



**Earth System Science Organization (ESSO)  
Ministry of Earth Sciences (MoES)  
India Meteorological Department (IMD)**

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

**April 2026**

**Highlights**

At present, Weak La Niña-like conditions are transitioning to ENSO-neutral conditions over the equatorial Pacific. Atmospheric circulation features across the tropical Pacific remain consistent with weak La Niña-like conditions. The Monsoon Mission Climate Forecast System (MMCFS) suggests the development of El Niño conditions during the southwest monsoon season.

At present, neutral Indian Ocean Dipole (IOD) conditions are present over the Indian Ocean and the latest Climate models forecast indicates that the positive IOD conditions are likely to develop towards the end of the southwest monsoon season.

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

During March 2026, above-average SSTs were prevalent over most of the global oceans (Fig. 1a). However, equatorial SST anomalies were warmer in the western and far eastern Pacific compared to the east-central Pacific. In addition, warmer-than-average SSTs prevailed over the northern and southern extra-tropical regions of the Pacific Ocean (Fig. 1a). In comparison with February 2026, mostly positive SST anomaly were observed across the central and eastern equatorial Pacific Ocean and eastern Indian Ocean. central and eastern equatorial Pacific Ocean and eastern Indian Ocean. Negative SST anomaly were evident in the western equatorial Indian Ocean, near the Maritime Continent (Fig. 1b).

In March 2026, sea surface temperatures (SSTs) were near-to-above-average in the Atlantic Ocean and were below average north of Australia (Fig. 1a). Warm SSTs were observed in the Arabian Sea and Bay of Bengal. Compared to February 2026, mostly positive SST anomaly were observed across the western Indian Ocean (Fig. 1b).

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

The monthly time series of Niño3.4 SST anomalies for the last 12 months, from April 2025 to March 2026 is shown in Fig. 2(a). In April 2025, ENSO neutral conditions were observed over the equatorial Pacific Ocean, which persisted until September 2025. Since October 2025, borderline La Niña conditions emerged and persisted through February 2026. Currently, the El Niño–Southern Oscillation (ENSO) neutral conditions are present.

The strong positive subsurface temperature anomalies are observed over most parts of the western equatorial Pacific Ocean below the 20°C isotherm, extending down to the thermocline, with the maximum strength close to the surface along the central Pacific Ocean (Fig.2 b).

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

Figure 2(c) shows the monthly time series of Dipole Mode Index (DMI) for April 2025 to March 2026. Weak positive IOD conditions were observed from April 2025, followed by prevailing neutral IOD conditions over the Indian Ocean till July 2025. The neutral IOD conditions turned into Weak Negative IOD conditions during December 2025. Thereafter the neutral positive IOD conditions were prevailed from January to February 2026. At present, neutral to weak positive IOD conditions are prevailing over the Indian Ocean.

Positive subsurface temperature anomalies (Fig. 2d) were observed in the eastern equatorial Indian Ocean below the 20°C isotherm, extending up to the thermocline. In contrast, negative subsurface temperature anomalies (Fig. 2d) were observed in the western equatorial Indian Ocean below the 20°C isotherm, also extending up to the thermocline.

