Earth System Science Organization (ESSO)
Ministry of Earth Sciences (MoES)
India Meteorological Department
WMO Regional Climate Centre
Pune, India

SEASONAL CLIMATE OUTLOOK FOR SOUTH ASIA
(January to April 2026)

Highlights

- At present, weak La Niña conditions are prevailing over the equatorial Pacific region. The latest forecasts from the Monsoon Mission Climate Forecast System (MMCFS) indicate that the transition to ENSO-neutral is most likely in the January-March 2026 season and thereafter.

- Currently, neutral Indian Ocean Dipole (IOD) conditions are prevailing over the Indian Ocean. The latest MMCFS forecast suggests that these neutral IOD conditions are likely to continue during JFM season and likely to continue thereafter.

- The probability forecast for precipitation for JFM season indicates that enhanced probability of above normal precipitation is likely over most parts of northwest, west and northeast of South Asia and enhanced probability of below normal precipitation over the remaining parts of South Asia. The same for FMA indicates that enhanced probability of above normal rainfall is likely over most parts of South Asia except over parts of extreme north and south peninsular region where enhanced probability of below normal rainfall is likely.

- In January the country averaged monthly precipitation is likely to be normal to above normal for Bangladesh, Bhutan and India and below normal for Afghanistan, Maldives, Myanmar, Nepal, Pakistan and Sri Lanka. In February, the country averaged monthly precipitation is likely to be normal to above normal for all countries except Maldives, Myanmar and Sri Lanka where it is likely to be below normal. In March and April, it is likely to be normal to above normal for all countries except Maldives and Sri Lanka where it is likely to be below normal.

- Temperature probability forecast for JFM season indicates that enhanced probability of above normal temperatures is likely over most parts of northwest, extreme north, north along the plains of Himalayas, east, northeast and southeast of South Asia and enhanced probability of below normal temperature in the remaining parts of South Asia. The same for FMA season indicate that enhanced probability of above normal temperatures is likely over some parts of extreme north, east, south east and parts of south of South Asia and enhanced probability of below normal temperatures over the rest of South Asia.

- The country averaged monthly temperatures during January is likely to be above normal for all countries except Maldives. In February it is likely to be above normal for all the countries. In March the country averaged monthly temperatures are likely to be above normal for all countries except Nepal where it is likely to be below normal. In April, the country averaged monthly temperature is likely to be above normal for all countries except Afghanistan where it is likely to be below normal.

1. Important Global Climate Factors

1.1 Sea Surface Temperatures over the Pacific Ocean

During December 2025, the east-central and eastern Pacific Ocean experienced below-average sea surface temperatures (SSTs) (Fig. 1a), while the western equatorial Pacific recorded above-average SSTs. The northern extratropical Pacific also experienced warmer-than-normal SSTs. Relative to November 2025, negative SST anomalies intensified over the eastern Pacific Ocean, whereas positive SST anomalies persisted over parts of the North Pacific (Fig. 1b). Currently, neutral El Nino-Southern Oscillation (ENSO) conditions are prevailing over the equatorial Pacific region. The latest Monsoon Mission Climate Forecast System (MMCFS) as well as other climate model forecasts indicate that the increased likelihood of La Niña conditions during the upcoming months (Fig.2). At present, weak La Niña conditions are prevailing over the equatorial Pacific region. The latest forecasts from the Monsoon Mission Climate Forecast System (MMCFS) indicate that the transition to ENSO-neutral is most likely in the January-March 2026 season and thereafter

