

# Global: Monthly Climate Outlook February to November

**Issued: May 2023**

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# Overview

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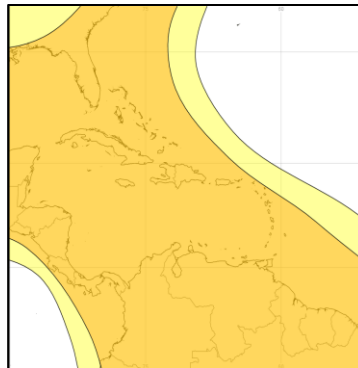
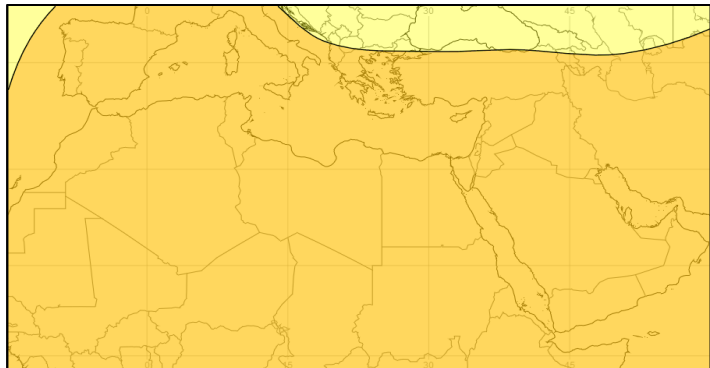
# MENA, Caribbean and British Overseas Territories Current Status and Outlook - Temperature

## Current Status:

Across the MENA region, temperatures were warm or hot in March, and near-normal in the Middle East during February and April. The Caribbean was warm or hot for much of the last three months, with the exception of Guyana and Haiti which were normal in February.

## Outlook:

For the next three months, much more likely to be warmer than normal across the MENA and Caribbean regions.



## 3-Month Outlook June to August - Temperature



Left: Middle East and North Africa

Right: Caribbean region

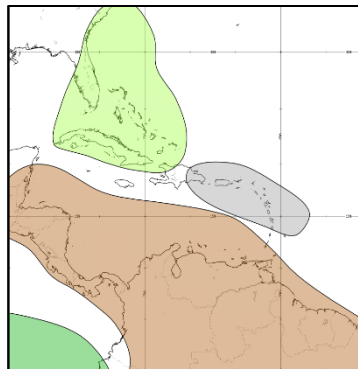
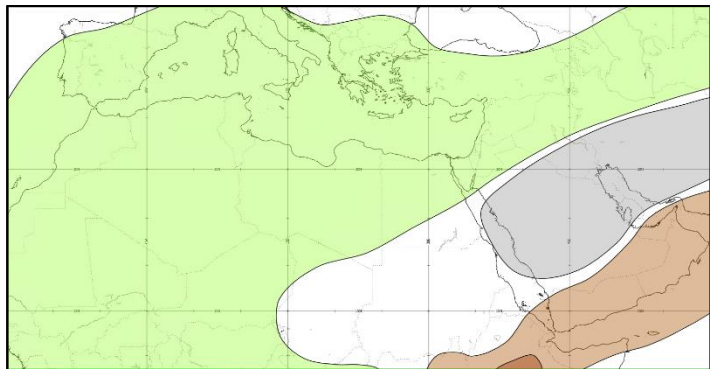
# MENA, Caribbean and British Overseas Territories Current Status and Outlook - Rainfall

## Current Status:

Near-normal to dry conditions have been observed across the MENA and Caribbean regions for much of the past three months. There were a few exceptions, these include parts of Morocco, Libya and Egypt which were wet in February. The Levant and Yemen were wet in March, whilst some parts of the Levant and Caribbean were wet in April.

## Outlook:

It is likely to be wetter than normal across the middle east, with the exception of Yemen and Eritrea, where it is likely to be drier than normal. The impact of this will be limited given that this is a dry part of the year for much of the region. It is likely to be drier than normal in the Caribbean, other than in the northeast and northwest of the region, where it is likely to be wetter than normal.



