India Meteorological Department
Ministry of Earth Sciences
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Issued on 07.05.2026

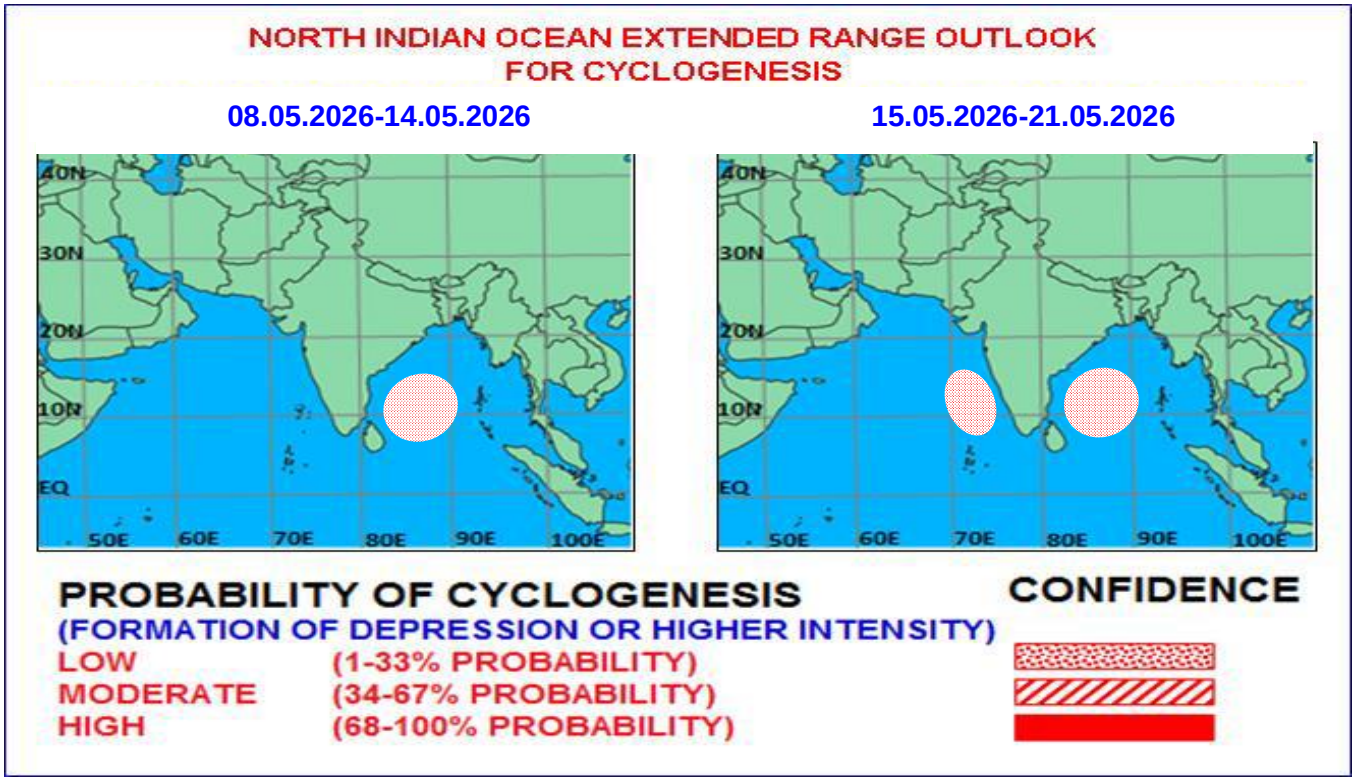

Fig. 1: Graphical Cyclogenesis over the north Indian Ocean during the next two weeks

I. Environmental features and Equatorial waves:

The guidance from ECMM model indicates that the Madden-Julian Oscillation (MJO) index is currently in phase 3 with amplitude close to 1. It will continue in same phase with amplitude gradually decreasing to less than 1 from middle of week 1. It will gradually enter into phase 4 and continue in same phase with amplitude remaining less than 1 during week 2. Thus, MJO is likely to support enhancement of convective activity/ cyclogenesis over the Arabian Sea (AS) during week 1 and over the Bay of Bengal (BoB) during the entire forecast period.

The guidance from the NCICS model indicates the prevalence of westerly wind anomaly (>9 mps) over East Equatorial Indian Ocean (EEIO) & adjoining south BoB alongwith prevalence of Equatorial Rossby wave (ERW) & MJO and easterly wind anomaly (5-7 mps) over north & adjoining central BoB, indicating the equatorial wavs to support cyclogenesis over the BoB during week 1. Over the AS, the model is indicating westerly wind anomaly (1-3 mps) over central & southwest AS with easterly wind anomaly (1-3 mps) over northwest BoB, indicating weakening of seasonal anticyclone over the central AS and gradual establishment of southwesterly winds over the south AS. Thus, equatorial waves may support cyclogenesis over the eastcentral BoB during week 1. During week 2, the model is indicating establishment of easterly wind anomaly (3-5 mps) over south BoB with westerly wind anomaly (1-3 mps) to it' s north alongwith MJO, indicating unfavourable environment for establishment of southwest monsoonal winds over the Andaman Sea. The model is indicating strengthening of westerly wind anomaly over southwest AS off Somalia coast (3-5 mps) and easterly wind anomaly (1-3 mps) to its north over westcentral AS off Oman-Yemen coasts, indicating a favourable environment for enhancement of convective activity over the southwest AS during week 2.