1.2 Sea Surface Temperatures over Indian Ocean

In December 2025, the eastern equatorial Indian Ocean experienced warmer-than-average sea surface temperatures (SSTs), while near-average SSTs prevailed over the western Indian Ocean (Fig. 1a). The Arabian Sea recorded cooler SSTs, whereas the northern Bay of Bengal experienced warmer SSTs. Compared to November 2025, cooler SSTs developed over parts of the eastern Indian Ocean. Positive SST anomalies were evident over the northern Arabian Sea, while negative SST anomalies prevailed over the northern Bay of Bengal. Currently, neutral Indian Ocean Dipole (IOD) conditions are prevailing over the Indian Ocean. The latest MMCFS forecast suggests that these neutral IOD conditions are likely to continue during JFM season and likely to continue thereafter
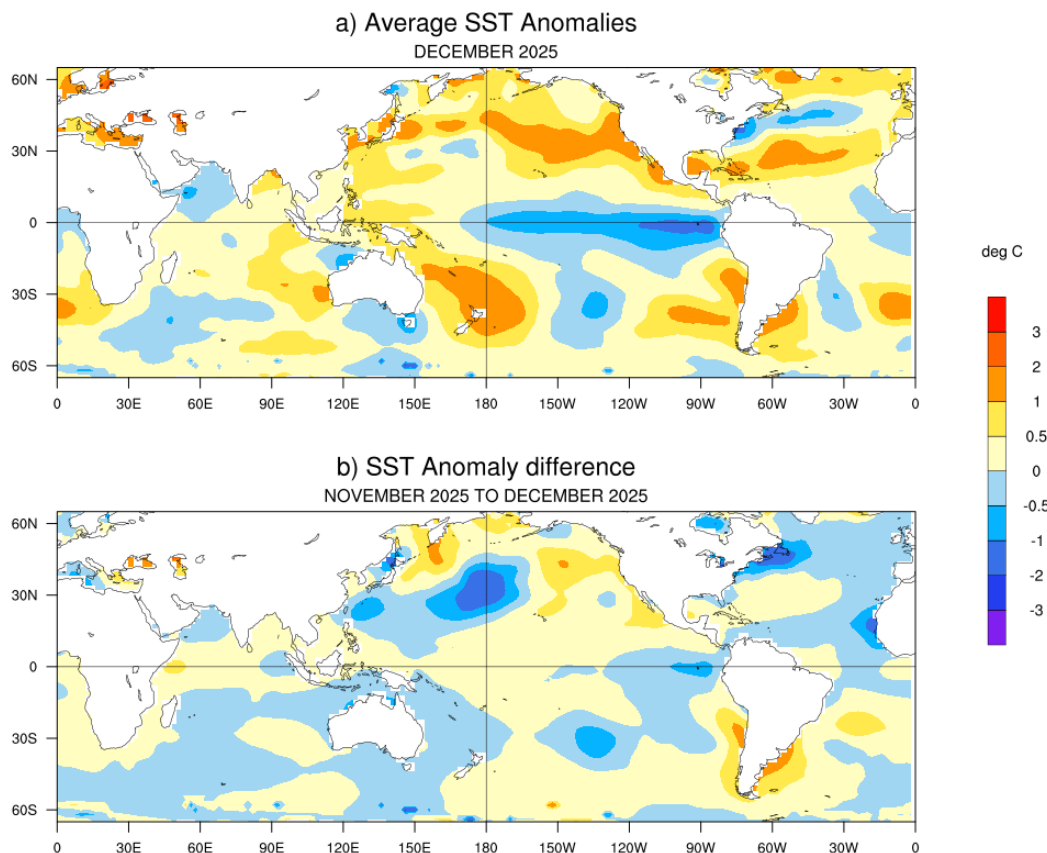

