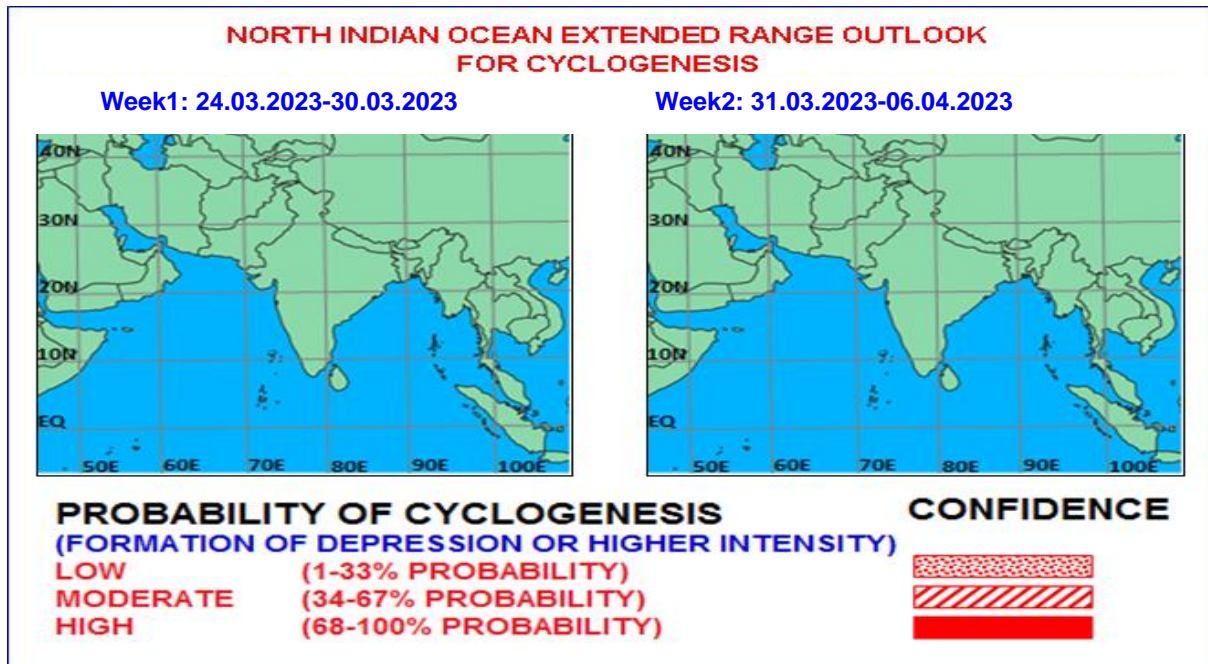




Issued on 23.03.2023



### I. Environmental features:

The Madden Julian Oscillation (MJO) Index is currently in Phase 3 with amplitude more than 1. It will continue in same phase during first half of week 1 with decreasing amplitude. Thereafter, it will move across phases 4 & 5 during later part of week 1 and would mainly continue in phase 6 & 7 with negligibly small amplitude during week 2. Hence, MJO would support enhancement of convective activity over the Bay of Bengal (BoB) during week 1, specially during 1<sup>st</sup> half of week 1.

During first half of week 1, westerly winds (3-7 mps), Kelvin Waves (KW) and Equatorial Rossby Waves (ERW) are likely over East Equatorial Indian Ocean (EIO) and adjoining south Bay of Bengal (BoB). During the same period feeble easterly winds (1-3 mps) are likely over central BoB. During later part of week 1 and week 2, westerly winds (3-5 mps) alongwith ERW are likely over Equatorial Indian Ocean (EIO) and easterly winds (3-5 mps) are likely over central Arabian Sea (AS). Thus, equatorial waves are likely to contribute towards enhancement of convective activity over the EIO and adjoining southern parts of the NIO during week 1 and week 2, even though it may not lead to cyclogenesis. Considering the collectively, both MJO and equatorial waves are likely to contribute towards enhancement of convective activity over east EIO and adjoining south BoB during first half of week 1.

### II. Model Guidance:

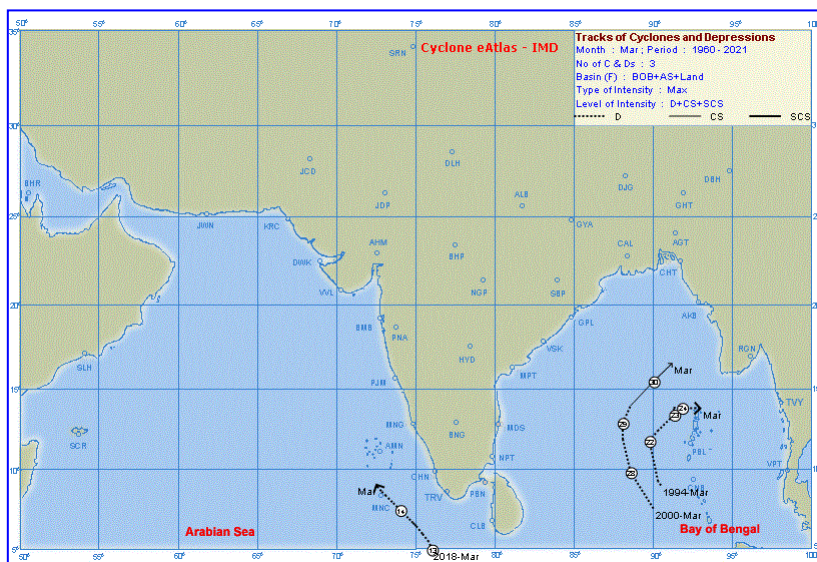
Various models including IMD GFS, NCUM, ECMWF, ECMM, NEPS, GEFS and GPP are not indicating any cyclogenesis over the region during next 7-10 days,

IMD's Coupled Forecast System Version 2 (IMD CFS V2) is indicating likely development of a cyclonic disturbance over the East EIO and adjoining South Andaman Sea during week 1 with low probability (10-20%).

