

Asia: Monthly Climate Outlook

June to March

Issued: September 2020

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Overview

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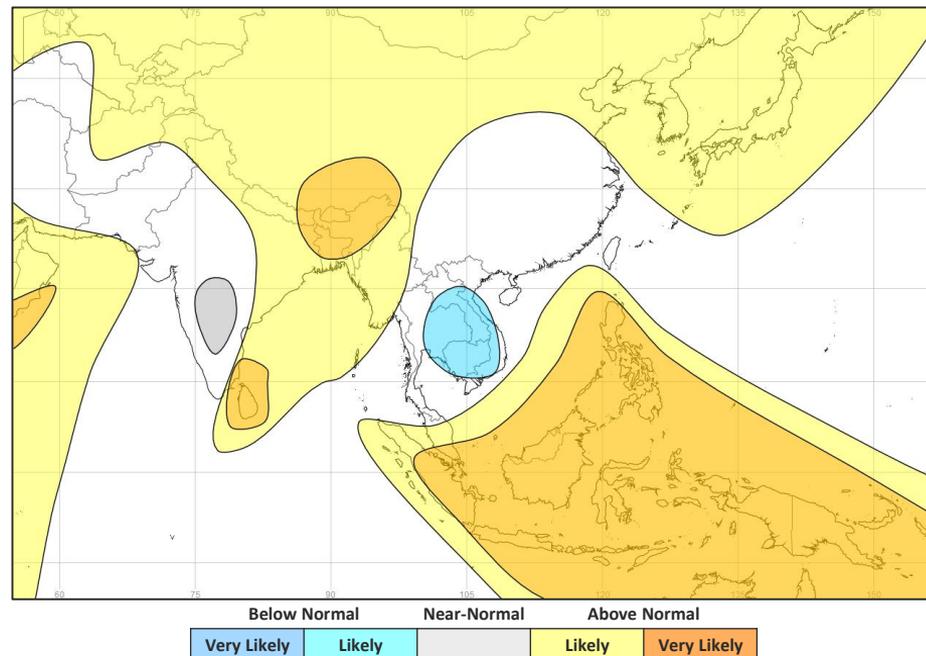
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Asia Current Status and Outlook - Temperature

Current Status: During August, most parts of the region have had warmer than normal conditions. The main exceptions across central parts of India where temperatures have been nearer normal and Vietnam where temperatures have been below normal.

Outlook: For the next three months, temperatures are likely to remain above normal in many parts of the continent; for parts of Southeast Asia, including Indonesia and the Philippines, temperatures are very likely to be above normal. There are some exceptions which include western parts of India, Pakistan and southeastern China. In addition, below normal temperatures are likely for parts of the Indochina Peninsula.

3-Month Outlook October to December - Temperature



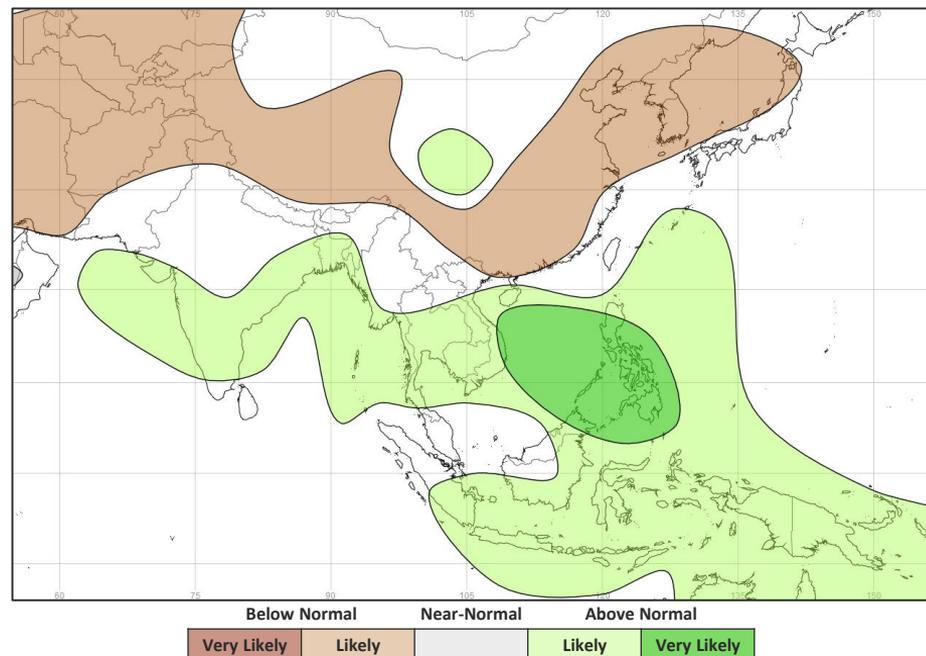
Asia Current Status and Outlook - Rainfall