Fig.1: (a) Sea surface temperature (SST) anomalies (^{0}C) during December 2025 and (b) changes in the SST anomalies (^{0}C) from November to December 2025. SSTs are based on the ERSSTv5, from NOAA, and anomalies are computed with respect to 30-year (1991-2020) long term mean.
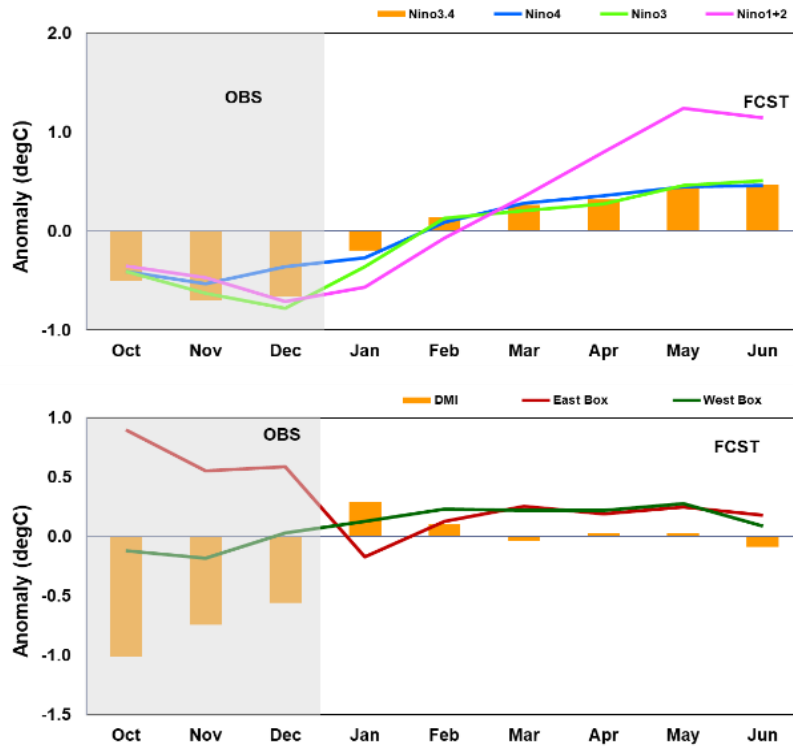
Fig.2: Time series of monthly area-averaged SST anomalies (°C) in the 4 Niño regions. ERSSTv5 observed anomaly for the last 3 months and MMCFS model PDF corrected anomaly forecast for the next 6 months.

Fig.3: The time series of the monthly area-averaged SST anomaly Indices (°C) over west equatorial Indian Ocean (WEI) & east equatorial Indian Ocean (EEI) along with Dipole Mode Index (DMI=WEI-EEI) representing Indian Ocean Dipole (IOD). ERSSTv5 observed anomaly for the last 3 months and MMCFS model PDF corrected anomaly forecast for the next 6 months.