(Legends: IMD GFS: India Meteorological Department Global Forecast System, NCUM: National Centre for Medium Range Weather Forecasting Centre Unified Model, European Centre for Medium Range Weather Forecasting, National Centre for Environment Prediction GFS, ECMM: ECMWF multi model, GEFS: GFS ensemble, NEPS: NCUM ensemble prediction system)

### III. Climatological Guidance:

Tracks of cyclonic disturbances (maximum sustained wind speed  $\geq 17$  knots) during 1960-2021 is presented in Fig. 1 indicating that during the period, only 3 cyclonic disturbances formed over the NIO with 2 over BoB and 1 over AS. All the 3 systems dissipated over sea. During 2022, 2 depressions developed over the BoB during March (not shown here). Out of these 2, a deep depression developed over southwest BoB and weakened over sea. Another deep depression formed over southeast BoB and adjoining Andaman Sea and crossed Myanmar coast.



**Fig. 1: Tracks of cyclonic disturbances (maximum sustained wind speed  $\geq 17$  knots) during 1960-2021**

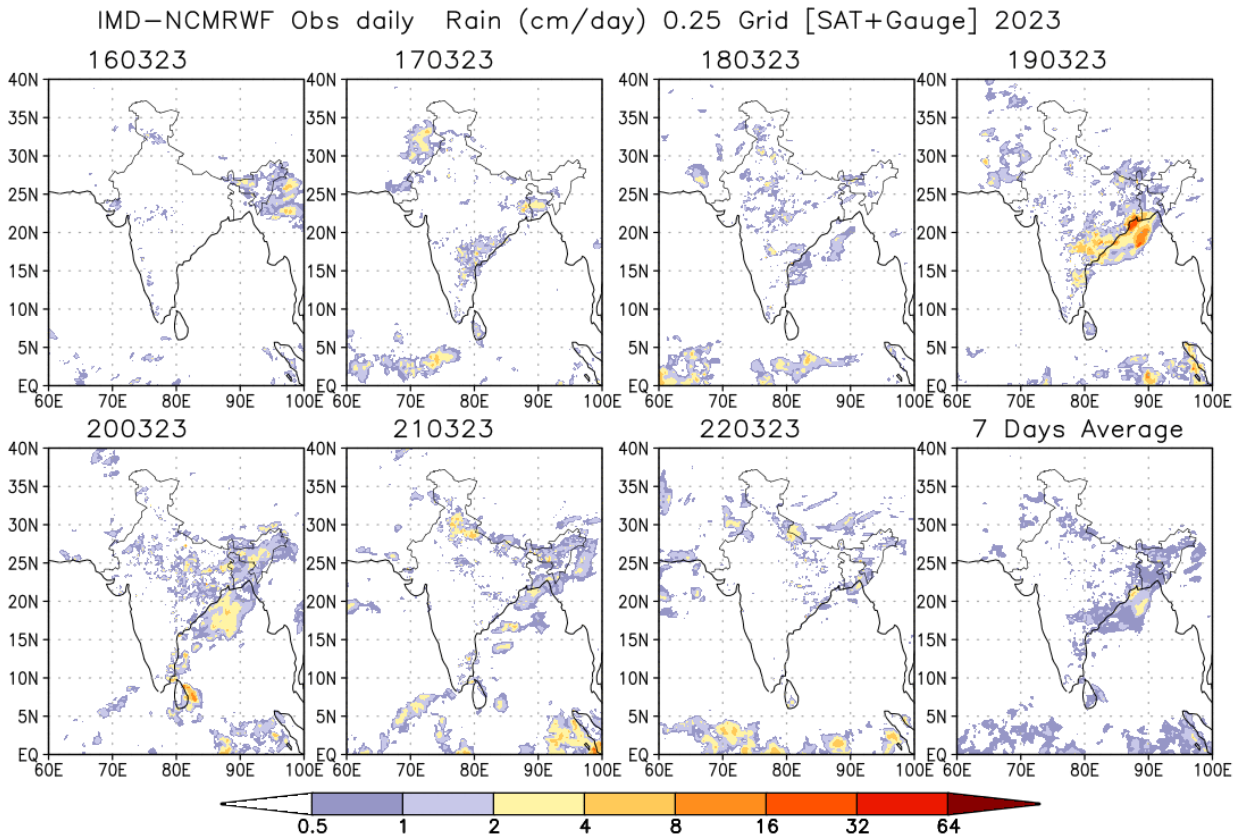
### IV. Inference:

Considering the environmental features and model guidance, it is inferred that no cyclogenesis (formation of depression) is likely over the North Indian Ocean region during next 2 weeks.

### V. Verification of forecast issued during last two weeks:

The forecast issued on 9<sup>th</sup> March, 2023 for week 2 (17.03.2023 – 23.03.2023) indicated no cyclogenesis over the North Indian Ocean. The forecast issued on 16<sup>th</sup> March, 2023 for week 1 (17.03.2023 – 23.03.2023) indicated no cyclogenesis over the North Indian Ocean. Hence, nil cyclogenesis was correctly predicted in two weeks forecast.

The realized rainfall during 16<sup>th</sup> March, 2023 – 22<sup>nd</sup> March, 2023 from satellite-gauge merged data is presented in Fig.2



**Fig.2: Rain gauge and satellite merged rainfall plots during 16<sup>th</sup> March, 2023 – 22<sup>nd</sup> March, 2023**

**Next update: 30.03.2023**