## 3-Month Outlook June to August - Rainfall

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

Left: Middle East and North Africa

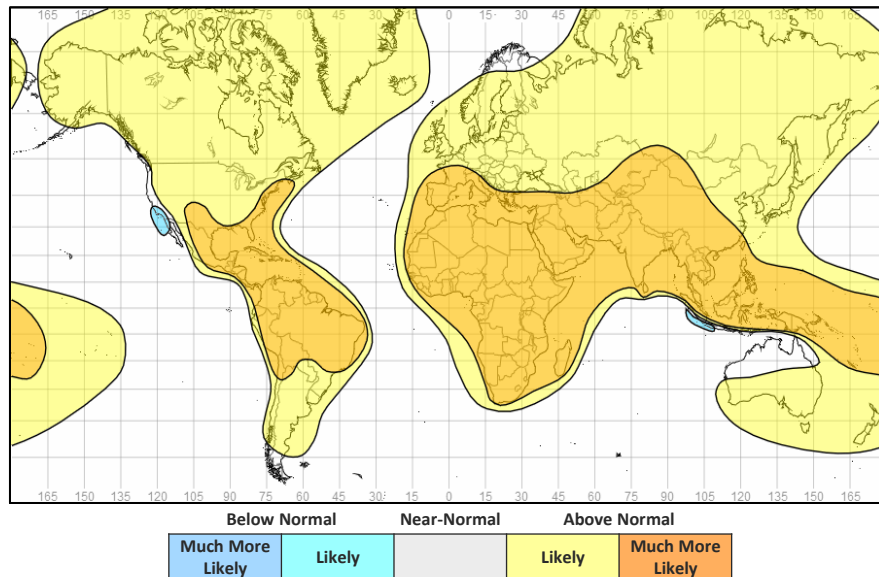
Right: Caribbean region

# Global Outlook - Temperature

## Outlook:

With the backdrop of a warming climate and the emerging El Niño, most land areas are likely to be warmer than normal with limited exceptions. These exceptions include northern Australia, small parts of southwest Indonesia and western Mexico/southwest USA where it is likely to be colder than normal.

## 3-Month Outlook June to August - Temperature



# Global Outlook - Rainfall

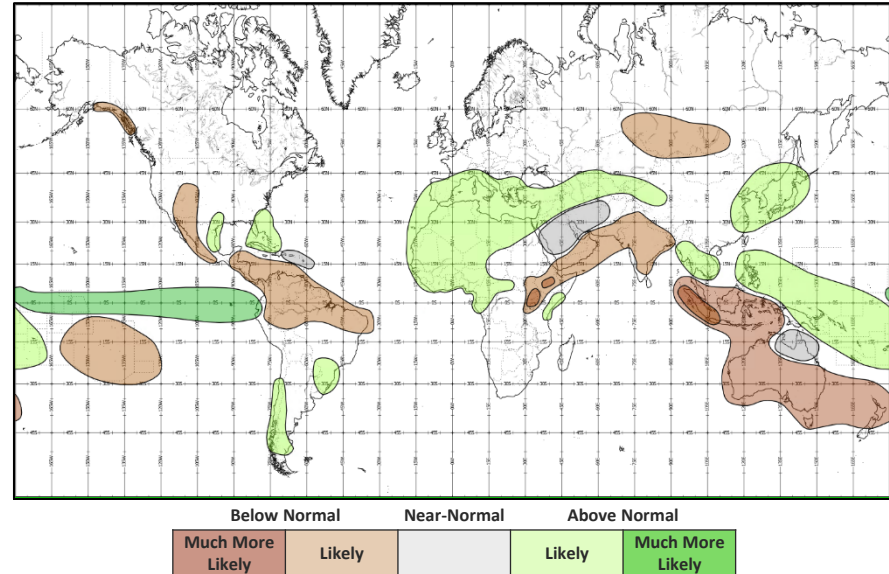
**Outlook: El Niño-Southern Oscillation (ENSO)** – Sea surface temperatures (SSTs) in the tropical Pacific Ocean continue to rise and are approaching El Niño thresholds, even exceeding these thresholds in eastern parts of the basin. The atmosphere, however, remains in an ENSO-neutral state. Through the coming months, SSTs are likely to continue to rise and the transition to an El Niño event is expected in the next two months, with a greater than 90% chance of it then persisting into the Northern Hemisphere winter.