Current Status: The summer monsoon remained active in August bringing wet or very wet conditions to parts of Pakistan, India and southern China. In addition, typhoon activity brought very wet conditions to parts of Korea and northeast China. Other areas had nearer to normal rainfall.

Outlook: A La Nina phase of the El Niño-Southern Oscillation (ENSO) is developing, with many atmospheric variables now consistent with this global driver, and there is an increased chance of a negative Indian Ocean Dipole developing. Both of these factors typically increase the likelihood of wetter than normal conditions across large swathes of southern and southeast Asia. Early in this period (September – October) the summer monsoon patterns across south and southeast Asia tend to complete their withdrawal with the heaviest rainfall becoming more confined to tropical regions.

In the next three months, most of southeast Asia is likely to experience above normal rainfall, with this very likely across the Philippines. Wetter than normal conditions are likely for much of southern and eastern India as well as for Bangladesh suggesting an active end to the monsoon season. Drier than normal conditions are likely for large swathes of China and the Korean Peninsula.

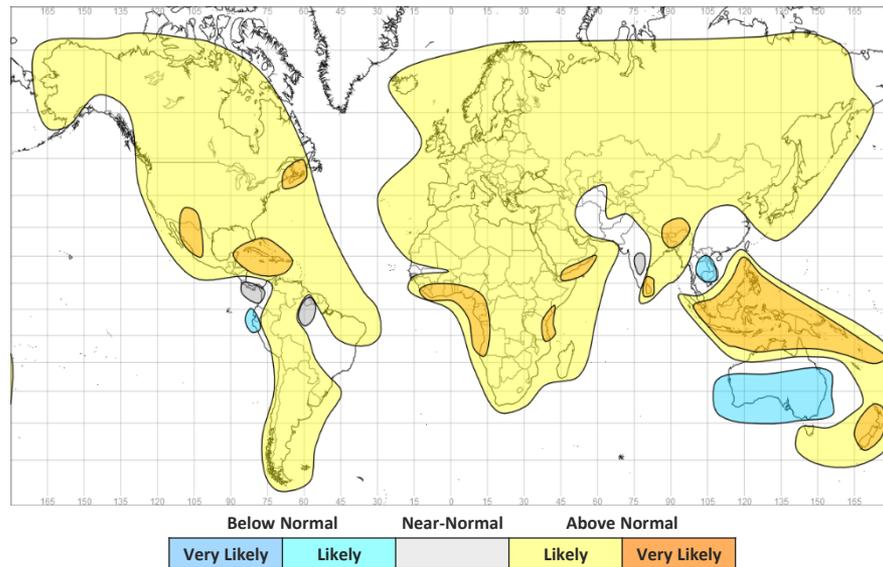
3-Month Outlook October to December - Rainfall



Global Outlook - Temperature

Outlook: There is an increase in the likelihood of warmer than normal conditions across large parts of the world. The highest confidence in tropical regions including the Caribbean and Southeast Asia. This is consistent with the warming observed in the past decade. Below normal temperatures are likely for southern Australia, parts of mainland Southeast Asia and parts of Peru and Ecuador.

