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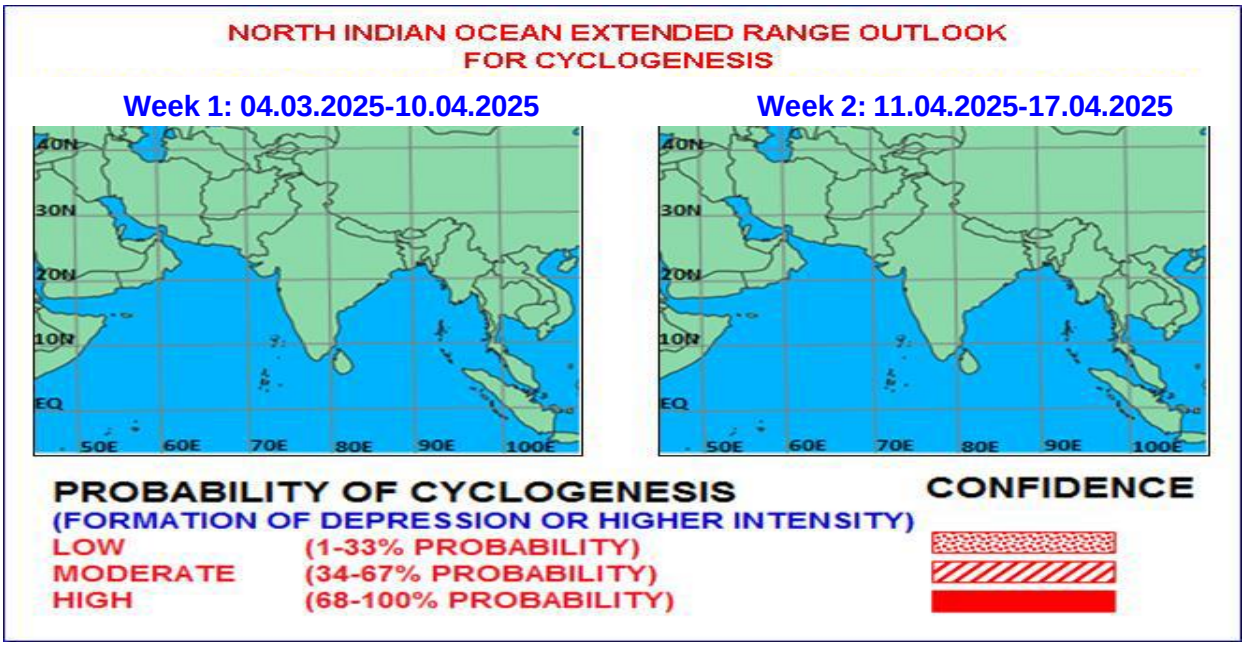

Fig. 1: Graphical Cyclogenesis over the north Indian Ocean during next two weeks

I. Environmental features:

The guidance from ECMM model for Madden Julian Oscillation (MJO) indicates that the MJO is currently in phase 7 with amplitude less than 1. It is likely to move across phases 7 & 8 with negligible amplitude during week 1. Thereafter it will move rapidly across phases 2, 3 and 4 during week 2 with amplitude remaining less than 1. Thus, MJO is likely to support cyclogenesis and enhancement of convective activity over the Bay of Bengal (BoB) during week 2.

The NCICS CFS model forecast for zonal wind suggests prevalence of westerly wind anomaly (3-5 mps) over south BoB along with Equatorial Rossby waves (ERW) and easterly wind anomaly (5-7 mps) over north Andaman Sea & Eastcentral BoB during first half of week 1. The model is also indicating easterly wind anomaly (3-5 mps) over Central & north Arabian Sea (AS) during first half of week 1. During the later part of week 1, the model is indicating prevalence of westerly wind anomaly (3-5 mps) over entire BoB, AS and Indian mainland. Thus, Equatorial waves may support enhancement of convective activity over BoB only during middle of week 1.

II. Model Guidance:

IMD GFS is indicating a cyclonic circulation over southeast & adjoining central BoB around 5th April with nearly westwards movement till 7th April and no further intensification. IMD GEFS is indicating a cyclonic circulation over southwest BoB around 6th with nearly westwards movement till 7th and no further intensification. NCEP GFS is indicating development of low pressure area around 6th over southeast BoB with intensification into a depression around 7th and weakening over north BoB around 9th. ECMWF model is not indicating any significant cyclonic circulation over the region during next 10 days. EC-AIFS is indicating a feeble trough over south BoB during 4th to 8th.

