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## Current condition and forecasts of ENSO and IOD for OND 2021

Issued on 3<sup>rd</sup> October 2021 by Seasonal forecasting Division of the Department of Meteorology, Sri Lanka.

### 1. El Niño and La Niña update

The El Niño–Southern Oscillation (ENSO) is currently neutral. However, according to the recent model outlooks, **La Niña** is favoured during the Northern Hemisphere fall and winter 2021-22. Accordingly, the transition from ENSO-neutral to **La Niña** is favored in next couple of months, with a 70-80% chance during the Northern Hemisphere winter 2021-22. (source-CPC-USA) (Fig.3a).

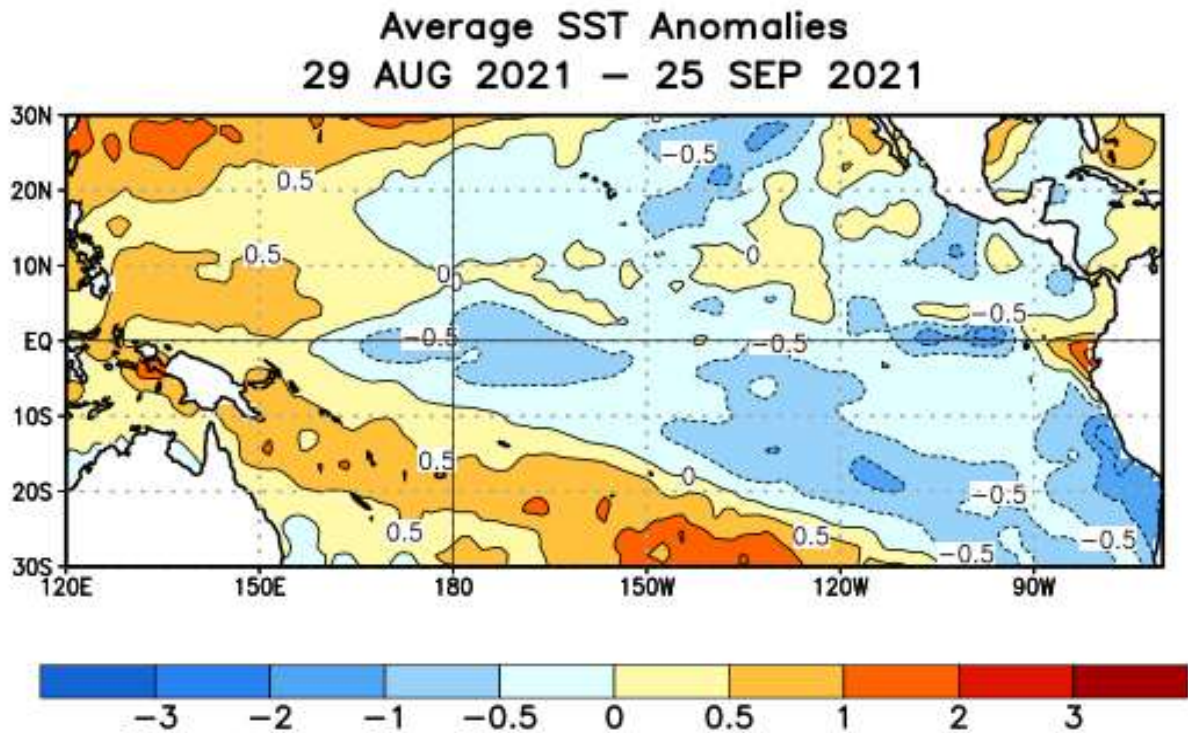


Fig 1: Observed Average sea surface temperature (SST) anomalies (°C)