Currently, based on 2nd May 2026 guidance, weak El-Nino– like conditions (with NINO 3.4 Index as +1.2ºC) are prevailing. Trends indicate further development of El-Nino conditions. Currently, Neutral Indian Ocean Dipole (IOD with index value +0.01ºC) is prevailing and the same are likely to prevail over the Indian Ocean during the forecast period.

II. Model Guidance:

(a) Guidance for Extended Range models:

The 850 hPa mean wind field forecast of IMD Extended Range model (MME-CFSV2) is indicating prevalence of a cyclonic circulation over central parts of south BoB with westerly winds over southern parts of south AS during week 1. Corresponding anomaly field is not indicating any prominent circulation. It is indicating east-west trough in easterly extending from Indonesia upto southeast AS across south BoB & Comorin during week 1. The 850 hPa mean wind field is indicating westerly/ southwesterly flow over south, westcentral & northwest AS and southwest/southerly flow over entire BoB during week 2. Corresponding anomaly field is also indicating similar features with a cyclonic anomaly over westcentral BoB off Andhra Pradesh coast during week 2. The precipitation anomaly is positive over entire southeast AS and entire BoB which is increasing from week 1 to week 2 and covering Kerala & Karnataka coasts. The negative precipitation anomaly over northeast India during week 1 is becoming positive during week 2.

NCMRWF extended range model (CNCUM) is indicating a feeble cyclonic circulation over South Tamil Nadu & neighbourhood during week 1. Strong easterly anomaly over entire BoB and southeast AS is indicated during week 1. During week 2, it is indicating similar features like IMD CFSV2. However, corresponding anomaly field does not show any cyclonic circulation over BoB. Westerly wind anomaly is seen over south AS only. It is not seen extending over south BoB. Slow progress of monsoon is indicated by this model.

The ECMWF Ensemble model forecast is indicating a probable zone for cyclogenesis (20-30% probability) over the westcentral BoB around 16th May and eastcentral AS (30-40%) around 17th May. The sub-seasonal forecast of ECMWF indicates 10-20 % probability of cyclogenesis over eastcentral AS and another over westcentral BoB with 20-30% probability of cyclogenesis during 11th-18th May.

With respect to cyclogenesis, IMD MME-CFSV2 model is indicating a moderate (30-40%) probability of cyclogenesis over south BoB & southeast AS during week 1. During week 2 also, the model is indicating probable cyclogenesis zone (20-30%) covering eastern parts of BoB & westcentral BoB, Comorin & adjoining southeast AS.

Various extended range models are indicating low probability of cyclogenesis over southwest & adjoining westcentral BoB duing first half of week 2 and onset of southwest monsoon over Andaman Sea & Andaman & Nicobar Islands during later half of week 2. There may also be likelihood of development of a vortex over eastcentral AS before onset of southwest monsoon.

(b) Guidance from Medium-Range NWP models:

There is large divergence among various models wrt location and time of genesis over the BoB and AS. NCEP GFS is consistently showing cyclogenesis over the southwest BoB around 13th/ 00 UTC with further intensification. ECMWF is indicating a low-pressure area over southwest BoB around 15th/ 00 UTC. ECAI is showing low pressure area over southeast BoB around 20th/00 UTC. IMD GFS, BFS, NCUM are not indicating formation of depression over BoB. Over the AS, ECMWF is showing a depression over eastcentral AS around 17/00. Among the various AI models, Pangu weather is showing depression over southwest BoB around 13th/00 UTC and GraphCast is showing depression over westcentral BoB around 13th/ 00 UTC.

(c) Climatological Guidance:

Climatologically, during the forecast period, the daily probability of cyclogenesis is about 4-10% based on the data during the period 1891-2000. During 1961-2024, there have been 74 cyclonic disturbances (maximum sustained wind speed ≥ 17 kt (31 kmph)) that developed over the North Indian Ocean with 52 over the BoB, 21 over the AS and 1 over the land in the Month of May. Tracks of cyclonic disturbances during 1961-2024 are presented in Fig. 2.

