

The Madden Julian Oscillation Index (MJO) currently lies in phase 4 with amplitude close to 1 and would move to phase 5 from tomorrow till the end of week 1 with amplitude remaining more than 1. It will thereafter move across phase 6 with amplitude remaining more than 1 during entire week 2. Enhanced MJO phase and amplitude is likely to increase westerly winds over the Bay of Bengal region during week 1 and over the the northwest Pacific during week 2. 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, weak easterlies (1-3 mps) over south Arabian Sea (AS) and southwest BoB are likely to prevail. During later part of week 1, westerlies (1-3 mps) over central BoB and MJO over central BoB and central India are likely to prevail. During week 2, equatorial rossby waves (ERW) alongwith Kelvin waves (KW) and westerly winds are likely over the central & adjoining north BoB region. Thus, equatorial waves are likely to contribute towards enhancement of convective activity over the central BoB during first half of week 2.

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 formation of low pressure area over central parts of BoB during first half of week 1 with west-northwestwards movement towards Andhra Pradesh coast without any further intensification. Various extended range forecast models including IMD MME CFS (V2) and NCMRWF CNCUM also indicate likely movement of existing cyclonic circulation over central parts of south BoB towards westcentral BoB during first half of week 1 and also another circulation over central parts of BoB during week 2. These models are also indicating likely formation of a cyclonic circulation over eastcentral AS during week 2. ECMF ensemble prediction system is indicating 10-30% probability of cyclogenesis over westcentral BoB during week 1 and (5-10%) probability of cyclogenesis over eastcentral BoB during week 2. IMD MME CFS (V2) is also indicating 10-20% probability of cyclogenesis over westcentral BoB during week 1 and similar probability over eastcentral BoB during week 2. However, it is also indicating 30-40% probability of cyclogenesis over eastcentral AS.

- Hence, considering the model guidance and various environmental features, it is inferred that**
- (i) the existing cyclonic circulation over central parts of south BoB is likely to move west-northwestwards with low probability of it's intensification into a low pressure area.**
 - (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.**
 - (iii) there is also low probability of formation of a cyclonic circulation/low pressure area over eastcentral AS during week 2.**

Verification of forecast issued during last two weeks:

The forecast issued on 22nd September for week 2 (30.09.2022 – 06.10.2022) indicated likelihood of formation of a cyclonic circulation over central BoB during middle of week 2. The forecast issued on 29th September for week 1 (30.09.2022 – 06.10.2022) indicated likelihood of formation of a cyclonic circulation over central BoB during first half of week 1.

Actually, a cyclonic circulation formed over central parts of south BoB on 6th September. Hence likely formation of cyclonic circulation over BoB with some spatial difference could be captured well in two weeks forecast.

The realized rainfall during 29th September, 2022 to 5th October, 2022 from satellite-gauge merged data is presented in Fig.1.

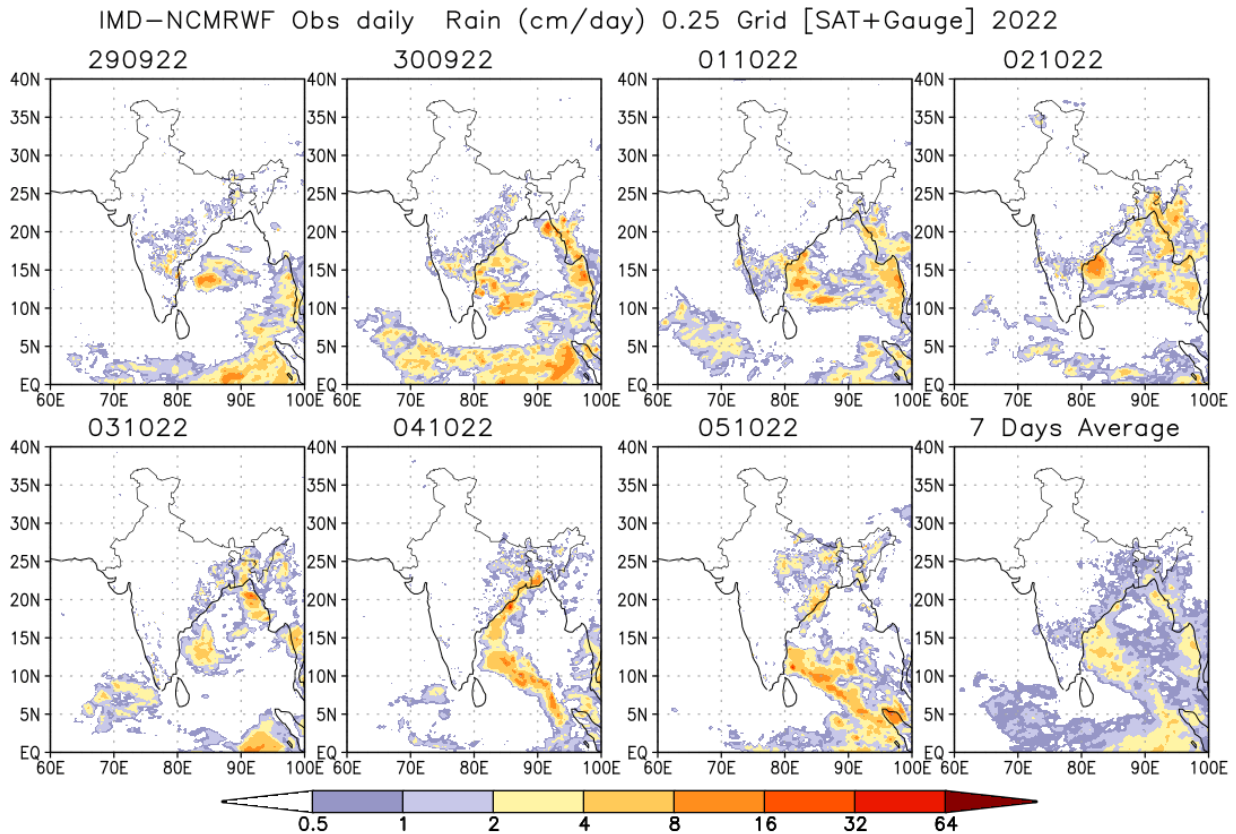


Fig.1: Rain gauge and satellite merged rainfall plots during 29th September to 5th October, 2022

Next update: 13.10.2022