ENSO impacts regional weather patterns around the world, leading to some regions experiencing wetter than normal conditions and other regions drier than normal conditions.

Should El Niño fully develop, then the chance of heatwaves, drought and wildfire increases across parts of southern and southeast Asia and Australia, and wetter than normal conditions may be experienced across parts of East Africa, central Asia and the Middle East.

**Indian Ocean Dipole (IOD)** – The Indian Ocean Dipole is currently neutral and is not influencing regional conditions. All forecasts currently suggest development of a positive IOD phase during the Northern Hemisphere summer, however forecast accuracy at this time of year is low and will improve over coming months.

## 3-Month Outlook June to August - Rainfall



# Current Status

[Current Status maps](#)

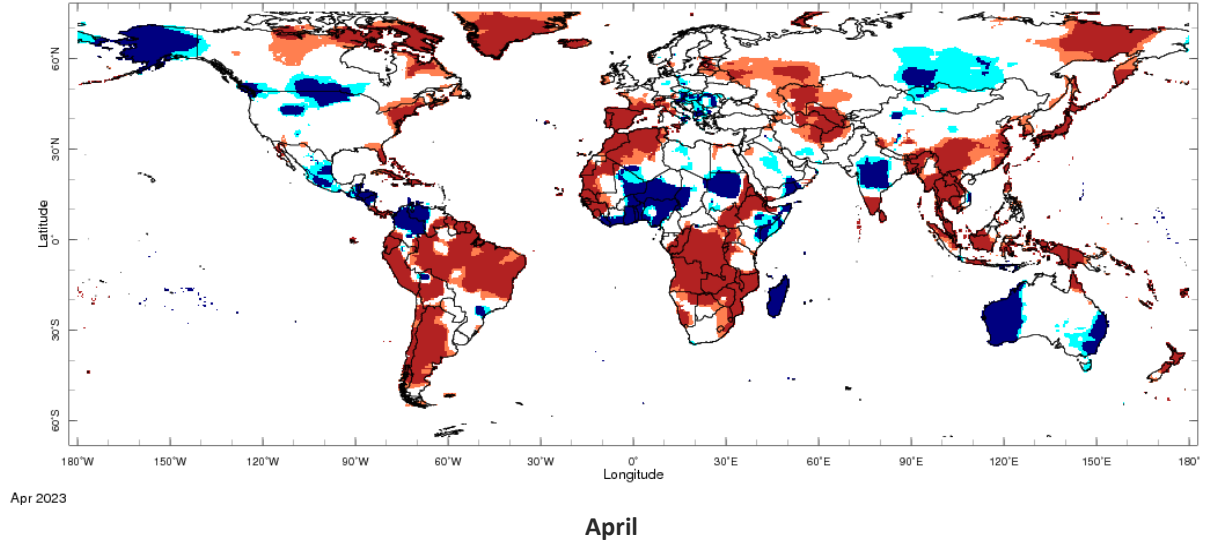
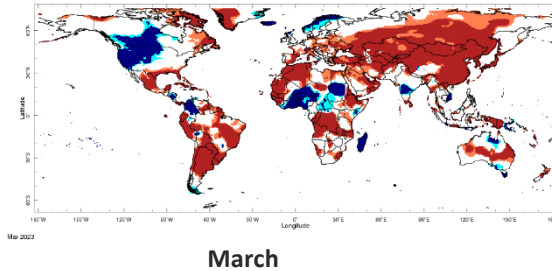
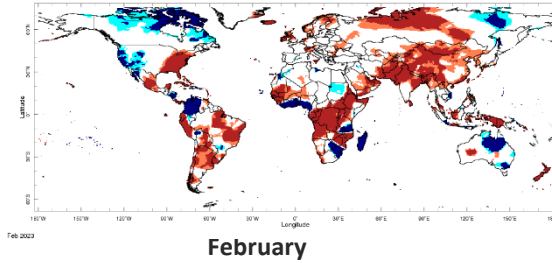
[MENA – Middle East](#)

