

# Asia: Monthly Climate Outlook October to July

**Issued: January 2021**

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# Overview

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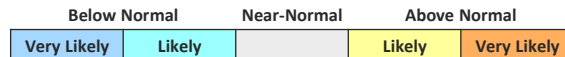
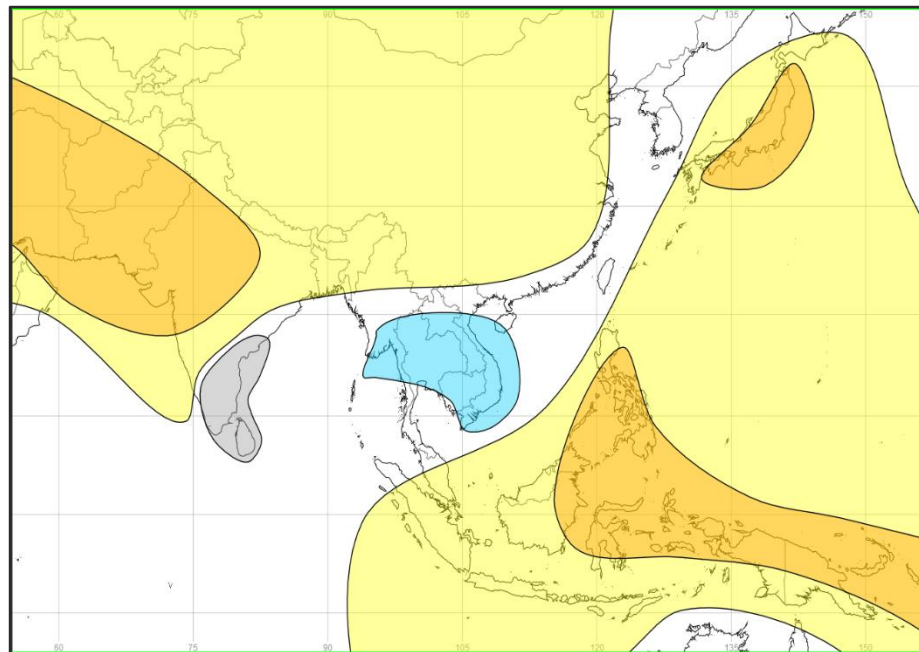
# Asia Current Status and Outlook - Temperature

## Current Status:

Central Asia has been near normal or colder than normal over the past three months. Parts of southeast Asia, primarily Vietnam, Laos, Cambodia and Thailand, have been colder than normal. Many other areas have seen temperatures above normal.

**Outlook:** Warmer than normal conditions are likely across much of the continent for the next three months. The exceptions to this are likely to be: colder than normal temperatures likely in Vietnam, Cambodia, Thailand and Laos, and near normal temperatures across southeastern parts of India and Sri Lanka

## 3-Month Outlook February to April - Temperature



# Asia Current Status and Outlook - Rainfall

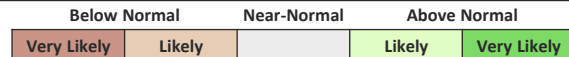
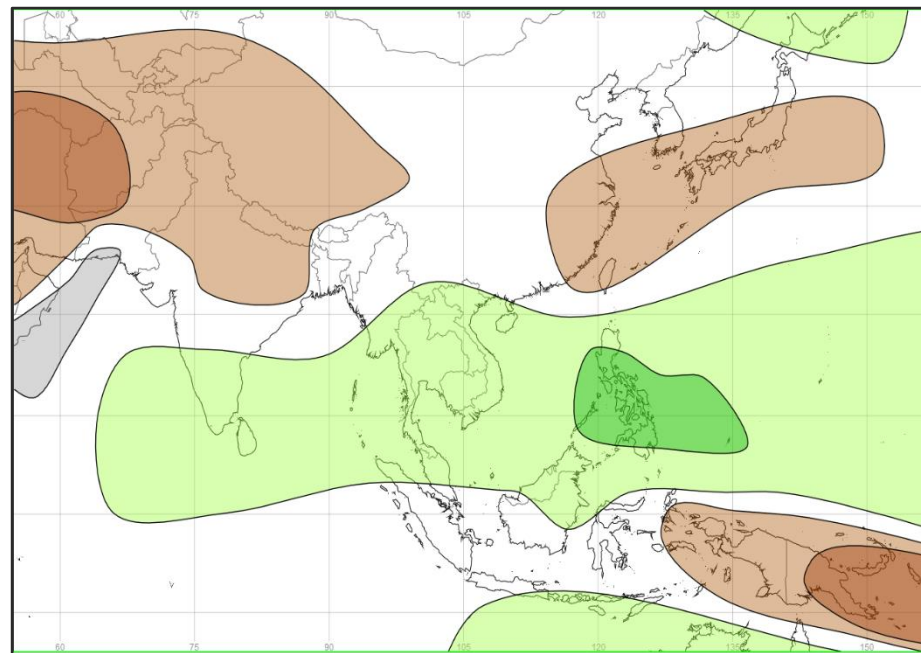
## Current Status:

