

The Madden Julian Oscillation Index (MJO) currently lies in phase 6 with amplitude more than 1. It would move eastwards to phase 7 during later part of week 1 and would continue in same phase during rest part of the forecast period. Hence, MJO will not support any convective activity over the North Indian Ocean (NIO) including the Bay of Bengal (BoB) and the Arabian Sea (AS) during entire forecast period.

Based on CFS forecast, during first half of week 1, westerly winds (3-5 mps) with Kelvin waves are likely to prevail over south BoB. Over the AS, weak easterly winds (1-3 mps) and westerly winds (3-5 mps) are likely over southeast AS. During later part of week 1, westerly winds (3-5 mps) are likely to prevail over south BoB and also over south AS. Hence during week 1, though equatorial waves may not support convective activity over the region, the stronger westerly may lead to increase in convective activity over southeast BOB and Andaman Sea. During first half of week 2, strong westerly winds (3-5 mps), Equatorial Rossby Waves (ERW) and weak easterly winds (1-3 mps) over eastcentral BoB are likely to prevail. During later part of week 2, weakening of these features is indicated with weak westerly winds (1-3 mps) over southeast BoB. Thus, equatorial waves are likely to contribute towards enhancement of convective activity over south and eastcentral BoB during first half of week2.

Considering the sea conditions, sea surface temperature (SST) is around 29-30°C over entire BoB and AS. The ocean heat content (OHC) is >100 KJ/cm² over entire Andaman Sea, central BoB, south BoB & adjoining EIO and 50-70 KJ/cm² over extreme north BoB. Over the AS, OHC is >100 KJ/cm² over southeast and adjoining eastcentral AS.

Considering the model guidance, the IMD GFS, NCEP GFS, GEFS, NCUM and NEPS are not indicating any development during the entire forecast period. However, ECMWF deterministic and ECMWF probabilistic models are indicating likely formation of depression over eastcentral BoB during first half of week 1 with gradual east-northeastwards movement.

Climatologically, during the period 1961-2020, there have been 69 cyclonic disturbances (CDs) (maximum sustained wind speed (MSW) ≥ 17 kt) over the NIO with 48 over the BoB and 21 over the AS (Fig.1a). Out of these, 50 intensified into cyclonic storm (MSW) ≥ 34 kt) with 35 over the BoB & 15 over the AS (Fig. 1 b).

Hence, considering all the above, it is concluded that a low pressure area is likely to form over Eastcentral BOB towards end of week 1 in association with advance of southwest monsoon over the region. There is low probability that the system would intensify into a depression over eastcentral BoB and during beginning of week 2.

Verification of forecast issued during last two weeks:

The forecast issued on 28th April for week 2 (06.05.2022-12.05.2022) indicated moderate probability of cyclogenesis over south Andaman Sea and Southeast BoB during first half of week 2. The forecast issued on 5th May for week 1 (06.05.2022-12.05.2022) indicated high probability of formation of depression over South Andaman Sea & Southeast BoB during first half of week 1. Actually a low pressure area formed over

south Andaman Sea on 6th May and depression formed over southeast bay of Bengal on 7th May. Thus, cyclogenesis was correctly predicted in forecast issued on 28th April for week 2 and that issued on 5th May for week 1 (i.e. about 9 days prior to formation of depression). The realised rainfall during 5th to 12th May, 2022 from satellite-gauge merged data is presented in Fig.2.

