



Issued on 14.12.2023

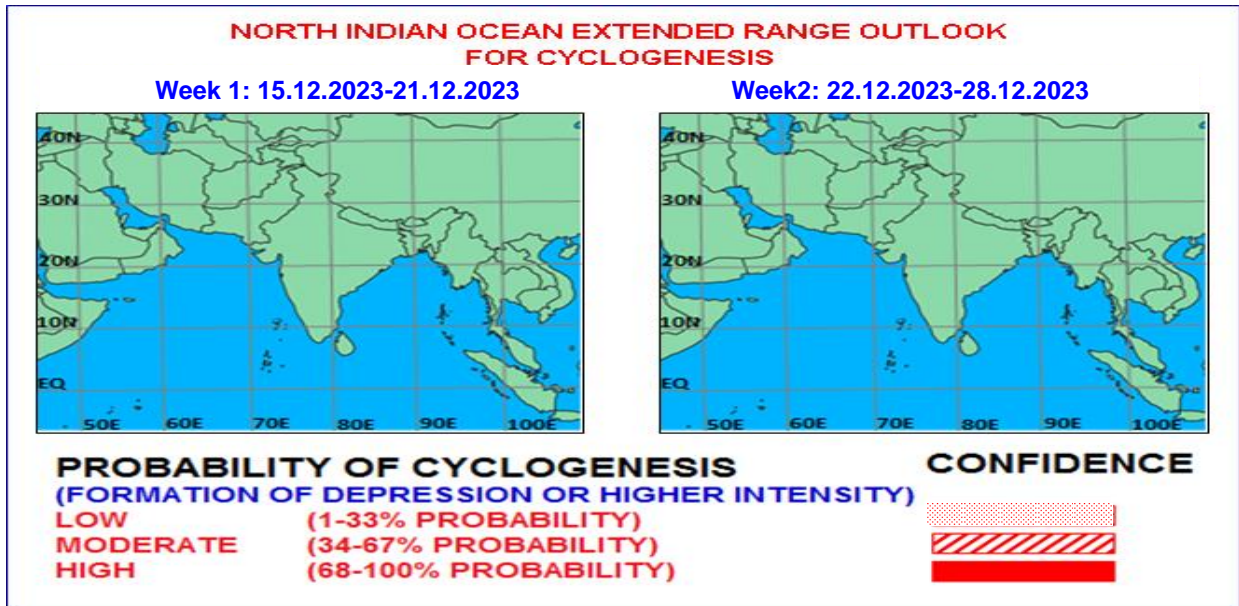


Fig. 1: Graphical Cyclogenesis over north Indian Ocean during next two weeks

I. Environmental features:

Madden Julian Oscillation (MJO) index is currently in phase 6 with amplitude close to 1. It is likely to move across phases 7 and 8 with decreasing amplitude during the forecast period. NCICS based forecast for zonal winds indicates weak easterly winds over both the basins the Bay of Bengal (BoB) and Arabian Sea (AS) during the forecast period. Thus, MJO and equatorial waves are not likely to contribute to any cyclogenesis over the region.

II. Model Guidance:

Most of the models including IMD GFS, NCUM and ECMWF are indicating a circulation over southeast BoB and adjoining Equatorial Indian Ocean (EIO) on 17th December with nearly westwards movement. GPP is indicating a feeble potential zone over southwest BoB with westwards movement. There is another significant potential zone for cyclogenesis over south BoB and adjoining EIO during 18th – 21st December. Mean wind anomaly at 850 hPa is indicating a cyclonic circulation over south BoB during first half of week 1. IMD extended range model is indicating low to moderate probability of cyclogenesis over south BoB with nearly westwards movement during week 1. Thus, during week 1, most of the models are indicating formation of cyclonic circulation over south BoB and adjoining EIO. Models are also indicating the cyclonic circulation over southwest AS to persist for next 2-3 days. ECMM is also indicating 20% probability of cyclogenesis over south BoB and also over southwest AS.

