

# Asia: Monthly Climate Outlook February to November

**Issued: May 2021**

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# Overview

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# Asia Current Status and Outlook - Temperature

## Current Status:

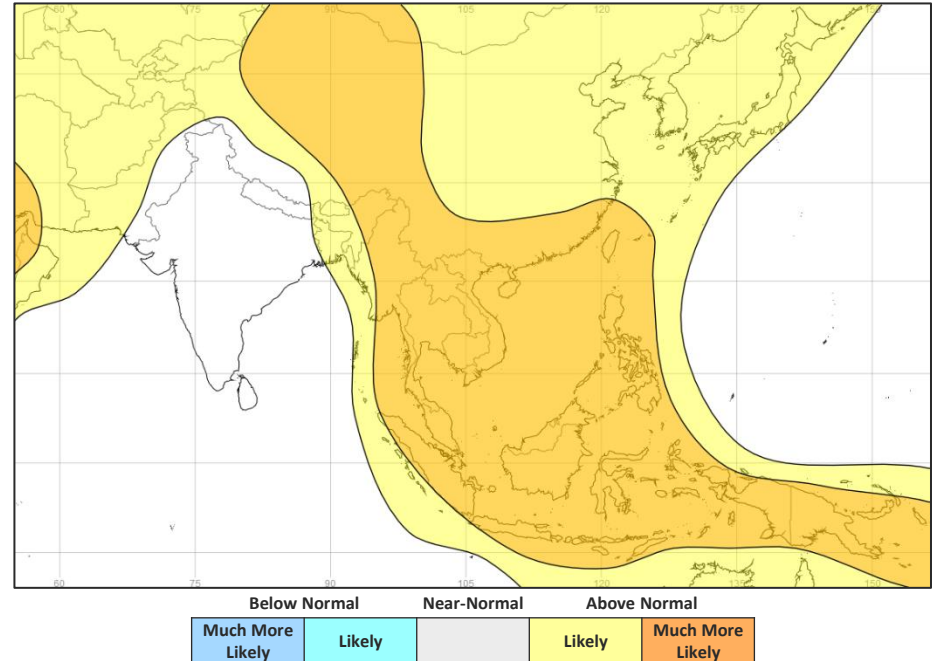
Most of Asia has been warm or hot over the last three months. The exceptions have been parts of India, where temperatures had been more mixed, as well as parts of central Asia, where temperatures have fluctuated around normal. Temperatures across Indonesia have also been mixed.

## Outlook:

Most of the area is likely or much more likely to be warmer than normal through the next three months. Forest fires, as well as impacts on health from prolonged heat are more likely during warmer than likely temperatures.

The main exception to this is the Indian subcontinent where Climatological Odds are considered most likely.

## 3-Month Outlook June to August - Temperature



# Asia Current Status and Outlook - Rainfall

## Current Status:

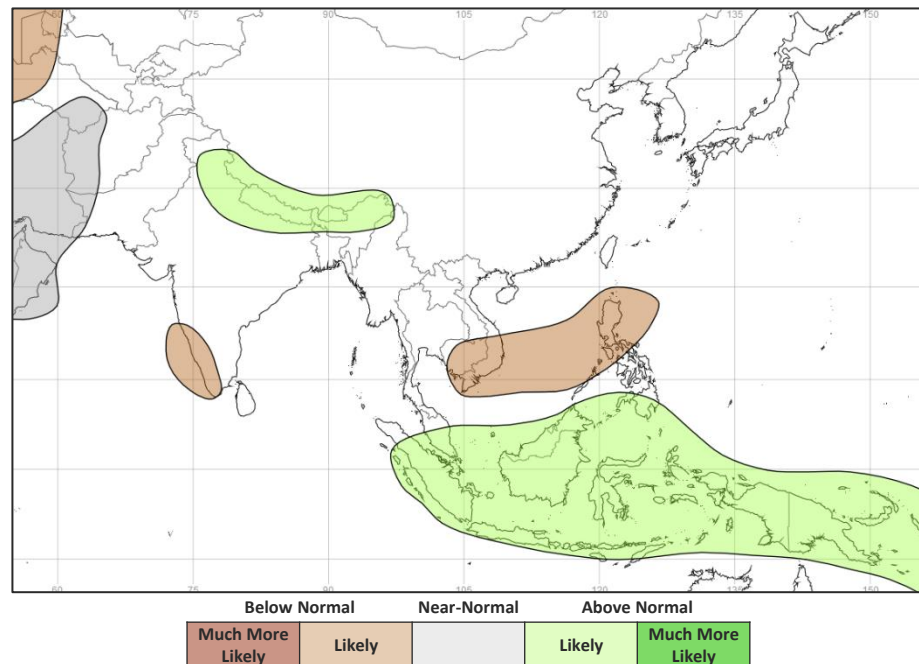
After an initially wet start to the year for parts of Indonesia and parts of the Philippines, precipitation across the continent has been near- to below normal. Other parts of the Philippines have continued to see wetter than normal conditions, along with Vietnam, Laos and Thailand during April.

