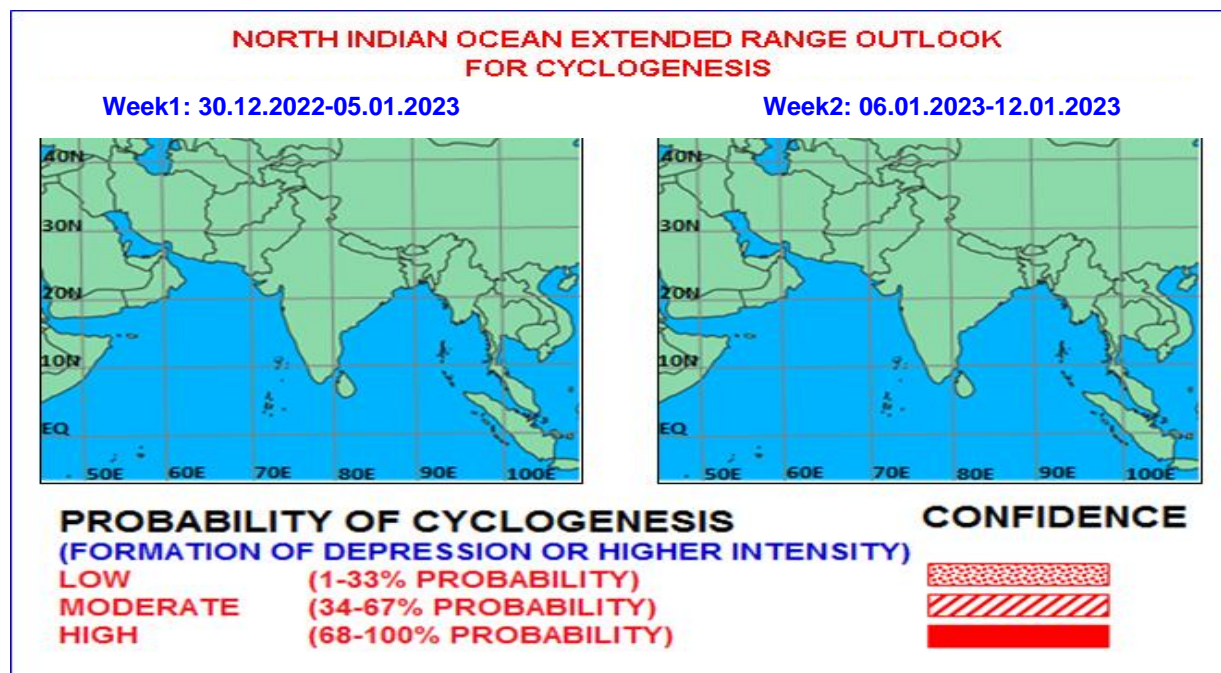




Issued on 29.12.2022



## I. Environmental features:

The Madden Julian Oscillation (MJO) Index is currently in Phase 7 with amplitude more than 1. It will continue in same phase during week 1. Thereafter, it would move to phase 8 with amplitude becoming less than 1. Thus, MJO will not support convective activity over the north Indian Ocean (NIO) during the forecast period.

Based on CFS forecast for equatorial waves, weak easterly winds (1-3 mps) over central Bay of Bengal (BoB), central India and south Arabian Sea (AS), weak westerly winds (1-3 mps) over south BoB & adjoining east Equatorial Indian Ocean (EIO) are likely to prevail during week 1. Thereafter, gradual weakening of westerly winds over EIO region and easterly winds over southwest AS are likely to prevail during week 2. Thus, equatorial waves are not likely to support any convective activity over the BoB and AS during the forecast period.

## II. Model Guidance:

- Based on the guidance from various deterministic models (GFS group, NCUM group, ECMWF, IMD MME) no cyclogenesis is likely over the NIO region during the forecast period.
- Ensemble systems including IMD GEFS, MCMRWF NEPS and genesis potential parameter plots do not indicate any cyclogenesis over the NIO region during the forecast period.
- NCMRWF Coupled Extended Range Model (CNCUM) and IMD MME Coupled Forecast System (MME CFS V-2) Version 2 do not indicate any cyclogenesis over the NIO region during the forecast period.

