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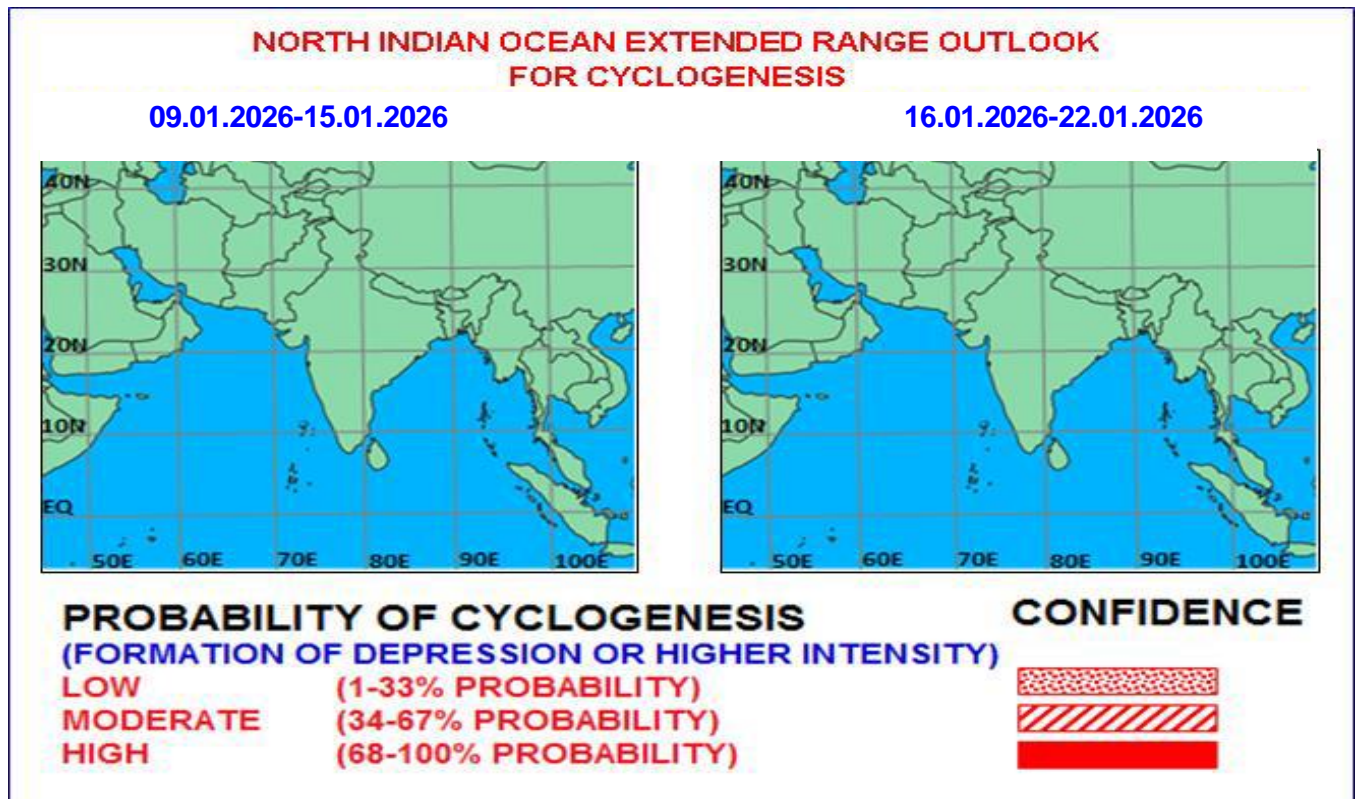


Fig. 1: Graphical Cyclogenesis over the north Indian Ocean during the next two weeks

**I. Environmental features:**

The guidance from ECMM model indicates that the Madden Julian Oscillation (MJO) index is currently in phase 6 with amplitude less than 1. It is likely to continue in same phase during the entire forecast period. However, the amplitude will become more than 1 from later half of week 1. Thus, the MJO is not likely to contribute to enhancement of convective activity over the North Indian Ocean (NIO), including the Bay of Bengal (BoB) and the Arabian Sea (AS) during the entire forecast period.

