Asia: Monthly Climate Outlook September to June

Issued: December 2020

Overview

Asia Current Status and Outlook – Temperature

Asia Current Status and Outlook – Rainfall

Global Outlook – Temperature

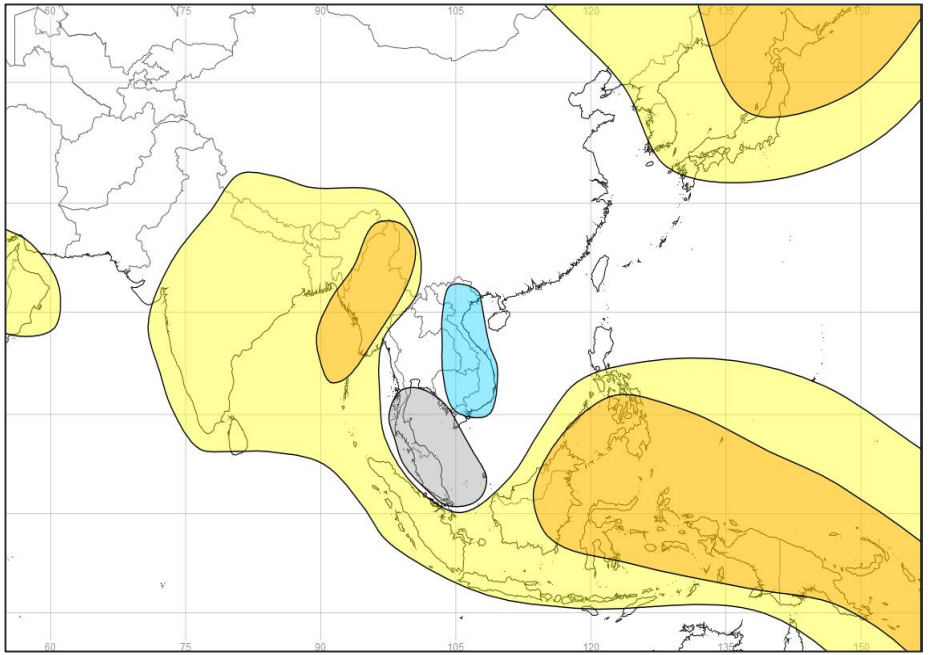
Global Outlook – Rainfall

Asia Current Status and Outlook - Temperature

Current Status:
The temperature in central Asia has been near normal or colder than normal over the past three months.Parts of Vietnam and China have also had colder than normal conditions. Elsewhere, warmer than normal conditions have mostly prevailed.

Outlook: For the next three months warmer than normal conditions are likely across Japan, the Korean Peninsula and Indian sub-continent, Myanmar, Philippines and Indonesia. Near normal temperatures are likely across Malaysia and colder than normal conditions are likely in Vietnam, Cambodia and Laos. Elsewhere, predictions are more finely balanced and largely indistinguishable from climatological odds.

