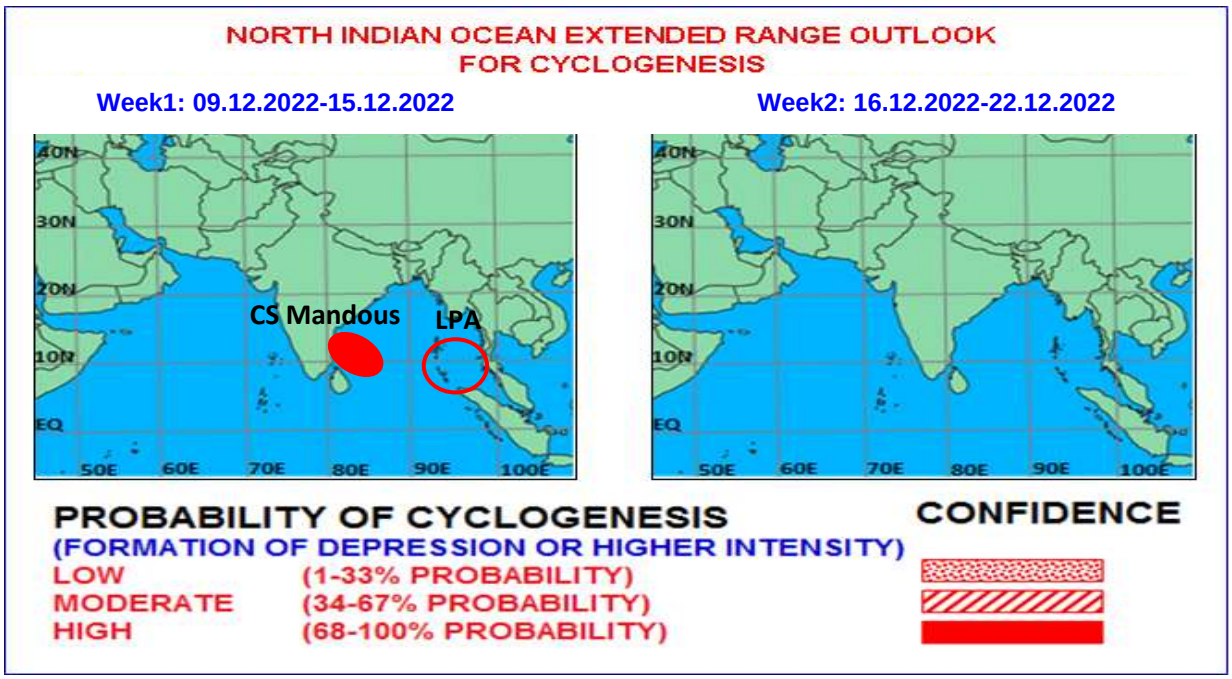
India Meteorological Department
Ministry of Earth Sciences
Mausam Bhawan, Lodhi Road, New Delhi-110003

Issued on 08.12.2022



I. Environmental features:

The Madden Julian Oscillation (MJO) Index is currently in Phase 4 with amplitude more than 1. It will move across Phase 4 and 5 during first half of week 1 with amplitude remaining more than 1. Thereafter, it would move across phases 6 and 7 during remaining part of the forecast period with amplitude becoming less than 1. Thus, MJO will be favourable for enhancement of convective activity over the Bay of Bengal (BoB) during first half of week 1.

Based on CFS forecast for equatorial waves, during beginning of week 1, westerly winds (5-7 mps) alongwith equatorial Rossby Waves (ERW) & eastward moving Kelvin Waves (KW) are likely over south BoB & adjoining south Andaman Sea and easterly winds (3-5 mps) are likely over eastcentral BoB. During later part of week 1, weak westerly winds (1-3 mps) are likely over south BoB and weak easterly winds (1-3 mps) are likely over central & north BoB. During week 2, weak easterly winds (1-3 mps) are likely over north & adjoining central BoB. Thus, equatorial waves are very likely to support convective activity over the BoB during first half of week 1. No such support is predicted thereafter during entire forecast period.

II. Model Guidance:

Most of the models including IMD GFS, IMD GEFS, IMD MME, NCUM (R), NEPS, ECMWF, NCEP GFS, ECMWF EPS are indicating likely west-northwestwards movement of the cyclonic storm “MAN-DOUS” over southwest Bay of Bengal and intensify further into a Severe Cyclonic Storm during next 06 hours. It will maintain its intensity of Severe Cyclonic Storm until early morning of 9th December and then weaken gradually into a cyclonic storm tomorrow. It is very likely to cross north Tamilnadu, Puducherry and adjoining south Andhra Pradesh coasts between Puducherry and Sriharikota, around Mahabalipuram with a maximum sustained wind speed of 65-75 kmph gusting to 85 kmph around midnight of 09th December

- Most of the models also suggest the remnant of the system to emerge into the east-central Arabian Sea and adjoining southeast-Arabian Sea as a cyclonic circulation on 12 December, however with no further significant intensification.

- NCMRWF Coupled Extended Range Model (CNCUM) and IMD coupled extended range forecast model is indicating development of fresh low pressure area over southeast BoB & adjoining South Andaman Sea during end of week 1 with west-northwestward movement and no significant intensification.