### III. Inference:

Considering the model guidance and various environmental features, it is inferred that no cyclogenesis is likely over the North Indian Ocean during the entire forecast period extending between 30<sup>th</sup> December, 2022 to 12<sup>th</sup> January, 2023.

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

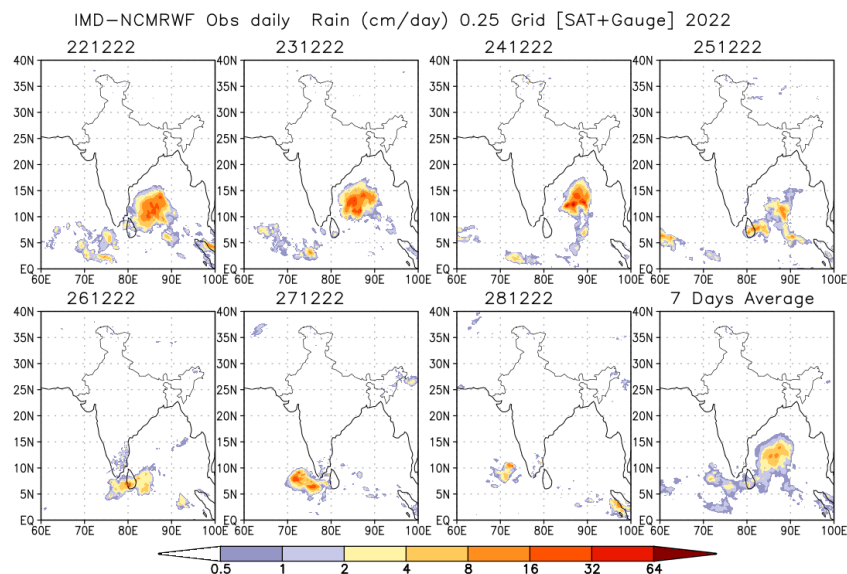
**Forecast System:** The forecast issued on 15<sup>th</sup> December for week 2 (23.12.2022–29.12.2022) indicated likely development of a fresh cyclonic circulation over South Andaman Sea during middle of week.

The forecast issued on 22<sup>nd</sup> December for week 1 (23.12.2022–29.12.2022) indicated that the depression over southwest Bay of Bengal would move north-northwestwards till 23<sup>rd</sup>/0000 UTC and recurve west-southwestwards thereafter reaching Comorin Area around 26<sup>th</sup>/0000 UTC. Thereafter, it would move west-northwestwards towards Southeast Arabian Sea.

**Realised System:** The depression that developed over southwest Bay of Bengal on 22<sup>nd</sup> December, moved northwestwards till 22/1200 UTC, recurved northeastwards, followed a looping track and recurved northwestwards till 24<sup>th</sup>/0000 UTC. Thereafter, it recurved southwestwards, crossed Sri Lanka coast near 8.35N/81.4E and weakened into a well marked low pressure area over Sri Lanka. It then moved nearly westwards, emerged into Comorin Area on 26<sup>th</sup>/0000 UTC as a well marked low pressure area and became less marked over Maldives and adjoining Lakshadweep area.

Hence, the genesis, movement and intensity of the depression over southwest bay of Bengal was well captured in two weeks forecast. However, the likely development of a cyclonic circulation over South Andaman Sea during 23<sup>rd</sup> to 29<sup>th</sup> December was not realized.

The realized rainfall during 22<sup>nd</sup> Dec. – 28<sup>th</sup> Dec., 2022 from satellite-gauge merged data is presented in Fig.1



**Fig.1: Rain gauge and satellite merged rainfall plots during 22<sup>nd</sup> Dec. – 28<sup>th</sup> Dec, 2022**

**Next update: 05.01.2023**