India Meteorological Department
Ministry of Earth Sciences
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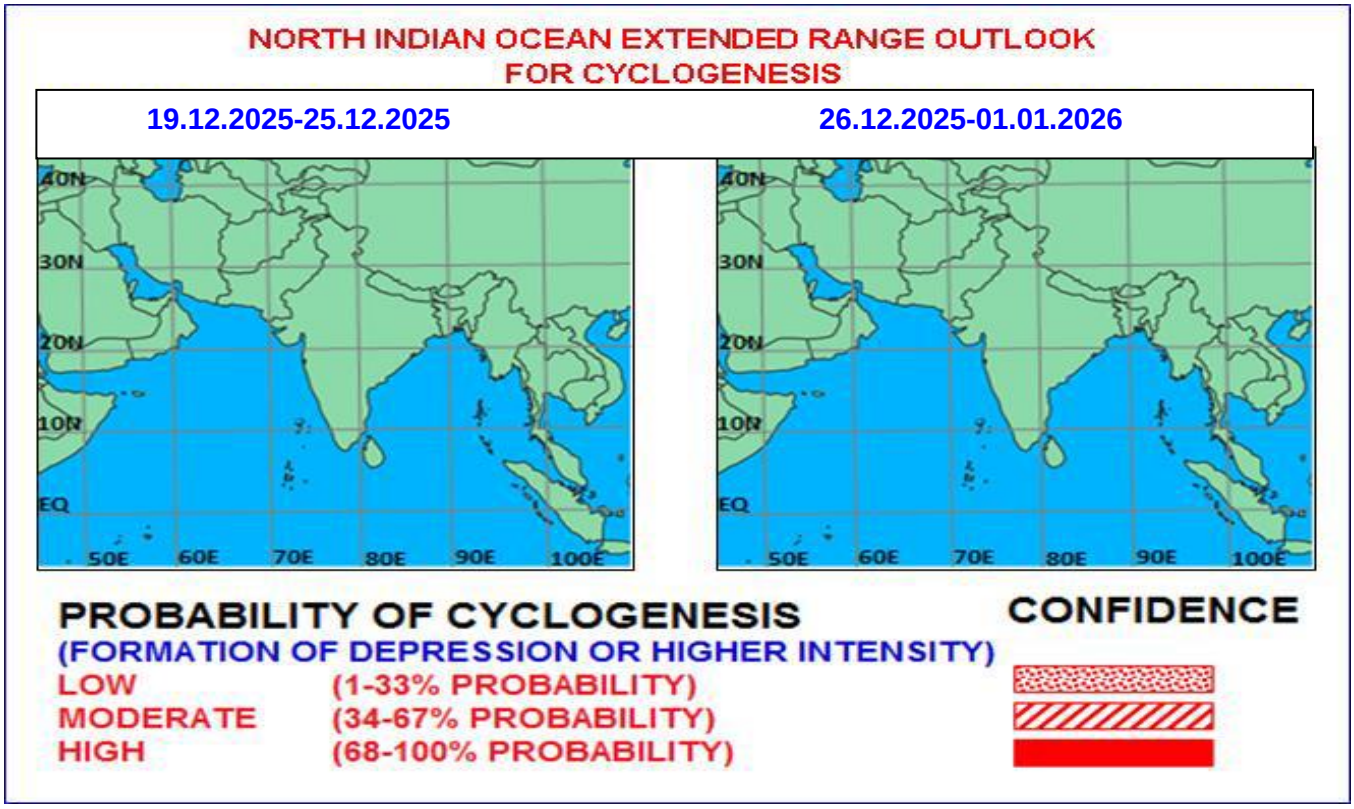

Fig. 1: Graphical Cyclogenesis over the north Indian Ocean during the next two weeks

I. Environmental features:

The guidance from ECMM models indicates that the Madden Julian Oscillation (MJO) index is presently in phase 8 with amplitude less than 1. It is very likely to continue in same phase with amplitude remaining less than 1 during first half of week 1. Thereafter, it is likely to move across phases 7, 6 and 5 with gradually decreasing amplitude during remaining part of the forecast period. Thus, MJO is not likely to contribute towards enhancement of convective activity over the north Indian Ocean (NIO) region including the Bay of Bengal (BoB) and the Arabian Sea (AS).

The guidance from NCICS model indicates easterly wind anomaly (5-7 mps) over south Andaman Sea and south Bay of Bengal (BoB) during beginning of week 1. During the same period westerly wind anomaly (1-3 mps) is indicated over Equatorial Indian Ocean (EIO) and adjoining southwest BoB, Comorin area and adjoining southeast AS along with Low frequency (LW) background wave. Thereafter, during later half of week 1, westerly wind anomaly (1-3 mps) is seen over same region along with LW. During this period an Equatorial Rossby Wave (ERW) is also seen over south Andaman Sea. Also, there is prevalence of westerly wind anomaly (1-3 mps) over central India and easterly wind anomaly (1-3mps) over north India during later half of week 1. During week 2, westerly wind anomaly (1-3 mps) along with LW over south BoB & adjoining EIO is seen. Hence, Equatorial waves are likely to support the development of cyclonic circulation embedded in the easterly wave over BoB during beginning of week 1 and also development of some cyclonic circulation/trough over northern parts of India during later part of week 1. Further the guidance from NCICS model indicates weakening of easterly flow is indicated over south BoB region.

