Asia: Monthly Climate Outlook
April to January

Issued: July 2022

Overview

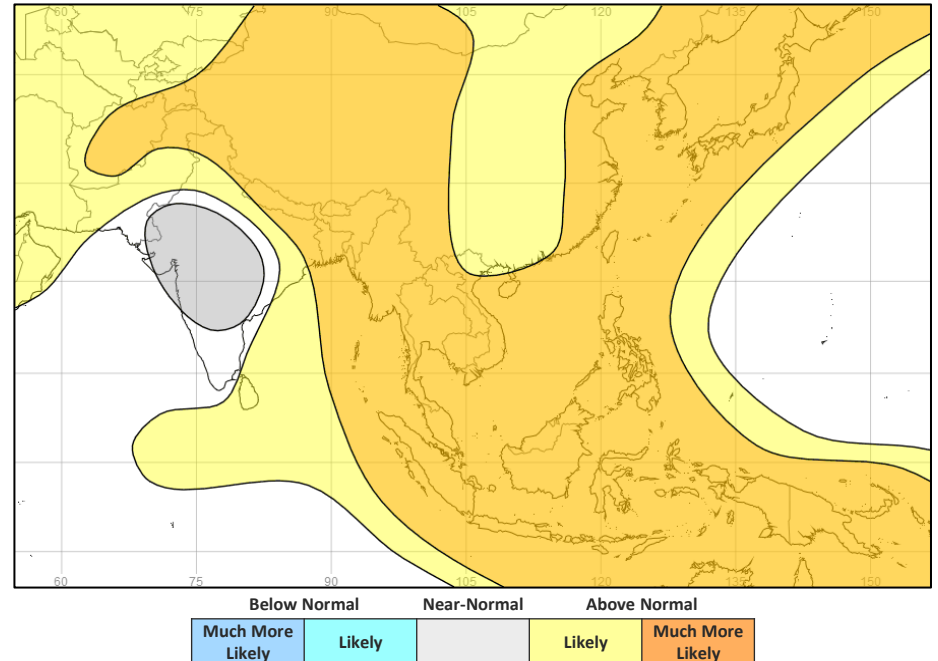# Asia Current Status and Outlook - Temperature

Current Status:

Most of the region has experienced warm to hot conditions over the last three months, however, parts of the Southeast Asian Peninsula experienced cold conditions in April and May, and very locally in June.

Outlook:

Consistent with La Niña conditions, many areas are much more likely to experience above normal temperatures over the next three months; in particular, Indonesia and Southeast Asia. Near-normal conditions are likely across parts of India.

3-Month Outlook August to October - Temperature

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

Climate Outlook
Asia: April to January

# Asia Current Status and Outlook - Rainfall

Current Status:

Central Asia saw a dry April, followed by a normal May and June, although during these months some parts climatologically experience very little rainfall. Over the last three months Southern Asia has generally been more mixed, ranging from normal to very wet, however, dry conditions were experienced in Pakistan in April. Parts of Southeast Asia have been wet in April and May, and Indonesia was wet conditions by June. In Papua New Guinea after a very dry April and dry May, June was normal.

Outlook:

Over the next three months, above normal rainfall is much more likely across Indonesia, due to La Niña and a developing negative Indian Ocean Dipole. Above normal rainfall is also likely across much of eastern southern Asia.

In Central Asia, as well as parts of the Southeast Asian Peninsula and Papua New Guinea, below normal rainfall is likely.

