



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

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

JUNE 2026

Highlights

Currently, El Niño conditions are present over the equatorial Pacific Ocean and are expected to strengthen further during the Southwest Monsoon season. The atmosphere has responded to the warming sea surface temperatures, and the coupled ocean–atmosphere system now exhibits characteristics consistent with El Niño conditions. Forecasts from the Monsoon Mission Coupled Forecast System (MMCFS) indicate a further strengthening of El Niño conditions during the Southwest Monsoon season.

At present, neutral Indian Ocean Dipole (IOD) conditions prevail over the Indian Ocean. Forecasts from the Monsoon Mission Coupled Forecast System (MMCFS) indicate that neutral IOD conditions are likely to persist through the Southwest Monsoon season.

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

During May 2026, sea surface temperatures (SSTs) were generally above average across the equatorial central and eastern Pacific Ocean (Fig. 1a). Positive SST anomalies persisted over the far eastern Pacific, the Maritime Continent, and parts of the western Pacific. Above-average SSTs were also observed across the tropical and extratropical regions of both the North and South Pacific Oceans (Fig. 1a). Compared to April 2026, SST anomalies increased across much of the equatorial Pacific and the far western Pacific during May 2026, indicating a general warming of the tropical Pacific Ocean (Fig. 1b).

In the Indian Ocean, SSTs were above average in the western and eastern basin, including regions near the Maritime Continent in May 2026 (Fig. 1a). Above-average SSTs were also observed over the Arabian Sea and the Bay of Bengal. Compared with April 2026, predominantly positive SST anomalies were evident across the eastern Indian Ocean, the northern Arabian Sea, and the northern Bay of Bengal in May 2026 (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 June 2025 to May 2026 is shown in Fig. 2a. ENSO-neutral conditions prevailed over the equatorial Pacific Ocean during June and July 2025. La Niña conditions emerged in August 2025 and persisted through February 2026. ENSO-neutral conditions redeveloped in March 2026 and continued through May 2026. As of June 2026, sea surface temperatures (SSTs) in the central tropical Pacific have exceeded the El Niño threshold, with the latest three-month running mean Niño 3.4 SST anomaly for April–May–June (AMJ) 2026 reaching above the El Niño threshold of $+0.5^{\circ}\text{C}$.

Strong positive subsurface temperature anomalies are observed across much of the western and eastern equatorial Pacific Ocean below the 20°C isotherm, extending down to the thermocline. The strongest positive anomalies are located near the surface in the eastern equatorial Pacific Ocean (Fig. 2b).

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

Figure 2c shows the monthly time series of the Dipole Mode Index (DMI) over the Indian Ocean from June 2025 to May 2026. Neutral Indian Ocean Dipole (IOD) conditions prevailed during June and July 2025. Negative IOD conditions developed in August 2025 and persisted through December 2025. Thereafter, neutral IOD conditions re-emerged in January 2026 and continued through May 2026. At present, neutral IOD conditions prevail over the Indian Ocean.