[MENA – North Africa](#)

[Caribbean](#)

[British Overseas Territories](#)

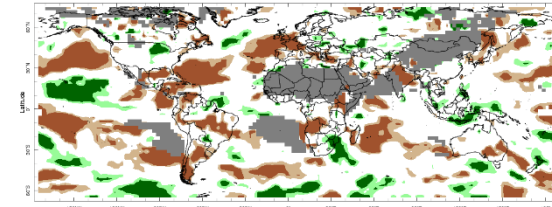
# Current Status – Temperature percentiles



**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.

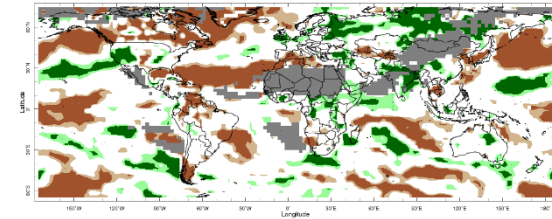


# Current Status – Precipitation percentiles



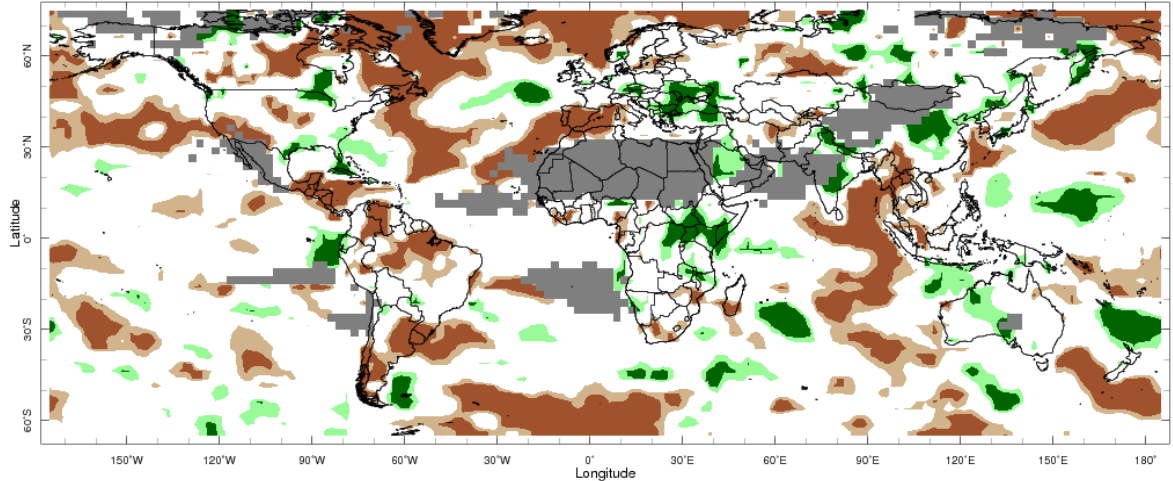
Feb 2023

**February**



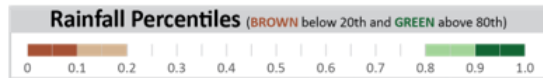
Mar 2023

**March**



Apr 2023

**April**



**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

	February	March	April
Turkey	Normal	Hot	Normal
Palestine	Normal	Hot	Normal
Lebanon	Normal	Warm	Normal
Jordan	Normal	Warm	Normal
Syria	Normal	Warm	Normal
Iraq	Normal	Warm	Normal
Yemen	Hot	Normal	Cold

### Current Status: Rainfall

	February	March	April
	Mixed (1)	Wet	Very Wet
	Normal	Normal	Normal
	Normal	Normal	Normal
	Normal	Normal	Normal
	Normal	Wet	Normal
	Very Dry	Wet	Wet
	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: Very dry in the southwest, normal elsewhere

