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Asia: Monthly Climate Outlook September to June

Issued: December 2024

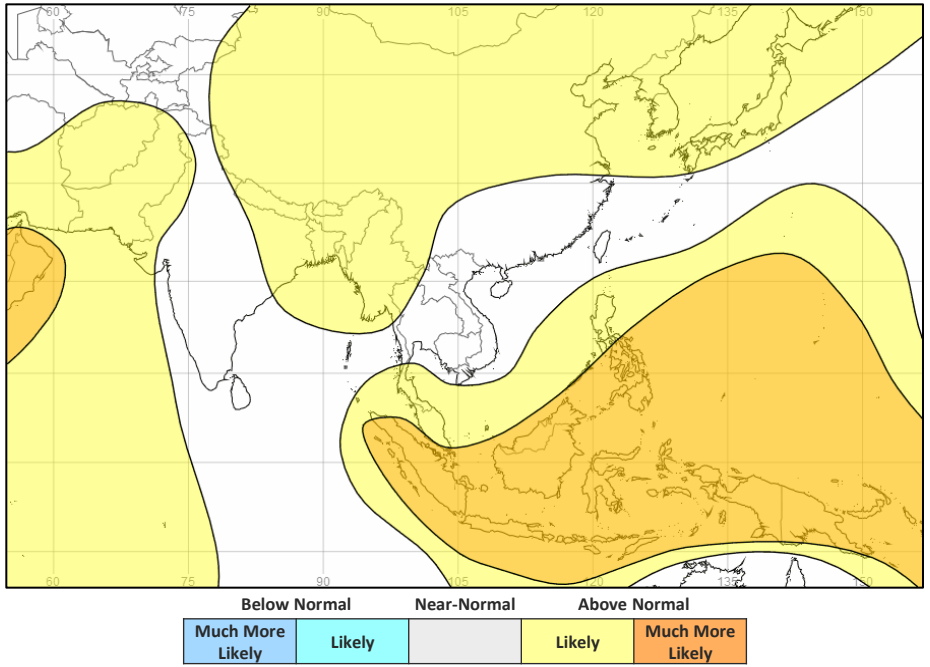
Overview

Asia Current Status and Outlook - Temperature

Current Status: Warm or hot conditions have dominated over the past three months, although parts of India, Pakistan, China and mainland Southeast Asia have been near normal or cool at times. Cooler conditions also extended to Tajikistan and Kyrgyzstan during September.

Outlook: Warmer than normal conditions are likely across much of the continent and very likely across Papua New Guinea, Indonesia and Timor-Leste. The exception is across parts of India and Central Asia where predictions for temperature are more uncertain.

3-Month Outlook January to March - Temperature



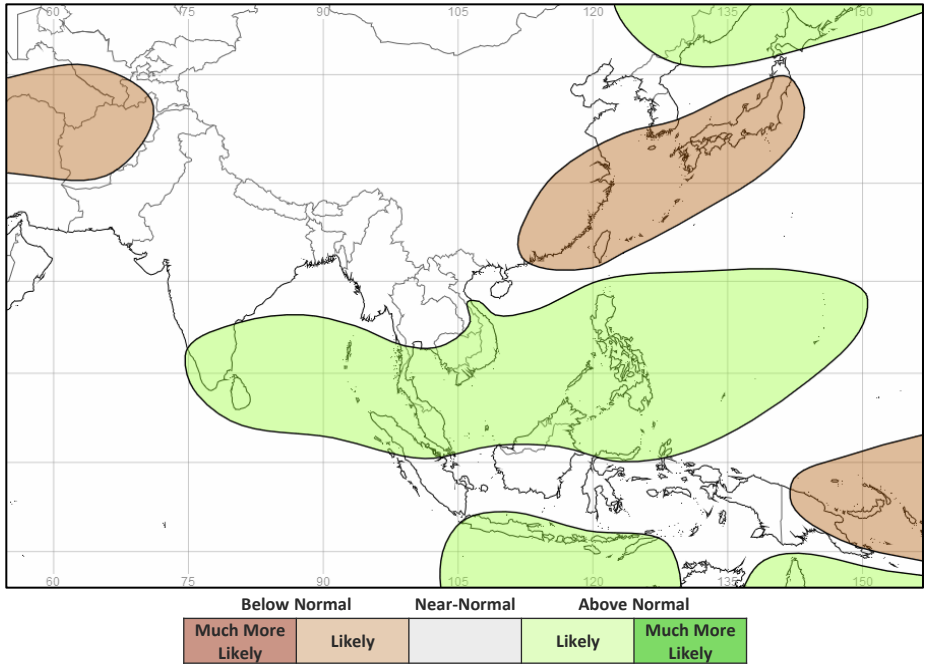
Asia Current Status and Outlook - Rainfall