1.3 Convection (OLR Anomaly) Pattern over the Asia Pacific Region

The Outgoing Longwave Radiation (OLR) anomaly during December 2025 is shown in (Fig.4). Negative OLR anomalies (enhanced convection, blue shading) were observed over western and central tropical Pacific Ocean and few parts of eastern Indian Ocean. Negative OLR anomalies were also observed over Maritime Continent, north Australia and parts of Africa. Positive OLR anomalies (suppressed convection, orange/red shading) were observed over North Indian Ocean, central equatorial Pacific Ocean, eastern tropical Pacific Ocean, south Australia and southern parts of South Asia.
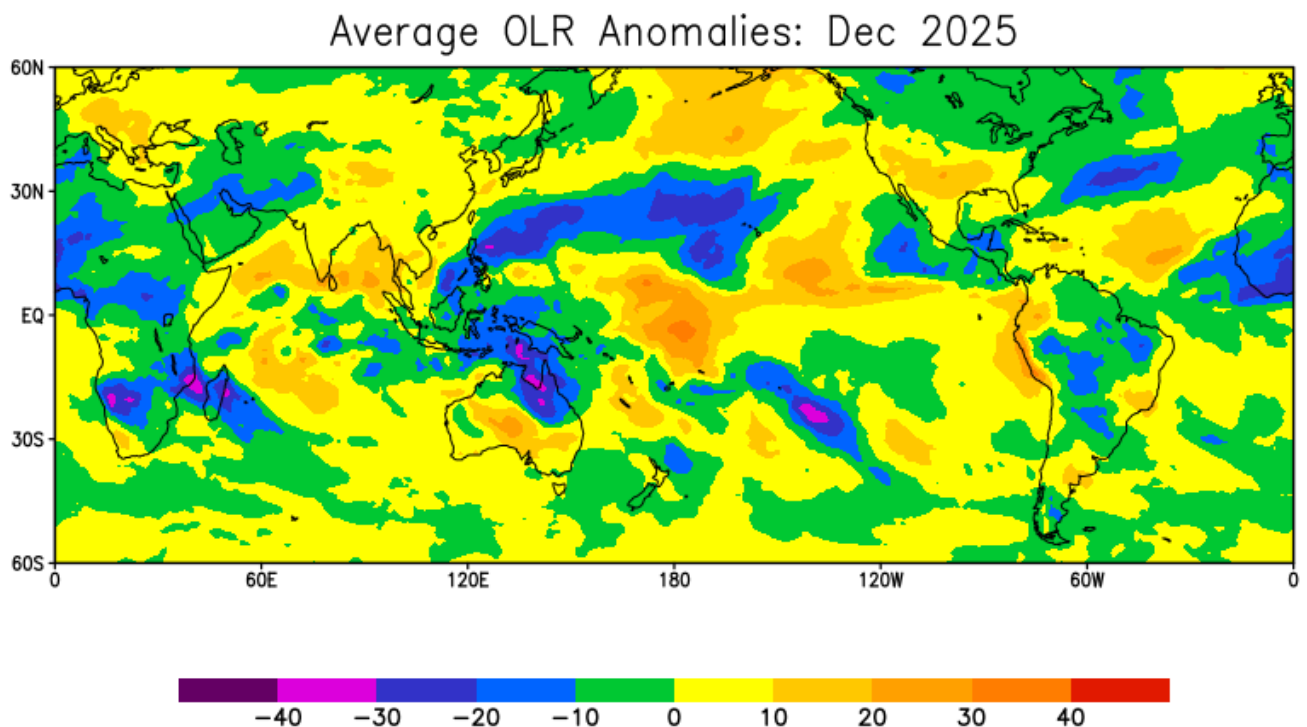

Fig.4: Outgoing Long Wave Radiation (OLR) Anomaly (W/m^2) for December 2025
(Data source: NCEP-NOAA)

1.4 Snow Cover Area over the Northern Hemisphere (NH)

During December 2025, the NH snow cover area (41.87 million Sq. km) was less than the 1991- 2020 normal by 0.24 million Sq. km (Fig. 5). Eurasian Snow cover area (25.28 million Sq. km) was 2.1 million Sq. km less than the 1991-2020 normal. North America snow cover area of 16.6 million sq. km was less by 0.31 million Sq. Km with respect to 1991-2020 normal.
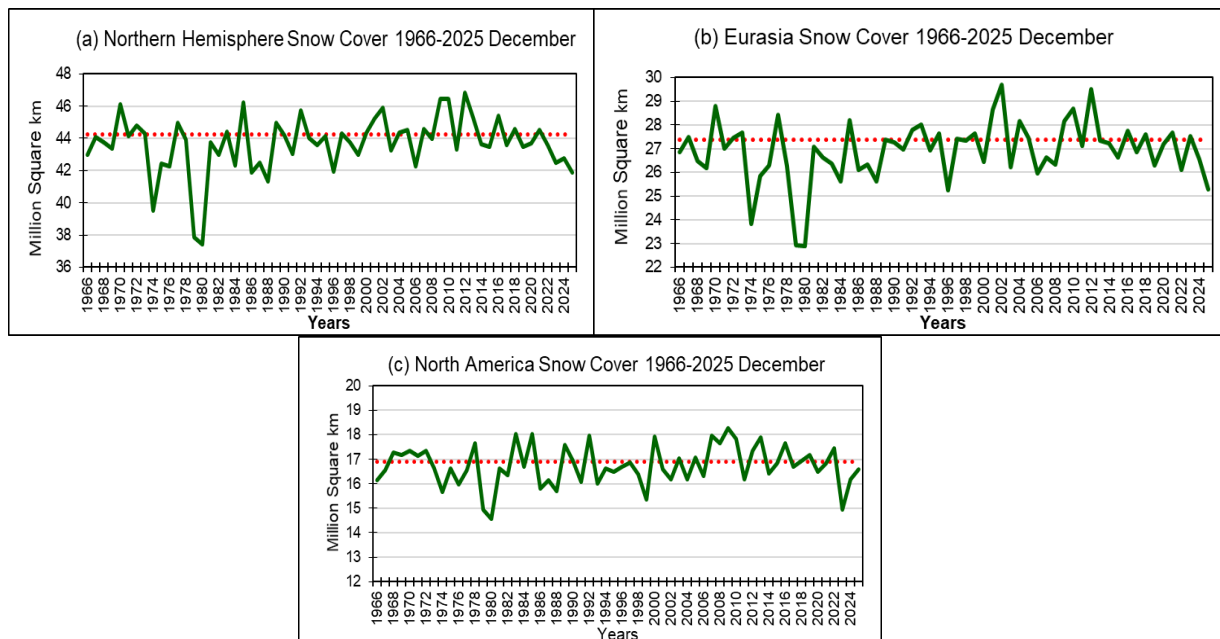