Mainland southern Asia was predominately wetter than normal during October. In November rainfall returned to normal levels and in southern China conditions became drier than normal. Wetter than normal conditions were largely confined to parts of southern India and Sri Lanka, as well as the Philippines during December.

## Outlook:

Fore the next three months, drier than normal conditions are likely or very likely across large parts of central Asia (including Afghanistan, Pakistan, northern India and Nepal), southeast China, parts of eastern Indonesia, much of Papua New Guinea and southern Japan. Meanwhile wetter than normal conditions are likely across southern India, Sri Lanka, Indonesia, Malaysia, Vietnam, Myanmar, Thailand, Cambodia, Laos and and very likely across the Philippines.

## 3-Month Outlook February to April - Rainfall

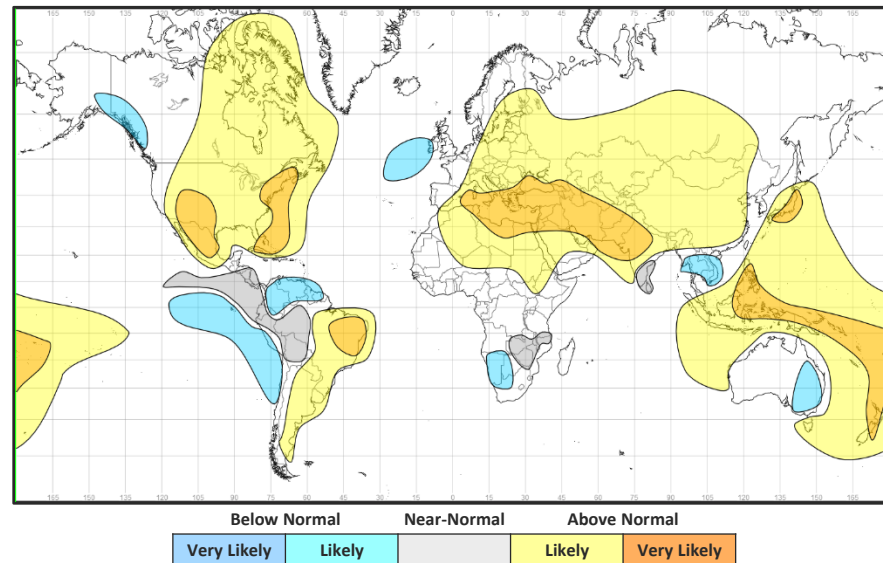


# Global Outlook - Temperature

## Outlook:

La Niña tends to have an overall cooling effect across the world. However, many regions are likely to be warmer than normal over the next three months, consistent with the warming observed over the past decade. There are some notable exceptions to this, with an increased likelihood of colder than normal conditions across tropical regions of South America and small parts of southeastern Africa and southeast Asia. Parts of Australia, particularly the east, are likely to see temperatures below normal.

## 3-Month Outlook February to April - Temperature



# Global Outlook - Rainfall

## Outlook:

**El Niño-Southern Oscillation (ENSO)** – La Niña conditions are now well established across the tropical Pacific, with SST anomalies, trade wind strength, atmospheric pressure pattern and cloudiness all consistent with this. The event has likely recently peaked and a gradual shift towards more neutral conditions should take place during the first half of next year. However, over the next few months there is ~95% chance of La Niña continuing.