3-Month Outlook August to October - Rainfall

Below Normal		Near-Normal	Above Normal	
Much More Likely	Likely		Likely	Much More Likely
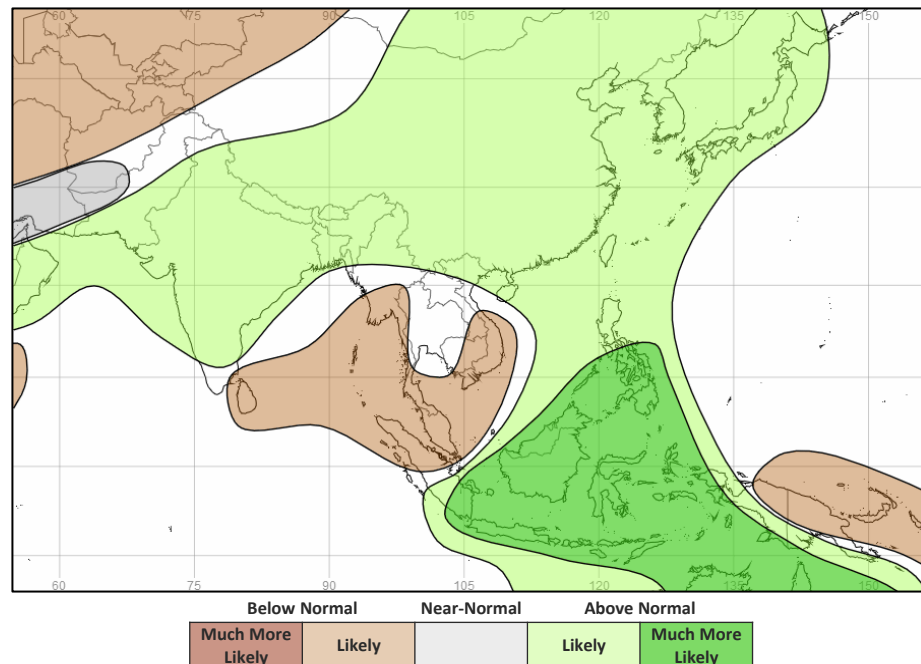
Global Outlook - Temperature

Outlook:

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

Consistent with background global warming, many parts of the globe are likely to be warmer than normal in the next three months. However, consistent with La Niña, parts of Australia, northern and western South America, the Indian sub-continent, the Sahel region in Africa and parts of southern Africa are likely to be colder than normal.

3-Month Outlook August to October - Temperature

|	Below Normal		Near-Normal	Above Normal	
	Much More Likely	Likely		Likely	Much More Likely
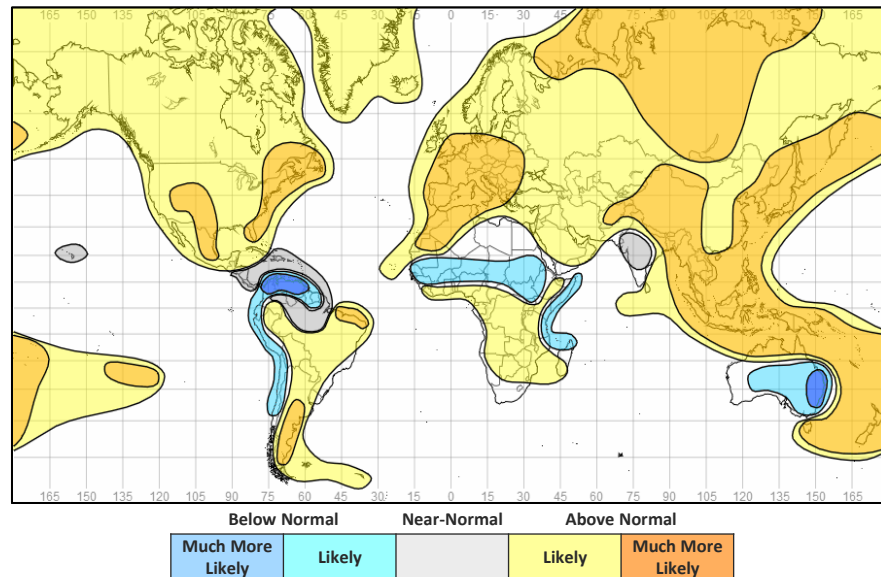
Global Outlook - Rainfall

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 (60% chance in July-September 2022) before slightly increasing during the Northern Hemisphere autumn and early winter 2022 (62-66% 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) – The IOD index has been close to or exceeded negative IOD thresholds for the past 6 weeks. It is highly likely that the technical definition for a negative IOD year will be met soon. When concurrent with a La Nina, a negative IOD can increase the effects of a La Nina, increasing the likelihood of wetter than normal conditions in parts of Australia and Asia, and drier than normal conditions in East Africa - of particular concern given the current drought conditions in the Horn of Africa.

