

The Madden Julian Oscillation (MJO) Index currently lies in Phase 6 with amplitude close to 1 and will move across phases 6 & 7 during entire forecast period with amplitude gradually increasing but remaining less than 1 till end of forecast period. Thus, MJO phase is not conducive for enhancement of convective activity over the North Indian Ocean (NIO) including the Bay of Bengal (BoB) and Arabian Sea (AS) during entire forecast period.

Based on CFS forecast, during week 1 low frequency background waves and weak westerlies (1-3 mps) are likely to prevail over Equatorial Indian Ocean (EIO) and adjoining NIO with slightly stronger westerlies (5-7 mps) over the EIO and adjoining central parts of south AS. During week 2, low frequency background waves and weak westerlies (1-3 mps) are likely to prevail over the same region with development of weak easterlies (1-3 mps) over the central BoB.

Considering the sea conditions, sea surface temperatures (SST) is around 29-30°C over south & adjoining eastcentral BoB and Andaman Sea and southeast & adjoining eastcentral AS. The ocean heat content (OHC) is >100 KJ/cm² over south Andaman Sea and adjoining southeast BoB with gradually decreasing trend, becoming 60-80 KJ/cm² over major parts of south & adjoining central BoB and Andaman Sea. Over the AS, OHC is >100 KJ/cm² over southeast and adjoining eastcentral AS.

Considering NWP model guidance, most of the models including IMD GFS, GEFS, NCUM, NEPS and ECMWF etc. are indicating likely development of cyclonic circulation/low pressure area over southeast BoB during later half of week 1. It is likely to move west-northwestwards during first half of week 2.

Climatologically, during the period 1891-2020, there have been 44 cyclonic disturbances (CDs) (maximum sustained wind speed (MSW) ≥ 17 kt) over the NIO including 8 over AS and 36 over BoB (Fig.1a). Out of the 8 CDs over AS, 2 intensified into CS category (MSW ≥ 34 kt) and 4 into SCS category (MSW ≥ 48 kt) and over the BoB, out of 44 CDs, 13 intensified into CS category and 15 into SCS category (Fig. 1 b).

Hence, various environmental features and model guidance indicate that there is likelihood of formation of a cyclonic circulation/low pressure area over southeast Bay of Bengal during later half of week 1 with west-northwestwards movement during week 2. However, a continuous watch is being maintained over the region.

Verification of forecast issued during last two weeks:

The forecast issued on 17th March for week 2 (24.03.2022-30.03.2022) indicated no cyclogenesis over the NIO. The forecast issued on 24th March for week 1 (24.03.2022-30.03.2022) indicated formation of a cyclonic circulation/low pressure area over central parts of south Arabian Sea during the period. Actually, a cyclonic circulation developed over southeast and adjoining Lakshadweep area on 24th March (0300 UTC).

It moved nearly westwards and became less marked on 27th March (0300 UTC) over the southwest BoB. The realised rainfall during 24th to 30th March, 2022 from satellite-gauge merged data is presented in Fig.2. Hence, development of cyclonic circulation over south Arabian Sea and enhanced rainfall activity over the region was well captured in week 1 forecast. No cyclogenesis was also correctly picked in week 2 and week 1 forecasts.

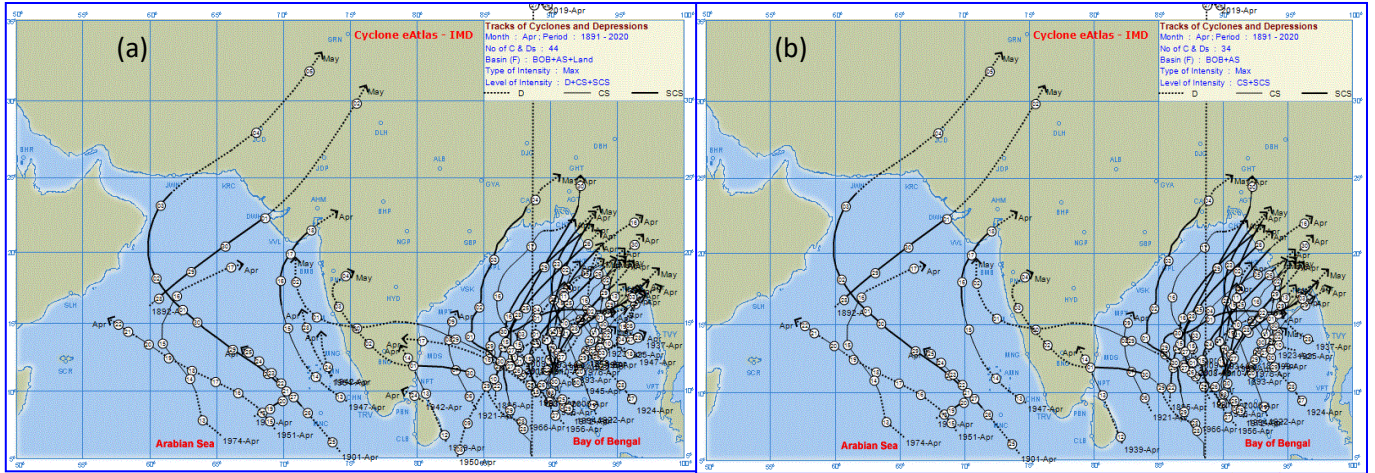


Fig. 1: Tracks of (a) cyclonic disturbances (MSW) ≥ 17 kt and (b) cyclonic storms (MSW) ≥ 34 kt in the month of April during the period 1891-2020

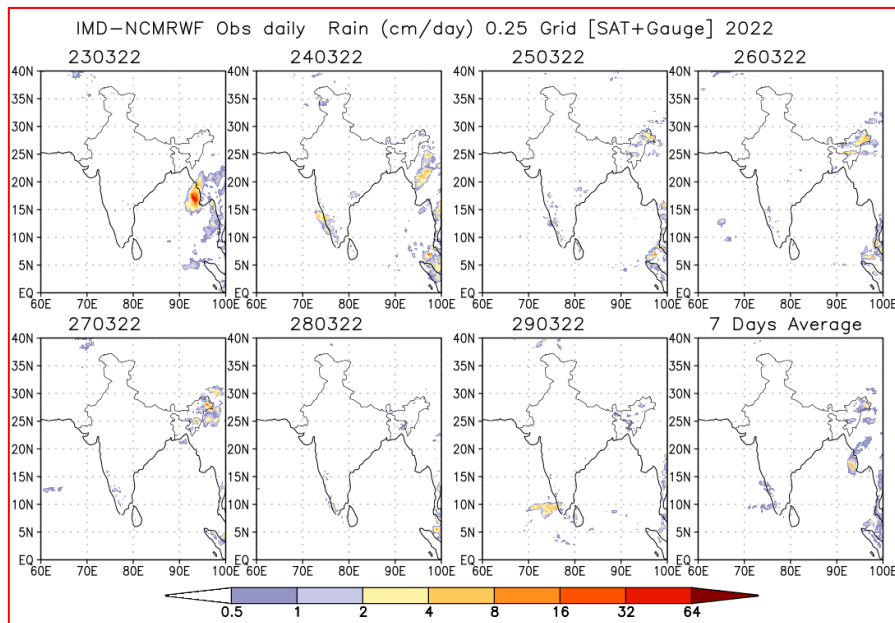


Fig.2: Rain gauge and satellite merged rainfall plots during 24th to 30th March, 2022

Next update: 07.04.2022