

Asia: Monthly Climate Outlook March to December

Issued: June 2022

[Overview](#)

[Current Status](#)

[Outlooks](#)

[Annex 1 – Supplemental Information](#)

Overview

[Asia Current Status and Outlook – Temperature](#)

[Asia Current Status and Outlook – Rainfall](#)

[Global Outlook – Temperature](#)

[Global Outlook – Rainfall](#)

Asia Current Status and Outlook - Temperature

Current Status:

After a hot March and April across much of the continent, May saw cooler conditions develop across parts of Southeast Asia initially, before temperatures near-normal to cold, locally very cold spread to other parts of southern and eastern Asia, particularly India, Indochina and southern and eastern China.

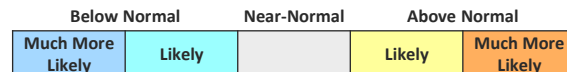
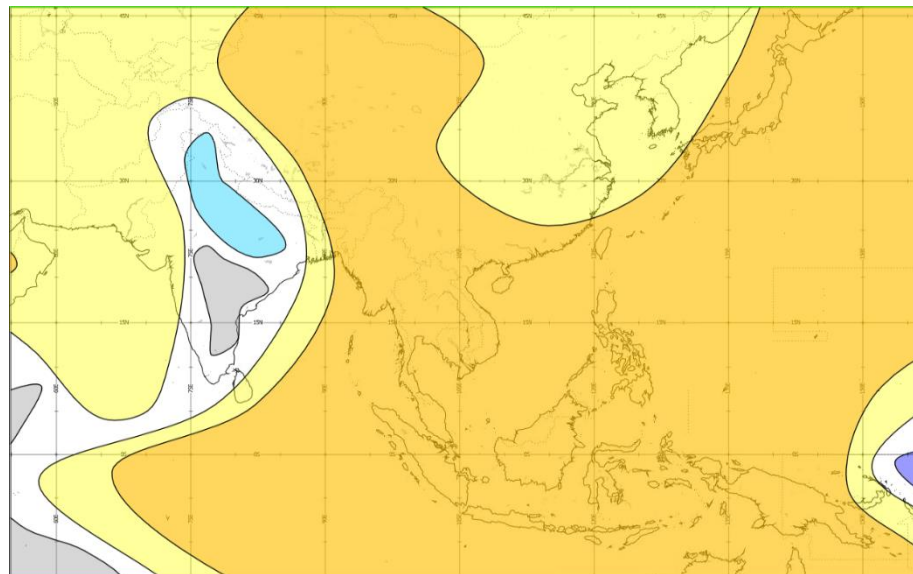
Much of central Asia continued to experience warm to hot temperatures through much of May.

Outlook:

Over the next three months, the majority of the continent is likely to experience warmer than normal conditions, bringing increased risks of impacts from heatwaves – poor air quality, wildfires, health impacts for people and animals, as well as stress on infrastructure.

The one exception to this is likely to be parts of the Indian subcontinent, where temperatures near- to below normal are likely.

3-Month Outlook July to September - Temperature



Asia Current Status and Outlook - Rainfall

Current Status:

Many parts of Asia had near-normal to drier than normal conditions, though parts of Southeast Asia were wet or very wet, with these wetter conditions then spreading further north into May. This led to much of Nepal and Bangladesh being very wet in May.

