



Issued on 18.04.2024

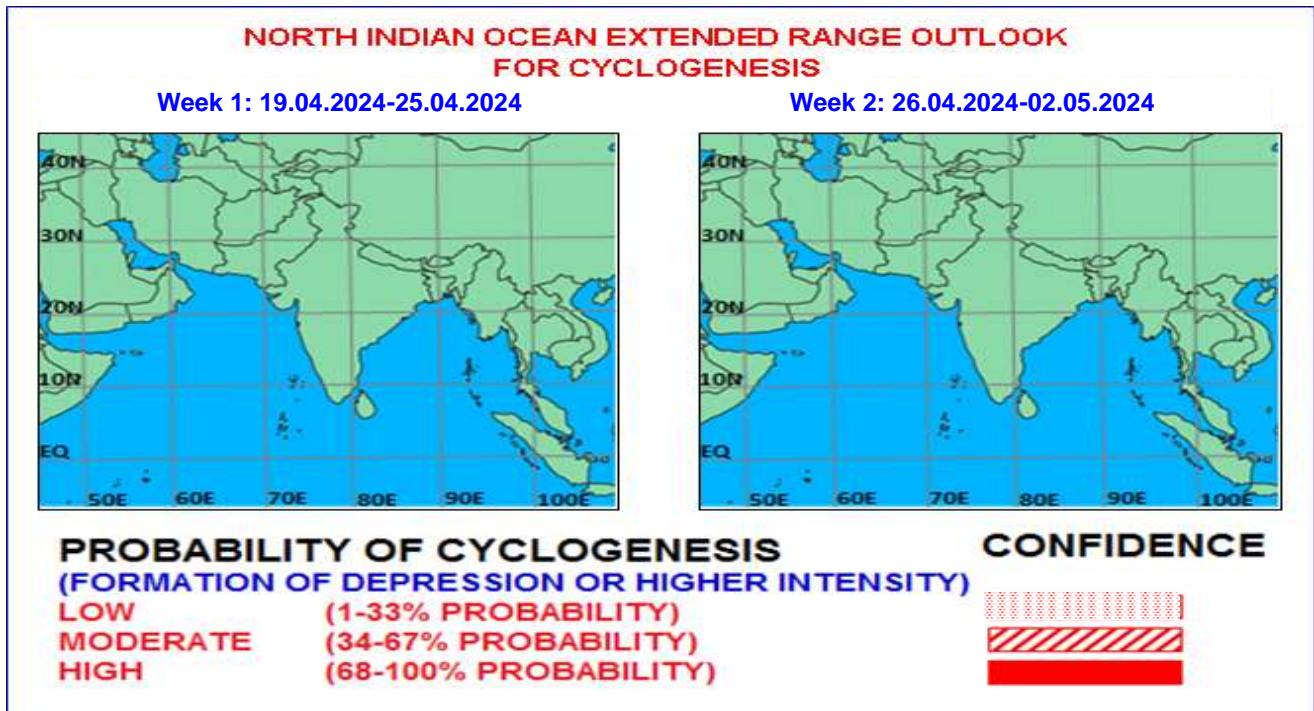


Fig. 1: Graphical Cyclogenesis over north Indian Ocean during next two weeks

I. Environmental features:

Madden Julian Oscillation (MJO) index is currently in Phase 1 with amplitude less than 1. It will continue in same phase with gradually decreasing amplitude during first half of week 1. Thereafter, it would move across phases 2 and 3 during remaining part of the forecast period with amplitude remaining less than 1. Thus, MJO Phase may support enhancement of convective activity and cyclogenesis over the Arabian Sea (AS) from second half of the forecast period.

NCICS based forecasts for zonal winds indicate easterly winds (1-3 mps) over south AS during first half of the week 1 and weak westerly winds (1-3 mps) over North & Central Bay of Bengal (BoB) with Equatorial Rossby Waves (ERW) over South BoB. During later part of week 1, weak easterly winds (1-3 mps) alongwith ERW are likely over south AS and weak westerly winds (1-3 mps) are likely over central AS. During first half of week 2, weak westerly winds (1-3 mps) are likely over south AS alongwith ERW and strong easterly winds (3-5 mps) are likely over north AS. Over the BoB, Easterly winds are likely during week 2. Overall, the equatorial waves may support formation of cyclonic circulation over the AS during later part of week 1.

