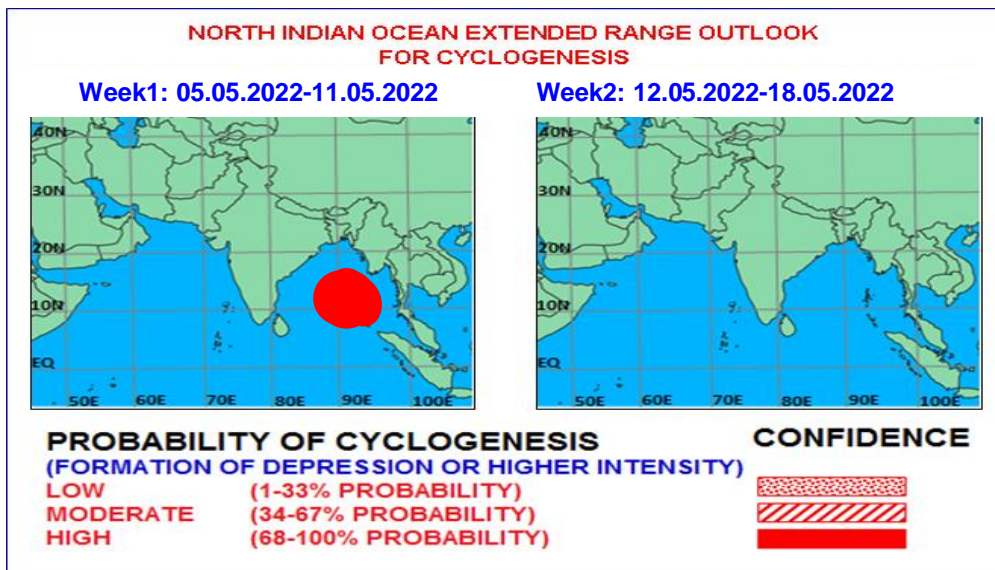




Issued on 05.05.2022



The Madden Julian Oscillation Index (MJO) currently lies in phase 1 with amplitude less than 1. It would move across phases 2, 3, 4 and 5 during next 5 days with gradually increasing amplitude. Hence, MJO will support enhancement of convective activity over the Bay of Bengal (BoB) during week 1.

Based on CFS forecast, during first half of week 1, MJO, Equatorial Rossby Waves (ERW), westerly winds (3-5 mps) over Equatorial Indian Ocean (EIO) & adjoining southeast Arabian Sea (AS) and south BoB and stronger easterly winds (5-7 mps) likely to prevail over central BoB. During later part of week 2, weak easterly winds (1-3 mps) over central BoB and weak easterly winds (1-3 mps) over south BoB & south AS are likely to prevail. Thus, equatorial waves are likely to contribute towards enhancement of convective activity over EIO and adjoining southeast AS and south BoB & central BoB during first half of week1. During first half of week 2, weak easterly winds (1-3 mps) over north BoB, strong westerlies (3-5 mps) over south BoB alongwith ERW are likely to prevail. During later part of week 2, weak easterly winds (1-3 mps) over north BoB and westerly winds (3-5 mps) and ERW over EIO & adjoining southeast AS are likely to prevail. During week 2, equatorial waves may not support significantly towards enhancement of convective activity over the NIO region.

Considering the sea conditions, sea surface temperature (SST) is around 29-30⁰C 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 northwest BoB. Over the AS, OHC is >100 KJ/cm² over southeast and adjoining eastcentral AS.

Considering the model guidance, most of the deterministic models including IMD GFS, NCEP GFS, ECMWF, NCUM (R), NCUM (G), ECMWF, IMD WRF, IMD MME and probabilistic models including GEFS, NEPS, ECMWF ensemble are indicating likely cyclogenesis (formation of depression) over Andaman Sea and adjoining southeast BoB during middle of week1 (around 8th May). The MME CFS (V2) is indicating >80% probability of cyclogenesis over Andaman Sea & adjoining southeast BoB. However, there is large variation among various models wrt intensification of the system. Most of the models are indicating the system to intensify upto a marginal cyclone. However, IMD GFS is indicating the system to intensity upto very severe category storm. Models are also unanimous about the northeastwards recurvature of the system.

Climatologically, during the period 1961-2020, there have been 69 cyclonic disturbances (CDs) (maximum sustained wind speed (MSW) \geq 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 \geq 34 kt) with 35 over the BoB & 15 over the AS (Fig. 1 b).

Hence, considering available guidance from various sources, it is concluded that a low pressure area is likely to form over south Andaman Sea and adjoining southeast Bay of Bengal areas on 6th May. There is high probability that the system would move northwestwards and intensify into a depression over southeast BoB and adjoining Andaman Sea during subsequent 48 hours.

Verification of forecast issued during last two weeks:

The forecast issued on 21st April for week 2 (29.04.2022-05.05.2022) indicated no probability of cyclogenesis over the region. The forecast issued on 28th April for week 1 (29.04.2022-05.05.2022) indicated likely formation of cyclonic circulation over south Andaman Sea during week1. Actually a cyclonic circulation developed over south Andaman Sea and neighbourhood on 4th May and persisted over the same region on 5th May. The realised rainfall during 14th to 20th April, 2022 from satellite-gauge merged data is presented in Fig.2.