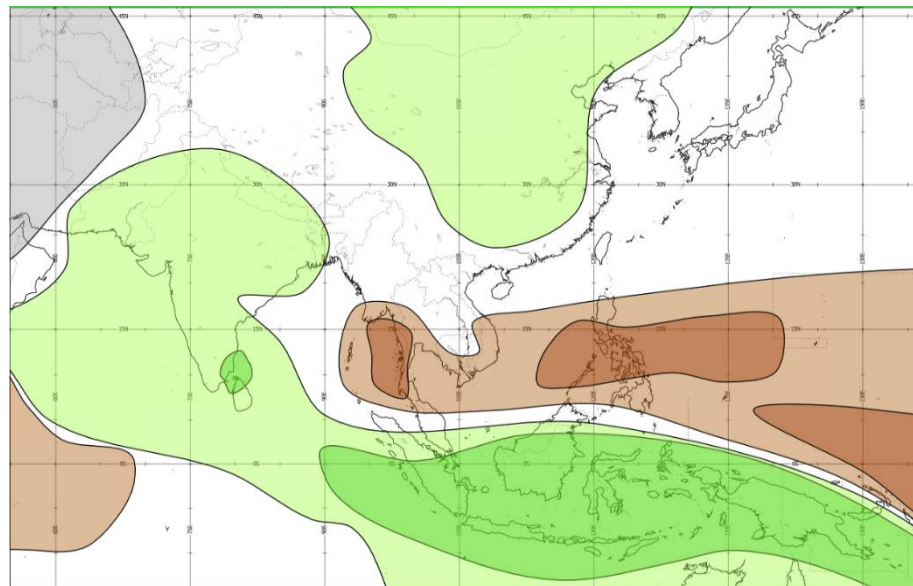
Outlook:

Over the next three months, in much of India, Pakistan, Nepal and Bangladesh the South Asian monsoon is expected to be more active than normal making wetter than normal conditions likely.

Wetter than normal conditions are much more likely across much of Indonesia and the far south of Malaysia. Further north, the Philippines and Indochina are likely to be drier than normal, with parts of the Philippines much more likely to be drier than normal.

China is likely to be wetter than normal in some northeastern areas.

3-Month Outlook July to September - Rainfall



Below Normal		Near-Normal	Above Normal	
Much More Likely	Likely		Likely	Much More Likely

Global Outlook - Temperature

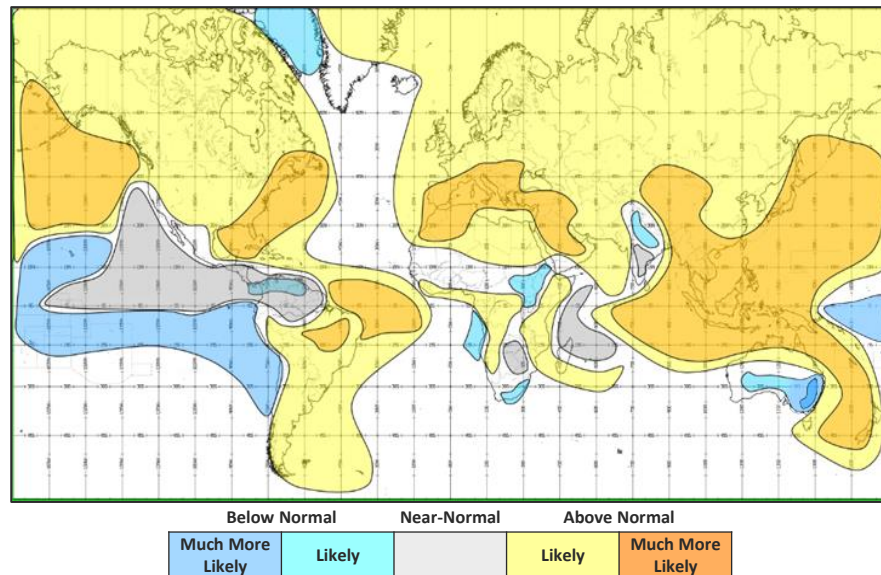
Outlook:

La Niña is likely to persist into the Northern hemisphere autumn. More details can be found in the precipitation section.

Many parts of the globe are likely to be warmer than normal during the next three months. However, consistent with La Niña, parts of Australia, the Indian sub-continent, The Sahel region in Africa and parts of southern Africa are likely to be colder than normal.

The tropical Pacific is also likely to be colder than normal, with these colder temperatures also affecting coastal and equatorial parts of South America.

