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**El Niño Southern Oscillation (ENSO) and
Indian Ocean Dipole (IOD) Bulletin**

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Highlights

Currently, strong to very strong El Niño conditions prevail over the equatorial Pacific, with SSTs well above average in the central-eastern and eastern Pacific. These are expected to strengthen further through end-2026, with Monsoon Mission Coupled Forecast System (MMCFS) indicating a high likelihood of strong-to-very strong El Niño conditions persisting through January–March 2027.

Currently, neutral IOD conditions prevail over the Indian Ocean. Sea surface temperatures are warmer than normal in both the western and eastern equatorial Indian Ocean, with stronger warming in the west. MMCFS predicts that neutral IOD conditions are most likely to continue throughout the forecast period, while some international centres expect the positive IOD phase to continue in the near term.

1. Current Sea Surface Temperature (SST) Conditions over the Pacific and Indian Oceans

During September 2026, El Niño conditions strengthened further relative to August. SST anomalies exceeded $+2.0^{\circ}\text{C}$ over the eastern equatorial Pacific, with positive anomalies intensifying east of the Date Line and extending across the eastern basin (Fig. 1a). Above-average SSTs were also observed over parts of the North Pacific and several other global ocean regions, while near-normal to slightly below-normal SSTs prevailed over portions of the southern Pacific and south Atlantic. Compared with August 2026, positive SST anomalies strengthened over the eastern equatorial Pacific, whereas cooling occurred over parts of the central and western equatorial Pacific as well as parts of the northern and southern subtropical Pacific (Fig. 1b).

In September 2026, positive SST anomalies were observed over both the western and eastern Indian Ocean (Fig. 1a). Compared with August 2026, warm SST anomalies strengthened over the western and central equatorial Indian Ocean, while cooling occurred over the eastern equatorial Indian Ocean and the Bay of Bengal. The Arabian Sea continued to exhibit warm SSTs (Fig. 1b).

1.1 El Niño Southern Oscillation (ENSO) conditions over the Pacific Ocean

The monthly time series of Niño 3.4 SST anomalies for the 12-month period from October 2025 to September 2026 is shown in Fig. 2a. La Niña conditions persisted from September 2025 through February 2026 and transitioned to ENSO-neutral conditions in March 2026. Subsequently, the Niño 3.4 SST anomalies increased rapidly, crossing the El Niño threshold in May 2026 and strengthening further to approximately $+2.0^{\circ}\text{C}$ by September 2026, indicating the strong El Niño conditions over the central equatorial Pacific Ocean.

Strong positive subsurface temperature anomalies are observed across much of the eastern equatorial Pacific Ocean both near and above the 20°C isotherm, extending down to the thermocline. Negative SST anomalies were observed over the western and central equatorial Pacific, with the strongest negative anomalies in the central equatorial Pacific (Fig. 2b).

1.2. Indian Ocean Dipole (IOD) conditions over the Indian Ocean

Fig. 2c shows the monthly variation of the Dipole Mode Index (DMI) over the Indian Ocean from October 2025 to September 2026. Negative IOD conditions persisted from October to December 2025, followed by a gradual weakening of the negative phase. The DMI remained near neutral in January 2026 and turned positive during February–April 2026, indicating relatively warmer SSTs over the western equatorial Indian Ocean compared to the eastern equatorial Indian Ocean. Thereafter, the DMI gradually turned to negative during May–June 2026. Neutral IOD conditions prevailed from July to August 2026. Both western and eastern equatorial boxes show positive SST anomalies, with the west warmer with DMI index 0.6°C . However, currently neutral IOD conditions prevail over the Indian Ocean.

Positive subsurface temperature anomalies (Fig. 2d) are observed in the western and central equatorial Indian Ocean below the 20°C isotherm, extending down to the thermocline. Negative SST anomalies were observed over the eastern Indian Ocean.

