Global: Monthly Climate Outlook
March to December

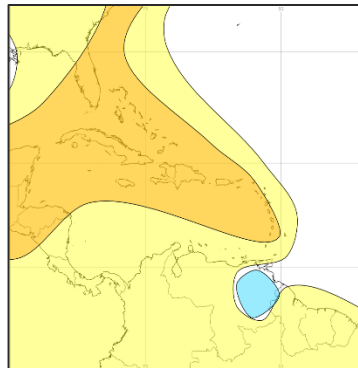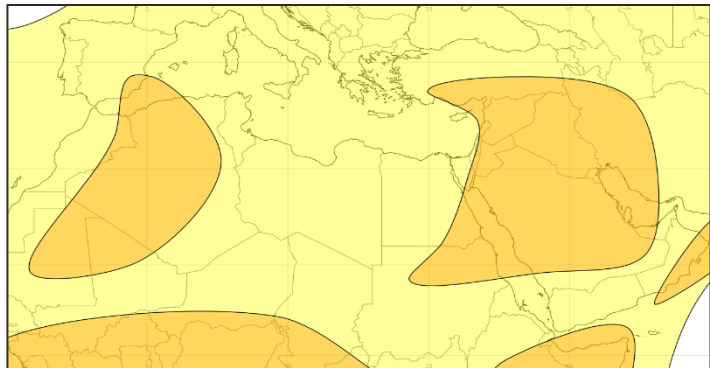## Issued: June 2021

Overview

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

Current Status:

During the last three months above normal temperatures have become increasingly widespread across North Africa and the Middle East. Similarly, above normal temperatures have been experienced across the Caribbean. The main exception to above normal temperatures have been some of the more remote British Overseas Territories in the Indian and Pacific Oceans where near or below normal temperatures have been observed.

Outlook:

Across both the MENA and Caribbean, temperatures are likely or very likely to be above normal for the next three months.

3-Month Outlook July to September - Temperature

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

Left: Middle East and North Africa
Right: Caribbean region

Climate Outlook
Global: March to December

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

Current Status:
Over the last three months and especially prior to the dry season many parts of the Middle East recorded below normal rainfall. During the same period the Caribbean and British Overseas Territories have seen near-normal or below normal rainfall.

Outlook:
For much of the Middle East and North Africa the next three months are the dry season with little if any rainfall typically observed. However, in Yemen rainfall can peak during July and August; above normal rainfall is likely across western parts of Yemen over the next 3 months. For the Caribbean, much of the area is likely to be drier than normal, with the exception being northern South America and the far southeast of Central America, where conditions are likely to be wetter than normal through this period.

Tropical Cyclone outlook: Latest Met Office model output (27 June 2021) for July to December 2021 suggests slightly above average tropical storm frequency. More information, and the full forecast can be found at https://www.metoffice.gov.uk/research/weather/tropical-cyclones/seasonal/northatlantic2021 (NOTE – as of 30 June 2021 the website is pending update to the latest forecast).
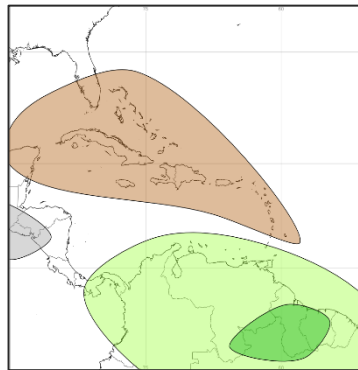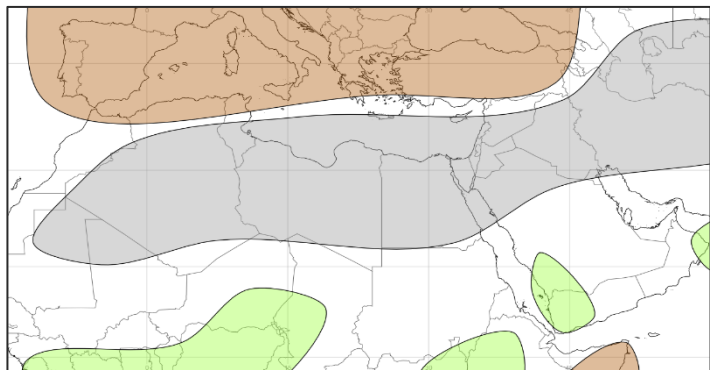
3-Month Outlook July to September - Rainfall

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 El Niño–Southern Oscillation (ENSO) remains neutral and is most likely to remain so for at least the next three months. Later this year, there is small chance of La Niña redeveloping. However, predictions made at this time of year have lower skill than at other times and therefore the confidence in the evolution of ENSO over the coming months is low. With ENSO in its neutral phase, predictability will be relatively low.

