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Ministry of Earth Sciences
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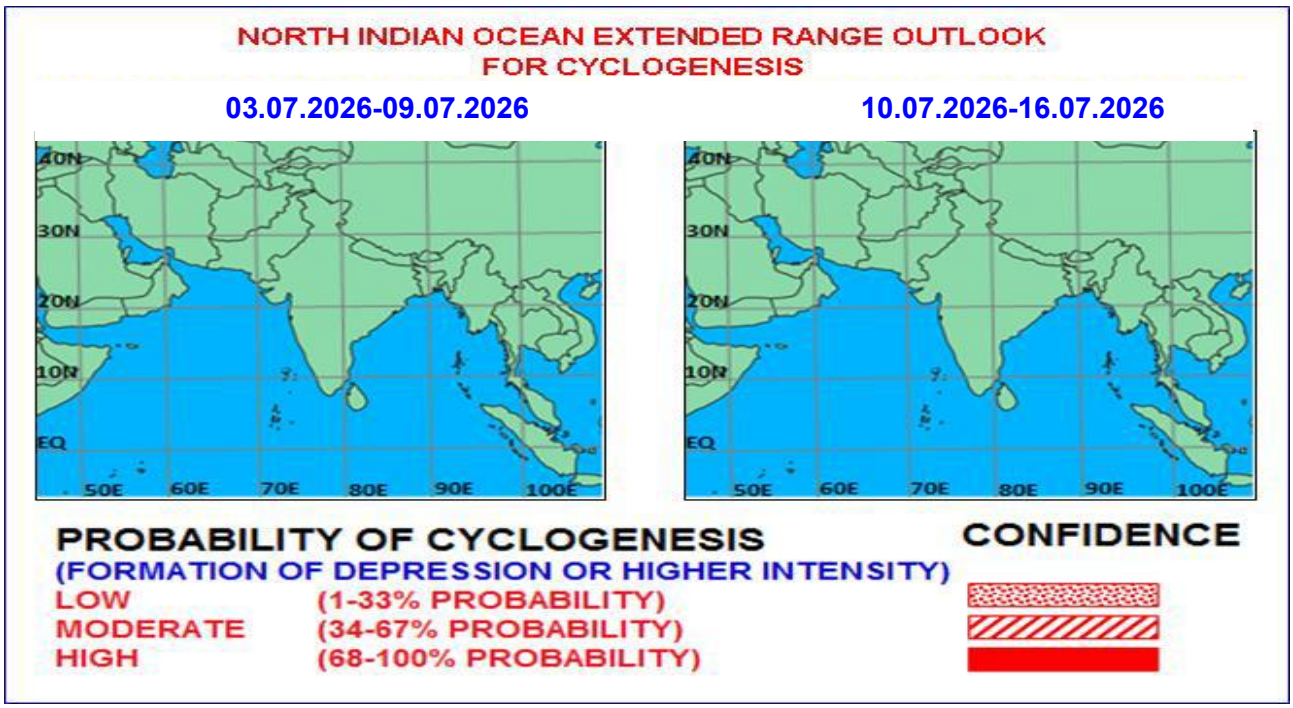

Fig. 1: Graphical Cyclogenesis over the north Indian Ocean during the next two weeks

I. Environmental features and Equatorial waves:

The guidance from various models (GEFSV12, BoMM, NCMRWF) indicates that MJO is currently in Phase 7 with amplitude more than 1. It is likely to continue to move in same phase with increasing trend in amplitude during the entire forecast period. Thus, MJO is not likely to support the enhancement of convective activity over the Bay of Bengal (BoB) and the Arabian Sea (AS) during the forecast period.

Equatorial Waves

The guidance from NCICS model indicates the prevalence of westerly wind anomaly (7-9 mps) over south & adjoining central BoB, along with Equatorial Rossby wave (ERW) & MJO and easterly wind anomaly (5-7 mps) over north & adjoining areas of central BoB, indicating a favourable environment for further intensification of low-pressure area over northwest BoB and adjoining Odisha-West Bengal coasts during week 1. During week 2, the model is indicating, prevalence of westerly wind anomaly (7-9 mps) over south Peninsular India & adjoining central parts of India, along with MJO and easterly wind anomaly (5-7 mps) over northwest parts of India, indicating a favourable environment for the development of low-pressure area over central & adjoining northwest parts of India. These features indicate a favourable environment for development of low-pressure systems over north BoB and their west-northwestwards movement along seasonal monsoon trough during both the weeks.

II. Model Guidance:

(a) Guidance from Extended Range models:

During week 1, the 850 hPa mean wind field forecast of IMD Extended Range model (MME CFS-V2) indicates seasonal west-southwesterly winds over the entire AS and BoB, with a prominent upper-air

cyclonic circulation over northwest BoB and adjoining Gangetic West Bengal (GWB) & Odisha coasts during week 1. However, during the week the seasonal trough at lower tropospheric level is not fully established as the western end lay along foothills of Himalayas. The associated wind anomaly at 850 hPa pressure level indicates mainly westerly winds with an anomalous upper-air cyclonic circulation over Vidarbha and neighbourhood in central India along with an east-west trough extending from eastcentral BoB up to Gujarat state across the centre of the cyclonic circulation. The model indicates that the westerly/southwesterly mean wind field is likely to persist over both AS and BoB sub-basins during week 2 as well. A weak upper air cyclonic circulation is likely to prevail over Head BoB and adjoining GWB & Odisha embedded within a seasonal monsoon trough at its normal position extending from eastcentral BoB up to west Rajasthan during week 2. Corresponding wind anomaly at 850 hPa indicates a prominent upper-air cyclonic circulation over west Madhya Pradesh & neighborhood embedded within an east-west trough extending from north Odisha up to the center of the cyclonic circulation. Although wind anomaly is westerly over the entire AS excluding southwest part, the anomalous wind is mostly northerly over the entire BoB and westerly over Andaman Sea.

