

### I. Environmental features:

The Madden Julian Oscillation (MJO) Index is currently in Phase 7 with amplitude less than 1. It will continue in same phase for next 1 day. Thereafter, it would move to phase 5 from middle of week 1 to middle of week 2. Thereafter, it would move to phase 6. Thus MJO will be favourable for enhancement of convective activity over the over the Bay of Bengal during middle of week 1 to middle of week 2.

Based on CFS forecast for equatorial waves, during first half of week 1, easterlies (5-7 mps) are likely over south Bay of Bengal (BoB) and southeast Arabian Sea (AS). During later part of week 1, westerlies (1-3 mps) are likely over southeast BoB and Andaman Sea alongwith Equatorial Rossby Waves (ERW). During first half of week 2, similar features are extending over south & central BoB alongwith ERW. Over the AS region, only westerly winds (1-3 mps) are likely to prevail. Thus, equatorial waves are indicating enhanced cross equatorial flow over the BoB region during later part of week 1 to middle of week 2.

### II. Model Guidance:

Most of the models like IMD GFS, GEFS, NCEP GFS, ECMWF, ECMWF ensemble and NCUM are indicating the low pressure area over southwest BoB on 10<sup>th</sup> to move northwestwards towards Tamil Nadu coast till 12<sup>th</sup> morning (0000 UTC). No significant intensification of this system is indicated by the models. However, models are indicating this low pressure area/it's remnant to move across south Peninsular region on 13<sup>th</sup> and emerge into Arabian Sea, intensify further and move northwestwards towards Yemen coast. However, NCUM group of models are indicating intensification of this system into severe cyclonic storm and above and movement towards Yemen-Oman coasts till 19<sup>th</sup> evening (1200 UTC). GFS, GEFS, NCEP GFS and ECMWF are not indicating any significant intensification of the system over Arabian Sea. Models are also indicating development of fresh cyclonic circulation over south Andaman Sea around 14<sup>th</sup>, low pressure area over Andaman Sea and adjoining southeast BoB around 15<sup>th</sup> and depression over southeast & adjoining eastcentral BoB around 18<sup>th</sup>. However, GFS group is indicating significant

intensification of this system into a cyclonic storm around 19<sup>th</sup>. NCEP & ECMWF are not indicating any significant intensification. NCUM group is not indicating any significant intensification of this system. Overall, Models are indicating simultaneous development of cyclonic disturbances over the BoB and the AS from 15<sup>th</sup> onwards. NCEP GFS and ECMWF are indicating no significant intensification of both the systems. GFS group is indicating the system over BoB to intensify into a depression around 18<sup>th</sup> and further into a cyclonic storm around 19<sup>th</sup>. NCUM group is indicating marginal intensification of system over BoB, but it is indicating system over AS to intensify into a depression on 15<sup>th</sup> and into a CS on 17<sup>th</sup>. Both the systems are exhibiting some interaction. Consequently, GFS group is indicating intensification of system over BoB and weakening of system over AS on 16<sup>th</sup>. Similarly, NCUM group is indicating intensification over system over AS from 15<sup>th</sup> onwards. NCMRWF extended range model is indicating cyclonic circulation over southwest BoB during beginning of week 1 and another over south Andaman Sea during the beginning of week 2. IMD extended range model is indicating 30-40 % probability of cyclogenesis over eastcentral BoB & adjoining southwest BoB and 10-20 % probability of cyclogenesis over eastcentral AS during week 1, 20-30% probability of cyclogenesis over south Andaman Sea & south BoB during week 2.

### III. Inference:

**Considering the model guidance and various environmental features, it is inferred that**

- The Low Pressure Area (LPA) over southwest Bay of Bengal is likely to become more marked during next 24 hours and move northwestwards towards Tamilnadu-Puducherry coasts till 12th November. Thereafter, it would move west-northwestwards across Tamil Nadu-Puducherry and Kerala during 12th-13th November, 2022.
- There is also likelihood of development of a fresh cyclonic circulation over south Andaman Sea/southeast BoB during middle of week 1 (around 14th Nov). It is likely to move west-northwestwards and intensify gradually. Hence probability of cyclogenesis is assigned over southeast BoB and neighbourhood towards end of week 1 or beginning of week 2.
- There is likelihood of emergence of the existing low pressure area/it's remnant over into southeast Arabian Sea middle of week 1 (around 14th Nov). The system is likely to move west-northwestwards and intensify gradually into a depression during later part of week 1. Hence cyclogenesis is expected over southeast/eastcentral AS later part of week 1 with low probability.