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

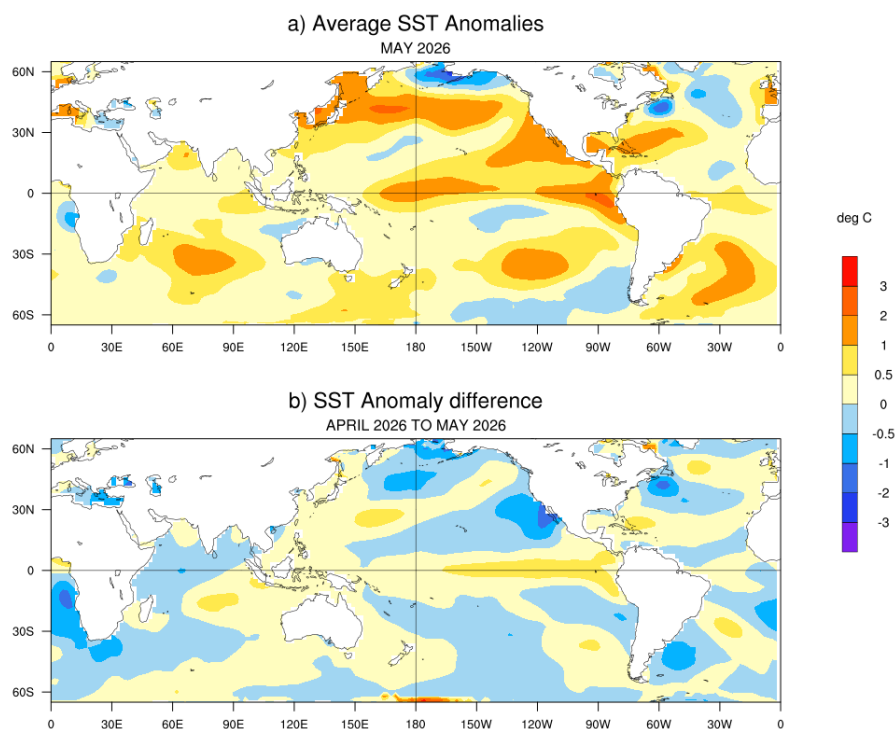


Fig.1: (a) Sea surface temperature (SST) anomalies (degC) during May 2026 and (b) changes in the SST anomalies (degC) from April 2026 to May 2026. SSTs are based on the ERSSTv5 (NCEP-NOAA), and anomalies are computed with respect to 30-year (1991-2020) long term mean.

