

# Asia: Monthly Climate Outlook February to November

**Issued: May 2022**

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# Overview

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# Asia Current Status and Outlook - Temperature

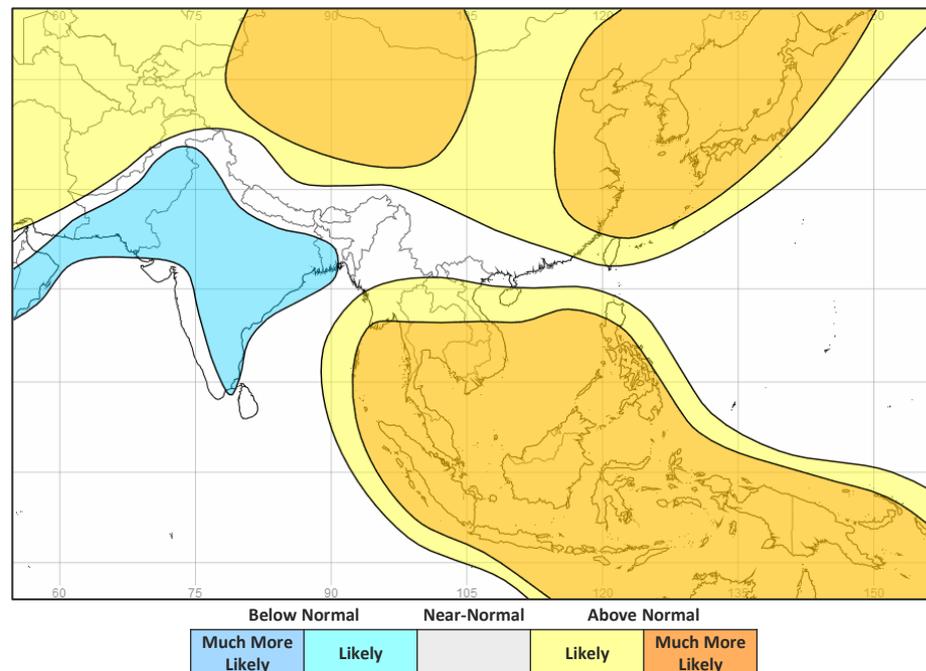
## Current Status:

Parts of India, China and Nepal had near or below normal temperatures in February before experiencing warmer than normal conditions in March and April. Most other areas were warmer than normal over the last three months.

## Outlook:

Over the next three months, large areas of the continent are likely to much more likely to see warmer than normal conditions, with increasing risk of hot weather impacts such as wildfires and poor air quality as a result. The main exception to this is likely to be across the Indian subcontinent where conditions are likely to be colder than normal.

## 3-Month Outlook June to August - Temperature



# Asia Current Status and Outlook - Rainfall

## Current Status:

Mixed conditions were observed over Central Asia over the last three months; Afghanistan was drier than normal in March and April. Parts of India and Pakistan were wetter than normal in February and then drier than normal in March and April. In Southeast Asia, many areas were wet or very wet during February to April.

