

The Madden Julian Oscillation Index (MJO) currently lies in phase 3 with amplitude less than 1 and would move across phase 4 till the end of week 1 with amplitude becoming more than 1. It will thereafter move across phase 5 with amplitude remaining more than 1 till the middle of week 2. Thereafter, it will move to phase 6 with amplitude remaining more than 1. Enhanced MJO phase and amplitude during week 1 and first half of week 2 is likely to increase westerly winds over the Bay of Bengal region during the period. Thus, MJO would support enhancement of convective activity over the Bay of Bengal (BoB) during week 1 and first half of week 2.

Based on CFS forecast for equatorial waves, during first half of week 1, easterlies (1-3 mps) over north & adjoining central BoB and central India and westerlies (1-3 mps) alongwith equatorial rossby waves (ERW) over Gulf of Thailand are likely to prevail during first half of week 1. Thus, equatorial waves are likely to support the convective activity over north & adjoining central BoB during first half of week 1. During later half of week 1, weak easterlies (1-3 mps) are likely over south & adjoining central BoB. During week 2, weak easterlies are likely to prevail over south BoB.

The guidance from various deterministic numerical models including IMD GFS, GEFS, ECMWF, NCUM, NEPS, NCEP GFS does not indicate any cyclogenesis over the NIO during next two weeks. However, these models indicate likely emergence of a cyclonic circulation over the central & adjoining north BoB during first half of week 1. Various extended range forecast models including IMD MME CFS (V2) and NCMRWF CNCUM also indicate likelihood of formation of a cyclonic circulation over westcentral & adjoining northwest BoB during middle of week 1. ECMM is indicating 5-10% probability of cyclogenesis over westcentral BoB during week 1 and over eastcentral BoB during week 2. IMD MME CFS (V2) is also indicating 10-20% probability of cyclogenesis over eastcentral BoB week 2.

- Hence, considering the model guidance and various environmental features, it is inferred that
- (i) there is likelihood of emergence of a cyclonic circulation over central & adjoining north BoB during first half of week 1 with west-northwestwards movement and no significant intensification.
 - (ii) there is also likelihood of formation of a cyclonic circulation over eastcentral BoB and adjoining North Andaman Sea during week 2 with low probability of it's further intensification and west-northwestwards movement.

Verification of forecast issued during last two weeks:

The forecast issued on 15th September for week 2 (23.09.2022 - 29.09.2022) indicated likelihood of formation of a cyclonic circulation over north & adjoining central BoB during week 2. The forecast issued on 22nd September for week 1 (23.09.2022 - 29.09.2022) indicated likelihood of formation of a cyclonic circulation over north and adjoining central BoB during middle of week.

Actually, a cyclonic circulation formed over westcentral BoB on 24th September. Another cyclonic circulation

developed over northwest & adjoining westcentral BoB on 27th September. It lay over westcentral BoB off Andhra Pradesh coast on 29th September. Hence likely formation of cyclonic circulation over central BoB was correctly predicted 2 weeks in advance with minor spatial anomaly.

The realized rainfall during 22nd September, 2022 to 27th September, 2022 from satellite-gauge merged data is presented in Fig.1.

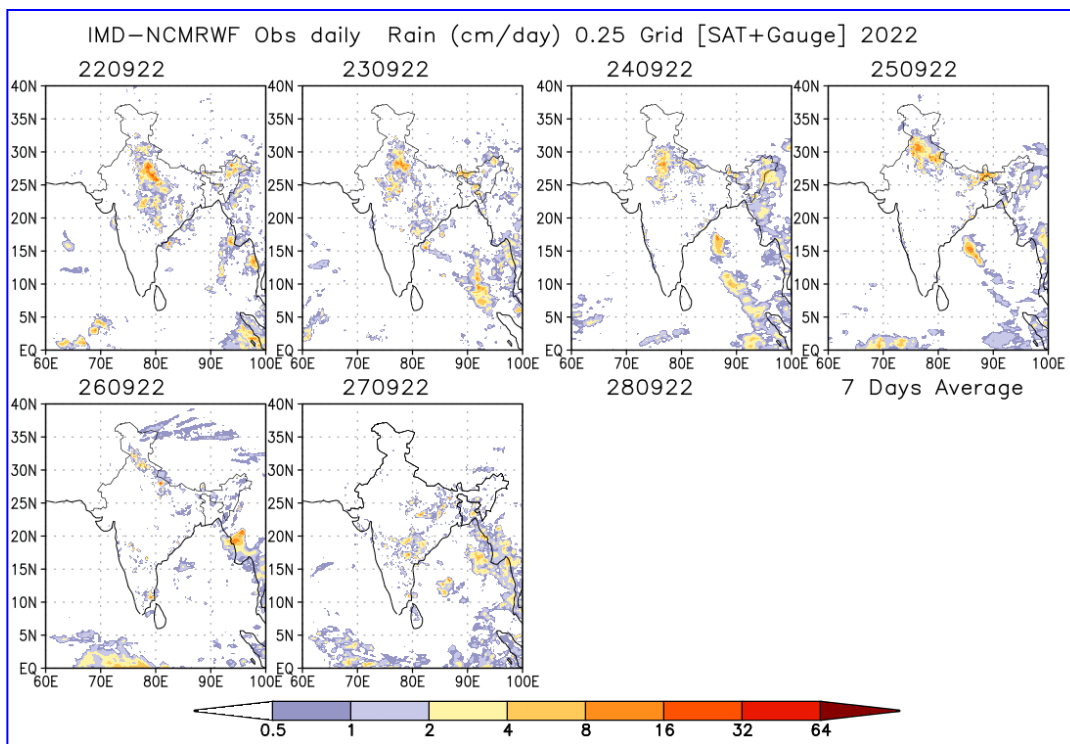


Fig.1: Rain gauge and satellite merged rainfall plots during 22nd September to 27th September, 2022

Next update: 06.10.2022