The guidance from the NCICS model indicates strong westerly wind anomaly (7-9 mps) over southwest BoB and adjoining areas of East Equatorial Indian Ocean (EIO) & Comorin area during beginning of week 1 along with prevalence of MJO, a Low-frequency background wave (LW) and easterly wind anomaly (5-7mps) over southwest & adjoining westcentral BoB. Thereafter, the model is indicating the prevalence of easterly wind anomaly over the Peninsular India & most parts of east Arabian Sea and central BoB during middle of week 1. The model is also indicating weak westerly anomaly over south BoB and south Andaman Sea along with an approaching Equatorial Rossby Wave (ERW) in later part of week 1. These features indicate that equatorial waves are likely to support the convective activity associated with the existing deep depression over southeast BoB till 11<sup>th</sup> January. During week 2, westerly wind anomaly is indicated over central Arabian Sea and easterly over south AS. Over the BoB, westerly wind anomaly is indicated over southeast BoB and Andaman Sea. Thus, during week 2, the equatorial waves may not support any convective activity over the NIO region.

**II. Model Guidance:**

**(a) Guidance for Extended Range models:**

The mean wind field at 850 hPa of IMD ERF (CFS V-2) model indicates prevalence of northeasterly/easterly winds over the entire AS and BoB with an anticyclone over central India and a prominent Inter-Tropical Convergence Zone (ITCZ) with east-west shear zone over EIO and adjoining south BoB during week 1. Corresponding wind anomaly field for week 1, displays a cyclonic anomaly over central parts of south AS during week 1. It is also indicating, easterly/southeasterly winds over central and south BoB. The weekly mean wind field during week 2 is indicating northwesterly winds reaching upto central India and central parts of BoB. Corresponding anomaly field is also indicating similar features. The weekly rainfall forecast during week 1 indicates enhanced rainfall activity over South BoB, Sri Lanka and Tamil Nadu & adjoining Kerala/Karnataka during week 1. Enhanced rainfall activity is also indicated over southeast AS. Similarly, corresponding rainfall anomaly field is also indicating above normal rainfall activity over Southwest BoB, Sri Lanka, Tamil Nadu & southeast AS. Thus, IMD extended range model is capturing the rainfall associated with the existing Deep Depression over southwest BoB and adjoining east EIO.

The mean wind of NCMRWF Extended Range Prediction (ERP) model at 850 hPa level indicates prevalence of an anticyclonic circulation over northwest India during week 1. It also indicates a cyclonic circulation over southwest BoB during week 1. Precipitation charts and corresponding anomaly charts are indicating enhanced rainfall activity over southwest BoB and north Sri Lanka during week 1. During week 2, an anticyclonic circulation is indicated over northwest BoB and another over northeast AS.

Thus, the extended range models are indicating the existing deep depression over southwest BoB and associated enhanced rainfall activity over Sri Lanka and Tamil Nadu during week 1.

IMD CFS V-2 model is also indicating an east-west oriented zone over the south BoB extending from south Andaman Sea upto the southwest BoB off Sri Lanka-Tamil Nadu coasts with low-moderate (20-50 %) probability of cyclogenesis during week 1. However, higher probability (70-80%) of cyclogenesis is indicated over southwest BoB off Sri Lanka coast. During week 2, no significant probable zone is indicated. The ECMWF ensemble forecasts is not indicating any fresh probable zone for cyclogenesis during next 2 weeks.

#### **(b) Guidance from Medium-Range NWP models:**

Most of the deterministic models (GFS and NCUM group) are highly underestimating the intensity and capturing the existing deep depression over southwest BoB and adjoining East EIO as a cyclonic circulation/ low pressure area. However, ECMWF is capturing the existing system and indicating its west-northwestwards movement followed by slight increase in northward component of movement towards Sri Lanka coast. However, there is large variation in the consecutive runs of ECMWF as well.

### **III. Inference:**

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

- (a) The existing deep depression over southwest Bay of Bengal and adjoining East Equatorial Indian Ocean is likely to intensify further and move west-northwestwards across southwest Bay of Bengal during next 36 hours and cross Sri Lanka coast between Hambantota and Batticaloa around evening/night of tomorrow, the 9th January 2026.
- (b) No fresh cyclogenesis is likely over the North Indian Ocean during next 2 weeks.

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

#### **Forecast issued:**

The extended range outlook issued on 25<sup>th</sup> December 2025 for week 2 (02.01.2026-08.01.2026) indicated no probability of cyclogenesis (formation of depression) during the entire forecast period. However, it indicated a possibility of formation of an upper-air cyclonic circulation / low pressure area over the south Bay of Bengal during the the week (02.01.2026-08.01.2026).