3-Month Outlook July to September - Temperature



Global Outlook - Rainfall

Outlook:

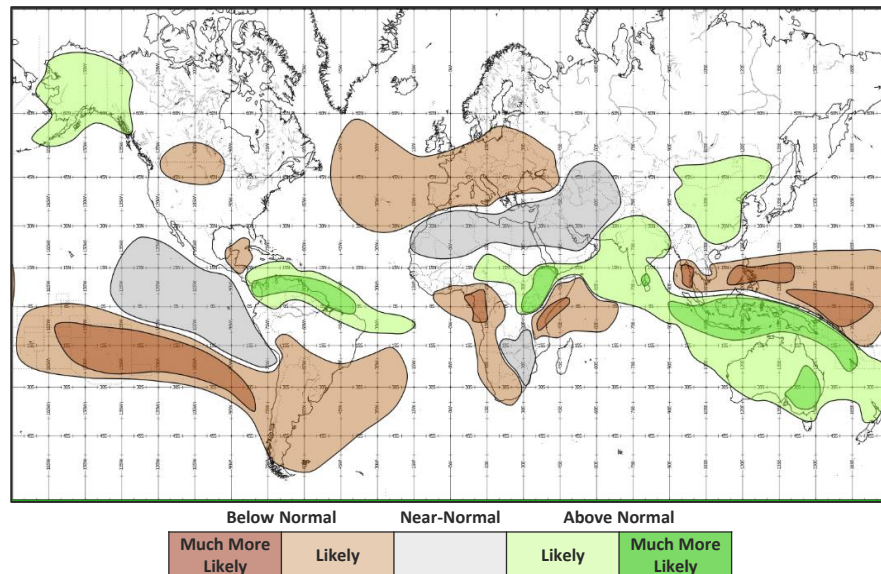
El Niño-Southern Oscillation (ENSO) – The 2021-22 La Niña event continues in the tropical Pacific Ocean. Both oceanic and atmospheric indicators have changed little over the past month.

The latest [ENSO outlook](#) issued by NOAA (27th June) states that although La Niña is likely to continue, the odds decrease into the late Northern Hemisphere summer (52% chance in July-September 2022) before slightly increasing during the Northern Hemisphere autumn and early winter 2022 (58-59% chance).

Therefore, it seems likely that La Niña will remain a 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) – Seasonal forecast systems continue to suggest a negative IOD, potentially strongly negative, is likely to develop during the Northern Hemisphere summer. Should this occur, this would start to influence rainfall patterns both around the Indian Ocean basin and more widely. However, it should be noted skilful prediction of the IOD is limited at this time of year so forecasts of a negative phase still need to be treated with caution.

3-Month Outlook July to September - Rainfall



Current Status

[Current Status maps](#)

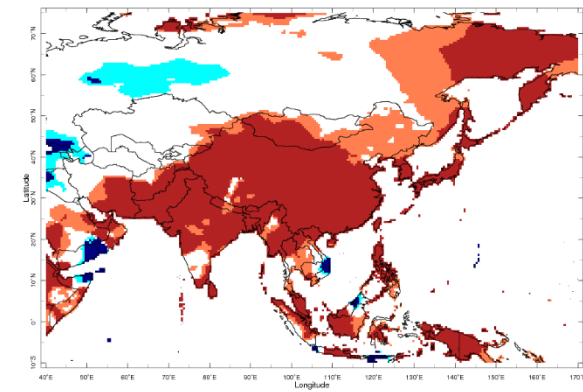
[Central Asia](#)

[Southern Asia](#)

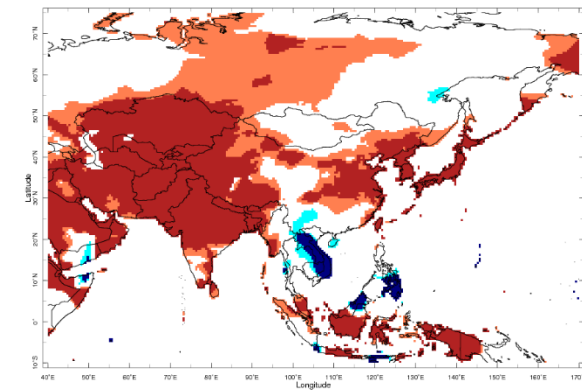
[Southeast Asian Peninsula](#)

[Southeastern Asia / Indonesia](#)