## Weekly SST Anomalies (DEG C)

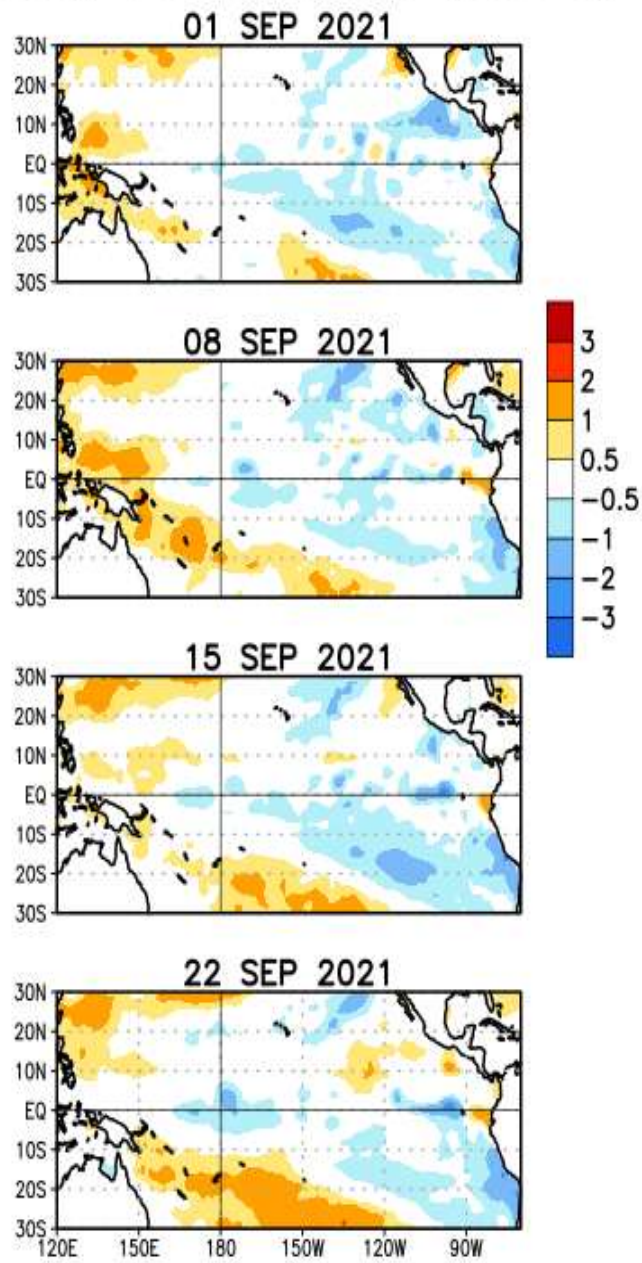


Fig 2: Weekly Observed Average sea surface temperature (SST) anomalies (°C)