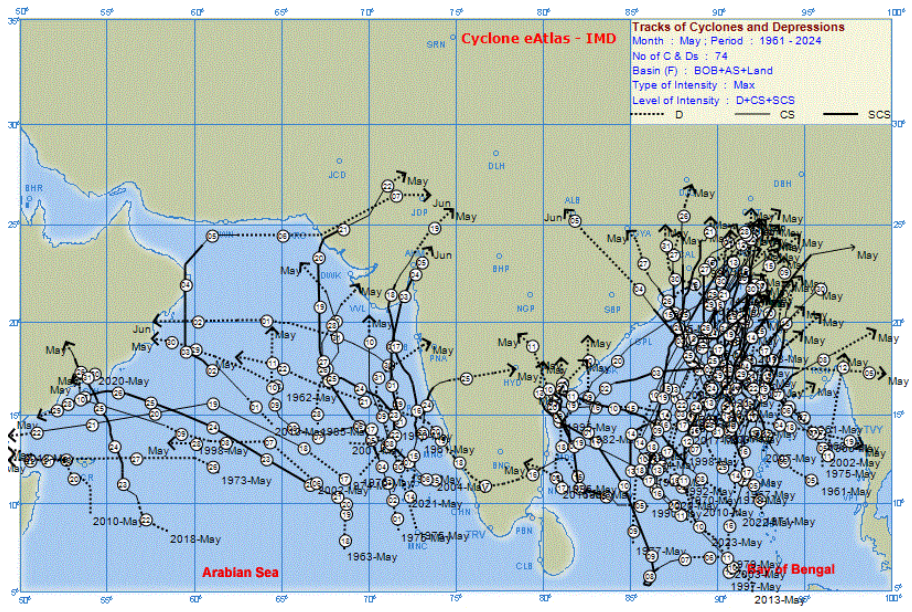

Fig. 2: Tracks of cyclonic disturbances (maximum sustained wind speed ≥ 17 kt (31 kmph)) during 1961-2024

III. Inference:

Considering various large-scale environmental features, climatology and model guidance, it is inferred that there is a likelihood of the development of an upper-air cyclonic circulation/low pressure area over southwest Bay of Bengal and adjoining areas of westcentral and southeast Bay of Bengal during second half of week 1. There is a low probability of cyclogenesis over the southwest & adjoining westcentral Bay of Bengal during the second half of week 1 and first half of week 2, preferrably during 13-16 May 2026.

There is also likelihood of development of a depression with low probability over eastcentral Arabian Sea around middle of week 2 (17-18th May 2026).

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

Forecast issued:

The extended range outlook issued on 23rd April for week 2(01.05.2026-07.05.2026) indicated that no probability of cyclogenesis over the North Indian Ocean during the entire forecast period.

The extended range outlook issued 30th April for week 1(01.05.2026-07.05.2026) indicated no probability of cyclogenesis over the North Indian Ocean during the entire forecast period. However, it indicated likelihood of the development of an upper-air cyclonic circulation over the southeast Arabian Sea during the week.

Realized weather:

No cyclogenesis occurred over the region during the specified week. However, an upper air cyclonic circulation formed over Gulf of Mannar & neighborhood on 06th May 2026 and became less marked on 07th May 2026. Another upper air cyclonic circulation formed over southeast Arabian Sea and adjoining Lakshadweep Islands off south Kerela coast on today the 7th May. Thus, cyclonic circulation over AS was predicted well in one week advance.

NCMRWF-IMD satellite gauge merged data plots of 24-hour accumulated rainfall from 30th April-06th May, 2026 is presented in **Fig. 2**.

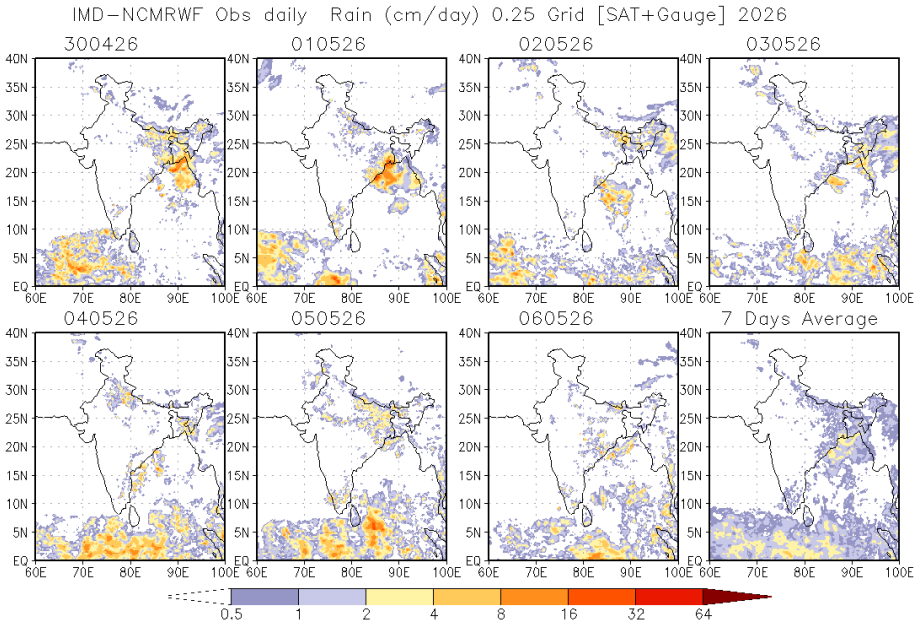

Fig. 2: NCMRWF-IMD satellite gauge merged data plots of 24-hour accumulated rainfall from 30th April-06th May, 2026

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, 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: 14.05.2026