

# Asia: Monthly Climate Outlook November to August

**Issued: February 2022**

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# Overview

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# Asia Current Status and Outlook - Temperature

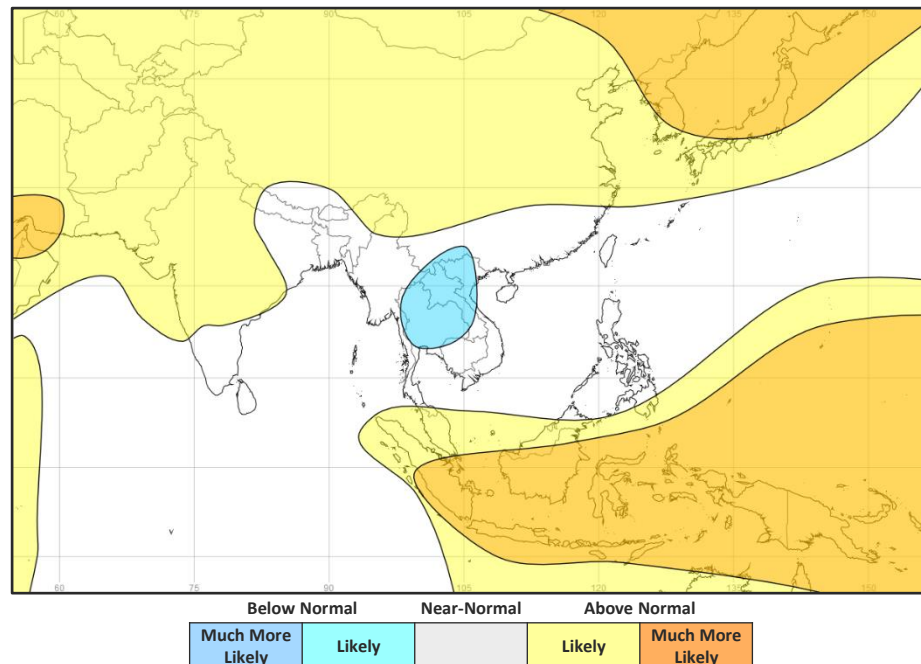
## Current Status:

Over the last three months, many parts of this region have been warm or hot. However, there have been some there were large variations across some countries, particularly in northern parts of the continent. Parts of central and southern Vietnam have been colder than normal since November. Parts of India and Nepal were also cold during January.

## Outlook:

For the next three months, it is likely to be warmer than normal across large parts of the continent. The main exceptions to this are southern parts of India and parts of Indochina where near- or below normal temperatures are likely.

## 3-Month Outlook March to May - Temperature



# Asia Current Status and Outlook - Rainfall

## Current Status:

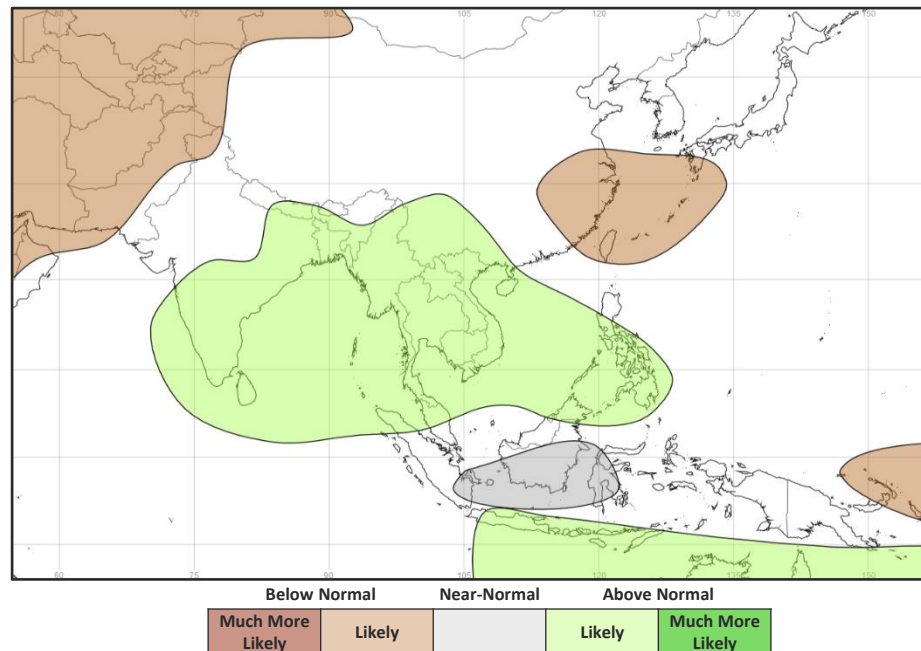
After near-normal or drier than normal conditions early in the winter, above normal precipitation was observed for many parts of Central Asia during January. Above normal precipitation also extended to Afghanistan, Pakistan and northern India during January.