Current Status: Many parts of Southern Asia were wet or very wet at times during September. Mixed conditions have been observed over Southeast Asia. Normal, typically dry, conditions were observed over much of Central Asia, though Tajikistan was very wet during October and November.

Outlook: Wetter than normal most likely across Vietnam. For Indonesia, predictions for rainfall are more finely balanced although wetter than normal conditions are more likely across Java and northern Sumatra. Wetter than normal conditions are also more likely for parts of northeast China, whilst eastern regions are more likely to be drier than normal. Given the time of year, this could manifest as heavier and more frequent snowfalls. Afghanistan is more likely to be drier than normal. Finally, Sri Lanka and southern parts of India are more likely to be wetter than normal. Rainfall, especially in Sri Lanka, is typically high at this time of year, and with wetter than normal conditions likely, large amounts of rain could be impactful.

Tropical cyclones – The tropical cyclone season has now peaked in the North Indian Ocean. Tropical cyclones can form throughout the year in Northwest Pacific basin though activity tends to peak between May and October. After a relatively active few months, near average activity is signalled over the coming period. However, there are signals that prevailing track may be displaced slightly further west compared to normal, with a greater risk of cyclones affecting the Philippines and regions surrounding the South China Sea.

3-Month Outlook January to March - Rainfall

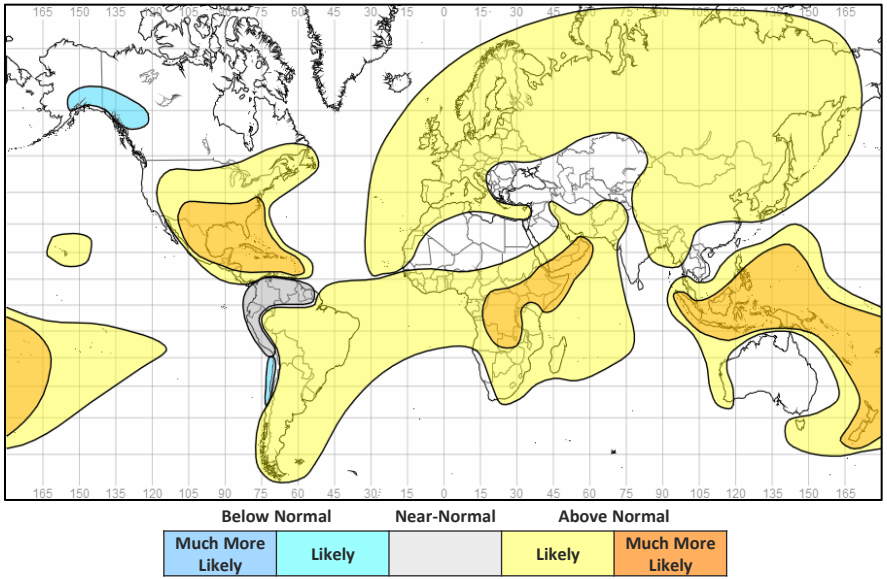


Global Outlook - Temperature

Outlook: Weak La Niña are likely to develop and persist over the next three months, transitioning back to ENSO-Neutral in the northern hemisphere spring. More details in the precipitation section.

Many parts of the globe are likely to see warmer than normal conditions through the next three months. However, consistent with a developing La Niña, parts of Alaska, western Canada, and the Pacific coastlines of South America are more likely to be colder than normal.

