

# Asia: Monthly Climate Outlook October to July

**Issued: January 2022**

[Overview](#)

[Current Status](#)

[Outlooks](#)

[Annex 1 – Supplemental Information](#)

# Overview

[Asia Current Status and Outlook – Temperature](#)

[Asia Current Status and Outlook – Rainfall](#)

[Global Outlook – Temperature](#)

[Global Outlook – Rainfall](#)

# Asia Current Status and Outlook - Temperature

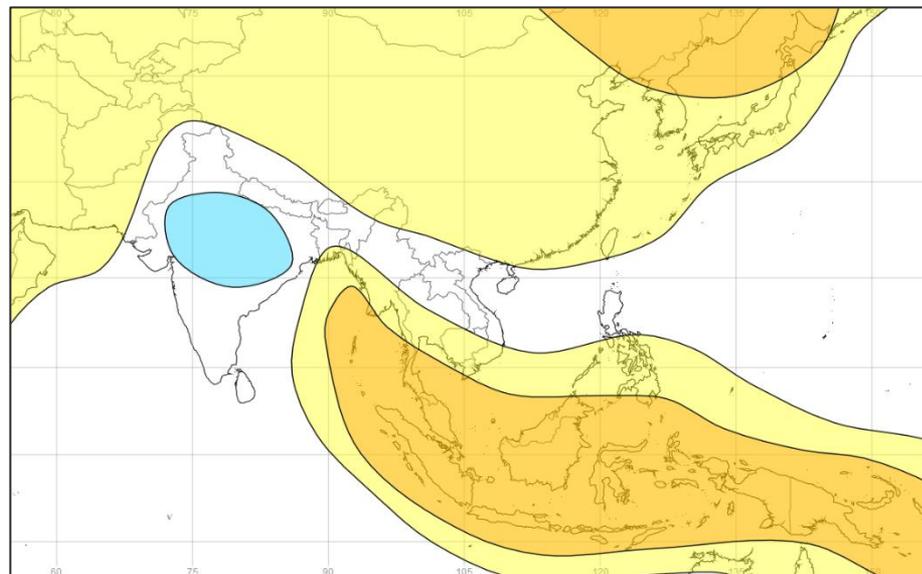
## Current Status:

Over the last three months, many parts of this region have been warm or hot. However, there have been some large temperature variations across some countries especially in southeast Asia; for instance, in Vietnam during October and November it was colder than normal in the south and warmer than normal in the north. Parts of Central Asia and China were also cold during November.

## Outlook:

For the next three months, it is likely to be warmer than across large parts of the continent. The main exceptions to this are parts of central and northern India where it is likely to be colder than normal.

## 3-Month Outlook February to April - Temperature



# Asia Current Status and Outlook - Rainfall

## Current Status:

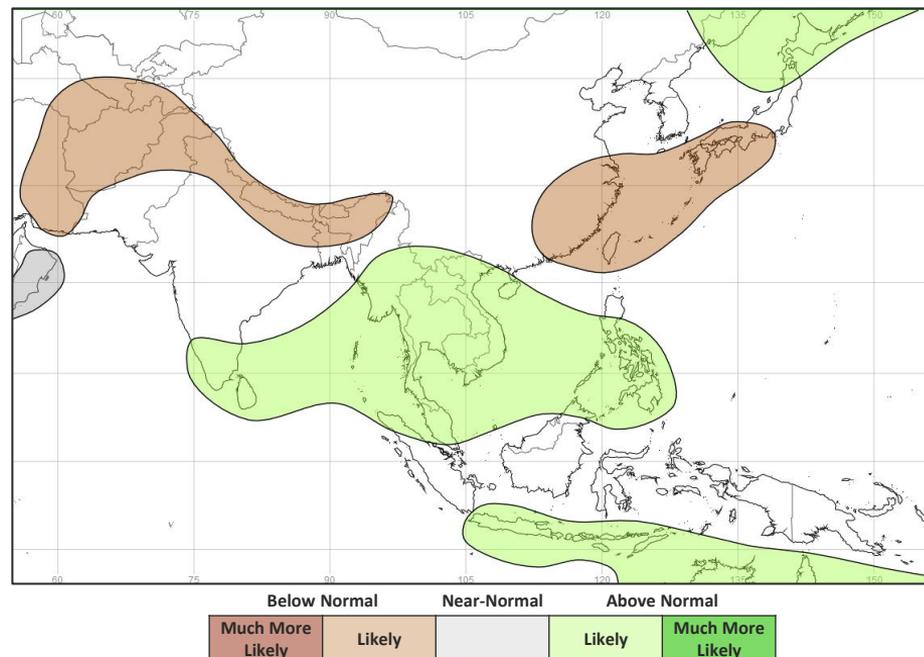
Northern Pakistan, Tajikistan and western China were very wet in October. During November, central Asia had near or below normal precipitation.