## Outlook:

Wetter than normal conditions are likely across much of Indonesia and Malaysia. Further north, it is likely to be drier than normal across parts of Vietnam, Laos and the Philippines.

The South Asian Monsoon rains will track northward over the next three months; on average during Jun to August, wetter than normal conditions are likely across northern India, Nepal, Bhutan and parts of Bangladesh, and drier than normal conditions likely across parts of southwest India.

## 3-Month Outlook June to August - Rainfall



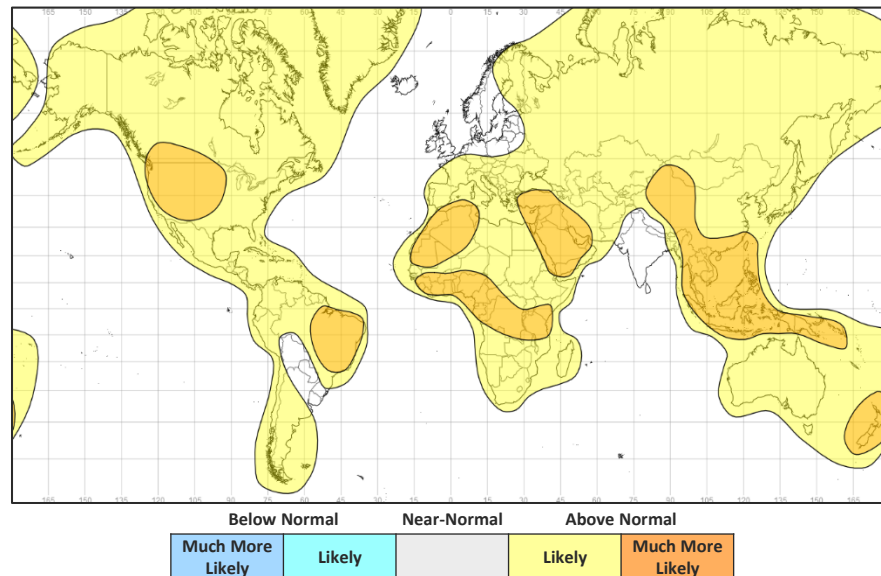
# Global Outlook - Temperature

## Outlook:

The El Niño–Southern Oscillation (ENSO) is now neutral as is expected to remain so for at least the next three months, and this decreases the predictability of seasonal forecasts. Later this year, there is small chance of La Niña redeveloping. However, ENSO predictions made at this time of year have lower skill than at other times of the year.

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. Parts of the western USA, much of central and northern Africa, Middle East and Southeast Asia are much more likely to be warmer than normal.