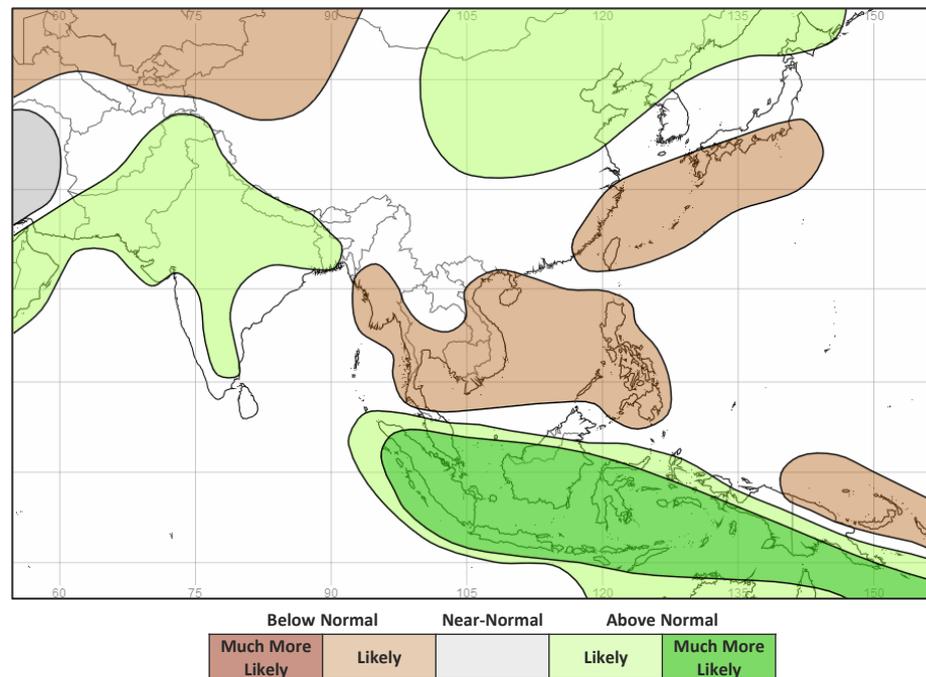
## Outlook:

Over the next three months India, Pakistan, Nepal and Bangladesh are likely to be wetter than normal due to a more active South Asian monsoon. There are also indications of an earlier than normal onset of the monsoon.

Wetter than normal conditions are much more likely across much of Indonesia and Malaysia. Parts of the Philippines and Indochina are likely to be drier than normal

In China, it is likely to be wetter than normal in some northeastern areas and drier than normal in southeastern areas and southern Japan. It is likely to be drier than normal for much of Central Asia. In the south and far east of Afghanistan it is likely to be wetter than normal.

## 3-Month Outlook June to August - Rainfall



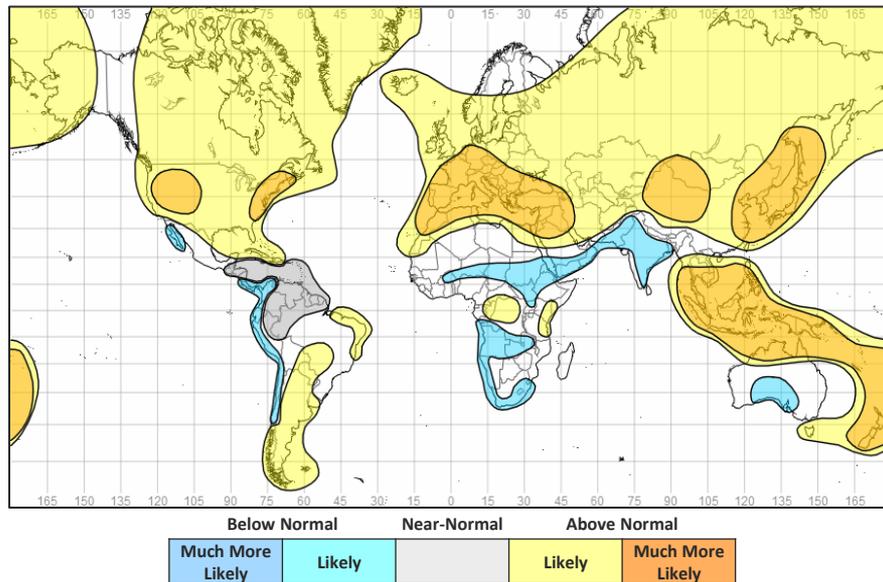
# Global Outlook - Temperature

## Outlook:

La Niña conditions are likely to persist for at least the next three months, although it is likely to weaken during this period.

Many parts of the globe are likely to be warmer than normal over the next three months. However, consistent with La Niña, parts of Australia, the Indian sub-continent, the Sahel region in Africa and parts of southern Africa are likely to be colder than normal.

