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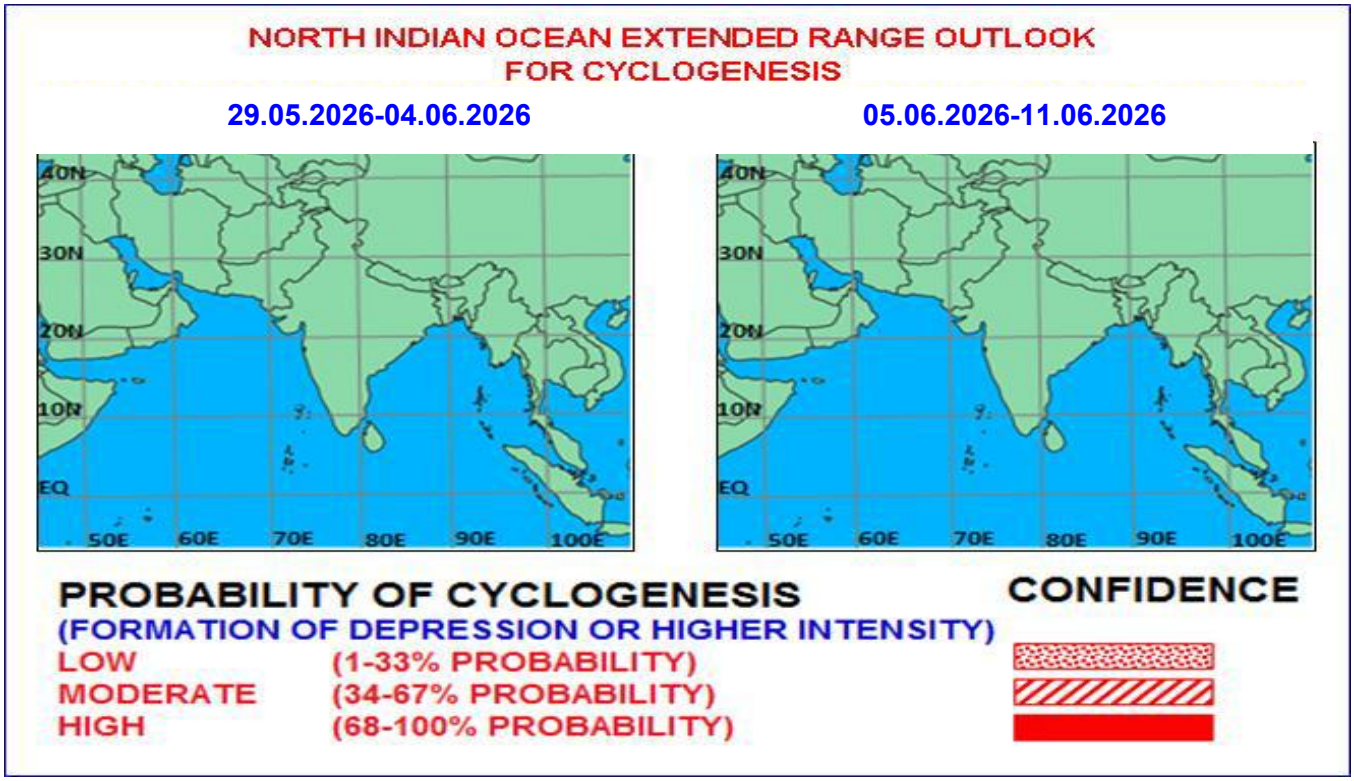

Fig. 1: Graphical Cyclogenesis over the north Indian Ocean during the next two weeks

I. Environmental features and Equatorial waves:

The guidance from ECMM model indicates that the Madden-Julian Oscillation (MJO) index is currently in phase 7 with amplitude close to 2. It is likely to move across phases 7 and 8 during the forecast period with gradually decreasing amplitude, becoming less than 1 during week 2. Thus, as per ECMM, MJO is not likely to contribute to enhancement of convective activity over the North Indian Ocean including the Bay of Bengal (BoB) and the Arabian Sea (AS) during next 2 weeks.

