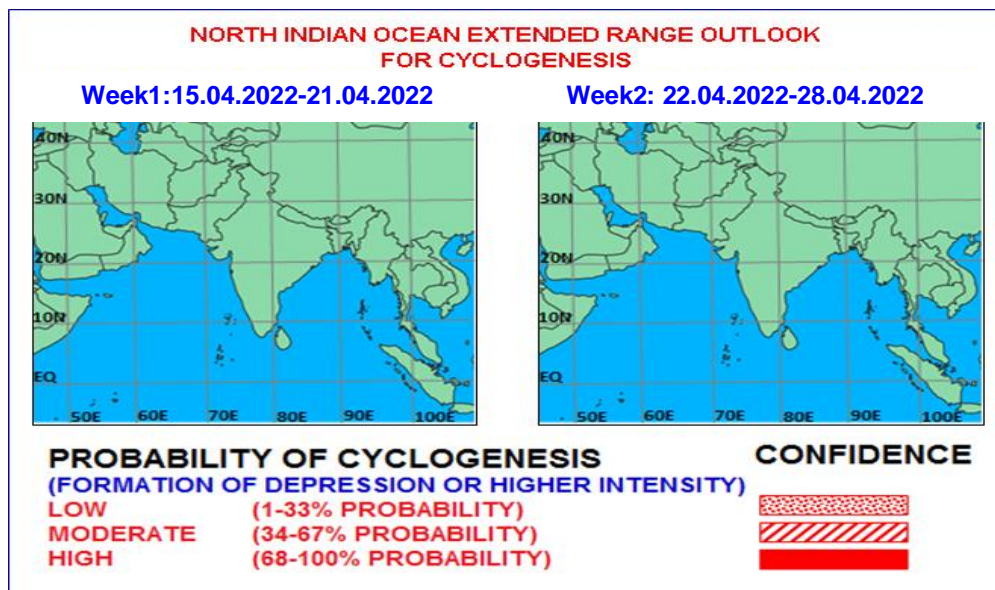




Issued on 14.04.2022



The Madden Julian Oscillation Index (MJO) currently lies in phase 7 with amplitude close to 1. It is likely to move eastwards and move across phases 7 & 8 during week 1. Thereafter, during week 2, it will move across phases 1, 2, 3 & 4 with amplitude remaining negligibly small. Hence MJO will support enhancement of convective activity over the Bay of Bengal (BoB) during week 2. Based on CFS forecast, 1-3 mps easterly winds are likely to prevail over eastcentral Arabian Sea (AS) & central BoB, strong westerly winds (5-7 mps) & Equatorial Rossby waves (ERW) are likely over Equatorial Indian Ocean (EIO) & adjoining south AS during first half of week 1. During later part of week 1, 3-5 mps westerly winds are likely to prevail over EIO & adjoining south AS with weak easterly winds (1-3 mps) over central AS. During first half of week 2, weak easterly winds (1-3 mps) and westerly winds (1-3 mps) are likely to prevail over central BoB & eastcentral AS. During later part of week 2, strengthening of westerly winds (3-5 mps) is likely over EIO & adjoining south BoB with easterly winds remaining 1-3 mps. Thus, MJO and equatorial waves will contribute towards enhancement of convective activity over the BoB during week 2.

Considering the sea conditions, sea surface temperature (SST) is around 29-30°C over south & adjoining eastcentral BoB and southeast AS. The ocean heat content (OHC) is >100 KJ/cm<sup>2</sup> over southeast & adjoining southwest BoB and 60-80 KJ/cm<sup>2</sup> over remaining parts of BoB & Andaman Sea. Over the AS, OHC is >100 KJ/cm<sup>2</sup> over southeast and adjoining eastcentral AS.

Considering NWP model guidance, some models including IMD GFS, NCEP GFS, ECMWF etc. are indicating that the existing cyclonic circulation over southeast AS and adjoining Lakshadweep is likely to move west-northwestwards and dissipate gradually during next 2-3 days. These models are also indicating likely development of a fresh cyclonic circulation over south Andaman Sea during beginning of week 2 with gradual west-northwestwards movement without any significant intensification.

