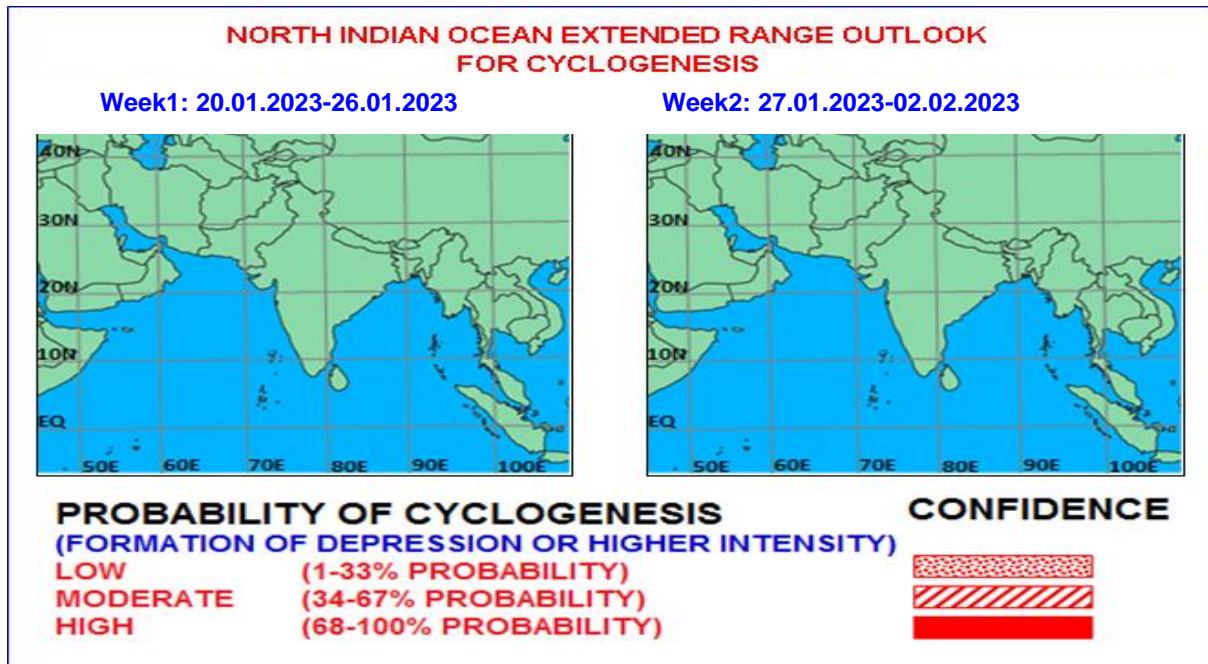




Issued on 19.01.2023



I. Environmental features:

The Madden Julian Oscillation (MJO) Index is currently in Phase 2 with amplitude more than 1. It will continue in same phase during first half of week 1 and move to phase 3 during later half of week 1 with same amplitude. Thereafter, it would continue in same phase with amplitude becoming less than 1 during week 2. Thus, MJO will support enhancement of convective activity over the North Indian Ocean (NIO) during the entire forecast period.

The CFS based forecast for Equatorial Waves indicate weak easterly winds (1-3 mps) over Andaman Sea and weak westerly winds (1-3 mps) over southwest Bay of Bengal (BoB), southeast & central Arabian Sea (AS) alongwith Equatorial Rossby Waves (ERW) during first half of week 1. Weak easterly winds (1-3 mps) over Andaman Sea and south BoB, ERW over southwest BoB and southeast AS are likely during later part of week 1. During week 2, ERW, westerly winds (1-3 mps) and Kelvin waves are likely over central AS. Thus, equatorial waves are likely to contribute towards enhancement of convective activity over south BoB during week 1 and over central AS during week 2.

However, sea surface temperature is 27-28°C over south BoB, southeast AS and <26°C over central AS. Ocean thermal energy is 90-100 KJ/cm² over south Andaman Sea becoming 40-50 KJ/cm² over southwest BoB, southeast AS and <20 KJ/cm² over central AS.

