

Asia: Monthly Climate Outlook May 2021 to February 2022

Issued: August 2021

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Overview

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Asia Current Status and Outlook - Temperature

Current Status:

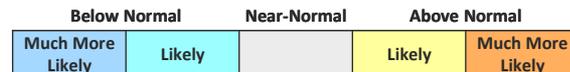
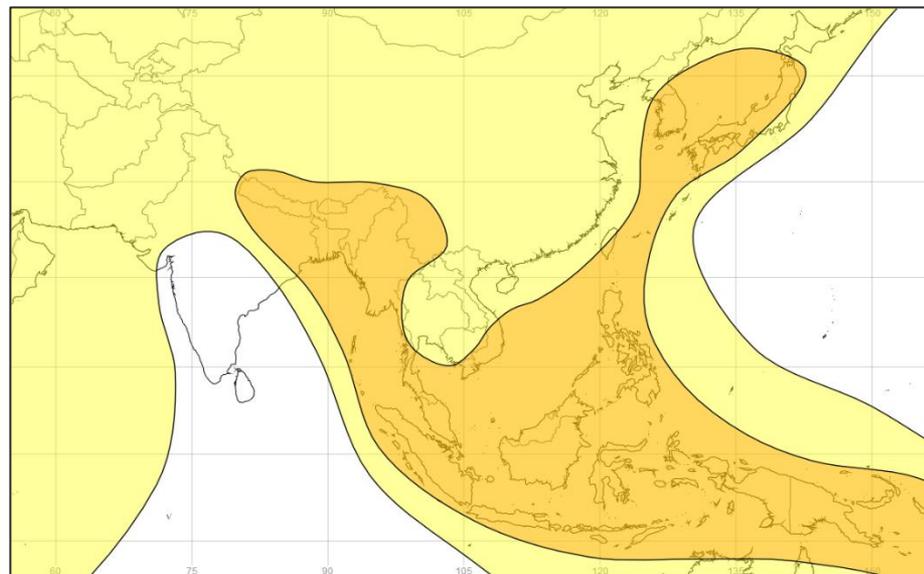
Most of the region has seen above normal temperatures over the past 3 months, although parts of India and China have seen near-normal temperatures.

Outlook:

For the next three months, temperatures are likely or much more likely to be above normal across much of the region. The main exceptions to this are parts of the Indian subcontinent where the monsoon is active.

Impacts from heat, especially across the Indochina Peninsula, are more likely than normal.

3-Month Outlook September to November - Temperature



Asia Current Status and Outlook - Rainfall

Current Status:

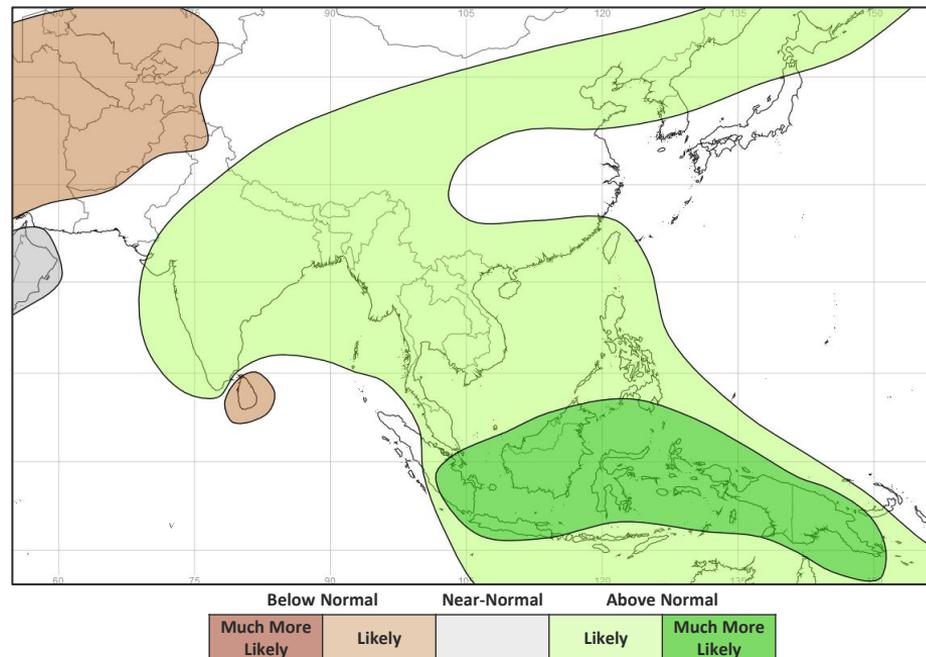
The Summer Monsoon has been active this year, bringing wet or very wet conditions, compared to normal, across Nepal, Bangladesh and central and northern parts of India. Myanmar has also been wetter than normal, along with many parts of northern and eastern China. Near-normal rainfall has been observed across most other parts of Asia.