The end of the South Asian monsoon was wetter than normal with wet or very wet conditions in southern India and Sri Lanka during November. Additionally, many parts of Southeast Asia and parts of China have been wet or very wet during October and November. However, by December, wet conditions were largely restricted to the Philippines and some parts of Indonesia, with rainfall near-normal across the rest of the region.

## Outlook:

Consistent with La Niña wetter than normal conditions are likely across the Philippines, parts of Indonesia, and much of Indochina over the next three months. Wetter than normal conditions are also likely across Sri Lanka and southern India. However, southeast China, Afghanistan, northern Pakistan, Nepal and parts of northeast India are likely to be drier than normal.

## 3-Month Outlook February to April - Rainfall



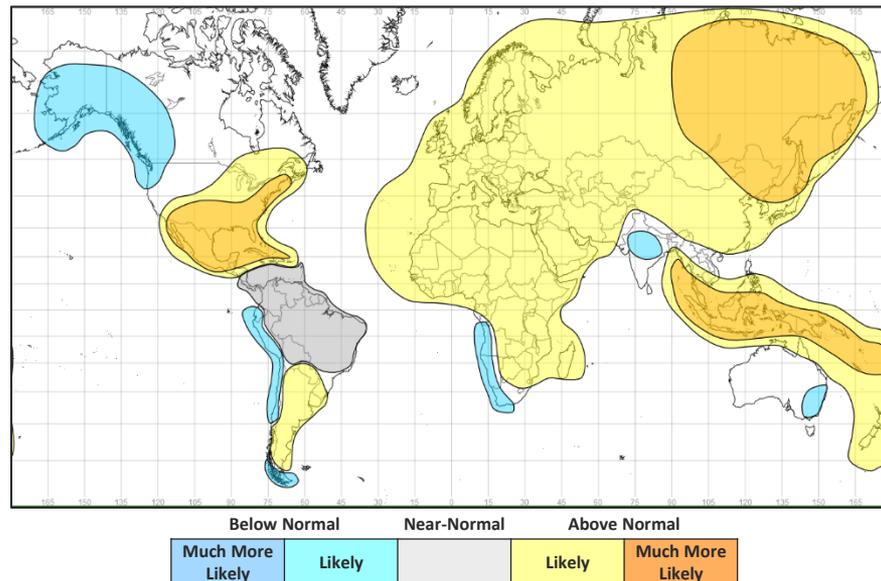
# Global Outlook - Temperature

## Outlook:

A moderate 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 period.

Consistent with long-term climate change, many parts of the globe are likely to see above normal temperatures over the next three months. However, one of the key characteristics of La Niña is a cooling of the surface seawaters of the central and eastern tropical Pacific Ocean. This means near or below normal temperatures are likely for northern and western parts South America, southeast Australia, parts of southern Africa and northwest North America.

