



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



FDP (Cyclone) NOC Report Dated 16th November, 2019

Time of Issue: 1100 UTC

Synoptic features:

- A trough in easterlies is seen to run from southwest Bay of Bengal to eastcentral Bay of Bengal and extends upto 0.9 km above mean sea level.
- A cyclonic circulation extending upto 0.9 km above mean sea level lies over north Kerala & neighbourhood

Dynamical and thermodynamical features

Sea Surface Temperature (SST):

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

SST is around 27-28 °C over north BoB and adjoining WC BoB. It is around 28 - 30°C over rest BoB with higher values over eastcentral 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. A small area of value more than 100 kJ/cm² is seen over southwest BoB.

Relative Vorticity:

Cyclonic relative vorticity at 850 hPa of value 5-10 X10⁻⁶s⁻¹ is seen over a small area central BoB.

Cyclonic relative vorticity at 850 hPa of value 10-20 X10⁻⁶s⁻¹ is seen over the northeast Arabian Sea.

Low level Convergence:

Small areas of positive lower level convergence area of value 5x10⁻⁵ s⁻¹ is seen over southwest BoB region off south Tamilnadu- Sri Lanka coasts.

No significant area of positive lower level convergence is seen over Arabian Sea except for an area over equatorial ocean.

Upper level Divergence:

Upper level divergence of value 05x10⁻⁵ s⁻¹ is seen over westcentral BoB off Andhra Pradesh coast.

Upper level divergence of value 05-10x10⁻⁵ s⁻¹ is seen over southwest Arabian Sea.

Wind Shear:

Wind shear is high over most parts of Arabian Sea except extreme south Arabian Sea where it is low to moderate.

Wind shear is low to moderate over most parts of BoB and Andaman Sea except extreme north BoB where it is high.

Wind Shear Tendency:

The wind shear tendency is negative over Andaman Sea and adjoining northeast, and southwest BoB. It is positive or neutral elsewhere.

It is negative over westcentral and southeast Arabian Sea. It is positive or neutral over rest Arabian Sea.

Upper tropospheric ridge:

The upper tropospheric ridge at 200 hPa runs roughly along 15°N over the BoB.

Satellite observations based on INSAT imagery:**Arabian Sea:-**

As per the satellite imagery at 0600 UTC of 16th November, 2019, scattered low to medium clouds with embedded moderate to intense convection lies over south Arabian Sea, Maldives-Comorin areas and Gulf of Mannar and weak to moderate convection over eastcentral Arabian Sea.

Bay of Bengal & Andaman Sea:

According to 0600 UTC satellite imagery, scattered low/medium clouds with embedded moderate to intense convection lies over eastcentral adjoining westcentral BoB off Tamil Nadu coast, and northwest Andaman Sea.

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 2-3 days with amplitude >1.

Storms and Depression over South China Sea/ South Indian Ocean: Nil**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 southwest BoB off Tamil Nadu- Sri Lanka coasts 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 development of no low pressure systems for the next 10 days.

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.

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