Fig.5. Snow cover area (million Sq. km) for the month of December during the period 1966-2025 (green solid lines) and normal value (1991-2020) (red dotted line) for (a) Northern Hemisphere (b) Eurasia and (c) North America. (Data Source: Rutgers University Snow Lab).

1.5. Madden Julian Oscillation (MJO)

During the first week of December 2025, MJO moved eastwards from Phase 7 (Western Pacific) to Phase 8 (Western Hem., Africa) with an amplitude > 1. During the next three weeks it was mostly confined to the unit circle with amplitude < 1. The MJO phase diagram illustrates the progression of the MJO through different phases, which generally coincide with locations along the equator around the globe.
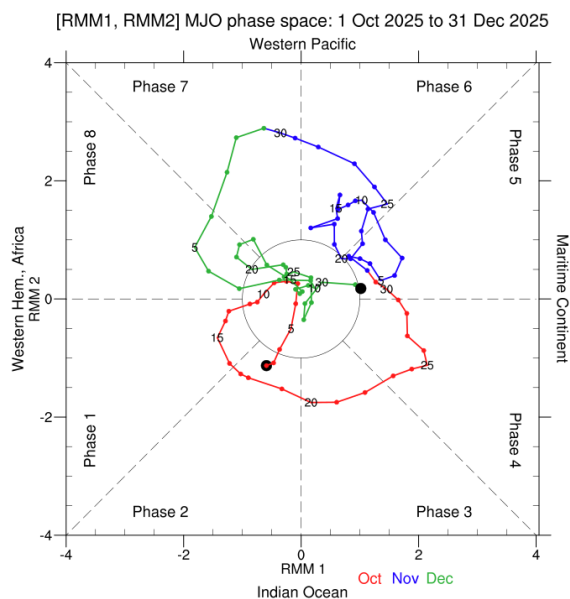

Fig.6. RMM phase diagram for Madden Julian Oscillation (MJO) for the period October to December 2025. (Data Source: http://www.bom.gov.au/climate/mjo/).

2.   Seasonal Outlook for South Asia

The seasonal outlook was prepared based on the forecast from Monsoon Mission Coupled Forecasting System (MMCFS). The model is a fully coupled ocean-atmosphere-land model. The atmospheric component of CFSv2 is Global Forecast System (GFS) with spectral resolution of T382 (approximately 38 km) and 64 hybrid vertical levels and the ocean component is Geophysical Fluid Dynamics Laboratory (GFDL) Flexible Modelling System (FMS) Modular Ocean Model version.