Outlook:

Over the next three months, consistent with the increased likelihood of an emerging La Niña (see [Global Outlook – Rainfall](#) for more information), wetter than normal conditions are likely across the Korean Peninsula and Indian, and are much more likely across Malaysia, Indonesia and southern parts of the Philippines. Longer-range forecasts show that these conditions may continue beyond the end of the year, however forecast uncertainty generally increases with longer range, and this should be updated with the 3-month outlook when available.

Large parts of China and much of the rest of southern Asia are also likely to be wetter than normal, and drier than normal conditions are likely across Central Asia, including Afghanistan.

3-Month Outlook September to November - Rainfall



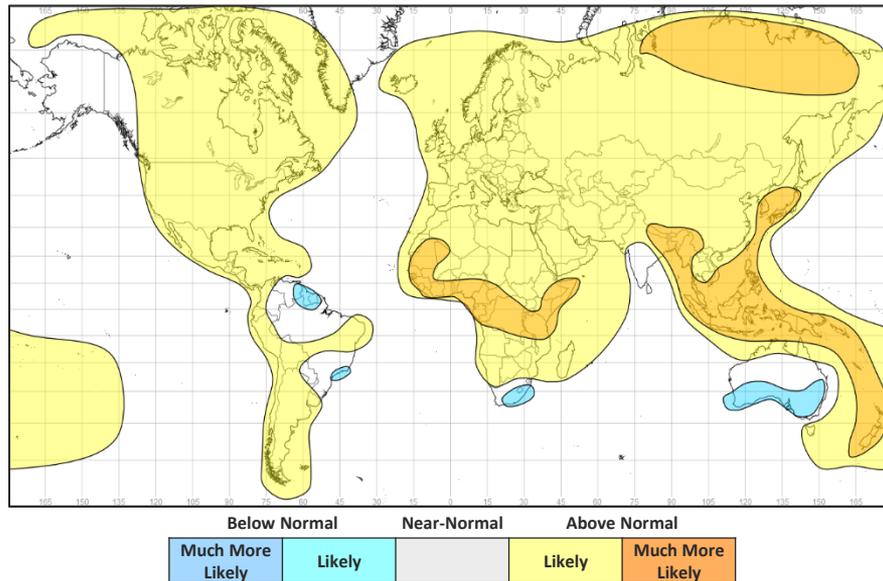
Global Outlook - Temperature

Outlook:

Over the next three months, many regions are likely to be warmer than normal, consistent with the warming observed over the past decade.

There are some notable exceptions to this with colder than normal conditions likely across tropical regions of South America, southern Australia and some parts of southern Africa.

3-Month Outlook September to November - Temperature



Global Outlook - Rainfall

Outlook:

Indian Ocean Dipole (IOD) – A negative IOD event is established and is expected to persist for the next three months, returning to neutral by December, as is typical of the usual IOD seasonal cycle. This means that the western Indian Ocean is currently cooler than usual, while the east is warmer. This affects meteorological patterns over wide areas of the globe: the negative IOD leads to wetter conditions in Indonesia and Australia and drier conditions in East Africa.

