Global: Monthly Climate Outlook December to September

Issued: March 2024

Overview

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

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

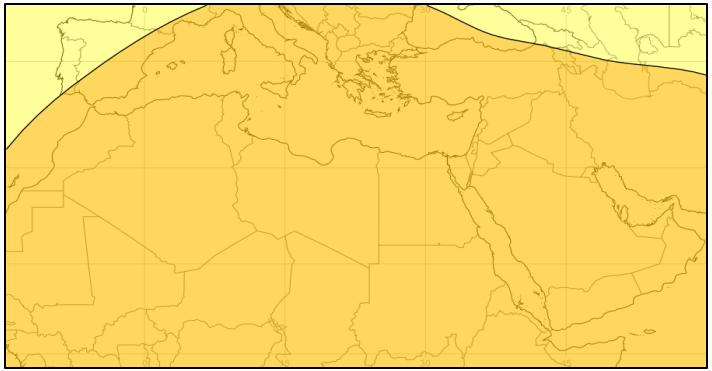
Global Seasonal Outlook – Temperature

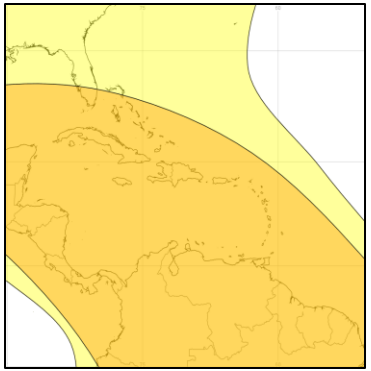
Global Seasonal Outlook – Rainfall

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

Current Status:
Across much of the MENA region, the Caribbean and the British Overseas Territories temperatures were hot over the last three months, with a couple of exceptions. Though hot in December and January, away from coastal regions, parts of North Africa were normal or cold during February. The British Overseas Territories in the central Pacific were normal in December but cold in January and February.

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. The exception to this is the British Overseas Territories in the central Pacific where temperatures are likely to be co during February temperatures thannormal.





3-Month Outlook April to June - Temperature

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

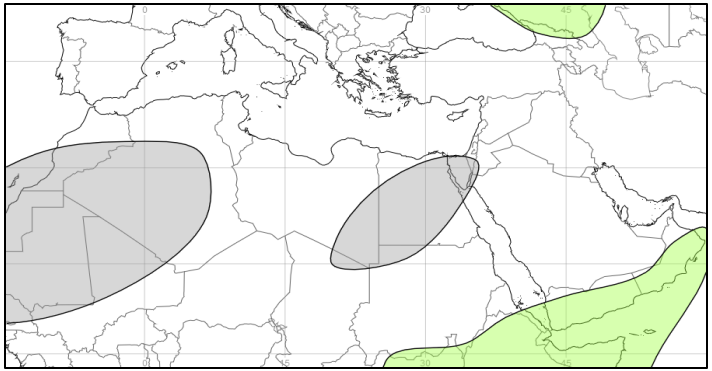
Left: Middle East and North Africa
Right: Caribbean region

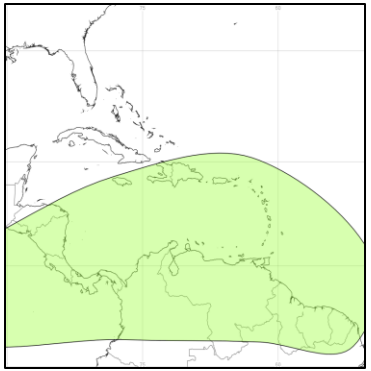
MENA, Caribbean and British Overseas Territories Current Status and Outlook - Rainfall

Current Status:
Across most of the Middle East, rainfall was near-normal over the last three months, apart from some parts of Iraq which were wet. In North Africa, many parts have been near-normal over the past three months, though this region usually experiences very little rainfall in this period. The Caribbean and British Overseas Territories were either dry or had near-normal rainfall over the past three months. The exception to this was Haiti which was very wet in December and parts of the far west and far northeast of the Caribbean which were wet during February.

Outlook:
Over the next three months, parts of the MENA region are likely to have near-normal rainfall, and it is likely to be wetter than normal in Yemen and Oman. In the Caribbean, it is likely to be wetter than normal for the British Virgin Islands, Anguilla and Montserrat.