## 3-Month Outlook June to August - Temperature



# Global Outlook - Rainfall

## Outlook:

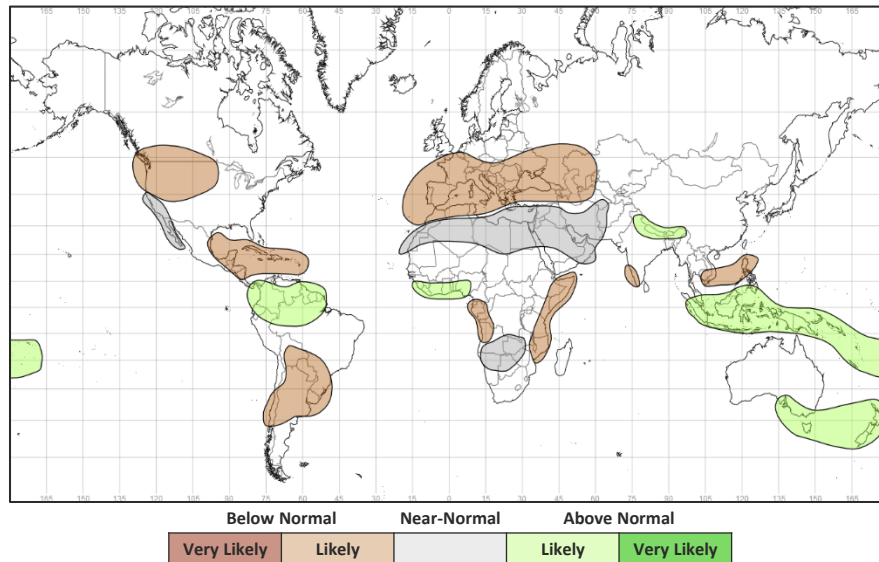
As described in the temperature section, the influences of the recent La Niña is reduced in the forecast and predictability is lower than if ENSO was in an active phase. The Indian Ocean Dipole (IOD) is likely to remain neutral, making seasonal rainfall less predictable in the coming months across East Africa and southern Asia.

Over the next three months, the seasonal northward shift of rains will see the onset of the South Asian Monsoon (SAM). Predictions for the SAM are finely balanced with mixed and conflicting signals from longer range forecast systems. Overall, however, there is a slight increase in the likelihood of drier than normal conditions in southwest India and wetter than normal conditions across northern India, Nepal, Bhutan and parts of Bangladesh.

Elsewhere, it is likely to be wetter than normal for parts of West Africa (just inland from the Gulf of Guinea), as well northern parts of South America. Here, a southward displaced and more active than normal Intertropical Convergence Zone (ITCZ) means conditions are likely to be wetter than normal across areas which have already seen impacts from flooding over the last few months.

Much of the rest of South America, as well as the Caribbean, central and southern Europe and central parts of Asia are likely to be drier than normal. This is also true for southern Vietnam and parts of the Philippines. Meanwhile, wetter than normal conditions are more probable across much of Indonesia, Malaysia and Papua New Guinea.

## 3-Month Outlook June to August - Rainfall



# Current Status

[Current Status maps](#)

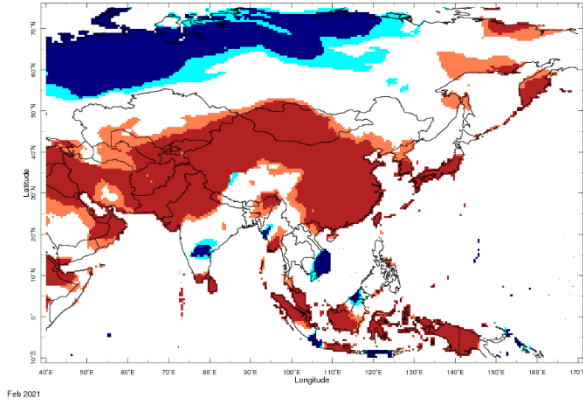
[Central Asia](#)

[Southern Asia](#)

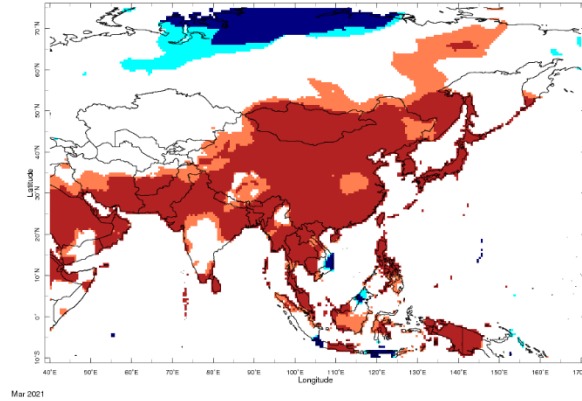
[Southeast Asian Peninsula](#)

[Southeastern Asia / Indonesia](#)

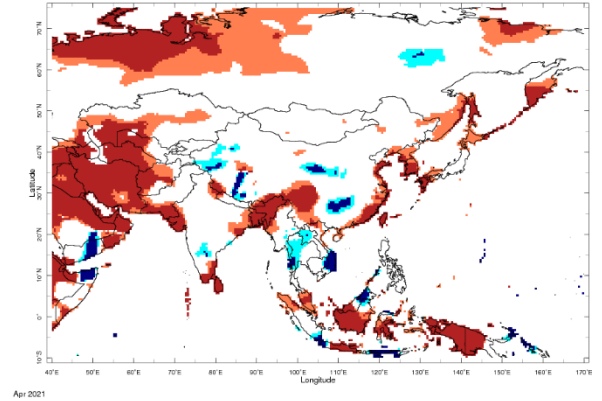
# Current Status – Temperature percentiles