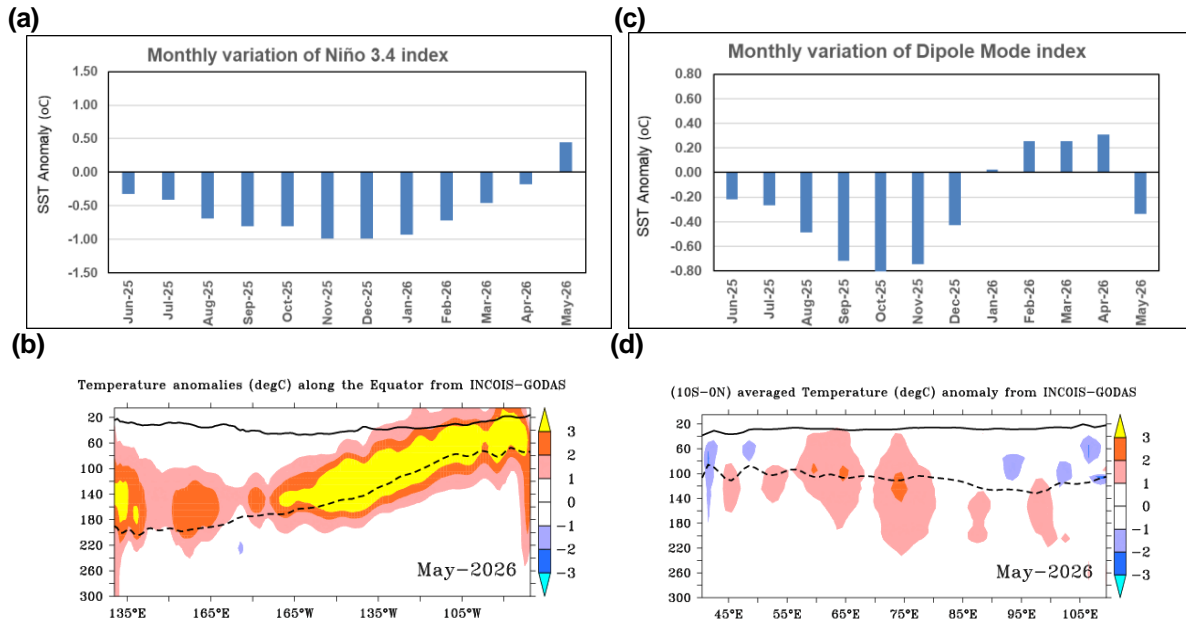


Fig.2: (a) Monthly variation of Niño 3.4 SST index for the last 12 months and (b) Depth-longitude section of sub-surface temperature anomalies in the equatorial (5°S-5°N) Pacific Ocean for the month of May 2026. (c) Same as (a) but for the Dipole Mode Index (DMI). (d) Same as (b) but for the tropical 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 May 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) and the Dipole Mode Index (DMI; Fig. 4b) using hindcasts for the period 1999–2008. Forecast anomalies were computed relative to the 1991–2020 climatological mean.

The forecast of three-month seasonally averaged SST anomalies over the Pacific Ocean (Fig. 3) indicates that positive SST anomalies are likely to prevail over the central equatorial Pacific Ocean during June–August (JJA) 2026. Thereafter, from July–September (JAS) 2026 onwards, positive SST anomalies are expected to strengthen and expand across the central and eastern equatorial Pacific Ocean. The latest MMCFS plume and probability forecasts (Figs. 4a and 5a) suggest a moderate to strong El Niño conditions during the southwest monsoon season. The India Meteorological Department (IMD) will continue to closely monitor the evolving ENSO conditions and provide monthly updates based on 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 positive SST anomalies are prevailing over most parts of the Indian Ocean during the upcoming seasons. At present, neutral Indian Ocean Dipole (IOD) conditions are present over the Indian Ocean and the latest MMCFS forecast indicates that the neutral IOD conditions are likely to continue till the end of the southwest monsoon season (see Figs. 4b and 5b).

MMCFS SST Anomaly Forecast :May 2026 IC

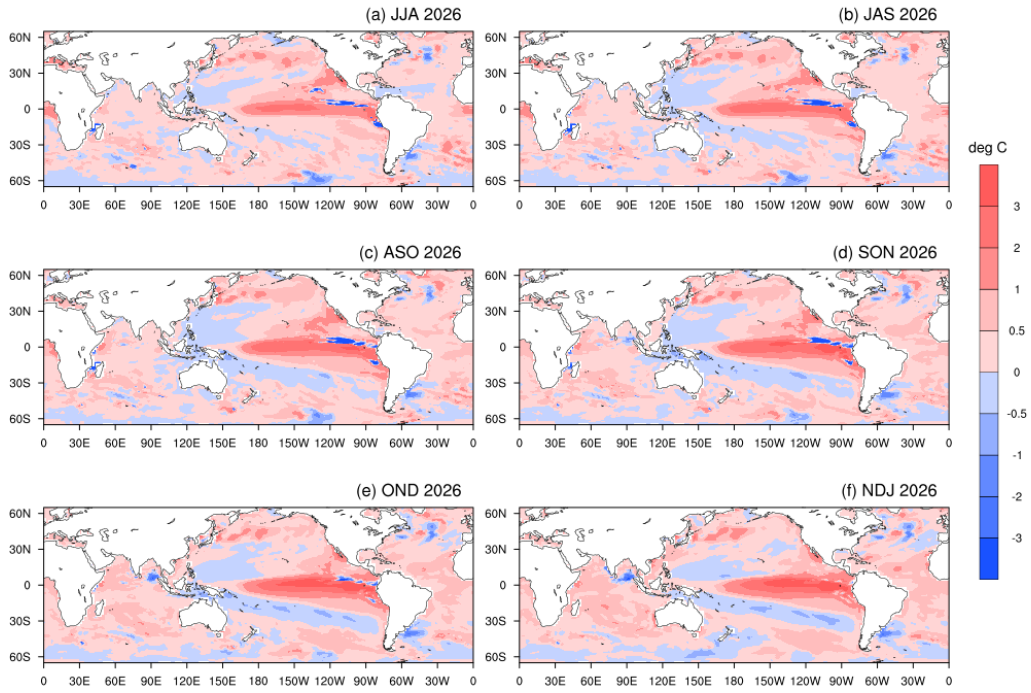


Fig.3: Forecasted Seasonal mean SST anomalies for three-monthly (a) June to August (JJA 2026), (b) July to September (JAS 2026), (c) July to September (JAS 2026) (d) September to November (SON 2026), (e) October to December (OND 2026) and (f) November to January (NDJ 2026) Model bias correction base period: 1999-2008; Climatology base period:1991-2020).