3-Month Outlook January to March - Temperature

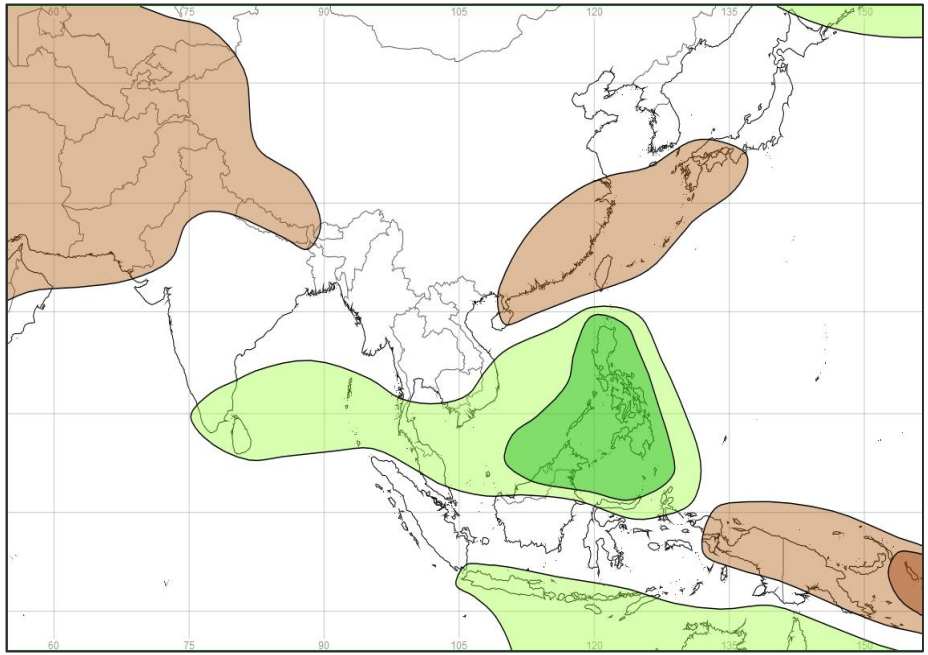


Asia Current Status and Outlook - Rainfall

Current Status:
Mainland southern Asia was predominately wetter than normal during September and October. In November southern China became drier than normal.

Outlook:
For the next three months, drier than normal conditions are likely across large parts of central Asia (including Afghanistan, Pakistan and Nepal), southeast China, southern Japan and parts of eastern Indonesia. Meanwhile wetter than normal conditions are likely across southern India (including Sri Lanka), Indonesia, Malaysia, southern Vietnam and the Philippines.

3-Month Outlook January to March - Rainfall

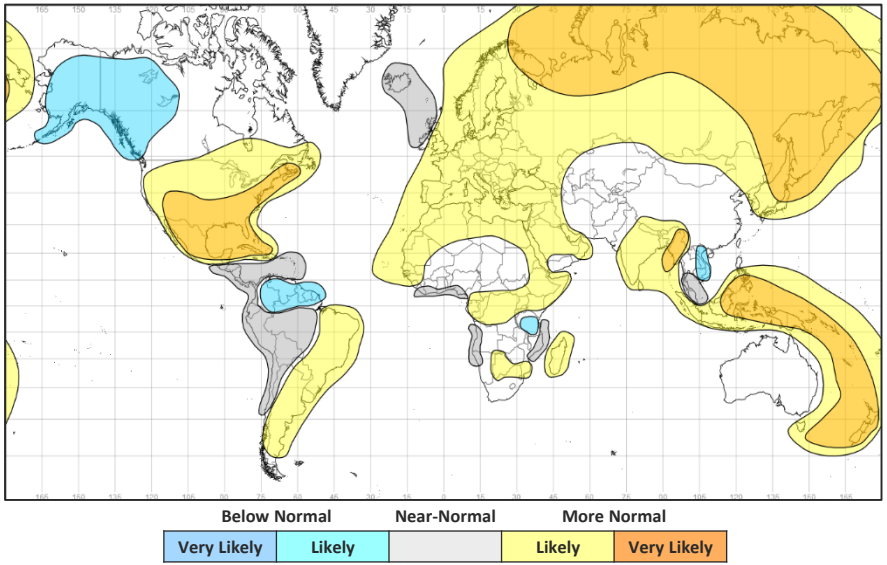


Global Outlook - Temperature

Outlook:

La Niña tends to have an overall cooling effect across the world. However, 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 an increased likelihood of colder than normal conditions across tropical regions of South America and small parts of eastern Africa and southeast Asia.

