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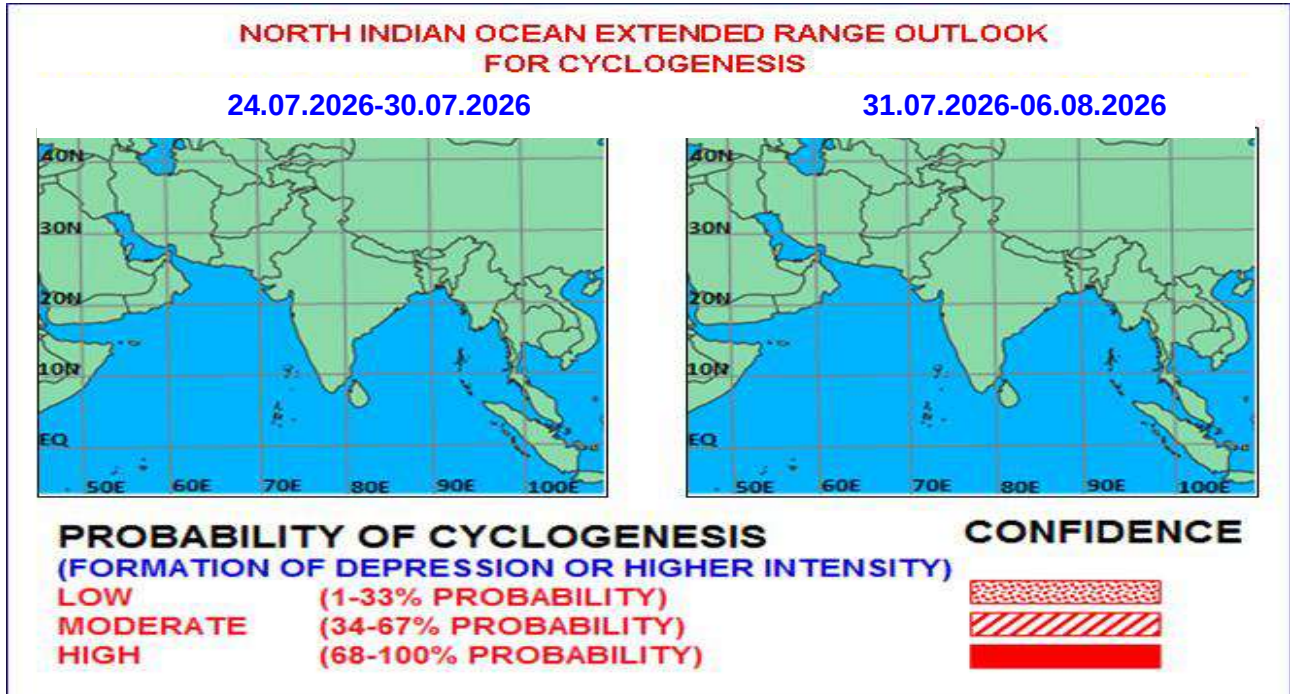


Fig. 1: Graphical Cyclogenesis over the north Indian Ocean during the next two weeks

I. Environmental features:

The guidance from various models (ECMM, GEFSV12, BoMM, NCMRWF) indicates that the MJO is currently in Phase 8, with an amplitude more than 1. It is likely to continue in the same phase with with decreasing trend in amplitude during week1. Thereafter, it is likely to move rapidly across phases 1,2,3 & 4 during beginning of week 2 with very weak strength (amplitude close to zero) and move across phase 5 with increasing trend in amplitude (but less than 1) during remaining part of week 2. Thus, MJO will support enhancement of convective activity and development of cyclonic circulation / low pressure area over BoB during week 2.

The guidance from NCICS model indicates prevalence of weak westerly wind anomaly (1-3 mps) over North Bay of Bengal (BoB) & central parts of India alongwith a westward moving Equatorial Rossby wave (ERW) and strong easterly wind anomaly to it's north (5-7 mps) over Indo-Gangetic Plains & northwest India during beginning of week 1. During the same period predominantly easterly wind anomaly is indicated over entire central and south BoB. These features indicate a favourable environment for development of embedded cyclonic circulations in the seasonal monsoon trough over the Head Bay region and over the land region of north India during first half of week 1. Over the Arabian Sea (AS), the model is predominantly indicating easterly wind anomaly alongwith an eastward moving Kelvin wave (KW) and a westward moving ERW during the same period. Prevalence of easterly wind anomaly over the AS indicates weakening of seasonal southwest monsoonal flow over the AS during beginning of week 1. Thereafter, during later half of week 1, the model is indicating gradual establishment of westerly wind anomaly (3-5 mps) over south & adjoining central BoB & south Peninsular India alongwith ERW over the same region. It also indicates easterly wind anomaly (1-3 mps) over the north BoB & adjoining East India with an approaching KW over the same region during the same period. These features indicate a moderately favourable environment for development of an