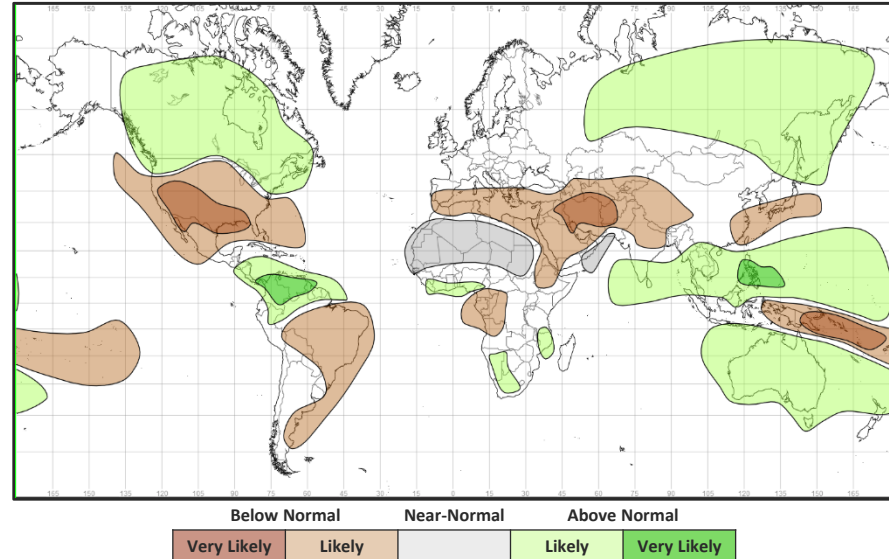
The latest [NOAA Climate Prediction Centre / NCEP statement](#) (PDF) states that: *“La Niña is expected to continue through the Northern Hemisphere winter 2020-21 (~95% chance during January-March), with a potential transition to ENSO-neutral during the spring 2021 (55% chance during April-June).”*

Very generally, the suppression of rainfall over the tropical Pacific Ocean, that La Niña is associated with, leads to increases in rainfall across the tropical land areas.

Large parts of southern Asia, Australasia, along with the south of India, Central America, northern parts of South America, along with southern parts of the Caribbean are likely to be wetter than normal. Much of Australia is also likely to be wetter.

Meanwhile, much of the Middle East, Mexico, southern USA, Ethiopia and parts of the Congo basin are likely to be drier than normal.

## 3-Month Outlook February to April - Rainfall



# Current Status

[Current Status maps](#)

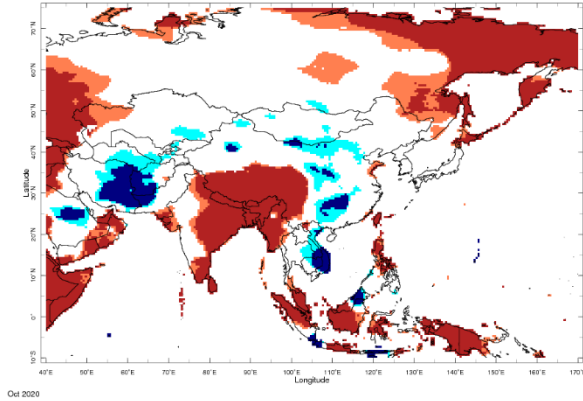
[Central Asia](#)

[Southern Asia](#)

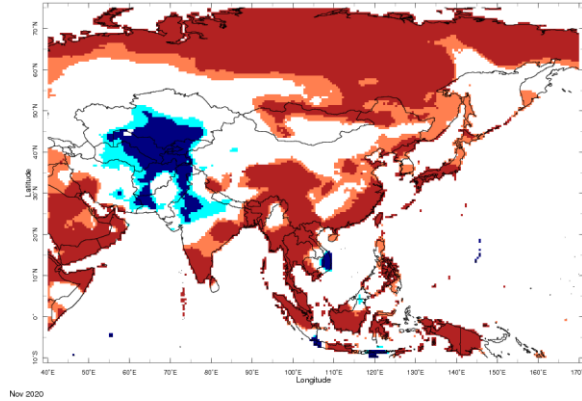
[Southeast Asian Peninsula](#)

[Southeastern Asia / Indonesia](#)

