

The Madden Julian Oscillation Index (MJO) currently lies in phase 5 with amplitude less than 1 and would continue in same phase during first half of week 1. Thereafter, it will move across phases 6, 7, 8 & 1 with amplitude remaining less than 1 during remaining part of the forecast period. Thus, MJO would support cyclogenesis over the Bay of Bengal (BoB) during first half of the forecast period.

Based on CFS forecast for equatorial waves, during first half of week 1, easterlies (5-7 mps) over central & adjoining north BoB, westerlies (5-7 mps) over central & adjoining south BoB, Kelvin waves (KW), equatorial Rossby Waves (ERW) and MJO are likely to prevail over central BoB. During later part of week 1 and beginning of week 2, easterlies ((1-3 mps) are likely to prevail over central & north BoB. Also easterlies (3-5 mps) over north Arabian Sea (AS) and feeble westerlies over southwest AS are likely during later part of week 1 and first half of week 2. During later half of week 2, (3-5 mps) easterlies over north BoB and feeble westerlies (1-3 mps) alongwith ERW are likely over eastcentral BoB. Hence equatorial waves are very likely to contribute towards cyclogenesis over the BoB during first half of week 1.

Current environmental conditions (including low level vorticity, low level convergence, upper level divergence and vorticity at different levels) indicate favourable environment over westcentral BoB.

The guidance from IMD GFS model indicates likely intensification of existing low pressure area (LPA) over westcentral BoB into a depression over westcentral & adjoining northwest BoB off North Andhra Pradesh & adjoining South Odisha coasts around 11th September. However, models like NCEP GFS, NCUM (R), ECMWF, NEPS and GEFS indicate the existing low pressure area to move across central India without significant intensification. ECMF ensemble is indicating likely formation of depression over central BoB during first half of week 1. IMD GPP index is indicating potential zone for cyclogenesis over northwest & adjoining westcentral BoB during 10th-12th September. IMD MME TC tracker is also indicating likely formation of depression over westcentral & adjoining northwest BoB off North Andhra Pradesh & adjoining Odisha coasts around 11th September. IMD CFS-V2 is also indicating likely formation of a cyclonic circulation/ low pressure area over north & adjoining central BoB during first half of week 2.

Hence, considering the model guidance and various environmental features, it is inferred that there is (a) low probability of cyclogenesis (formation of depression) over westcentral and adjoining northwest BoB off North Andhra Pradesh & Odisha coasts during first half of week 1 and (b) likelihood of formation of a cyclonic circulation/ low pressure area over north & adjoining central BoB during first half of week 2.

Verification of forecast issued during last two weeks:

The forecast issued on 25th August for week 2 (02.09.2022 - 08.09.2022) indicated no probability of cyclogenesis over the North Indian Ocean region during week 2. The forecast issued on 1st September for week 1 (02.09.2022 - 08.09.2022) indicated likely formation of cyclonic circulation/low pressure area over westcentral BoB during week 1. Actually a cyclonic circulation formed over eastcentral BoB on 7th and it lay as a low pressure area over westcentral & adjoining eastcentral BoB on 8th September. Hence likely formation of low pressure area over westcentral BoB was correctly predicted 1 week in advance.

The realized rainfall during 1st September, 2022 to 7th September, 2022 from satellite-gauge merged data is presented in Fig.1.

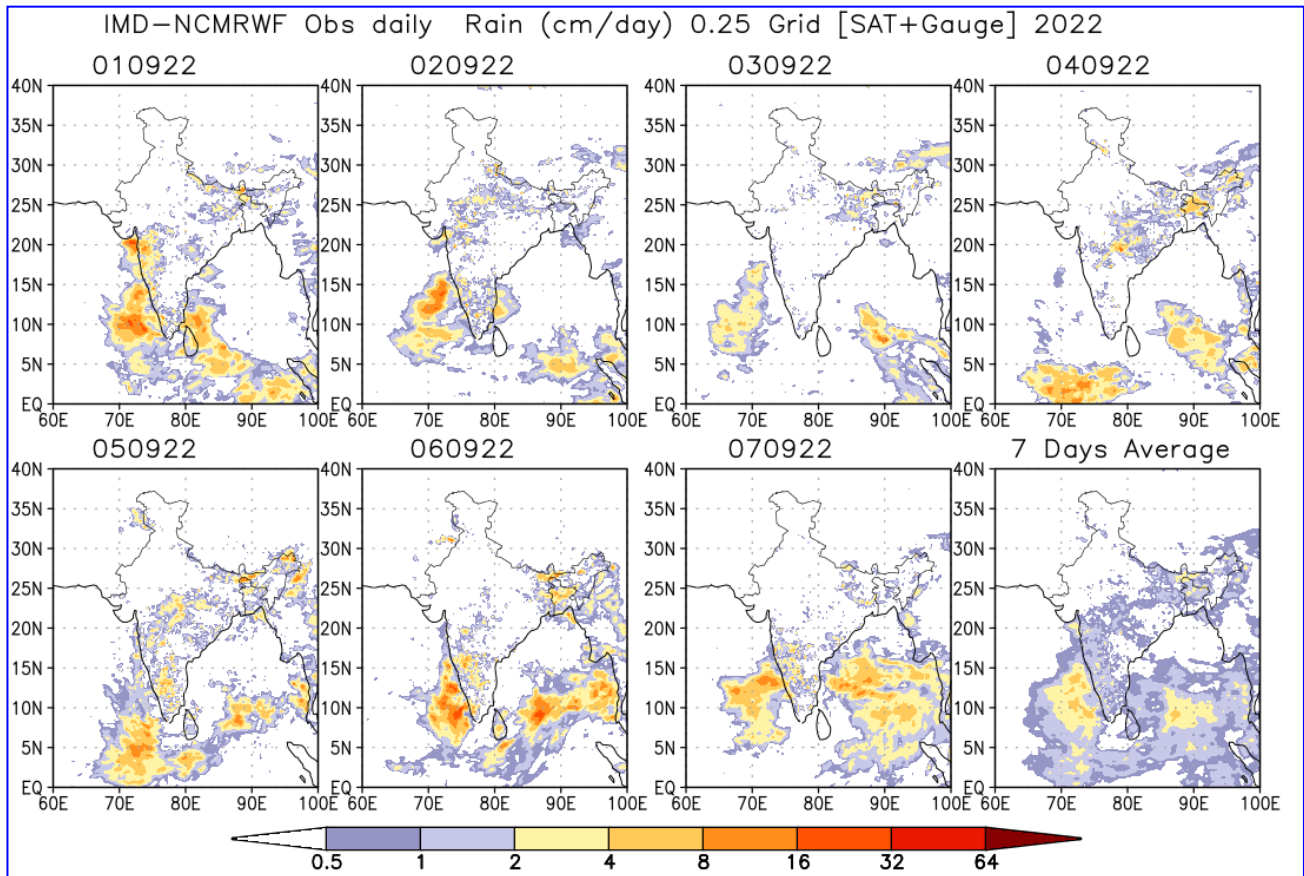


Fig.1: Rain gauge and satellite merged rainfall plots during 1st September to 7th September, 2022

Next update: 15.09.2022