3-Month Outlook October to December - Temperature

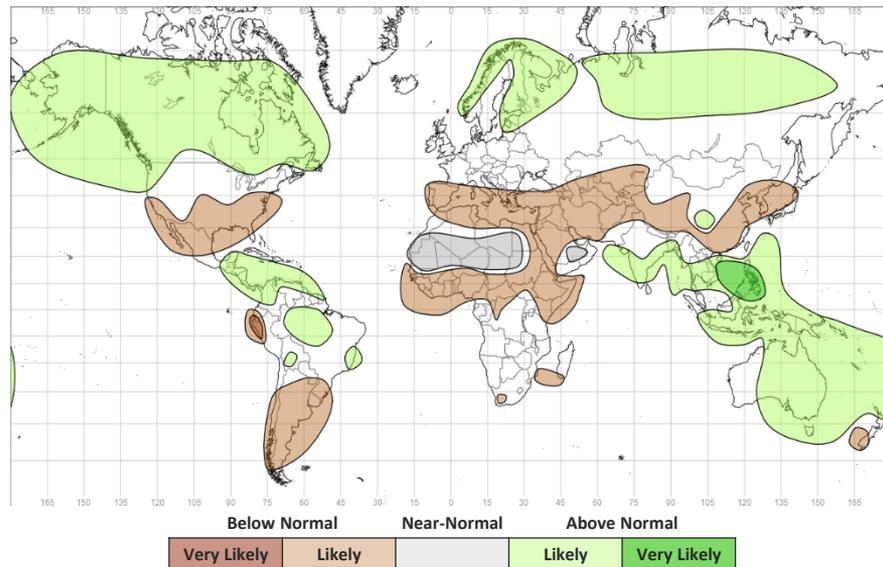


Global Outlook - Rainfall

Outlook: El Niño-Southern Oscillation (ENSO) – Analysis of sea surface temperatures (SSTs) show continued decline in central and eastern parts of the Pacific basin over recent weeks bringing them to La Niña levels. Atmospheric conditions over the tropical Pacific Ocean, trade wind strength and cloudiness near the Date Line are also consistent with La Niña. Long-range forecast models are in good agreement that this pattern is very likely (75%+) to persist over the coming months, most likely until early next year, with some strengthening of the pattern possible. The impacts of La Niña are expected to be far reaching and the latest output from long-range prediction models are consistent in replicating the La Niña state and some of its favoured impacts. 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) – In the Indian Ocean, sea-surface temperatures (SSTs) are above average across much of the basin. There is still the potential for cooling to occur in western parts of the basin and should this occur a negative IOD would be likely. This state of the IOD tends to be sympathetic to the La Niña pattern. There remains some uncertainty as to whether a negative IOD will form but there remains an increased chance of this compared to normal over the next couple of months. Should a negative IOD pattern form then wetter than normal conditions become likely across Australia and the Maritime Continent (Indonesia, Borneo, New Guinea, the Philippine Islands, the Malay Peninsula, and the surrounding seas); drier than normal conditions in East Africa would be likely for the Short Rains season (October-November-December).

3-Month Outlook October to December - Rainfall



Current Status

[Current Status maps](#)

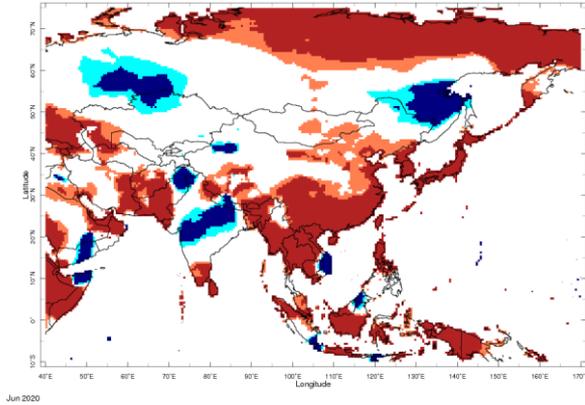
[Central Asia](#)

[Southern Asia](#)

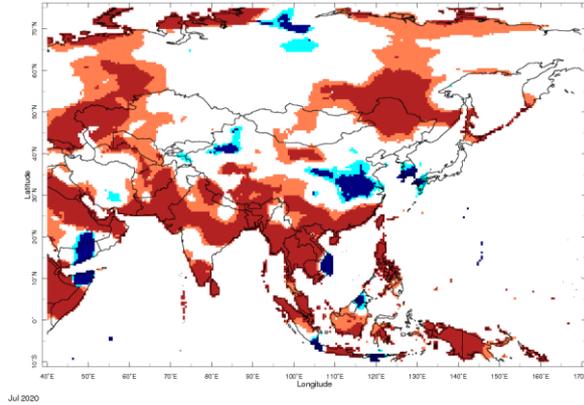
[Southeast Asian Peninsula](#)