## 3-Month Outlook June to August - Temperature



# Global Outlook - Rainfall

## Outlook:

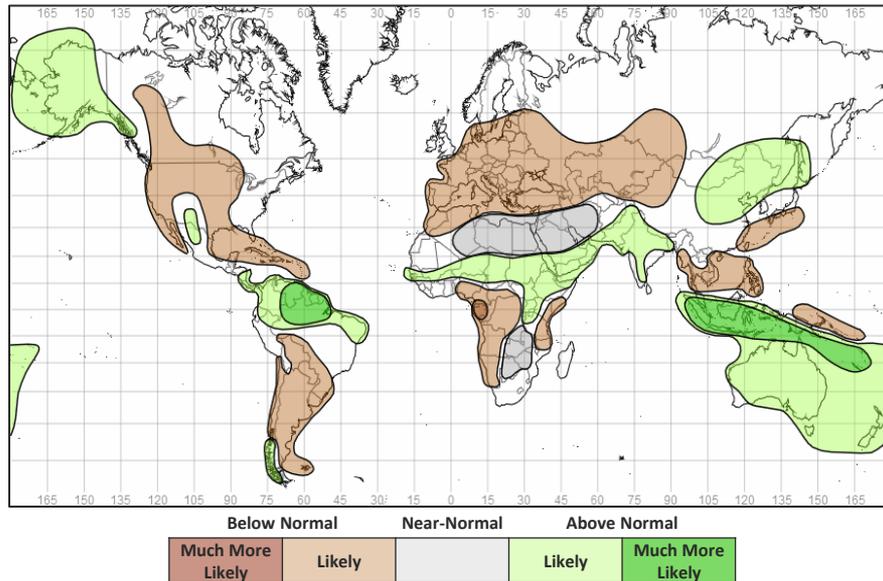
**El Niño-Southern Oscillation (ENSO)** – The 2021-22 La Niña event continues in the tropical Pacific Ocean. Whilst this event is likely to weaken, La Niña remains probable, albeit with lower likelihood, throughout the northern hemisphere summer.

The latest [ENSO outlook issued by NOAA](#) (23 May) states that although La Niña is likely to continue, the odds decrease into the late Northern Hemisphere summer (58% chance in August-October 2022) before slightly increasing during the Northern Hemisphere autumn and early winter 2022 (61% chance). Therefore, it seems likely that La Niña will remain a dominant driver of global weather patterns over the next few months, particularly in tropical regions.

With a couple of notable exceptions (e.g., 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>

**Indian Ocean Dipole (IOD)** – The Indian Ocean Dipole (IOD) is currently neutral. Seasonal forecast systems are consistent in suggesting a negative IOD, potentially strongly negative, is likely to form during the Northern Hemisphere summer. Should this occur, this would start to influence rainfall patterns both around the Indian Ocean basin and more widely. However, it should be noted skilful prediction of the IOD is limited at this time of year so forecasts of a negative phase still need to be treated with caution.

## 3-Month Outlook June to August - Rainfall



# Current Status

[Current Status maps](#)

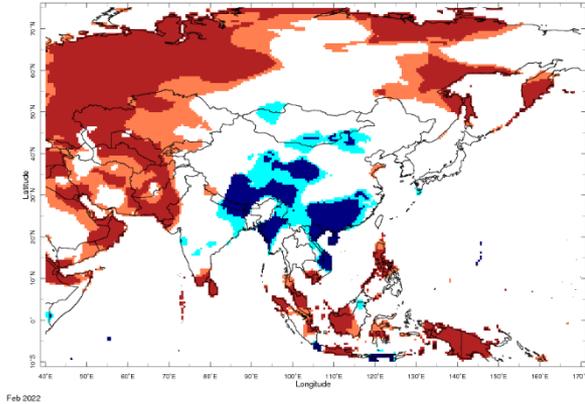
[Central Asia](#)

[Southern Asia](#)

