

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

I. Environmental features:

Most of the models are indicating that currently, MJO is in phase 1 with amplitude more than 1. It would continue in same phase during the entire forecast period with amplitude becoming less than 1 during week 2. Thus, MJO would not be conducive for enhancement of convective activity over the North Indian Ocean (NIO).

NCICS based forecast for equatorial waves over the region indicates westerly winds (3-5 mps) over entire Bay of Bengal (BoB) region during week 1. During week 2, weakening of westerly winds is indicated (1-3 mps) over the BoB. Weak easterly winds (1-3 mps) over southeast and westerly winds (1-3 mps) over north Arabian Sea (AS) are likely during the entire period. Thus, equatorial waves are not likely to contribute towards cyclogenesis over the NIO region including the BoB and the AS. However, easterlies are expected to strengthen during second week over southern parts of Bay of Bengal to the South of Indian mainland.

Model Guidance:

The deterministic models including IMD GFS, NCEP GFS, NCUM and ECMWF are indicating no cyclogenesis over the region during the forecast period. The extended range models including IMD CFS V2 and CNCUM are not indicating any cyclonic circulation in wind field or wind anomaly field. The GPP is also not indicating any cyclogenesis over the region during next 7 days.

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).

II. Inference:

Considering all the above it is inferred that there is no probability of cyclogenesis (formation of depression) over the region during the entire forecast period.

III. Verification of forecast issued during last two weeks:

The forecast issued on 21st September for week 2 (29.09.2023-05.10.2023) indicated likelihood of formation of low pressure area over eastcentral BoB and adjoining areas during first half of week 2 with low probability of its intensification into depression over the same region. The forecast issued on 28th September for week 1 (29.09.2023-05.10.2023) indicated formation of a low pressure area over eastcentral and adjoining northeast BoB around 29th September. It was also indicated that the system would become well marked low pressure area and move northwestwards towards North Odisha and adjoining West Bengal coasts during subsequent 2 days.

Actually, a cyclonic circulation lay over Myanmar and adjoining Eastcentral Bay of Bengal (BoB) on 28th Sep. It lay as a low pressure area over Northeast & adjoining Eastcentral BoB on 29th Sep. and well marked low pressure area on 30th Sep. It moved northwestwards across Gangetic West Bengal and Jharkhand during 30th September to 2nd Sep.. Thereafter, it recurved northeastwards and moved across Jharkhand & Gangetic West Bengal on 3rd & 4th September. It lay over and lay over Gangetic West Bengal on 5th October.

Hence, the likely formation of low pressure area over Bay of Bengal and it's movement was well captured two weeks in advance.

However, under the influence of the cyclonic circulation over North coastal Karnataka & neighbourhood, a low pressure area formed over Eastcentral Arabian Sea off South Konkan-Goa coasts in the early morning (0530 hours IST) of the 29th September, 2023. It lay as a Well Marked Low Pressure Area (WML) over the same region in the early morning (0530 hours IST) of 30th September, 2023. It concentrated into a depression over the same region in the morning (0830 hours IST) of 30th September. It moved northeastwards and crossed south Konkan coast between Panjim (Goa) and Ratnagiri (Maharashtra) during 2030-2230 hours IST of 30th September. Thereafter, it moved east-northeastwards and weakened into a well marked low pressure area over south Maharashtra in the morning (0830 hours IST) of 1st October. This system was missed in the extended range outlooks issued since last two weeks.

IMD-NCMRWF satellite-gauge merged data plots during 28th September -4th October, 2023 are presented in Fig.2

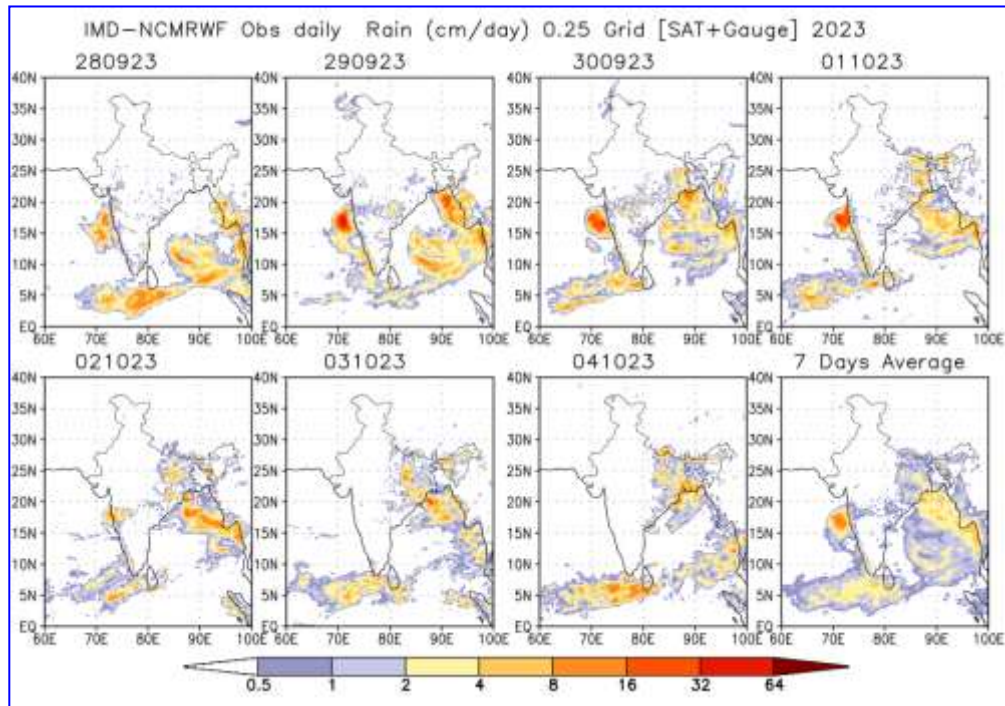


Fig.2: IMD-NCMRWF satellite-gauge merged data plots during 28th Sep. – 4th Oct., 2023

Next update: 12.10.2023