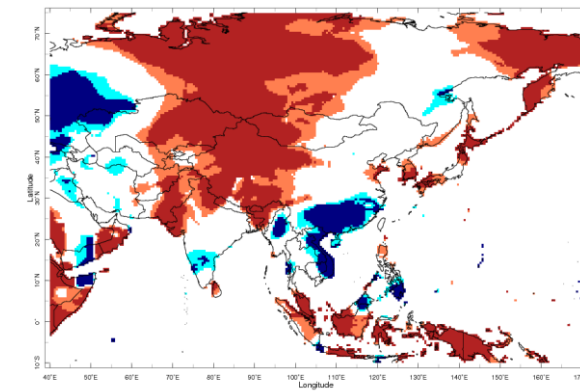
Current Status – Temperature percentiles



March

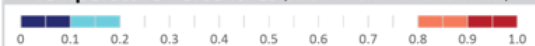


April



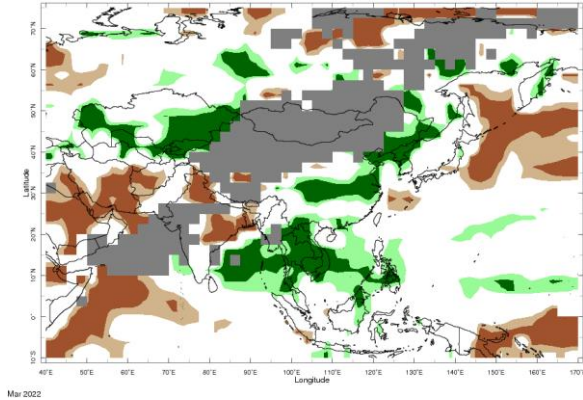
May

Temperature Percentiles (BLUE below 20th and RED above 80th)

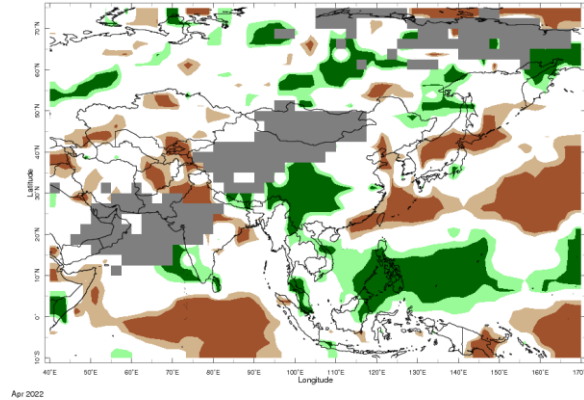


Notes: The percentiles shown in the map indicate a ranking of temperature, with the 0th percentile being the coolest and the 100th percentile being the warmest in the 1981-2010 climatology. Orange and red shading represent values above the 80th (Warm) and 90th (Hot) percentile, respectively; regions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

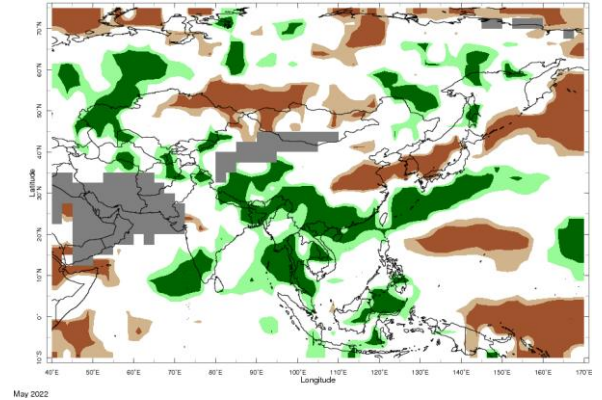
Current Status – Precipitation percentiles



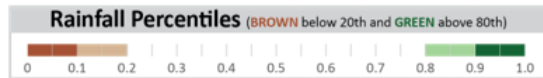
March



April



May



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

2

Current Status: Temperature

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

Current Status: Rainfall

	March	April	May
	Dry	Dry	Mixed (1)
	Wet	Dry	Mixed (2)
	Very Wet	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: Wet in the north, normal elsewhere