upper air cyclonic circulation over north BoB during later half of week 1. Over the AS, during later half of week 1, the model is indicating weak easterly wind anomaly (1-3 mps) over south AS and westerly wind anomaly (1-3 mps) over the central AS, indicating unfavourable environment for the strengthening of southwesterly seasonal monsoonal winds.

Thereafter, from week 2, gradual establishment of westerly wind anomaly (3-5 mps) is indicated over most parts south AS and over almost entire BoB. During this period, the model is also indicating MJO wave over southwest AS and an approaching ERW over southwest BoB, South Peninsular India & adjoining southeast AS. Easterly wind anomaly (1-3 mps) is indicated over central parts of India and also over north AS. Thus, week 2 indicates favourable support from equatorial waves for enhancement of seasonal monsoonal southwesterly winds and associated convective activity.

El Niño conditions prevail over the equatorial Pacific Ocean, with sea surface temperature (SST) anomalies remaining above normal across the central and eastern equatorial Pacific. These conditions are expected to strengthen further during the Southwest Monsoon season. Forecasts from the Monsoon Mission Coupled Forecast System (MMCFS) also indicate a continued strengthening of El Niño conditions throughout the Southwest Monsoon season.

Neutral Indian Ocean Dipole (IOD) conditions prevail over the Indian Ocean. Forecasts from the Monsoon Mission Coupled Forecast System (MMCFS) indicate that these neutral IOD conditions are likely to persist throughout the Southwest Monsoon season

Model Guidance:

(a) Guidance from Extended Range models:

The forecast of the mean wind field at 850 hPa pressure level from IMD Extended Range model (MME CFS-V2) indicates strong westerly/southwesterly winds over the entire AS and BoB, with a weak upper-air cyclonic circulation over North Odisha-West Bengal embedded within the seasonal monsoon trough nearly at its normal position at this level, during week 1. The corresponding forecast of wind anomaly at 850 hPa pressure level shows an east-west oriented trough along 22°N and a weak upper-air cyclonic circulation over the Gujarat region during the first week.

The mean wind forecast characteristics at 850 hPa level by the model during week 2 are very similar to those of week 1 over the entire AS, with much stronger wind over the south & centrals parts of AS and BoB. However, a prominent upper-air cyclonic circulation is indicated by the model over northwest BoB and adjoining areas of north Odisha & Gangetic West Bengal during week 2. Accordingly, the seasonal monsoon trough has an eastern end dipping towards north BoB, whereas the western end is likely to stay north of its normal position along the foothills of the Himalayas. The wind anomaly forecast of the model indicates an upper-air cyclonic circulation over eastcentral BoB and adjoining coastal areas of Myanmar and the north Andaman Sea. There is likely development of an anomalous east-west trough along 15°N latitude with strong anomalous easterly winds across the entire northern plains of India.

The model predicts a significant circular zone with a moderate-to-high (70-80%) probability of cyclogenesis over east Rajasthan and neighbourhood and an east-west belt across the northern plains with a low probability (30-50%) of cyclogenesis.

The NCMRWF ERF model mean wind forecast indicates monsoonal westerlies/southwesterlies over the entire AS & BoB during week 1 and week 2. It is also indicating anomalous cyclonic circulation over the Gujarat state during week 1. However, it shows an anomalous westerly wind over the northern parts of BoB with an anticyclonic wind flow pattern over the south & central BoB during the first week. During week 2, there is development of anomalous upper-air cyclonic circulation over Bihar & adjoining east Uttar Pradesh.

The sub-seasonal forecast of ECMWF shows low (5-10%) probability of cyclogenesis over the northeast BoB during the week from 27th July to 3rd August, 2026. Thereafter, the model indicates no probability of cyclogenesis over the NIO region during the week from 3rd to 10th August. The ECMWF ensemble forecast indicates a low (10-20%) probability of cyclogenesis over north BoB during the later part of week 1.