Tropical Cyclone outlook: North Atlantic tropical storm seasonal forecasts for 2024 will be issued in May.





3-Month Outlook April to June - Rainfall

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

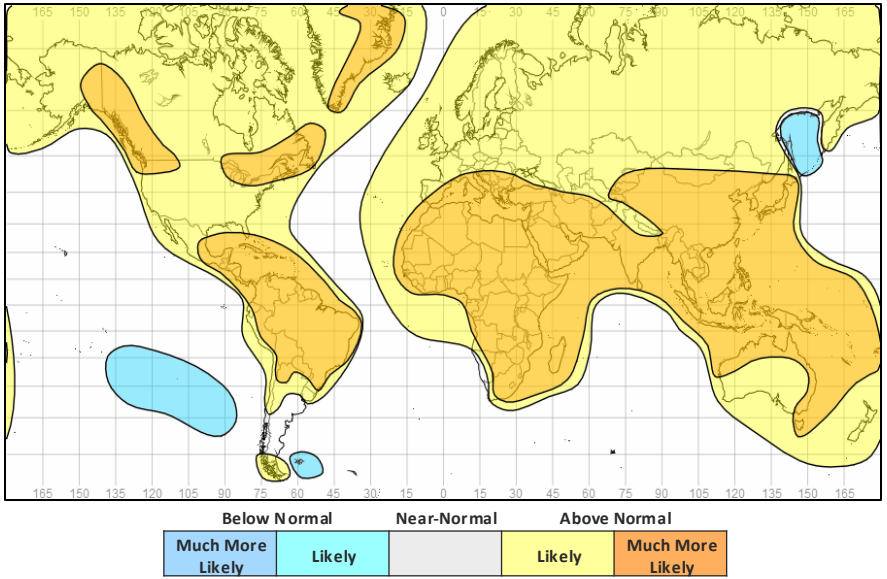
Left: Middle East and North Africa
Right: Caribbean region

Global Outlook - Temperature

Outlook:

With the backdrop of a warming climate and the current ongoing (though weakening) El Niño event, the vast majority of land areas are likely or much more likely to be warmer than normal during April, May and June. The main exception to this being the southeast Pacific region and far southwest Atlantic, where colder conditions are likely. This is result of colder than normal sea surface temperatures in this area due to El Niño.

3-Month Outlook April to June - Temperature



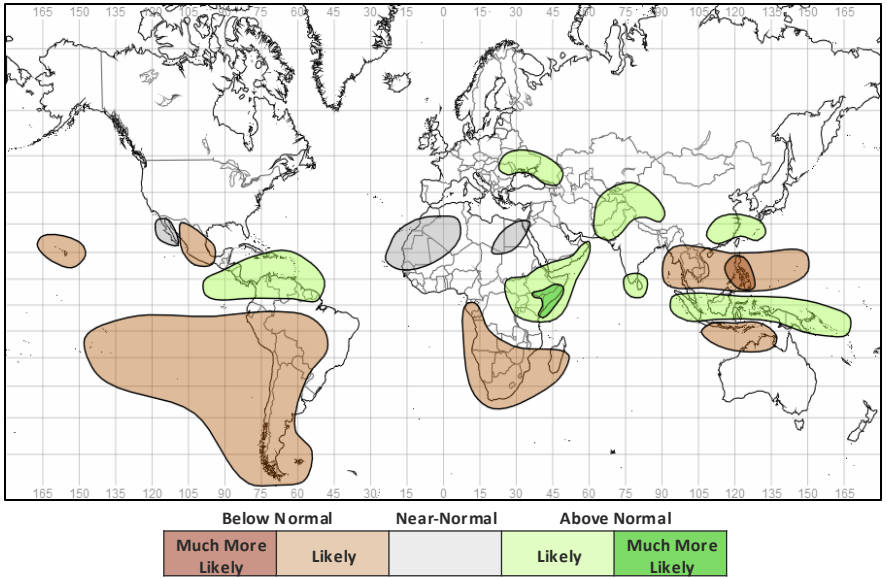
Global Outlook - Rainfall

Outlook:

El Niño-Southern Oscillation (ENSO) – Although now declining, sea surface temperatures (SSTs) across the equatorial Pacific remain indicative on an ongoing El Niño event. Now past its peak, the current El Niño event is likely to weaken further with a transition to ENSO-neutral very likely (83%) April-June. There is an increasing chance (62%) of a transition to La Niña in June-August.