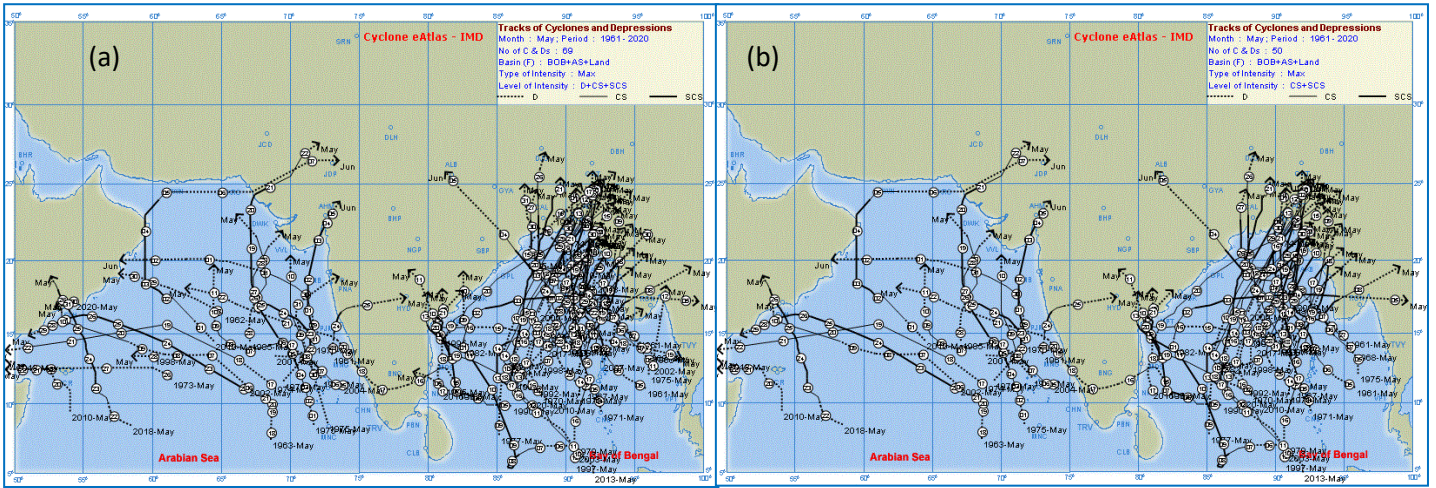


Fig. 1: Tracks of (a)cyclonic disturbances (MSW) ≥ 17 kt and (b) cyclonic storms (MSW ≥ 34 kt) over the North Indian Ocean during the month of May based on period of 1961-2020

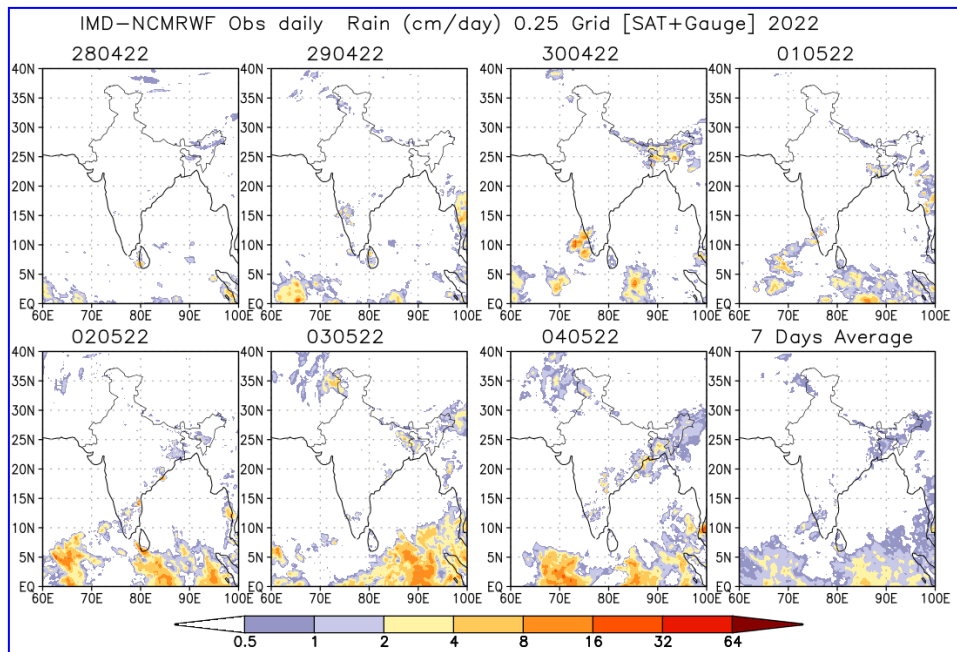


Fig.2: Rain gauge and satellite merged rainfall plots during 28th April to 4th May, 2022

Next update: 12.05.2022