Despite a neutral ENSO state some consistent signals are apparent. Many parts of the globe are likely to see warmer than normal conditions through the next three months with only a few limited exceptions; for example, parts of India and northern South America. Many tropical regions are very likely to see above normal temperatures, this is also the case for many parts of North America.

3-Month Outlook July to September - Temperature

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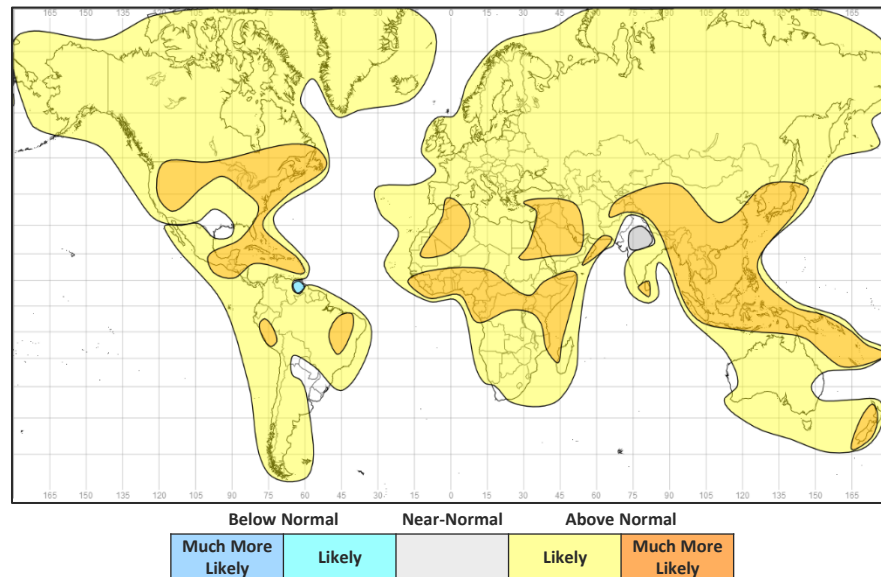
Global Outlook - Rainfall

Outlook:

As described in the temperature section, ENSO is now neutral which reduces predictability compared to when it is in an active phase. However, there are still some common themes from seasonal predictions systems.

The Indian Ocean Dipole (IOD) is still neutral but the pattern of sea surface temperatures in the Indian Ocean are indicative of a negative phase developing. This is reflected in most of the climate prediction systems, which are suggesting a negative IOD emerging over the next two months. Over the next three months, this results in above normal rainfall being likely across parts of Southeast Asia and Australia; conversely parts of East Africa are likely to be drier than normal, though these areas of East Africa normally see little rainfall during this period.

The South Asian Monsoon (SAM) is underway with the northward shift of rains close to climatology in terms of timings. Predictions for the SAM remain finely balanced with mixed signals from longer range forecast systems. Overall, wetter than normal conditions are more likely for many parts of Pakistan, India and Nepal.

Parts of West Africa are likely to experience above normal rainfall associated with an active West Africa Monsoon season. In northern South America a southward shifted and active Intertropical Convergence Zone (ITCZ) makes above normal rainfall likely or very likely across much region with some o areas already being wetter than normal over recent weeks and months.

Many parts of southern South America, North America and Europe, as well as the Caribbean are likely to see below normal rainfall. This is also true for parts of the Philippines.

