

Asia: Monthly Climate Outlook January to October

Issued: April 2022

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Overview

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Asia Current Status and Outlook - Temperature

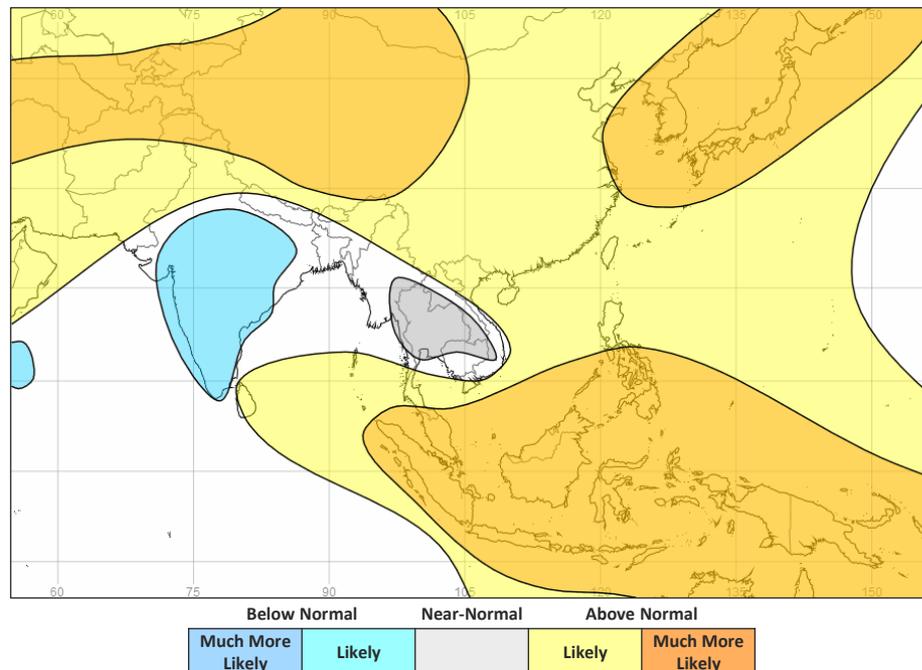
Current Status:

Parts of India, China and Nepal had near- or below normal temperatures in January and February before seeing warmer than normal conditions in March. Most other areas were warmer than normal over the last three months.

Outlook:

For the next three months, below normal temperatures are likely for India. Near-normal temperatures are likely for many parts of Indochina. Otherwise, above normal temperatures are likely or very likely for most areas.

3-Month Outlook May to July - Temperature



Asia Current Status and Outlook - Rainfall

Current Status:

Over the last three months, mixed conditions were observed over Central Asia. Many areas were wetter than normal during January, including Afghanistan, followed by near normal or drier than normal conditions in February and March.

Parts of India and Pakistan were wetter than normal in January and February and then drier than normal in March.

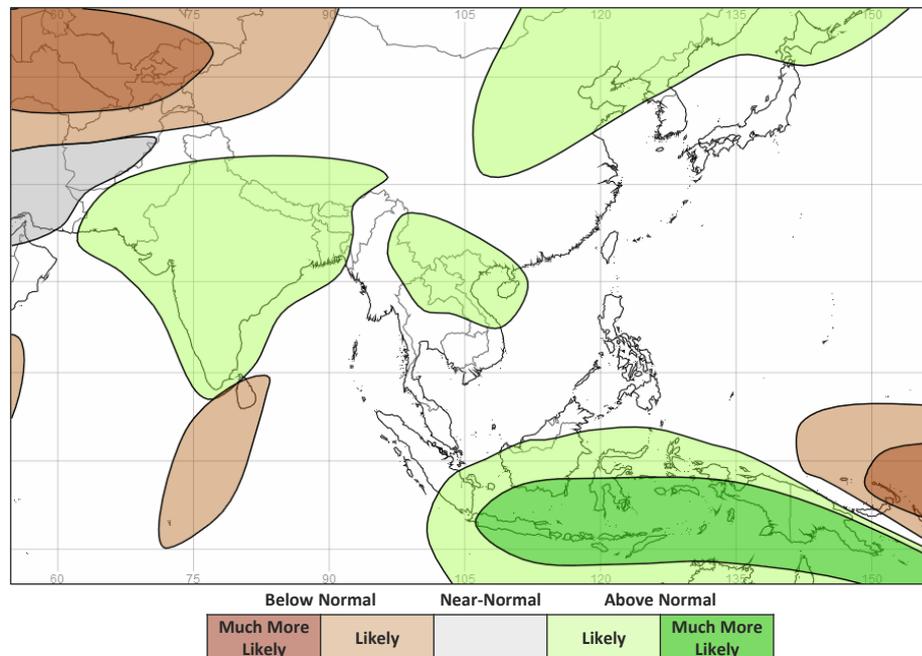
In Southeast Asia, after near-normal conditions in January, many areas were wet or very wet in February and March.