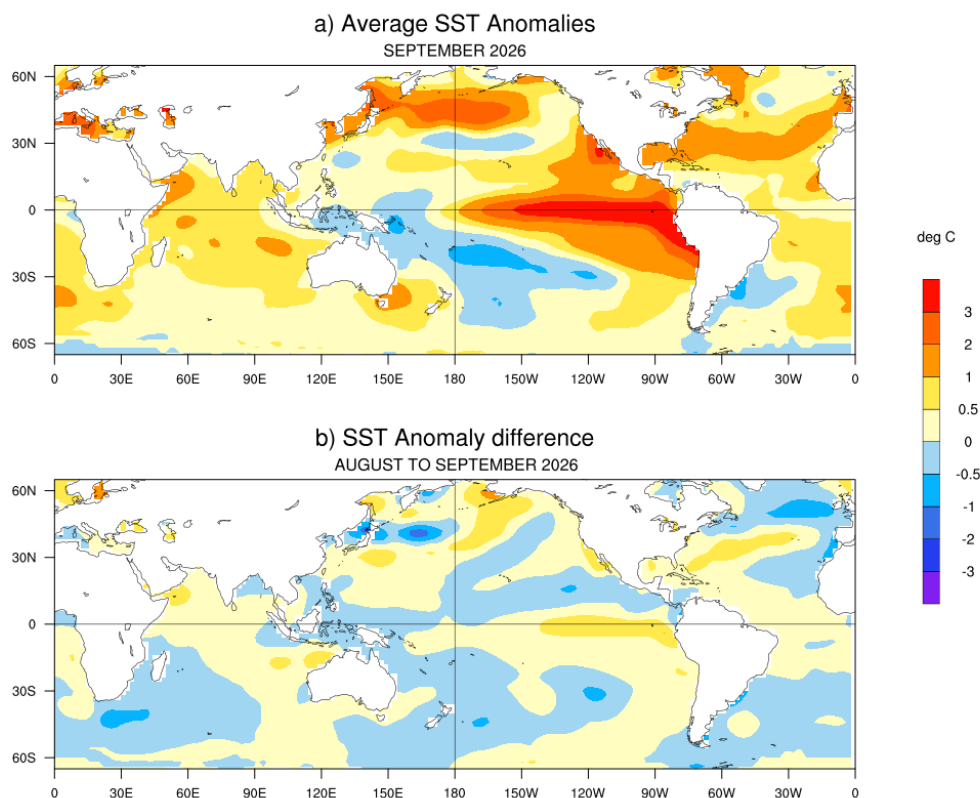


Fig.1: (a) Sea surface temperature (SST) anomalies (degC) during September 2026 and **(b)** changes in the SST anomalies (degC) from August to September 2026. SSTs are based on the ERSSTv5 (NCEP-NOAA), and anomalies are computed with respect to 30-year (1991-2020) long term mean.

