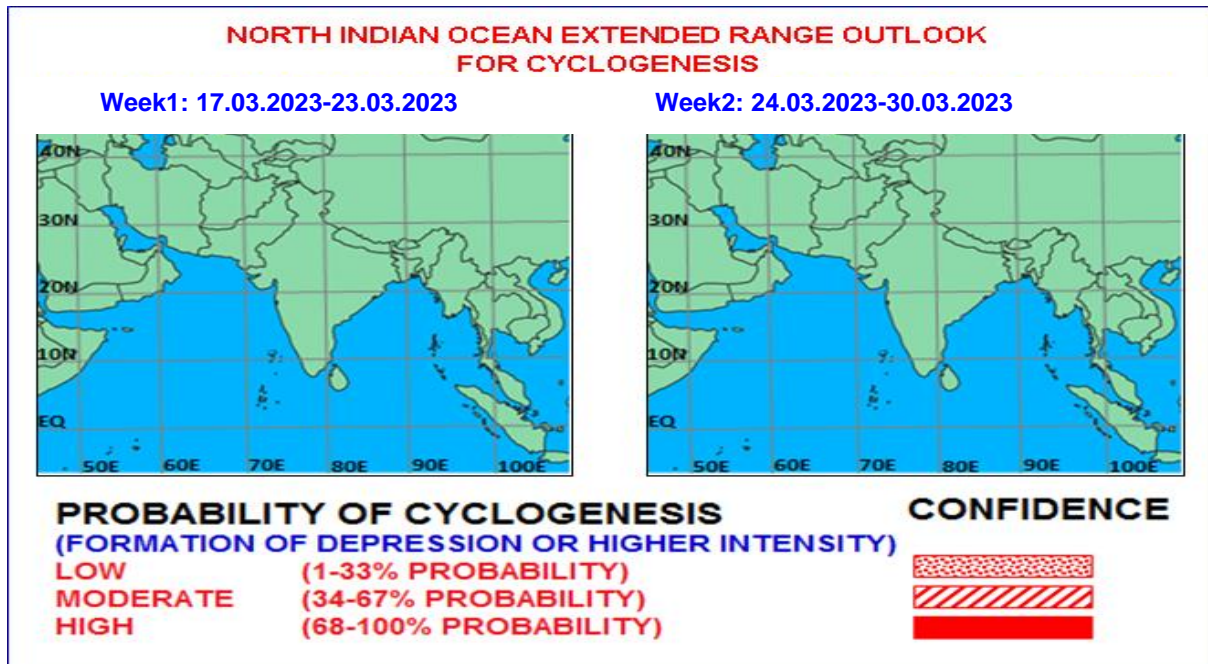




Issued on 16.03.2023



I. Environmental features:

The Madden Julian Oscillation (MJO) Index is currently in Phase 1 with amplitude more than 2. It will move across phase 2 from middle of week 1 with amplitude remaining more than 1. It will move across phases 2,3,4 and 5 thereafter with amplitude gradually becoming less than 1 from week 2. Hence, MJO would support enhancement of convective activity over the North Indian Ocean (NIO) from middle of week 1 especially over the Arabian Sea (AS) during later half of week 1 and over the Bay of Bengal (BoB) during week 2.

During later part of week 1 and week 2, 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 first half of week 2, westerly winds (3-5 mps), MJO, KW and ERW are likely over West EIO. Feeble easterly winds (1-3 mps) are likely over central Arabian Sea during later half of week 1.

Thus, equatorial waves are likely to contribute towards enhancement of convective activity over the southern parts of the NIO during later part of week 1 and week 2, even though it may not lead to cyclogenesis.

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,

Extended range model viz. Coupled NCMRWF Unified Model (CNCUM) and IMD's Coupled Forecast System Version 2 (IMD CFS V2) are also not indicating development of any cyclonic disturbance over the region during next 2 weeks.

(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 ≥ 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.

