

Asia: Monthly Climate Outlook June to March

Issued: September 2022

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Overview

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Asia Current Status and Outlook - Temperature

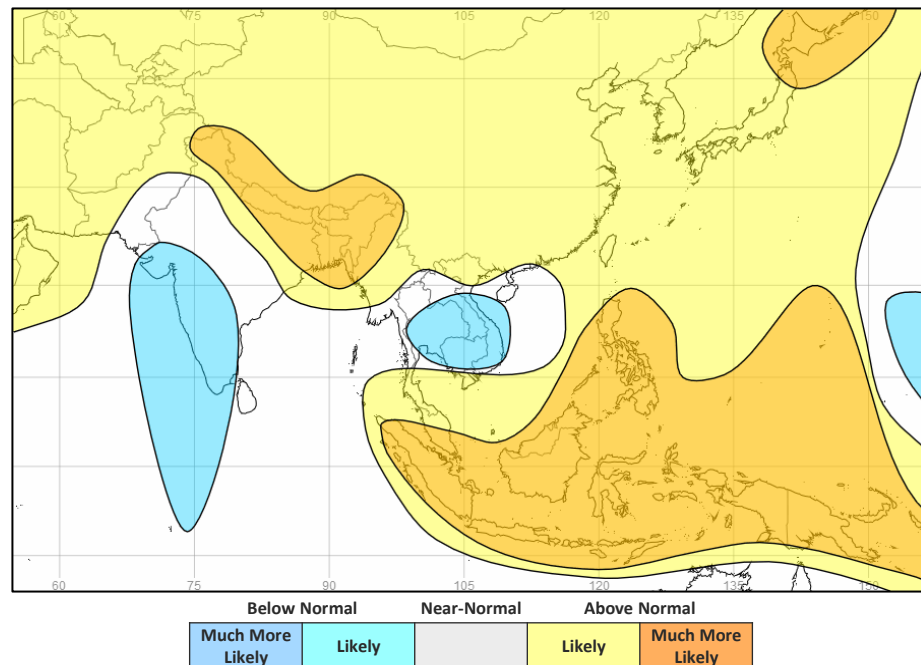
Current Status:

Most of the region has experienced warm to hot conditions over the last three months. However, parts of Southeast Asia and the Indian subcontinent, notably Pakistan in July and August, have seen below normal temperatures.

Outlook:

Consistent with La Niña conditions, many areas are likely or much more likely to experience above normal temperatures over the next three months. The main exception being southwest India and parts of mainland Southeast Asia where below normal temperatures are likely.

3-Month Outlook October to December - Temperature



Asia Current Status and Outlook - Rainfall

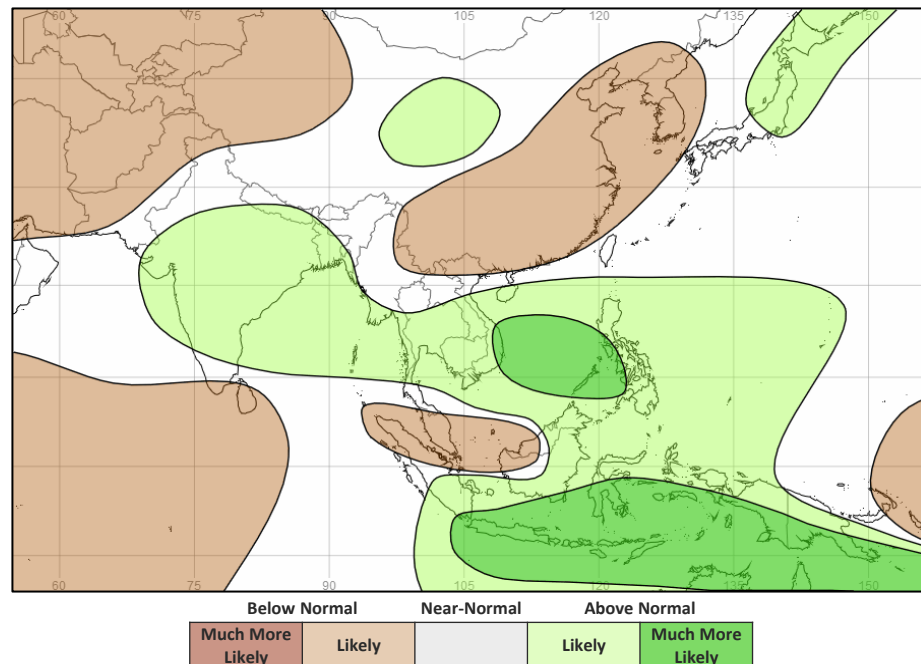
Current Status:

Pakistan, as well as parts of India, have been wet or very wet over the last three months, as well as parts of parts of Southeast Asia in July and August. China has experienced mixed conditions for the last three months with south-eastern areas dry or very dry during August.

Outlook:

Over the next three months, above normal rainfall is likely or much more likely across many parts of Southeast Asia, particularly Indonesia, as a result of La Niña and the negative Indian Ocean Dipole. Late season monsoon rains over India are likely to be wetter than normal. It is likely to be drier than normal in Central Asia and south/southeast China.

3-Month Outlook October to December - Rainfall



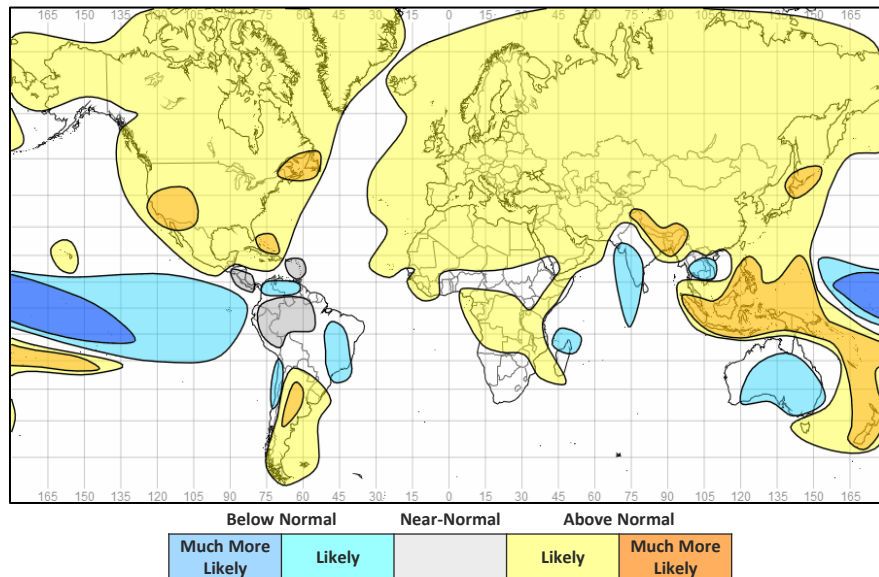
Global Outlook - Temperature

Outlook:

The ongoing La Niña has strengthened over the last month and is likely to persist into the northern hemisphere winter. Aside from the background global warming trend, La Niña is likely to be the largest driver of temperatures over the next three months. The negative Indian Ocean Dipole (IOD) will have more limited influence but will reinforce the effects of La Niña on temperatures around the Indian Ocean and western Pacific.

For many areas above normal temperatures are likely. However, consistent with La Niña and the IOD, northern South America, parts of Australia, mainland Southeast Asia and southwest India are likely to experience near- to below normal temperatures.

