



Issued on 20.11.2025

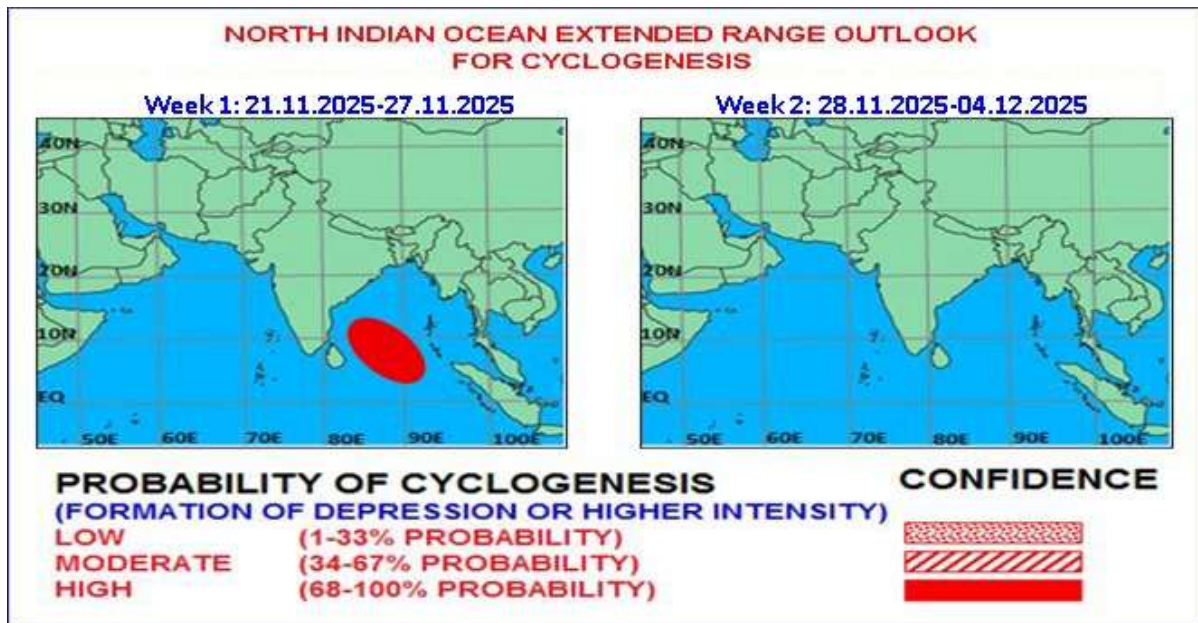


Fig. 1: Graphical Cyclogenesis over the north Indian Ocean during the next two weeks

I. Environmental features:

The guidance from various models indicates that the Madden Julian Oscillation (MJO) index is presently in phase 6 with amplitude more than 1 in the phase diagram. Most of the models suggest that the MJO index is likely to remain in phase 6 with a slow eastward propagation and increasing amplitude during the first week. Thereafter, it is likely to enter into phase 7 with amplitude remaining more than 1 during week 2. Thus, the MJO index which show amplitude is very strong with amplitude more than 1 in week 1 and also in week 2 is not favourable for enhancement of convective activities over the North Indian Ocean (NIO) during the entire forecast period. However, The tropical monitoring guidance from the NCICS indicates westerly wind anomaly (5-7 mps) over the southern parts of the North Indian Ocean (NIO) including south Bay of Bengal (BoB) and southeast Arabian Sea (AS) alongwith prevalence of MJO, Equatorial Rossby wave (ERW), low frequency background wave (LW) and easterly wind anomaly (3-5 mps) during first half of week 1 during 20th-24th November. These features indicate a favourable environment for cyclogenesis (development of depression) over southeast BoB during first half of week 1. During later part of week 1, there is prevalence of westerly wind anomaly (3-7 mps) over entire BoB and major parts of south & adjoining central AS alongwith MJO, ERW, LW over the same region & KW over northern parts of BoB. There is likely prevalence of weak easterly wind anomaly (1-3 mps) over extreme North BoB & adjoining Bangladesh & Odisha during that period. Thus, during later part of week 1, the equatorial waves may support enhancement of convective activity over the westcentral and adjoining northwestern parts of BoB. Thereafter, during week 2, there are no anomalous easterly