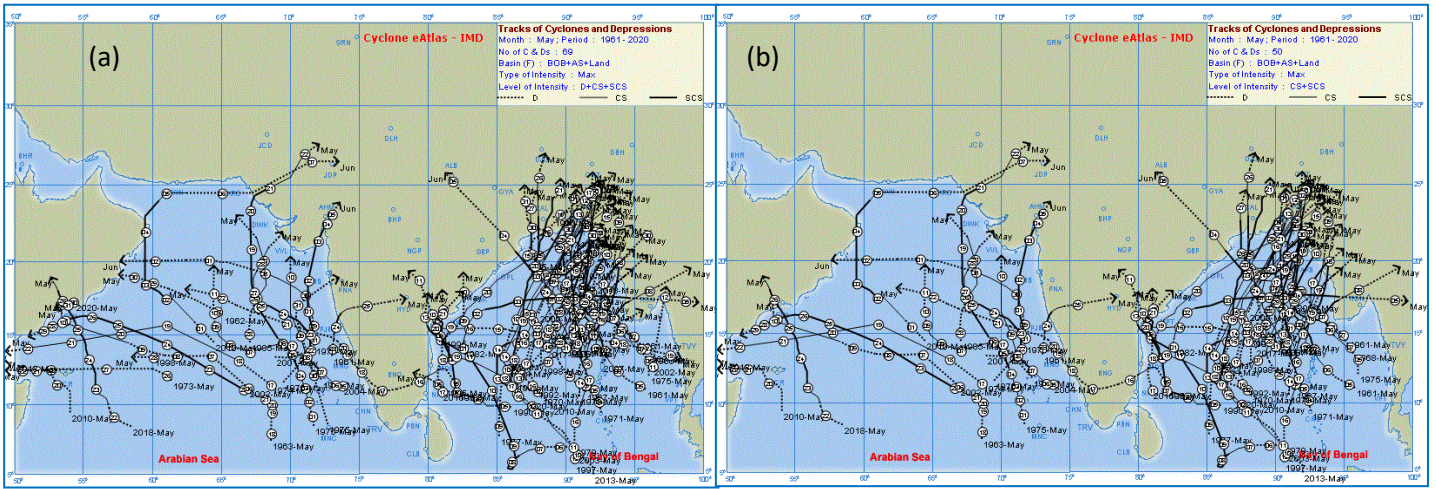


Fig. 1: Tracks of (a)cyclonic disturbances (MSW) \geq 17 kt and (b) cyclonic storms (MSW \geq 34 kt) over the North Indian Ocean during the month of May based on period of 1961-2020

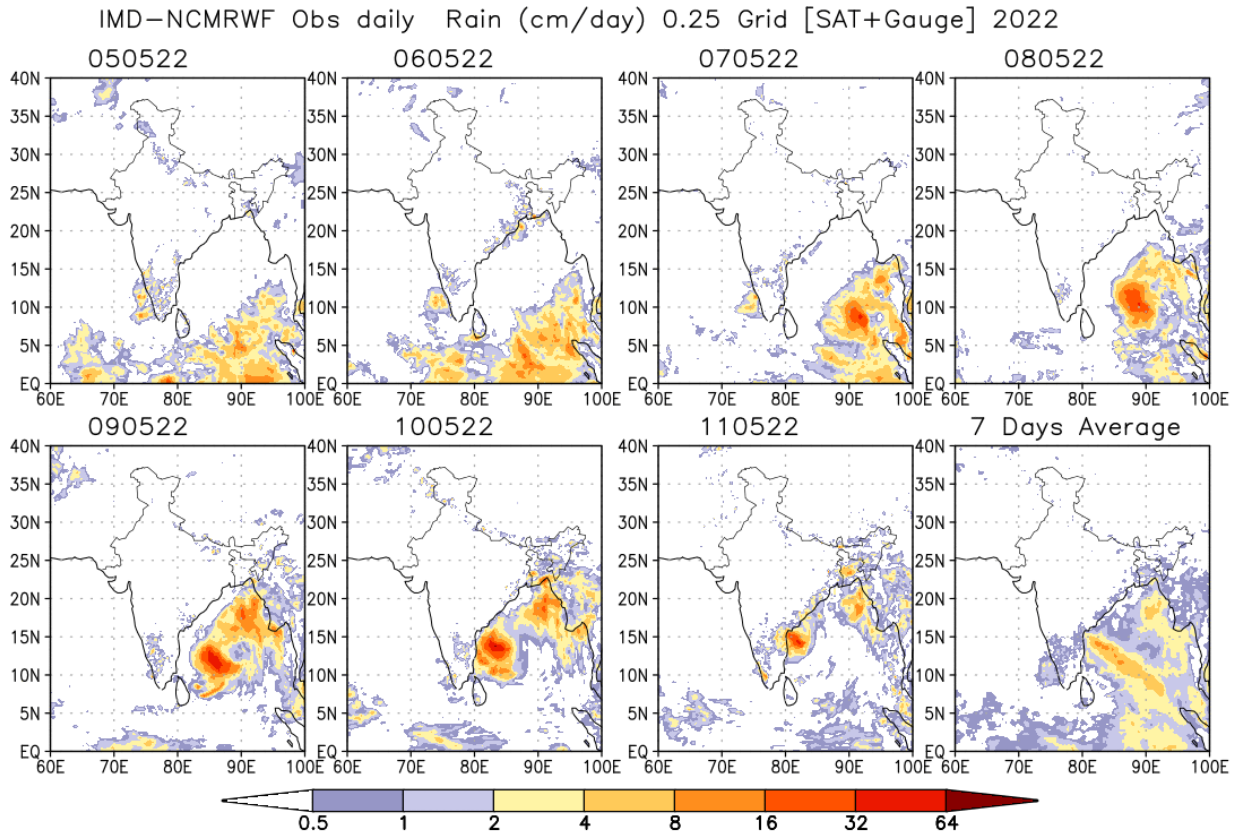


Fig.2: Rain gauge and satellite merged rainfall plots during 5th April to 12th May, 2022

Next update: 19.05.2022