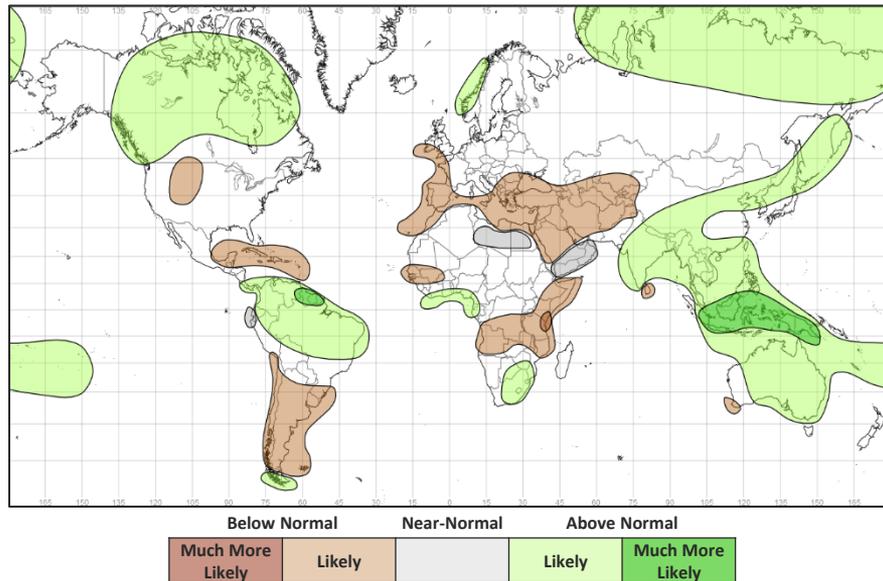
El Niño-Southern Oscillation (ENSO) – ENSO is currently neutral, however, a La Niña is expected to re-establish during the northern hemisphere winter. NOAA Climate Prediction Center / NCEP predictions give a small chance of La Niña emerging in September, rising to a 70% chance of emerging November to January – more than double the normal risk – and lasting through the 2021-22 Northern Hemisphere winter.

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

Over the next three months, large parts of southern Asia, Australasia, northern parts of South America, along with southern parts of Africa are likely to be wetter than normal.

Meanwhile, parts of Central and East Africa and the Middle East are likely to be drier than normal.

3-Month Outlook September to November - Rainfall



Current Status

[Current Status maps](#)

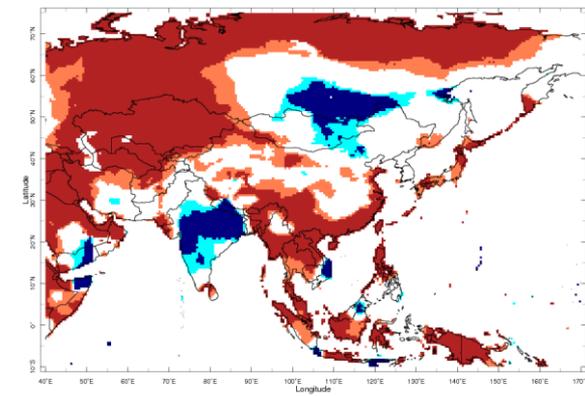
[Central Asia](#)

[Southern Asia](#)

[Southeast Asian Peninsula](#)

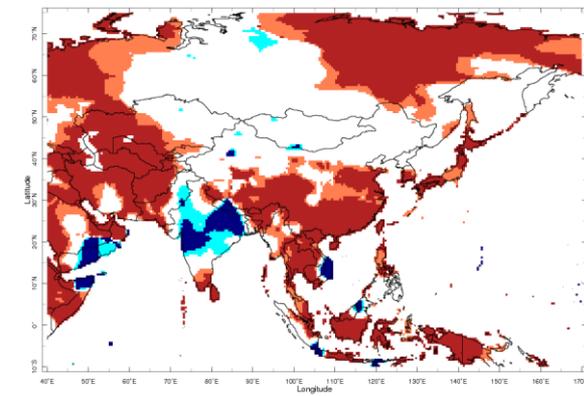
[Southeastern Asia / Indonesia](#)