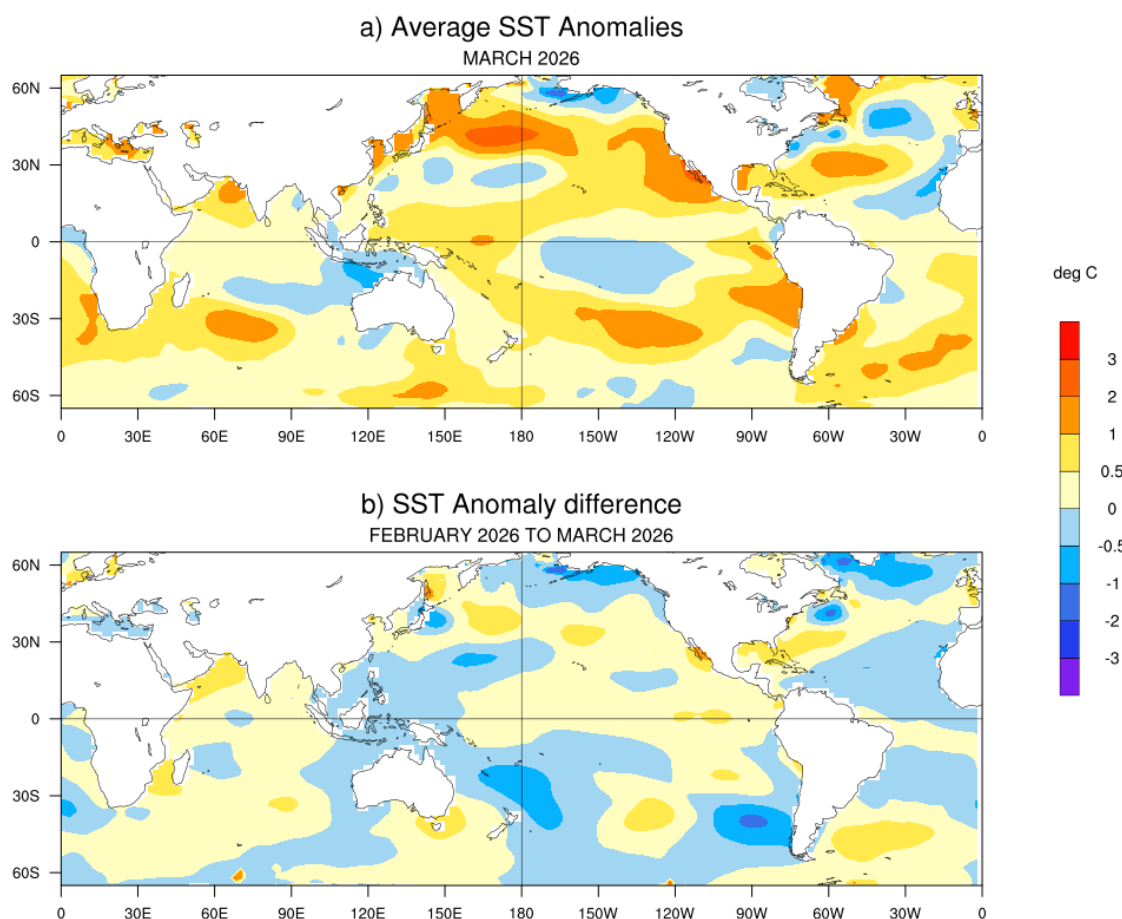
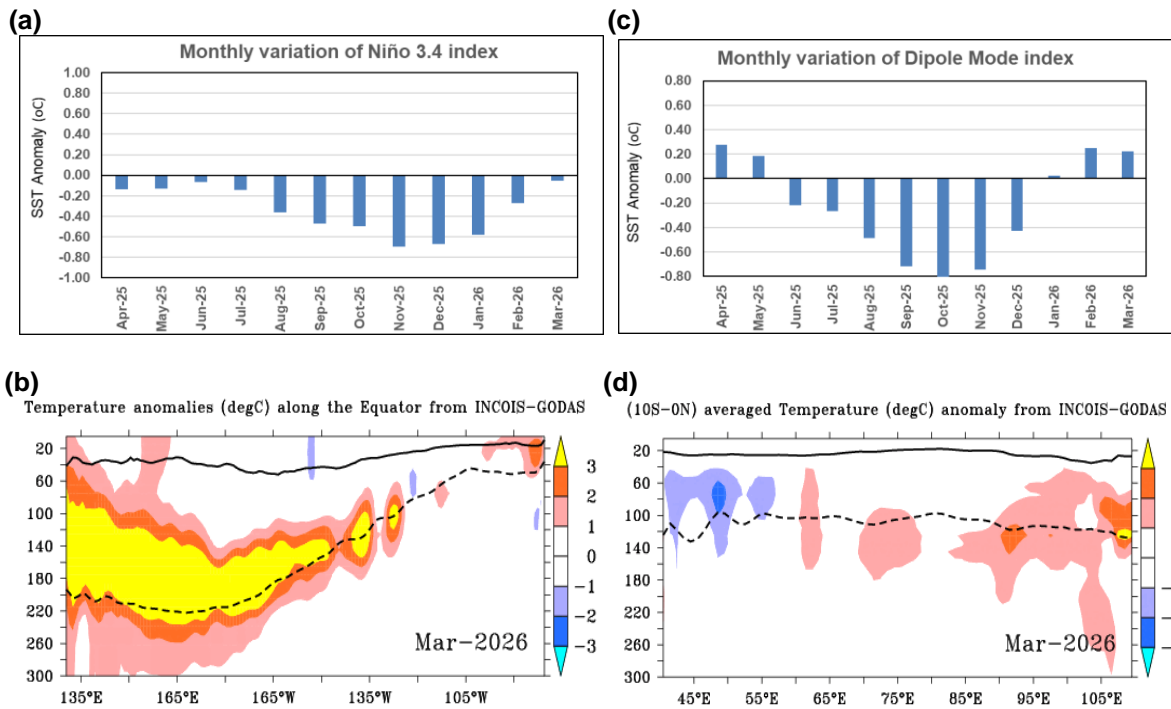


Fig.1: (a) Sea surface temperature (SST) anomalies (degC) during February 2026 and (b) changes in the SST anomalies (degC) from February 2026 to March 2026. SSTs are based on the ERSSTv5 (NCEP-NOAA), and anomalies are computed with respect to 30-year (1991-2020) long term mean.