The 850 hPa mean wind field of IMD ERF Model is indicating a feeble trough over south BoB during week 1. It is also indicating a cyclonic circulation over southwest & adjoining westcentral BoB during week 2. The 850 hPa wind anomaly field of the model is indicating anomalous cyclonic circulation over southwest & adjoining westcentral BoB during week 1. The model is also indicating moderate probability of cyclogenesis (30-40 %) over south BoB during week 1. The 850hpa wind anomaly field of NCMRWF ERF model is also

indicating similar features during week 1. ECMF extended range model is indicating 10-20% probability of cyclogenesis over westcentral & adjoining north BoB during week latter part of week 1.

Thus, majority of numerical weather prediction models are indicating likely formation of a cyclonic circulation around 6th April with no further intensification except NCEP GFS model which shows intensification up to a depression..

III. Inference:

Considering various environmental conditions and model guidance it is inferred that no cyclogenesis is likely over the North Indian Ocean region during entire forecast period. However, there is high probability of formation of a cyclonic circulation over central parts of south Bay of Bengal during middle of week 1 (around 6th April 2025) with low probability of its intensification into a low pressure area.

IV. Verification of forecast issued during last two weeks:

The forecast issued on 20th March for week 2 (28th March-3rd April) indicated no probability of cyclogenesis during the week. The forecast issued on 27th March for week 1 (28th March-3rd April) indicated no probability of cyclogenesis during the week. No cyclogenesis occurred during the period. However, a cyclonic circulation formed over Andaman Sea on 29th March which moved nearly westwards and weakened over southwest BoB off Tamil Nadu coast on 2nd April.

NCMRWF-IMD satellite gauge merged data plots of realized 24 hours accumulated rainfall from, 27th March to 1st April, 2025 are presented in **Fig. 2**.

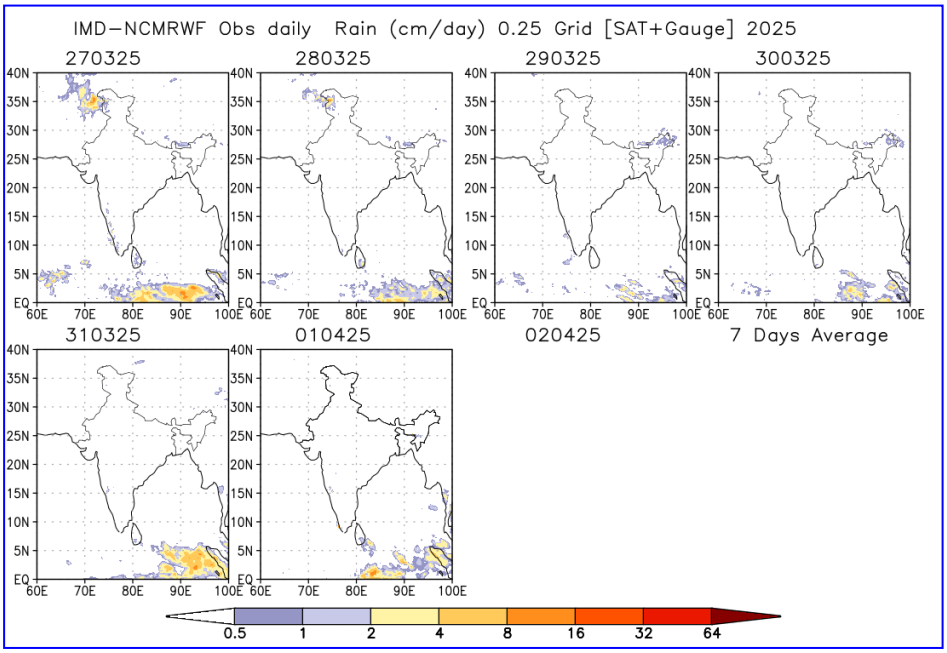

Fig.2: NCMRWF-IMD satellite gauge merged data plots of realized 24 hours accumulated rainfall from 27th March to 1st April, 2025.

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, ECMM: ECMWF-Ensemble System Bias Corrected, 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: 10.04.2025