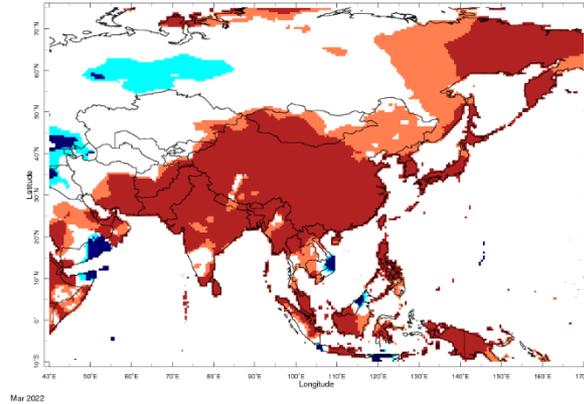
[Southeast Asian Peninsula](#)

[Southeastern Asia / Indonesia](#)

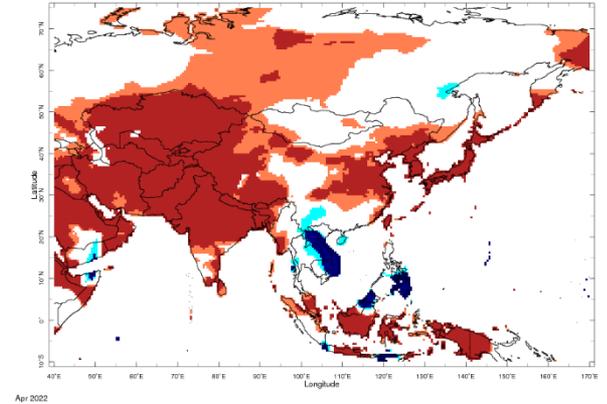
# Current Status – Temperature percentiles



February



March

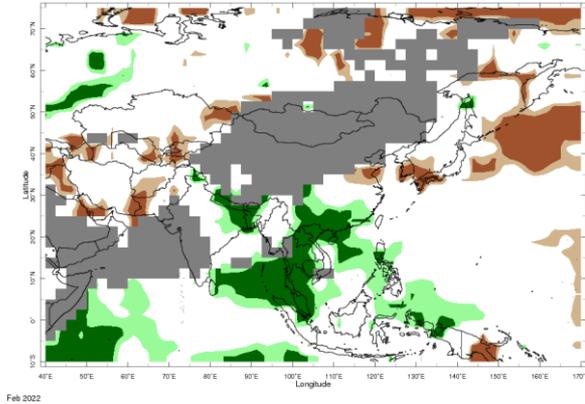


April

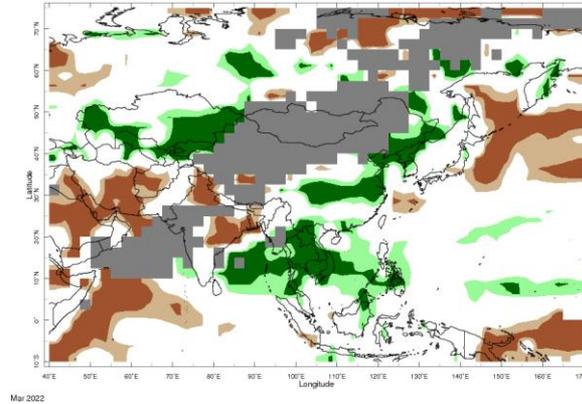


**Notes:** The percentiles shown in the map indicate a ranking of temperature, with the 0th percentile being the coolest and the 100th percentile being the warmest in the 1981-2010 climatology. Orange and red shading represent values above the 80th (Warm) and 90th (Hot) percentile, respectively; regions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