[Southeastern Asia / Indonesia](#)

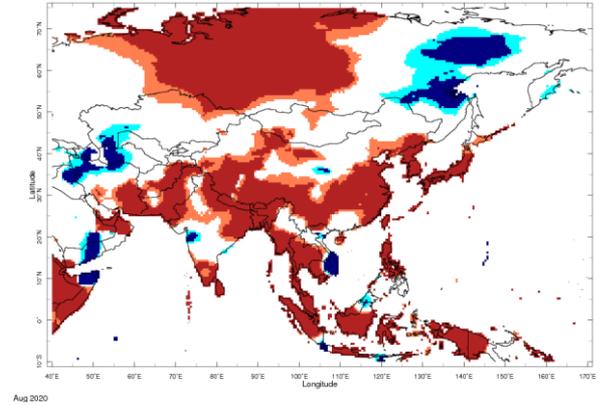
Current Status – Temperature percentiles



June



July

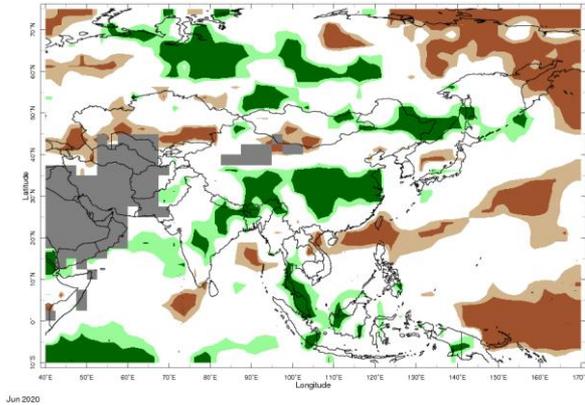


August

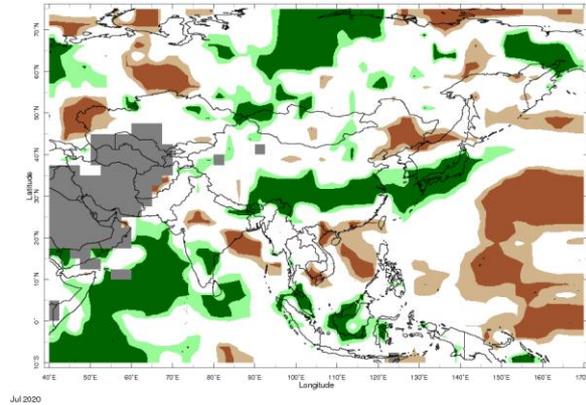


Notes: The percentiles shown in the map indicate a ranking of temperature, with the 0th percentile being the coolest and the 100th percentile being the warmest in the 1981-2010 climatology. Orange and red shading represent values above the 80th (Warm) and 90th (Hot) percentile, respectively; regions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

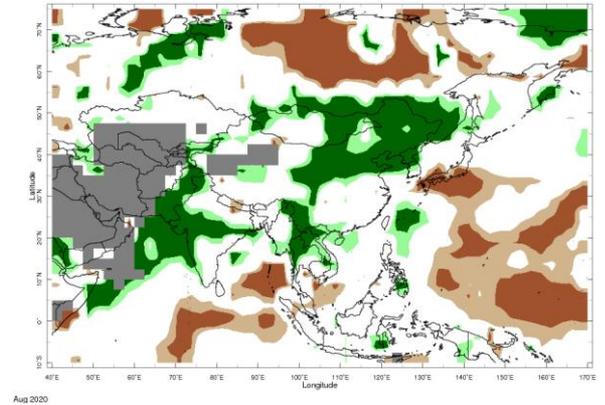
Current Status – Precipitation percentiles



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	Hot [^]	Warm	Warm
Tajikistan	Normal	Normal	Normal
Kyrgyzstan	Normal	Normal	Normal