3-Month Outlook August to October - Rainfall

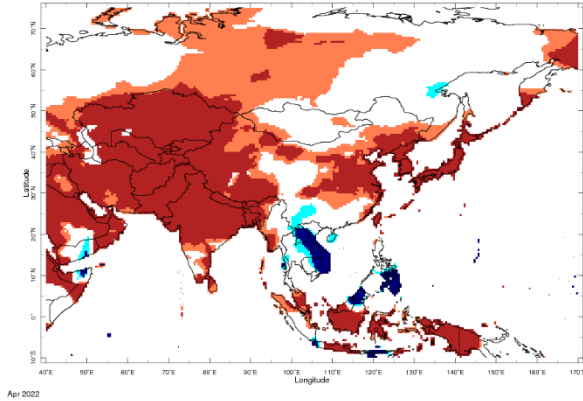| Below Normal		Near-Normal	Above Normal	
Much More Likely	Likely		Likely	Much More Likely
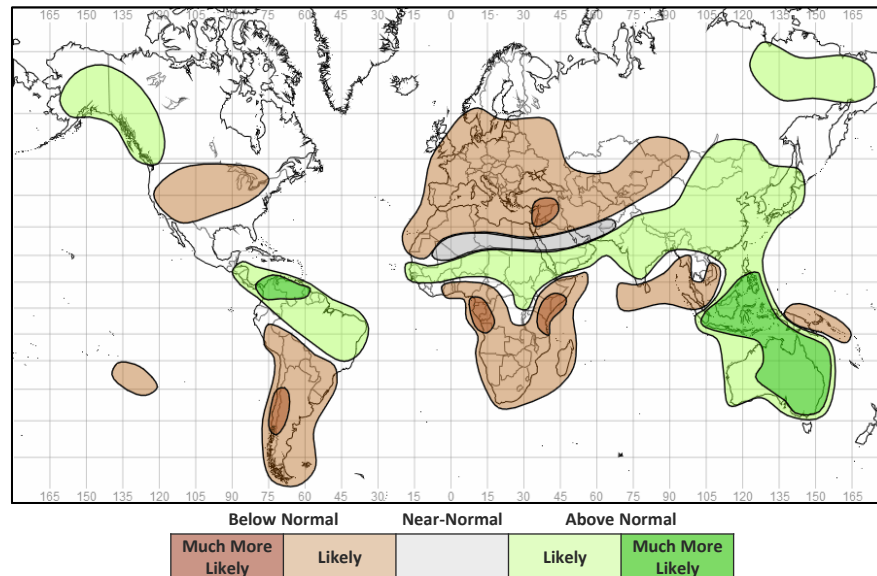
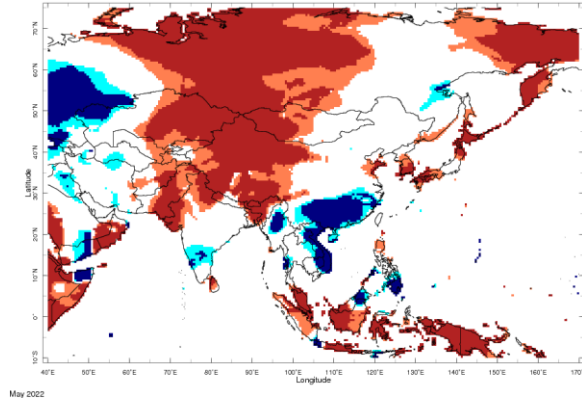# Current Status

