

Asia: Monthly Climate Outlook

August to May

Issued: November 2020

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Overview

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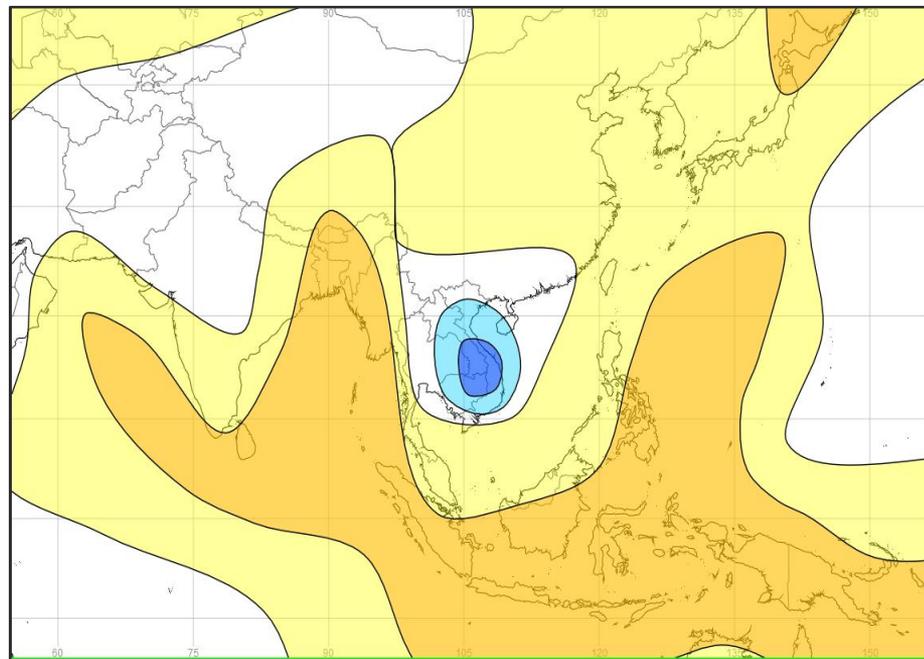
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Asia Current Status and Outlook - Temperature

Current Status: In the last three months, warmer temperatures have been experienced across much of southern Asia, especially those affected by the retreating south Asian monsoon, including northern India, and adjacent countries. Malaysia and Indonesia, have also been warmer than normal during the past few months. Central Asia has generally been closer to normal, although colder than normal conditions were experienced across parts of Iran, Afghanistan, and China. The past three months have seen warmer than normal conditions across Russia and the Arctic.

Outlook: For the next three months, warmer than normal sea temperatures, associated with the mature La Niña are becoming established close to the Philippines and Indonesia, resulting in warmer than normal conditions being very likely across the Philippines, Malaysia and Indonesia. Warmer than normal conditions are likely widely elsewhere. The main exception to this is the Indochinese peninsula, where below normal temperatures are likely, and expected to persist in the next 6 months.

