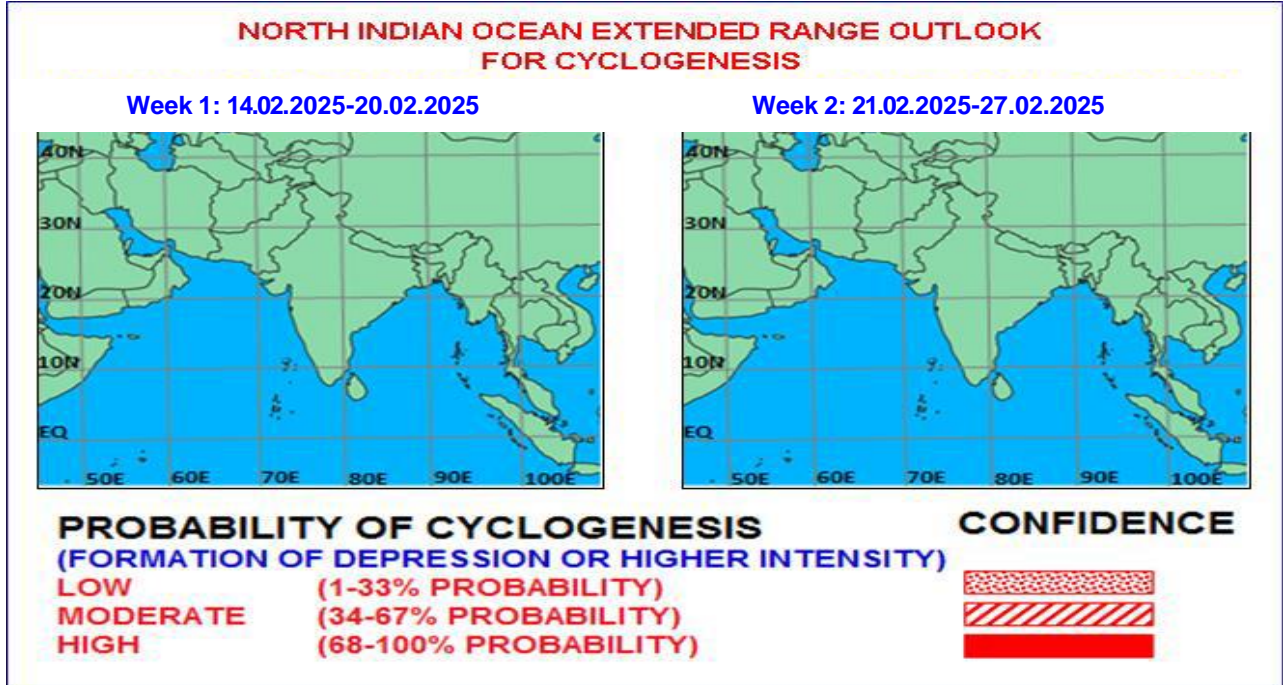




Issued on 13.02.2025



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

### I. Environmental features:

As per monitoring, the Madden Julian Oscillation (MJO) is currently entered into phase 8 with amplitude more than 1. The MJO forecast trajectories of MJO index in the phase diagram for GEFSv2, CFS, ECMF and ECMM differ from each other. However, it would continue to move eastward slowly with zigzag motion within the same phase 8 during the first week. Thereafter, it would continue to move across phase 8 more systematically during first half of the second week and likely to enter into phase 1 at the end of week 2. Therefore, MJO may likely to support enhancement of convective activity over the North Indian Ocean (NIO) region especially over Arabian Sea (AS) during second half of week 2.

The NCICS CFS model forecast indicates prevalence of easterly wind anomaly (3-5 mps) over entire BoB and AS during first half week 1. Thereafter, the westerly wind anomaly is seen over Andaman Sea and adjoining southeast BoB which gradually cover the entire south BoB by the end of week 1. The westerly wind anomaly (1-3 mps) is also likely to be seen over northern parts of BoB and AS during the end of week 1 and first half of week 2. The Equatorial Rossby Wave (ERW) activity is likely move across south BoB and subsequently southeast AS during entire forecast period. No other equatorial waves are not likely to contribute to enhancement of convective activity over the NIO region during the forecast period.

