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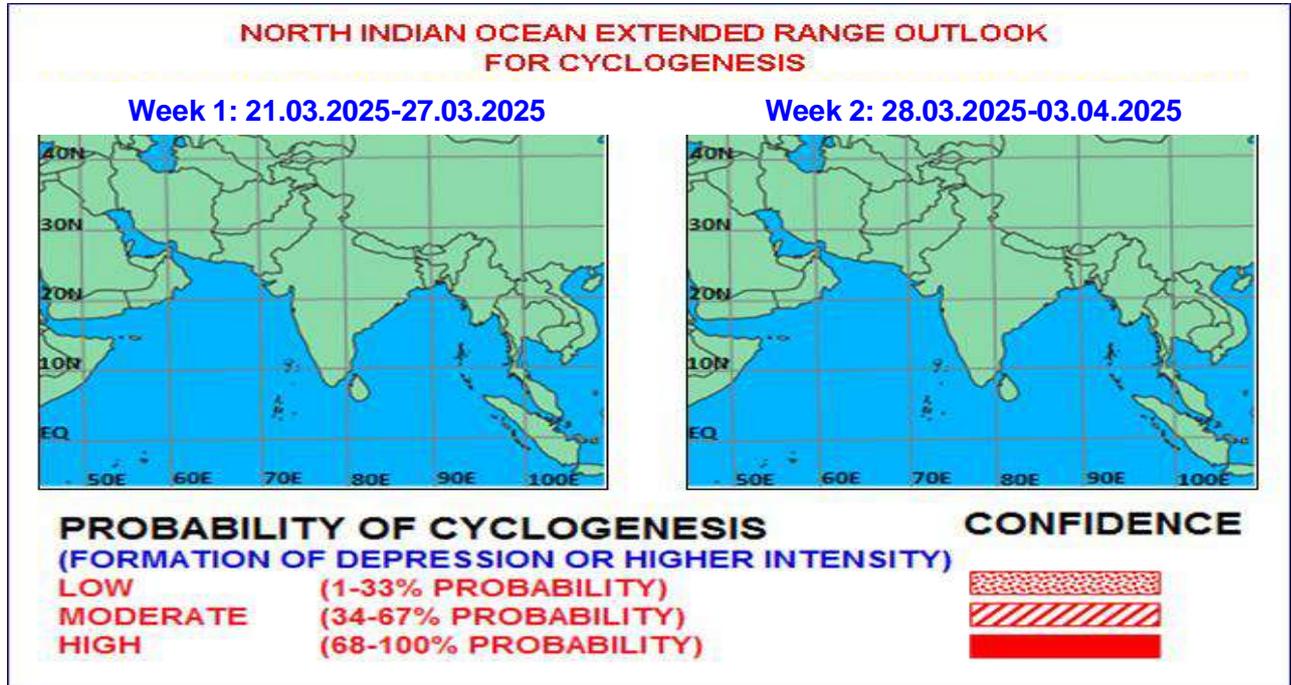


Fig. 1: Graphical Cyclogenesis over the north Indian Ocean during next two weeks

I. Environmental features:

The guidance from ECMM model indicates that currently Madden Julion Oscillation (MJO) is in phase 5 with amplitude close to 1. It is likely to continue in same phase during first half of week 1. Thereafter, it would move across phase 6 and 7 with amplitude remaining close to 1 during remaining part of the forecast period. Similar forecast is indicated by GEFS V12 model of NCEP. Thus, MJO is likely to support enhancement of convective activity over Bay of Bengal (BoB) during first half of week 1.

The NCICS CFS model forecasts for Equatorial Waves indicate prevalence of easterly wind anomaly (3-5 mps) over south BoB and south & western parts of Arabian Sea (AS) during week 1. Model also indicates prevalence of strong westerly wind anomaly along equator over Equatorial Indian Ocean (7-9 mps) along with the presence of Equatorial Rossby Waves (ERW). During week 2, the model is indicating prevalence of weak westerly wind anomaly over south AS, South India and south BoB. Thus, equatorial waves may support development of cyclonic circulation over Equatorial Indian Ocean (EIO) and adjoining southeast BoB during week 1.

II. Model Guidance:

IMD GFS and GEFS are indicating cyclonic circulation over eastcentral Arabian Sea with westwards movement during 23rd -25th March. Model is also indicating a cyclonic circulation over northeast EIO and adjoining southeast BoB with slow north-northwestwards movement during 24th -28th March. NCUM and NEPS are indicating similar development over BoB during 23rd -27th March. ECMWF is also indicating similar development during 24th -26th March over North Equatorial Indian Ocean and adjoining southeast BoB..