## 3-Month Outlook February to April - Temperature



# Global Outlook - Rainfall

## Outlook:

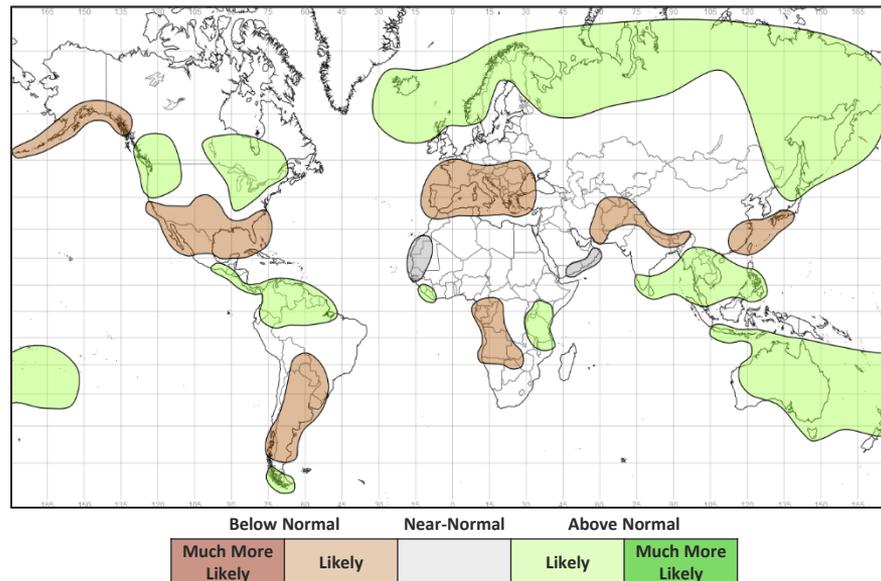
**El Niño-Southern Oscillation (ENSO)** – La Niña is ongoing with sea surface temperatures and atmospheric conditions across the Pacific basin indicative of a moderate event. The event has likely peaked and, according to NOAA, whilst La Niña is likely to continue into the Northern Hemisphere early spring (67% chance during March-May 2022) a transition to ENSO-neutral is more probable later in the season (51% chance during April-June 2022). The effects of La Niña are likely to remain wide-reaching for several months to come.

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. However, as we move 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 February to April; it will have little effect on global climate during this period.

## 3-Month Outlook February to April - Rainfall



# Current Status

[Current Status maps](#)

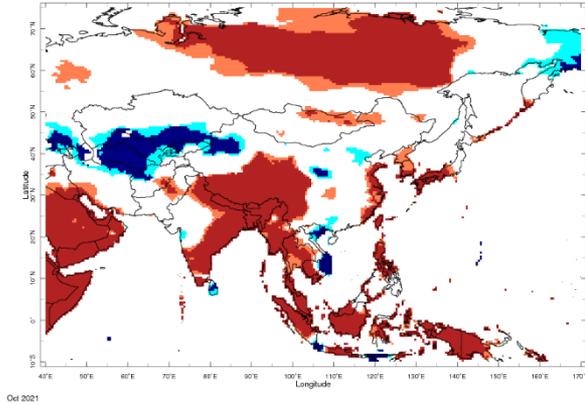
[Central Asia](#)

[Southern Asia](#)

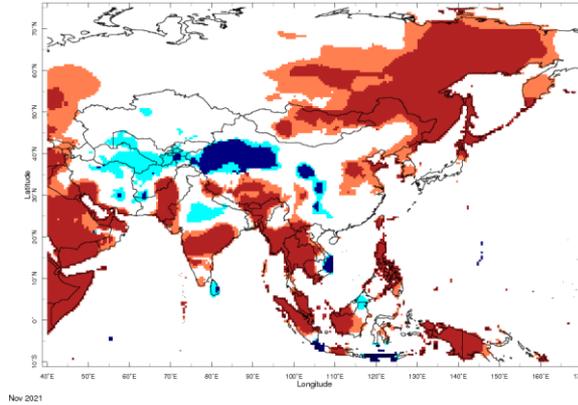
[Southeast Asian Peninsula](#)

[Southeastern Asia / Indonesia](#)