Current Status – Temperature percentiles



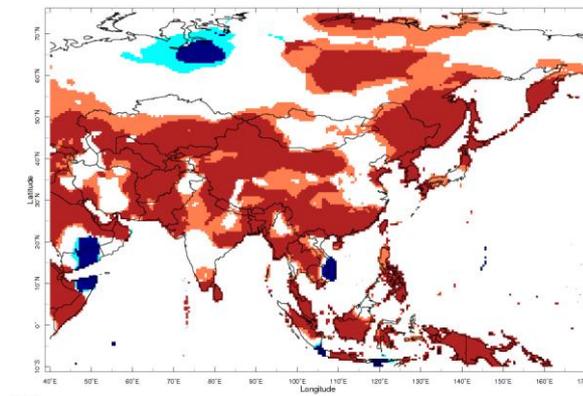
May 2021

May



Jun 2021

June



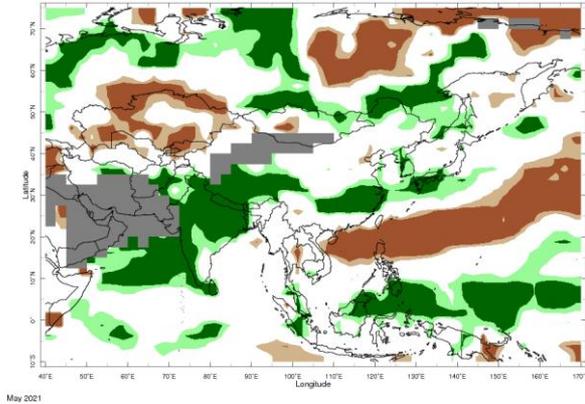
Jul 2021

July

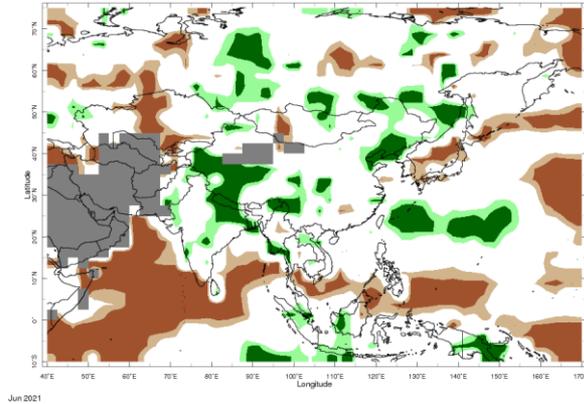


Notes: The percentiles shown in the map indicate a ranking of temperature, with the 0th percentile being the coolest and the 100th percentile being the warmest in the 1981-2010 climatology. Orange and red shading represent values above the 80th (Warm) and 90th (Hot) percentile, respectively; regions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

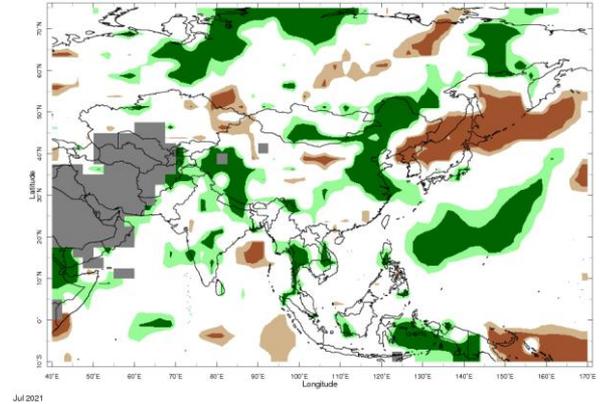
Current Status – Precipitation percentiles



