India Meteorological Department
Ministry of Earth Sciences
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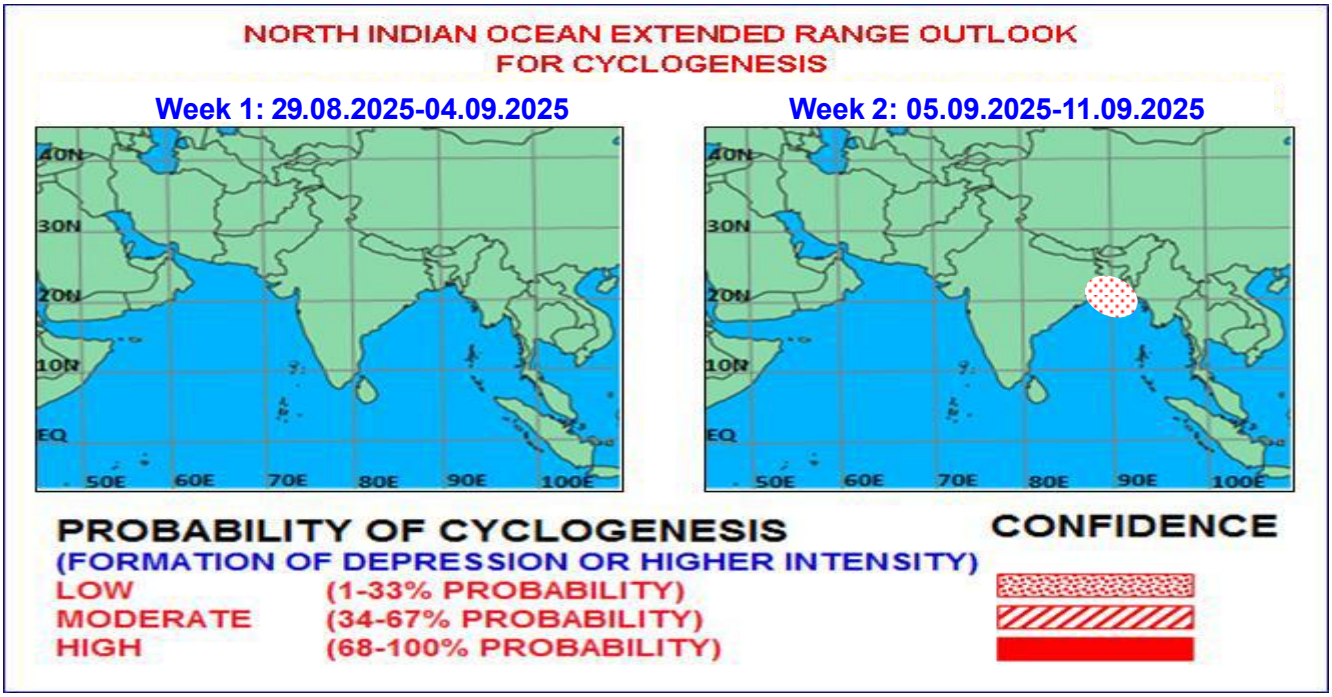

Fig. 1: Graphical Cyclogenesis over the north Indian Ocean during the next two weeks

I. Environmental features:

The guidance from various models indicates that Madden Julian Oscillation (MJO) is currently in phase 5 and likely to enter into phase 6 during the next 1-2 days with decreasing amplitude of less than 1. There is a lack of consensus between the forecasts of various models, with a randomly large spread of ensemble members. They predict an ambiguous propagation of MJO in the phase diagram as they indicate very weak MJO signal during week 1. However, the MJO is likely to show a quick migration across phases 6, 7 and 8 before it enters phase 1 within the first week. Thereafter, it will move eastwards very slowly across phases 2 & 3 with negligibly small amplitude during week 2. Only the NCEP GEFSv12 indicates a bit faster movement to take the MJO signal into phase 5 across 4 till the end of week 2. Thus, MJO is likely to support the enhancement of convective activity over the North Indian Ocean (NIO) basin after the first half of week 1 till the end of the forecast period.

The guidance from the NCICS CFS model indicates the westerly wind anomaly (3-5 mps) over most parts of the Arabian Sea (AS) & Bay of Bengal (BoB) and adjoining North Equatorial Indian Ocean (NEIO) during the entire forecast period. The core of the strong (5-7 mps) westerly anomaly is indicated over the central parts of AS during week 1, whereas it is likely to lay over south BoB and adjoining NEIO during week 2. A weak easterly wind anomaly (1-3 mps) over the northern parts of BoB & AS and adjoining areas of the Indo-Gangetic plains is also likely during the same period. The westward-moving Equatorial Rossby Wave (ERW) enters over the Andaman Sea during the second half of week 1 and reaches up to southeast AS across the entire south BoB till the end of week 2. Thus, the zonal wind anomalies and equatorial waves are likely to contribute to the enhancement of convective activity over the BoB from the second half of week 1.