Following wet conditions for parts of Southeast Asia during November, most areas had near-normal conditions in December and January.

## Outlook:

In South East Asia as seasonal rains shift northwards over the next three months, it is likely to be wetter than normal (consistent with La Niña). Additionally, it is likely to be wetter than normal in the Java region of Indonesia throughout this period. Wetter than average conditions also likely for southern and eastern India, ahead of the more substantial summer monsoon rains. Below normal rainfall is likely across Central Asia, Afghanistan and Pakistan.

## 3-Month Outlook March to May - Rainfall



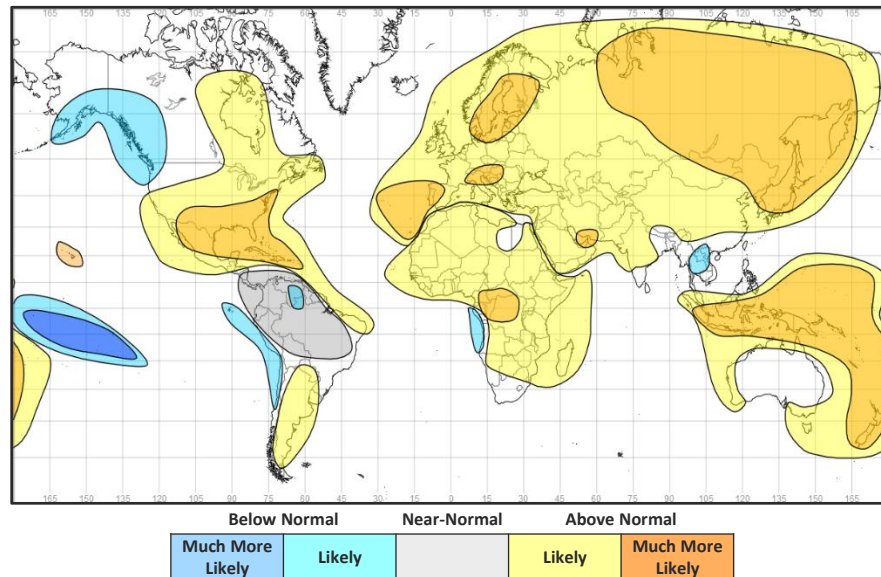
# Global Outlook - Temperature

## Outlook:

A weak La Niña is ongoing across the tropical Pacific. La Niña will be the main driver of temperature and rainfall anomalies across the tropics over the next three months. La Niña's influence will also extend further north and south, mainly early in the northern hemisphere spring.

As is typical due to climate change, many parts of the globe are likely to see above normal temperatures. However, there are some notable exceptions. Consistent with La Niña, below normal temperatures are most likely for some northern and western parts of South America, mainland Southeast Asia Australia and northwest North America.