winds over the northern parts of BoB. However, westerly wind anomaly (3-7mps) alongwith ERW, MJO and LW are very likely to prevail over south BoB & southeast AS. Thus, equatorial waves may support enhancement of convective activity over the south & adjoining central BoB and southeast & eastcentral Arabian Sea region during week 2.

The latest weekly sea surface temperature SST departure over NINO 3.4 region is -0.84°C (9th November update), indicating a weak La Niña condition. Negative IOD conditions (IOD index with a weekly value of -1.57°C on 9th November) are likely to continue during November - December 2025. All these provide a favourable environment for convective activity for genesis over the BoB.

II. Model guidance:

(a) Guidance for Extended Range models:

Mean wind field at 850 hPa of IMD ERF (CFS V-2) model is indicating prevalence of northeasterly/easterly winds over the north & westcentral AS and north & westcentral-southwest BoB during week 1. There is a prominent and strong cyclonic circulation over westcentral and adjoining southwest BoB with an east-west trough from the centre of the cyclonic circulation extending upto westcentral AS during week 1. The cyclonic circulation is vertically extending up to mid-tropospheric levels which indicates the likely formation of an intense low pressure system over the central part of the south BoB and adjoining central BoB during the first week. The respective anomaly wind field also suggests anomalous westerly flow over south & central AS, as well as over south BoB. There is an obvious prominent cyclonic circulation over central parts of south BoB and adjoining central BoB during week 1. This feature confirms the cyclogenesis during week 1. There is also a feeble trough from the cyclonic circulation extending up to northeast AS. The mean wind forecasts at 850 hPa is mainly northeasterly/northerly over entire AS, and over north & western BoB in the second week. There is a feeble cyclonic circulation over central BoB during week 2. Similar to the first week, the anomaly wind field of week 2 also indicates westerly wind over south AS & BoB and adjoining areas of central AS & BoB. There is an east-west oriented trough along 18°N latitude with an embedded cyclonic circulation over central India.

The mean wind field at 850 hPa of NCMRWF extended range model is indicating strong easterly winds over central & adjoining south BoB extending upto eastcentral & northeast AS during week 1. There is an east-west shear zone along 7°N . The associated anomaly field is indicating predominant easterly winds over entire BoB and a southeast-northwest oriented trough from southeast BoB extending upto northeast AS with strong westerly wind anomaly over south AS during week 1. However, during week 2, the mean wind field is indicating cyclonic circulation over central parts of south BoB and associated anomaly field is indicating prominent cyclonic circulation over westcentral & adjoining southwest BoB. These features suggest formation of low pressure system over central parts of south BoB during first half of week 2, indicating delay in genesis compared to IMD CFS V2.

IMD CFS V-2 model is indicating 60-70% probability of cyclogenesis over central parts of south BoB during week 1. Model is also indicating another prominent zone of cyclogenesis (60-70%) over southeast & adjoining southwest AS during week 1. During week 2, no probable zone of cyclogenesis is indicated over the NIO region. ECMWF ensemble forecast indicates a prominent zone i.e. moderate to high probability of cyclogenesis (70-80%) over central parts of south BoB during 24th to 28th November with west-northwestwards movement towards North tamil Nadu and South Andhra Pradesh coasts. The sub-seasonal range

forecast of ECMWF indicates 20–30% probability of cyclogenesis over the southwest BoB during 24th November to 1st December, 2025.