3-Month Outlook July to September - Rainfall

Below Normal		Near-Normal	Above Normal	
Very Likely	Likely		Likely	Very Likely
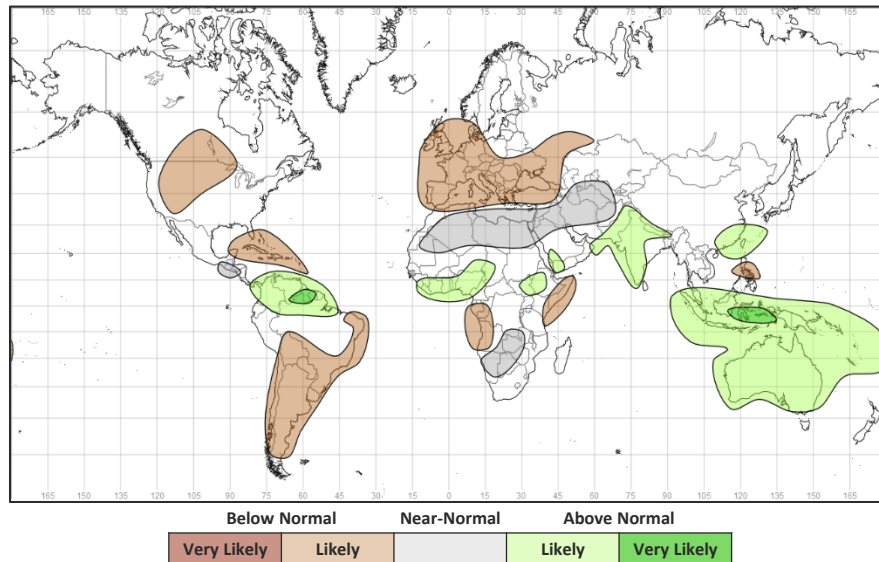
Current Status

Current Status maps

MENA – Middle East

MENA – North Africa

Caribbean

British Overseas Territories

Current Status – Temperature percentiles

March

April

May 2021

May

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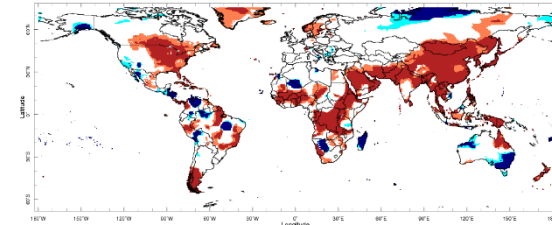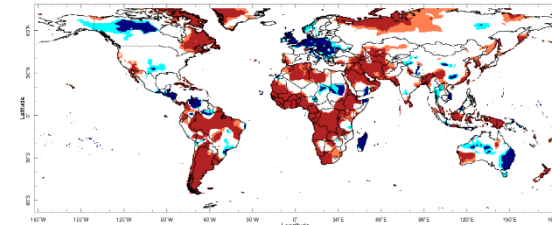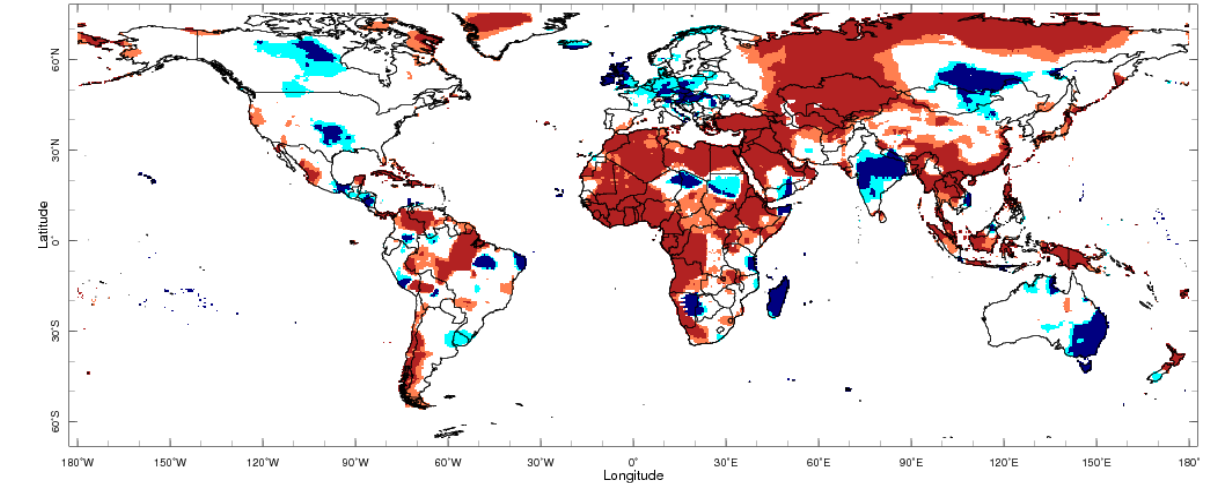
Notes: The percentiles shown in the map indicate a ranking of temperature, with the 0th percentile being the coolest and the 100th percentile being the warmest in the 1981-2010 climatology. Orange and red shading represent values above the 80th (Warm) and 90th (Hot) percentile, respectively; regions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

