to be drier than normal	Climatological odds
Palestine	*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
Lebanon	*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
Jordan	*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

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: February to July – MENA – Middle East (2)

		Forecast summary		
		February	February to April	May to July
Syria	*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
Iraq	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Climatological odds	Likely to be wetter than normal	Climatological odds
Yemen	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Climatological odds	Likely to be wetter than normal in the west; 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: February to July – MENA – North Africa(1)

		Forecast summary		
		February	**February to April**	**May to July**
Mauritania	*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
Morocco	*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
Algeria	*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	Climatological odds	Climatological odds
Tunisia	*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

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: February to July – MENA – North Africa(2)

		Forecast summary		
		February	February to April	May to July
Libya	*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	Climatological odds	Climatological odds
Egypt	*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 wetter than normal in the far southeast; Climatological odds elsewhere	Climatological odds
Eritrea	*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 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: February to July – Caribbean

		Forecast summary		
		February	**February to April**	**May to July**
Caribbean Region	*Temperature*	Likely to be near-normal	Likely to be near-normal in the south; Likely to be warmer than normal in the north	Likely to be warmer than normal
	Rainfall	Likely to be near-normal	Likely to be drier than normal	Likely to be drier than normal
Haiti	*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 drier than normal	Likely to be drier than normal
Guyana	*Temperature*	Likely to be colder than normal	Likely to be near-normal	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	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: February to July – British Overseas Territories

		Forecast summary		
		February	February to April	May to July
Southern Europe	*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
Central Indian Ocean	*Temperature*	Likely to be near-normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Climatological odds	Climatological odds	Climatological odds
Central Pacific	*Temperature*	Climatological odds	Likely to be near-normal	Climatological odds
	Rainfall	Much more 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.

Annex 1 – Supplemental Information

For further information

WMO Lead Centre for Long-Range Forecast Multi-Model Ensemble (LC-LRFMME)
https://www.wmolc.org/

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)

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 near-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