The guidance from the NCICS model indicates the prevalence of westerly wind anomaly (5-7 mps) alongwith prevalence of MJO & Low frequency background wave (LW) over south BoB, South Andaman Sea and easterly wind anomaly (7-9 mps) over northeast & adjoining eastcentral BoB during first half of week 1. Over the Arabian Sea (AS), the model is indicating prevalence of westerly wind anomaly (7-9 mps) alongwith MJO over southeast & adjoining southwest AS and easterly wind (7-9 mps) over eastcentral AS during the same period. These features indicate that as per NCICS model, equatorial waves are likely to support the existing cyclonic circulation over the southeast AS and over eastcentral & adjoining southeast BoB during first half of week 1. During second half of week 1, the model is indicating enhancement of westerly wind anomaly over the south BoB alongwith prevalence of MJO, equatorial Rossby wave (ERW) & low frequency background wave (LW) and easterly wind anomaly (7-9 mps) over northeast & adjoining northwest BoB. Over the AS also, the model is indicating westerly wind anomaly over southeast & adjoining southwest AS alongwith ERW and a marginal patch of

easterly wind anomaly to it's north over eastcentral & southeast AS. These features indicate a favourable environment for maintenance of cyclonic circulation or even formation of low system over eastcentral BoB.

During first half of week 2, the model is indicating establishment of westerly wind anomaly (3-5 mps) over entire BoB and Andaman Sea and most parts of south AS. Easterly wind anomaly (1-3 mps) is seen over north AS and northern parts of India.

Hence NCICS model, suggests MJO influencing the circulation over BoB along with ERW over the south China Sea. All this will lead to stronger westerlies over Northeast Equatorial Indian Ocean, some parts of southwest, southeast and eastcentral BoB. Similar condition is likely to continue with enhanced impact of MJO and ERW over the BoB during second half of week 1. While similar activity will continue during first half of the week 2 over the BoB. The impact of MJO and ERW will be felt over the South Arabian Sea during the same period, leading to strengthening of monsoon current in association with southwest monsoon. During the second half, both BoB and AS are likely to be active under the impact of MJO and ERW and stronger westerlies over the eastcentral BoB and stronger easterlies over the north BoB. All these indicates favorable condition for development of convective activity and possible genesis of Low/Cyclonic circulation over the BoB during the week 1 and week 2.

II. 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 the prevalence of (1) a cyclonic circulation over eastcentral BoB off Myanmar coast (2) predominantly westerly winds over entire AS & entire BoB. Corresponding anomaly field is indicating, a cyclonic wind anomaly over eastcentral BoB off Myanmar coast and anti-cyclonic anomaly over Gulf of Mannar & Comorin region and a ridge over central AS.

During week 2, the 850 hPa mean wind field is indicating west-southwesterly winds extending over south & central AS and predominantly westerly winds over entire BoB & Andaman Sea. Corresponding anomaly field is indicating (1) Prevalence of northwesterly winds over north & central AS, (2) cyclonic wind anomaly over Gujarat and (3) predominantly northwesterly winds over entire BoB.

During week 1, the mean wind field at 850 hPa of NCMRWF extended range model (CNCUM) is indicating the southwesterly winds over south AS and predominantly northwesterly to westerly winds over north & central AS. Over the BoB, southwesterlies are seen over south BoB & south Andaman Sea. A cyclonic circulation is also indicated over eastcentral BoB off Myanmar coast. During week 2, also southwesterlies are seen over south AS & south BoB and adjoining areas of central AS & BoB respectively.

With respect to cyclogenesis, IMD MME-CFSV2 model is indicating a zone with moderate (40-50%) probability of cyclogenesis over the southeast AS and moderate to high (60-70%) over eastcentral BoB off Myanmar coast during week 1. During week 2, no significant zone of cyclogenesis is indicated.