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. Its influence tends to be most dominant across the tropics and although weakening and perhaps becoming less of a driver in mid-latitudes, El Niño will continue to impact weather patterns over the next few months, especially across the tropics.

3-Month Outlook April to June - Rainfall



Current Status

Current Status maps

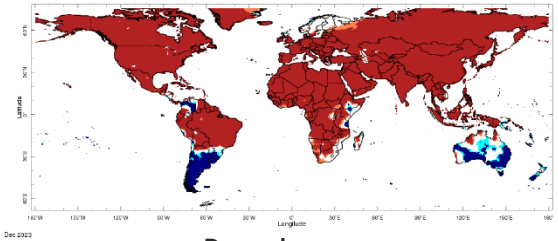
MENA – Middle East

MENA – North Africa

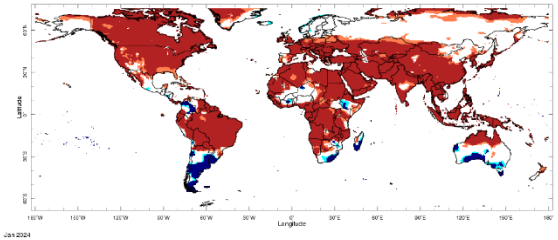
Caribbean

British Overseas Territories

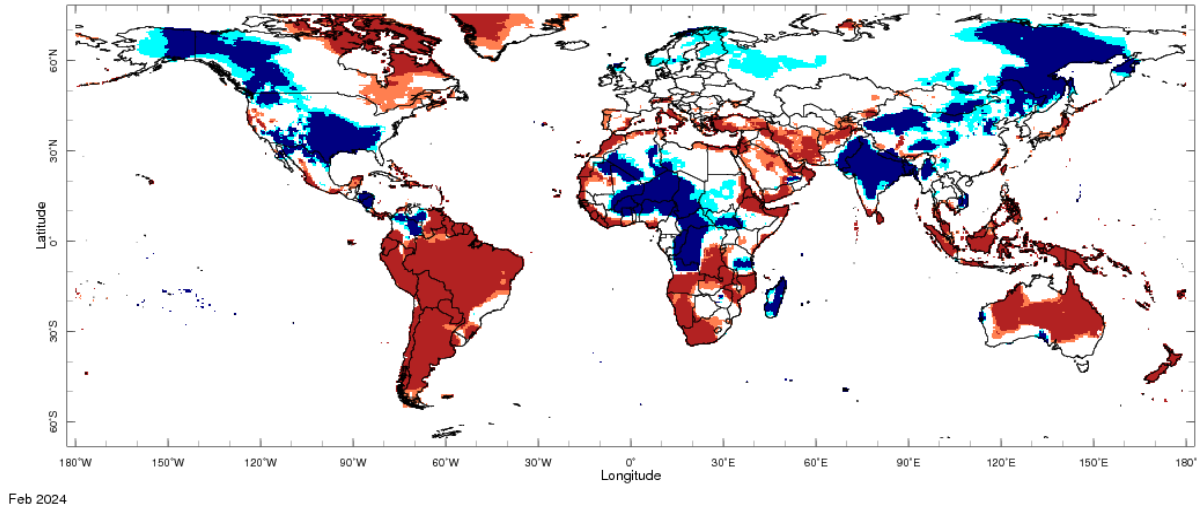
Current Status – Temperature percentiles



December



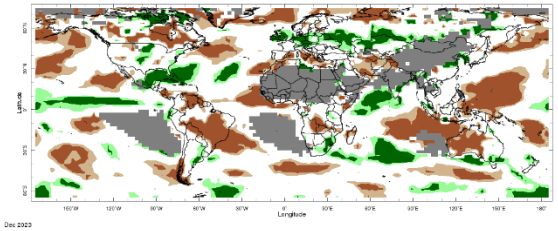
January



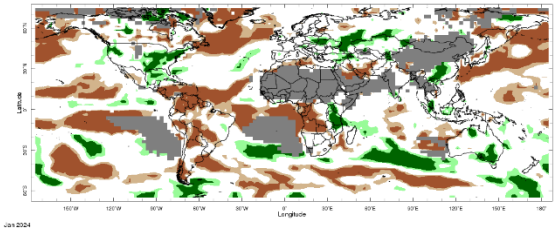
February

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.

