India Meteorological Department
Ministry of Earth Sciences
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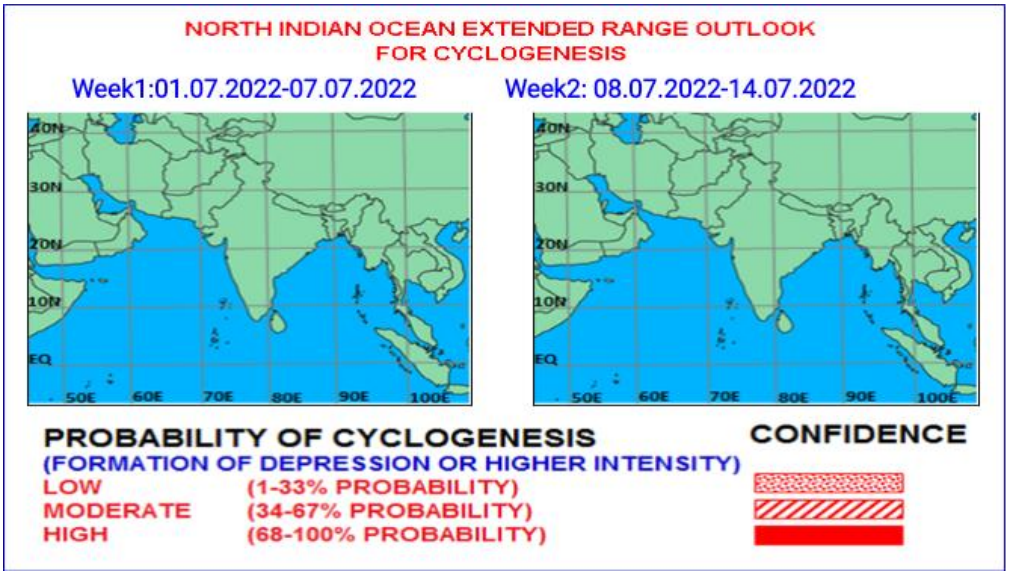

The Madden Julian Oscillation Index (MJO) currently lies in phase 3 with amplitude more than 1. It would move eastwards and enter phase 4 with amplitude remaining more than 1 on 1st July. Thereafter, it would move across phases 4 and 5 during entire forecast period with amplitude becoming less than 1 from the middle of the week 2. Hence, MJO phase will support enhancement of convective activity over the Bay of Bengal (BoB).

Based on CFS forecast, during first half of week 1, easterly winds (1-3 mps) over central BoB, Kelwin waves (KW) and MJO over southwest & adjoining westcentral BoB and strong westerlies (5-7 mps) with MJO are likely to prevail. During later part of week 1, complete withdrawal of easterly winds over the BoB & weak westerly winds (1-3 mps) over central & south BoB and comparatively weaker westerlies (3-5 mps) over westcentral AS are likely to prevail. Thus, equatorial waves are likely to contribute towards formation of low pressure system over the northwest & adjoining westcentral BoB region during first half of week 1. Similarly, during first half of week 2, westerlies (1-3 mps) alongwith MJO are likely to prevail over entire central & south AS intervening peninsular India and central & south BoB. During later part of week 2, weak westerlies (1-3 mps) over central & south AS and confinement of westerly flow only over south BoB region is likely. Thus, during week 2, equatorial waves may not contribute towards cyclogenesis over the NIO region including the BoB & AS.

The sea surface temperature (SST) is around 29-30^{0}C over major parts of BoB & Andaman Sea with slightly higher values over northwest & adjoining westcentral BoB. Over the AS, the SST is 28-29^{0}C over central & adjoining south AS with slightly higher values around 30^{0}C over westcentral & adjoining northwest AS off Gujarat & north Maharashtra coasts. Colder sea with values <26^{0}C is seen over southwest AS off North Somalia coast. The ocean heat content (OHC) is >100 KJ/cm^2 over entire central parts of BoB, south & northwest BoB. Over the AS, OHC is >100 KJ/cm^2 over south & adjoining Equatorial Indian Ocean (EIO), >60-80 KJ/cm^2 over major parts of east AS and <50 KJ/cm^2 over entire west AS.

The guidance from various deterministic & ensemble numerical models including IMD GFS, NCEP GFS, ECMWF, NCUM, NEPS, GEFS and IMD MME CFS (V2) etc. indicate no cyclogenesis over the region during next 2 weeks. However, IMD GFS, NCUM and ECMWF indicate development of a cyclonic circulation/low pressure area over northwest BoB off Odisha coast during beginning of week 1 and another during beginning of week 2 with no significant intensification and northwestwards movement. ECMWF EPS indicates intensification of low pressure area into depression during first half of week 2.