Outlook:

Over the next three months, consistent with La Niña, wetter than normal conditions are likely across much of Southeast Asia, with the area of highest rainfall tending to shift northwards through this period.

A forecast for a more active South Asian monsoon means that above normal rainfall is likely for India, Pakistan, Nepal and Bangladesh. Parts of eastern and southern China are also likely to be wetter than normal. Central Asia will transition to its dry season during this period with drier than normal conditions likely during May, including for northern Afghanistan.

3-Month Outlook May to July - Rainfall



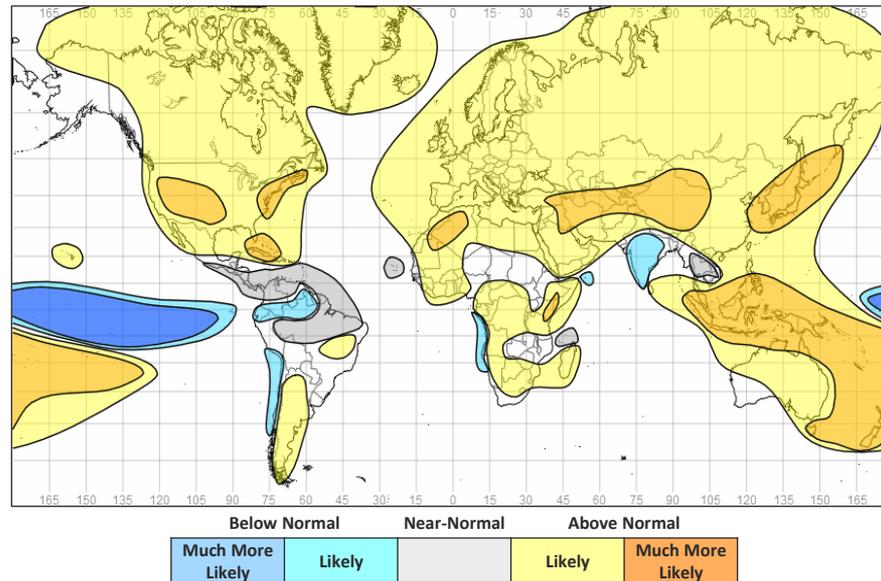
Global Outlook - Temperature

Outlook:

La Niña is ongoing across the tropical Pacific, persisting longer than anticipated over recent months. Predictions still indicate that ENSO will return to a neutral state during the late northern hemisphere spring or early summer. Even with La Niña expected to weaken, it will still be an important driver of temperature anomalies across the tropics over the next few months.

As is typical due to climate change, many parts of the globe are likely to see above normal temperatures. However, there are some notable exceptions. Consistent with La Niña, near- or below normal temperatures are likely for some northern and western parts of South America, India and parts of Southeast Asia.

3-Month Outlook May to July - Temperature



Global Outlook - Rainfall

Outlook:

El Niño-Southern Oscillation (ENSO) – La Niña persists with sea surface temperatures and atmospheric conditions across the Pacific basin indicative of a weak ongoing event, though recent changes in sea surface temperatures suggest La Niña is weakening. Predictions still indicate that ENSO will return to a neutral state during the late northern hemisphere spring or early summer. La Niña is expected to remain an important driver of rainfall patterns in the tropics over the next three months though at this time of year its influence at higher latitudes in the northern hemisphere tends to wane.