Legends: 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, European Centre for Medium Range Weather Forecasting, GPP: Genesis Potential Parameter, National Centre for Environment Prediction (NCEP) GFS, ECMM: ECMWF multi model, GEFS: GFS ensemble, NEPS: NCUM ensemble prediction system, CNCUM: Coupled NCUM, CPC: Climate Prediction Center, NWS: National Weather Service.

III. Inference:

Considering all the environmental conditions 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 likelihood of formation of a cyclonic circulation/low pressure area over south Bay of Bengal during week 1. The cyclonic circulation over southwest Arabian Sea is likely to persist during first half of week 1 and become less marked thereafter.

IV. Verification of forecast issued during last two weeks:

Forecast issued on 30th November for week 2 (08.12.2023-14.12.2023) and forecast issued on 7th December for week 1 (08.12.2023-14.12.2023) indicated no cyclogenesis over the North Indian Ocean. No cyclogenesis occurred over the region during the week 08.12.2023-14.12.2023.

NCMRWF-IMD satellite gauge merged data plots of 24 hours accumulated realized rainfall during 7th to 13th December, 2023 are presented in Fig.2.

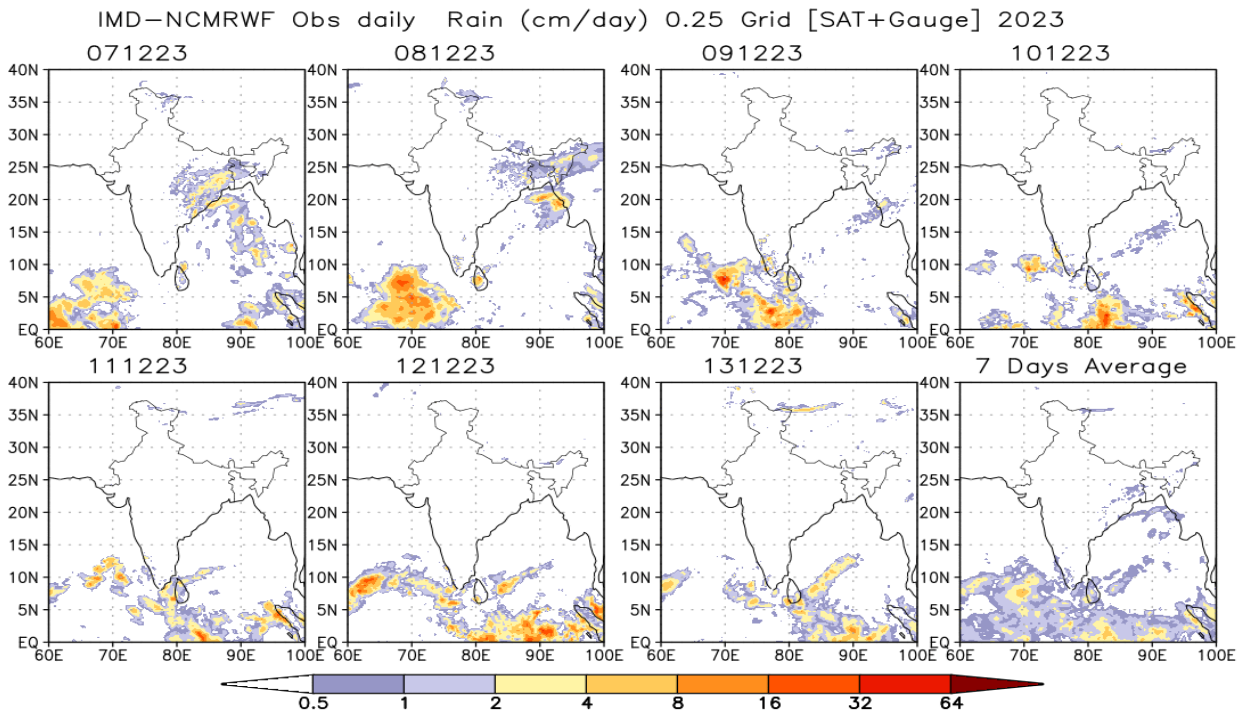


Fig.2: NCMRWF-IMD satellite gauge merged data plots of 24 hours accumulated realized rainfall during 7th to 13th December, 2023.

Next update: 21.12.2023