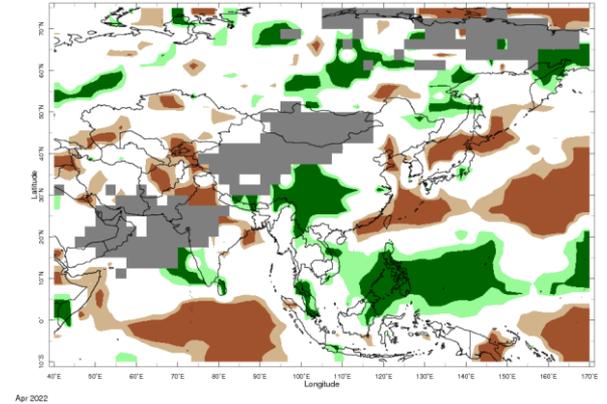
# Current Status – Precipitation percentiles



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	Hot
Tajikistan	Hot	Hot	Hot
Kyrgyzstan	Hot	Normal	Hot

### Current Status: Rainfall

	February	March	April
	Normal	Dry	Dry
	Dry	Wet	Dry
	Dry	Very Wet	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:

## Current Status – Southern Asia

Current Status: Temperature

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

Current Status: Rainfall

	February	March	April
	Normal	Normal	Dry
	Mixed (2)	Mixed (3)	Mixed (4)
	Very Wet	Normal	Wet
	Very Wet	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:** Normal in the far north
- (2) Note:** Very wet in the far northeast
- (3) Note:** Very dry in parts of the north and east, normal elsewhere
- (4) Note:** Very Dry in central and northern areas; Wet in the southwest

# Current Status – Southeast Asian Peninsula

### Current Status: Temperature

	February	March	April
China	Mixed (1)	Hot	Hot
Myanmar	Cold	Hot	Normal (6)
Vietnam	Cold	Mixed (2)	Cold

### Current Status: Rainfall

	February	March	April
China	Mixed (3)	Mixed (5)	Mixed (7)
Myanmar	Very Wet	Wet	Normal
Vietnam	Mixed (4)	Very Wet	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:** Large regional variations. Cold in central parts, normal elsewhere.
- (2) Note:** Cold in the south; normal elsewhere
- (3) Note:** Wet or very wet in parts of the southeast, otherwise mostly normal\*
- (4) Note:** Very wet in the north; normal elsewhere.
- (5) Note:** Large variations; wet or very wet in parts of the south and east
- (6) Note:** Hot in the west; Normal elsewhere
- (7) Note:** Most regions Normal, but Very Wet in central areas.

## Current Status – Southeastern Asia / Indonesia

	Current Status: Temperature			Current Status: Rainfall		
	February	March	April	February	March	April
Indonesia	Hot	Hot	Hot	Normal	Normal	Normal
Papua New Guinea	Hot	Hot	Hot	Normal (1)	Normal (1)	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:** Dry in the east

# 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	Likely to be warmer than normal
	Rainfall	Climatological odds	Likely to be wetter than normal in the far south and east; Climatological odds elsewhere	Likely to be drier than normal
Tajikistan	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	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	Likely to be drier than normal	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: June to November – Southern Asia

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

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# Outlook: June to November – SE Asian Peninsula

		Forecast summary		
		June	June to August	September to November
China	Temperature	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal in the northeast; Likely to be drier than normal in the far southeast and far northwest; Climatological odds elsewhere	Likely to be wetter than normal in the northeast; Likely to be drier than normal in the far southeast and far northwest; Climatological odds elsewhere	Climatological odds
Myanmar	Temperature	Likely to be warmer than normal	Much more likely to be warmer than normal in the south; Climatological odds elsewhere	Likely to be warmer than normal
	Rainfall	Likely to be drier than normal	Likely to be drier than normal, but Climatological odds in the northeast	Climatological odds
Vietnam	Temperature	Likely to be warmer than normal	Likely to be warmer than normal in the north; Much more likely to be warmer than normal in the south	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.

# Outlook: June to November – SE Asia / Indonesia

		Forecast summary		
		June	June to August	September to November
Indonesia	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	Much more likely to be wetter than normal	Likely to be wetter than normal
Papua New Guinea	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 wetter than normal in the south; Likely to be drier than normal in the north	Much more likely to be wetter than normal in the south; Likely to be drier than normal in the north	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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