The NCMRWF ERF model also indicates similar upper-air cyclonic circulation over north Odisha and neighborhood along with an establishment of seasonal east-west trough across central India south of its normal position during week 1. The corresponding anomaly wind field portray an upper air cyclonic circulation over central India representing revived monsoon condition over India. NCMRWF model, depicting the persistence of southwest monsoonal wind flow over the entire AS and most parts of BoB during week 1. The mean wind scenario during week 2 indicates the shifting of the seasonal trough towards the foothills of Himalayas in the absence of any upper air cyclonic circulation. The model also indicates anomalous easterly winds to prevail to the south of 15ºN latitude across both the sub-basins with strong westerlies across central parts of India representing subdued monsoon activity during week 2.

With respect to cyclogenesis, IMD MME-CFSV2 model indicates a zone with moderate (50-60%) probability of cyclogenesis along the seasonal monsoon trough from the northwest BOB spanning over northern plains of India during week 1. During week 2, a significant zone with moderate (50-60%) probability of cyclogenesis is also predicted over Madhya Pradesh.

The ECMWF ensemble forecast indicates a moderate (50-60%) probability of cyclogenesis over the northwest BoB and adjoining Gangetic West Bengal & Odisha during 4th to 7th July, with maximum probability on 6th July. Another zone with low probability (20-30%) of cyclogenesis over Gujarat state and neighbourhood during 6th to 9th July, 2026.

The sub-seasonal forecast of ECMWF shows that there is a very low probability of cyclogenesis over the northwest BoB (5-10%) and low probability over northeast AS and adjoining areas of Gujarat state and North Kokan during the week of 6th to 13th July, 2026. However, the model does not indicate any zone with significant probability of cyclogenesis over the Indian region during the week from 13th to 20th July, 2026.

Climatologically, there is around 10% probability of cyclogenesis over the North Indian Ocean region during the forecast period. The cyclogenesis forecast probability by various extended range models over BoB is higher than the climatological probability.

(b) Guidance from Medium-Range NWP models:

Most of the deterministic models (ECMWF, NCEP GFS, IMD GFS, GEFS, BFS) are indicating existing low-pressure area (LPA) over northwest BoB and adjoining North Odisha-West Bengal coasts to move slowly west-northwestwards during next 3-4 days and intensify marginally while moving west-northwestwards over northwest parts of India. However, AI models (EC-AIFS and AI-GFS) are indicating intensification of system

into a depression while moving west-northwestwards. Models like IMD GFS, BFS, NCEP GFS, ECMWF are also indicating a fresh upper air cyclonic circulation over Head BoB during first half of week 2.

III. Operational extended forecast for the next two weeks:

Considering various large-scale environmental features, climatology and model guidance, it is inferred that:

(a) the existing low pressure area over northwest Bay of Bengal and adjoining North Odisha-West Bengal coasts is likely to move slowly west-northwestwards and become more marked during next 2-3 days.

(b) there is a likelihood of development of a fresh upper-air cyclonic circulation over the north Bay of Bengal towards the first half of week 2.

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

The extended range outlook issued on 18th June for week 2 (26.06.2026-02.07.2026) indicated no cyclogenesis (formation of depression) during the entire forecast period.

The extended range outlook issued on 25th June for week 1 (26.06.2026-02.07.2026) indicated no cyclogenesis during the entire forecast period. However, it indicated likelihood of development of an upper-air cyclonic circulation over the northwest Bay of Bengal towards the end of week 1 with intensification into a low-pressure area over the North Bay of Bengal in the beginning of week 2.

Realised weather System:

1) An upper air cyclonic circulation formed over central parts of North & adjoining Central Bay of Bengal on 22nd June and became less marked over Northeast Bay of Bengal and adjoining Myanmar coast on 27th June, 2026.
2) Another upper air cyclonic circulation formed over westcentral Bay of Bengal & adjoining south Coastal Andhra Pradesh on 27th June and became less marked over same region on 28th June, 2026.
3) Another upper air cyclonic circulation formed over eastcentral Arabian Sea off Maharashtra coast on 28th June and became less marked over same region on 30th June, 2026.
4) Another upper air cyclonic circulation formed over north Bay of Bengal adjoining south Bangladesh on 30th June and under its influence a Low-Pressure Area formed over northwest Bay of Bengal and adjoining north Odisha-West Bengal coasts at 0300 UTC of 02nd July 2026.

Thus, the formation of upper air cyclonic circulation and low-pressure area over northwest BoB were well predicted.

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, Mithuna: 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: 09.07.2026