Current Status: Rainfall

	June	July	August
	Mixed [^]	Normal*	Normal*
	Normal	Normal	Wet
	Normal	Normal	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:

[^] **Note:** North-eastern Afghanistan saw temperatures close to, locally below normal. This area was also the wettest part of the country

Current Status – Southern Asia

Current Status: Temperature

	June	July	August
Pakistan	Mixed [^]	Hot [^]	Hot
India	Mixed	Hot ^{^^}	Hot ^{^^}
Nepal	Cold	Normal	Hot
Bangladesh	Warm	Hot	Hot

Current Status: Rainfall

June	July	August
Wet	Normal	Very Wet
Mixed	Normal	Mixed ^{^^^}
Very Wet	Wet	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: Southern Pakistan was Hot through June, whilst the north of the country was Cold. In July the south was Hot and normal temperatures were observed in the north.

^{^^}Note: During July and August some central areas of India had near-normal temperatures.

^{^^^}Note: During August, many western and some central areas were wet or very wet with the rest of India being normal.

Current Status – Southeast Asian Peninsula

Current Status: Temperature

	June	July	August
China	Hot	Mixed^^	Hot
Myanmar	Hot	Hot	Hot
Vietnam	Hot	Hot	Cold

Current Status: Rainfall

	June	July	August
China	Very Wet	Wet^	Very Wet^
Myanmar	Normal	Normal	Wet
Vietnam	Dry	Normal	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:

^Note: Rainfall was near normal across the far north and south of China during July. During August, some southeastern and western areas had near normal rainfall.

^^Note: China was hot in the South and South East, cold in some areas west of the Yellow Sea, and mainly normal elsewhere

Current Status – Southeastern Asia / Indonesia

	Current Status: Temperature			Current Status: Rainfall		
	June	July	August	June	July	August
Indonesia	Hot	Warm	Hot	Mixed [^]	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:

[^]Note: Rainfall was concentrated across parts of Borneo and southern Sumatra, whilst much of the rest of Indonesia had near normal rainfall.

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		
		October	October to December	January to March
Afghanistan	Temperature	Climatological odds – see note	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 – see note
Tajikistan	Temperature	Climatological odds – see note	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 – see note
Kyrgyzstan	Temperature	Climatological odds – see note	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 – see note

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		
		October	October to December	January to March
Pakistan	Temperature	Climatological odds – see note	Climatological odds – see note	Likely to be warmer than normal
	Rainfall	Likely to be near-normal	Likely to be drier than normal in the north, climatological odds – see note elsewhere	Climatological odds – see note
India	Temperature	Likely to be warmer than normal in the east, climatological odds – see note in the west	Likely to be warmer than normal in the far north and east, climatological odds – see note elsewhere	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal in the south and east, climatological odds – see note elsewhere	Climatological odds – see note
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	Climatological odds – see note	Likely to be drier than normal	Likely to be drier than normal
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	Climatological odds – see note	Likely to be wetter than normal	Climatological odds – see note

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Outlook: June to November – SE Asian Peninsula

		Forecast summary		
		October	October to December	January to March
China	Temperature	Likely to be warmer than normal in the west, elsewhere climatological odds – see note	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Likely to be drier than normal in parts of the south, elsewhere climatological odds – see note	Likely to be drier than normal in the south and east, elsewhere climatological odds – see note	Climatological odds – see note
Myanmar	Temperature	Much more 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 south, elsewhere climatological odds – see note	Likely to be wetter than normal in the south, elsewhere climatological odds – see note	Climatological odds – see note
Vietnam	Temperature	Likely to be warmer than normal	Climatological odds – see note	Climatological odds – see note
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds – see note

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Outlook: June to November – 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	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds – see note
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 – see note

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Annex 1 – Supplemental Information

Regional Climate Outlook Forums (RCOF)

Climate Outlook Forums (<https://public.wmo.int/en/our-mandate/climate/regional-climate-outlook-products>):

The South Asian Climate Outlook Forum (SASCOF)

Latest Output – <http://rcc.imdpune.gov.in/SASCOF18/concenus%20statement.pdf>

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

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

Email: internationaldevelopment@metoffice.gov.uk

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