Global: Monthly Climate Outlook
May to February

Issued: August 2023

Overview

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

Current Status: In the MENA region, temperatures were near-normal over the past three months. Parts of northwest Africa were hot in June and the Levant was cool during July. The Caribbean and southern Europe were mostly hot over the last three months.

Outlook: It is likely or much more likely to be warmer than normal in the MENA region, the Caribbean and the British Overseas Territories over the next three months.
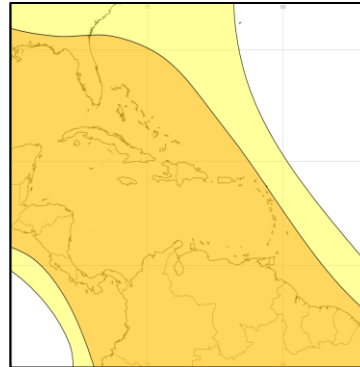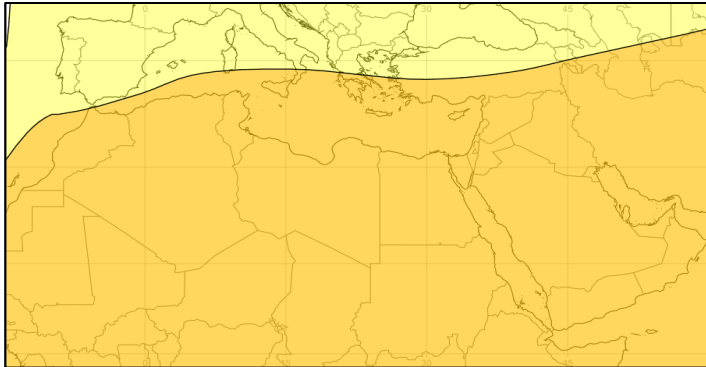
3-Month Outlook September to November - Temperature

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

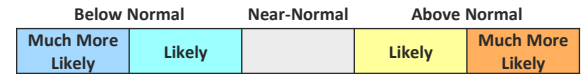**Current Status:** Rainfall was near-normal over the last three months, with the exception of Turkey, which was very wet in June, and Tunisia, parts of Algeria and Morocco, which were wet or very wet in May and June. In the Caribbean, it was dry or very dry in May and June, returning to near-normal in July.

Outlook: Over the next three months, it is likely to be wetter than normal in the MENA region. Rainfall typically increases in the MENA region, from September in the west of the region and from October in the east, and is characterised by an increased chance of thunderstorm activity - also increasing the risk of dust storms developing. The Leeward Islands are likely to be drier than normal, while the wider Caribbean region is likely to be wetter than normal over the next three months. It is likely to be wetter than normal than across southern Europe.

Tropical Cyclone outlook: September is normally the peak of the North Atlantic tropical cyclone season. The latest forecast, issued 01 August 2023, suggests a more active than usual North Atlantic tropical storm seasonal in 2023 - 19 named storms predicted (1991-2020 long-term average – 14), 9 hurricanes (long-term average – 7) and 6 major hurricanes (long-term average – 3). The full forecast can be found here.
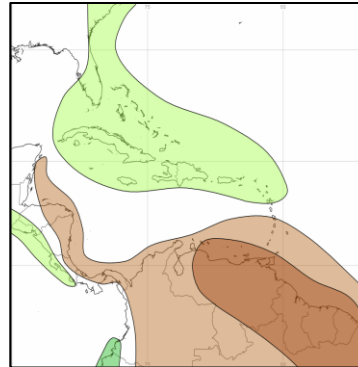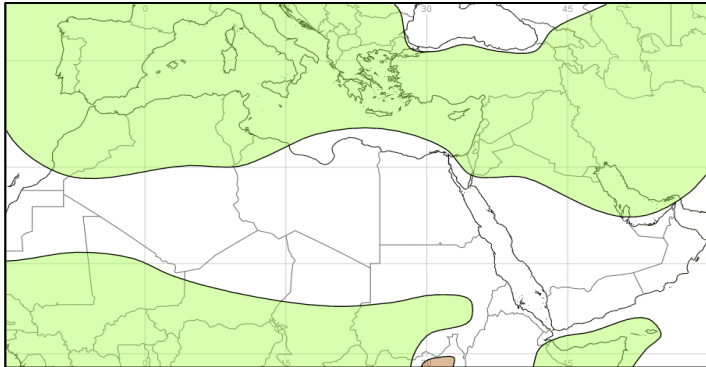
3-Month Outlook September to November - Rainfall

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 developing El Niño event, most land areas are likely to be warmer than normal with very limited exceptions.