March

April

May

May 2021

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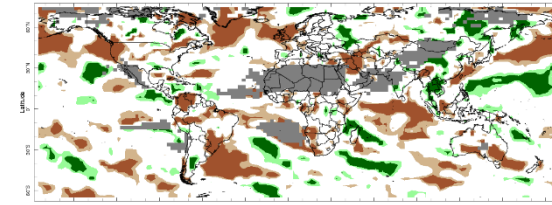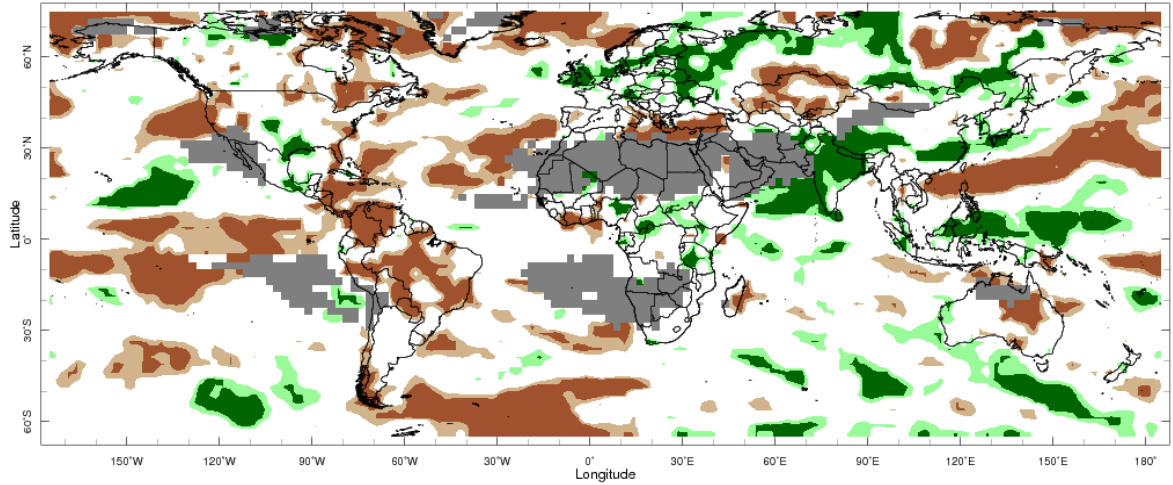
Notes: The percentiles shown in the map indicate a ranking of rainfall, with the 0th percentile being the driest and the 100th percentile being the wettest in the 1981-2010 climatology. Green and dark green shading represent values above the 80th (Wet) and 90th (Very Wet) percentile, respectively; regions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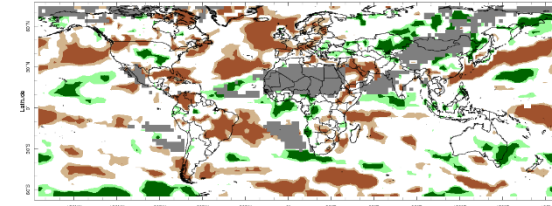 the 20th (Dry) and 10th (Very Dry) percentile, with respect to the 1981-2010 climatology. Grey areas on the map mask out regions that receive less than 10 mm/month of rainfall on normal in the 1981-2010 climatology for the month. The data used in this map are from the NOAA Climate Prediction Center.

Current Status – MENA – Middle East

Current Status: Temperature			
	March	**April**	**May**
Turkey	Normal	Normal (3)	Hot
Palestine	Normal	Hot	Hot
Lebanon	Normal	Hot	Hot
Jordan	Warm	Hot	Hot
Syria	Normal	Warm	Hot
Iraq	Mixed (1)	Hot	Hot
Yemen	Mixed (2)	Normal	Mixed (5)

Current Status: Rainfall			
	March	**April**	**May**
Turkey	Wet	Normal (4)	Dry
Palestine	Normal	Normal	Normal*
Lebanon	Normal	Normal	Normal*
Jordan	Dry	Normal	Normal*
Syria	Normal	Dry	Dry
Iraq	Very Dry	Very Dry	Normal*
Yemen	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: Warm in the south, and very warm in the far south. Near normal elsewhere
(2) Note: Hot in the far east and far west. Normal elsewhere
(3) Note: Hot in the east
(4) Note: Very Dry in the east
(5) Note: Cool or cold in the east, hot in the far southwest, otherwise normal