III. Inference:

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

(1) The cyclonic storm "MAN-DOUS" over southwest Bay of Bengal is likely to move west-northwestwards over southwest Bay of Bengal and intensify further into a Severe Cyclonic Storm during next 06 hours. It will maintain its intensity of Severe Cyclonic Storm until early morning of 9th December and then weaken gradually into a cyclonic storm tomorrow. It is very likely to cross north Tamilnadu, Puducherry and adjoining south Andhra Pradesh coasts between Puducherry and Sriharikota, around Mahabalipuram with a maximum sustained wind speed of 65-75 kmph gusting to 85 kmph around midnight of 09th December

(2) Another low pressure area is likely to develop over southeast BoB during end of week 1.

IV. Verification of forecast issued during last two weeks:

Forecast System: The forecast issued on 24th November for week 2 (02.12.2022– 08.12.2022) indicated development of a cyclonic circulation over South Andaman Sea around 4th December. It was predicted to move northwestwards and intensify further into a depression around 7th December with low probability. The forecast issued on 1st December for week 1 (02.12.2022– 08.12.2022) indicated formation of cyclonic circulation over South Andaman Sea around 4th Dec., low pressure area over southeast Bay of Bengal and adjoining south Andaman Sea around 5th Dec. and depression over southeast Bay of Bengal around 7th December with high probability (68-100%).

Realised System: A cyclonic circulation lay over south Andaman Sea and neighbourhood on 4th December. Under its influence, a low pressure area formed over south Andaman Sea on 5th December, 2022 and moving west-northwestwards it concentrated into a Depression over Southeast Bay of Bengal at 1200 UTC of 6th December.

Hence the development of cyclonic circulation, low pressure area and depression was correctly predicted two weeks in advance both on spatial and temporal scales.

The realized rainfall during 1st Dec. – 07th Dec., 2022 from satellite-gauge merged data is presented in Fig.1

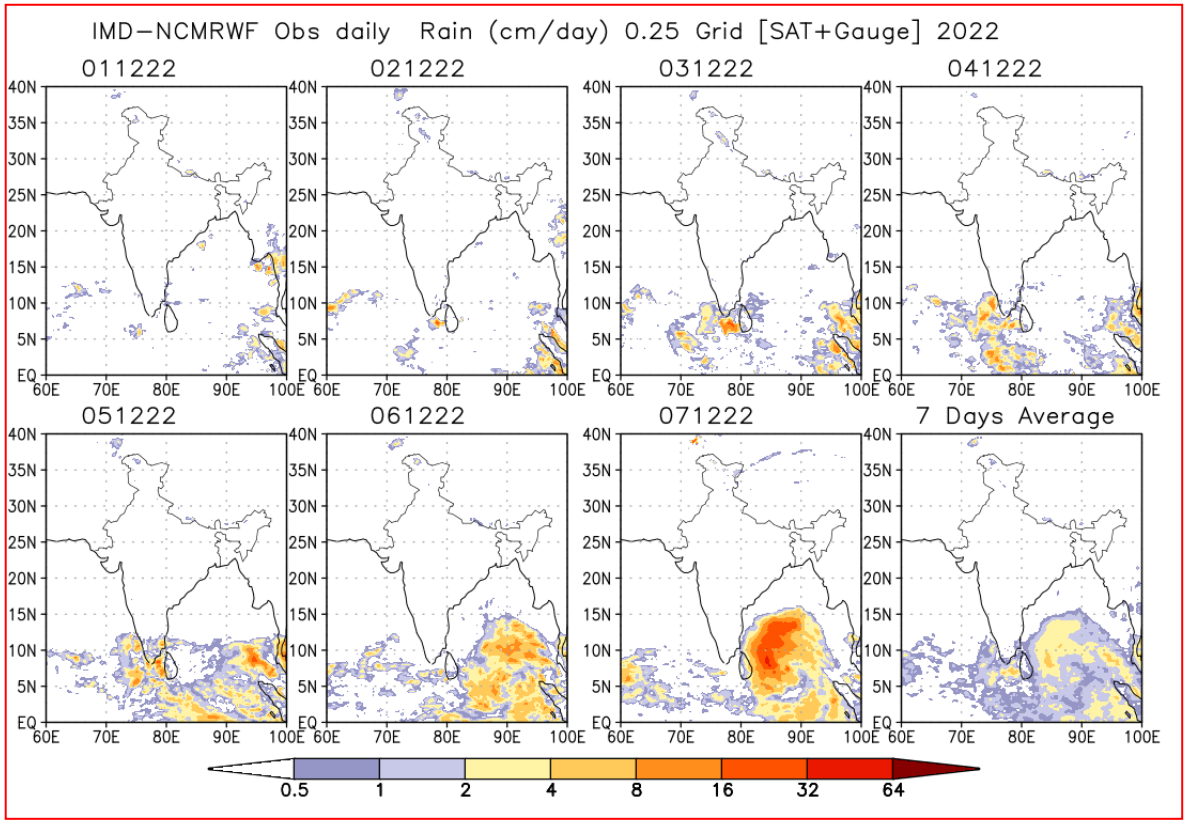


Fig.1: Rain gauge and satellite merged rainfall plots during 01st – 07th Dec, 2022

Next update: 15.12.2022