India Meteorological Department
Ministry of Earth Sciences
Mausam Bhawan, Lodhi Road, New Delhi-110003

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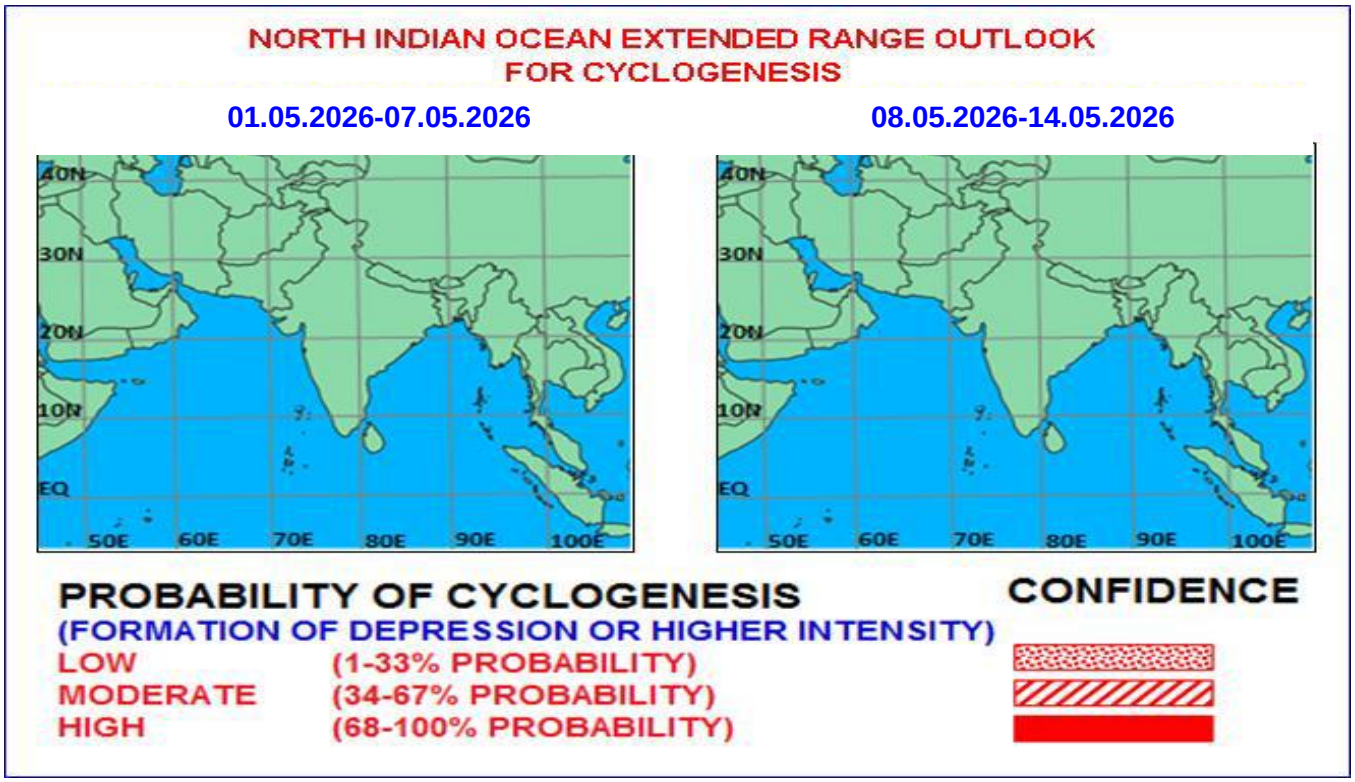

Fig. 1: Graphical Cyclogenesis over the north Indian Ocean during the next two weeks

I. Environmental features and Equatorial waves:

The guidance from ECMM model indicates that the Madden-Julian Oscillation (MJO) index is currently in the transition from phase 2 to 3, with amplitude decreasing below 1. According to the consensus amongst various models, the amplitude of the MJO signal is likely to decrease sharply by less than 1 without further eastward propagation during the first week. It is likely to show a movement along the diagonal in the phase diagram towards phase 8 across phase 2 during week 1 and across phase 1 with amplitude gradually reaching near the centre of the phase diagram during week 2. Thus, MJO is likely to become favourable for the enhancement of convective activity over the Arabian Sea (AS) during both weeks and the Bay of Bengal (BoB) during week 1.

The guidance from the NCICS model indicates the prevalence of easterly wind anomaly (1-3 mps) over the entire BoB except the southwest BoB during both weeks. The westerly wind anomaly (1-3 mps) is likely over the entire AS, along with an Equatorial Rossby wave (ERW) over the eastcentral AS & adjoining Konkan coast during the first half of week 1. Thereafter, the westerly anomaly over AS is likely to disappear gradually from north AS and subsequently from central & south AS during the second half of week 1 and from entire AS by the end of week 1. Low-frequency waves over Comorin and neighbourhood are likely to persist during the entire forecast period. The equatorial waves may support enhancement of convective activity over the southeast & adjoining central AS during week 1.