3-Month Outlook January to March - Temperature



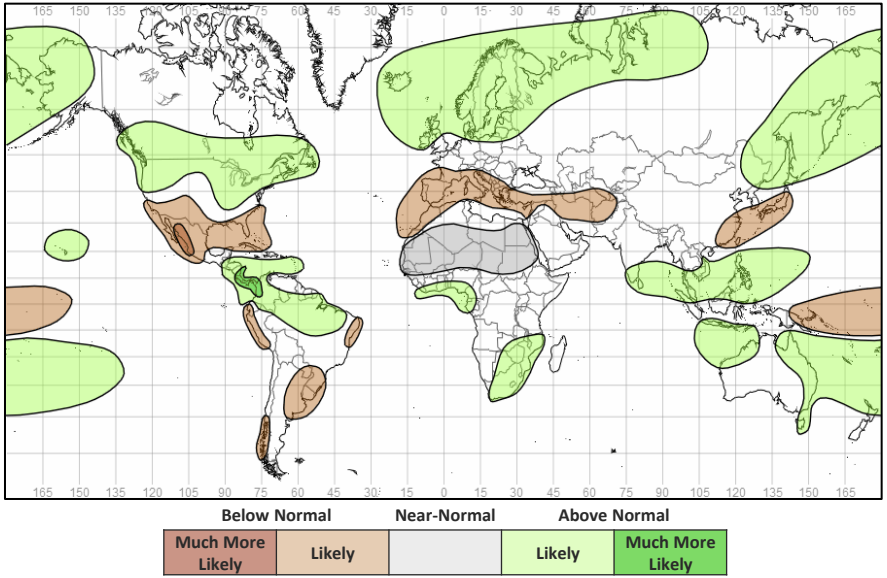
Global Outlook - Rainfall

Outlook:

El Niño-Southern Oscillation (ENSO) – Yet to be declared, but weak La Niña conditions are most likely over the next three months, with then a return to ENSO-neutral in the northern hemisphere spring. Equatorial sea surface temperatures across the central and eastern Pacific are slightly below average. Atmospheric indicators, such as the Southern Oscillation Index (SOI), trade wind strength and dateline cloudiness, are now indicating that some weak ocean-atmosphere coupling may now be underway. A transition to La Niña would improve the predictability of global weather patterns on seasonal timescales, particularly in the tropics, though its influence may not be as strong as some La Niña events over recent years. 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 Diploe (IOD) – Negative-like IOD conditions were observed through much of October and November. However, this event was never officially declared by the Bureau of Meteorology (BoM), falling short by just one week of the necessary 7 consecutive weeks of an IOD index below -0.4°C. The IOD is now at neutral levels and is expected to remain so throughout this period, offering little predictive value.