February



March



April

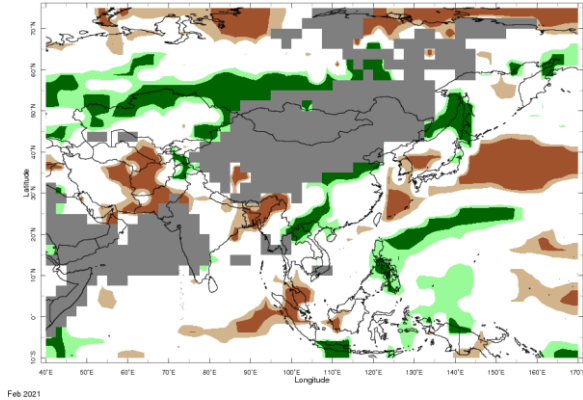
Temperature Percentiles (BLUE below 20th and RED above 80th)



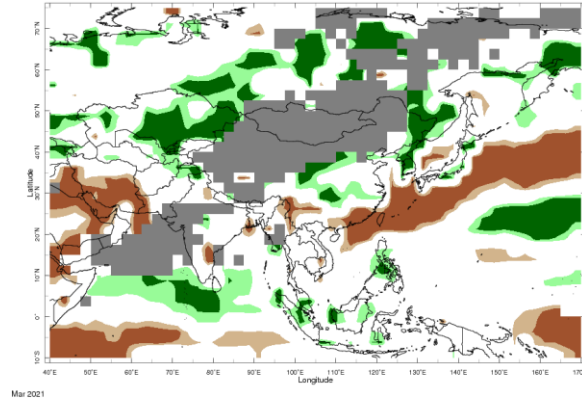
**Notes:** The percentiles shown in the map indicate a ranking of temperature, with the 0th percentile being the coolest and the 100th percentile being the warmest in the 1981-2010 climatology. Orange and red shading represent values above the 80th (Warm) and 90th (Hot) percentile, respectively; regions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



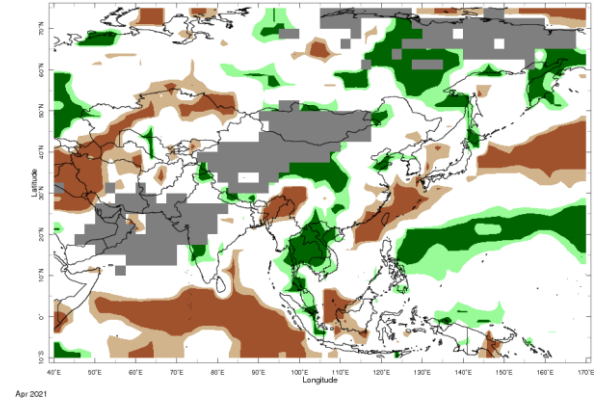
# Current Status – Precipitation percentiles



February



March



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 – Central Asia

### Current Status: Temperature

	February	March	April
Afghanistan	Hot	Hot (1)	Hot (1)
Tajikistan	Hot	Normal	Normal
Kyrgyzstan	Hot	Normal	Normal

### Current Status: Rainfall

	February	March	April
	Dry	Normal	Normal
	Very Wet	Wet	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:** Near normal for parts of the north and east, but overall hot

## Current Status – Southern Asia

### Current Status: Temperature

	February	March	April
Pakistan	Hot	Hot	Normal (3)
India	Mixed (1)	Hot	Normal (3)
Nepal	Normal	Hot	Normal
Bangladesh	Normal	Hot	Hot

### Current Status: Rainfall

	February	March	April
Pakistan	Mixed (2)	Normal	Normal
India	Normal	Normal	Normal
Nepal	Normal	Normal	Wet
Bangladesh	Very 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:** Hot in the northeast, mostly Normal elsewhere, apart from very cold in central-southern regions.