Currently, based on 26th April 2026 guidance, weak La Niña–like conditions (with NINO 3.4 Index as +0.23^{o}C) are prevailing. Trends indicate a transition to ENSO neutral conditions by the end of the forecast period. Neutral Indian Ocean Dipole (IOD with index value +0.09^{o}C) conditions 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 prominent anti-cyclonic circulation over central AS and weaker anticyclonic wind flow pattern over North Andaman Sea and adjoining Myanmar with a ridgeline nearly along 15ºN during week 1. The easterly is likely to prevail over the south BoB and AS during the week. The corresponding anomaly field indicates a cyclonic circulation over Gujarat with a north-south trough extending up to the central parts of AS during week 1. Another anomalous cyclonic circulation is likely over south Bangladesh and adjoining Gangetic West Bengal & north BoB during week 1. The southeast-northwest trough across southeast AS extending up to the central parts of AS is likely to be seen on anomalous easterly wind over south AS. Accordingly, above normal rainfall is likely over southeast AS, Lakshadweep Islands and coastal Karnataka, Kerala and adjoining areas of Konkan and Interior Karnataka during week 1. Above normal rainfall is also likely over northeast India and West Bengal during week 1.

During week 2, with a change, the ERF is indicating that a weak cyclonic circulation over southeast AS with westerly winds is likely to prevail over south AS and BoB. The anomaly wind field clearly indicates a prominent cyclonic circulation over the central parts of AS during week 2. The precipitation anomaly field during week 2 indicates above normal activity over the entire AS and over coastal areas of Kerala, Karnataka and the south Konkan coasts. The above normal activities are also likely over the entire south BoB and Andaman & Nicobar Islands and adjoining Andaman Seas during week 2.

Similar wind circulation features are indicated by the NCMRWF ERF model during week 1. However, the NCMRWF ERP do not indicate a lot of changes in the mean wind field from week 1 to week 2. Accordingly, the anomalous cyclonic circulation over Bangladesh and the neighbourhood is only seen, but no cyclonic circulation or westerly wind anomaly is predicted over the south AS & BoB during week 2. Hence, the precipitation anomaly does not indicate any above normal rainfall activity over the Indian region except over northeast India during week 1.

The ECMWF Ensemble model forecast is indicating a probable zone for cyclogenesis (10-20% probability) over the central parts of southeast AS & adjoining Equatorial Indian Ocean (EIO) around 4th May, moving northeastwards towards the Yemen coast during the subsequent 4-5 days. The sub-seasonal forecast of ECMWF indicates a very low (5-10 %) probability of cyclogenesis over south AS during week 1 and over northeast & adjoining eastcentral BoB during week 2.

With respect to cyclogenesis, IMD MME-CFSV2 model is indicating a moderate (40-50%) probability of cyclogenesis over southeast AS and adjoining EIO during week 1. There is another small area with similar probability over the southeast BoB during the same week. The probability of cyclogenesis decreases to a low (20-30%) category over southeast AS, the entire south BoB and the Andaman & Nicobar Islands during week 2.

The model guidance indicates that there is a low probability of the onset of the southwest monsoon over parts of southeast AS and south BoB & the Andaman & Nicobar Islands during week 2. The cross equatorial westerly winds are likely to establish over south AS with a possibility of above normal rainfall activities over southeast AS, Lakshadweep Islands and Kerala and Karnataka during week 2.

(b) Guidance from Medium-Range NWP models:

Most of the NWP models (IMD-GFS, BFS, ECMWF, NCUM, and Mithuna) indicate seasonal anticyclonic wind patterns at 850 hPa over the central parts of AS and an east-west ridgeline nearly along 15°N latitude across peninsular India and south-central BoB during the next 10 days. However, the ridgeline is likely to run south of 15°N during the next 3 - 4 days and move northwards thereafter. At the surface, a North-South trough from Vidarbha to South Tamil Nadu is likely for many days of week 1. However, the orientation of the trough is likely to change to a northeast-southwest direction extending across north-interior Karnataka, coastal Karnataka, Kerala and southeast AS towards Lakshadweep Islands after 5th May. Only the NCEP GFS model is indicating a cyclonic disturbance with a rapid development from a low pressure area to a cyclonic storm on 4th May over southeast AS & adjoining EIO. Initially, the storm is likely to move nearly northwards along longitude 69°E till 7th May morning. The storm is likely to intensify into a severe cyclonic

storm and move northwestwards across South AS until the morning of 10th May. Thereafter, continuing to move northwestwards towards the Yemen coast, it is likely to intensify further into a very severe cyclonic storm.

The NCMRWF AI models (Pangu, GraphCast and FourCastNet), EC-AIFS and NCEP GFSAI are not indicating any cyclogenesis during the next 10 days.