3-Month Outlook December to February - Temperature

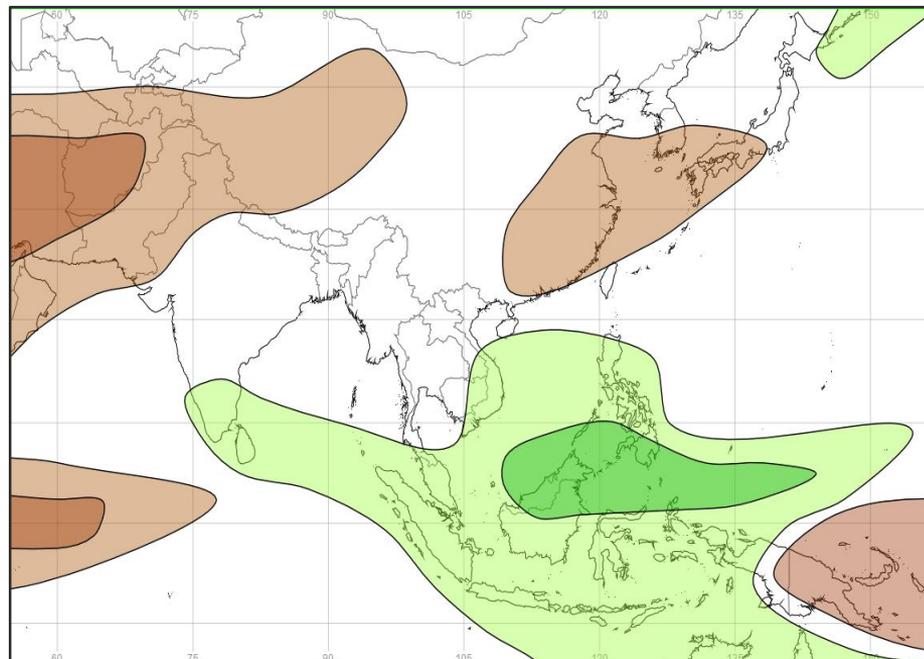


Asia Current Status and Outlook - Rainfall

Current Status: For the last three months, the wetter than normal conditions across large areas of southern Asia have moved southwards with the winter monsoon. Elsewhere conditions were much more mixed.

Outlook: La Niña will continue to exert its influence across the region in the coming months. Wetter than normal conditions very likely over much of the Philippines, and likely over large parts of Indonesia and the far east of south-east Asia. Drier than normal conditions are likely across much of Central Asia and very likely in Iran and Afghanistan. Additionally, drier than normal conditions are likely in PNG and equatorial pacific islands to the east.

3-Month Outlook December to February - Rainfall



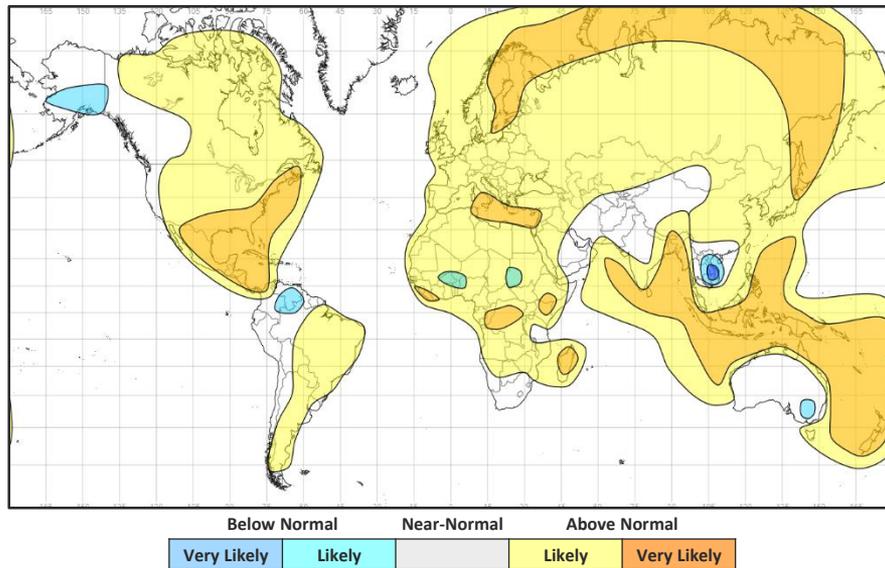
Global Outlook - Temperature

Outlook: For the next three months, consistent with the warming climate over the past decade (the anomalies forecast are with respect to the 1981-2010 climate) the majority of the globe is likely to experience warmer than normal conditions.

The most significant deviations from this are in areas where La Niña has a strong influence. This is evident across south-east Asia where colder than normal conditions are expected across parts of Indochina and the South China Sea. Conversely warmer than normal conditions are very likely across Indonesia, Malaysia, the Philippines, and across the Bay of Bengal and much of the Indian Ocean where Sea Surface Temperatures (SSTs) are above normal.

Also warmer-than-normal conditions are very likely across the parts of Central America, southern and eastern USA and much of the Caribbean. Over large parts of the Arctic, where sea ice and snow cover are currently below normal levels, warmer than normal conditions are very likely.