### IV. Verification of forecast issued during last two weeks:

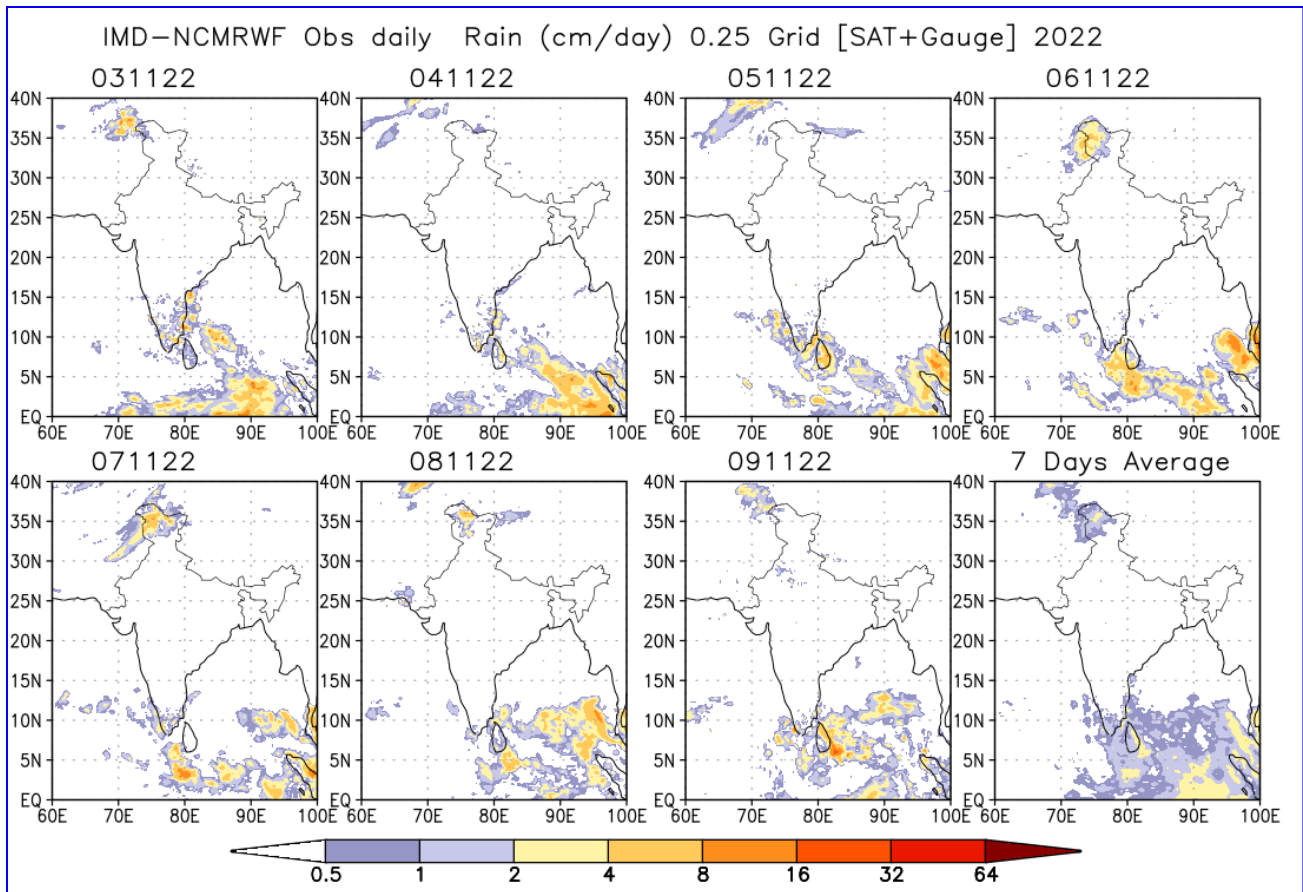
The forecast issued on 27<sup>th</sup> October for week 2 (**04.11.2022 – 10.11.2022**) indicated likelihood of formation of a cyclonic circulation over Andaman Sea and adjoining southeast BoB during later part of the week 2.

The forecast issued on 3<sup>rd</sup> November for week 1 (**04.11.2022 – 10.11.2022**) predicted that a low pressure area is likely to form over southwest BoB off Sri Lanka coast towards the end of week 1 or in the beginning of week 2.

Actually, a cyclonic circulation formed over south Andaman Sea and adjoining southeast BoB on 4<sup>th</sup> November, 2022, moved westwards and merged with the trough running from southeast BoB & adjoining equatorial Indian Ocean (EIO) to southwest BoB off south Sri Lanka coast on 7<sup>th</sup> November, 2022. Under the influence of the cyclonic circulation over southwest BoB & adjoining EIO, a low pressure area formed over the same region on 9<sup>th</sup> November, 2022.

Hence, the development of cyclonic circulation over south Andaman Sea & neighborhood could be predicted about 2 weeks in advance and formation of low pressure area over southwest BoB could be predicted about 1 week in advance.

The realized rainfall during 03<sup>rd</sup> Nov to 09<sup>nd</sup> Nov, 2022 from satellite-gauge merged data is presented in Fig.1



**Fig.1: Rain gauge and satellite merged rainfall plots during 03<sup>rd</sup> Oct to 09<sup>nd</sup> Nov, 2022**

**Next update: 17.11.2022**