India Meteorological Department
Ministry of Earth Sciences
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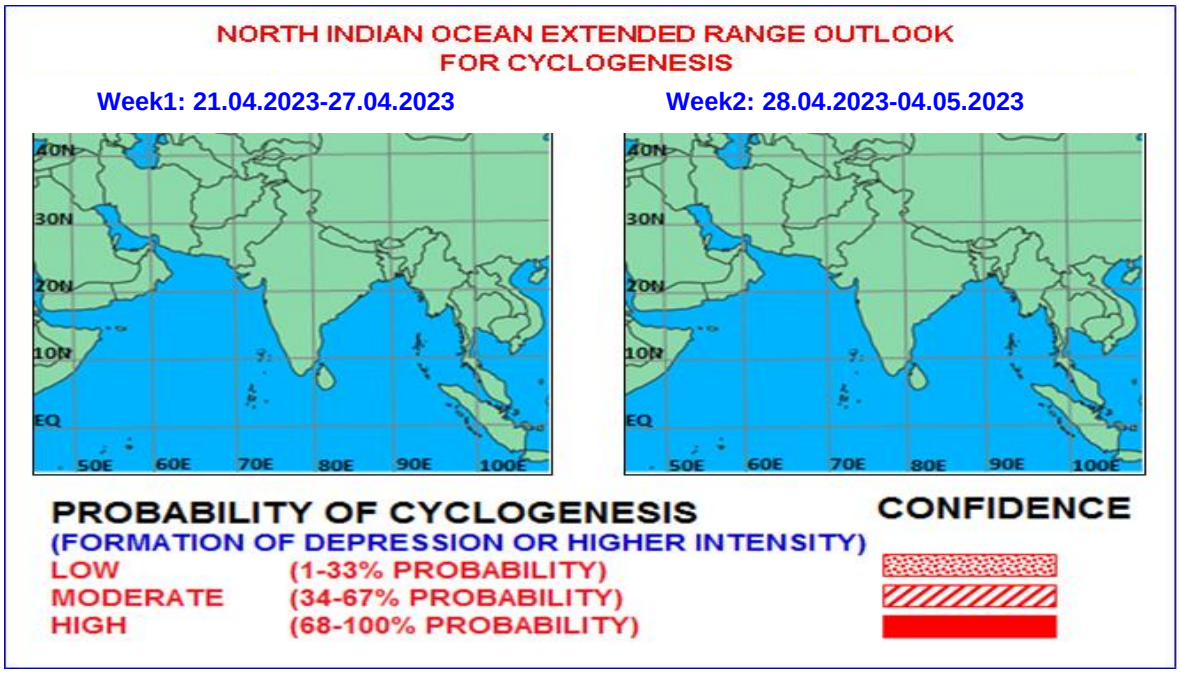


Fig.1: Graphical Cyclogenesis over north Indian Ocean during next two weeks

## I. Environmental features:

The Madden Julian Oscillation (MJO) Index is currently in Phase 1 with amplitude close to 1. It will continue in same phase first half of week 1. Thereafter, it will move across phases 2, 3 and 4 during later half of week 1 and week 2 with amplitude less than 1. Hence, MJO will support enhancement of convective activity over the North Indian Ocean (NIO) from later half of week 1 onwards.

During week 1, easterly winds (1-3 mps) over central Bay of Bengal (BoB) and central Arabian Sea (AS) NIO and Equatorial Rossby Waves (ERW) over East Equatorial Indian Ocean (EIO) & adjoining south Bay of Bengal (BoB) are likely to prevail. During week 2, easterly winds (1-3 mps) over eastcentral BOB and westerly winds (1-3 mps) over south & AS and adjoining west EIO are likely to prevail during later part of week 1. During beginning of week 2, westerly winds (3-5 mps), Equatorial Rossby Waves (ERW) and MJO are likely over south AS. Considering collectively, both MJO and equatorial waves are not likely to contribute towards any cyclogenesis over the region during week 1. However, during week 2, equatorial waves and MJO may contribute towards enhanced convective activity over south AS.

## II. Model Guidance:

Various models including IMD GFS, NCUM, ECMWF, ECMM, NEPS, GEFS and GPP are not indicating any cyclogenesis over the region during next 7-10 days. IMD GPP forecast field is also not indicating any cyclogenesis during next 7 days.

IMD's Coupled Forecast System Version 2 (IMD CFS V2), IMD GPP and NCMRWF CNCUM are also not indicating any cyclogenesis over the North Indian Ocean (NIO) region.

