India Meteorological Department
Ministry of Earth Sciences
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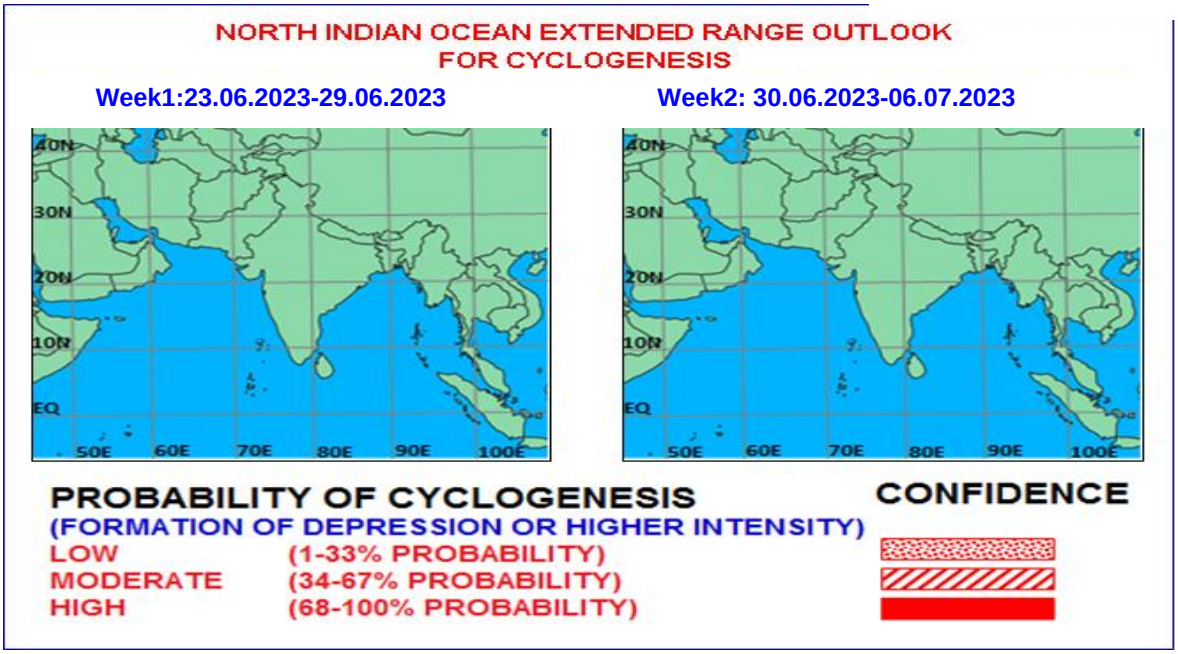

Fig.1: Graphical Cyclogenesis over north Indian Ocean during next two weeks

I. Environmental features:

The Madden–Julian Oscillation (MJO) Index is currently in Phase 8 (western Maritime Continent) with amplitude less than 1. It would continue in same phase for next 2 days. Thereafter, it would move to phase 1 and would continue in same phase with amplitude less than 1 till first half of week 1. It would then move quickly to phase 2 during later part of week 1 and would lie in phase 3 during remaining forecast period. Hence, MJO is likely to support the enhancement of convective activity and in turn development of low pressure systems over the north Bay of Bengal (BoB) uring later part of week 1 to week 2. During week 1, westerly winds (1-3 mps) along with Equatorial Rossby Waves (ERW) are likely to prevail over North and central Bay of Bengal which is likely to move westwards during 2nd half of week 1. All kinds of equatorial waves activity over North Indian Ocean (NIO) will be absent with very weak (less than 1 mps) westerly wind during week 2 except later part of the week 2 with a little increase in westerly wind speed (1- 3 mps). Therefore, MJO along with other tropical waves will be supporting convective activity during later part of week 1 to week 2.

II. Model Guidance:

Various deterministic models including ECMWF, IMD GFS, NCEP GFS, NCUM, NEPS and GEFS are indicating no fresh cyclogenesis over both the basins i.e. BoB and Arabian Sea (AS). All models are showing formation of cyclonic circulation in the lower and middle troposphere over Northwest Bay of Bengal off Odisha coast on 25th June and formation of a low pressure area under its influence over the same region on 27th June, 2023. The subsequent west-northwestwards movement over land is supported by most of the models but intensification of the system is not unanimously found.