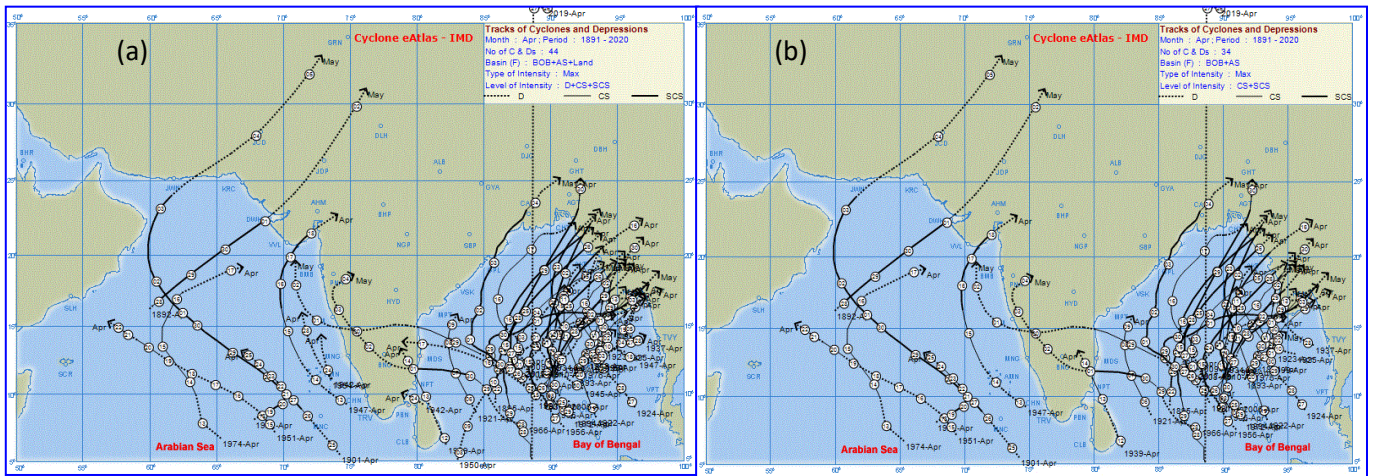
Climatologically, during the period 1891-2020, there have been 44 cyclonic disturbances (CDs) (maximum sustained wind speed (MSW) ≥ 17 kt) over the NIO including 8 over AS and 36 over BoB (Fig.1a). Out of the 8 CDs over AS, 2 intensified into CS category (MSW ≥ 34 kt) and 4 into SCS category (MSW ≥ 48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

Hence, various environmental features and model guidance indicate that the existing cyclonic circulation over southeast Arabia Sea and adjoining Lakshadweep would move west-northwestwards with enhanced convective activity over the region during first half of week 1 without significant intensification. Also there is likelihood of formation of fresh cyclonic circulation over south Andaman Sea during beginning of week 2 with west-northwestwards movement and no significant intensification.

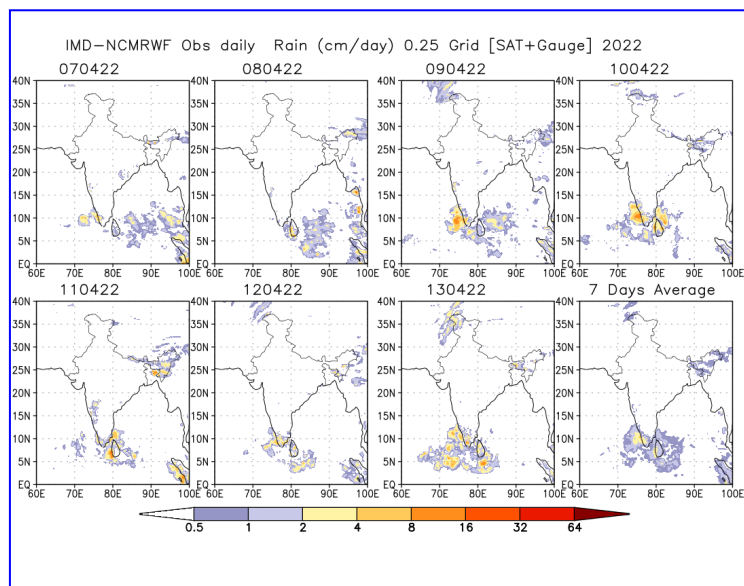
#### **Verification of forecast issued during last two weeks:**

The forecast issued on 31<sup>st</sup> March for week 2 (08.04.2022-14.04.2022) indicated 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. The forecast issued on 7<sup>th</sup> April for week 1 (08.04.2022-14.04.2022) indicated the cyclonic circulation over south Andaman Sea to move west-northwestwards without any significant intensification. Actually, cyclonic circulation formed over south Andaman Sea & neighbourhood on 6<sup>th</sup> April. It moved west-northwestwards and emerged into southeast Arabian Sea on

13th April as a cyclonic circulation. Hence, the likely formation of cyclonic circulation over south Andaman Sea was well predicted two weeks in advance. Movement and no cyclogenesis was also well predicted correctly two weeks in advance. The realised rainfall during 7<sup>th</sup> to 13<sup>th</sup> April, 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) in the month of April during the period 1891-2020**



**Fig.2: Rain gauge and satellite merged rainfall plots during 7<sup>th</sup> April to 13<sup>th</sup> April, 2022**

**Next update: 21.04.2022**