The sub-seasonal ECMWF model is indicating low (20-30%) probability of cyclogenesis over northeast BoB off Myanmar coast during week 1 and similar probability over north BoB off Bangladesh-West Bengal coasts during week 2. Over the AS, the model is indicating low (10-20%) probability of cyclogenesis over eastcentral & adjoining northeast AS off south Gujarat coast during week 1 and off south Gujarat-north Maharashtra coasts during week 2.

The higher cyclogenesis probability indicated by IMD CFSV2 and ECMM is against the 8-10% climatological probability of cyclogenesis over the North Indian Ocean region during the forecast period.

(b) Guidance from Medium-Range NWP models:

Models like IMD-GFS, GEFS, BFS, NCUM and MITHUNA are indicating existing upper air cyclonic circulation over southeast AS to move northwestwards during next two days. Models like NCUM & FourCast (AI model) are indicating a fresh upper air cyclonic circulation over southeast AS around 2nd & 6th June respectively with nearly westwards movement for 2-3 days.

Over the BoB, models like IMD-GFS, GEFS are showing existing upper air cyclonic circulation over eastcentral & adjoining southwest BoB to gradually move west-northwestwards towards North BoB till 4th June. Some models like BFS, NCUM, GraphCast (AI) are also indicating development of fresh upper air cyclonic circulation over eastcentral BoB around 4th June with northwestwards movement for subsequent 2-3 days.

ECMWF suggests, the existing Upper air cyclonic circulation over eastcentral BoB to move initially east-northeastwards and then north-northwestwards across coastal Myanmar and southeast Bangladesh and lie over Mizoram and neighbourhood by 1st June, and became less marked thereafter. The model is also indicating development of fresh Upper air cyclonic circulation over eastcentral AS off Karnataka and adjoining Konkan coasts during first half of week 2.

Operational extended forecast for next two weeks:

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

(a) the existing upper air cyclonic circulation / low pressure area over southeast Arabian Sea is likely to move northwestwards during next two days with no significant intensification.

(b) existing upper air cyclonic circulation over eastcentral & adjoining southeast BoB is likely to move north-northwestwards during next 4-5 days.

(c) development of a fresh Upper air cyclonic circulation over eastcentral AS off Karnataka and adjoining Konkan coasts during first half of week 2.

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

Forecast issued:

The extended range outlook issued on 14th May for week 2(22.05.2026-28.05.2026) indicated

(i) likelihood of development of an upper air cyclonic circulation / low pressure area over south Arabian Sea during first half of week 2.

The extended range outlook issued on 21st May for week 1(22.05.2026-28.05.2026) indicated development of:

(i) an upper air cyclonic circulation / low pressure area over eastcentral Arabian Sea during first half of week 1 (around 24th May) which may move northward during subsequent 3-4 days and

(ii) another upper air cyclonic circulation/ low pressure area over eastcentral BoB during end of week 1 or beginning of week 2 (around 28th -29th May) with gradual west-northwestwards movement.

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Realized weather:

a) An upper air cyclonic circulation formed over southeast Bay of Bengal & neighbourhood on

22nd May 2026 and became less marked on 25th May 2026 over southwest Bay of Bengal & neighborhood.

b) An upper air cyclonic circulation formed over eastcentral Arabian Sea & neighbourhood on 21st May and became less marked on 24th May 2026.
c) Another upper air cyclonic circulation formed over southeast Arabian Sea & neighbourhood on 22nd May 2026 and became less marked on 23rd May 2026.
d) An upper air cyclonic circulation formed over the Westcentral Bay of Bengal & neighborhood on 26th May 2026 and persisted over Eastcentral and Southeast Bay of Bengal between 1.5 km & 7.6 km above sea level on 28th May 2026.
e) An upper air cyclonic circulation formed over the Southeast Arabian Sea & neighborhood on 26th May 2026 and persisted over the same region with extended upto 5.8 km km above sea level on 28th May 2026.

Thus, the formation of upper air cyclonic circulations over AS and BoB was predicted well in extended range forecast with some spatio-temporal errors

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: 04.06.2026