II. Model Guidance:

- Based on the guidance from various deterministic models (GFS group, NCUM group, ECMWF, IMD MME) a cyclonic circulation/low pressure area is likely over southeast BoB during end of week 1 or beginning of week 2.
- Ensemble systems including IMD GEFS, NCMRWF NEPS and genesis potential parameter plots do not indicate any cyclogenesis over the NIO region during the

forecast period. However, ECMWF ensemble prediction system is indicating likely formation of depression over southeast BoB during beginning of week 2 (10-30% probability).

- NCMRWF Coupled Extended Range Model (CNCUM) and IMD MME Coupled Forecast System (MME CFS V-2) Version 2 do not indicate any cyclogenesis over the NIO region during the forecast period. However, these models indicate increased rainfall over south BoB and south peninsular region during week 2.

III. Inference:

Considering the model guidance and various environmental features, it is inferred that no cyclogenesis is likely over the North Indian Ocean during the entire forecast period extending between 20th January and 2nd February, 2023. However, there is likelihood of formation of a cyclonic circulation/low pressure area over southeast BoB during the later part of week 1 and first half of week 2 with westwards movement towards southwest Bay of Bengal.

IV. Verification of forecast issued during last two weeks:

The forecast issued on 5th January, 2023 for week 2 (13.01.2023– 19.01.2023) indicated no cyclogenesis over the region. The forecast issued on 12th January, 2023 for week 1 (13.01.2023– 19.01.2023) indicated no cyclogenesis over the region. Actually, no cyclogenesis occurred over the region during the period. Hence, no cyclogenesis was correctly predicted in two weeks forecast.

The realized rainfall during 11th Jan, 2023 – 17th Jan, 2023 from satellite-gauge merged data is presented in Fig.1

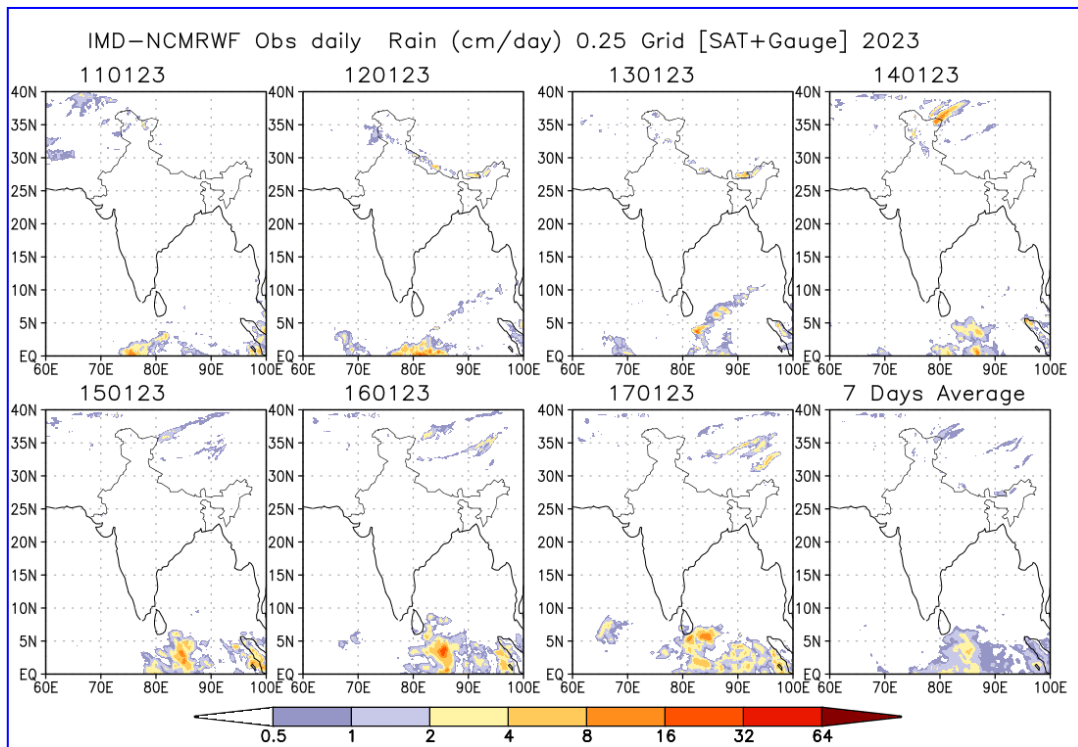


Fig.1: Rain gauge and satellite merged rainfall plots during 11th Jan, 2023 – 17th Jan, 2023