(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.

III. Inference:

Considering various large-scale environmental features, climatology and model guidance, it is inferred that there is no probability of cyclogenesis over the North Indian Ocean during the entire forecast period. However, there is a likelihood of the development of an upper-air cyclonic circulation over the southeast Arabian Sea during the first week and another cyclonic circulation/low pressure area over the same region during week 2. There is also a likely development of an upper-air cyclonic circulation over the south Bay of Bengal during week 2.

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

The extended range outlooks issued on 16th April for week 2 (24.04.2026-30.04.2026) and on 23rd April for week 1 (24.04.2026-30.04.2026) indicated no probability of cyclogenesis over the North Indian Ocean during the entire forecast period.

Realised weather:
Actually, no cyclogenesis occurred over the region during the specified week.

Thus, the non-occurrence of cyclogenesis was correctly predicted two weeks in advance.

NCMRWF-IMD satellite gauge merged data plots of 24-hour accumulated rainfall from 23rd – 29th April, 2026 is presented in **Fig. 2**.

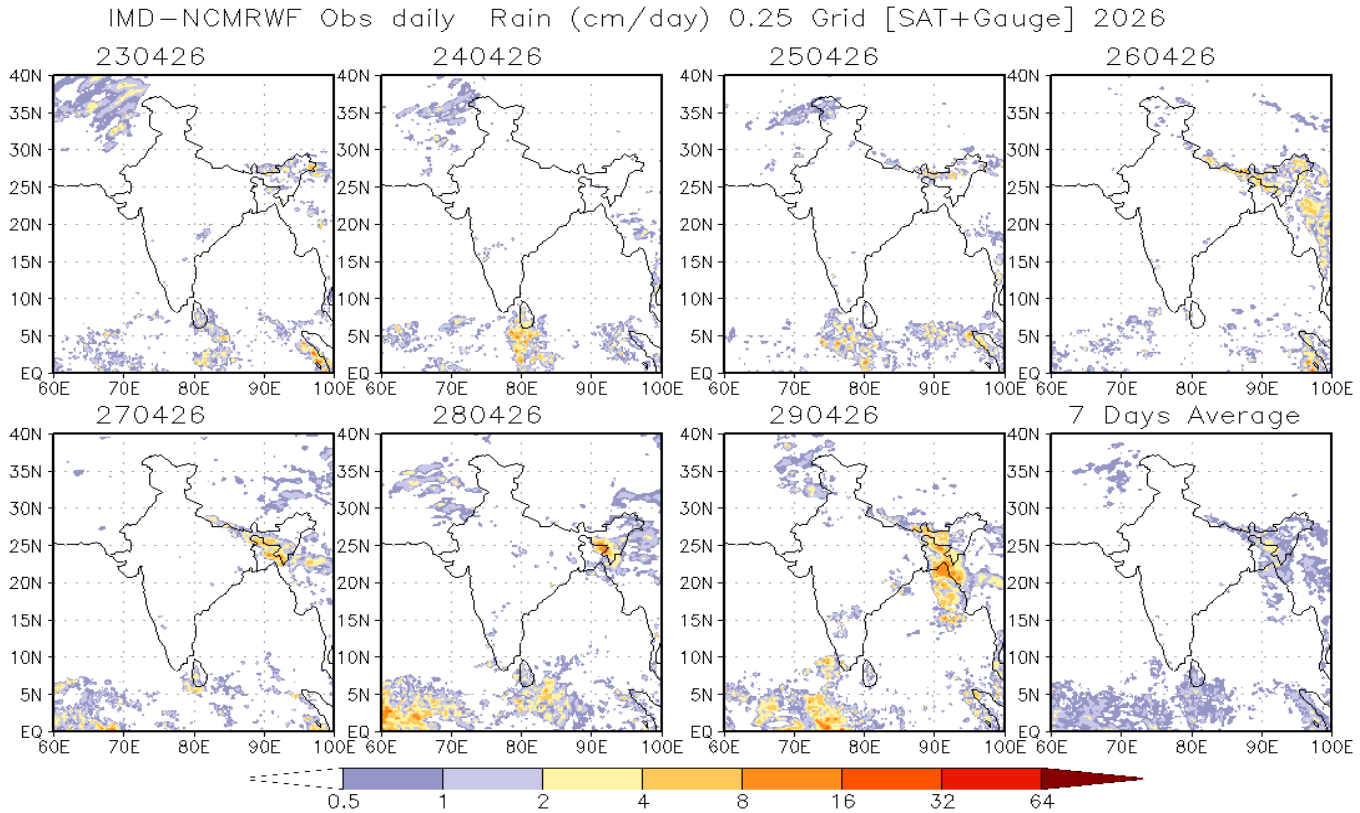

Fig. 2: NCMRWF-IMD satellite gauge merged data plots of 24-hour accumulated rainfall from 23rd – 29th April, 2026.

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: 07.05.2026