

Asia: Monthly Climate Outlook March to December

Issued: June 2020

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Overview

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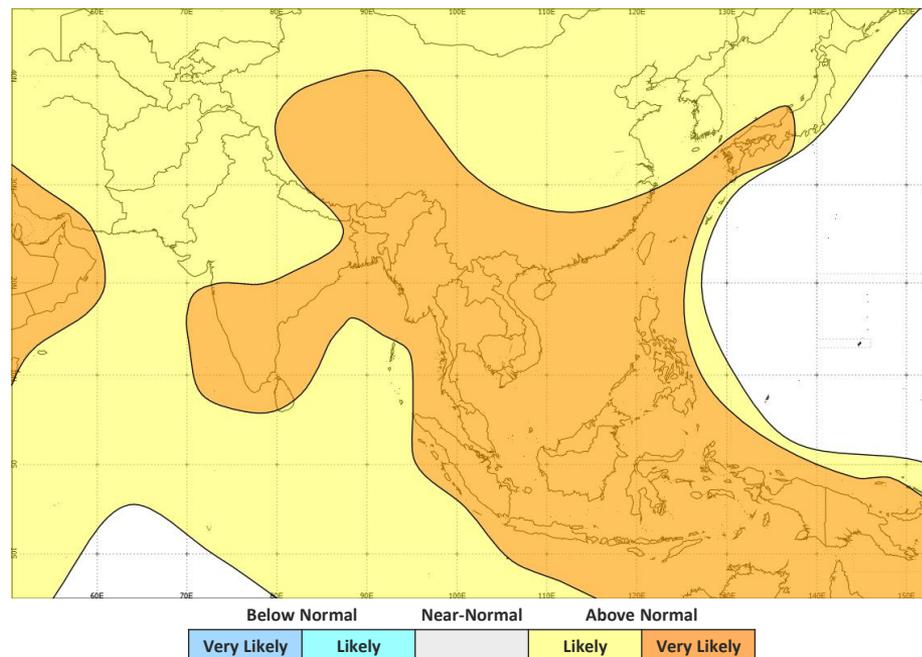
[Global Outlook – Rainfall](#)

Asia Current Status and Outlook - Temperature

Current Status: Temperatures have been close to normal across India, Nepal and Bangladesh. Elsewhere, warmer than normal conditions have prevailed.

Outlook: Large parts of the continent are expected to be above normal; this especially so across south-east Asia, Indonesia and Papua New Guinea.

3-Month Outlook chart for July to September 2020 - Temperature



Asia Current Status and Outlook - Rainfall

Current Status: Afghanistan, Pakistan, Nepal, northern India and Bangladesh have been wetter than normal over the past 3 months. Southern China along with much of Indonesia and Papua New Guinea have also been wetter than normal. Meanwhile, Vietnam and Myanmar were drier than normal. Elsewhere across the region normal rainfall was reported.

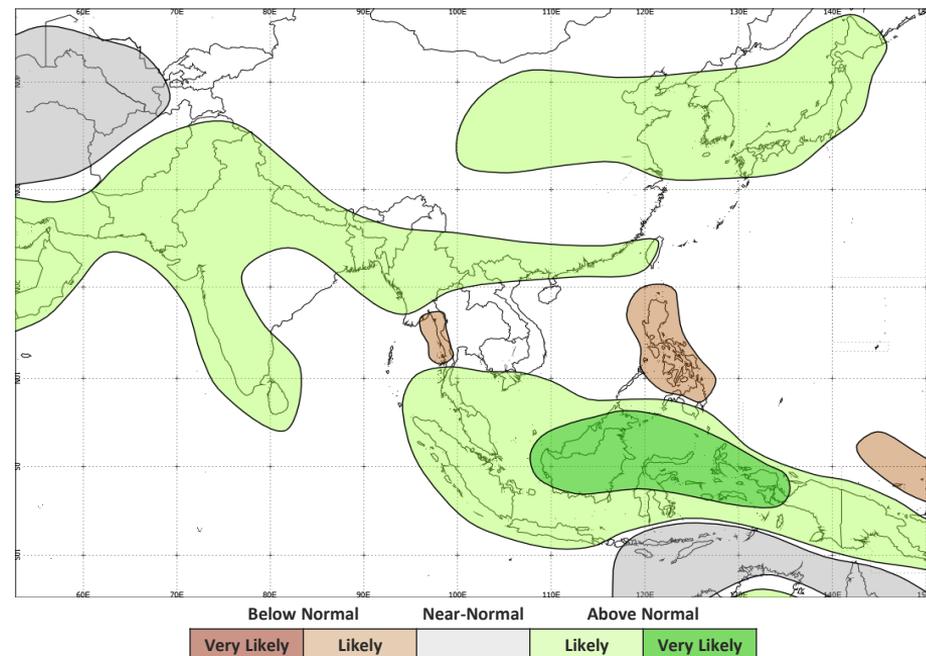
Outlook:

For the next 3 months there is high confidence in wetter than normal conditions across Indonesia, with a weaker signal for the same across the Papua New Guinea. Wetter than normal is also slightly more likely across central and southern China. There is a slight increase in the likelihood of drier than normal conditions across southern Myanmar.

The current lack of clear and strong drivers of predictability (see slide 6) means that the seasonal outlook skill of the Indian Summer Monsoon prediction is low for the next 3 months. However, there are some weak emerging common themes suggesting wetter than normal conditions are slightly more probable across western and northern India, along with Pakistan, Bhutan, Nepal and northern Myanmar; otherwise the chances of drier than normal and wetter than normal conditions across the region are roughly similar – climatological odds.

Both ENSO and IOD are neutral, reducing predictability on seasonal timescales, although as we progress through the boreal autumn the likelihood of La Niña and/or a negative IOD developing increases. Should La Niña and/or negative IOD develop, this would favour wetter than normal conditions across Malaysia and Indonesia later in the period (3-6 months).

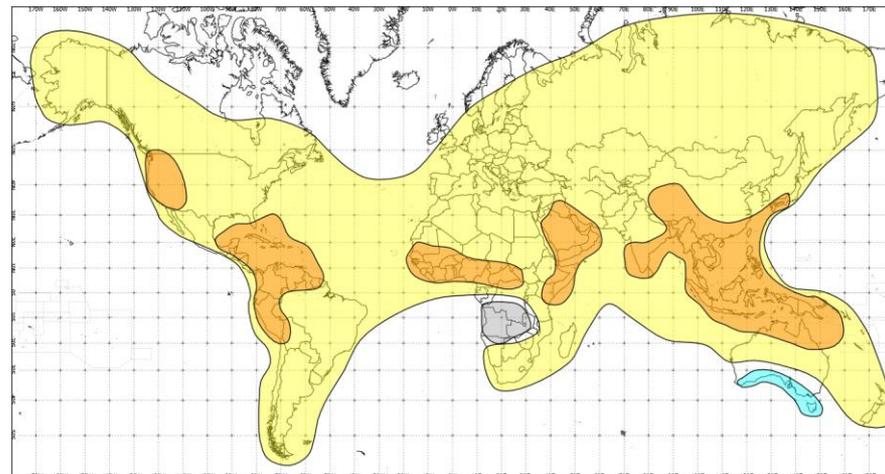
3-Month Outlook chart for July to September 2020 - Rainfall



Global Outlook - Temperature

Outlook: There is an increase in the likelihood of warmer than normal conditions across large parts of the world, with the highest confidence in tropical regions. This is consistent with the warming observed in the past decade.