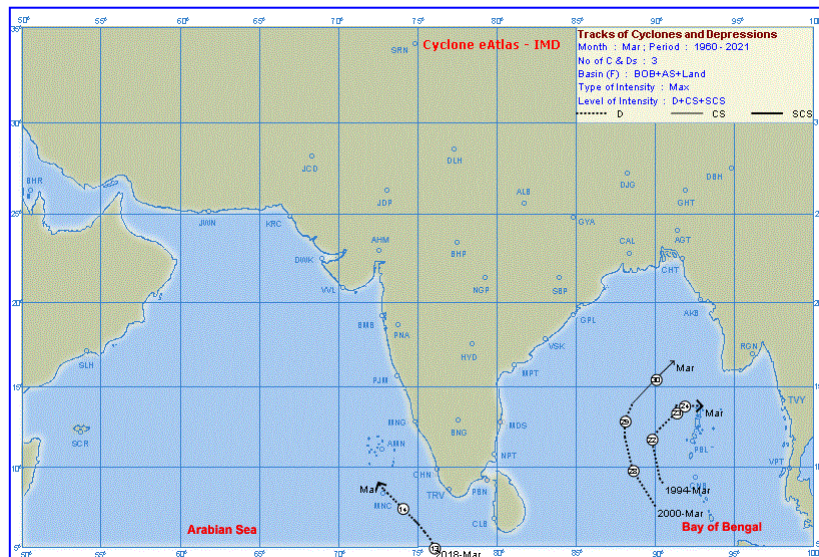


Fig. 1: Tracks of cyclonic disturbances (maximum sustained wind speed ≥ 17 knots) during 1960-2021

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 2nd March, 2023 for week 2 (10.03.2023 – 16.03.2023) indicated no cyclogenesis over the North Indian Ocean. The forecast issued on 9th March, 2023 for week 1 (10.03.2023 – 16.03.2023) indicated no cyclogenesis over the North Indian Ocean. Hence, nil cyclogenesis was correctly predicted in two weeks forecast.

The realized rainfall during 9th March, 2023 – 15th March, 2023 from satellite-gauge merged data is presented in Fig.2

IMD-NCMRWF Obs daily Rain (cm/day) 0.25 Grid [SAT+Gauge] 2023

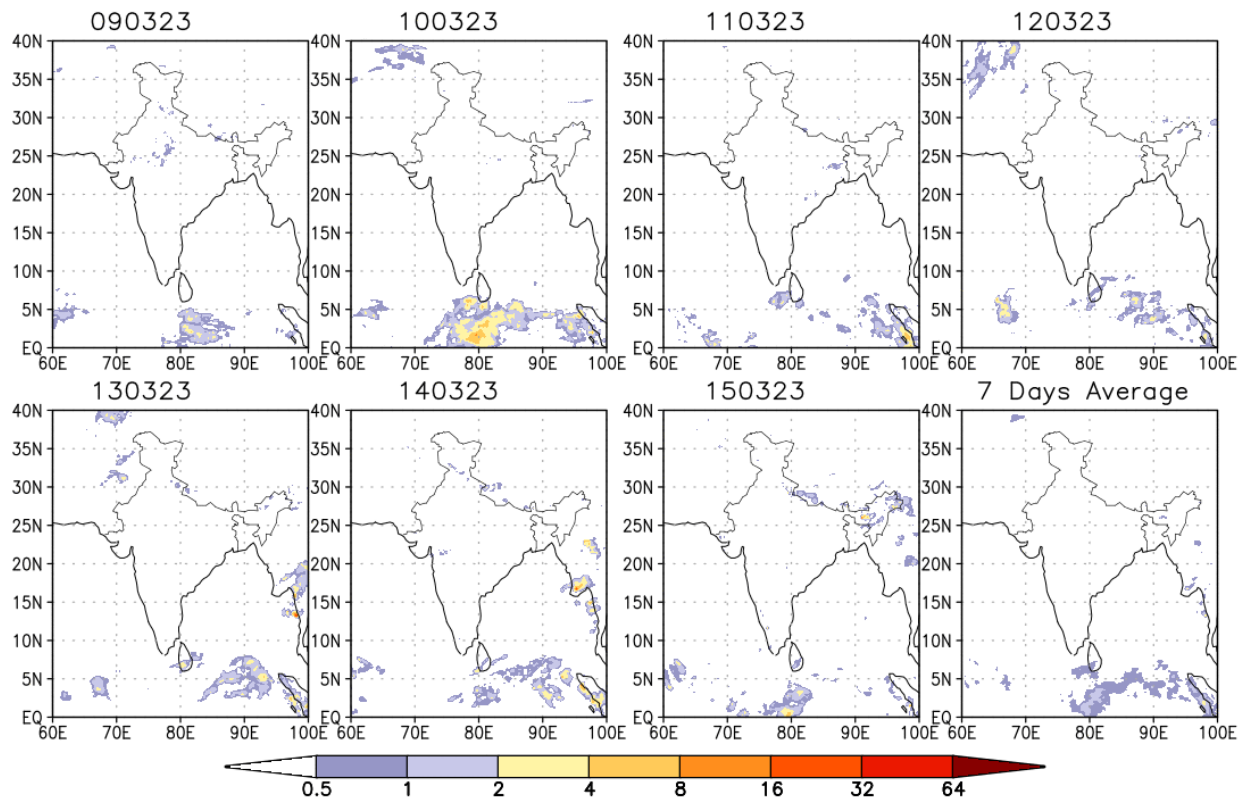


Fig.2: Rain gauge and satellite merged rainfall plots during 9th March, 2023 – 15th March, 2023

Next update: 23.03.2023