Current Status maps

Central Asia

Southern Asia

Southeast Asian Peninsula

Southeastern Asia / Indonesia

Current Status – Temperature percentiles

April

May

June

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

| 0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 |
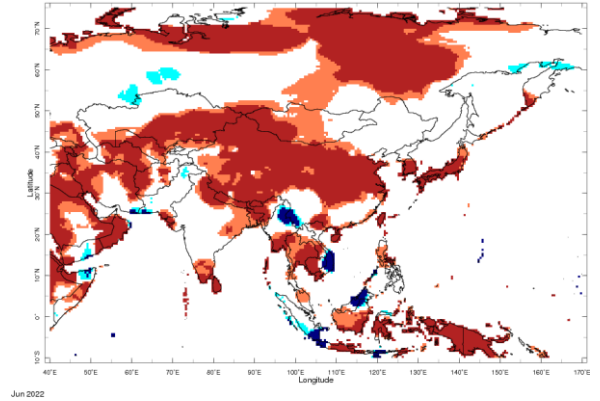
Notes: The percentiles shown in the map indicate a ranking of temperature, with the 0th percentile being the coolest and the 100th percentile being the warmest in the 1981-2010 climatology. Orange and red shading represent values above the 80th (Warm) and 90th (Hot) percentile, respectively; regions 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

April

May

June

Rainfall Percentiles (BROWN below 20th and GREEN above 80th)

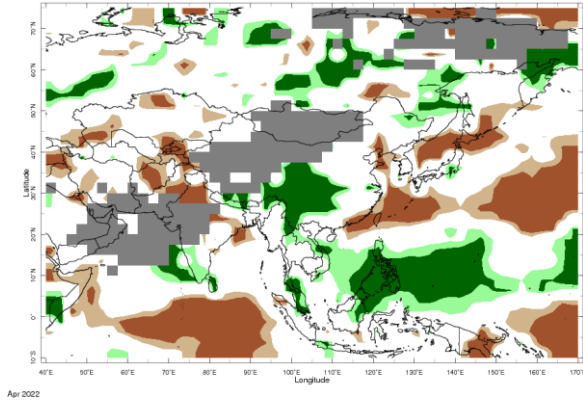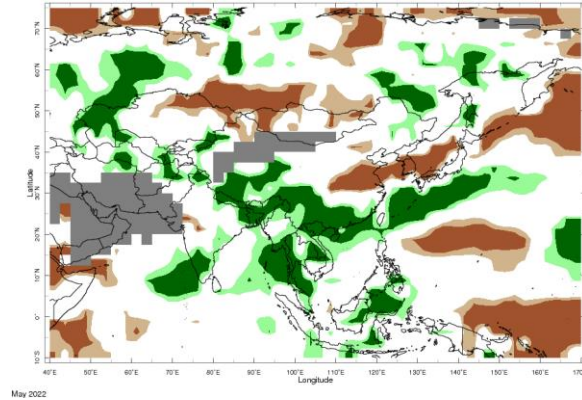| 0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 |
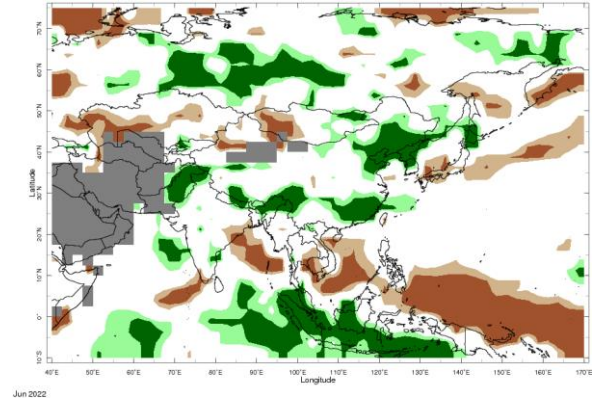
Notes: The percentiles shown in the map indicate a ranking of rainfall, with the 0th percentile being the driest and the 100th percentile being the wettest in the 1981-2010 climatology. Green and dark green shading represent values above the 80th (Wet) and 90th (Very Wet) percentile, respectively; regions 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				Current Status: Rainfall		
	April	**May**	**June**	**April**	**May**	**June**
Afghanistan	Hot	Warm	Mixed (3)	Dry	Mixed (1)	Normal*
Tajikistan	Hot	Warm	Normal	Dry	Mixed (2)	Normal
Kyrgyzstan	Hot	Warm	Warm	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: Wet in the north, normal elsewhere
(2) Note: Wet in the west, normal elsewhere
(3) Note: Hot in the west, more variable in the east.