3-Month Outlook July to September 2020 - Temperature



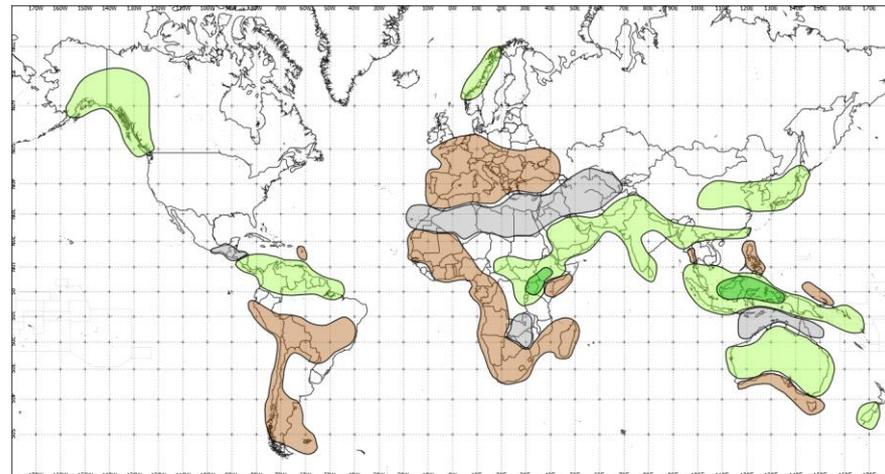
Global Outlook - Rainfall

Outlook:

El Niño-Southern Oscillation (ENSO) – Sea Surface Temperatures (SSTs) continue to decline in the central and eastern tropical Pacific, close to La Niña thresholds. There is, however, yet to be an atmospheric response with most other indicators still neutral. Long-range forecast models continue to predict La Niña developing later this year, most probably in the boreal autumn. Considering signals from the long-range models and the ongoing decline in SSTs, there is around a 45-50% chance of La Niña developing during the boreal (northern hemisphere) autumn.

Indian Ocean Dipole (IOD) – The IOD is currently neutral, but there is growing evidence of a negative pattern developing through this period, most likely late July or August. For much of this period, the IOD is not expected to significantly influence patterns of rainfall around the world. However, should a negative IOD develop, then wetter than normal conditions become more likely, later in this period, across Australia, along with Malaysia and Indonesia; drier than normal conditions in East Africa for the Short Rains season (October-November-December).

3-Month Outlook July to September 2020 - Rainfall



Current Status

[Current Status maps](#)

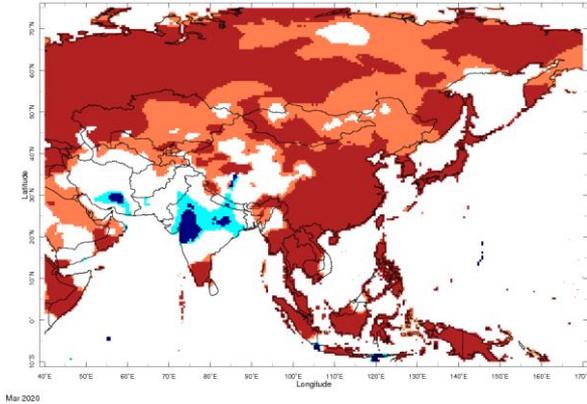
[Central Asia](#)

[Southern Asia](#)

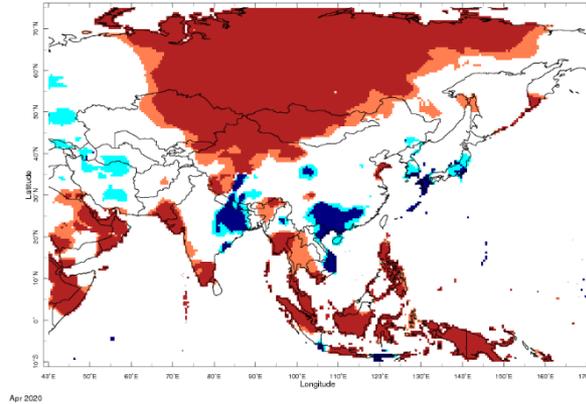
[Southeast Asian Peninsula](#)

[Southeastern Asia / Indonesia](#)