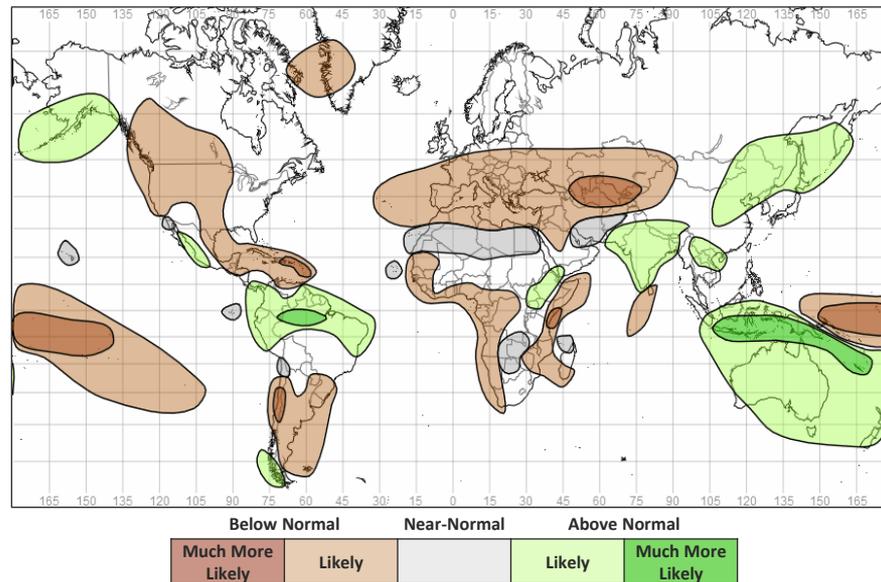
With a couple of notable exceptions (including East Africa) La Niña, very broadly speaking, tends to increase the likelihood of wetter than normal conditions across many land areas of the tropics. More information on typical impacts can be found here

<https://www.metoffice.gov.uk/research/climate/seasonal-to-decadal/gpc-outlooks/el-nino-la-nina/enso-impacts>

For the next three months, wetter than normal conditions are likely across much of south and southeast Asia and Australasia as well as equatorial South America. Drier than normal conditions are likely across large swathes of North America, southern South America, Europe and parts of Africa.

Indian Ocean Dipole (IOD) –The IOD is currently neutral. Seasonal forecast systems are consistent in suggesting a negative IOD is likely to form during the boreal summer. This would influence rainfall patterns 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 need to be treated with caution.

3-Month Outlook May to July - Rainfall



Current Status

[Current Status maps](#)

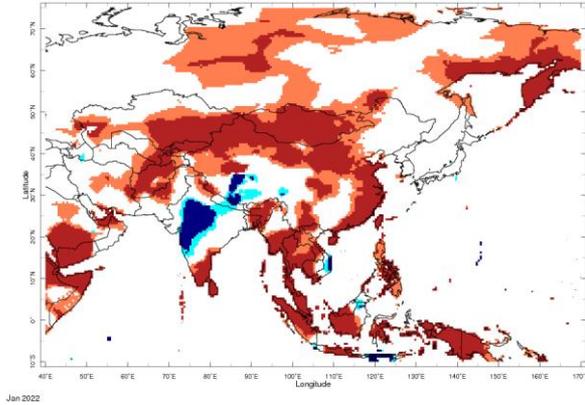
[Central Asia](#)

[Southern Asia](#)

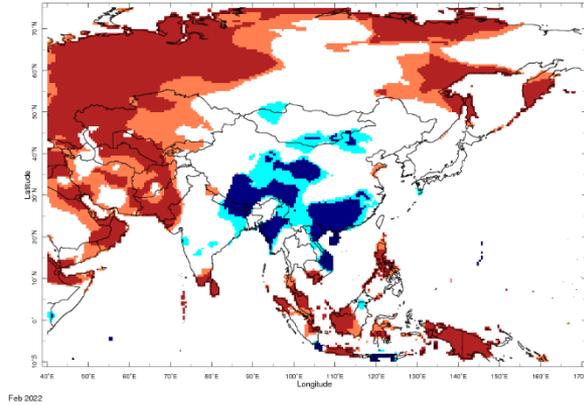
[Southeast Asian Peninsula](#)