3-Month Outlook September to November - Temperature

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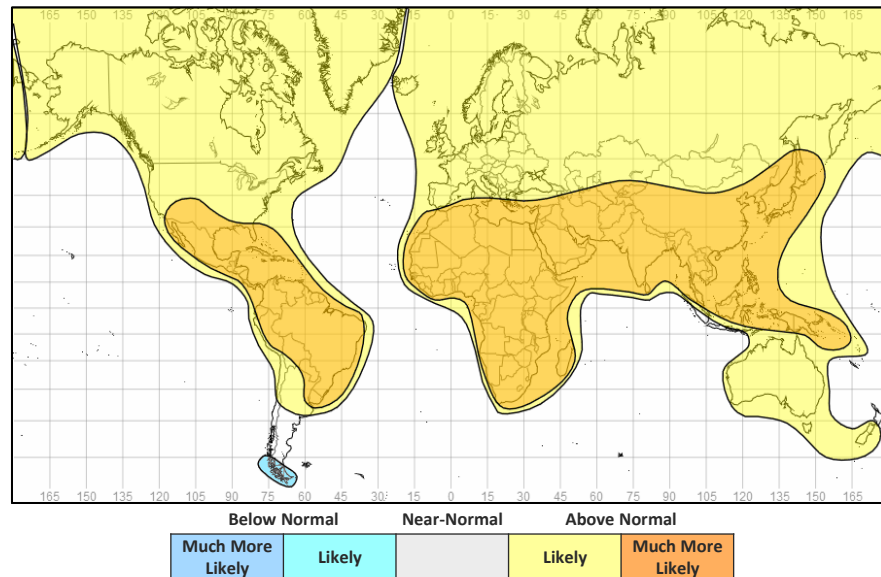
Global Outlook - Rainfall

Outlook:

El Niño-Southern Oscillation (ENSO) – Sea surface temperatures across the equatorial Pacific are above average, in the Niño 3.4 region they are 1.3°C above average. The atmospheric response has been slower though is now consistent with El Niño conditions, and NOAA have declared El Niño to be underway.

This moderate El Niño is expected to persist into the northern hemisphere winter. The latest information from most of the seasonal prediction models now suggests a strong or very strong event peaking this Northern Hemisphere winter. However, there is a spread in model outputs at this range. A strong El Niño does not necessarily equate to large impacts in any given location.

El Niño impacts regional weather patterns around the world, leading to some regions experiencing wetter than normal conditions and other regions drier than normal conditions. During El Niño, temperatures around the globe are likely or much more likely to be higher than normal, and this is reflected in the current outlooks.

Indian Ocean Dipole (IOD) – The Indian Ocean Dipole is currently neutral. Recent warming of the western side of the basin in the past few weeks has increased the index to +0.8°C above normal – seasonal forecasts currently suggest this will persist and a positive IOD will develop over the next couple of months.