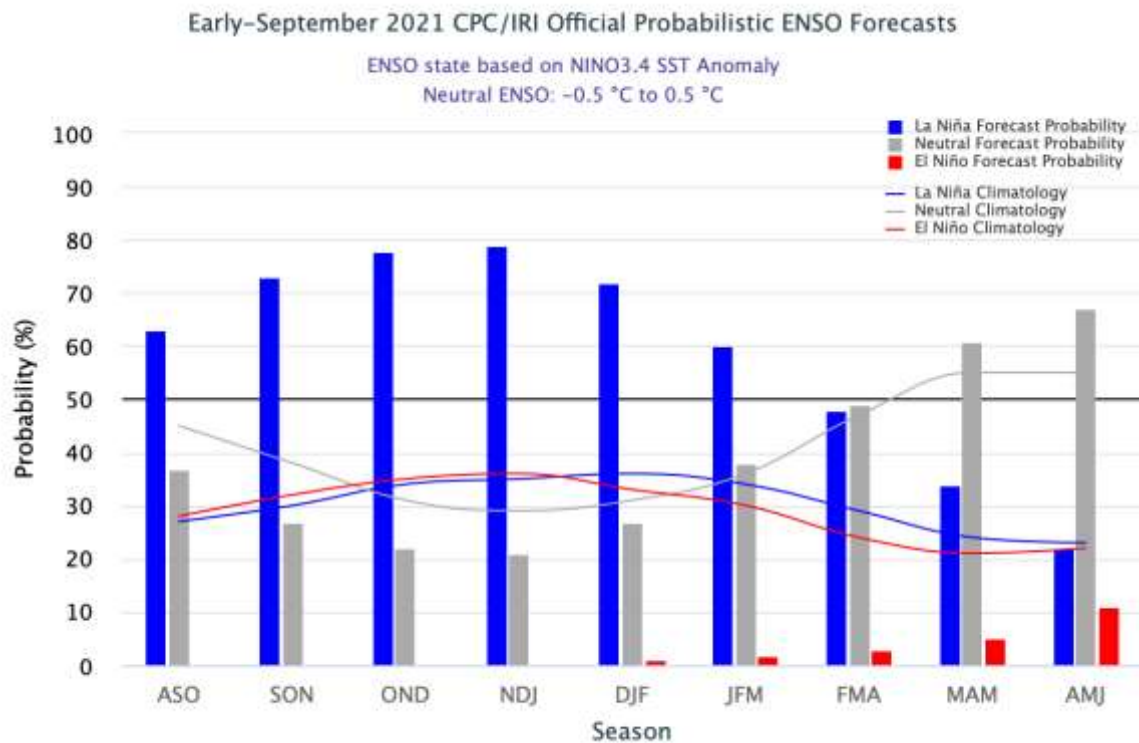


Fig 3a: ENSO forecast from Climate Prediction Center (CPC)/ IRI Forecast

### 1.1.1 Impacts of La-Nina on monthly rainfall anomaly during October, November and December

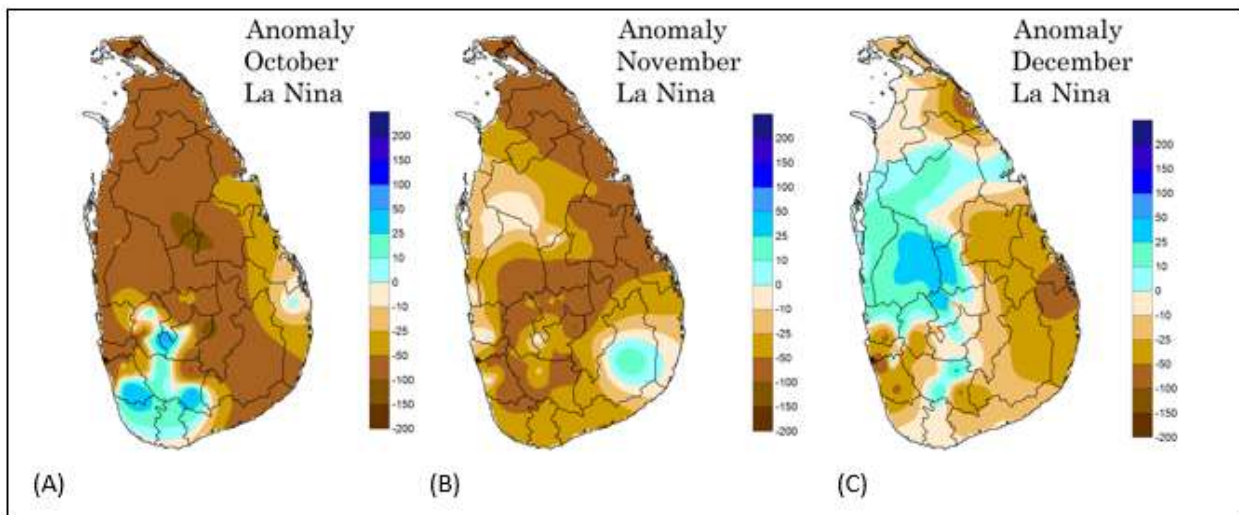


Fig 3b: Monthly Rainfall Anomaly maps of the months of October (A), November (B) and December (C) during La-Nina years (Hapuarachchi et al 2016)