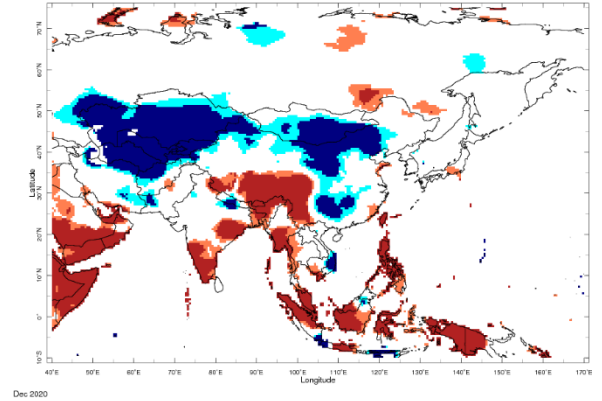
# Current Status – Temperature percentiles



October



November



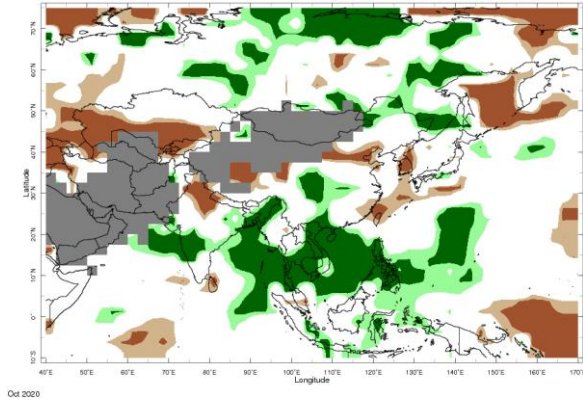
December



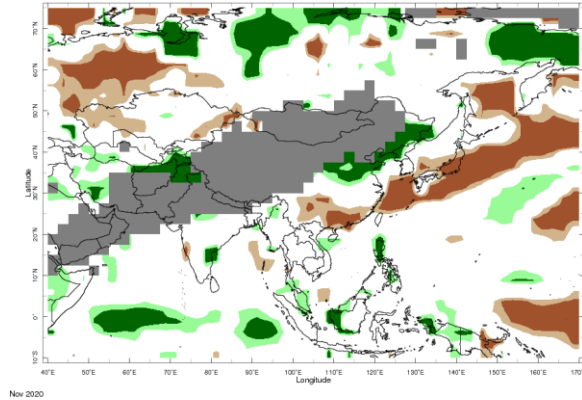
**Notes:** The percentiles shown in the map indicate a ranking of temperature, with the 0th percentile being the coolest and the 100th percentile being the warmest in the 1981-2010 climatology. Orange and red shading represent values above the 80th (Warm) and 90th (Hot) percentile, respectively; regions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



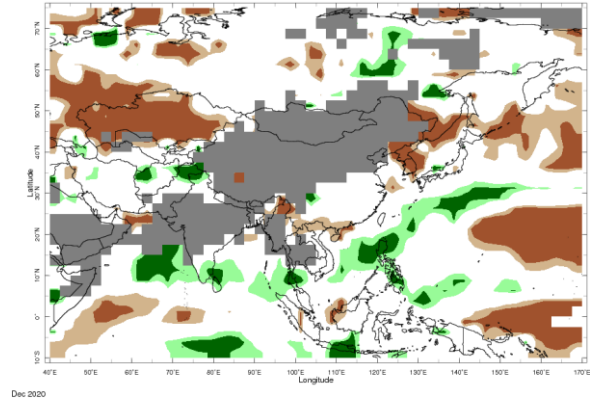
# Current Status – Precipitation percentiles



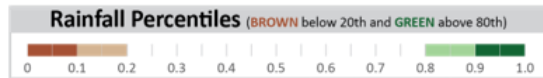
October



November



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	Normal <sup>^</sup>	Cold	Cold
Tajikistan	Normal	Cold	Cold
Kyrgyzstan	Normal	Cold	Cold

### Current Status: Rainfall

October	November	December
Normal <sup>*</sup>	Normal <sup>***</sup>	Normal
Normal	Normal	Normal
Normal <sup>^^</sup>	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:

<sup>^</sup>Note: In October, cool / cold in the south, normal elsewhere

<sup>^^</sup>Note: Dry in the north-east

<sup>\*\*\*</sup>Note: Northern Afghanistan was very wet in November. Little rainfall observed across the rest of the country.