3-Month Outlook October to December - Temperature



Global Outlook - Rainfall

Outlook:

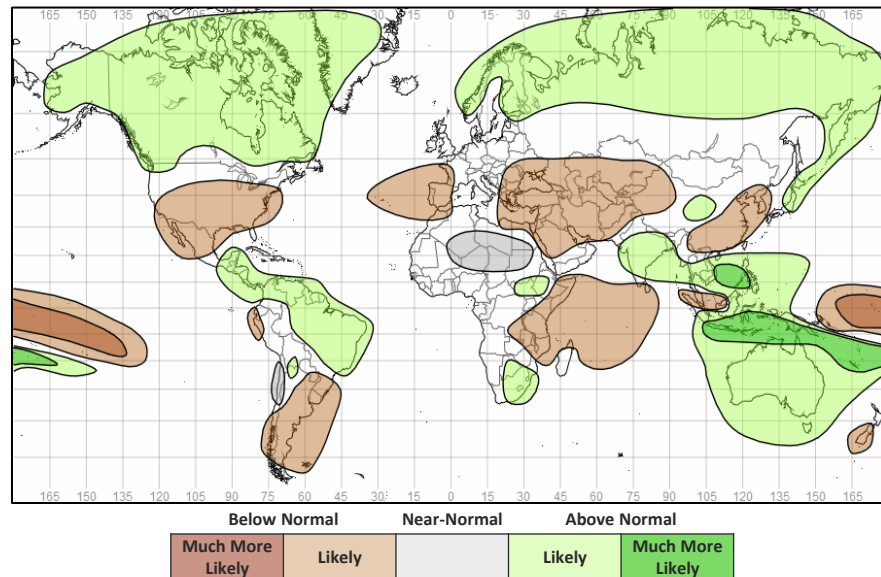
El Niño-Southern Oscillation (ENSO) – The current La Niña event continues in the tropical Pacific Ocean with oceanic and atmospheric indicators showing it has strengthened over the last month.

The latest [ENSO outlook](#) issued by NOAA (26th September) states that La Niña is active, with a 91% chance of it persisting through the northern hemisphere autumn and 54% it will last through the northern hemisphere winter.

La Niña will remain the most dominant driver of global weather patterns over the next few months at least, more especially for 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 IOD index is negative and is expected to remain so for at least the next three months before returning to neutral around the turn of the year. When concurrent with a La Niña, a negative IOD can increase the effects of a La Niña, enhancing wetter than normal conditions in parts of Australia and Asia, and drier than normal conditions in East Africa - of particular concern given the current drought conditions in the Horn of Africa.

3-Month Outlook October to December - Rainfall



Current Status

[Current Status maps](#)

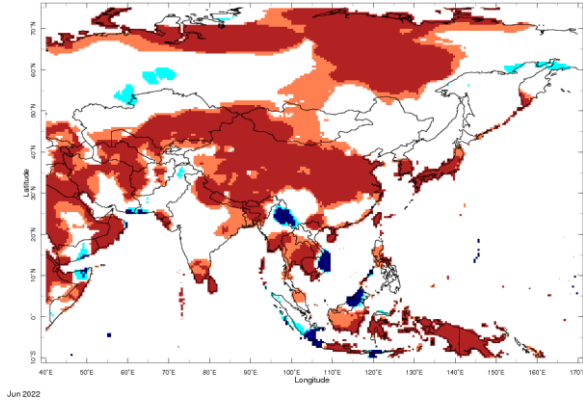
[Central Asia](#)

[Southern Asia](#)

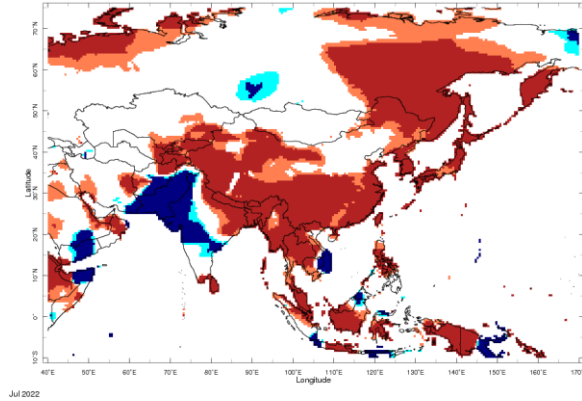
[Southeast Asian Peninsula](#)

[Southeastern Asia / Indonesia](#)