**(2) Note:** Very Dry in the south, but Very Wet in the north.

**(3) Note:** Hot in coastal regions

# Current Status – Southeast Asian Peninsula

## Current Status: Temperature

	February	March	April
China	Hot	Hot	Normal (3)
Myanmar	Mixed	Hot	Normal
Vietnam	Cold	Mixed (1)	Mixed (1)

## Current Status: Rainfall

	February	March	April
	Normal	Mixed (2)	Mixed (2)
	Normal (4)	Mixed	Normal (4)
	Normal	Normal	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:** Hot in the north, cold in the south
- (2) **Note:** Large variations across the country
- (3) **Note:** Hot along the east coast and across Tibet
- (4) **Note:** Large variations across the country
- (5) **Note:** Dry in the north.

## Current Status – Southeastern Asia / Indonesia

	Current Status: Temperature			Current Status: Rainfall		
	February	March	April	February	March	April
Indonesia	Hot	Mixed (1)	Mixed (1)	Mixed	Mixed (2)	Normal
Papua New Guinea	Hot	Hot	Hot	Normal	Normal	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:** Large variations across the country

**(2) Note:** Highly variable, all areas normal or wet/very wet

# Outlooks

Outlooks – Notes for use

Central Asia

Southern Asia

Southeast Asian Peninsula

Southeastern Asia / Indonesia

# 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: June to November – Central Asia

		Forecast summary		
		June	June to August	September to November
Afghanistan	Temperature	Likely to be warmer than normal	Likely to be warmer than normal	Climatological odds
	Rainfall	Likely to be near-normal	Likely to be near-normal in the west; Climatological odds elsewhere	Likely to be drier than normal
Tajikistan	Temperature	Likely to be warmer than normal	Likely to be warmer than normal	Climatological odds
	Rainfall	Likely to be near-normal	Climatological odds	Likely to be drier than normal
Kyrgyzstan	Temperature	Likely to be warmer than normal	Likely to be warmer than normal	Climatological odds
	Rainfall	Likely to be near-normal	Climatological odds	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: June to November – Southern Asia

		Forecast summary		
		June	June to August	September to November
Pakistan	Temperature	Likely to be warmer than normal	Likely to be warmer than normal	Climatological odds
	Rainfall	Climatological odds	Climatological odds	Climatological odds
India	Temperature	Climatological odds	Climatological odds	Climatological odds
	Rainfall	Climatological odds	Likely to be drier than normal in the southwest; Likely to be wetter than normal in the north; Climatological odds elsewhere	Climatological odds
Nepal	Temperature	Climatological odds	Climatological odds	Climatological odds
	Rainfall	Climatological odds	Likely to be wetter than normal	Climatological odds
Bangladesh	Temperature	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Climatological odds	Likely to be wetter than normal in the north; Climatological odds elsewhere	Climatological odds

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

# Outlook: June to November – SE Asian Peninsula

		Forecast summary		
		June	June to August	September to November
China	Temperature	Likely to be warmer than normal	Much more likely to be warmer than normal in the south; Likely to be warmer than normal elsewhere	Climatological odds
	Rainfall	Climatological odds	Climatological odds	Climatological odds
Myanmar	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
Vietnam	Temperature	Likely to be warmer than normal	Much more likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Climatological odds	Likely to be drier than normal in the south; Climatological odds elsewhere	Climatological odds

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

# Outlook: June to November – SE Asia / Indonesia

		Forecast summary		
		June	June to August	September to November
Indonesia	Temperature	<b>Much more likely to be warmer than normal</b>	<b>Much more likely to be warmer than normal</b>	Likely to be warmer than normal
	Rainfall	Climatological odds	<b>Likely to be wetter than normal</b>	Likely to be wetter than normal
Papua New Guinea	Temperature	<b>Much more likely to be warmer than normal</b>	<b>Much more likely to be warmer than normal</b>	Likely to be warmer than normal
	Rainfall	Climatological odds	<b>Likely to be wetter than normal</b>	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.ncdc.noaa.gov/teleconnections/enso/indicators/sst.php>

Met Office

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

The South Asian Climate Outlook Forum (SASCOF) [http://www.imdpune.gov.in/Clim\\_RCC\\_LRF/Index.html](http://www.imdpune.gov.in/Clim_RCC_LRF/Index.html)

Latest Output (Apr 2021) - <http://rcc.imdpune.gov.in/SASCOF17/concensus.html>

# 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 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

Email: [internationaldevelopment@metoffice.gov.uk](mailto:internationaldevelopment@metoffice.gov.uk)

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