## Current Status – Southern Asia

### Current Status: Temperature

	October	November	December
Pakistan	Normal	Cool	Normal
India	Mixed^^	Mixed^^	Mixed^^
Nepal	Hot	Normal	Mixed
Bangladesh	Hot	Hot	Hot

### Current Status: Rainfall

	October	November	December
Pakistan	Normal*	Normal*^^^	Normal
India	Normal^	Normal	Normal
Nepal	Normal	Normal*	Normal
Bangladesh	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:

**^Note:** Dry in the Himalayan region

**^^Note:** Mainly normal in east of country, hot elsewhere in October. For November, the northwest was Cool, east and south Hot and elsewhere near normal. In December, Hot in the East and South, normal elsewhere

**^^^Note:** Northern Pakistan was very wet in November. Little rainfall observed across the rest of the country.

# Current Status – Southeast Asian Peninsula

Current Status: Temperature

	October	November	December
China	Mixed <sup>^</sup>	Mixed <sup>^</sup>	Cool <sup>^^</sup>
Myanmar	Hot	Hot	Warm
Vietnam	Cold	Cold	Cool

Current Status: Rainfall

	October	November	December
	Normal	Mixed <sup>^^^</sup>	Normal
	Normal	Normal	Normal
	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:

**^Note:** Most of southern and parts of eastern China were hot during Oct and Nov, whilst the rest of the country was normal to cool.

**^^Note:** Hot conditions continued across southern parts of China, whilst a large area of cold developed across many northern areas.

**^^^Note:** Northern China as Very Wet in November and southern China was Dry

# Current Status – Southeastern Asia / Indonesia

	Current Status: Temperature			Current Status: Rainfall		
	October	November	December	October	November	December
Indonesia	Hot <sup>^</sup>	Hot <sup>^</sup>	Hot <sup>^</sup>	Wet	Normal	Normal
Papua New Guinea	Hot	Hot	Hot	Normal	Mixed <sup>^^</sup>	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:

<sup>^</sup>Note: whilst most of the country was hot, Java and islands to the east were cold.

<sup>^^</sup>Note: marked west (wet), east (dry) pattern for November

# 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: February to July – Central Asia

		Forecast summary		
		February	February to April	May to July
Afghanistan	Temperature	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 drier than normal	Much more likely to be drier than normal	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: February to July – Southern Asia

		Forecast summary		
		February	February to April	May to July
Pakistan	Temperature	Likely to be warmer than normal	<b>Much more likely to be warmer than normal</b>	Likely to be warmer than normal
	Rainfall	Likely to be drier than normal	Likely to be drier than normal	Climatological odds – <a href="#">see note</a>
India	Temperature	Likely to be warmer than normal	Likely to be warmer than normal	Climatological odds – <a href="#">see note</a>
	Rainfall	Likely to be drier than normal in the north, likely to be wetter than normal in the south, Climatological odds – <a href="#">see note</a> elsewhere	Likely to be drier than normal in the north, likely to be wetter than normal in the south.	Likely to be wetter than normal in some areas.
Nepal	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 wetter than normal
Bangladesh	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	Climatological odds – <a href="#">see note</a>	Climatological odds – <a href="#">see note</a>

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# Outlook: February to July – SE Asian Peninsula

		Forecast summary		
		February	February to April	May to July
China	Temperature	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Climatological odds – <a href="#">see note</a>	Climatological odds – <a href="#">see note</a>	Climatological odds – <a href="#">see note</a>
Myanmar	Temperature	Likely to be warmer than normal in the north, and likely to be colder than normal in the south	Likely to be warmer than normal in the north, and likely to be colder than normal in the south	Climatological odds – <a href="#">see note</a>
	Rainfall	Likely to be drier than normal in the north, and likely to be wetter than normal elsewhere	Likely to be drier than normal in the north, and likely to be wetter than normal elsewhere	Likely to be wetter than normal
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 – <a href="#">see note</a>

**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: February to July – SE Asia / Indonesia

		Forecast summary		
		February	February to April	May to July
Indonesia	Temperature	Likely to be warmer than normal	Likely to be warmer than normal	Much more likely to be warmer than normal
	Rainfall	Climatological odds – <a href="#">see note</a>	Climatological odds – <a href="#">see note</a>	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>	Much more likely to be warmer than normal
	Rainfall	Likely to be drier than normal in the north, Climatological odds – <a href="#">see note</a> elsewhere	<b>Much more likely to be drier than normal</b>	Climatological odds – <a href="#">see note</a>

**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 2020) - <http://rcc.imdpune.gov.in/SASCOF16/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 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 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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