Current Status – Southern Asia

	Current Status: Temperature		
	April	**May**	**June**
Pakistan	Hot	Hot	Normal
India	Hot	Mixed (1)	Mixed (6)
Nepal	Hot	Mixed (2)	Hot
Bangladesh	Hot	Hot	Hot

	Current Status: Rainfall		
	April	**May**	**June**
Pakistan	Dry	Mixed (4)	Very Wet (7)
India	Mixed (3)	Mixed (5)	Normal
Nepal	Wet	Very Wet	Wet
Bangladesh	Normal	Very Wet	Mixed (8)

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 central and northern areas; wet in the southwest
(4) **Note:** Wet in the far north. Normal elsewhere
(5) **Note:** Wet in the far north and far south. Normal elsewhere
(6) **Note:** Normal overall. Locally warm or hot.
(7) **Note:** Far south of country normal*
(8) **Note:** Very wet in north, normal in south.

Current Status – Southeast Asian Peninsula

	Current Status: Temperature			Current Status: Rainfall		
	April	**May**	**June**	**April**	**May**	**June**
China	Hot	Mixed (2)	Hot	Mixed (4)	Mixed (5)	Normal (8)
Myanmar	Normal (1)	Cold (3)	Mixed (6)	Normal	Wet	Normal
Vietnam	Cold	Cold	Mixed (7)	Wet	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 elsewhere
(2) Note: Hot for much of the west, very cold in the southeast, normal elsewhere
(3) Note: Near normal for parts of the south
(4) Note: Most regions normal, but very wet in central areas.
(5) Note: Most regions normal, but very wet across southern areas.
(6) Note: Large variation across the country
(7) Note: Large variation, from cold in south, to hot in extreme north.
(8) Note: Normal overall, although very wet in parts of the far south, and far north-east.

Current Status – Southeastern Asia / Indonesia

Current Status: Temperature		
April	May	June

	April	May	June
Indonesia	Hot	Hot	Hot (1)
Papua New Guinea	Hot	Hot	Hot

Current Status: Rainfall		
April	May	June

April	May	June
Normal	Normal	Wet
Very Dry	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: Parts of Sumatra and Java normal, and cold in places.

Outlooks

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.

Outlooks

Outlook: August to January – Central Asia

		Forecast summary		
		August	August to October	November to January
Afghanistan	*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 near-normal	Likely to be drier than normal in the northwest; Climatological odds elsewhere	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	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: August to January – Southern Asia

		Forecast summary		
		August	August to October	November to January
Pakistan	*Temperature*	Climatological odds	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 in the south and east; Climatological odds elsewhere	Likely to be drier than normal
India	*Temperature*	Climatological odds	Mainly Likely to be near-normal; **Much more likely to be warmer than normal** in the far north-east	Climatological odds
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Likely to be drier than normal in the extreme north; Likely to be wetter than normal in the south and west
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	Likely to be drier than normal
Bangladesh	*Temperature*	Climatological odds	**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

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: August to January – SE Asian Peninsula

		Forecast summary		
		August	August to October	November to January
China	*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 wetter than normal	Likely to be drier than normal
Myanmar	*Temperature*	Much more likely to be warmer than normal	Much more likely to be warmer than normal	Climatological odds
	Rainfall	Likely to be drier than normal	Likely to be drier than normal	Climatological odds
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	Likely to be drier than normal	Likely to be drier than normal	Likely to be wetter 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: August to January – SE Asia / Indonesia

		Forecast summary		
		August	August to October	November to January
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**	**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	**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 south	Likely to be wetter 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.

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://www.imdpune.gov.in/Clim_RCC_LRF/Index.html
Latest Output (May 2022) - https://www.imdpune.gov.in/Enhanced_outlook_JJAS.pdf

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 near-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 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

Email: internationaldevelopment@metoffice.gov.uk

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