3-Month Outlook September to November - Rainfall

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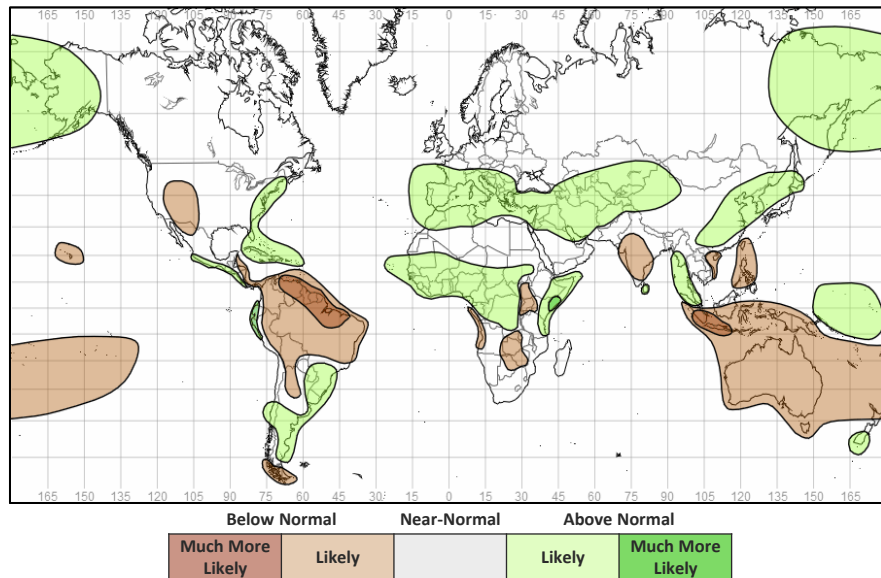
Current Status

Current Status maps

MENA – Middle East

MENA – North Africa

Caribbean

British Overseas Territories

Current Status – Temperature percentiles

May

June

July

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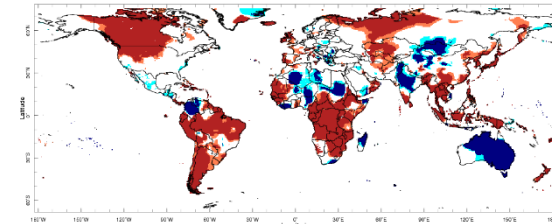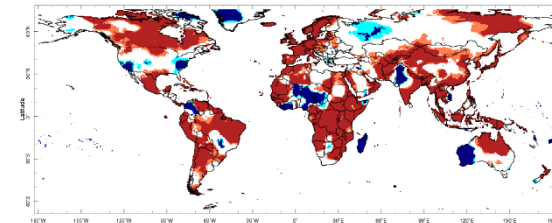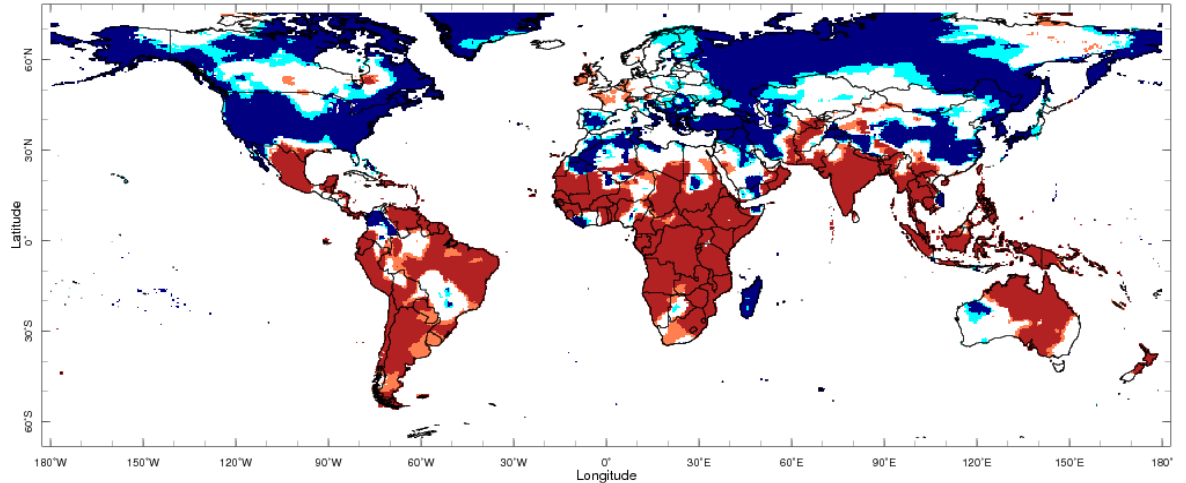
Notes: The percentiles shown in the map indicate a ranking of temperature, with the 0th percentile being the coolest and the 100th percentile being the warmest in the 1981-2010 climatology. Orange and red shading represent values above the 80th (Warm) and 90th (Hot) percentile, respectively; regions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