(b) Guidance from Medium-Range NWP models:

The guidance from various deterministic models indicate development of low pressure area over southeast BoB & adjoining south Andaman Sea during 22nd to 25th (GFS group around 22nd, ECMWF around 24th and NCUM group around 25th November). There is good consensus among various models with respect to further intensification of the system into a depression over central parts of south BoB. However, there is variation among various models wrt time of genesis, with GFS group & ECMWF indicating development of depression around 24th and NCUM group around 27th/28th November. Models are also indicating further intensification and west-northwestwards movement of the system towards westcentral BoB. ECAIFS model is indicating genesis over southwest BoB off South Sri Lanka coast around 26th November with initial northwards movement towards westcentral BoB till 30th November and north-northeastwards movement towards northeast BoB off South Bangladesh-Myanmar coasts till 3rd December. The guidance from ECAIFS is totally off the guidance from other models.

III. Inference:

Considering various large-scale environmental features, climatology and model guidance, it is inferred that,

- ❖ The Low-Pressure area over southeast Arabian Sea & adjoining Lakshadweep area is likely to move slowly west-northwestwards during next 24 hours.
- ❖ Under the influence of an upper air cyclonic circulation over central parts of Strait of Malacca, a low pressure area is likely to form over southeast Bay of Bengal around 22nd November, 2025. Thereafter, it is very likely to move west-northwestwards and intensify into depression over central parts of south Bay of Bengal around 24th November 2025. Continuing to move west-northwestwards, it is very likely to intensify further over southwest Bay of Bengal during subsequent 48 hours.

IV. Verification of forecast issued during the previous two weeks:

An extended range outlook issued on 06th November for week 2 (14.11.2025-20.11.2025) indicated formation of upper air cyclonic circulation / low pressure area over South Andaman Sea towards the end of week 2 (around 19th November).

Extended range outlook issued on 13th November for week 1 (14.11.2025-20.11.2025) indicated the existing upper air cyclonic circulation over southeast Bay of Bengal will move nearly westwards across the southwest Bay of Bengal towards south Sri Lanka coast and reach over southeast Arabian Sea during the subsequent 2 days.

Another upper air cyclonic circulation is likely to emerge over the South Andaman Sea towards the end of week 1 (around 19th November).

Actually, the existing upper air cyclonic circulation over southeast Bay of Bengal is likely to move nearly westwards across the southwest Bay of Bengal towards south Sri Lanka coast till 14th November 2025 and under its influence a Low-Pressure area has formed over Southwest Bay of

Bengal off Sri Lanka coast on 15th November 2025 and persisted over Southwest Bay of Bengal & neighborhood till 19th November and become less marked on 20th November, 2025.

Another upper air cyclonic circulation formed over Southeast Arabian Sea and adjoining South Kerala coast on 15th November 2025 and become less marked on 17th November, 2025.

Another Low-Pressure area formed over Comorin area and neighborhood on 19th November and persisted on 20th November 2025.

The NCMRWF-IMD satellite gauge merged data plot of 24-hour accumulated rainfall from 12th to 18th November 2025 is presented in **Fig.2**.

