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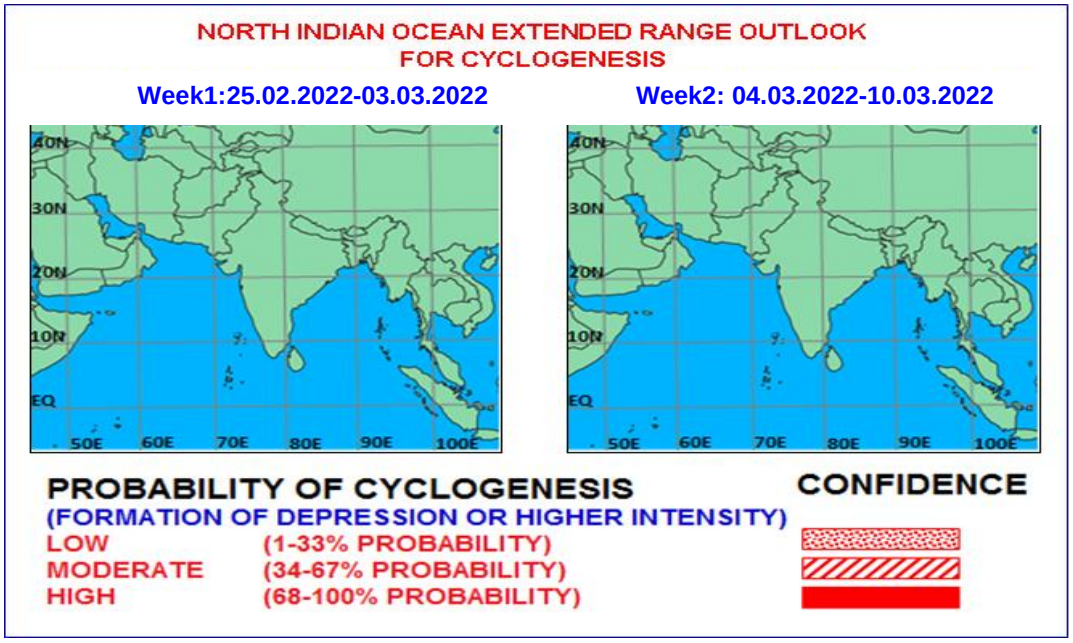

The Madden Julian Oscillation (MJO) Index currently lies in Phase 4 with amplitude close to 1 and will continue in same phase during first half of week 1. Thereafter, it will propagate to phase 5 with amplitude remaining less than 1 till end of week 1. The amplitude will gradually increase thereafter becoming more than 1 during week 2. MJO phase is thus favourable for enhancement of convective activity over Bay of Bengal (BoB) during entire forecast period.

Based on CFS forecast, MJO, westerlies (3-5 mps) over south Andaman Sea & (5-7 mps) over southeast BoB, Equatorial Rossby waves (ERW) over southeast BoB & Kelvin waves (KW) over eastcentral BoB are likely to prevail on 25th. However, weak easterlies over Equatorial Indian Ocean (EIO) & adjoining south Arabian Sea (AS) and weak westerlies over south Andaman Sea are likely to prevail during remaining part of week 1. During week 2, westerlies (5-7 mps) would prevail over westcentral BoB upto eastcentral AS. No other wave is likely to prevail over the region during week 2. Considering the sea conditions, sea surface temperatures (SST) is around 26^{0}C over southern parts of NIO. The ocean heat content is more than 100 KJ/cm^2 over south Andaman Sea and adjoining EIO, becoming less than 60 KJ/cm^2 towards west. Thus, various broad scale features including MJO, westerlies, easterlies, ERW, KW and ITCZ etc. and oceanic conditions rule out any cyclogenesis over the NIO region during forecast period.

The pressure and wind fields of IMD GFS and GEFS are indicating development of depression over south Andaman Sea during middle of week 1 with gradual weakening till end of week 1. NCEP GFS is indicating a low pressure area over south Andaman Sea during later part of week 1 with gradual westwards movement and no intensification. ECMWF deterministic model is indicating a low pressure area over south Andaman Sea on 27th, becoming insignificant thereafter. NCUM (G) is indicating a cyclonic circulation over south Andaman Sea on 27th with westwards movement and no further intensification. NEPS and NCUM (R) are not indicating any significant development over the region. ECMWF ensemble is indicating 10-30% probability of formation of depression over south BoB during later part of week 1 with westwards movement and weakening over sea itself. Considering climatological guidance, 6 cyclonic disturbances developed over south BoB during 1891-2020 with one crossing north Tamil Nadu, other crossing Sri Lanka and 4 weakened over sea.