[Southeastern Asia / Indonesia](#)

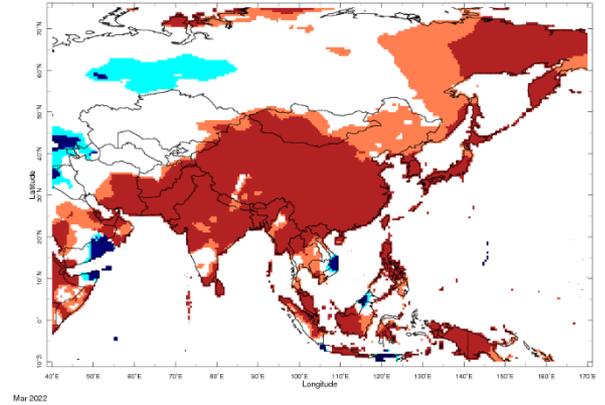
Current Status – Temperature percentiles



January



February



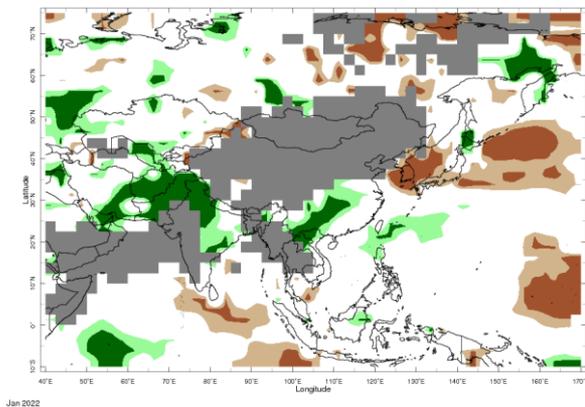
March

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

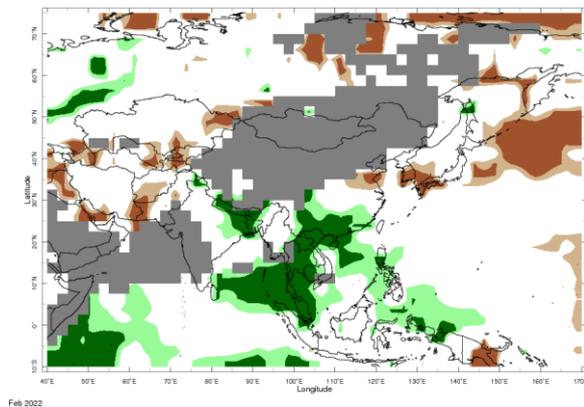


Notes: The percentiles shown in the map indicate a ranking of temperature, with the 0th percentile being the coolest and the 100th percentile being the warmest in the 1981-2010 climatology. Orange and red shading represent values above the 80th (Warm) and 90th (Hot) percentile, respectively; regions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

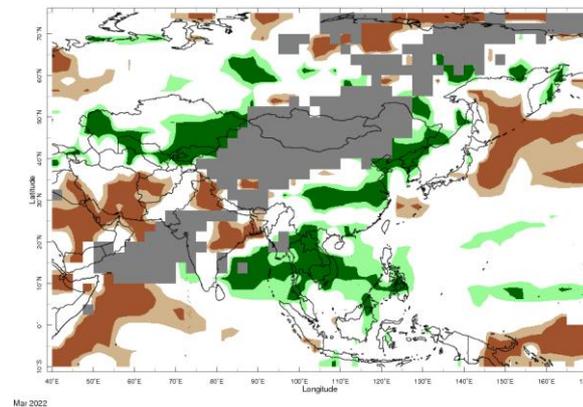
Current Status – Precipitation percentiles