Current Status – MENA – North Africa

Current Status: Temperature			
	March	April	May
Mauritania	Mixed	Mixed (2)	Hot
Morocco	Normal	Warm	Hot
Algeria	Normal	Hot	Hot
Tunisia	Normal	Warm	Warm
Libya	Normal	Hot	Hot
Egypt	Mixed (1)	Normal	Hot
Eritrea	Hot	Hot	Hot

Current Status: Rainfall			
	March	April	May
	Normal*	Normal*	Normal*
	Normal	Normal	Normal
	Normal*	Normal*	Normal*
	Normal*	Normal*	Normal
	Normal*	Normal*	Normal*
	Normal*	Normal*	Normal*
	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:

(1) **Note:** Mainly normal, but warm to hot in parts of far east and west
(2) **Note**: Cold in the north and Hot in the south

Current Status – Caribbean

	Current Status: Temperature				Current Status: Rainfall		
	March	**April**	**May**		**March**	**April**	**May**
Caribbean Region	Hot	Hot	Hot		Mixed (1)	Wet	Mixed (2)
Haiti	Hot	Hot	Hot		Normal	Normal	Dry
Guyana	Normal	Normal	Normal		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: Dry or very dry for much of the northern Caribbean. Near normal elsewhere.
(2) Note: Dy for Hispaniola, Jamaica, Cayman Islands, Puerto Rico and Turks and Caicos. Mostly normal elsewhere.

Current Status – British Overseas Territories

Current Status: Temperature				Current Status: Rainfall		
	March	**April**	**May**	**March**	**April**	**May**
Southern Europe	Normal	Hot	Hot	Dry	Mixed (1)	Dry
Central Indian Ocean	Warm	Cold	Normal	Normal	Dry	Normal
Central Pacific	Cold	Cold	Cold	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:

(1) Note: Gibraltar Normal, Cyprus Very Dry.

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 – MENA – Middle East (1)

		Forecast summary		
		July	July to September	October to December
Turkey	*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 north; Likely to be near-normal in the south	Likely to be drier than normal	Likely to be drier than normal
Palestine	*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	Likely to be drier than normal
Lebanon	*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	Likely to be drier than normal
Jordan	*Temperature*	Likely to be warmer than normal	Much more likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be near-normal	Likely to be near-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.

Outlooks

Outlook: July to December – MENA – Middle East (2)

		Forecast summary		
		July	July to September	October to December
Syria	*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	Likely to be drier than normal
Iraq	*Temperature*	Likely to be warmer than normal	Much more likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be near-normal	Likely to be near-normal	Likely to be near-normal
Yemen	*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 west of the country; Climatological odds in the east	Likely to be wetter than normal in the west of the country; Climatological odds in the east	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 – MENA – North Africa(1)

		Forecast summary		
		July	July to September	October to December
Mauritania	*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
Morocco	*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 drier than normal north, Climatological odds south	Climatological odds
Algeria	*Temperature*	Likely to be warmer than normal	Much more likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be near-normal	Likely to be near-normal but Likely to be drier than normal far north	Climatological odds
Tunisia	*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 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 – MENA – North Africa(2)

		Forecast summary		
		July	July to September	October to December
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	Likely to be near-normal	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 near-normal	Climatological odds
Eritrea	*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

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 – Caribbean

		Forecast summary		
		July	July to September	October to December
Caribbean Region	*Temperature*	Likely to be warmer than normal	Much more likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be drier than normal	Likely to be drier than normal	Climatological odds
Haiti	*Temperature*	Likely to be warmer than normal	Much more likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be drier than normal	Likely to be drier than normal	Climatological odds
Guyana	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Climatological odds
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds

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

Outlook: July to December – British Overseas Territories

		Forecast summary		
		July	July to September	October to December
Southern Europe	*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 drier than normal in the west, Likely to be near-normal in the east	Likely to be drier than normal
Central Indian Ocean	*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
Central Pacific	*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.

Outlooks

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.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)

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)

Enquiries

Email: internationaldevelopment@metoffice.gov.uk

Web: https://www.metoffice.gov.uk/services/government/international-development