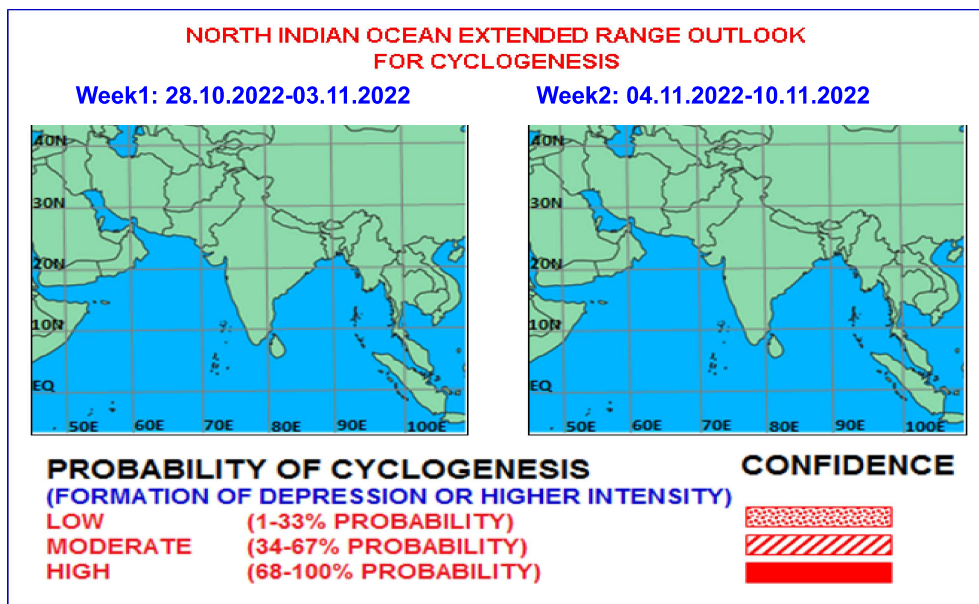




Issued on 27.10.2022



The Madden Julian Oscillation Index (MJO) currently lies in phase 6 with amplitude more than 1 and would continue in same phase during the entire forecast period.

Based on CFS forecast for equatorial waves, during week 1, weak easterlies (1-5 mps) are likely over south & central parts of BoB. and along with a anti-cyclone over north Arabian Sea northeasterly win (1-5 mps) will prevail over south & central AS. During the week, ERW, MJO and weak westerlies (1-5 mps) are likely over eastcentral BoB and adjoining north Andaman Sea. Thus, equatorial waves are likely to support cyclogenesis over central parts of BoB during week 2. There is also a potential for disturbances emerging over the BoB to develop into a TC during the latter part of Week-2. Additionally, Rossby wave activity favors a potential for westerly wind bursts over the eastern Indian Ocean, which may also provide an opportunity for TC development over the southern Indian Ocean.

The guidance from various deterministic numerical models including IMD GFS, GEFS, ECMWF, NCUM, NEPS, NCEP GFS indicate only easterly wind with embedded lower tropospheric cyclonic circulation over Andaman Sea, south and adjoining central BoB during week 1 and westward movement in easterlies across south BoB and subsequently over south AS. Thus, a cyclonic circulation is likely to emerge into southeast and adjoining east central AS during second half of the week 1. The extended range forecast model IMD MME CFS (V2) indicates easterlies over south and central Bay of Bengal and 10-20% probability of cyclogenesis during week 1 and less than 10% probability of cyclogenesis over BoB during week 2. The model is forecasting mean cyclonic circulation over southeast AS with less than 10% probability of cyclogenesis over south AS during week 1. It is also indicating 10-20% cyclogenesis over central and south BoB. ECMWF ensemble prediction system is indicating 05-10% probability of cyclogenesis over central & south BoB during week 1 and similar probability of cyclogenesis during week 2. The model is not showing any significant probability of cyclogenesis over south AS during week 1 and week 2.

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

- (i) The existing cyclonic circulation over southwest BoB off Tamil Nadu coast is less likely to intensify further while moving westward during first half of the week 1.
- (ii) There is likelihood of formation of another cyclonic circulation over southwest BoB and neighbourhood around 30th -31st October with west-northwestwards movement towards Tamil Nadu coast. It is likely to emerge into southeast and adjoining east central AS during second half of the week 1.
- (iii) there is also likelihood of formation of a cyclonic circulation over Andaman Sea and adjoining southeast BoB during later part of the week 2.

Verification of forecast issued during last two weeks:

The forecast issued on 13th October for week 2 (21.10.2022 – 27.10.2022) :

Forecast: Moderate probability that the low pressure area would move west-northwestwards and concentrate into a depression over westcentral Bay of Bengal during beginning of the week 2.

Realised : A Depression was formed at 0300 UTC of 22nd October .

The forecast issued on 20th October for week 1 (21.10.2022 – 27.10.2022):

(i) Cyclonic storm:

Forecast: A low pressure area over north Andaman Sea and neighbourhood is very likely to move west-northwestwards and concentrate into a Depression over Eastcentral & adjoining Southeast Bay of Bengal around 22nd October and into a Deep Depression on 23rd October. Subsequently, it is very likely to recurve northwards and intensify into a cyclonic storm over Westcentral and adjoining Eastcentral Bay of Bengal by 24th October. Thereafter, it is likely to move gradually north-northeastwards and reach near West Bengal - Bangladesh coasts on 25th October, skirting Odisha coast.

Realised: Actually, Depression was formed at 0300 UTC of 22nd October and intensified into Deep Depression on 23rd October, it becomes Cyclone on 1200 UTC of 23rd October and then gradually recurved north-northeastwards and crossed Bangladesh coast between Tinkona and Sandwip close to Barisal in the night of 24th October during 1600 to 1800 UTC of 24th October as a cyclonic storm.

(ii) A cyclonic circulation

Forecast: Another cyclonic circulation is likely to develop over Eastcentral Bay of Bengal during week 2 with low probability of its intensification into a depression.

Realised: A cyclonic circulation was formed at 0300 UTC of 25th October over Westcentral Bay of Bengal & neighborhood and persist over Southwest Bay of Bengal off north Tamil Nadu coast on 27th October.

Hence, development of a Depression and its intensification and crossing and cyclonic circulation could be captured two weeks in advance.

The realized rainfall during 19th to 25th October, 2022 from satellite-gauge merged data is presented in Fig.1

Fig.1: Rain gauge and satellite merged rainfall plots during 19th to 25th October, 2022