II. Model Guidance:

Various deterministic models including NCUM, NEPS, ECMWF are not indicating any cyclogenesis over the region. However, GFS group of models are indicating an extended low pressure area over the southwest AS during middle of week 1. The wind anomaly field of IMD (CFS V2) is also indicating a cyclonic circulation over southwest AS during week 1. The IMD CFS (V2) is also indicating 10-20% probability of cyclogenesis over southwest AS during week 1. ECMWF extended range model is also indicating 10-20% probability of cyclogenesis over the southwest AS.

Legends: 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, European Centre for Medium Range Weather Forecasting (ECMWF), GPP: Genesis Potential Parameter, National

Centre for Environment Prediction (NCEP) GFS, ECMM: ECMWF multi model, GEFS: GFS ensemble, NEPS: NCUM ensemble prediction system, CNCUM: Coupled NCUM, CPC: Climate Prediction Centre, NWS: National Weather Service.

III. Inference:

Considering various environmental conditions and model guidance, it is inferred that there is probability of formation of a cyclonic circulation/low pressure area over the southwest AS during second half of week 1. The probability of formation of depression or above intensity storm may be taken as NIL.

IV. Verification of forecast issued during last two weeks:

Forecast issued on 4th April for second week (12.04.2024-18.04.2024) and forecast issued on 11th April for first week (11.04.2024-18.04.2024) indicated no cyclogenesis over the NIO during the forecast period. Actually, no cyclogenesis occurred over the region during the specified week.

NCMRWF-IMD satellite gauge merged data plots of 24 hours accumulated realized rainfall during, 10th April to 16th April, 2024 are presented in **Fig. 2**.

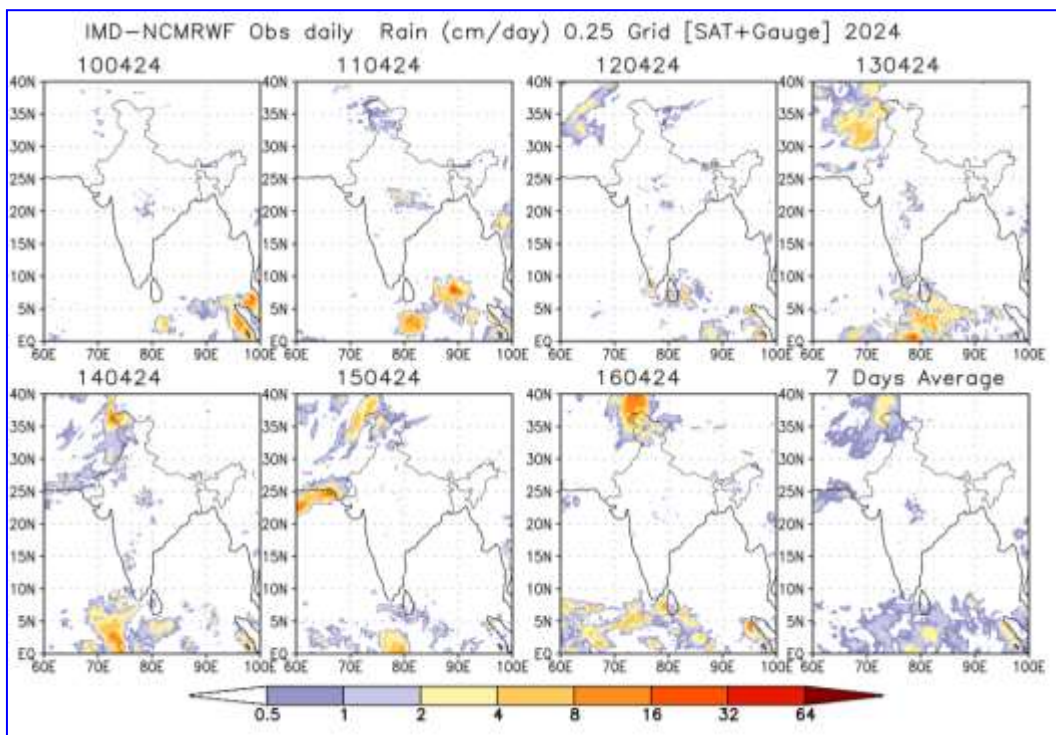


Fig.2: NCMRWF-IMD satellite gauge merged data plots of 24 hours accumulated realized rainfall during 10th to 16th April, 2024.

Next update: 24.04.2024