IMD ERF Model is indicating a cyclonic circulation at 850 hPa pressure level over North Equatorial Indian Ocean and adjoining Southeast BoB during week 1. No such features are seen in the wind anomaly field during week 1. However, 850 hpa wind anomaly field is indicating cyclonic circulation eastcentral AS during both the weeks. The model is indicating no cyclogenesis over NIO region during next two weeks. The 850hpa wind anomaly field of NCMRWF ERF model is indicating cyclonic wind anomaly over central AS

during both the weeks. However, mean wind field at 850 hPa is not showing any cyclonic circulation over the region during both the weeks. The guidance from both the ERF models thus indicates weakening of seasonal anticyclone over central AS. ECMM is indicating 10-20% of cyclogenesis over south Andaman Sea and adjoining northeast EIO during middle 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 no cyclogenesis is likely over the North Indian Ocean during next two weeks. There is likelihood of a feeble cyclonic circulation over northeast Equatorial Indian Ocean and adjoining southeast Bay of Bengal embedded into the Equatorial trough during middle of week 1.

IV. Verification of forecast issued during last two weeks:

The forecast issued on 6th March for week 2 (14th March-20th March) indicated no probability of cyclogenesis during the week. The forecast issued on 13th March for week 1 (14th March-20th March) 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, 12th March to 18th March, 2025 are presented in **Fig. 2**.

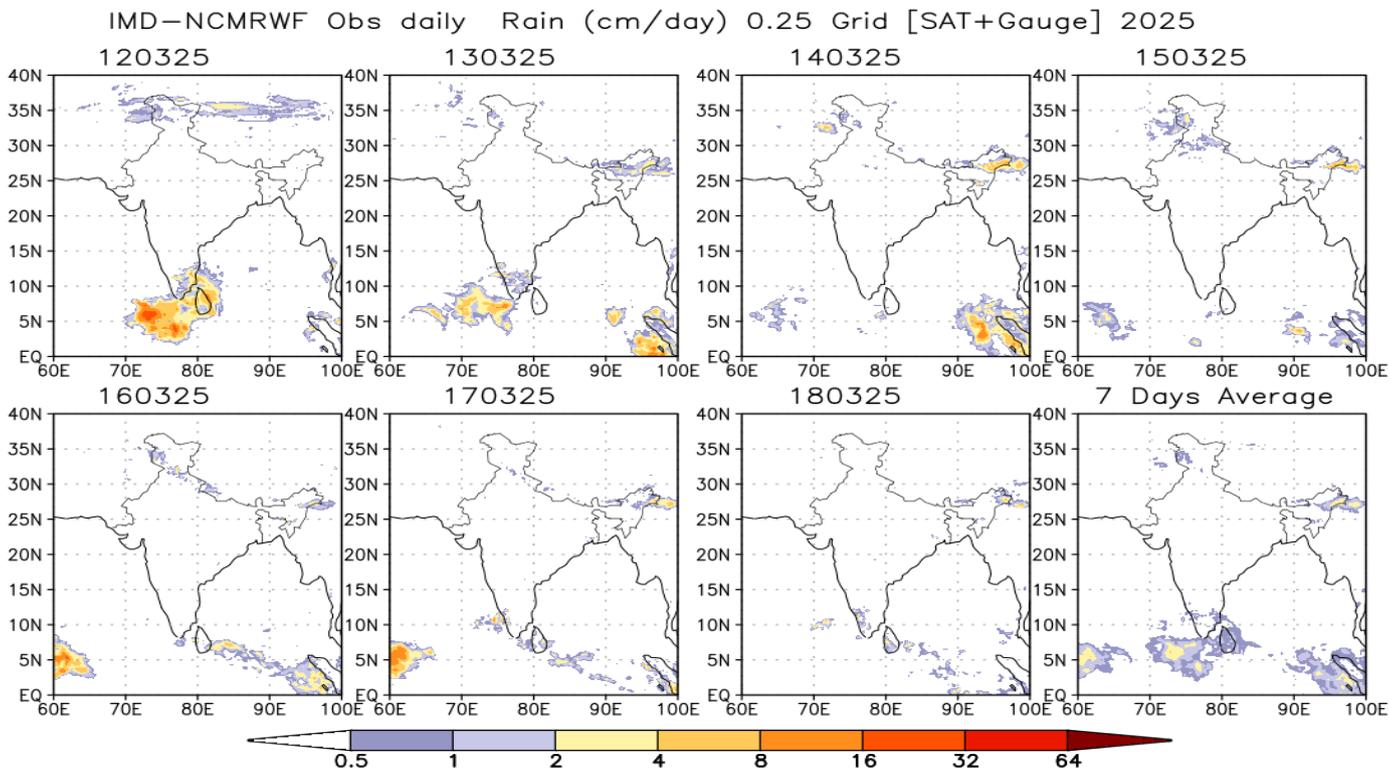


Fig.2: NCMRWF-IMD satellite gauge merged data plots of realized 24 hours accumulated rainfall from 12th March to 18th March, 2025.