II. Model Guidance:

Guidance from various deterministic models, including ECMWF, ECAIFS, IMD GFS, NCEP GFS, BFS, indicates the existing low pressure area (LPA) over the central parts of Chhattisgarh & neighbourhood with monsoon trough south of its normal position. According to model forecasts, the LPA is likely to become less marked during the next 12 hours, and the associated upper-sir cyclonic circulation is likely to move west-northwestwards during the next 2-3 days. Most of the models are also suggesting the formation of another fresh LPA over the north Bay of Bengal during the second half of week 1, around 2nd/3rd September, 2025.

According to the model forecasts, the system is likely to become more marked over northwest BoB and move gradually west-northwestwards across northwest BoB, coastal areas of West Bengal & North Odisha, and north Chhattisgarh during the next 2-3 days. Accordingly, the monsoon trough is likely to remain south of its normal position during the entire week 1.

The IMD ERF extended range model 850hPa mean wind field indicates the seasonal monsoon trough south of its normal position with an embedded cyclonic circulation over east Rajasthan during week 1. The corresponding wind anomaly field suggests a trough and an embedded cyclonic circulation similar to the mean field. A cyclonic circulation is also indicated another cyclonic circulation over the northeast & adjoining eastcentral AS during week 1. During week 2, the mean wind indicates that the monsoon trough, with its western end located near its normal position, but its eastern end dipping over northwest BoB with an embedded cyclonic circulation over the region. The corresponding anomaly wind field suggests an east-west trough with a cyclonic circulation over eastcentral BoB. Another cyclonic circulation over the northeast and adjoining east-central AS is likely to persist during week 2 as well.

The model indicates a zone with a moderate (40-60%) probability of cyclogenesis over the Gujarat region and adjoining Madhya Pradesh & Rajasthan during week 1. The model furnishes an east-west oriented zone with low-moderate probability (30 - 40%) of cyclogenesis from the north Odisha-West Bengal coasts to East Uttar Pradesh across Jharkhand & adjoining Bihar during week 2.

The ECMWF ensemble model shows a low probability (20-30%) of cyclogenesis over the north BoB at the end of week 1, and no significant probability is suggested during week 2. The sub-seasonal model forecast of ECMWF is also indicating a low probability (5-10%) of cyclogenesis over the north BoB during week 1 and nil probability during week 2.

III. Inference:

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

(i) There is no probability of cyclogenesis during week 1. However, a low pressure area is likely to form over the north Bay of Bengal around 3rd September, 2025.

(ii) Thereafter, the system is likely to move west-northwestwards across the northwest Bay of Bengal, the coastal areas of West Bengal & north Odisha, and intensify into a depression around 5th September. Accordingly, there is a low probability of cyclogenesis during the first half of week 2.

(iii) There is a likelihood for the formation of another low pressure area over the northwest Bay of Bengal at the end of week 2.

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

The forecast issued on 14th August for week 2 (22.08.2025-28.08.2025) indicated the likelihood of formation of cyclonic circulation/low pressure area over Gangetic West Bengal-north Odisha coasts and adjoining areas of northwest Bay of Bengal during the end of week 2 (around 27th August) with gradual west-northwestwards movement across Jharkhand.

The forecast issued on 21st August for week 1 (22.08.2025-28.08.2025) indicated likelihood of the development of a low pressure area over northwest Bay of Bengal off Odisha-West Bengal coasts around 25th August with low probability of its intensification into a depression over north Odisha and adjoining northwest Bay of Bengal & Gangetic West Bengal around 27th August and It's likely movement towards west northwestwards across north Odisha & adjoining Jharkhand, North Chhattisgarh and east Madhya Pradesh during subsequent 2 days.

Realized:

i. A Low-Pressure Area formed over Gangetic West Bengal & neighborhood at 1200 UTC of 22nd August, 2025. It moved west northwestwards over northeast Madhya Pradesh & neighborhood at 0300 UTC of 24th August, 2025 and became less marked over central parts of south Uttar Pradesh & adjoining north Madhya Pradesh at 0300 UTC of 25th August, 2025.

ii. Another low-pressure area formed over northwest Bay of Bengal off Odisha coast in the morning of 26th August, 2025. It became Well Marked Low Pressure area over the same region at 0000 UTC on 27th August. It further moved slowly west-northwestwards and weakened into a low-pressure area over South Odisha adjoining Chhattisgarh at 0000 UTC of 28th August 2025

Hence likely formation of low-pressure area over Gangetic West Bengal & neighborhood during the week (22.08.2025-28.08.2025) was predicted 2 weeks in advance. Further, the formation of another low-pressure area over the northwest Bay of Bengal off the Odisha coast and its low probability of intensification into a depression was predicted over the same region around 27th August. However, the Low-pressure area was intensified into WML on 27th August and weakened into a low-pressure area over South Odisha adjoining Chhattisgarh.