## 3-Month Outlook March to May - Temperature



# Global Outlook - Rainfall

## Outlook:

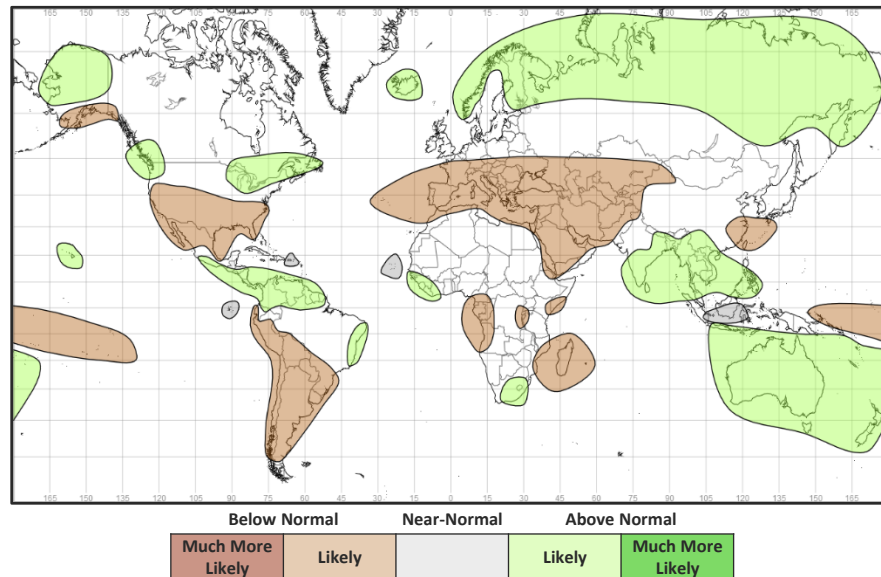
**El Niño-Southern Oscillation (ENSO)** – La Niña is ongoing with sea surface temperatures and atmospheric conditions across the Pacific basin indicative of a weak event. The event has likely peaked and, according to NOAA, whilst La Niña is likely to continue into the Northern Hemisphere early spring (77% chance during March-May 2022), a transition to ENSO-neutral is more probable later in the season (56% chance during May-July 2022). The effects of La Niña are likely to remain wide-reaching during the northern hemisphere spring.

With a couple of notable exceptions (including East Africa) La Niña, very broadly speaking, tends to increase the likelihood of wetter than normal conditions across many land areas of the tropics. More information on typical impacts can be found here <https://www.metoffice.gov.uk/research/climate/seasonal-to-decadal/gpc-outlooks/el-nino-la-nina/enso-impacts>

For the next three months, the outlook for North America and Eurasia is also broadly consistent with the influence of La Niña with northern parts of both continents favoured to see wetter than normal conditions. With progression into the Northern Hemisphere spring, the influence of La Niña on weather patterns at higher latitudes tends to decline.

**Indian Ocean Dipole (IOD)** – The IOD returned to a neutral state during early November and is expected to remain neutral throughout March to May. It will therefore have little effect on global climate during this period.

## 3-Month Outlook March to May - Rainfall



# Current Status

[Current Status maps](#)

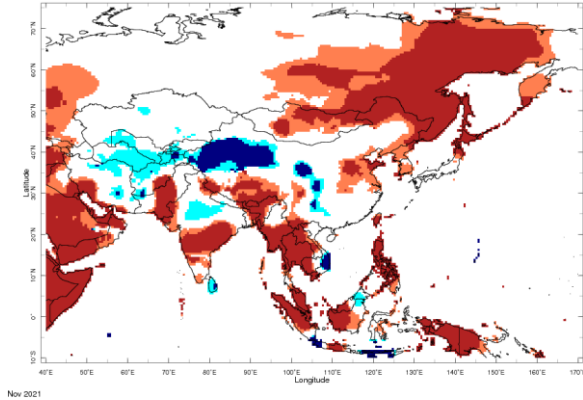
[Central Asia](#)

[Southern Asia](#)

[Southeast Asian Peninsula](#)

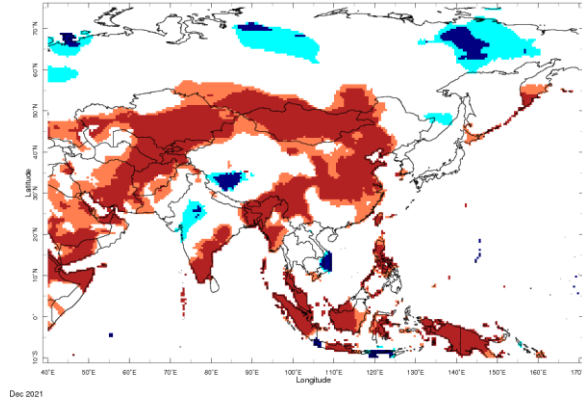
[Southeastern Asia / Indonesia](#)