May

June

July

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 |
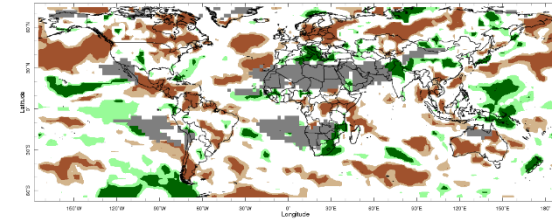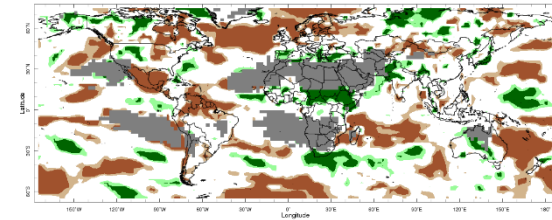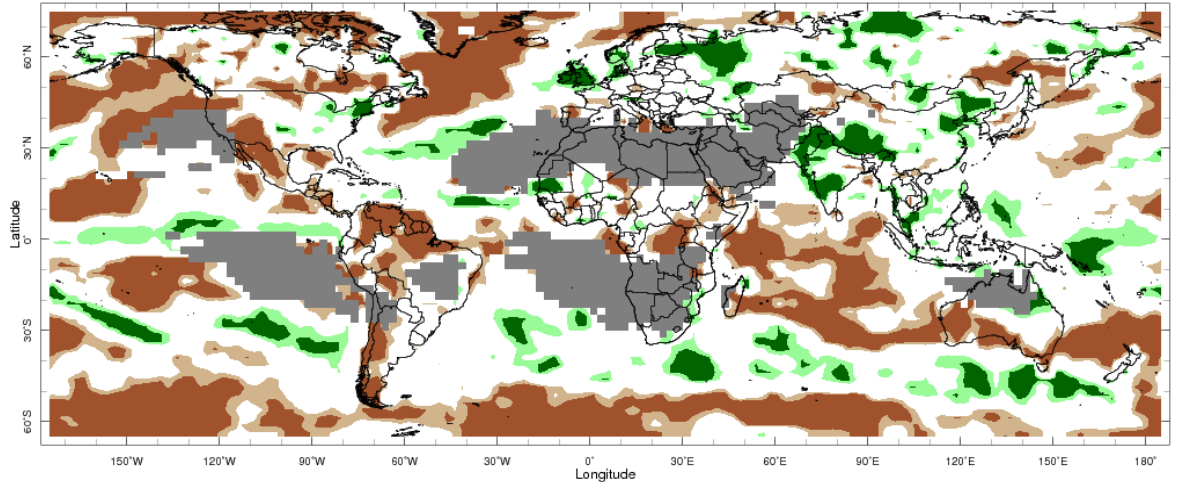
Notes: The percentiles shown in the map indicate a ranking of rainfall, with the 0th percentile being the driest and the 100th percentile being the wettest in the 1981-2010 climatology. Green and dark green shading represent values above the 80th (Wet) and 90th (Very Wet) percentile, respectively; regions 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		
	May	June	July		May	June	July
Turkey	Normal	Normal	Cold		Normal (2)	Very Wet (4)	Normal
Palestine	Normal	Normal	Normal		Normal*	Normal*	Normal*
Lebanon	Normal	Normal	Normal		Normal*	Normal*	Normal*
Jordan	Normal	Normal	Normal		Normal*	Normal*	Normal*
Syria	Normal	Normal	Cold		Normal*	Normal*	Normal*
Iraq	Normal	Mixed (5)	Cold		Normal*	Normal*	Normal*
Yemen	Mixed (1)	Mixed (5)	Cool		Normal (3)	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: Hot in southwest and far east, cool or cold for central areas
(2) Note: Wet or very wet in the west
(3) Note: Wet in the far west
(4) Note: Normal in the southeast
(5) Note: Large variations around the country but mostly normal