(Legends: IMD GFS: India Meteorological Department Global Forecast System, NCUM: National Centre for Medium Range Weather Forecasting Centre Unified Model, European Centre for Medium Range Weather Forecasting, GPP: Genesis Potential Parameter, National Centre for Environment Prediction GFS, ECMM: ECMWF multi model, GEFS: GFS ensemble, NEPS: NCUM ensemble prediction system, CNCUM: Coupled NCUM)

## III. Inference:

Considering the environmental features and model guidance, it is inferred that no cyclogenesis (formation of depression) is likely over the North Indian Ocean region during next 2 weeks. Graphically shown in Fig. 1.

## IV. Verification of forecast issued during last two weeks:

The forecast issued on 6th April, 2023 for week 2 (14.04.2023– 20.04.2023) indicated no cyclogenesis over the NIO region. The forecast issued on 13th April, 2023 for week 1 (14.04.2023– 20.04.2023) indicated no cyclogenesis over the NIO region. Thus, nil cyclogenesis was correctly predicted in two weeks forecast.

The realized rainfall during 13th April, 2023 – 19th April, 2023 from satellite-gauge merged data is presented in Fig.2

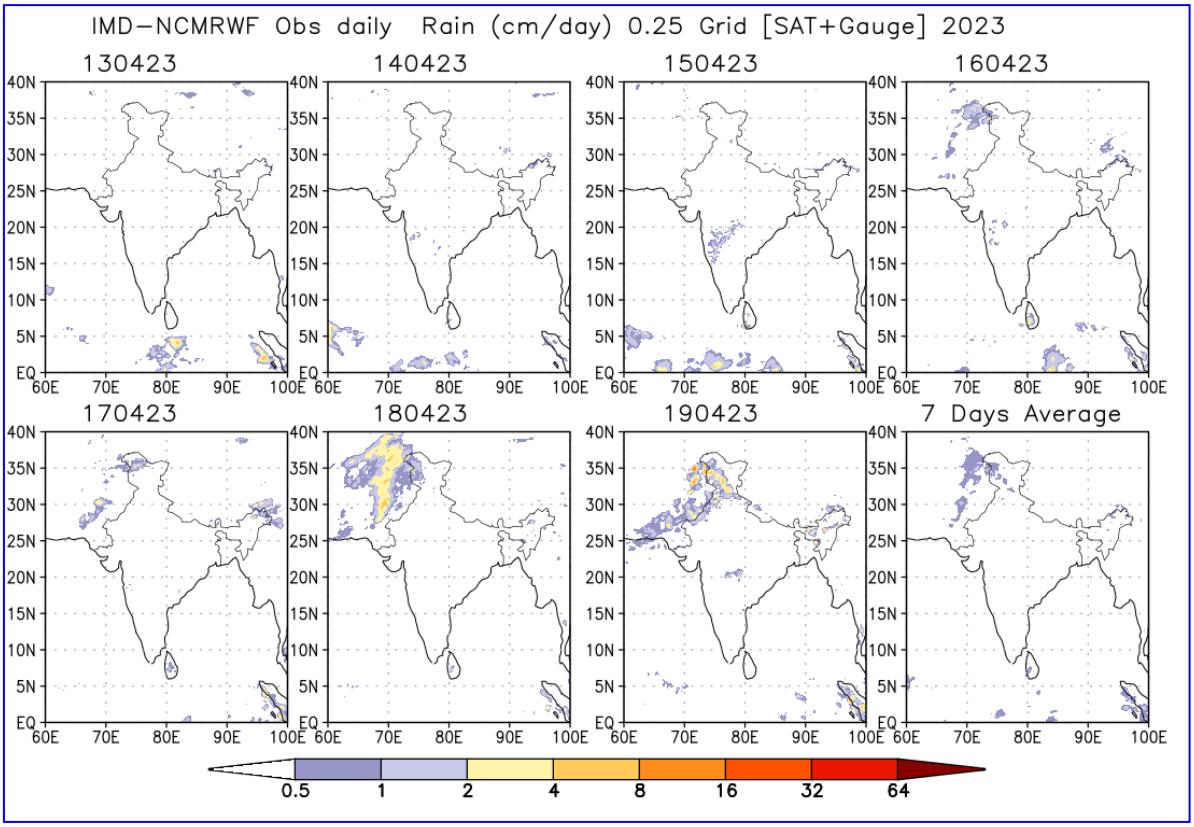


**Fig.2: Rain gauge and satellite merged rainfall plots during 13th April, 2023 – 19th April, 2023**

**Next update: 27.04.2023**