2.1.   Precipitation Probability Forecast:

The probability forecasts for precipitation for the seasons January to March 2026 (JFM) and February to April 2026 (FMA) are given in the Figures 7a and 7b respectively. The forecast is prepared based on the December initial conditions. The probability forecast for precipitation for JFM season indicates that enhanced probability of above normal precipitation is likely over most parts of northwest, west and northeast of South Asia and enhanced probability of below normal precipitation over the remaining parts of South Asia. The same for FMA indicates that enhanced probability of above normal rainfall is likely over most parts of South Asia except over parts of extreme north and south peninsular region where enhanced probability of below normal rainfall is likely.
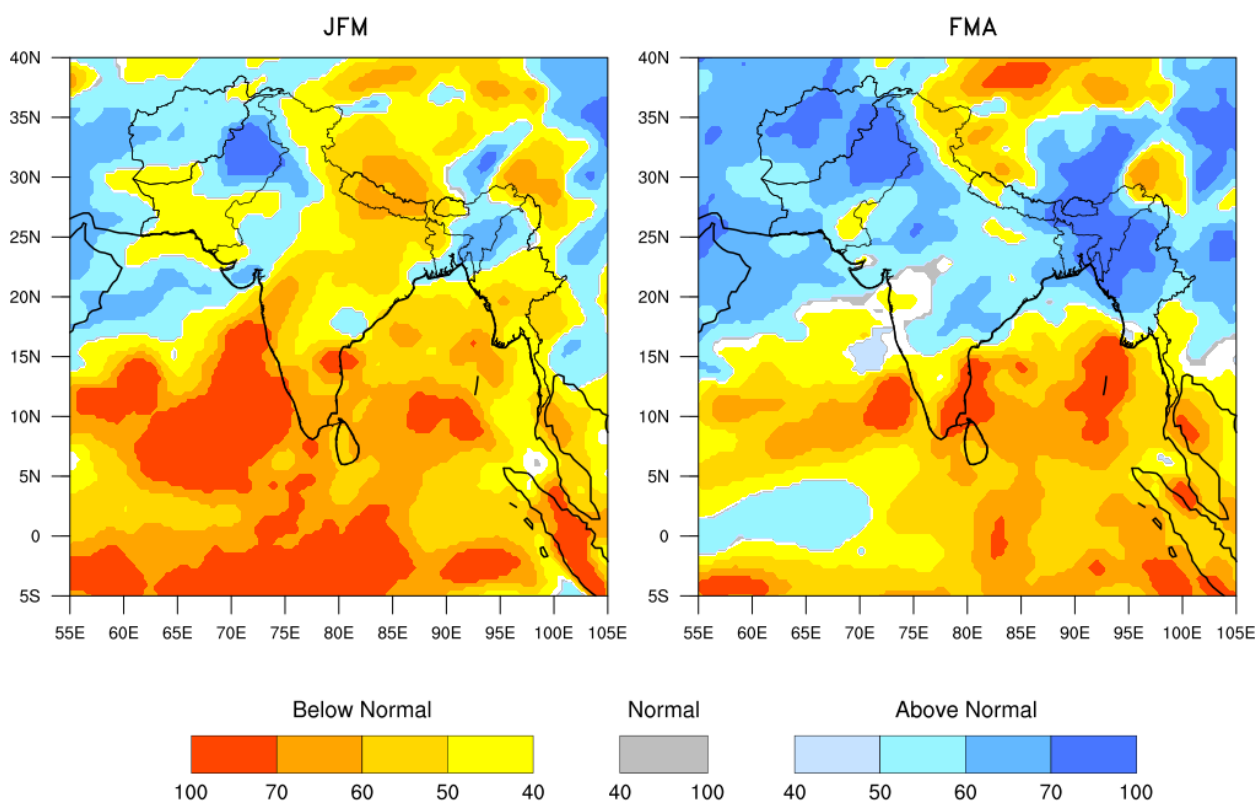

Fig.7: Seasonal probability (%) forecasts of precipitation for (a) JFM 2026 (left) and (b) FMA 2026 (right) based on initial conditions of December 2025.The white colour indicates climatological probability.

