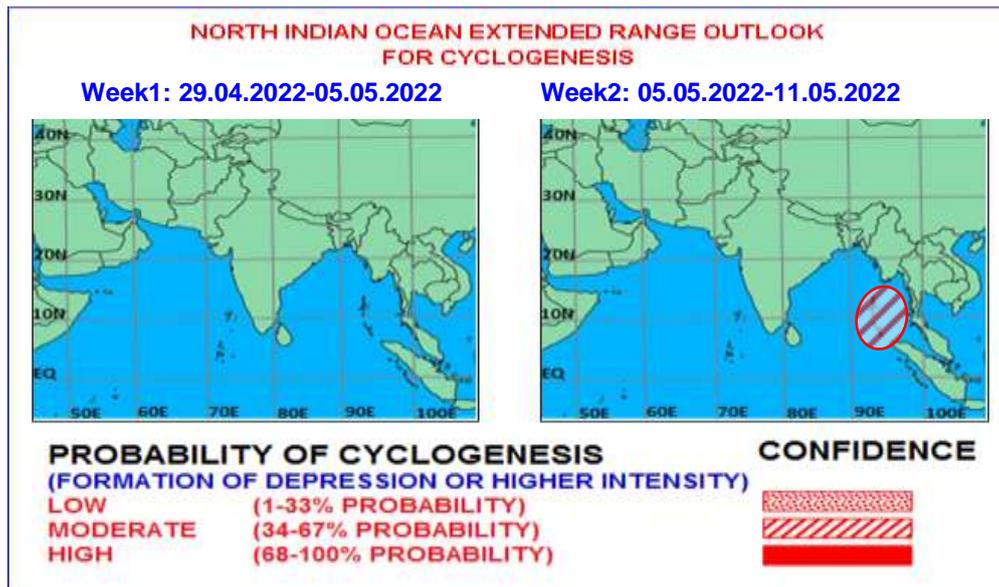




Issued on 28.04.2022



The Madden Julian Oscillation Index (MJO) currently lies in phase 5 with amplitude less than 1 and would continue in same phase during next 2 days. It is likely to move across phases 6, 7 & 8 during remaining part of the forecast period. Hence, MJO will support enhancement of convective activity over the Bay of Bengal (BoB) during first half of week 1. Based on CFS forecast, during first half of week 1, no significant equatorial waves are likely to prevail over BoB. However, over the Arabian Sea (AS), 3-5 mps easterly winds are likely to prevail over central AS alongwith Kelvin Waves (KW) and low frequency background waves (LOW). During later part of week 1, over the BoB, strong westerly winds (5-7 mps) are likely to prevail over equatorial Indian Ocean (EIO) & adjoining south BoB alongwith Equatorial Rossby Waves (ERW). Over the AS, weak easterly winds over central AS alongwith weak westerly winds (1-3 mps) & LOW are likely to prevail. During week 2, weak easterly winds (1-3 mps) over north BoB & central AS alongwith weak westerly winds (1-3 mps) are likely to prevail over south BoB & south AS. Thus, equatorial waves are likely to contribute towards enhancement of convective activity over the EIO and adjoining south BoB during first half of week 2. No other significant impact of these waves is likely during other parts of the forecast period.

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 major parts of south BoB & adjoining EIO & westcentral BoB and 60-80 KJ/cm² over remaining parts of BoB & Andaman Sea. Over the AS, OHC is >100 KJ/cm² over southeast and adjoining eastcentral AS.

Considering the model guidance, IMD GFS is indicating development of low pressure area over south Andaman Sea during beginning of week2 with gradual northeastwards movement & subsequent intensification into a depression over Gulf of Thailand. NCUM (G) is indicating confluence of southwesterlies and easterlies over eastcentral BoB during first half of week 2 leading to development of a cyclonic circulation over eastcentral BoB. ECMWF deterministic model is indicating development of depression over eastcentral BoB during first half of week 2. ECMWF probabilistic model is also indicating 10-30% of cyclogenesis over southeast & adjoining eastcentral BoB during first half of week 2. Thus, model guidance indicates moderate probability of cyclogenesis over the south Andaman Sea and adjoining southeast & eastcentral Bay of Bengal region during first half of week 2.

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 available guidance from various sources, it is concluded that there is moderate probability of formation of a depression over south Andaman Sea and adjoining southeast Bay of Bengal areas with gradual northeastwards movement during first half of week 2 and enhanced convective activity over south Andaman Sea & adjoining areas of southeast & eastcentral BoB, Andaman & Nicobar Islands, Myanmar and Thailand.

Verification of forecast issued during last two weeks:

The forecast issued on 14th April for week 2 (22.04.2022-28.04.2022) indicated likelihood of formation of cyclonic circulation over south Andaman Sea during beginning of week 2 with west-northwestwards movement and no significant intensification. Actually, a cyclonic circulation formed over Equatorial Indian Ocean & adjoining Southeast Bay of Bengal on 26th and became less marked on 27th April. The forecast issued on 21st April for week 1 (22.04.2022-28.04.2022) indicated likelihood of formation of a cyclonic circulation over Comorin area/ southeast Arabian Sea during first half of week 1. However, no formation of any cyclonic circulation occurred over Arabian Sea during week 1. The realised rainfall during 14th to 20th April, 2022 from satellite-gauge merged data is presented in Fig.2.