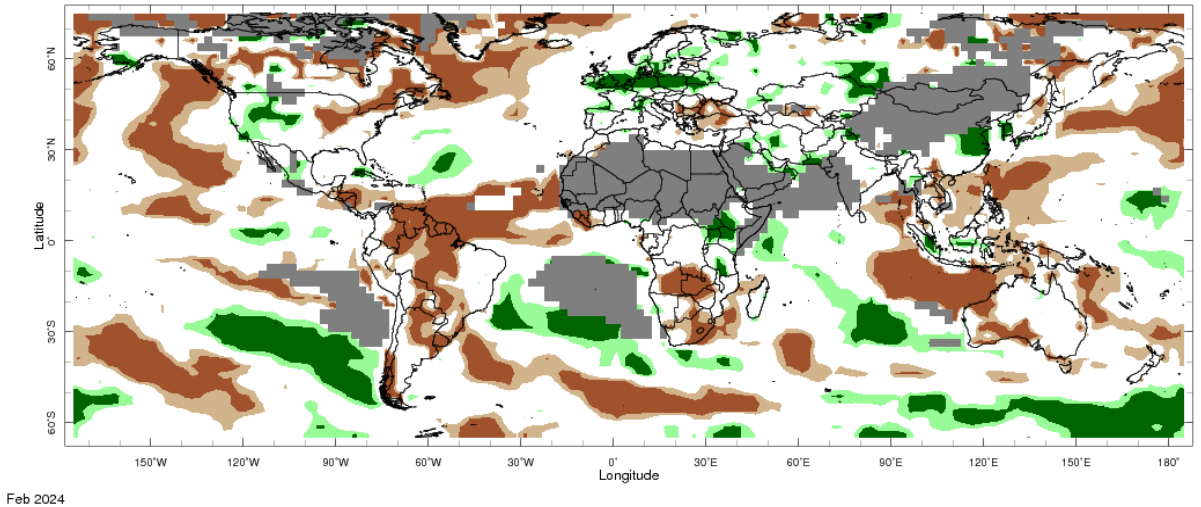
Current Status – Precipitation percentiles



December



January



Feb 2024

December

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 10mm/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		
	December	January	February	December	January	February
Turkey	Hot	Hot	Hot (4)	Normal	Normal (2)	Dry (7)
Palestine	Hot	Hot	Hot	Normal	Normal	Normal
Lebanon	Hot	Hot	Hot	Normal	Normal	Normal
Jordan	Hot	Hot	Hot	Normal	Normal	Normal
Syria	Hot	Hot	Normal (5)	Normal	Wet	Normal
Iraq	Hot	Hot	Normal (6)	Normal (1)	Normal (3)	Normal (8)
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:

(1) Note: Wet in far west
(2) Note: Wet in the east
(3) Note: Dry in the south
(4) Note: Normal in central parts
(5) Note: Hot in the far west
(6) Note: Normal in central parts, hot in the far north and south
(7) Note: Normal in the east
(8) Note: Wet in central parts

Current Status – MENA – North Africa

	Current Status: Temperature			Current Status: Rainfall		
	December	January	February	December	January	February
Mauritania	Hot	Hot	Hot	Normal*	Normal*	Normal*
Morocco	Hot	Hot	Hot	Dry	Normal	Normal
Algeria	Hot	Hot	Mixed (2)	Normal (1)	Normal (1)	Normal*
Tunisia	Hot	Hot	Normal (3)	Normal	Dry	Normal
Libya	Hot	Hot	Normal (4)	Very Wet	Normal	Normal*
Egypt	Hot	Hot	Normal (3)	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: Dry in the west
(2) Note: Hot in the north and cold in the southwest and southeast, normal elsewhere
(3) Note: Hot in the north
(4) Note: Hot in the far northeast and cold in the far southwest