Hence, considering the model guidance and environmental features, no cyclogenesis is likely over the region during next two weeks. However, there is likelihood of formation of a low pressure area/cyclonic circulation over the northwest BoB off Odisha coast during beginning of week 1 and another during beginning of week 2 over the same region leading to enhanced monsoon activity over central India and west coast of India during the forecast period. Enhanced westerlies over the Arabian Sea will also support enhanced monsoon activity over the country during next two weeks compared to past week.

Verification of forecast issued during last two weeks:

The forecast issued on 16th June for week 2 (24.06.2022-30.06.2022) indicated no probability of cyclogenesis over the NIO region during week 2. The forecast issued on 23rd June (24.06.2022-30.06.2022) indicated likelihood of formation of a cyclonic circulation/low pressure area over northwest BoB off Odisha coast at the end of week 1 was indicated. Actually a low pressure area formed over eastcentral & adjoining northeast AS at 0000 UTC of 27th June and became less marked over northeast AS at 1200 UTC of same day. Also, another cyclonic circulation formed over coastal Odisha on 29th June.

The realised rainfall during 23rd June, 2022 to 29th June 2022 from satellite-gauge merged data is presented in Fig.1.

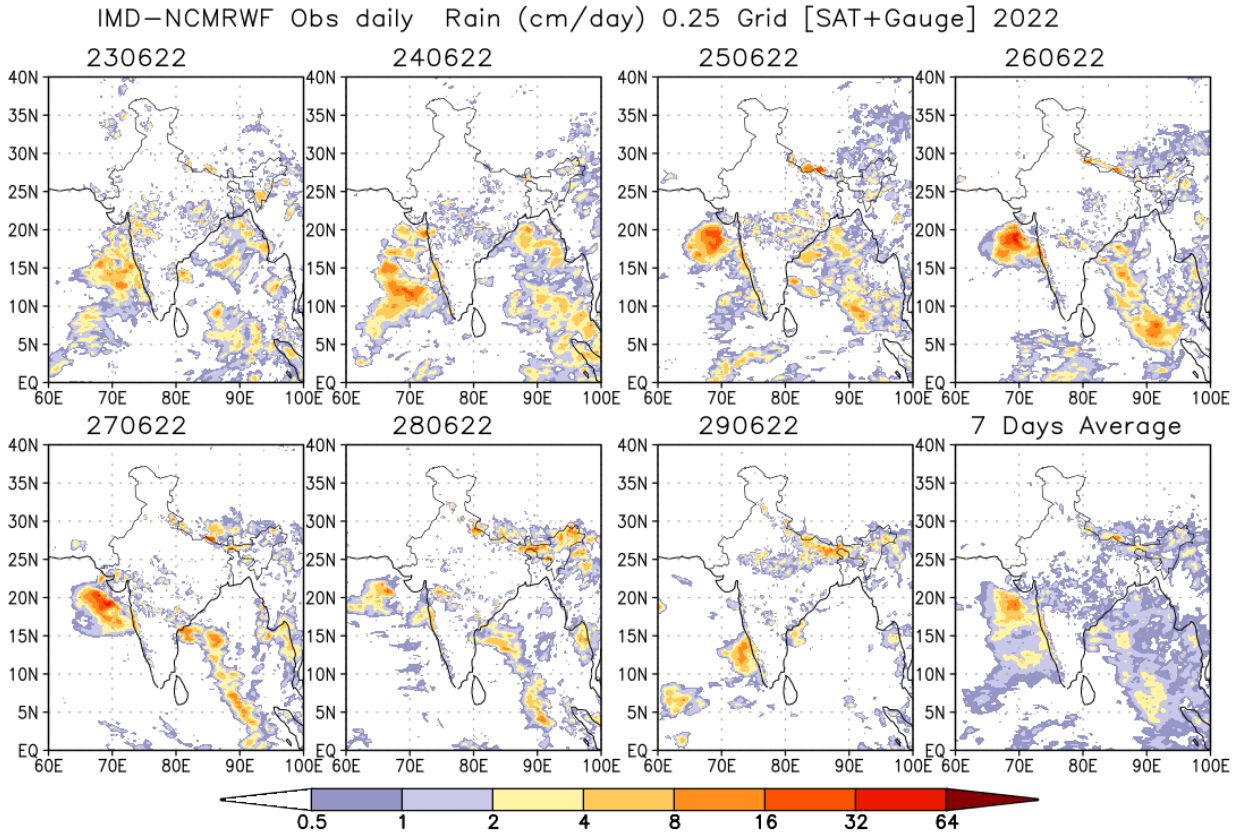

Fig.1: Rain gauge and satellite merged rainfall plots during 23rd June, 2022 to 29th June 2022

Next update: 07.07.2022