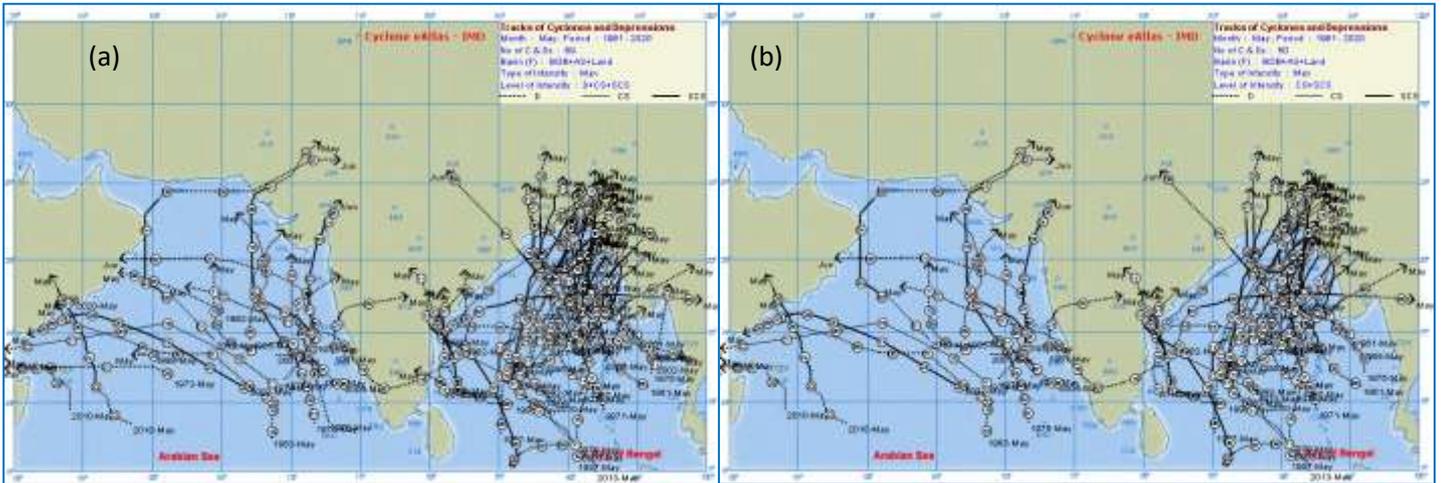


Fig. 1: Tracks of (a)cyclonic disturbances (MSW) ≥ 17 kt and (b) cyclonic storms (MSW ≥ 34 kt) over the North Indian Ocean during the month of May based on period of 1961-2020

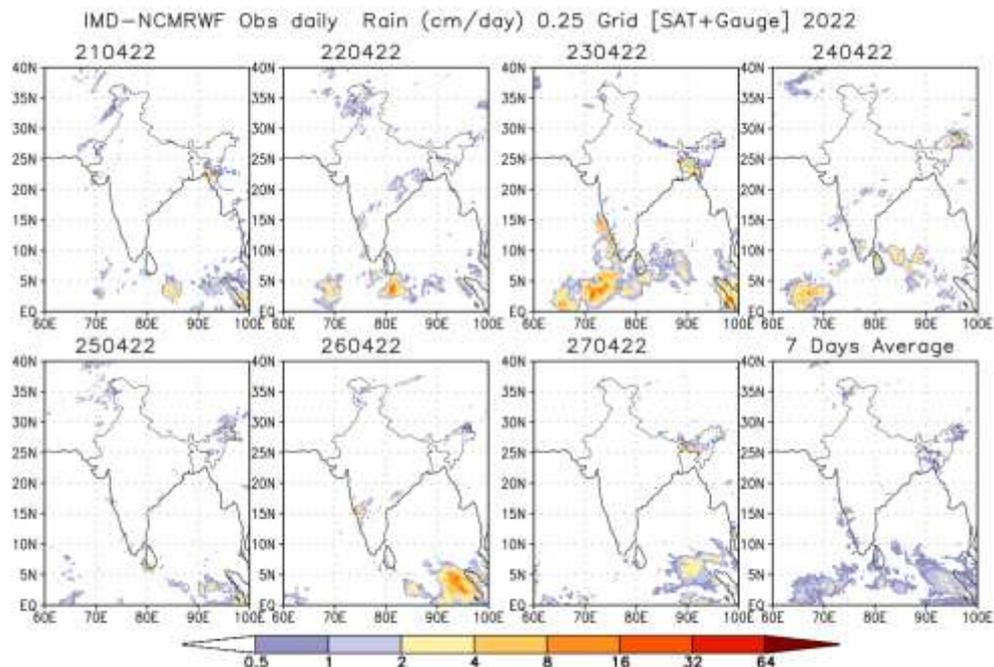


Fig.2: Rain gauge and satellite merged rainfall plots during 21st April to 27th April, 2022