Current Status – Caribbean

	Current Status: Temperature		
	December	January	February
Caribbean Region	Hot	Hot	Hot
Haiti	Hot	Hot	Hot
Guyana	Hot	Hot	Hot

Current Status: Rainfall		
December	January	February
Normal (2)	Normal (1)	Normal (3)
Very Wet	Dry	Normal
Very 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: Very dry across the Lesser Antilles.
(2) Note: Very wet in northwest, normal elsewhere
(3) Note: Wet across parts of the far northeast and west, dry in the far south and southwest, normal elsewhere

Current Status – British Overseas Territories

	Current Status: Temperature			Current Status: Rainfall		
	December	January	February	December	January	February
Southern Europe	Hot	Hot (1)	Hot	Dry	Normal	Normal
Central Indian Ocean	Hot	Hot	Hot	Dry	Dry	Wet
Central Pacific	Normal	Cold	Cold	Normal	Normal	Very Wet

Notes:

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

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

Additional Information:

(1) Note: Normal across western Iberia.

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		
		April	April to June	July to September
Turkey	*Temperature*	**Much more likely to be warmer than normal** in the west; **Likely to be warmer than normal** elsewhere	**Much more likely to be warmer than normal**	Much more likely to be warmer than normal
		Climatological odds	Climatological odds	Likely to be near-normal
	Rainfall	**Much more likely to be warmer than normal**	**Much more likely to be warmer than normal**	Much more likely to be warmer than normal
Palestine	*Temperature*	**Likely to be near-normal**	**Likely to be near-normal**	Likely to be near-normal
	Rainfall	**Much more likely to be warmer than normal**	**Much more likely to be warmer than normal**	Much more likely to be warmer than normal
Lebanon	*Temperature*	Climatological odds	Climatological odds	Likely to be near-normal
	Rainfall	**Much more likely to be warmer than normal**	**Much more likely to be warmer than normal**	Much more likely to be warmer than normal
Jordan	*Temperature*	Climatological odds	Climatological odds	Likely to be near-normal
	Rainfall	**Much more likely to be warmer than normal**	**Much more likely to be warmer than normal**	Much more likely to be warmer 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		
		April	April to June	July to September
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	Climatological odds	Climatological odds	Likely to be near-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	Climatological odds	Climatological odds	Likely to be near-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 in the west; Much more likely to be warmer than normal elsewhere
	Rainfall	**Likely to be wetter than normal**	**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.

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

		Forecast summary		
		April	April to June	July to September
Mauritania	*Temperature*	**Much more likely to be warmer than normal**	**Much more likely to be warmer than normal**	Likely to be warmer than normal in the west; Much more likely to be warmer than normal elsewhere
	Rainfall	Likely to be near-normal	Likely to be near-normal	Likely to be drier 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 near-normal	Likely to be near-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 near-normal	Likely to be near-normal in the west; Climatological odds elsewhere	Likely to be wetter than normal in the north; Climatological odds elsewhere
Tunisia	*Temperature*	Likely to be warmer than normal	**Much more likely to be warmer than normal**	Much more likely to be warmer than normal
	Rainfall	Climatological odds	Climatological odds	Likely to be near-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		
		April	April to June	July to September
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 near-normal	Likely to be near-normal in the east; Climatological odds elsewhere	Likely to be near-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 near-normal	Likely to be near-normal	Likely to be near-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 wetter than normal in the south; Climatological odds elsewhere	Likely to be wetter than normal in the south; Climatological odds elsewhere	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.

Outlook: March to August – Caribbean

		Forecast summary		
		April	April to June	July to September
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	Climatological odds	**Likely to be wetter than normal**	Likely to be wetter than normal
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	Climatological odds	**Likely to be wetter than normal**	Likely to be wetter than normal
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** in the north; Climatological odds elsewhere	**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 – British Overseas Territories

		Forecast summary		
		April	April to June	July to September
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	Climatological odds	Climatological odds	Likely to be drier than normal for Gibraltar; Likely to be near-normal for Cyprus
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 wetter than normal**	Climatological odds	Likely to be wetter than normal
Central Pacific	*Temperature*	**Likely to be colder than normal**	**Likely to be colder than normal**	Likely to be colder than normal
	Rainfall	**Likely to be drier than normal**	**Likely to be drier than normal**	Much more 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.

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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