3-Month Outlook January to March - Rainfall



Current Status

Current Status maps

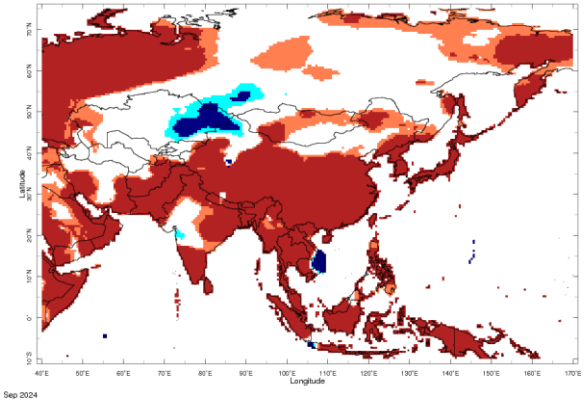
Central Asia

Southern Asia

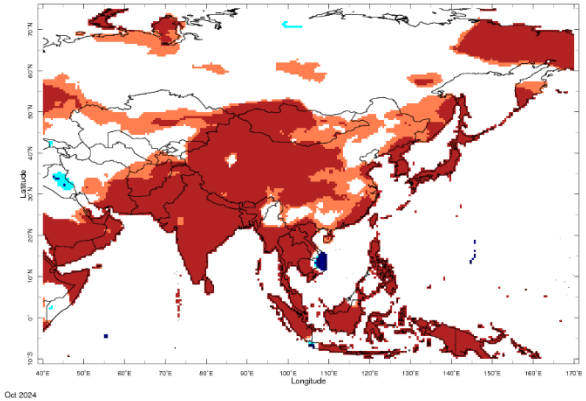
Southeast Asian Peninsula

Southeastern Asia / Indonesia

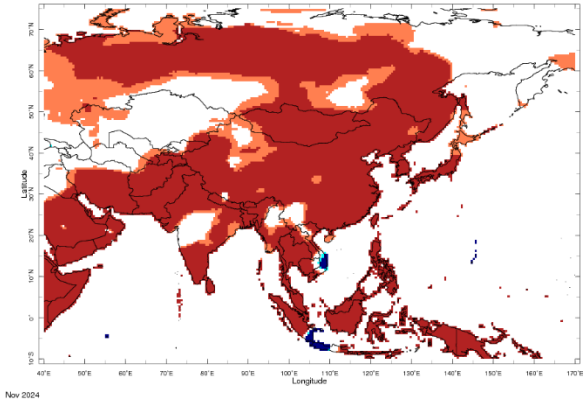
Current Status – Temperature percentiles



September



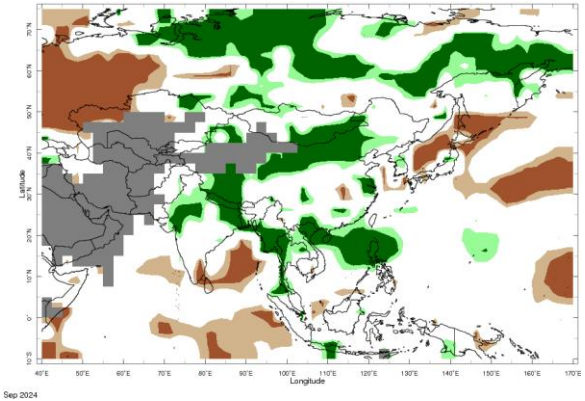
October



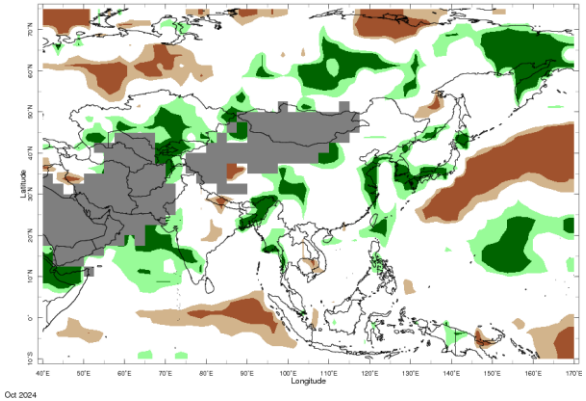
November

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.

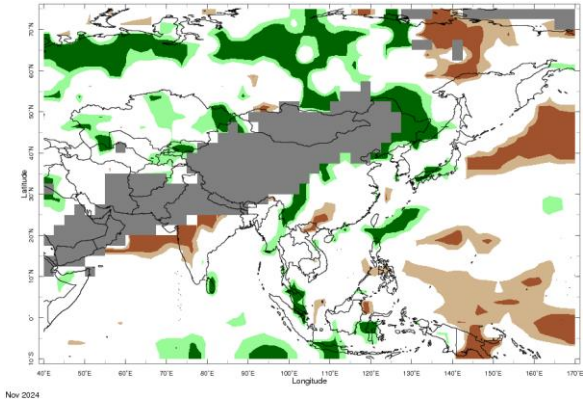
Current Status – Precipitation percentiles



September



October



November

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		
	September	October	November
Afghanistan	Hot	Hot	Hot
Tajikistan	Mixed (2)	Warm	Hot
Kyrgyzstan	Cool	Normal	Normal

	Current Status: Rainfall		
	September	October	November
Afghanistan	Normal*	Normal* (1)	Normal
Tajikistan	Normal*	Very Wet	Wet
Kyrgyzstan	Normal	Mixed (3)	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: Very wet in parts of the far east.
(2) Note: Hot in the south, cool in the north.
(3) Note: Very wet in the west, normal in the east

