



Issued on 21.03.2024



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

I. Environmental features:

Based on ECMM forecast, currently Madden Julian Oscillation (MJO) index is in Phase 8 with amplitude close to 1. It would continue in same phase during first half of week 1 with amplitude remaining close to 1. Thereafter, it would move across phase 1 till beginning of week 2 with decreasing amplitude. It would then move across phase 2 with significantly less amplitude. Considering the amplitude, the movement across phase 2 may not support enhancement of any convective activity over the region.

NCICS based forecast for equatorial waves indicates weak easterly winds (1-3 mps) over south Andaman Sea and south & central Arabian Sea (AS) during week 1. During week 2, complete reversal of winds is indicated with westerly winds (1-3 mps) over the entire Bay of Bengal and major parts of Arabian Sea. Equatorial Rosby Waves are also indicated over southwest Bay of Bengal & adjoining Comorin Area.

II. Model Guidance:

Various deterministic models including IMD GFS, GEFS, NCUM, NEPS, ECMWF and NCEP GFS are not indicating any cyclonic circulation over the NIO region during next 7-10 days. GPP forecast based on IMD GFS is not indicating any significant zone of cyclogenesis over the NIO region during next 7 days. The extended range forecast (ERF) of mean winds by IMD (CFS V2) is also not indicating any cyclogenesis during next 2 weeks.

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 no probability of cyclogenesis over the North Indian Ocean during the entire forecast period.

IV. Verification of forecast issued during last two weeks:

Forecast issued on 7th March for second week (15.03.2024-21.03.2024) and forecast issued on 14th March for first week (15.03.2024-21.03.2024) indicated no cyclogenesis over the NIO during the 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, 7th March to 13th March, 2024 are presented in **Fig. 2**.



Fig.2: NCMRWF-IMD satellite gauge merged data plots of 24 hours accumulated realized rainfall during 14th March to 20th March, 2024.

Next update: 28.03.2024