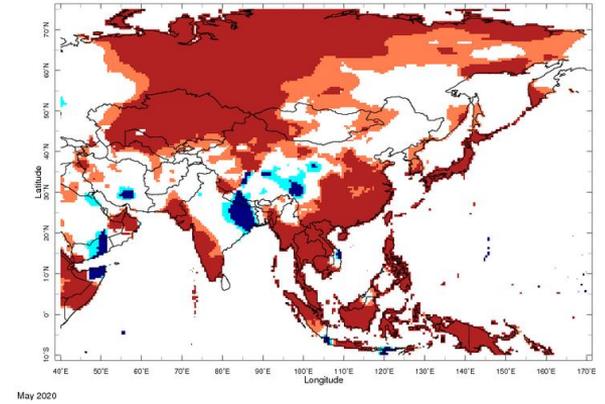
Current Status – Temperature percentiles



March 2020



April 2020

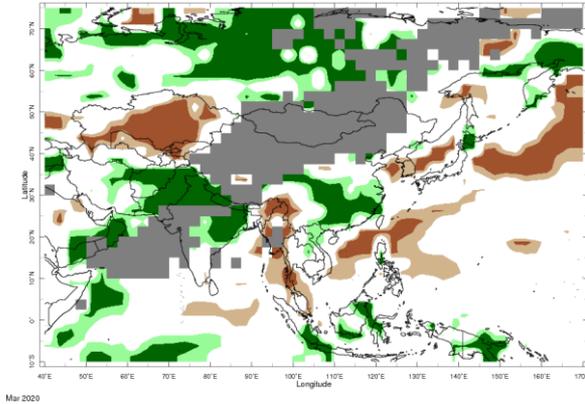


May 2020

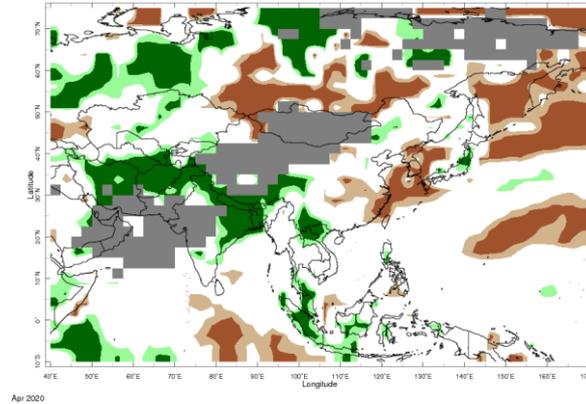


Notes: The percentiles shown in the map indicate a ranking of temperature, with the 0th percentile being the coolest and the 100th percentile being the warmest in the 1981-2010 climatology. Orange and red shading represent values above the 80th (Warm) and 90th (Hot) percentile, respectively; regions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

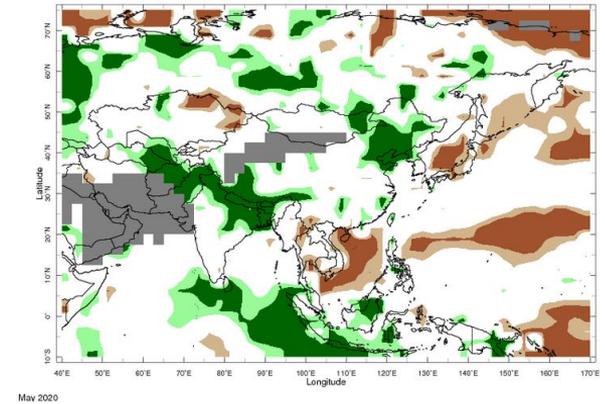
Current Status – Precipitation percentiles



March 2020



April 2020



May 2020



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

	March	April	May
Afghanistan	Normal	Normal	Normal
Tajikistan	Warm	Normal	Normal
Kyrgyzstan	Warm	Normal	Normal

Current Status: Rainfall

March	April	May
Very Wet	Very Wet	Very Wet
Dry	Wet	Normal
Very Dry	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:

Current Status – Southern Asia

Current Status: Temperature

	March	April	May
Pakistan	Normal	Normal	Normal
India	Mixed	Mixed^^	Mixed^^
Nepal	Cool	Cool	Cold
Bangladesh	Normal	Cool	Warm

Current Status: Rainfall

March	April	May
Very Wet	Very Wet	Very Wet
Wet^	Very Wet^	Normal^
Very Wet	Very Wet	Very Wet
Normal	Very 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:

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* Region usually experiences less than 10mm/month rainfall during the month (dry season).