Previous studies conducted by the Department of Meteorology, identified that, during La-Nina years, it is evident that below normal rainfalls over most parts of the country except in some areas in Kaluthara, Galle, Mathara, Hambantota, Rathnapura, Kegalle and Nuwara Eliya districts where above normal rainfall were observed during the month of October (Fig 3b-A). Below normal rainfalls were observed over most parts of the country except some parts of Monaragala District

where above normal rainfall was observed, during the month of November (Fig 3b-B). During the month of December, below normal rainfall were observed in some parts of Eastern, Uva, Southern and western provinces and in Mulathive and Pollonnaruwa districts and above normal rainfall in remaining areas of the country (Fig 3b-C).

## 2. The Indian Ocean Dipole (IOD) update

Sea surface temperatures (SSTs) in the Indian Ocean were warmer than average across much of the eastern half of the basin. However, the negative Indian Ocean Dipole (IOD) event has weakened, with index values falling just shy of the negative IOD threshold (i.e.  $-0.4\text{ }^{\circ}\text{C}$ ) for most of the past month and a half. The weak negative IOD pattern could persist through October according to the most of international climate modals and all models indicate a return to a neutral IOD pattern by December 2021. (Source-Bureau of Meteorology, Australia).

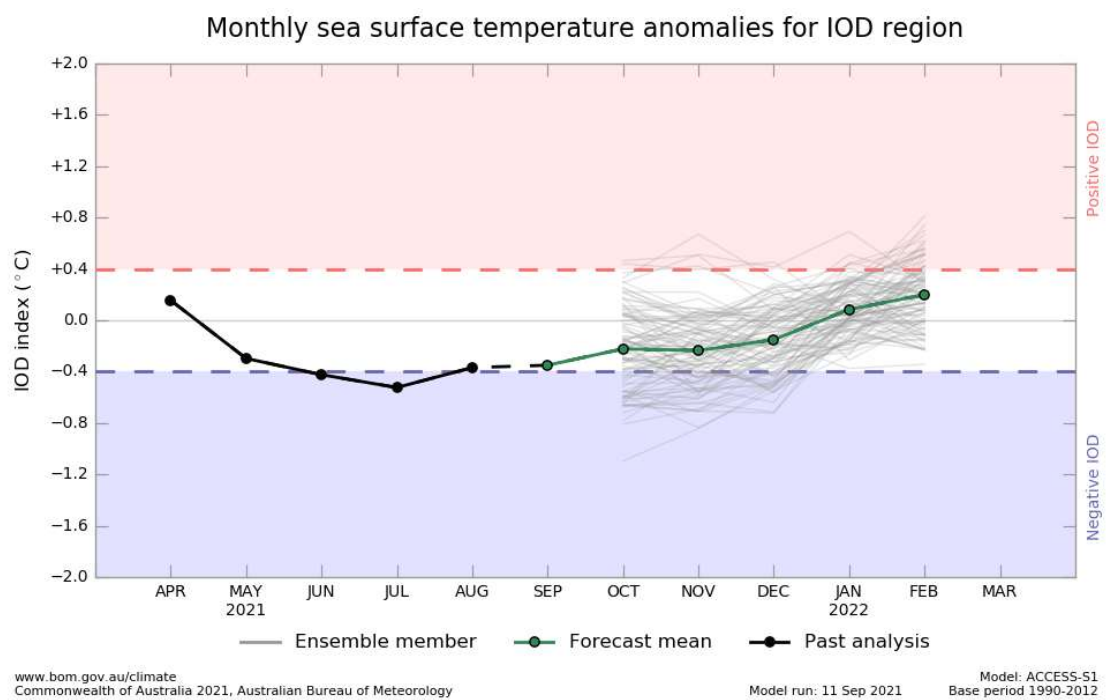


Figure 4a: IOD forecast from Australian Bureau of Meteorology