Hence to conclude, various broad scale features, sea conditions and model guidance indicate that cyclogenesis is not likely over the North Indian Ocean during the ensuing 2 weeks. However, enhanced convective activity leading to formation of cyclonic circulation or a low pressure area is likely over south Andaman Sea and adjoining southeast Bay of Bengal during middle of week 1 and it is likely to move westwards towards Sri Lanka during later half of the week..

Verification of forecast issued during last two weeks:

The forecast issued on 10th February for week 2 (18.02.2022-24.02.2022) and on 17th February for week 1 (18.02.2022-24.02.2022) indicated no cyclogenesis over the region during the forecast period. Hence non-occurrence of cyclogenesis was correctly predicted in the two weeks forecast. Also, on 10th February, enhanced convective activity was indicated over South Andaman Sea and Gulf of Thailand during week 2 (18.02.2022-24.02.2022). On 17th February, enhanced convective activity was indicated over Andaman Sea and adjoining eastern parts of BoB during week 1 (18.02.2022-24.02.2022). Hence, enhanced activity over Andaman Sea and adjoining eastern parts of BoB and Gulf of Thailand could be predicted well two weeks in advance (Fig.1).

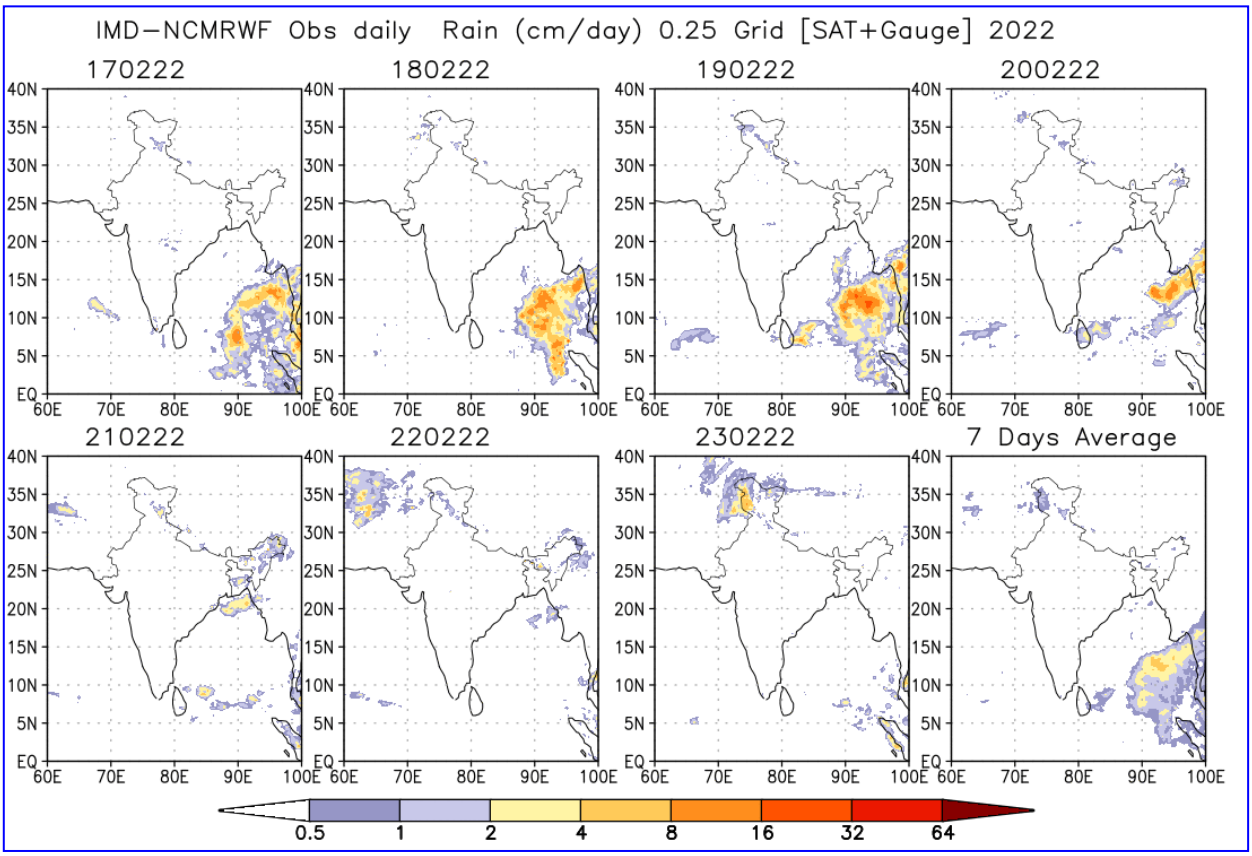

Fig. 1: IMD-NCMRWF merged satellite rain gauge plots during 17th to 23rd February, 2022

Next update: 03.03.2022