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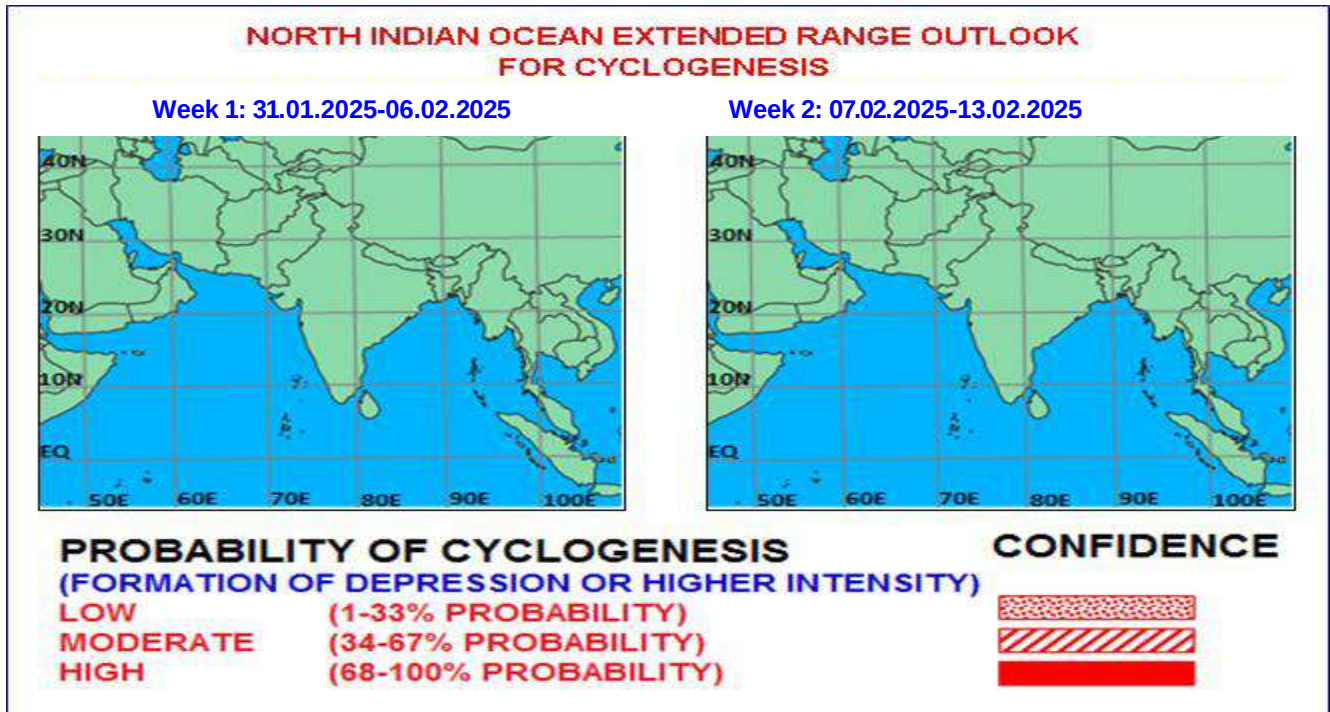


Fig. 1: Graphical Cyclogenesis over the north Indian Ocean during next two weeks

I. Environmental features:

As per ECMM guidance, Madden Julian Oscillation (MJO) is currently in phase 4 with amplitude more than 1. It would continue in same phase during first half of week 1. Thereafter, it would move across phase 5 with gradually decreasing amplitude during remaining part of the forecast period. The amplitude would become less than 1 during week 2. Thus, MJO would contribute to enhancement of convective activity over the Bay of Bengal (BoB).

The NCICS CFS model forecast indicates prevalence of MJO, Equatorial Rossby Waves (ERW), Kelvin Waves (KW), enhanced westerly wind anomaly (7-9 mps) over Equatorial Indian Ocean (EIO) & adjoining south BoB and southeast Arabian Sea (AS) and weak easterly wind anomaly (1-3 mps) over southwest BoB during first half of week 1. Thereafter, the model is indicating prevalence of easterly wind anomaly (1-5 mps) over entire BoB during later part of week 1 and also during week 2. Thus, equatorial waves are likely to support enhancement of convective activity over EIO and adjoining south BoB during first half of week 1. Additionally, the model is also indicating westerly wind anomaly over northeast AS along with ERW and easterly wind anomaly over northwest India during middle of week 1. Thus, equatorial waves may contribute to enhancement of convective activity over northwest and adjoining central India during middle of week 1.

II. Model Guidance:

Various deterministic models including IMD GFS, IMD GEFS, NCUM and NEPS are indicating active easterly wave over EIO and adjoining south BoB and southeast AS during first half of week 1 with embedded circulation around 5th Feb over EIO and adjoining South Andaman Sea. ECMWF and NCEP GFS are not indicating any significant system over the region. Various

extended range models including IMD CFS(V2), CNCUM and ECMM are also not indicating any cyclonic disturbance over the region during entire forecast period.

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. However, there is likelihood of active easterly waves during week 1.

IV. Verification of forecast issued during last two weeks:

The forecast issued on 16th January for week 2 (24th-30th Jan) indicated no probability of cyclogenesis during the week. The forecast issued on 23rd January for week 1 (24th-30th Jan) indicated no probability of cyclogenesis during the week.

It also indicated active easterly waves with embedded cyclonic circulation over south BoB and adjoining EIO during the period 17th -23rd January. Actually a cyclonic circulation developed over south Andaman Sea and adjoining East EIO on 24th January and became less marked on 25th January.

NCMRWF-IMD satellite gauge merged data plots of realized 24 hours accumulated rainfall from, 23rd January to 29th January, 2025 are presented in **Fig. 2**.

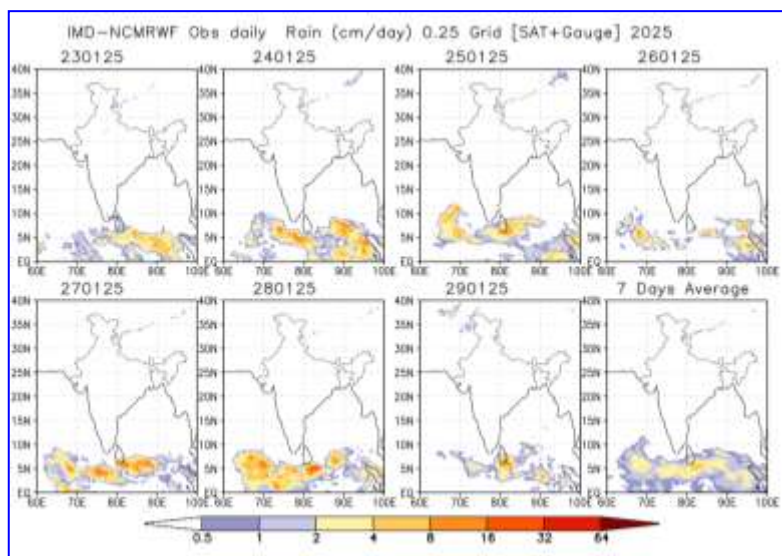


Fig.2: NCMRWF-IMD satellite gauge merged data plots of realized 24 hours accumulated rainfall from 23rd January to 29th January, 2025.

Next update: 06.02.2025