May



June



July



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

	May	June	July
Afghanistan	Warm	Hot	Hot
Tajikistan	Warm	Hot	Hot
Kyrgyzstan	Hot	Warm	Hot

Current Status: Rainfall

May	June	July
Mixed (1)	Very Dry*	Normal*
Normal	Normal	Wet
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:

(1) Note: Normal in the south, Very Wet in parts of the northeast

Current Status – Southern Asia

Current Status: Temperature

	May	June	July
Pakistan	Normal	Mixed (1)	Hot
India	Cold	Mixed (2)	Normal (5)
Nepal	Cold	Cold	Warm
Bangladesh	Hot	Warm	Hot

Current Status: Rainfall

	May	June	July
	Mixed (3)	Mixed (4)	Mixed (3)
	Very Wet	Normal	Mixed (6)
	Very Wet	Very Wet	Very Wet
	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:** Hot in the west, Normal in the east.
- (2) Note:** Hot in extreme south. Cool to Cold for many central regions.
- (3) Note:** Normal in the south, Wet in the north.
- (4) Note:** Normal in the west, wet in the east.
- (5) Note:** Warm/Hot in the north and extreme south.
- (6) Note:** Wet in the north and central regions; normal elsewhere

Current Status – Southeast Asian Peninsula

Current Status: Temperature

	May	June	July
China	Normal (1)	Hot (3)	Hot
Myanmar	Hot	Warm	Hot
Vietnam	Mixed (2)	Mixed (4)	Cold

Current Status: Rainfall

	May	June	July
China	Mixed (5)	Normal	Mixed (5)
Myanmar	Normal	Normal	Very Wet
Vietnam	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:

- (1) Note:** Hot along the east coast and across Tibet
- (2) Note:** Hot in the north, Cold in the south
- (3) Note:** Hot in the south, Normal in the north
- (4) Note:** Hot north and south, Cold central parts.
- (5) Note:** Large variations across the country

Current Status – Southeastern Asia / Indonesia

	Current Status: Temperature			Current Status: Rainfall		
	May	June	July	May	June	July
Indonesia	Mixed (1)	Hot	Hot	Mixed (2)	Normal	Normal (3)
Papua New Guinea	Hot	Hot	Hot	Dry	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:** Large variations across the country
- (2) **Note:** Highly variable, all areas normal or wet/very wet
- (3) **Note:** Wet in the east

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		
		September	September to November	December to February
Afghanistan	Temperature	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Climatological odds	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	Climatological odds	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	Climatological odds	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: June to November – Southern Asia

		Forecast summary		
		September	September to November	December to February
Pakistan	Temperature	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Climatological odds	Likely to be drier than normal in the north and climatological odds elsewhere	Climatological odds
India	Temperature	Likely to be near-normal	Much more likely to be warmer than normal in the northeast, likely to be warmer than normal in the northwest and climatological odds elsewhere	Climatological odds
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds
Nepal	Temperature	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
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	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: June to November – SE Asian Peninsula

		Forecast summary		
		September	September to November	December to February
China	Temperature	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	Climatological odds in central regions; otherwise likely to be wetter than normal	Likely to be drier than normal in the south; otherwise climatological odds
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	Climatological odds	Likely to be wetter than normal	Climatological odds
Vietnam	Temperature	Much more likely to be warmer than normal	Likely to be warmer than normal in the north and much more likely to be warmer than normal in the south	Climatological odds
	Rainfall	Climatological odds	Likely to be wetter than normal	Climatological odds

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Outlook: June to November – SE Asia / Indonesia

		Forecast summary		
		September	September to November	December to February
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	Climatological odds
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	Much more likely to be wetter than normal	Climatological odds

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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>

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>

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Insert Pictures

Click to insert pictures – note that you will be prompted for a location folder

Update Months

Click to update months on slide footers and tables – note that you may need to run this twice as it sometimes misses some...