Current Status – MENA – North Africa

	Current Status: Temperature				Current Status: Rainfall		
	May	**June**	**July**		**May**	**June**	**July**
Mauritania	Hot	Hot	Mixed (6)		Normal*	Normal (4)	Very Wet
Morocco	Normal	Hot	Cool		Normal (1)	Normal	Normal*
Algeria	Normal (2)	Hot	Cool		Normal (1)	Normal (5)	Normal*
Tunisia	Normal	Warm	Cold		Very Wet	Normal (5)	Normal*
Libya	Normal (3)	Normal	Normal		Normal*	Normal*	Normal*
Egypt	Normal	Warm	Normal		Normal*	Normal*	Normal*
Eritrea	Hot	Hot	Hot		Normal	Very Wet	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 or very wet in some northern areas
(2) Note: Cool or cold in the south
(3) Note: Cool or cold in the west
(4) Note: Wet in the south
(5) Note: Very Wet in the north
(6) Note: Cold in the north, Hot in the south

Current Status – Caribbean

	Current Status: Temperature		
	May	**June**	**July**
Caribbean Region	Hot	Hot	Hot (1)
Haiti	Hot	Hot	Hot
Guyana	Hot	Hot	Hot

	Current Status: Rainfall		
	May	**June**	**July**
Caribbean Region	Dry	Dry	Normal
Haiti	Dry	Normal	Normal
Guyana	Dry	Very Dry	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: Cold in the north

Current Status – British Overseas Territories

Current Status: Temperature				Current Status: Rainfall		
	May	**June**	**July**	**May**	**June**	**July**
Southern Europe	Hot	Hot	Normal	Normal	Wet	Normal*
Central Indian Ocean	Normal	Hot	Hot	Normal	Normal	Dry
Central Pacific	Cool	Cold	Cold	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:

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

		Forecast summary		
		September	September to November	December to February
Turkey	*Temperature*	Likely to be warmer than normal	Much more likely to be warmer than normal	Climatological odds
	Rainfall	Climatological odds	Likely to be wetter than normal	Climatological odds
Palestine	*Temperature*	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds
Lebanon	*Temperature*	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds
Jordan	*Temperature*	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds

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		
		September	September to November	December to February
Syria	*Temperature*	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Likely to be wetter than normal
Iraq	*Temperature*	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Likely to be wetter than normal
Yemen	*Temperature*	Much more 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

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)

		September	September to November	December to February
		Forecast summary		
Mauritania	*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 wetter than normal	Likely to be wetter than normal in the south; Climatological odds in the north	Climatological odds
Morocco	*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 wetter than normal	Likely to be wetter than normal	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 wetter than normal	Likely to be wetter than normal in the north; Climatological odds in the south	Climatological odds
Tunisia	*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 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: March to August – MENA – North Africa(2)

		Forecast summary		
		September	September to November	December to February
Libya	*Temperature*	**Much more likely to be warmer than normal**	**Much more likely to be warmer than normal**	Likely to be warmer than normal
	Rainfall	**Likely to be wetter than normal**	**Likely to be wetter than normal** in the far northwest; Climatological odds elsewhere	Climatological odds
Egypt	*Temperature*	**Much more 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
Eritrea	*Temperature*	**Much more 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

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		
		September	September to November	December to February
Caribbean Region	*Temperature*	**Much more 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** in the Leeward Islands; Climatological odds elsewhere	**Likely to be drier than normal** in the Leeward Islands; **Likely to be wetter than normal** elsewhere	Likely to be drier than normal in the Leeward Islands; Likely to be wetter than normal elsewhere
Haiti	*Temperature*	**Much more 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 wetter than normal**	Climatological odds
Guyana	*Temperature*	**Much more likely to be warmer than normal**	**Much more likely to be warmer than normal**	Likely to be warmer than normal
	Rainfall	**Much more likely to be drier than normal**	**Much more 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		
		September	September to November	December to February
Southern Europe	*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 wetter than normal	Likely to be wetter than normal	Climatological odds
Central Indian Ocean	*Temperature*	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Likely to be wetter than normal
Central Pacific	*Temperature*	Climatological odds	Climatological odds	Climatological odds
	Rainfall	Climatological odds	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

Climate Outlook
Global: May to February

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)

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