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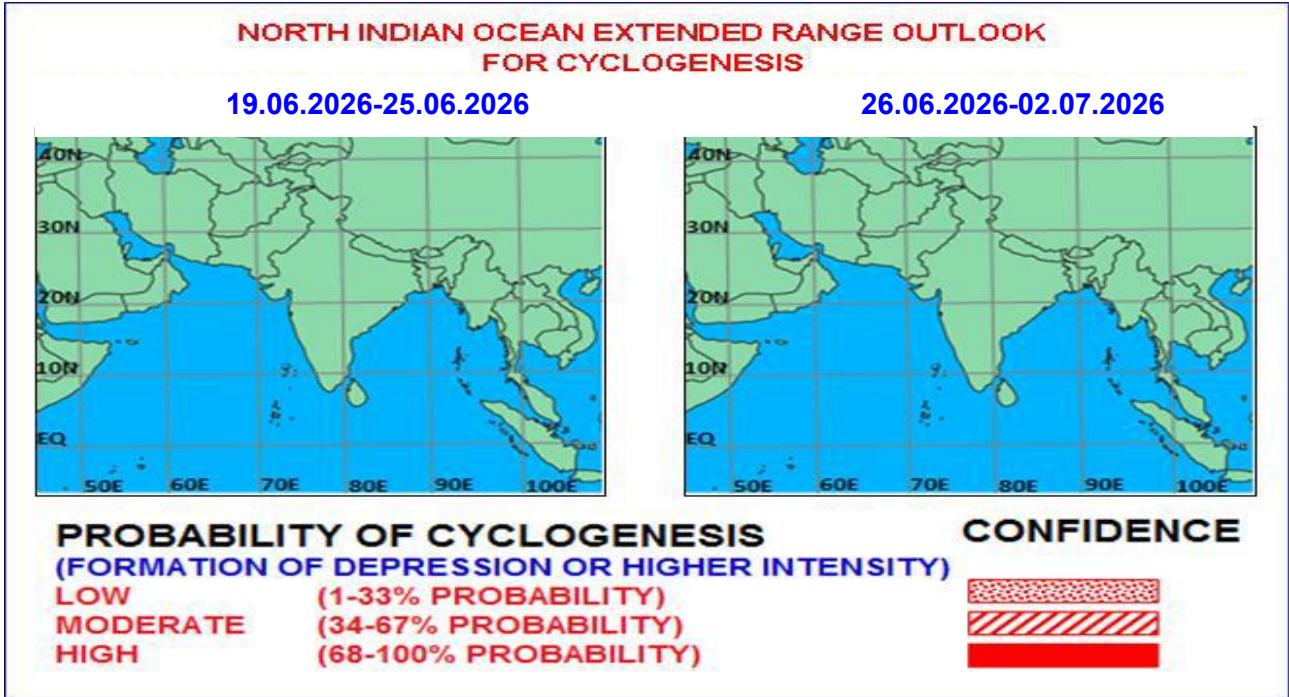


Fig. 1: Graphical Cyclogenesis over the north Indian Ocean during the next two weeks

I. Environmental features and Equatorial waves:

The guidance from ECMM model indicates that the Madden-Julian Oscillation (MJO) index is currently in phase 2 with amplitude close to zero. It is likely to move rapidly across phases 2, 3, 4 & 5 during week 1 with increasing trend in amplitude during week 1. Thereafter, it will enter into phase 6 with amplitude becoming close to 1 and continue in same phase during the remaining period. Thus, as per ECMM, MJO may support enhancement of convective activity over the Bay of Bengal (BoB) during the forecast period.

The guidance from the NCICS model indicates explicitly easterly wind anomaly (3-5mps) over entire BoB and most parts of central & adjoining south Arabian Sea (AS) during first half of week 1, indicating weaker southwest-monsoon circulation. During later part of week 1, the model is indicating westerly wind anomaly (3-5mps) over south & central BoB along with Equatorial Rossby wave (ERW) & Kelvin Wave. Model is also indicating weak easterly anomaly to its north over Myanmar and adjoining northeast BoB. These features indicate a favorable environment for development of a cyclonic circulation over eastcentral BoB during later half of week 1. Over the AS, the model is indicating easterly wind anomaly over south AS, westerly wind anomaly over central AS along with easterly wind anomaly (1-3mps) to it north over northeast AS and adjoining Gujarat region during later half of week 1. These features indicate a favorable environment for development of a feeble cyclonic circulation over northeast AS during later half of week 1. During week 2, model is indicating westerly wind anomaly (3-5mps) over south & adjoining central AS along with MJO. These features indicate enhancement of cross equatorial

flow over south AS during week 2. However, over the BoB, the model is indicating weak westerly wind anomaly (1-3mps) over most parts of BoB along with Low frequency background wave.

Model Guidance:

(a) Guidance for Extended Range models:

During week 1, the 850 hPa mean wind field forecast of IMD Extended Range model (MME CFS-V2) indicates predominantly west-southwesterly winds covering south & central AS and over the BoB predominantly southwesterly winds are seen over south and adjoining equatorial Indian Ocean. During week 2, the model is indicating enhancement of south westerly winds up to central AS and over the BoB upto head BoB.