2.2.   Temperature Probability Forecast:

The probability forecasts for temperature for the season January to March 2026 (JFM) and February to April 2026 (FMA) are given in the Figures 8a and 8b respectively. The forecast is prepared based on the December initial conditions. Temperature probability forecast for JFM season indicates that enhanced probability of above normal temperatures is likely over most parts of northwest, extreme north, north along the plains of Himalayas, east, northeast and southeast of South Asia and enhanced probability of below normal temperature in the remaining parts of South Asia. The same for FMA season indicate that enhanced probability of above normal temperatures is likely over some parts of extreme north, east, south east and parts of south of South Asia and enhanced probability of below normal temperatures over the rest of South Asia.
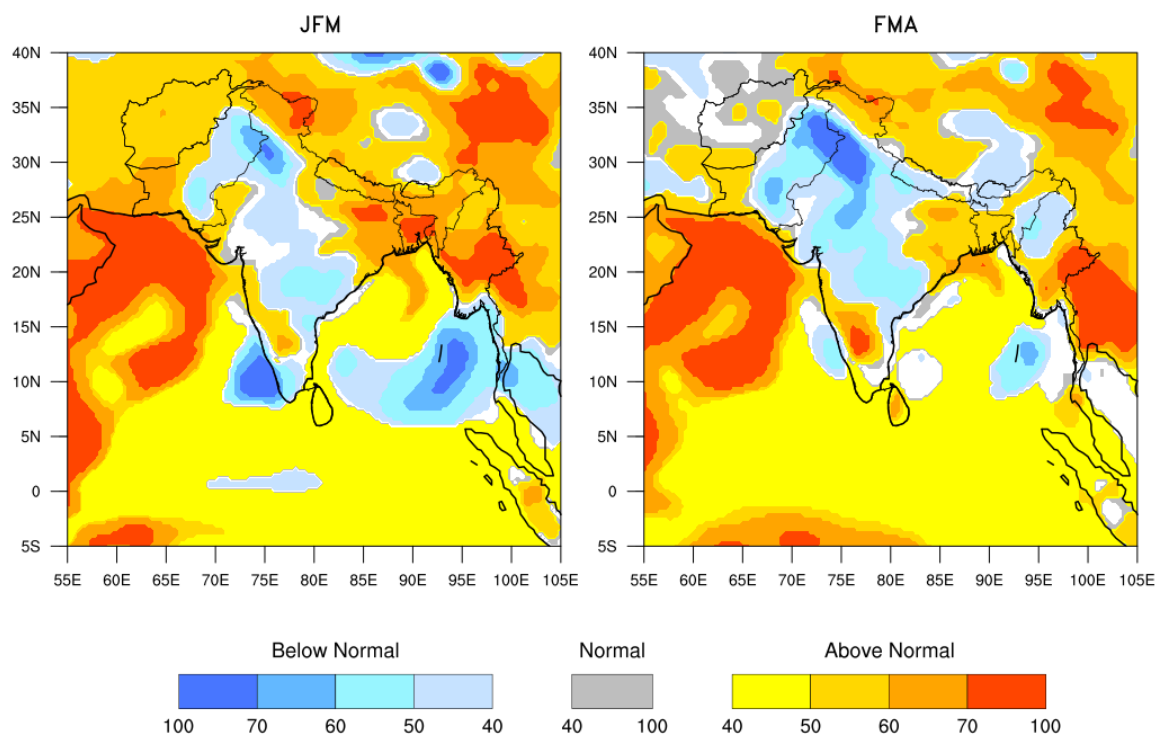
Fig. 8: Probability (%) forecast for the seasonal mean temperature for (a) JFM 2026 (left) and (b) FMA 2026 (right) based on initial conditions of December 2025. The white colour indicates climatological probability.