The extended range outlook issued on 01<sup>st</sup> January 2026 for week 1 (02.01.2026-08.01.2026) indicated possibility of formation of upper-air cyclonic circulation / low pressure area over the southwest Bay of Bengal in the middle (around 6<sup>th</sup> January) of the week (02.01.2026-08.01.2026).

#### **Realized weather:**

However, in association with active easterly wave over the south BoB, following low pressure systems formed:

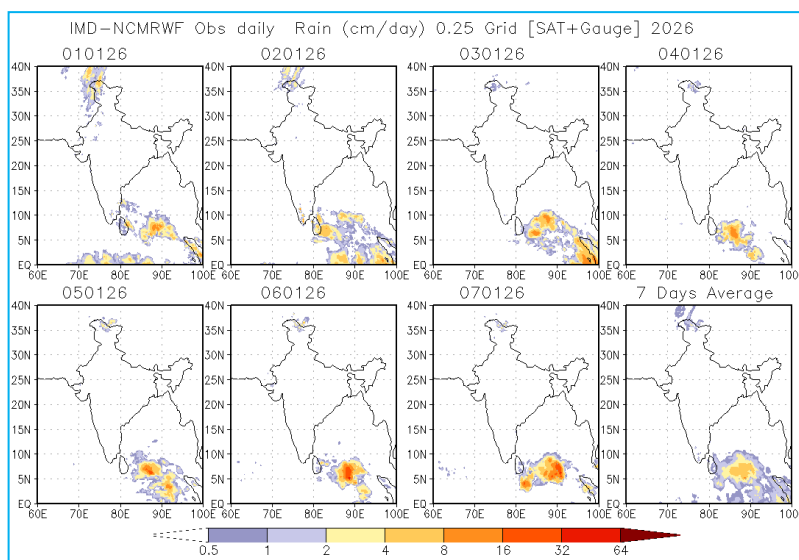
- (a) An upper air cyclonic circulation lay over over southwest Bay of Bengal off Sri Lanka coast

on 31<sup>st</sup> December. It persisted over the same region and became less marked on 03<sup>rd</sup> January 2026.

- (b) An upper air cyclonic circulation lay over southeast BoB & adjoining areas of southwest BoB and East EIO in the morning (0830 hrs IST) of 3<sup>rd</sup> January 2026. Under its influence, a low pressure area formed over southeast BoB and adjoining East EIO in the evening (1730 hrs IST) of 5<sup>th</sup> January, 2026. It lay as a Well Marked Low pressure area (WML) over the same region at in the morning (0530 hrs IST) of 6<sup>th</sup> January, 2026. It concentrated into a depression in the morning (0830 hours IST) of 7<sup>th</sup> January, 2026 over southeast BoB and adjoining East EIO and into a deep depression over southwest BoB and adjoining areas of southeast BoB & East EIO in the early morning (0530 hrs IST) of 8<sup>th</sup> January.
- (c) A cyclonic circulation lay over Comorian area & neighbourhood at 0300 UTC 06<sup>th</sup> January 2026 and became less marked on 07<sup>th</sup> January 2026.
- (d) An upper air cyclonic circulation lay over southeast AS and adjoining South Kerala coast on 04<sup>th</sup> January 2026 became less marked on 05<sup>th</sup> January 2026.
- (e) Another upper air cyclonic circulation formed over Eastcentral Arabian Sea & adjoining Lakshadweep area on 06<sup>th</sup> January 2026 and became less marked on 07<sup>th</sup> January 2026.

**Conclusion:** Thus, active prevalence of active easterly wave with development of cyclonic circulations was indicated two weeks in advance. However, each development of cyclonic circulation was not indicated. Further, the development of depression over the southeast BoB could not be captured in the extended range outlooks issued for the week (02.01.2026-08.01.2026).

NCMRWF-IMD satellite gauge merged data plots of 24-hour accumulated rainfall from 1<sup>st</sup> January-7<sup>th</sup> January 2026 is presented in **Fig. 2**.



**Fig. 2:** NCMRWF-IMD satellite gauge merged data plots of 24-hour accumulated rainfall from 1<sup>st</sup> January-7<sup>th</sup> January 2026

**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: 15.01.2026**