3-Month Outlook December to February - Temperature



Global Outlook - Rainfall

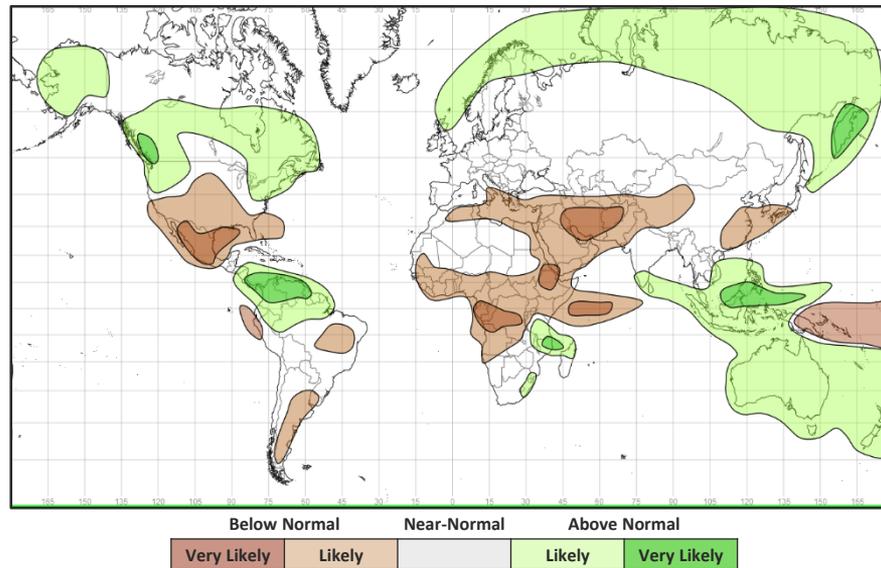
Outlook: Similar to predicted temperature variation, the rainfall patterns over the next 3-6 months are expected to be strongly influenced by the ongoing mature La Niña event across the tropical Pacific.

The latest statement from the NOAA Climate Prediction Centre / NCEP states that “*La Niña is likely to continue through the Northern Hemisphere winter 2020-21 (~95% chance during January-March) and into spring 2021 (~65% chance during March-May).*” ([Full statement 23/11/2019](#))

Confidence is highest in these rainfall shifts across the tropics, but the impacts of La Niña will be far reaching, and in general the expected rainfall anomalies align with typical La Niña events. Forecasts for the Indian Ocean Dipole (IOD) show that this will remain neutral in the coming months.

Over the next three months, rainfall is very likely to be above normal over the Philippines, northern Malaysia, across the South China Sea and north-west Pacific. Tropical cyclone activity is likely higher across the Philippine and South China Seas compared to areas further north. Above normal rainfall is also likely in parts of southern Africa, Mozambique Channel, the southern Caribbean Sea, the north of South America, large parts of northern North America, parts of Scandinavia, parts of Indonesia, and Australia. However, below normal rainfall is very likely over parts of Mexico and the southern States of the US, and parts of central Asia. Below normal rainfall is likely across much of central, eastern and parts of western and northern Africa, parts of southern South America, southern Europe, the Middle East and south-west Asia.

3-Month Outlook December to February - Rainfall



Current Status

[Current Status maps](#)

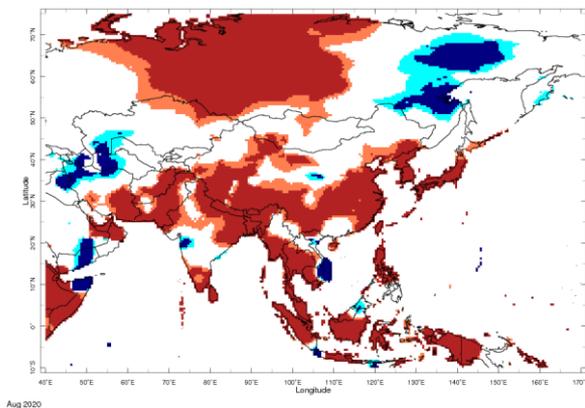
[Central Asia](#)

[Southern Asia](#)

[Southeast Asian Peninsula](#)