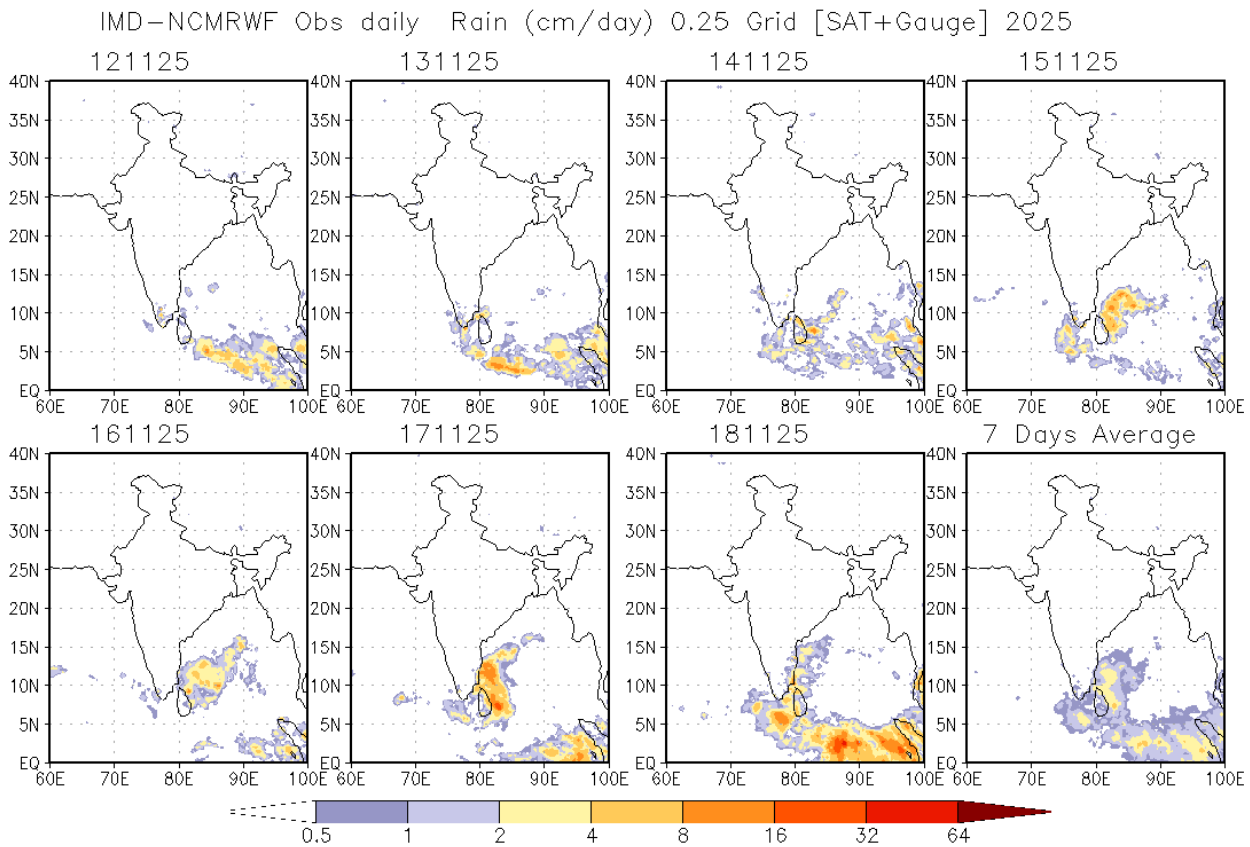


Fig. 2: NCMRWF-IMD satellite gauge merged data plots of 24-hour accumulated rainfall from 12th to 18th November 2025

Legends: MJO: Madden Julian Oscillation, ERW: Equatorial Rossby Waves, KW: Kelvin Waves, NCICS: North Carolina Institute for Climate Studies (for Equatorial waves Forecast), IMD GFS: India Meteorological Department Global Forecast System, NCUM: National Centre for Medium-Range Weather Forecasting Centre (NCMRWF) Unified Model, ECMWF: European Centre for Medium-Range Weather Forecasting, EC-AIFS: ECMWF Artificial Intelligence Forecasting System, ECMM: ECMWF-Ensemble System Bias Corrected, BFS: Bharat Forecast System, GPP: Genesis Potential Parameter, NCEP GFS/GEFS/CFS: National Centre for Environment Prediction GFS/GEFSv12/CFSv2, CPC: Climate Prediction Center (for MJO update), IMD-GEFS: GFS ensemble forecast system of IMD, NEPS: NCUM ensemble prediction system, CNCUM: Coupled NCUM, CPC: Climate Prediction Centre, NWS: National Weather Service, INCOIS: Indian National Centre for Ocean Information Services.

Next update: 27.11.2025