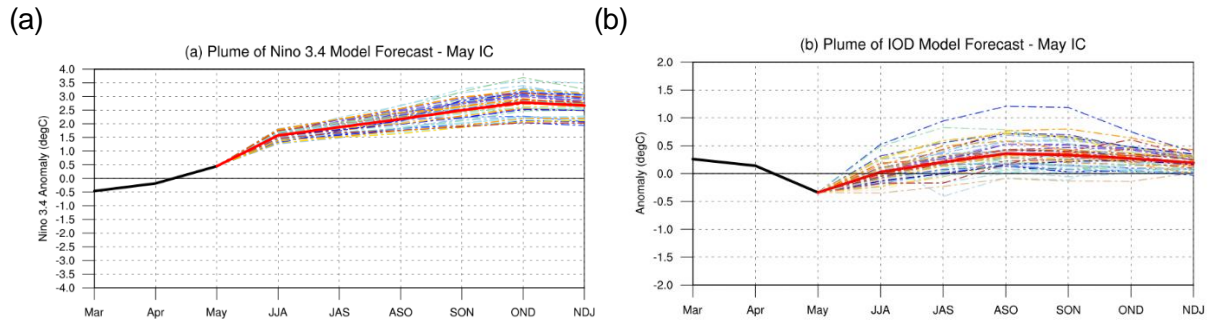


Fig.4: Plume of (a) Niño 3.4 SST index, (b) Indian Ocean Dipole (IOD) Mode Index forecasted by high-resolution MMCFS. The forecasts were PDF corrected for bias and variance. The solid green line is the observed SST anomaly (ERSSTv5, NOAA) and the solid red line is the ensemble mean SST anomaly forecast of 50 members (MMCFS). The individual ensemble member forecasts are shown in light dotted lines of different colours.

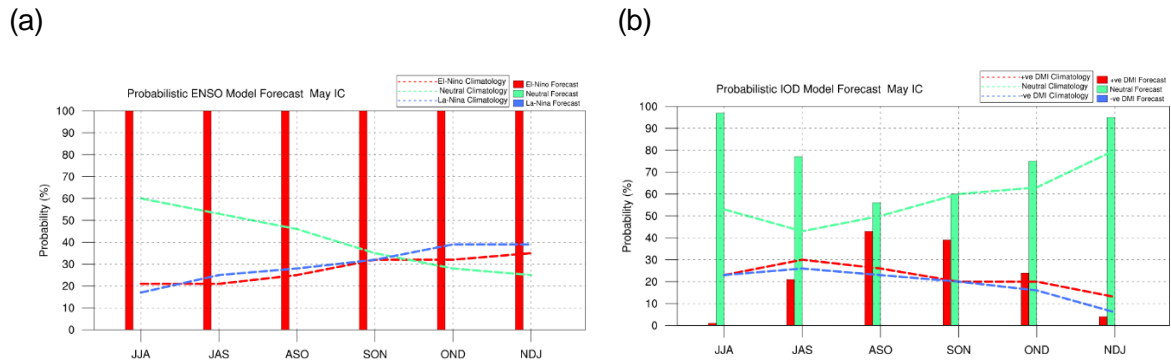


Fig.5: Probability forecast along with climatological probabilities of (a) Niño 3.4 and (b) Indian Ocean Dipole (IOD) Mode Index from high-resolution MMCFS. The data source for Climatology probabilities: NOAA Extended Reconstructed SST V5. Criteria used for Probabilistic ENSO Forecast: La Niña ≤ -0.5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