3-Month Outlook January to March - Temperature



Global Outlook - Rainfall

Outlook:

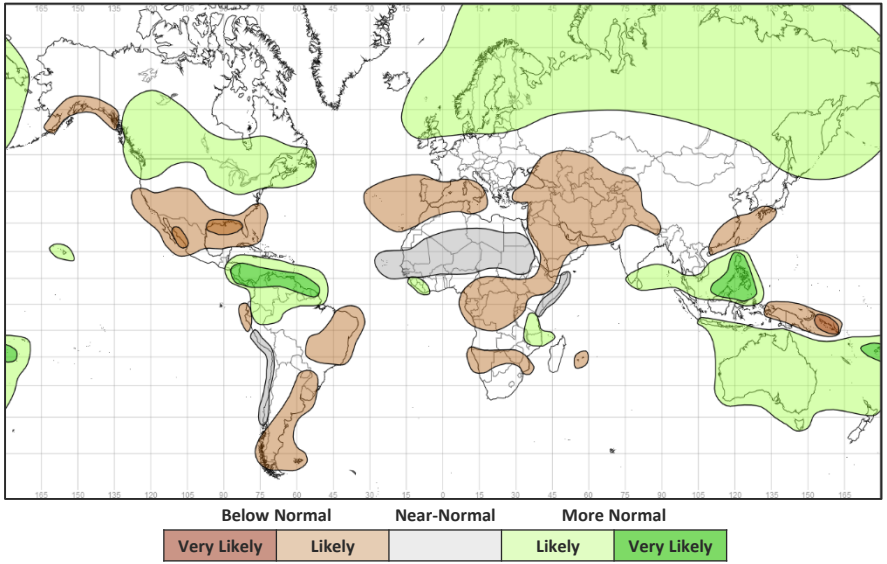
El Niño-Southern Oscillation (ENSO) – La Niña conditions are now well established across the tropical Pacific, with SST anomalies, trade wind strength, atmospheric pressure pattern and cloudiness all consistent with this. The event is probably close to its peak and a gradual shift towards more neutral conditions should take place during the first half of next year.

The latest NOAA Climate Prediction Centre / NCEP statement (PDF) states that:
"La Niña is likely to continue through the Northern Hemisphere winter 2020-21 (~95% chance during January-March), with a potential transition during the spring 2021 (~50% chance of Neutral during April-June)."

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

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

3-Month Outlook January to March - Rainfall



Current Status

Current Status maps

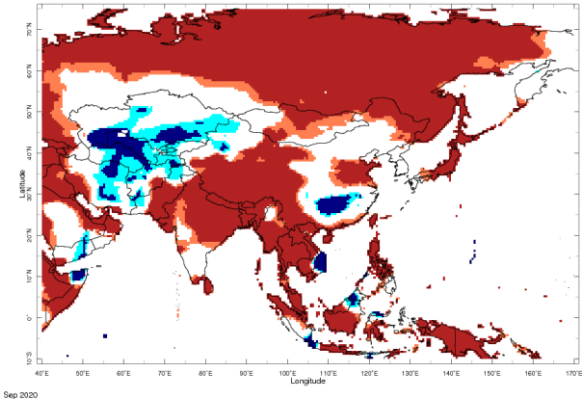
Central Asia

Southern Asia

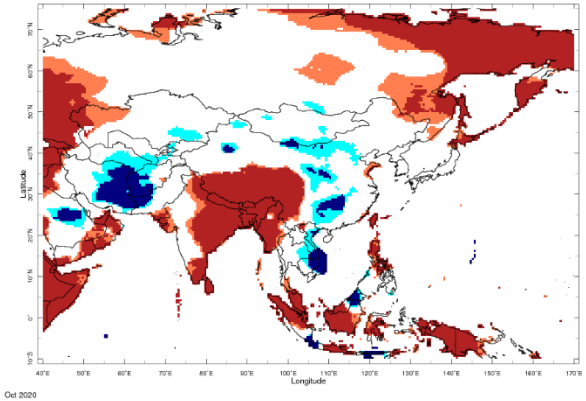
Southeast Asian Peninsula

Southeastern Asia / Indonesia

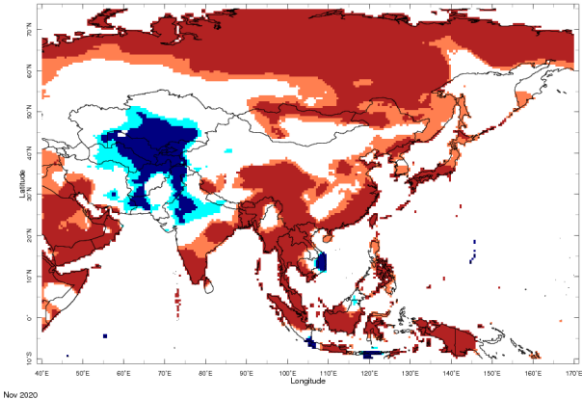
Current Status – Temperature percentiles



