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Ministry of Earth Sciences
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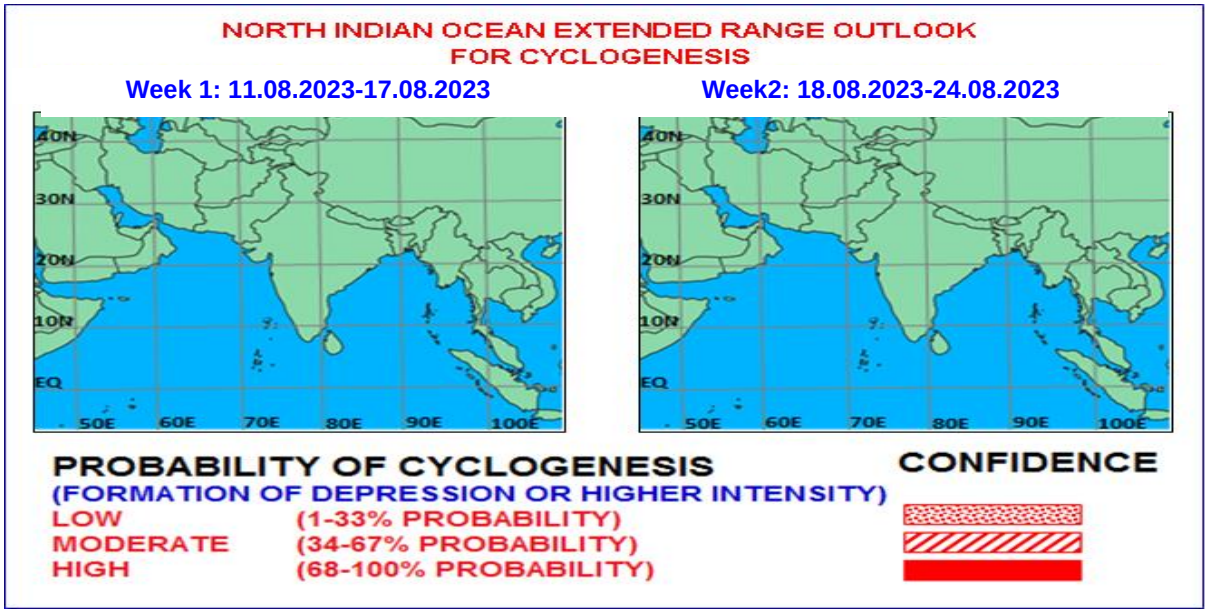

Graphical Cyclogenesis over north Indian Ocean during next two weeks

I. Environmental features:

As per ECMM forecast, the Madden–Julian Oscillation (MJO) Index is currently in Phase 8 with amplitude less than 1. It would continue in same phase during first half of week 1. Thereafter, it is likely to move to phase 8 with amplitude remaining less than 1. Hence MJO is not likely to support any cyclogenesis over the North Indian Ocean during entire forecast period. NCICS based forecast for equatorial waves over the region indicates presence of westerly winds (1-3 mps) alongwith Equatorial Rossby Waves (ERW) during beginning of week 1 over north Bay of Bengal (BoB), central India and north Arabian Sea. Easterlies (3-5 mps) are also seen to it's north over northeast India and North India. Similarly, during middle of week 1, weak westerlies (1-3 mps) over southeast BoB & south Peninsular India alongwith ERW are likely and easterlies (1-3 mps) are likely over north BoB & central India. These features indicate that equatorial waves would support enhancement of convective activity of northeast India and East India during next 3-4 days. Thereafter, equatorial waves are not likely to support any convective activity over the region.

II. Model Guidance:

Various deterministic models including IMD GFS, NCEP GFS and NCUM are indicating likely formation of a cyclonic circulation over northwest Bay of Bengal off Gangetic West Bengal and Bangladesh during the end of week 1/ beginning of week 2 (around 18th August). IMD Genesis Potential Parameter (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 off Gangetic West Bengal and Bangladesh during week 2.

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) There is moderate probability of formation of a fresh cyclonic circulation over Northwest Bay of Bengal off Gangetic West Bengal & Bangladesh during end of week 1/ beginning of week 2 (around 18th August) with west-northwestwards movement across Gangetic West Bengal and Jharkhand during subsequent 2-3 days.

(ii) Another cyclonic circulation is likely to develop over northwest Bay of Bengal towards end of week 2.

(iii) 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 27th July for week 2 (04.08.2023-10.08.2023) indicated no cyclogenesis over the region during the week. The forecast issued on 3rd August for week 1 (04.08.2023-10.08.2023) indicated the well marked low pressure area over north Chattisgarh and neighbourhood on 4th August to move west-northwestwards towards northeast Madhya Pradesh and adjoining southeast Uttar Pradesh and further weaken into Low Pressure Area during next 24 hours. It was also indicated that a cyclonic circulation would form over Bangladesh & adjoining North Bay of Bengal around 9th August. Actually, the well marked low pressure area northeast Madhya Pradesh weakened into a low pressure area over the same region on 5th August. It lay as a cyclonic circulation over Bihar on 6th & 7th and North Bangladesh on 8th and Northeast Bihar on 9th & 10th.

Thus, no cyclogenesis was correctly predicted. The likely circulation over Bangladesh around 9th was also captured, but with spatial error.

Next update: 17.08.2023