The corresponding anomaly wind field indicates easterly/northeasterly wind anomaly over most parts of BoB. Similarly, over the AS northeasterly to northerly wind anomaly is seen over most parts, indicating weaker cross-equatorial flow and hence monsoon circulation over both the basins during week 1. Although the flow patterns of wind anomaly are likely to remain similar to the first week, the anomalous easterly winds are comparatively weaker during the second week, indicating strengthening of the cross-equatorial southwesterly wind flow over AS as well as restoration of the normal condition over the entire NIO region. However, the wind anomaly indicates a cyclonic circulation over Comorin & adjoining peninsular India during week 2.

The NCMRWF ERF model almost agrees with IMD ERF model except the fact that it indicates a prominent change in the flow pattern with a cyclonic circulation over eastcentral BoB and adjoining Andaman Sea in week 2.

With respect to cyclogenesis, IMD MME-CFSV2 model is indicating a zone with low (20-30%) probability of cyclogenesis over eastcentral BoB during week 1. Similar probability of cyclogenesis is also indicated over eastcentral and adjoining northeast BoB during week 2 as well.

The ECMWF ensemble forecast indicates a very low (05-10%) probability of cyclogenesis over the north BoB during all days of week 1 and over northeast AS during a few days of the week. The sub-seasonal range forecast of ECMWF shows that there is a very low probability of cyclogenesis over the north BoB and northeast AS during two consecutive weeks of 22nd to 29th June and 29th June to 6th July, 2026. However, a little increase in probability to 10-20% is indicated during the 2nd week.

Climatologically, there is around 10% probability of cyclogenesis over the North Indian Ocean region during the forecast period. Thus, the cyclogenesis probability from ECMWF ensemble system is less than the climatological probability.

(b) Guidance from Medium-Range NWP models:

Most of the deterministic models do not indicate any low pressure area/depression over the BoB and AS region. However, some models (IMD GFS, NCEP GFS and ECMWF) are indicating likely formation of an upper air cyclonic circulation over northwest BoB off the south Odisha coast at the end of week 1 (around 25th June) with the establishment of a seasonal trough along the northern plains near its normal position. Similar forecasts are also indicated by the GEFS mean forecast. The BharatFS forecasts indicate the likely formation of another cyclonic circulation over northeast BoB towards the end of week 1 with westwards movement. Mithuna model of NCMRWF does not indicate any development of upper-air cyclonic circulation/low pressure area during week 1.

AI models (Pangu Weather and GraphCast) are also indicating likely formation of an upper air cyclonic circulation over northeast BoB towards end of week 1 (around 25th June) with gradual westwards movement. GraphCast is not showing such formation. ECAI is indicating similar

development but over northwest BoB and AIGFS is showing development over westcentral & adjoining northwest BoB. Though different models show consensus regarding the formation of upper air cyclonic circulation, there is large spread in the area of occurrence.

Operational extended forecast for next two weeks:

Considering various large-scale environmental features, climatology and model guidance, it is inferred that there is no likelihood of cyclogenesis (formation of depression) during the entire forecast period. However, there is likelihood of development of an upper air cyclonic circulation over North and adjoining central BoB towards end of week 1.

IV. Verification of forecast issued during the previous two weeks:

The extended range outlook issued on 04th June for week 2 (12.06.2026-18.06.2026) indicated development of an upper air cyclonic circulation / low pressure area over North BoB towards end of week 2

The extended range outlook issued on 11th June for week 1 (12.06.2026-18.06.2026) indicated:

- (a) existing upper air cyclonic circulation over westcentral BoB and adjoining north coastal Andhra Pradesh to persist during next 1-2 days with possible westwards movement.
- (b) development of another upper air cyclonic circulation over eastcentral Arabian Sea off Karnataka coast during the later half of week1.
- (c) development of another upper air cyclonic circulation / low pressure area over North BoB towards end of week 2.

Realized weather System:

Actually, no cyclonic circulation formed over the region during the forecast period.

Legends: MJO: Madden Julian Oscillation, ERW: Equatorial Rossby Waves, KW: Kelvin Waves, NCICS: North Carolina Institute for Climate Studies (for Equatorial waves Forecast), IMD GFS: India Meteorological Department Global Forecast System, NCUM: National Centre for Medium-Range Weather Forecasting Centre (NCMRWF) Unified Model, ECMWF: European Centre for Medium-Range Weather Forecasting, BOMM: Bureau of Meteorology, Australia, EC-AIFS: ECMWF Artificial Intelligence Forecasting System, ECMM: ECMWF-Ensemble System Bias Corrected, BFS: Bharat Forecast System, GPP: Genesis Potential Parameter, NCEP GFS/GEFS/CFS: National Centre for Environment Prediction GFS/GEFSv12/CFSv2, CPC: Climate Prediction Center (for MJO update), IMD-GEFS: GFS ensemble forecast system of IMD, NEPS: NCUM ensemble prediction system, CNCUM: Coupled NCUM, CPC: Climate Prediction Centre, NWS: National Weather Service, INCOIS: Indian National Centre for Ocean Information Services.

Next update: 25.06.2026