September



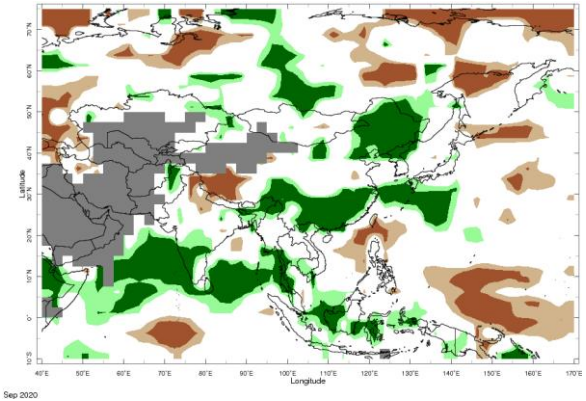
October



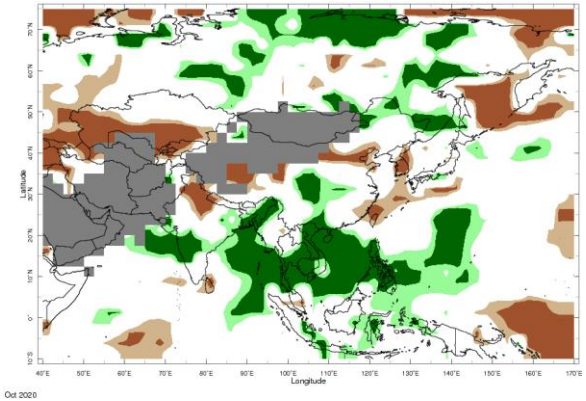
November

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.

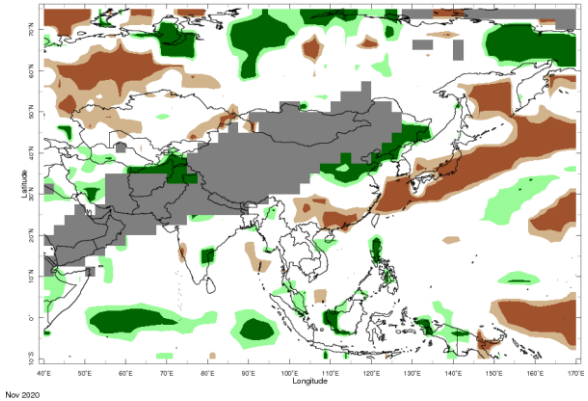
Current Status – Precipitation percentiles



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			Current Status: Rainfall		
	September	October	November	September	October	November
Afghanistan	Normal^	Normal^	Cold	Normal*	Normal*	Normal*^^^
Tajikistan	Cool	Normal	Cold	Normal	Normal	Normal
Kyrgyzstan	Cool	Normal	Cold	Wet	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:

^Note: Temperatures much more variable across country in September with some cool / cold areas in the north and hot areas in the east of the country; in October, cool / cold in the south, normal elsewhere
^^Note: Dry in the north-east
^^^Note: Northern Afghanistan was very wet in November. Little rainfall observed across the rest of the country.

Current Status – Southern Asia

	Current Status: Temperature			Current Status: Rainfall		
	September	October	November	September	October	November
Pakistan	Hot	Normal	Cool	Normal	Normal*	Normal*^^^
India	Warm	Mixed^^	Mixed^^	Normal	Normal^	Normal
Nepal	Hot	Hot	Normal	Normal	Normal	Normal*
Bangladesh	Hot	Hot	Hot	Wet	Very 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:

^Note: Dry in the Himalayan region
^^Note: Mainly normal in east of country, hot elsewhere in October. For November, the northwest was Cool, east Hot and elsewhere near normal.
^^^Note: Northern Pakistan was very wet in November. Little rainfall observed across the rest of the country.

