



Issued on 27.02.2025

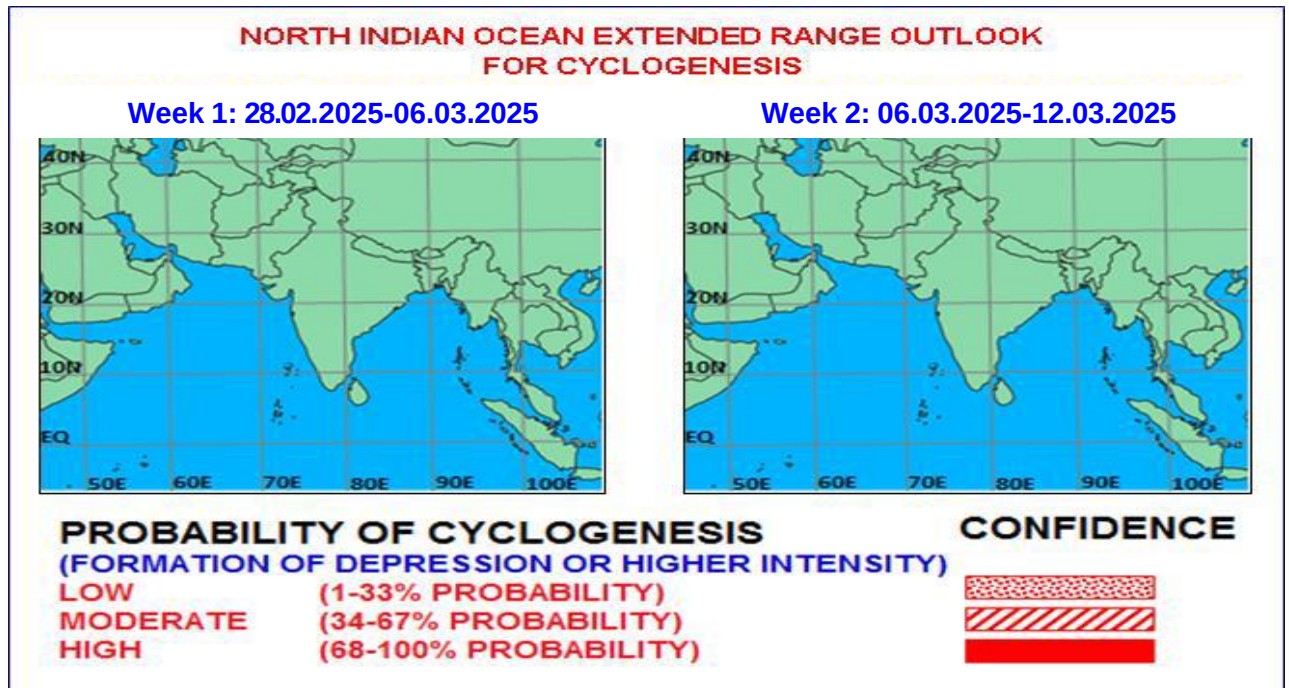


Fig. 1: Graphical Cyclogenesis over the north Indian Ocean during next two weeks

I. Environmental features:

As per ECMM guidance, Madden Julian Oscillation (MJO) is currently in phase 1 with amplitude more than 1. It would continue in same phase during week 1. Thereafter, it would very slowly move to phase 2 and continue in same phase with amplitude remaining close to 1 during week 1. MJO phase and amplitude are likely to support enhancement of convective activity over the Arabian Sea (AS).

The NCICS CFS model forecast indicates prevalence of easterly wind anomaly (3-5 mps) over south Bay of Bengal (BoB) and south AS during week 1. The model is also indicating prevalence of Equatorial Rossby Waves (ERW) alongwith enhanced westerly winds (5-7 mps) over the North Equatorial Indian Ocean (NEIO) and adjoining southeast AS during week 1. During week 2, the model is not indicating prevalence of any significant equatorial wave over the entire region.

The MJO and equatorial waves are likely to contribute towards enhanced convective activity over the EIO and adjoining southeast AS & southwest BoB during week 1.