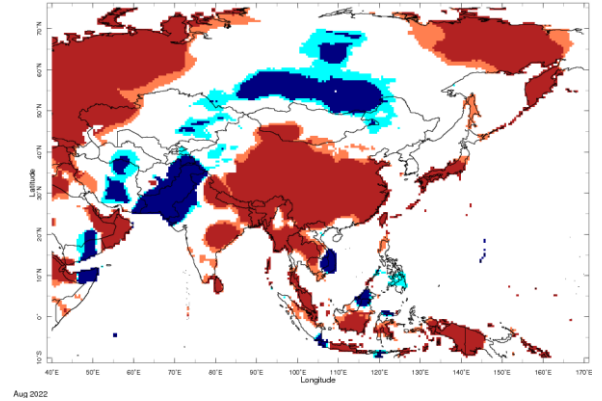
Current Status – Temperature percentiles



June



July

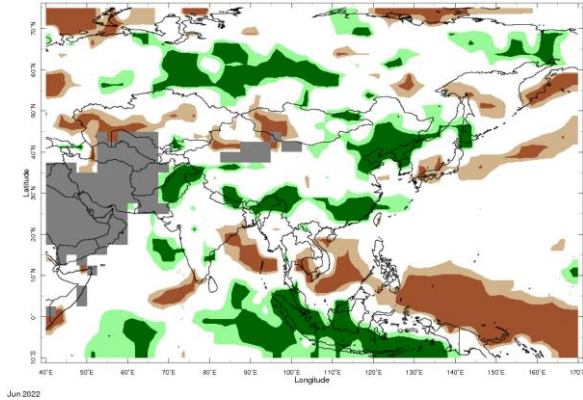


August

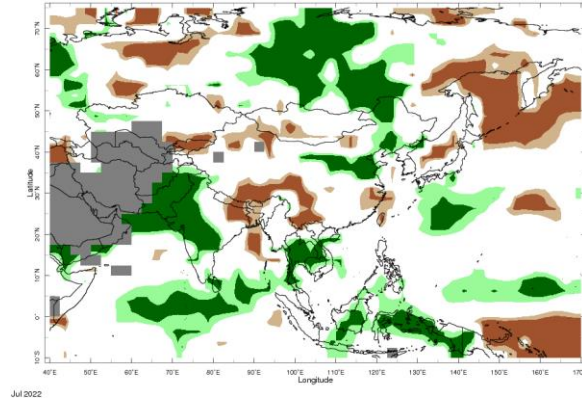


Notes: The percentiles shown in the map indicate a ranking of temperature, with the 0th percentile being the coolest and the 100th percentile being the warmest in the 1981-2010 climatology. Orange and red shading represent values above the 80th (Warm) and 90th (Hot) percentile, respectively; regions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

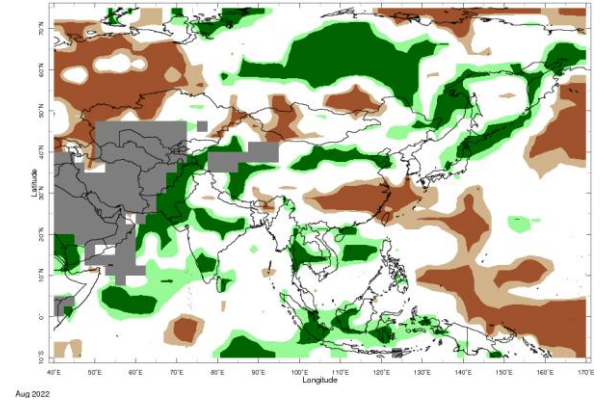
Current Status – Precipitation percentiles



June



July



August



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		
	June	July	August
Afghanistan	Mixed (1)	Mixed (2)	Mixed (2)
Tajikistan	Normal	Hot	Normal
Kyrgyzstan	Warm	Hot	Normal