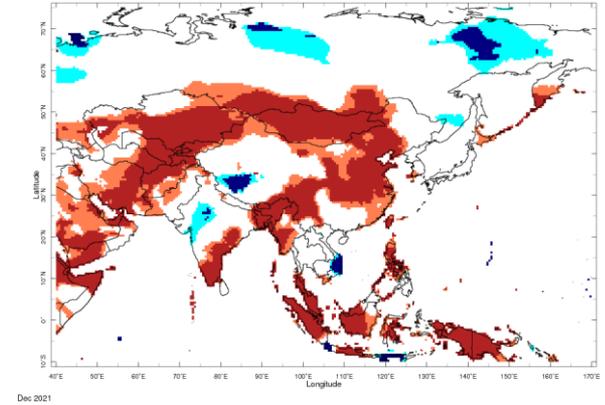
# Current Status – Temperature percentiles



October



November

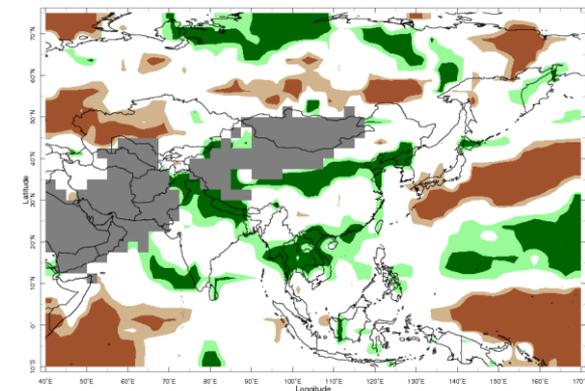


December

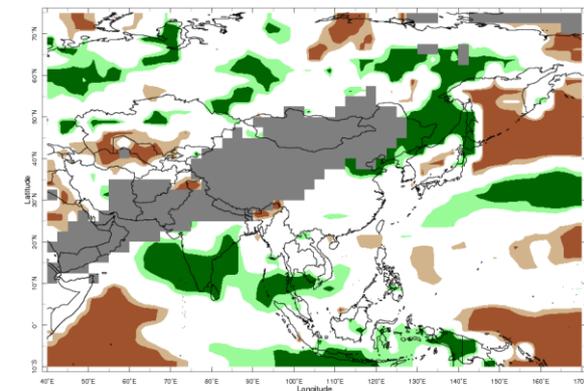


**Notes:** The percentiles shown in the map indicate a ranking of temperature, with the 0th percentile being the coolest and the 100th percentile being the warmest in the 1981-2010 climatology. Orange and red shading represent values above the 80th (Warm) and 90th (Hot) percentile, respectively; regions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

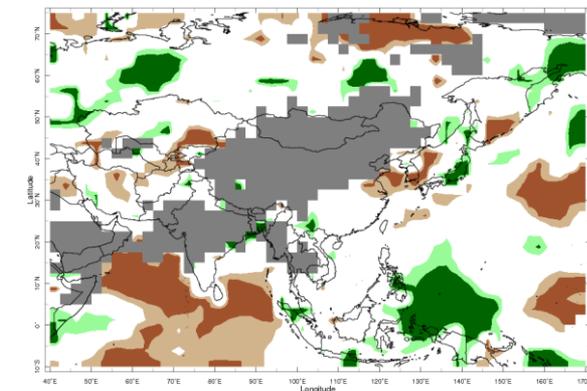
# Current Status – Precipitation percentiles



Oct 2021

**October**


Nov 2021

**November**


Dec 2021

**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 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

	October	November	December
Afghanistan	Mixed (1)	Mixed (2)	Warm
Tajikistan	Normal	Cold	Hot
Kyrgyzstan	Cold	Cold	Hot

### Current Status: Rainfall

	October	November	December
	Normal	Normal	Normal
	Normal	Normal	Dry
	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:** Cold in the west

**(2) Note:** Cold in the northwest, Hot in the southeast

# Current Status – Southern Asia

## Current Status: Temperature

	October	November	December
Pakistan	Mixed (1)	Mixed (5)	Normal
India	Mixed (2)	Mixed (6)	Mixed (6)
Nepal	Hot	Normal	Normal
Bangladesh	Hot	Hot	Hot