II. Model Guidance:

Various deterministic models including IMD GFS, NCEP GFS, NEPS are indicating an upper air cyclonic circulation over NEIO and adjoining areas of Southwest BoB on 27th with west-northwestwards movement during the first half of week 1. IMD extended range forecast model (IMD CFSV2) based 850 hPa wind anomaly field is indicating a trough over the NEIO and adjoining Comorin & Maldives Area. The model is also indicating enhanced rainfall activity over the NEIO & adjoining Sri Lanka, Comorin & Maldives areas during week 1. Further low (30-40%) probability of cyclogenesis is indicated over the same region during week 1. Similarly, NCMRWF model CNCUM is indicating a trough and enhanced rainfall activity over the NEIO and adjoining Comorin & Maldives areas and parts of Sri Lanka during week 1. There is good consensus among

various models wrt development of a cyclonic circulation over the EIO and adjoining southwest BoB and Comorin/Maldives Areas with enhanced rainfall activity over these regions during first half of week 1.

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, ECMM: ECMWF-Ensemble System Bias Corrected, GPP: Genesis Potential Parameter, NCEP GFS/GEFS/CFS: National Centre for Environment Prediction GFS/GEFSv12/CFSv2, 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.

III. Inference:

Considering various environmental conditions and model guidance it is inferred that there is likelihood of formation of an upper air cyclonic circulation over North Equatorial Indian Ocean and adjoining southwest Bay of Bengal in the beginning of week 1 with westwards movement across South Sri Lanka and Maldives/Comorin areas during the first half of week 1. There is no likelihood of its intensification into a depression.

IV. Verification of forecast issued during last two weeks:

The forecast issued on 13th February for week 2 (21st February-27th February) indicated no probability of cyclogenesis during the week. The forecast issued on 20th February for week 1 (21st February-27th February) indicated no probability of cyclogenesis during the week. No cyclogenesis occurred during the period.

NCMRWF-IMD satellite gauge merged data plots of realized 24 hours accumulated rainfall from, 19th February to 26th February, 2025 are presented in **Fig. 2**.

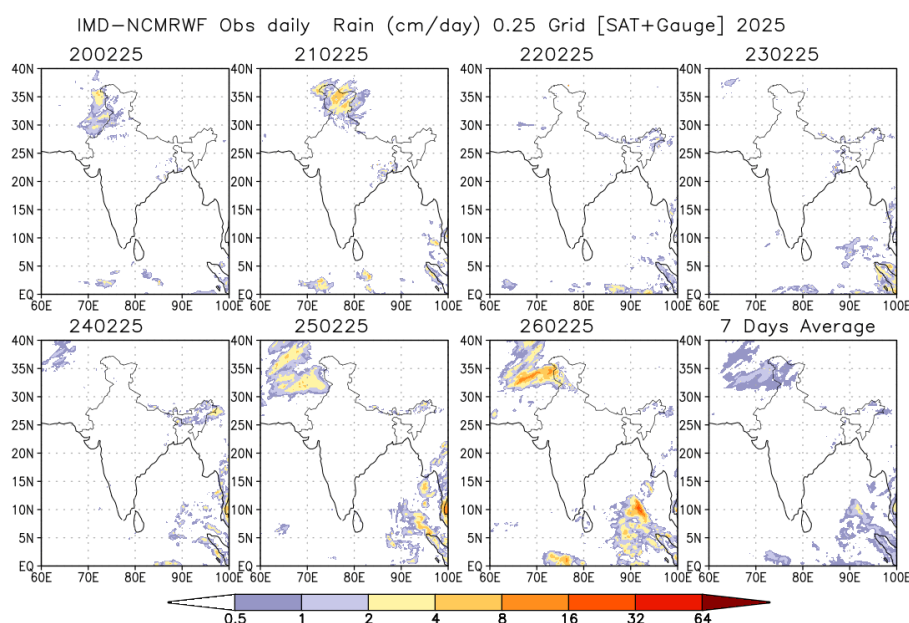


Fig.2: NCMRWF-IMD satellite gauge merged data plots of realized 24 hours accumulated rainfall from 19th February to 26th February, 2025.

Next update: 06.03.2025