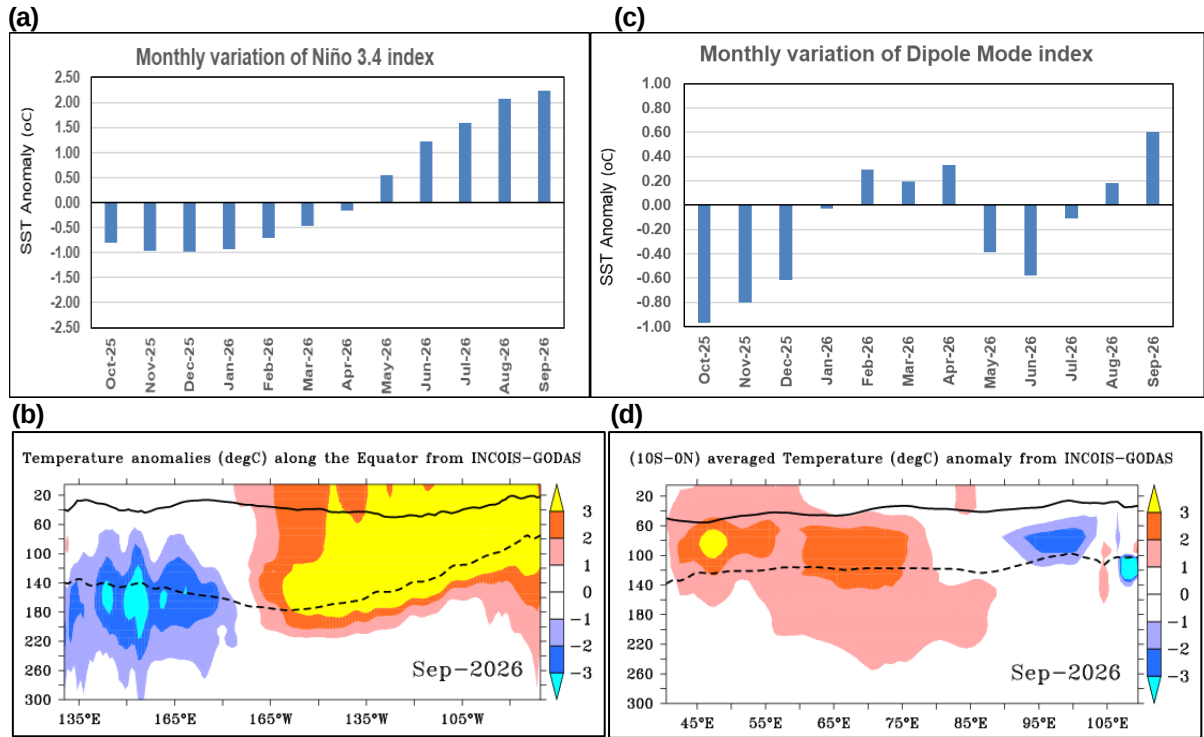


Fig.2: (a) Monthly variation of Niño 3.4 SST index for the last 12 months and **(b)** Depth-longitude section of sub-surface temperature anomalies in the equatorial (5°S-5°N) Pacific Ocean for the month of September 2026. **(c)** Same as **(a)** but for the Dipole Mode Index (DMI). **(d)** Same as **(b)** but for the tropical Indian Ocean (10°S-Eq). The anomalies in **(a)** and **(c)** were computed using the base period of 1991-2020 (Data Source: ERSSTv5). The solid dark line in **(b)** and **(d)** is the 20°C isotherm and the dashed line is thermocline depth (Data Source: INCOIS-GODAS).

2. ENSO and IOD Forecast

The SST forecast was generated using the high-resolution Monsoon Mission Coupled Forecast System (MMCFS) (AGCM T382L64; ~38 km horizontal resolution and OGCM ~25 km resolution in the tropics), initialized with September 2026 initial conditions. The model initial conditions were obtained from analyses produced by ESSO-INCOIS and ESSO-NCMRWF. Probability density function (PDF)-based bias correction was applied to the forecasts of the Niño 3.4 index (Fig. 4a&4b) and the Dipole Mode Index (DMI); Fig. 5a&5b) using hindcasts for the period 1999–2008. Forecast anomalies were computed relative to the 1991–2020 climatological mean.

The three-month seasonally averaged SST anomaly forecast over the Pacific Ocean (Fig. 3) indicates that positive anomalies are likely to strengthen over the central equatorial Pacific during October–December (OND) 2026. From November–January (NDJ) 2026–27 onwards, these positive anomalies are expected to intensify further and expand across both the central and eastern equatorial Pacific. Over the Indian Ocean, the same forecast suggests that near-neutral SST anomalies are likely to prevail across most regions during the upcoming seasons (Fig. 3).