### II. Model Guidance:

Various deterministic models including IMD GFS, IMD GEFS, NCEP GFS, NCUM, NEPS, ECMWF do not indicate any significant cyclonic disturbance over the region during next 10 days. The extended range forecast model of IIMD (CFSV2) and NCMRWF(CNCUM) do not show any cyclonic wind flow pattern in their mean and anomaly wind fields during the entire forecast period. However, the IMD ERF model indicates a very low probability of cyclogenesis over south BoB during the week 2.

The ECMM are also not indicating any cyclonic disturbance over the region during the first week. However, it indicates 20-30% probability of cyclogenesis over central parts of south BoB during later part of week 2.

**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, ECMF: ECMWF-Ensemble System, 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.

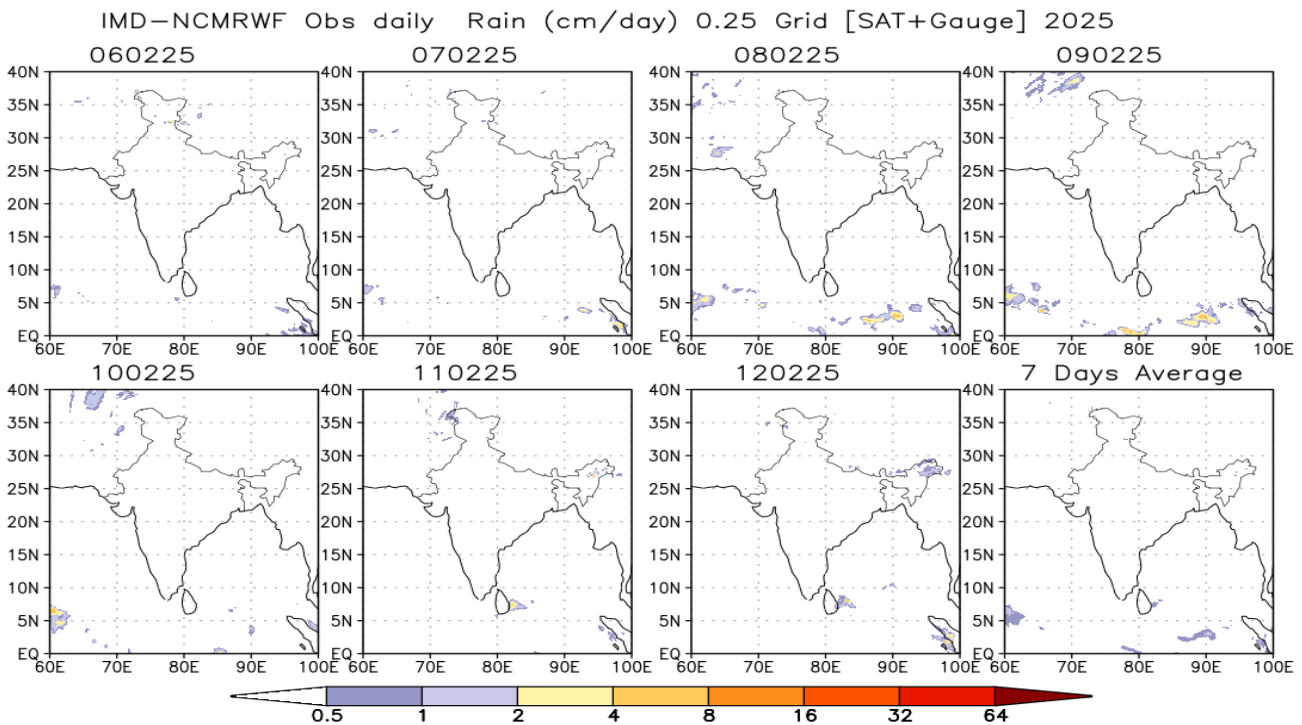
**III. Inference:**

Considering various environmental conditions and model guidance it is inferred that there is no likelihood of cyclogenesis over the North Indian Ocean region during the next two weeks.

**IV. Verification of forecast issued during last two weeks:**

The forecast issued on 30<sup>th</sup> January for week 2 (7<sup>th</sup>February-13<sup>th</sup> February) indicated no probability of cyclogenesis during the week. The forecast issued on 6<sup>th</sup> February for week 1 (7<sup>th</sup>February-13<sup>th</sup> 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, 6<sup>th</sup> February to 12<sup>th</sup> February, 2025 are presented in **Fig. 2**.



**Fig.2: NCMRWF-IMD satellite gauge merged data plots of realized 24 hours accumulated rainfall from 6th February to 12th February, 2025.**