Additional Information:

^Note: In March, April and May areas of northern India were Wet.

^^Note: In April and May southwest India was Hot and northern India Cold. Elsewhere across the country temperatures were normal.

Current Status – Southeast Asian Peninsula

Current Status: Temperature

	March	April	May
China	Hot	Normal	Hot
Myanmar	Hot^^	Warm^^	Hot^^
Vietnam	Hot	Cold	Hot

Current Status: Rainfall

	March	April	May
China	Normal^	Normal^	Normal
Myanmar	Dry	Normal	Normal
Vietnam	Normal	Normal	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:

^Note: In March, southern China was Very Wet. In April, eastern China was Very Dry.

^^Note: Temperatures were normal across the north of Myanmar throughout.

Current Status – Southeastern Asia / Indonesia

	Current Status: Temperature			Current Status: Rainfall		
	March	April	May	March	April	May
Indonesia	Hot	Hot	Hot	Normal [^]	Wet	Very Wet
Papua New Guinea	Hot	Hot	Hot	Very Wet	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: In March, Borneo, Sumatra and West Java were Very Wet.

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: July to December – Central Asia

		Forecast summary		
		July	July to September	October to December
Afghanistan	Temperature	Likely to be warmer than normal	Likely to be warmer than normal	Climatological odds - see note
	Rainfall	Likely to be near-normal	Likely to be wetter than normal in the east and Likely to be near-normal in the west	Likely to be drier than normal
Tajikistan	Temperature	Likely to be warmer than normal	Likely to be warmer than normal	Climatological odds - see note
	Rainfall	Climatological odds - see note	Climatological odds - see note	Likely to be drier than normal
Kyrgyzstan	Temperature	Likely to be warmer than normal	Likely to be warmer than normal	Climatological odds - see note
	Rainfall	Climatological odds - see note	Climatological odds - see note	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: July to December – Southern Asia

		Forecast summary		
		July	July to September	October to December
Pakistan	Temperature	Likely to be warmer than normal	Likely to be warmer than normal	Climatological odds - see note
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds - see note
India	Temperature	Likely to be warmer than normal	Likely to be warmer than normal	Climatological odds - see note
	Rainfall	Likely to be wetter than normal in the north and west. Climatological odds elsewhere - see note	Likely to be wetter than normal in the north and west. Climatological odds elsewhere - see note	Climatological odds - see note
Nepal	Temperature	Likely to be warmer than normal	Likely to be warmer than normal	Climatological odds - see note
	Rainfall	Climatological odds - see note	Likely to be wetter than normal	Climatological odds - see note
Bangladesh	Temperature	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

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: July to December – SE Asian Peninsula

		Forecast summary		
		July	July to September	October to December
China	Temperature	Likely to be warmer than normal	Much more likely to be warmer than normal	Climatological odds - see note
	Rainfall	Climatological odds - see note	Likely to be wetter than normal	Climatological odds - see note
Myanmar	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 drier than normal in the south. Climatological odds elsewhere - see note .	Likely to be wetter than normal in the north and Likely to be drier than normal in the south.	Climatological odds - see note
Vietnam	Temperature	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Climatological odds - see note
	Rainfall	Likely to be drier than normal	Climatological odds - see note	Likely to be wetter than normal

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Outlook: July to December – SE Asia / Indonesia

		Forecast summary		
		July	July to September	October to December
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	Likely to be wetter than normal	Likely to be wetter than normal	Likely to be wetter than normal

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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/SASCOF16/concensus.html> (April 2020)

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