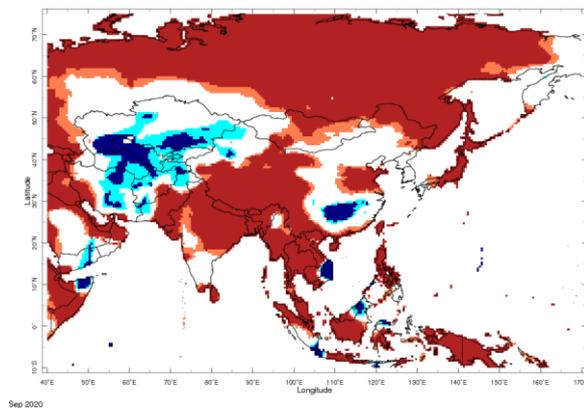
[Southeastern Asia / Indonesia](#)

Current Status – Temperature percentiles



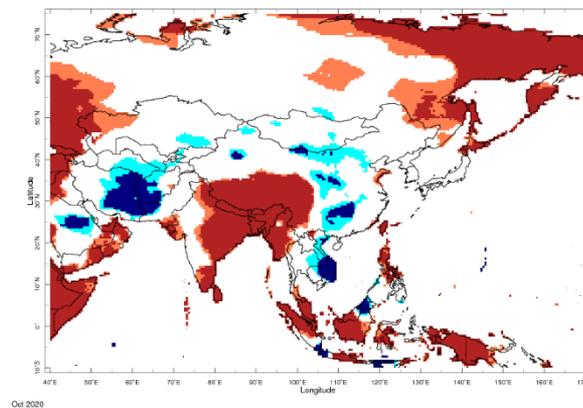
Aug 2020

August



Sep 2020

September



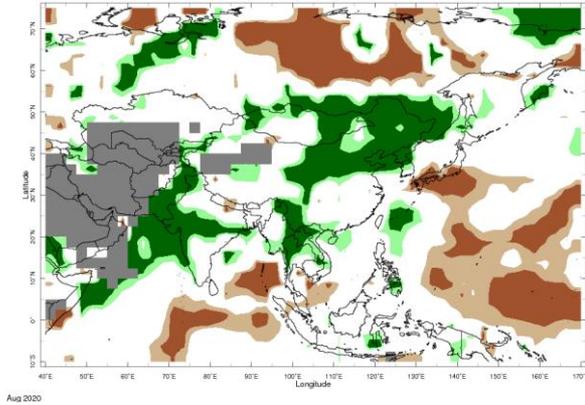
Oct 2020

October

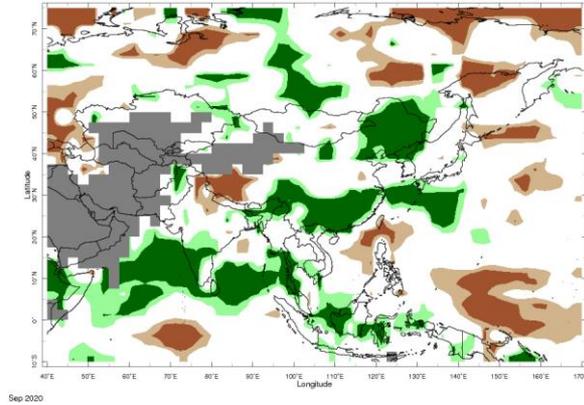


Notes: The percentiles shown in the map indicate a ranking of temperature, with the 0th percentile being the coolest and the 100th percentile being the warmest in the 1981-2010 climatology. Orange and red shading represent values above the 80th (Warm) and 90th (Hot) percentile, respectively; regions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

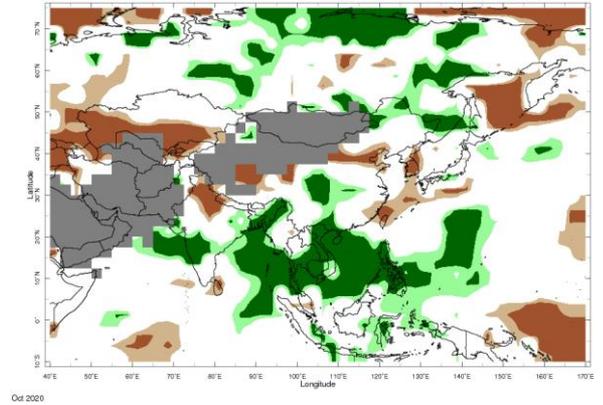
Current Status – Precipitation percentiles