The latest MMCFS plume and probability forecasts (Figs. 4a and 4b) indicate that strong to very strong El Niño conditions are likely to persist during the upcoming season. IMD will continue to closely monitor the evolving ENSO conditions and issue monthly updates based on the latest observations from the Pacific Ocean. Currently, neutral Indian Ocean Dipole (IOD) conditions prevail over the Indian Ocean, as the required threshold for establishing an IOD event has not been sustained. The latest MMCFS forecast indicates that neutral IOD conditions are most likely to continue throughout the forecast period (Figs. 5a and 5b).

MMCFS SST Anomaly Forecast :Sep 2026 IC

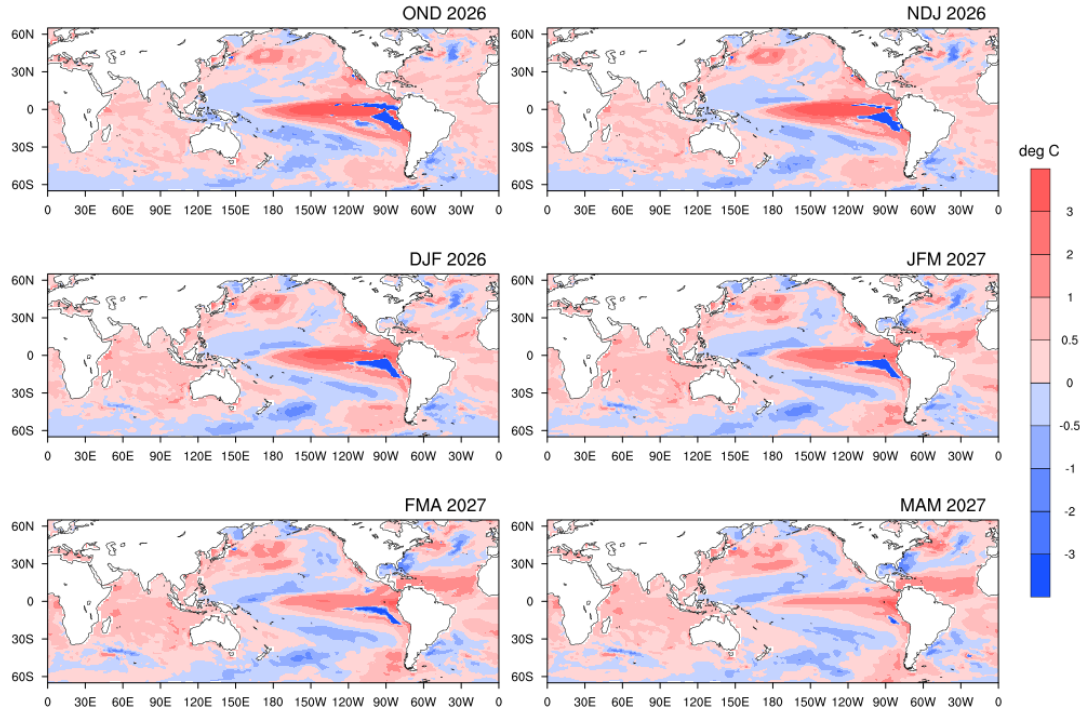


Fig.3: Forecasted Seasonal mean SST anomalies for three-monthly (a) October to December (OND 2026), (b) November to January (NDJ 2026), (c) December to February (DJF 2027), (d) January to March (JFM 2027), (e) February to April (FMA 2027), and (f) March to May (MAM 2027) Model bias correction base period: 1999-2008; Climatology base period:1991-2020).