## Current Status – MENA – North Africa

### Current Status: Temperature

	February	March	April
Mauritania	Mixed (1)	Hot	Hot
Morocco	Normal	Hot	Hot
Algeria	Normal	Hot	Hot (5)
Tunisia	Normal	Hot	Hot
Libya	Normal	Normal	Normal
Egypt	Normal	Mixed (4)	Normal (5)
Eritrea	Hot	Hot	Hot

### Current Status: Rainfall

February	March	April
Normal*	Normal*	Normal*
Mixed (2)	Very Dry	Very Dry
Normal	Very Dry	Very Dry
Normal	Very Dry	Normal
Mixed (3)	Dry	Normal
Mixed (3)	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:** Hot in the south, mostly normal elsewhere but cold in the far northwest
- (2) **Note:** Very Wet in the south, normal elsewhere
- (3) **Note:** Wet in parts of the north, normal\* elsewhere
- (4) **Note:** Warm in the north, cold in the far south, normal elsewhere
- (5) **Note:** Cold in the far south.

## Current Status – Caribbean

### Current Status: Temperature

	February	March	April
Caribbean Region	Hot	Hot	Hot
Haiti	Normal	Hot	Hot
Guyana	Normal	Warm	Hot

### Current Status: Rainfall

	February	March	April
Caribbean Region	Very Dry	Very Dry	Very Dry
Haiti	Very Dry	Very Dry	Wet
Guyana	Normal	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:

## Current Status – British Overseas Territories

Current Status: Temperature

	February	March	April
Southern Europe	Normal	Hot	Hot
Central Indian Ocean	Normal	Hot	Hot
Central Pacific	Normal	Cold	Cool

Current Status: Rainfall

	February	March	April
	Dry	Dry	Very Dry
	Dry	Wet	Wet
	Dry	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:

# Outlooks

Outlooks – Notes for use

MENA – Middle East

MENA – North Africa

Caribbean

British Overseas Territories

# 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: March to August – MENA – Middle East (1)

		Forecast summary		
		June	June to August	September to November
Turkey	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
Palestine	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
Lebanon	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
Jordan	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

**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: March to August – MENA – Middle East (2)

		Forecast summary		
		June	June to August	September to November
Syria	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
Iraq	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 near-normal	Likely to be near-normal	Likely to be near-normal
Yemen	Temperature	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Much more likely to be warmer than normal
	Rainfall	Likely to be drier than normal	Likely to be drier than normal	Likely to be drier than normal

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

# Outlook: March to August – MENA – North Africa(1)

		Forecast summary		
		June	June to August	September to November
Mauritania	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
Morocco	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
Algeria	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
Tunisia	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

**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: March to August – MENA – North Africa(2)

		Forecast summary		
		June	June to August	September to November
Libya	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
Egypt	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
Eritrea	Temperature	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Much more likely to be warmer than normal
	Rainfall	Likely to be drier than normal	Likely to be drier than normal	Likely to be drier than normal

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

# Outlook: March to August – Caribbean

		Forecast summary		
		June	June to August	September to November
Caribbean Region	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 in the northeast and northwest; Likely to be drier than normal elsewhere	Likely to be wetter than normal in the northeast and northwest; Likely to be drier than normal elsewhere	Likely to be wetter than normal in the northeast and northwest; Likely to be drier than normal elsewhere
Haiti	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	Climatological odds	Climatological odds
Guyana	Temperature	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Much more likely to be warmer than normal
	Rainfall	Likely to be drier than normal	Likely to be drier than normal	Likely to be drier than normal

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

# Outlook: March to August – British Overseas Territories

		Forecast summary		
		June	June to August	September to November
Southern Europe	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
Central Indian Ocean	Temperature	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Much more likely to be warmer than normal
	Rainfall	Likely to be drier than normal	Likely to be drier than normal	Likely to be drier than normal
Central Pacific	Temperature	Likely to be warmer than normal	Much more likely to be warmer than normal	Much more likely to be warmer than normal
	Rainfall	Much more likely to be wetter than normal	Much more likely to be wetter than normal	Much more likely to be wetter than normal

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

# 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 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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