January



February



March

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



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

	January	February	March
Afghanistan	Hot	Hot	Hot
Tajikistan	Hot	Hot	Hot
Kyrgyzstan	Hot	Hot	Normal

Current Status: Rainfall

	January	February	March
Afghanistan	Very Wet	Normal	Dry
Tajikistan	Normal	Dry	Wet
Kyrgyzstan	Normal	Dry	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:

Current Status – Southern Asia

Current Status: Temperature

	January	February	March
Pakistan	Mixed (1)	Hot (3)	Hot
India	Mixed (2)	Normal	Hot
Nepal	Cold	Cold	Hot
Bangladesh	Hot	Cold	Hot

Current Status: Rainfall

	January	February	March
	Very Wet	Normal	Normal
	Mixed (4)	Mixed (5)	Mixed (6)
	Normal	Very Wet	Normal
	Normal*	Very Wet	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:** Hot in central/southeastern areas, elsewhere normal
- (2) Note:** Variable but generally hot in the south, cold in the north
- (3) Note:** Normal in the far north
- (4) Note:** Very wet in the south, elsewhere normal
- (5) Note:** Very wet in the far northeast
- (6) Note:** Very dry in parts of the north and east, normal elsewhere

Current Status – Southeast Asian Peninsula

Current Status: Temperature

	January	February	March
China	Mixed (1)	Mixed (1)	Hot
Myanmar	Hot	Cold	Hot
Vietnam	Mixed (2)	Cold	Mixed (2)

Current Status: Rainfall

	January	February	March
China	Mixed (3)	Mixed (3)	Mixed (5)
Myanmar	Normal*	Very Wet	Wet
Vietnam	Normal	Mixed (4)	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:** Large regional variations. Cold in central parts, normal elsewhere.
- (2) Note:** Cold in the south; normal elsewhere
- (3) Note:** Wet or very wet in parts of the southeast, otherwise mostly normal*
- (4) Note:** Very wet in the north; normal elsewhere.
- (5) Note:** Large variations; wet or very wet in parts of the south and east

Current Status – Southeastern Asia / Indonesia

	Current Status: Temperature			Current Status: Rainfall		
	January	February	March	January	February	March
Indonesia	Hot	Hot	Hot	Normal	Normal	Normal
Papua New Guinea	Hot	Hot	Hot	Normal	Normal (1)	Normal (1)

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: May to October – Central Asia

		Forecast summary		
		May	May to July	August to October
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 drier than normal	Likely to be drier than normal in the north; Likely to be near-normal in the south	Likely to be drier than normal
Tajikistan	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 drier than normal	Much more likely to be drier than normal	Likely to be drier than normal
Kyrgyzstan	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 drier than normal	Much more 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: May to October – Southern Asia

		Forecast summary		
		May	May to July	August to October
Pakistan	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 wetter than normal	Climatological odds
India	Temperature	Likely to be warmer than normal in the north; Likely to be colder than normal in the south	Likely to be colder than normal	Climatological odds
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal	Likely to be wetter than normal
Nepal	Temperature	Likely to be warmer than normal	Climatological odds	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
Bangladesh	Temperature	Climatological odds	Climatological odds	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: May to October – SE Asian Peninsula

		Forecast summary		
		May	May to July	August to October
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 drier than normal in the northwest; Likely to be wetter than normal in parts of south and east	Climatological odds
Myanmar	Temperature	Likely to be colder than normal	Likely to be near-normal	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Climatological odds	Climatological odds
Vietnam	Temperature	Likely to be near-normal	Likely to be near-normal	Likely to be warmer than normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal in the north; Climatological odds 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.

Outlook: May to October – SE Asia / Indonesia

		Forecast summary		
		May	May to July	August to October
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	Likely to be drier than normal in the north; Likely to be wetter than normal in the south	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	Much more likely to be warmer than normal
	Rainfall	Likely to be drier than normal in the north; Likely to be wetter than normal in the south	Much more likely to be wetter 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.

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 (September 2021) - https://imdpune.gov.in/Climate_Outlook_Statement_OND2021_SASCOF20_30_SEP_2021.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 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)

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