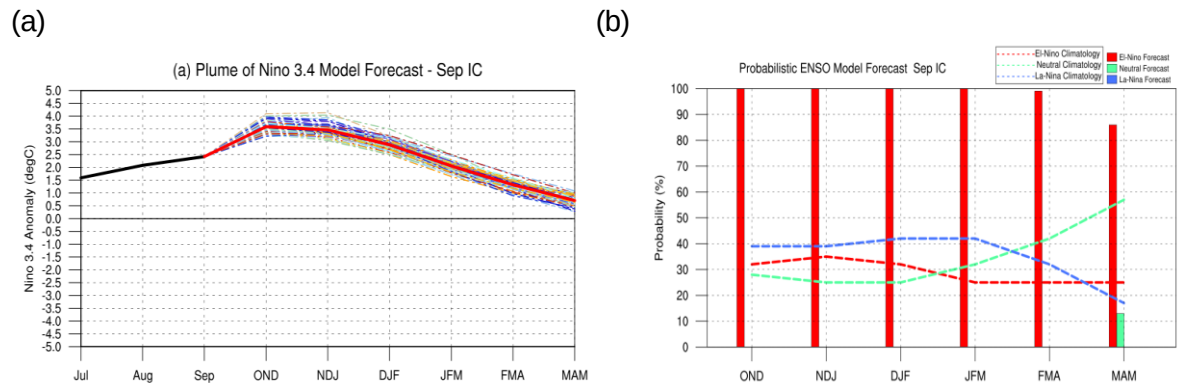


Fig.4: (a) Plume of Niño 3.4 SST index, forecasted by high-resolution MMCFS (b) Probability forecast along with climatological probabilities of Niño 3.4 SST index from high-resolution MMCFS.

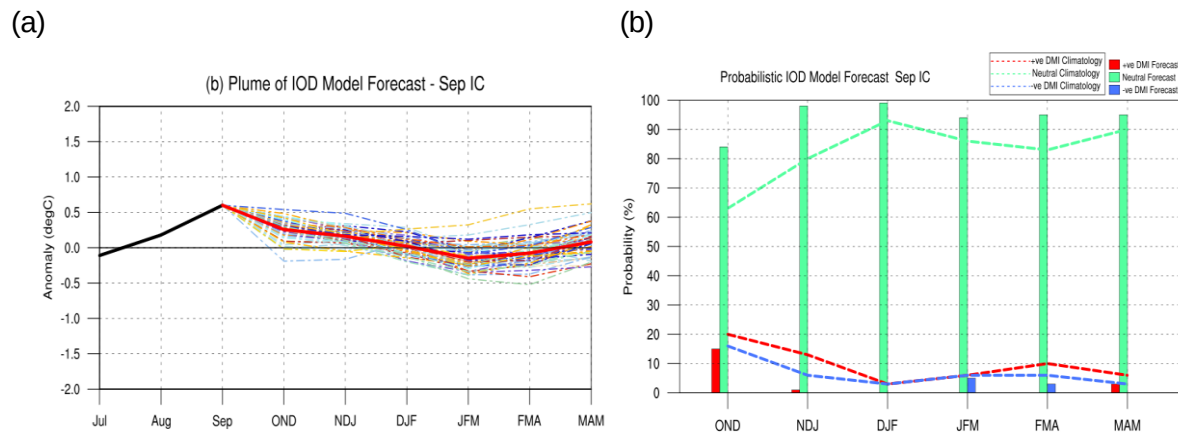


Fig.5: (a) Plume of Indian Ocean Dipole (IOD) Mode Index forecasted by high-resolution MMCFS and (b) Probability forecast along with climatological probabilities of Indian Ocean Dipole (IOD) Mode Index from high-resolution MMCFS.

Plume Forecast

Forecasts are PDF-corrected for bias and variance. The solid black line shows the observed SST anomaly (ERSSTv5, NOAA), while the solid red line represents the ensemble-mean SST anomaly forecast from 56 MMCFS members. Individual ensemble member forecasts are depicted as light dotted lines in different colours.

Probability Forecast

Climatology probabilities are based on NOAA Extended Reconstructed SST V5.

- **ENSO categories:** La Niña ≤ -0.5 °C, Neutral -0.5 °C to $+0.5$ °C, El Niño $\geq +0.5$ °C.
- **DMI (IOD) categories:** Negative ≤ -0.4 °C, Neutral -0.4 °C to $+0.4$ °C, Positive $\geq +0.4$ °C.