(2) Note: Wet in the west, normal elsewhere

Current Status – Southern Asia

	Current Status: Temperature		
	March	April	May
Pakistan	Hot	Hot	Hot
India	Hot	Hot	Normal (1)
Nepal	Hot	Hot	Mixed (2)
Bangladesh	Hot	Hot	Hot

	Current Status: Rainfall		
	March	April	May
	Normal	Dry	Mixed (5)
	Mixed (3)	Mixed (4)	Mixed (6)
	Normal	Wet	Very Wet
	Dry	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:

- (1) Note:** Hot in the far northeast and northwest, Normal elsewhere
- (2) Note:** Hot in the far west and far east, Normal elsewhere
- (3) Note:** Very Dry in parts of the north and east, Normal elsewhere
- (4) Note:** Very Dry in central and northern areas; Wet in the southwest
- (5) Note:** Wet in the far north. Normal elsewhere
- (6) Note:** Wet in the far north and far south. Normal elsewhere

Current Status – Southeast Asian Peninsula

Current Status: Temperature

	March	April	May
China	Hot	Hot	Mixed (3)
Myanmar	Hot	Normal (2)	Cold (4)
Vietnam	Mixed (1)	Cold	Cold

Current Status: Rainfall

	March	April	May
	Mixed (5)	Mixed (6)	Mixed (7)
	Wet	Normal	Wet
	Very Wet	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:** Cold in the south; normal elsewhere
- (2) Note:** Hot in the west; Normal elsewhere
- (3) Note:** Hot for much of the west, very cold in the southeast, normal elsewhere
- (4) Note:** Near normal for parts of the south
- (5) Note:** Large variations; wet or very wet in parts of the south and east
- (6) Note:** Most regions Normal, but Very Wet in central areas.
- (7) Note:** Most regions Normal, but Very Wet across southern areas.

Current Status – Southeastern Asia / Indonesia

	Current Status: Temperature			Current Status: Rainfall		
	March	April	May	March	April	May
Indonesia	Hot	Hot	Hot	Normal	Normal	Normal
Papua New Guinea	Hot	Hot	Hot	Normal (1)	Very Dry	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:

(1) Note: Dry 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: 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	Likely to be warmer than normal
	Rainfall	Likely to be near-normal	Likely to be near-normal	Likely to be wetter than normal
Tajikistan	Temperature	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Climatological odds	Climatological odds	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	Climatological odds	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: July to December – Southern Asia

		Forecast summary		
		July	July to September	October to December
Pakistan	Temperature	Likely to be warmer than normal in the south; Likely to be near-normal elsewhere	Likely to be warmer than normal in the south; Likely to be near-normal elsewhere	Climatological odds
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Likely to be wetter than normal
India	Temperature	Mainly Likely to be colder than normal or Likely to be near-normal; Likely to be warmer than normal in the far east and far west	Mainly Likely to be colder than normal or Likely to be near-normal; Likely to be warmer than normal in the far east and far west	Climatological odds
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds
Nepal	Temperature	Climatological odds	Climatological odds	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Climatological odds
Bangladesh	Temperature	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Much more likely to be warmer than normal
	Rainfall	Climatological odds	Climatological odds	Climatological odds

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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
	Rainfall	Mainly Climatological odds; Likely to be wetter than normal for central/eastern areas	Mainly Climatological odds; Likely to be wetter than normal for central/eastern areas	Climatological odds
Myanmar	Temperature	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Likely to be colder than normal
	Rainfall	Mainly Climatological odds; Likely to be drier than normal far south	Mainly Climatological odds; Likely to be drier than normal far south	Likely to be drier than normal
Vietnam	Temperature	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Likely to be colder than normal
	Rainfall	Mainly Climatological odds; Likely to be drier than normal south	Mainly Climatological odds; Likely to be drier than normal south	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 – 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	Much more likely to be warmer than normal
	Rainfall	Much more likely to be wetter than normal	Much more likely to be wetter than normal	Much more 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	Much more likely to be warmer than normal
	Rainfall	Much more likely to be wetter than normal	Much more likely to be wetter than normal	Much more likely to be wetter 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>

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

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

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