Current Status – Southern Asia

	Current Status: Temperature			Current Status: Rainfall		
	September	October	November	September	October	November
Pakistan	Hot	Hot	Hot	Normal	Normal* (3)	Normal
India	Mixed (1)	Hot	Mixed (1)	Mixed (2)	Mixed (4)	Normal (5)
Nepal	Warm	Hot	Hot	Very Wet	Dry	Normal*
Bangladesh	Hot	Hot	Hot	Very Wet	Very Wet	Normal
Sri Lanka	Hot	Hot	Hot	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 south and far north and northeast, else normal
(2) Note: Very wet in parts of the north, dry in the far south, else normal
(3) Note: Wet in the northeast
(4) Note: Very wet in parts of the northeast and west, otherwise normal.
(5) Note: Very dry in the northwest

Current Status – Southeast Asian Peninsula

	Current Status: Temperature			Current Status: Rainfall		
	September	October	November	September	October	November
China	Hot	Hot (5)	Hot	Mixed (3)	Mixed (6)	Mixed (3)
Myanmar	Hot	Hot	Hot	Very Wet	Mixed (2)	Normal
Vietnam	Mixed (1)	Mixed (1)	Mixed (1)	Mixed (4)	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: Cold in the south, normal or hot elsewhere
(2) Note: Very wet in the south and far north, normal elsewhere
(3) Note: Normal in central and eastern areas, otherwise wet or very wet
(4) Note: Very Wet in the north, normal in the south
(5) Note: Normal in parts of the east
(6) Note: Wet or very wet in some central and eastern parts, otherwise normal

Current Status – Southeastern Asia / Indonesia

	Current Status: Temperature			Current Status: Rainfall		
	September	October	November	September	October	November
Indonesia	Hot	Hot	Hot	Normal (1)	Normal	Normal (1)
Papua New Guinea	Hot	Hot	Hot (3)	Normal	Normal (2)	Very Dry
Timor-Leste	Hot	Hot	Hot	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: Wet over much of Java
(2) Note: Dry in the far east
(3) Note: Cold in western Java.

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.

Outlook: January to June – Central Asia

		Forecast summary		
		January	January to March	April to June
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	Climatological odds	Likely to be warmer than normal
	Rainfall	Climatological odds	Climatological odds	Climatological odds
Kyrgyzstan	*Temperature*	Likely to be warmer than normal	Climatological odds	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: January to June – Southern Asia (1)

		Forecast summary		
		January	January to March	April to June
Pakistan	*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
India	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal in the northeast, Climatological odds elsewhere	Climatological odds
	Rainfall	Climatological odds but Likely to be wetter than normal in the south	Climatological odds but Likely to be wetter than normal in the south	Likely to be wetter than normal
Nepal	*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: January to June – Southern Asia (2)

		Forecast summary		
		January	January to March	April to June
Bangladesh	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Climatological odds	Climatological odds	Likely to be wetter than normal
Sri Lanka	*Temperature*	Much more 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

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: January to June – SE Asian Peninsula

		Forecast summary		
		January	January to March	April to June
China	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal in the north, Climatological odds in the south	Likely to be warmer than normal
	Rainfall	Likely to be drier than normal in the southeast, Climatological odds elsewhere	Likely to be drier than normal in the southeast, Likely to be wetter than normal in the northeast, Climatological odds elsewhere	Likely to be drier than normal in the southeast, Climatological odds elsewhere
Myanmar	*Temperature*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Climatological odds	Climatological odds	Likely to be wetter than normal
Vietnam	*Temperature*	Likely to be near-normal	Climatological odds	Climatological odds
	Rainfall	Likely to be wetter than normal	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.

Outlook: January to June – SE Asia / Indonesia

		Forecast summary		
		January	January to March	April to June
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	Climatological odds	Climatological odds, but **Likely to be wetter than normal** across Java and northern Sumatra	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	Climatological odds	**Likely to be drier than normal**	Climatological odds
Timor-Leste	*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

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.ncei.noaa.gov/access/monitoring/enso/

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 2022) - http://sahfhydromet.rimes.int/wp-content/uploads/2022/10/Enhanced-SCOS-SASCOF-23-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

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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…