# Current Status – Temperature percentiles



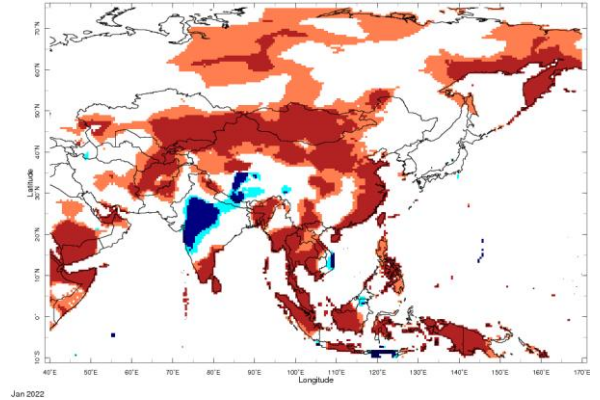
Nov 2021

**November**



Dec 2021

**December**



Jan 2022

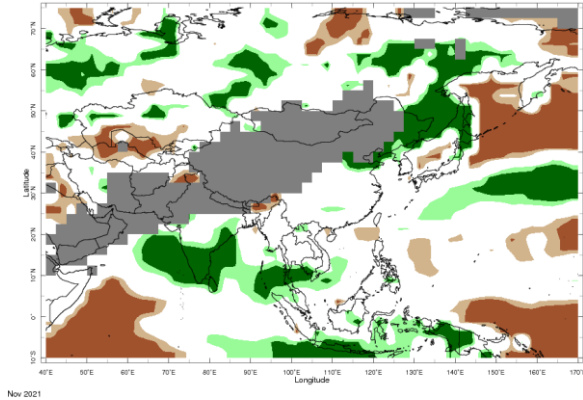
**January**



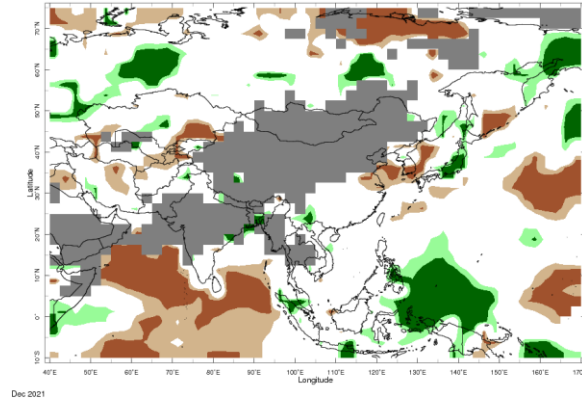
**Notes:** The percentiles shown in the map indicate a ranking of temperature, with the 0th percentile being the coolest and the 100th percentile being the warmest in the 1981-2010 climatology. Orange and red shading represent values above the 80th (Warm) and 90th (Hot) percentile, respectively; regions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



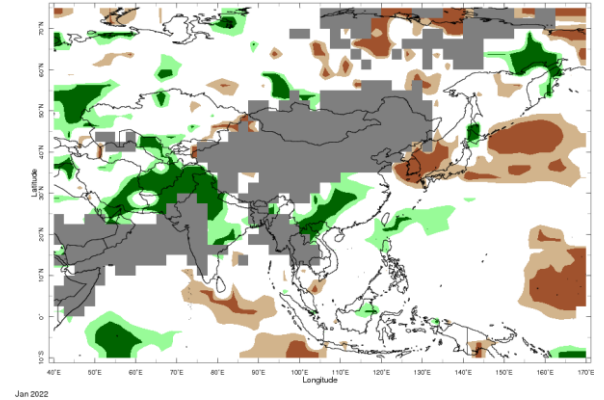
# Current Status – Precipitation percentiles



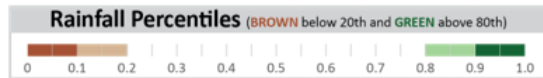
Nov 2021  
November



Dec 2021  
December



Jan 2022  
January



**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

	November	December	January
Afghanistan	Mixed (1)	Warm	Hot
Tajikistan	Cold	Hot	Hot
Kyrgyzstan	Cold	Hot	Hot

