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Ministry of Earth Sciences
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Issued on 03.08.2023

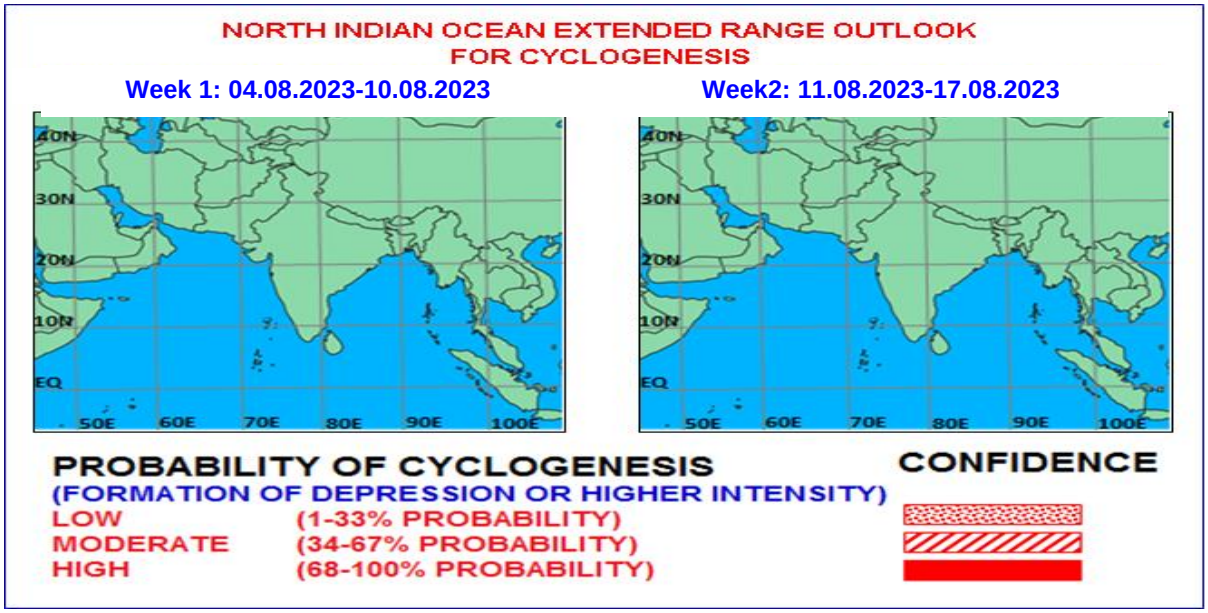

Fig.1: Graphical Cyclogenesis over north Indian Ocean during next two weeks

I. Environmental features:

The Madden–Julian Oscillation (MJO) Index is currently in Phase 1 with amplitude less than 1. It is likely to be in same phase during entire forecast period. Hence MJO is not likely to support any cyclogenesis over the North Indian Ocean. NCICS based forecast for equatorial waves over the region indicates presence of westerly winds (3-5 mps) are likely over south Arabian Sea, central & south India and south Bay of Bengal (BoB) alongwith presence of Rossby waves. Easterly winds (1-3 mps) are likely over north BoB and north & central India during first half of week 1. During later part of week 1 and week 2, weakening of westerly winds is indicated over the entire North Indian Ocean (NIO) region. Thus, equatorial waves are likely to contribute support convective activity over the north and central India during first half of week 1.

II. Model Guidance:

Various deterministic models including ECMWF, NCUM and NEPS are not indicating any cyclogenesis over the region during the entire forecast period. However, IMD GFS is indicating likely development of a cyclonic circulation over Bangladesh and adjoining North BoB region during later part of week 1 (around 09th August). IMD Genesis Potential Paramater (GPP) is not indicating any potential zone for cyclogenesis during next 7 days. The ERF models of IMD and NCMRWF are indicating a cyclonic circulation over northwest BoB during later part of week 1. Thus, only GFS group and ERF models are indicating likely formation of a fresh cyclonic circulation over North BoB and neighbourhood.

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 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 above it is inferred that:

(i) The existing well marked low pressure area over north Chattisgarh and neighbourhood is likely to move slowly west-northwestwards towards northeast Madhya Pradesh and adjoining southeast Uttar Pradesh and further weaken into Low Pressure Area during next 24 hours.

(ii) There is low probability of formation of a fresh cyclonic circulation over Bangladesh and adjoining North Bay of Bengal region during later part of week 1 (around 9th August) with west-northwestwards movement across Gangetic West Bengal and Jharkhand during subsequent 3 days. However, probability of cyclogenesis (formation of depression) may be treated as NIL over the North Indian Ocean during next two weeks.

IV. Verification of forecast issued during last two weeks:

The forecast issued on 20th July for week 2 (28.07.2023-03.08.2023) indicated no cyclogenesis over the region during the week. The forecast issued on 27th July for week 1 (28.07.2023-03.08.2023) indicated the low pressure area over South Odisha and adjoining north Andhra Pradesh to move northeastwards and reach Head Bay of Bengal around 28th July. Thereafter, it was indicated to move west-northwestwards during 2nd – 6th August.

Actually, the low pressure area over South Odisha and adjoining North Andhra Pradesh on 27th July became less marked on 28th July. The associated cyclonic circulation lay over North Odisha and adjoining Gangetic West Bengal and Jharkhand on 28th July. On 29th July, the circulation lay over North Odisha and adjoining Gangetic West Bengal. Under its influence a low pressure area formed over the same region on 29th July. It emerged into Head BoB on 30th July and lay as a well marked low pressure area over central parts of BoB on 31st July. Thereafter, it concentrated into a depression over central parts of North BoB in the morning (0000 UTC) and into a deep depression over northeast BoB off Bangladesh coast in the noon (0600 UTC) of 1st August. Moving northwestwards, it crossed Bangladesh coast in the evening (1000-1100 UTC) of 1st August. Thereafter, it moved across Gangetic West Bengal and weakened into a depression over Jharkhand in the midnight (1800 UTC) of 2nd August and into a well marked low pressure area over Chhattisgarh in the evening (1200 UTC) of 3rd August.

Thus, the movement of low pressure area over South Odisha and adjoining North Andhra Pradesh, it's emergence into Head Bay and further west-northwestwards movement could be captured well. However, it's intensification into depression could not be predicted.

Next update: 10.08.2023