**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 February 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).

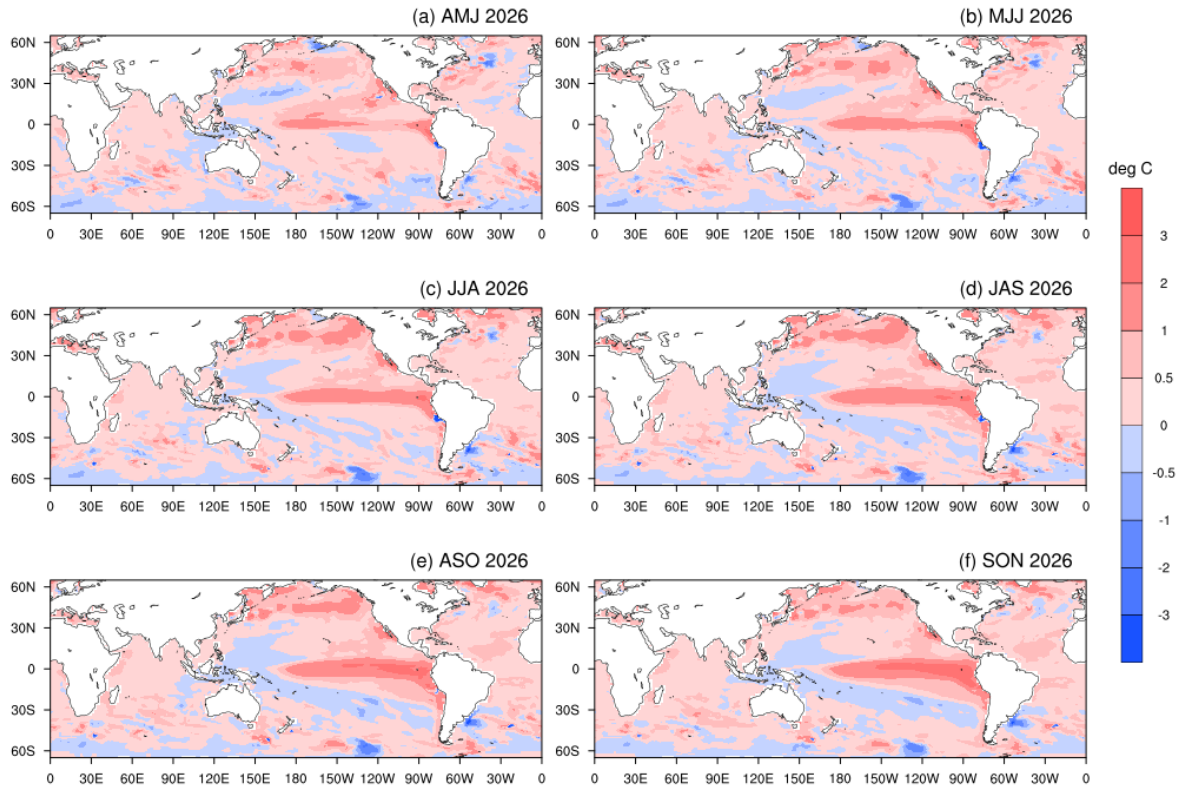
## 2. ENSO and IOD Forecast

The SST forecast was prepared using the high-resolution Monsoon Mission Coupled Forecast System (MMCFS) (AGCM T382L64; ~38 km in the tropics and OGCM 25 km) based on March 2026 initial conditions. The initial conditions for the model runs were obtained from ESSO-INCOIS and ESSO-NCMRWF analyses. Probability density function (PDF) bias correction was applied to the forecasts of the Niño3.4 index (Fig. 4a) and the DMI (Fig. 4b), based on hindcasts for the period 1999-2008, and anomalies were calculated using the 1991-2020 Climatology.