Current Status – Southeast Asian Peninsula

	Current Status: Temperature			Current Status: Rainfall		
	September	October	November	September	October	November
China	Warm	Mixed^^	Mixed^^	Normal	Normal	Mixed^^^
Myanmar	Hot	Hot	Hot	Wet	Normal	Normal
Vietnam	Mixed^	Cold	Cold	Normal	Very 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:

^Note: In September, cold in Central Vietnam, hot elsewhere
^^ Note: Hot in south west, normal to cold elsewhere
^^^Note: Northern China as Very Wet in November and southern China was Dry.

Current Status – Southeastern Asia / Indonesia

	Current Status: Temperature			Current Status: Rainfall		
	September	October	November	September	October	November
Indonesia	Hot	Hot	Hot	Wet	Wet	Normal
Papua New Guinea	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:

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: January to June – Central Asia

		Forecast summary		
		January	January to March	April to June
Afghanistan	*Temperature*	Likely to be colder than normal	Climatological Odds – see note	Climatological Odds – see note
	Rainfall	Likely to be drier than normal	Likely to be drier than normal	Climatological Odds – see note
Tajikistan	*Temperature*	Likely to be colder than normal	Climatological Odds – see note	Climatological Odds – see note
	Rainfall	Likely to be drier than normal	Likely to be drier than normal	Climatological Odds – see note
Kyrgyzstan	*Temperature*	Likely to be colder than normal	Climatological Odds – see note	Climatological Odds – see note
	Rainfall	Likely to be drier than normal	Likely to be drier than normal	Climatological Odds – see note

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

		Forecast summary		
		January	January to March	April to June
Pakistan	*Temperature*	Climatological Odds – see note	Climatological Odds – see note	Climatological Odds – see note
	Rainfall	**Likely to be drier than normal**	**Likely to be drier than normal**	Likely to be near-normal
India	*Temperature*	Climatological Odds – see note	**Likely to be warmer than normal**	Climatological Odds – see note
	Rainfall	Climatological Odds – see note	**Likely to be drier than normal** in the northwest; Climatological Odds – see note elsewhere	Climatological Odds – see note
Nepal	*Temperature*	Climatological Odds – see note	**Likely to be warmer than normal**	Climatological Odds – see note
	Rainfall	Climatological Odds – see note	**Likely to be drier than normal**	Climatological Odds – see note
Bangladesh	*Temperature*	**Likely to be warmer than normal**	**Likely to be warmer than normal**	Climatological Odds – see note
	Rainfall	Climatological Odds – see note	Climatological Odds – see note	Climatological Odds – see note

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 colder than normal	Climatological Odds – see note	Likely to be warmer than normal
	Rainfall	Likely to be drier than normal	Likely to be drier than normal in the south and east; Climatological Odds – see note elsewhere	Climatological Odds – see note
Myanmar	*Temperature*	Likely to be warmer than normal	**Much more likely to be warmer than normal**	Climatological Odds – see note
	Rainfall	Likely to be near-normal	Climatological Odds – see note	Climatological Odds – see note
Vietnam	*Temperature*	Likely to be colder than normal	Likely to be colder than normal	Likely to be near-normal
	Rainfall	Likely to be wetter than normal	Likely to be wetter than normal in the south; Climatological Odds – see note in the north	Climatological Odds – see note

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*	Likely to be warmer than normal	Likely to be warmer than normal	Likely to be warmer than normal
	Rainfall	Climatological Odds – see note	In the south, likely to be wetter than normal, although likely to be drier than normal across western Papua	Climatological Odds – see note
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	Likely to be drier than normal	Likely to be drier than normal	Climatological Odds – see note

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 (Apr 2020) - http://rcc.imdpune.gov.in/SASCOF16/concensus.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 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)

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