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, CPC: Climate Prediction Center, NWS: National Weather Service)

III. Inference:

Considering various environmental features and model guidance, it is inferred that no further cyclogenesis is likely over the BoB and AS during next two weeks.

There is likely development of an upper-air cyclonic circulation in the lower tropospheric levels over northwest BoB and adjoining coastal Odisha on 25th June. Under its influence a low pressure area is likely to form over the same region on 26th - 27th June and move subsequently west-northwestwards over land.

IV. Verification of forecast issued during last two weeks:

The forecast issued on 8th June, 2023 for week 2 (16.06.2023– 21.06.2023) indicated no fresh cyclogenesis over Bay of Bengal and Arabian Sea. The forecast issued on 15th June for week 1 (16.06.2023– 21.06.2023) also mentioned about the absence of cyclogenesis over North Indian Ocean (NIO).

Actually, the TC Biparjoy made landfall over Saurashtra & Kutch and adjoining Pakistan coasts between Mandvi (Gujarat) and Karachi (Pakistan) near Jakhau Port (Gujarat) in the night of 15th June as a very severe cyclonic storm. It moved further northeastwards and weakened into a Severe cyclonic storm immediately after landfall and further into a cyclonic storm 16th June forenoon. I maintained its intensity of cyclone till night of 16th and then weakened gradually to become a low pressure area over east Rajasthan and neighbourhood on 19th June morning. No other fresh cyclogenesis was found over the NIO region.

The realized rainfall during 15th to 21st June, 2023 from satellite-gauge merged data is presented in Fig.2.

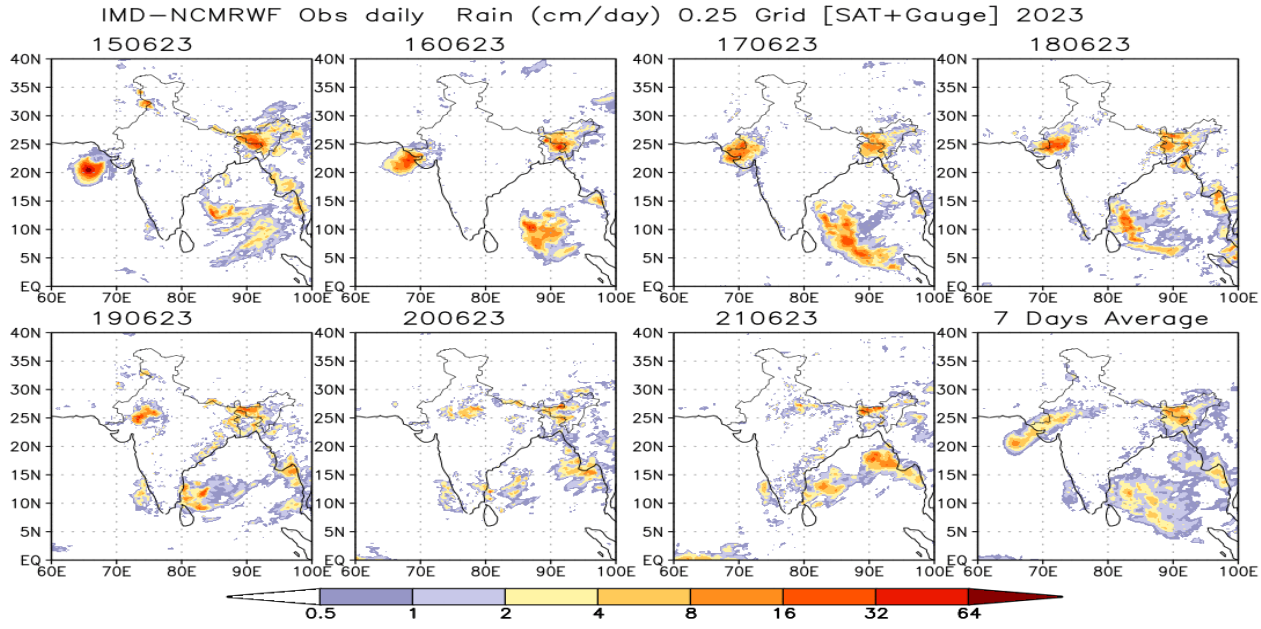

Fig.2: Rain gauge and satellite merged rainfall plots during 15th to 21st June, 2023

Next update: 29.06.2023