



Ministry of Earth Sciences
India Meteorological Department
Cyclone Warning Division, New Delhi



FDP (Cyclone) NOC Report Dated 20th November, 2019

Time of Issue: 1200 UTC

Synoptic features:

- No weather systems observed over NIO region.

Dynamical and thermodynamical features

Sea Surface Temperature (SST):

Sea Surface Temperature is around 25-28°C over most parts of westcentral Arabian Sea and north Arabian Sea. It increases to 28-30°C over eastcentral Arabian Sea and also over south Arabian Sea.

SST is around 26-28 °C over north BoB and adjoining WC BoB. It is around 28 - 30°C over rest BoB with higher values over eastcentral and south BoB.

Tropical Cyclone Heat Potential (TCHP):

Tropical Cyclone Heat Potential (TCHP) is 20-40 kJ/cm² over most parts of central Arabian Sea and north Arabian Sea. Over south Arabian Sea it is of value 60-100 kJ/cm².

TCHP is around 30-50 kJ/cm² over north BoB and adjoining westcentral BoB. It is around 80-90 kJ/cm² over rest of the BOB.

Relative Vorticity:

No significant areas of cyclonic relative vorticity seen over BoB except for the positive vorticity over northeast BoB.

No significant areas of cyclonic relative vorticity seen over Arabian Sea.

Low level Convergence:

No area of positive lower level convergence seen over BoB.

An area of positive lower level convergence of value 5×10^{-5} s⁻¹ is seen over eastcentral Arabian Sea off Kerala coast.

Upper level Divergence:

Upper level divergence of value $5-10 \times 10^{-5}$ s⁻¹ is seen over Andhra Pradesh coast and adjoining westcentral BoB.

No significant area of upper level divergence seen over Arabian sea.

Wind Shear:

Wind shear is high over north and central Arabian Sea except south Arabian Sea where it is low to moderate.

Wind shear is high over north and central BoB. It is low to moderate over south BoB and Andaman Sea.

Wind Shear Tendency:

The wind shear tendency is positive over most parts of BoB.

It is negative over north and adjoining westcentral Arabian Sea. It is negative or neutral over rest Arabian Sea.

Upper tropospheric ridge:

The upper tropospheric ridge at 200 hPa runs roughly along 18°N over the BoB and along 10°N over Arabian Sea.

Satellite observations based on INSAT imagery:

Arabian Sea:-

As per the satellite imagery at 0900 UTC of 20th November, 2019, scattered low to medium clouds with embedded moderate to intense convection lies over south Arabian Sea and Comorin- Maldives area.

Bay of Bengal & Andaman Sea:

According to 0900 UTC satellite imagery, scattered low/medium clouds with embedded moderate to intense convection lies over southeast BoB and south Andaman Sea. Weak to moderate convection is seen over westcentral BoB.

Large scale features

M.J.O. Index:

MJO index is in Phase 8 with amplitude more than 1. MJO is likely to propagate eastwards from phase 8 to phase 1 after 2 days with amplitude >1.

Storms and Depression over South China Sea/ South Indian Ocean:

- i) Tropical storm (Kalmaegi), located at 0600 UTC of 20th near 16.3°N 120.8°E over land, about 103 NM north of Manila, Philippines. The maximum sustained wind speed is 40 knots. It is expected to move southwestwards across northern parts of Philippines with gradual weakening and become a depression by 06 UTC of 22nd over South China Sea.
- ii) Tropical Storm (Fung- Wong), located at 0600 UTC of 20th near 17.7°N 127.3°E, about 408 NM east-northeast of Manila, Philippines. The maximum sustained wind speed is 35 knots. It is expected to move northwestwards with gradual intensification till 21/1800 UTC. Thereafter it is likely to weaken into a depression by 23/06 UTC over ocean near Taiwan.

NWP Input for FDP Cyclone based on 0000 UTC of today

IMD-GFS T-1534: Indicates development of no low pressure systems for the next 10 days.

IMD-GEFS: Indicates development of no low pressure systems for the next 8 days.

IMD-WRF: Analysis shows a Low Pressure area over coastal Tamil Nadu and adjoining southwest BoB on 20th which becomes less marked next day.

NCMRWF-NCUM: Indicates development of no low pressure systems for the next 10 days.

NCMRWF-UM-Regional Model: Indicates development of no low pressure systems for the next 3 days.

NEPS Model: Indicates development of no low pressure systems for the next 10 days.

ECMWF: Indicates a low pressure area over south Andaman Sea on 28th and 29th November.

NCEP-GFS: Indicates development of no low pressure systems for the next 10 days.

ARP-Meteo France : Indicates development of no low pressure systems for the next 3 days

Dynamical statistical models

IMD Genesis Potential Parameter (GPP):

No area of significant zone of GPP is seen to develop over NIO region during next 5 days.

IMD NWP products are available at:

<http://nwp.imd.gov.in/bias/gfsproducts.php>

<http://nwp.imd.gov.in/bias/wrf27pro.php>

http://www.rsmcnewdelhi.imd.gov.in/NWP_CYC/Analysis.htm or

http://www.rsmcnewdelhi.imd.gov.in/NWP_CYC/<HH> hrs.htm

<HH> are forecast hours i.e. 24, 48, 72 and etc.

Summary and Conclusion:

As per the NWP models considered, no significant low pressure system is seen to form over North Indian Ocean Region for the next 8-10 days. However, ECMWF indicates development of a low pressure area over south Andaman Sea on 28th and 29th, which needs to be monitored.

Probability of cyclogenesis over Bay of Bengal and Andaman Sea during next 120 hours:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS
Nil	Nil	Nil	Nil	Nil

Probability of cyclogenesis over Arabian Sea during next 120 hours:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS
Nil	Nil	Nil	Nil	Nil

Advisory: No IOP area for the next 5 days