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 easterly/northeasterly winds over the entire BoB and AS during week 1. The model is also indicating an anticyclone over northwest India and adjoining norrtheast Arabian Sea and a cyclonic circulation over South China Sea during week 1. Thereafter during week 2, the model is indicating an east-west trough over South BoB and adjoining EIO. Corresponding anomaly field is indicating an anomalous northeast-southwest oriented trough extending from north BoB to southwest BoB, anomalous anticyclone over northwest India and anomalous cyclonic circulation over South China Sea during week1. During week 2, anomalous westerly and southerly flow is indicated. The model is also indicating below average rainfall activity over south BoB, South Peninsular India and Sri Lanka during both the weeks. However, above average rainfall activity is indicated over north India (Jammu & Kashmir region) during week 1 and over south Andaman Sea and adjoining southeast BoB during week 2. NCMRWF Extended Range Prediction (ERP) model is also indicating similar features. ECMM is not indicating any cyclogenesis over the region during next 2 weeks.

IMD CFS V-2 model is indicating, no probable area of cyclogenesis over NIO during week 1 and low to moderate probability of cyclogenesis (40-50 %) over the south Andaman Sea during week 2.

(b) Guidance from Medium-Range NWP models:

Most of the models are indicating another spell of easterly wave during week 2, with trough reaching upto 15^0N around 90^0E on 22nd December. It is indicated to impact South Peninsular India during 25th to 28th December.

III. Inference:

Considering various large-scale environmental features, climatology and model guidance, it is inferred that there is no probability of cyclogenesis during the entire forecast period. However, an active easterly wave is likely to prevail over south Bay of Bengal during the later part of week 1 (during 22nd – 25th December).

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

Forecast issued:

The extended range outlook issued on 04th December for week 2 (12.12.2025-18.12.2025) indicated, low probability of the emergence of an upper air cyclonic circulation over the South Bay of Bengal during the second half of week 2. The extended range outlook issued on 11th December for week 1(12.12.2025-18.12.2025) indicated an active easterly wave to prevail over south Bay of Bengal during the second half of week 1 with likelihood of development of an upper air cyclonic circulation over central parts of south Bay of Bengal around 15th December with nearly westward movement till 17th December.

Realized weather:

No cyclogenesis occurred over the region during last week. An upper air cyclonic circulation lay oversoutheast Arabian Sea adjoining Lakshadweep on 14th December which became less marked on 15th December 2025. Further, as predicted an active easterly wave passed across South BoB and reached close to Tamil Nadu coast by 16th December. It caused widespread rainfall activity over southern peninsular India and Sri Lanka during 16th- 18th December.

Thus, no cyclogenesis was well predicted two weeks in advance. An active easterly wave prevailed over south Bay of Bengal during the second half of week 1 and also likely formation of upper air cyclonic circulation over south Bay of Bengal around 15th December was captured well but with some spatio variations.

NCMRWF-IMD satellite gauge merged data plots of 24-hour accumulated rainfall from 11th-17th December 2025 is presented in **Fig. 2**.

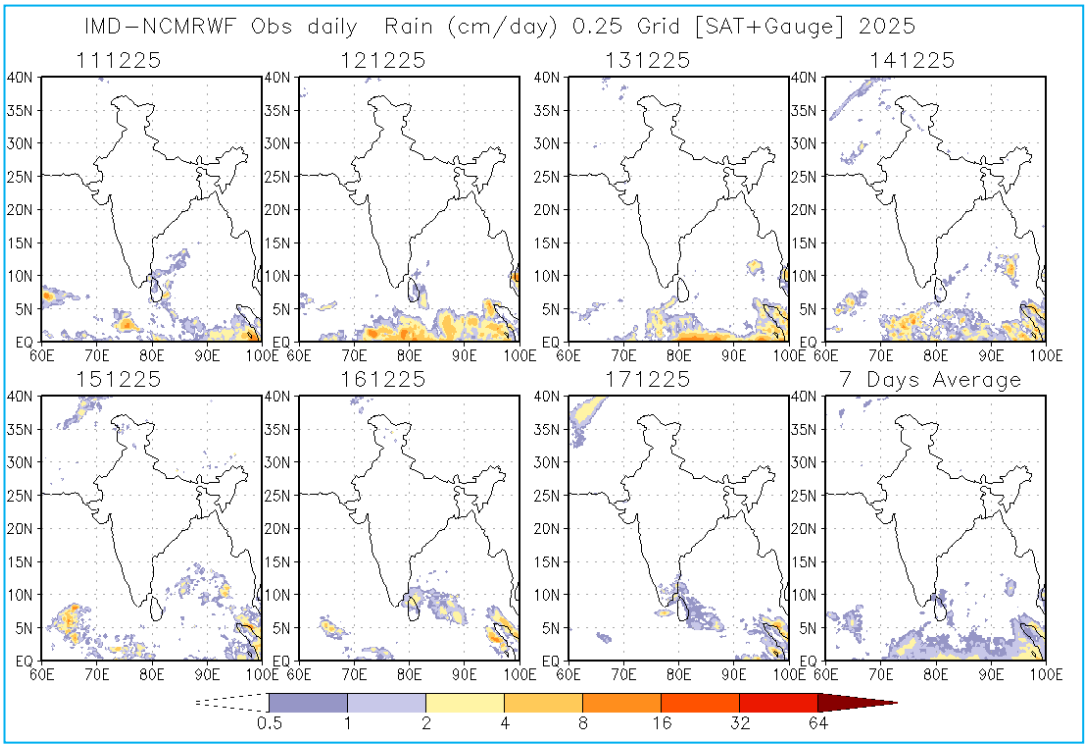

Fig. 2: NCMRWF-IMD satellite gauge merged data plots of 24-hour accumulated rainfall from 11th-16th December 2025

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: 25.12.2025