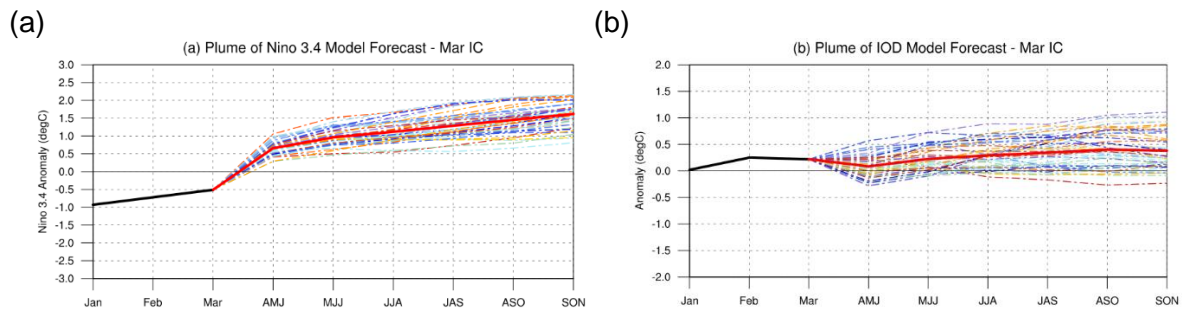
The 3-month season-averaged SST anomaly forecast for the Pacific Ocean (Fig. 3) indicates positive SSTs are likely to prevail over the central equatorial Pacific Ocean during AMJ. Thereafter, MJJ onwards, positive SSTs are likely to strengthen over the central and eastern equatorial Pacific. At present, Weak La Niña-like conditions are transitioning to ENSO-neutral conditions over the equatorial Pacific. Atmospheric circulation features across the tropical Pacific remain consistent with weak La Niña-like conditions. The latest MMCFS plume and probability forecasts (Fig. 4a & 5a) suggests the development of El Niño conditions during the southwest monsoon season. The India Meteorological Department (IMD) continues to closely monitor the evolving ENSO conditions and provides monthly updates that incorporate the latest observations and changes in the Pacific Ocean.

The 3-month season-averaged SST anomaly forecast for the Indian Ocean (Fig. 3) suggests that neutral SST anomalies are prevailing over most parts of the Indian Ocean Indian Ocean during the upcoming seasons. At present, neutral Indian Ocean Dipole (IOD) conditions are present over the Indian Ocean and the latest Climate models forecast indicates that the positive IOD conditions are likely to develop towards the end of the southwest monsoon season (see Figs. 4b and 5b).

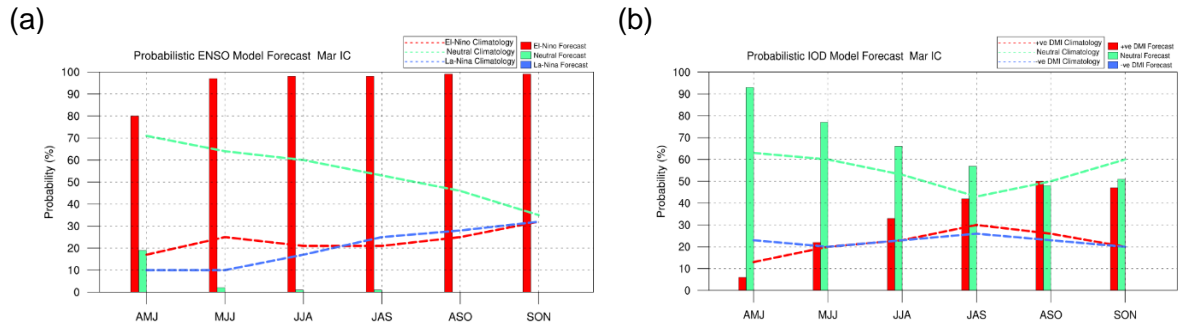
## MMCFS SST Anomaly Forecast :Mar 2026 IC



**Fig.3:** Forecasted Seasonal mean SST anomalies for three-monthly (a) April to Jun (AMJ 2026), (b) May to Jul (MJJ 2026), (c) June to August (JJA 2026), (d) July to September (JAS 2026), (e) July to September (JAS 2026) and (f) September to November (SON 2026) Model bias correction base period: 1999-2008; Climatology base period:1991-2020).



**Fig.4:** Plume of (a) Niño 3.4 SST index, (b) Indian Ocean Dipole (IOD) Mode Index forecasted by high-resolution MMCFS. The forecasts were PDF corrected for bias and variance. The solid green line is the observed SST anomaly (ERSSTv5, NOAA) and the solid red line is the ensemble mean SST anomaly forecast of 45 members (MMCFS). The individual ensemble member forecasts are shown in light dotted lines of different colours.



**Fig.5:** Probability forecast along with climatological probabilities of (a) Niño 3.4 and (b) Indian Ocean Dipole (IOD) Mode Index from high-resolution MMCFS. The data source for Climatology probabilities: NOAA Extended Reconstructed SST V5. Criteria used for Probabilistic ENSO Forecast: La Niña  $\leq -0.5$ , Neutral  $<0.5$  to  $>-0.5$ , El Niño  $\geq 0.5$ . Criteria used for Probabilistic DMI Forecast: negative DMI  $\leq -0.4$ , Neutral  $<0.4$  to  $>-0.4$ , positive DMI  $\geq 0.4$ .