### Current Status: Rainfall

	November	December	January
	Normal	Normal	Very Wet
	Normal	Dry	Normal
	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:** Cold in the west

## Current Status – Southern Asia

### Current Status: Temperature

	November	December	January
Pakistan	Mixed (1)	Normal	Mixed (1)
India	Mixed (2)	Mixed (2)	Mixed (2)
Nepal	Normal	Normal	Cold
Bangladesh	Hot	Hot	Hot

### Current Status: Rainfall

	November	December	January
	Normal	Normal	Very Wet
	Mixed (3)	Normal*	Mixed (4)
	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:** Hot in central/southeastern areas, elsewhere normal
- (2) Note:** Variable but generally hot in the south, cold in the north
- (3) Note:** Very wet in the south, elsewhere normal
- (4) Note:** Wet or very wet in parts of the north, elsewhere normal\*

# Current Status – Southeast Asian Peninsula

	Current Status: Temperature			Current Status: Rainfall		
	November	December	January	November	December	January
China	Mixed (1)	Mixed (1)	Mixed (1)	Mixed (3)	Normal	Mixed (5)
Myanmar	Hot	Warm	Hot	Normal	Normal*	Normal*
Vietnam	Mixed (2)	Mixed (2)	Mixed (4)	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:** Large regional variations Cold in central parts, normal elsewhere.
- (2) Note:** Cold in the south; normal elsewhere
- (3) Note:** Wet in far northeast, otherwise normal
- (4) Note:** Cold in the south; hot in north
- (5) Note:** Wet or very wet in parts of the southeast, otherwise mostly normal\*.

## Current Status – Southeastern Asia / Indonesia

	Current Status: Temperature			Current Status: Rainfall		
	November	December	January	November	December	January
Indonesia	Hot	Hot	Hot	Mixed (1)	Normal	Normal
Papua New Guinea	Hot	Hot	Hot	Wet	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:** Variable with many areas wet or 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: March to August – Central Asia

		Forecast summary		
		March	March to May	June to August
Afghanistan	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
Tajikistan	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 drier than normal	Likely to be drier than normal
Kyrgyzstan	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 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 – Southern Asia

		Forecast summary		
		March	March to May	June to August
Pakistan	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
India	Temperature	Climatological odds	Mainly Likely to be warmer than normal but Climatological odds in parts of south and east	Climatological odds
	Rainfall	Likely to be wetter than normal in the far south; Climatological odds elsewhere	Likely to be wetter than normal in the south and east; Climatological odds elsewhere	Likely to be wetter than normal
Nepal	Temperature	Climatological odds	Climatological odds	Likely to be warmer than normal
	Rainfall	Climatological odds	Likely to be wetter than normal	Likely to be wetter than normal
Bangladesh	Temperature	Likely to be near-normal	Climatological odds	Likely to be warmer than normal
	Rainfall	Climatological odds	Likely to be wetter than normal	Likely to be wetter than normal

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# Outlook: March to August – SE Asian Peninsula

		Forecast summary		
		March	March to May	June to August
China	Temperature	Likely to be warmer than normal in the north; Likely to be colder than normal in the far south	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Climatological odds	Likely to be drier than normal in the southeast; Mixed elsewhere	Climatological odds
Myanmar	Temperature	Likely to be warmer than normal	Climatological odds	Likely to be warmer than normal
	Rainfall	Climatological odds	Likely to be wetter than normal	Climatological odds
Vietnam	Temperature	Likely to be colder than normal	Likely to be colder 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 – SE Asia / Indonesia

		Forecast summary		
		March	March to May	June to August
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	Likely to be wetter than normal in Java; Climatological odds elsewhere	Likely to be wetter than normal in Java; Climatological odds elsewhere	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	Climatological odds	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 (September 2021) - [https://imdpune.gov.in/Climate\\_Outlook\\_Statement\\_OND2021\\_SASCOF20\\_30\\_SEP\\_2021.pdf](https://imdpune.gov.in/Climate_Outlook_Statement_OND2021_SASCOF20_30_SEP_2021.pdf)

# 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

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