	Current Status: Rainfall		
	June	July	August
Afghanistan	Normal*	Normal*	Normal* (3)
Tajikistan	Normal	Dry	Normal* (3)
Kyrgyzstan	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 in the west, more variable in the east
- (2) Note:** Cold in the east, variable elsewhere
- (3) Note:** Very wet in far east

Current Status – Southern Asia

Current Status: Temperature

	June	July	August
Pakistan	Normal	Cold	Cold
India	Mixed (1)	Mixed (2)	Mixed (2)
Nepal	Hot	Hot	Hot
Bangladesh	Hot	Hot	Hot
Sri Lanka	Hot	Hot	Hot

Current Status: Rainfall

June	July	August
Very Wet (3)	Very Wet	Very Wet
Normal	Wet	Wet
Wet	Dry	Normal
Mixed (4)	Dry	Normal
Normal	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:** Normal overall. Locally warm or hot.
- (2) Note:** Cold in the northwest, hot in the northeast, variable elsewhere.
- (3) Note:** Wet in the far north and far south. Normal elsewhere.
- (4) Note:** Far south of country normal.

Current Status – Southeast Asian Peninsula

Current Status: Temperature

	June	July	August
China	Hot	Hot	Hot
Myanmar	Mixed (1)	Hot	Hot
Vietnam	Mixed (2)	Mixed (2)	Mixed (2)

Current Status: Rainfall

June	July	August
Normal (3)	Normal (3)	Mixed (4)
Normal	Very Wet	Normal
Normal	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 variation across the country.
- (2) Note:** Large variation, from cold in south, to hot in extreme north.
- (3) Note:** Normal overall, although very wet in parts of the far south, and far north-east.
- (4) Note:** Large variations, very dry in parts of the east.

Current Status – Southeastern Asia / Indonesia

	Current Status: Temperature			Current Status: Rainfall		
	June	July	August	June	July	August
Indonesia	Hot (1)	Hot	Hot	Wet	Mixed (2)	Wet
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: Parts of Sumatra and Java normal, and cold in places.

(2) Note: Large variations across the sprawling country.

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: October to March – Central Asia

		Forecast summary		
		October	October to December	January to March
Afghanistan	Temperature	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be near-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	Likely to be drier than normal	Likely to be drier than normal	Climatological odds
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	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: October to March – Southern Asia (1)

		Forecast summary		
		October	October to December	January to March
Pakistan	Temperature	Climatological odds	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Climatological odds	Likely to be drier than normal	Climatological odds
India	Temperature	Likely to be colder than normal in the west; Likely to be warmer than normal in the east	Likely to be colder than normal in the west; Likely to be warmer than normal in the east	Climatological odds
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds
Nepal	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	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: October to March – Southern Asia (2)

		Forecast summary		
		October	October to December	January to March
Bangladesh	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	Likely to be wetter than normal	Climatological odds
Sri Lanka	Temperature	Likely to be colder than normal	Climatological odds	Climatological odds
	Rainfall	Likely to be drier than normal	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: October to March – SE Asian Peninsula

		Forecast summary		
		October	October to December	January to March
China	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 in the south; mixed elsewhere	Likely to be drier than normal in the south; mixed elsewhere	Likely to be drier than normal in the south; mixed elsewhere
Myanmar	Temperature	Much more likely to be warmer than normal	Likely to be warmer than normal in the north; Likely to be colder than normal in the south	Likely to be warmer than normal
	Rainfall	Climatological odds	Likely to be drier than normal in the north; Likely to be wetter than normal in the south	Climatological odds
Vietnam	Temperature	Likely to be warmer than normal	Likely to be warmer than normal in the north; Likely to be colder than normal in the south	Likely to be colder 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: October to March – SE Asia / Indonesia

		Forecast summary		
		October	October to December	January to March
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	Much more likely to be wetter than normal	Much more likely to be wetter than normal	Likely to be drier 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	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds

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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

Latest Output (June 2022) - https://www.imdpune.gov.in/SASCOF22_update_consensus_statement_JJAS2022_17_june_2022_final.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

Email: internationaldevelopment@metoffice.gov.uk

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