## Current Status: Rainfall

	October	November	December
	Normal (3)	Normal	Normal
	Normal (4)	Mixed (7)	Normal*
	Very Wet	Normal	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:** Hot across central parts; Normal elsewhere
- (2) Note:** Hot across many eastern and northern areas. Normal elsewhere
- (3) Note:** Very Wet in the north; Normal elsewhere
- (4) Note:** Very Wet in the north and far southeast; Normal elsewhere
- (5) Note:** Hot in central/southeastern areas, else Near-Normal
- (6) Note:** Variable but generally Hot in south, Cold in north
- (7) Note:** Very wet in south, elsewhere Normal

# Current Status – Southeast Asian Peninsula

## Current Status: Temperature

	October	November	December
China	Mixed (2)	Mixed (3)	Mixed (3)
Myanmar	Hot	Hot	Warm
Vietnam	Cold	Mixed (1)	Mixed (5)

## Current Status: Rainfall

	October	November	December
China	Mixed (3)	Mixed (4)	Normal
Myanmar	Very Wet	Normal	Normal*
Vietnam	Very 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:** Cold in central parts, Hot elsewhere.
- (2) Note:** Hot in the southwest and far east; Normal elsewhere
- (3) Note:** Very mixed across the country, with large regional variations
- (4) Note:** Wet in far northeast, otherwise Normal
- (5) Note:** Cold in the south; Normal elsewhere

## Current Status – Southeastern Asia / Indonesia

	Current Status: Temperature			Current Status: Rainfall		
	October	November	December	October	November	December
Indonesia	Hot	Hot	Hot	Normal	Mixed (1)	Normal
Papua New Guinea	Hot	Hot	Hot	Normal	Wet	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 but 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: June to November – Central Asia

		Forecast summary		
		February	February to April	May to July
Afghanistan	Temperature	Climatological odds	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be near-normal	Likely to be drier than normal	Likely to be drier than normal
Tajikistan	Temperature	Climatological odds	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	Likely to be drier than normal
Kyrgyzstan	Temperature	Climatological odds	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: June to November – Southern Asia

		Forecast summary		
		February	February to April	May to July
Pakistan	Temperature	Climatological odds	Likely to be warmer than normal in the west; Climatological odds elsewhere	Likely to be warmer than normal
	Rainfall	Likely to be drier than normal in the north; Climatological odds elsewhere	Likely to be drier than normal in the north; Climatological odds elsewhere	Climatological odds
India	Temperature	Likely to be colder than normal	Likely to be colder than normal in the north; Climatological odds elsewhere	Climatological odds
	Rainfall	Likely to be near-normal	Likely to be drier than normal in the far north; Climatological odds elsewhere	Likely to be wetter than normal
Nepal	Temperature	Likely to be colder than normal	Climatological odds	Likely to be warmer than normal
	Rainfall	Likely to be drier than normal	Likely to be drier than normal	Likely to be wetter than normal
Bangladesh	Temperature	Likely to be colder than normal	Climatological odds	Climatological odds
	Rainfall	Climatological odds	Likely to be drier than normal in the north; Climatological odds in the south	Likely to be wetter than normal

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# Outlook: June to November – SE Asian Peninsula

		Forecast summary		
		February	February to April	May to July
China	Temperature	Climatological odds	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Climatological odds	Likely to be drier than normal in the southeast; Climatological odds elsewhere	Climatological odds
Myanmar	Temperature	Likely to be warmer than normal	Likely to be warmer than normal	Climatological odds
	Rainfall	Climatological odds	Likely to be wetter than normal	Climatological odds
Vietnam	Temperature	Likely to be warmer than normal	Likely to be warmer than normal in the south; Climatological odds elsewhere	Climatological odds
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds

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# Outlook: June to November – SE Asia / Indonesia

		Forecast summary		
		February	February to April	May to July
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	<b>Likely to be wetter than normal</b> across Java; Climatological odds elsewhere	<b>Likely to be wetter than normal</b> across 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	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.

# 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>