NCMRWF-IMD satellite gauge merged data plots of realized 24-hour accumulated rainfall from 21st to 27th August, 2025, are presented in Fig. 2.

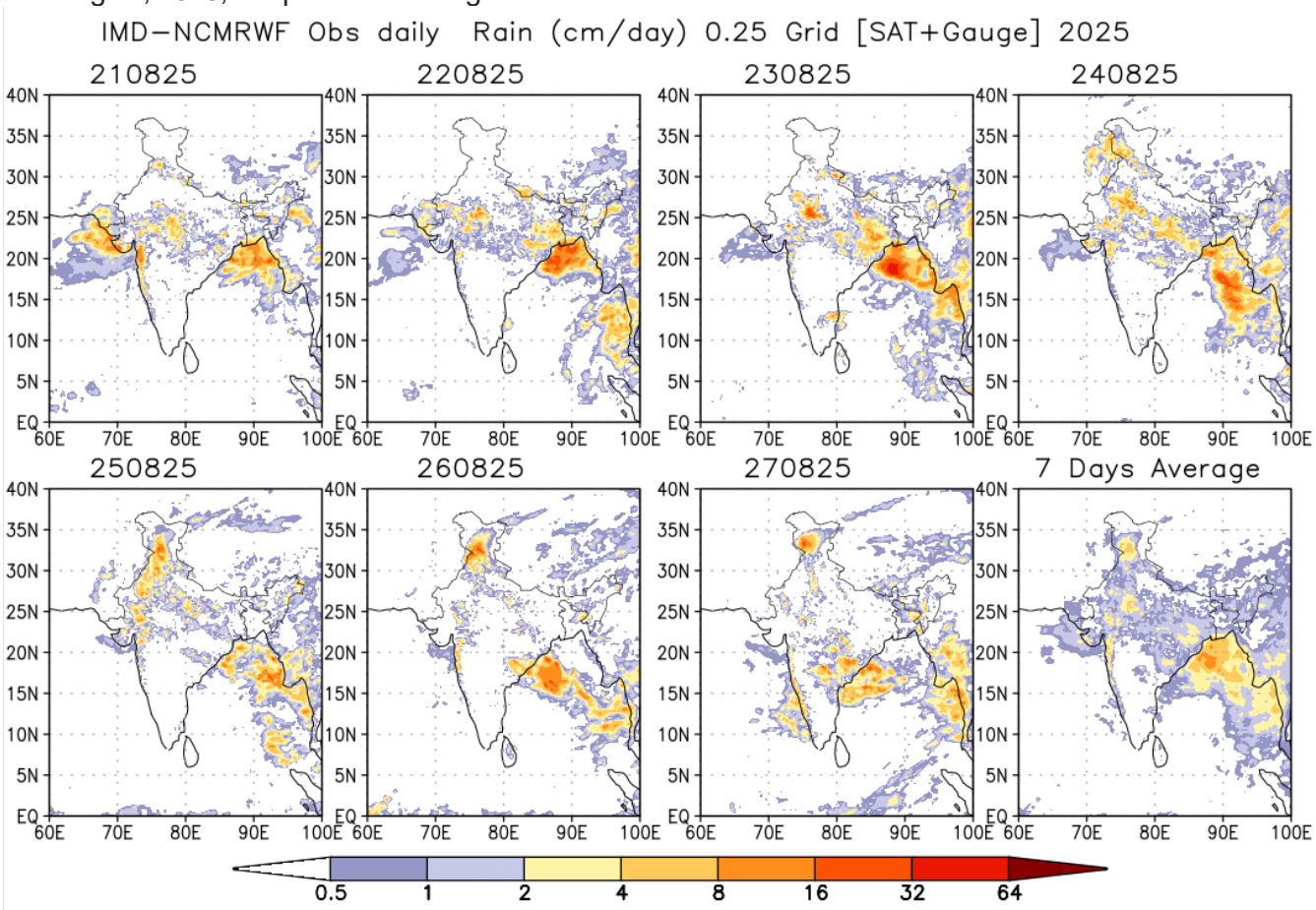

Fig.2: NCMRWF-IMD satellite gauge merged data plots of realized 24-hour accumulated rainfall from 21st to 27th August, 2025.

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, 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: 04.09.2025