3. Forecast Outlook for the Country Averaged Monthly Precipitation and Temperature

The MMCFS model forecast for monthly precipitation and temperature for the next four months (from January to April 2026) averaged over the 9 south Asian countries viz., Afghanistan, Bangladesh, Bhutan, India, Maldives, Myanmar, Nepal, Pakistan and Sri Lanka were shown in the Figures 9. The monthly rainfall anomaly is expressed as percentage departure from Long Period Model Average (LPMA) and monthly temperature anomaly is expressed in degree Celsius.

In January the country averaged monthly precipitation is likely to be normal to above normal for Bangladesh, Bhutan and India and below normal for Afghanistan, Maldives, Myanmar, Nepal, Pakistan and Sri Lanka. In February, the country averaged monthly precipitation is likely to be normal to above normal for all countries except Maldives, Myanmar and Sri Lanka where it is likely to be below normal. In March and April, it is likely to be normal to above normal for all countries except Maldives and Sri Lanka where it is likely to be below normal.

The country averaged monthly temperatures during January is likely to be above normal for all countries except Maldives. In February it is likely to be above normal for all the countries. In March the country averaged monthly temperatures are likely to be above normal for all countries except Nepal where it is likely to be below normal. In April, the country averaged monthly temperature is likely to be above normal for all countries except Afghanistan where it is likely to be below normal.
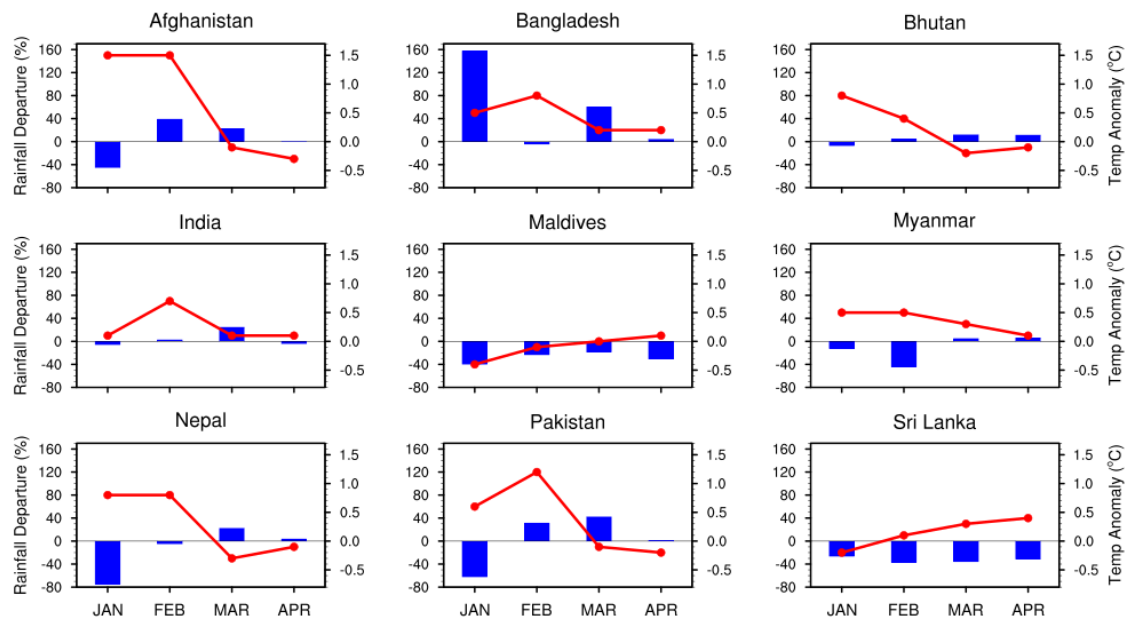
Fig. 9: Monthly country averaged rainfall forecast expressed as percentage departures (%) and monthly country averaged temperature anomaly (°C) forecast during January to April 2026. Here, the normal range for country averaged monthly precipitation is taken as -10% to +10% (Left Vertical Axis Scale for Precipitation indicated in blue shaded bars) and the normal range for country averaged monthly temperature is taken -0.25°C to +0.25°C (Right Vertical Axis Scale for Temperature indicated in red colored lines).