Aug 2020



Sep 2020



October



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

	August	September	October
Afghanistan	Warm	Normal [^]	Normal [^]
Tajikistan	Normal	Cool	Normal
Kyrgyzstan	Normal	Cool	Normal

Current Status: Rainfall

	August	September	October
Afghanistan	Normal [*]	Normal [*]	Normal
Tajikistan	Normal	Normal [*]	Normal
Kyrgyzstan	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:

[^]Note: Temperatures much more variable across country in September with some cool / cold areas in the north and hot areas in the east of the country; in October, cool / cold in the south, normal elsewhere

^{^^}Note: Dry in the north-east

Current Status – Southern Asia

	Current Status: Temperature		
	August	September	October
Pakistan	Hot	Hot	Normal
India	Warm	Warm	Mixed^^
Nepal	Hot	Hot	Hot
Bangladesh	Hot	Hot	Hot

	Current Status: Rainfall		
	August	September	October
Pakistan	Very Wet	Normal	Normal*
India	Wet	Normal	Normal^
Nepal	Normal	Normal	Normal
Bangladesh	Normal	Wet	Very 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: Dry in the Himalayan region

^^Note: Mainly normal in east of country, hot elsewhere

Current Status – Southeast Asian Peninsula

Current Status: Temperature

	August	September	October
China	Warm	Warm	Mixed^^
Myanmar	Warm	Hot	Hot
Vietnam	Cool	Mixed^	Cold

Current Status: Rainfall

	August	September	October
China	Wet	Normal	Normal
Myanmar	Normal	Wet	Normal
Vietnam	Wet	Normal	Very 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: In September, cold in Central Vietnam, hot elsewhere

^^ Note: Hot in south west, normal to cold elsewhere

Current Status – Southeastern Asia / Indonesia

	Current Status: Temperature			Current Status: Rainfall		
	August	September	October	August	September	October
Indonesia	Hot	Hot	Hot	Normal	Wet	Wet
Papua New Guinea	Warm	Hot	Hot	Normal	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:

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: December to May – Central Asia

		Forecast summary		
		December	December to February	March to May
Afghanistan	Temperature	Climatological odds - see note	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	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	Climatological odds - see note

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Outlook: December to May – Southern Asia

		Forecast summary		
		December	December to February	March to May
Pakistan	Temperature	Likely to be warmer than normal	Likely to be warmer than normal, but much more likely to be warmer than normal in the north.	Likely to be warmer than normal
	Rainfall	Likely to be near-normal	Likely to be drier than normal	Climatological odds - see note
India	Temperature	Likely to be warmer than normal	Likely to be near-normal	Likely to be warmer than normal
	Rainfall	Likely to be near-normal in the north, likely to be wetter than normal in the south	Likely to be drier than normal in the north, likely to be wetter than normal in the south	Climatological odds - see note
Nepal	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 - see note
Bangladesh	Temperature	Likely to be warmer than normal	Much more likely to be warmer than normal	Climatological odds - see note
	Rainfall	Climatological odds - see note	Climatological odds - see note	Climatological odds - see note

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Outlook: December to May – SE Asian Peninsula

		Forecast summary		
		December	December to February	March to May
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	Likely to be drier than normal	Climatological odds - see note
Myanmar	Temperature	Likely to be colder than normal	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
	Rainfall	Likely to be near-normal	Likely to be near-normal	Likely to be wetter than normal
Vietnam	Temperature	Likely to be colder than normal	Much more likely to be colder than normal	Likely to be colder than normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds - see note

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Outlook: December to May – SE Asia / Indonesia

		Forecast summary		
		December	December to February	March to May
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	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	Much more likely to be wetter than normal	Likely to be drier than normal in the north, likely to be wetter than normal in the far south, climatological odds - see note elsewhere.	Likely to be drier than normal

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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://rcc.imdpune.gov.in/SASCOF17/background.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>