Climatologically, there is around 15-20% probability of cyclogenesis over the North Indian Ocean region during the forecast period. The cyclogenesis forecast probability by ECMWF over BoB is higher than the climatological probability.

(b) Guidance from Medium-Range NWP models:

Most of the models are indicating existing cyclonic circulation over southeast Rajasthan & adjoining northwest Madhya Pradesh to slowly move nearly westwards during next 2-3 days, becoming less marked thereafter over Rajasthan. Models like IMD GFS, NCEP GFS & ECMWF are indicating the existing upper air cyclonic circulation over northwest BoB to persist over the same region. Under its influence, a low pressure area is likely to form over northwest BoB and adjoining areas of North Odisha and West Bengal around 26th July with initial northwestwards movement towards Gangetic West Bengal and then west-northwestwards movement towards Bihar & adjoining Jharkhand around 30th July. However, NCMRWF Mithuna model is indicating a delayed formation of upper air cyclonic circulation over northeast BoB and adjoining south Bangladesh around 27th July with intensification into a low pressure area on 28th July over the same region around 28th July. It is further indicated to become more marked and lie over Gangetic Bengal around 30th July and over East Uttar Pradesh around 2nd August.

ECAI is indicating a low pressure area over northwest BoB around 26th July with west-northwestwards movement. AIGFS is indicating the existing upper air cyclonic circulation over southeast Rajasthan & adjoining northwest Madhya Pradesh to move slowly west-northwestwards with gradual intensification. NCMRWF AI models Pangu Weather & Graph Cast are indicating a fresh cyclonic circulation over northwest BoB on 26th July, low pressure area on 27th July and well marked low pressure area over northwest BoB & adjoining Gangetic West Bengal on 28th July. It is indicated to move west-northwestwards along the seasonal trough upto Northeast Rajasthan till 2nd August. However, FourCast is not indicating any such development.

II. 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 upper-air cyclonic circulation over southeast Rajasthan & adjoining northwest Madhya Pradesh at lower tropospheric levels is likely to move slowly westwards and under its influence there is a probability of development of a low pressure area over East Rajasthan during next 48 hours.
- (b) a fresh upper air cyclonic circulation is likely to form over northwest Bay of Bengal and adjoining North Odisha-West Bengal around 25th July. Under its influence, a low pressure area is likely to form over the same region around 26th July. It is likely to move nearly northwestwards across North Odisha & adjoining Gangetic West Bengal, Jharkhand, North Chhattisgarh and adjoining East Madhya Pradesh & southeast Uttar Pradesh during subsequent 3-4 days.

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

Forecast issued:

- (a) The extended range outlook issued on 9th July for week 2 (17.07.2026-23.07.2026) indicated development of a low pressure area over the northwest BoB and adjoining areas of West Bengal & Odisha coasts during first half of week 2.

(b) The extended range outlook issued on 16th July for week 1 (17.07.2026-23.07.2026) indicated the existing Well Marked Low Pressure area over northwest BoB and adjoining North Odisha-West Bengal to move slowly northwestwards & weaken gradually during next 2 days.

Realised:

- (a) An upper air cyclonic circulation formed over North BoB & adjoining South Bangladesh on 13th July. Under its influence a low pressure area formed over Northwest BoB off north Odisha-West Bengal coasts at 0000 UTC 15th July. It intensified into a well-marked low pressure area over the same region at 0300 UTC of 16th July. It weakened into Low Pressure area over the Northwest BoB & adjoining North Odisha-West Bengal coasts at 0000 UTC of the 17th July which became less marked over Western parts of Gangetic West Bengal & adjoining north Jharkhand at 0300 UTC of 18th July, 2026.
- (b) A fresh upper air cyclonic circulation formed over Gulf of Mannar adjoining south Tamil Nadu at 0000 UTC of 18th July and became less marked at 0300 UTC of 19th July, 2026 over the same region.
- (c) Another upper air cyclonic circulation formed over Westcentral BoB & adjoining north coastal Andhra Pradesh at 0000 UTC of the 20th July which became less marked at 0000 UTC of the 22nd July 2026 over the same region.
- (d) Another upper air cyclonic circulation formed over northwest BoB & adjoining north Odisha coast at 1200 UTC of 22nd July 2026. It became less marked over the same region at 0300 UTC of today, the 23rd July 2026.

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: 06.08.2026