



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

**Tropical Cyclone Forecast Programme
Report Dated 18th December 2024**

Time of Issue: 1200 UTC

Synoptic features (based on 0300 UTC analysis):

- Yesterday's **low pressure** area over southwest Bay of Bengal with the associated cyclonic circulation extending upto 5.8 km above mean sea level has become more marked and now lay as a **well marked low pressure area** over the same region at 0300 UTC of today, the 18th of December 2024. It is likely to move nearly northwestwards towards north Tamil Nadu and south Andhra Pradesh coast during next 24 hours. Thereafter, it is likely to move nearly northwards along Andhra Pradesh coast in subsequent 24 hours.

A continuous watch is being maintained for further intensification and movement of the system.

Environmental Features based on 0300 UTC:

Parameter	Bay of Bengal (BoB)	Arabian Sea (AS)
Sea Surface Temperature (SST) °C	26-28°C over Extreme north BoB ➤ 26-28°C over most parts of BoB. ➤ 28-30°C over southern parts of southeast and adjoining southwest of BoB.	➤ 28-30°C over southeast & adjoining eastcentral AS. ➤ 25-28°C over rest of AS.
Tropical Cyclone Heat Potential (TCHP) kJ/cm²	➤ 160-210 over some parts southwest BoB. ➤ 110-150 over southeast, eastcentral and adjoining northeast BoB and Andaman Sea. ➤ 20-30 over north Tamil Nādu and Andhra coast. ➤ 60-80 over rest of BoB.	➤ 100-120 over southern parts of southeast AS, Maldives Islands, Lakshadweep Islands and adjoining EIO. ➤ 20-60 over rest AS.
Cyclonic Relative vorticity (X10⁻⁶s⁻¹)	➤ 40-50 over westentral & adjoining southwest BoB off south Tamil Nadu and Sri Lank coast. extending upto 500 hPa level.	➤ 40-50 over southern parts of southwest AS & adjoining EIO.
Low-Level convergence (X10⁻⁵ s⁻¹)	➤ 05-10 over westcentral & adjoining southwest BoB and over south Andaman Sea areas.	➤ 5 over central parts of southwest AS.
Upper-Level divergence (X10⁻⁵ s⁻¹)	➤ 10-20 over westentral & adjoining southwest BoB along and off north Tamil	➤ 10-20 over southeast AS ➤ 5-10 over southwest & adjoining southeast AS

	Nadu & Andhra coast.	➤ 5 over center part of central AS
Vertical Wind Shear (VWS knots) Low: 05-10 knots Moderate: 10-20 knots High: >20 knots	➤ High over north & central BoB and southern parts of south BoB along and off Sri Lanka coast. ➤ Low-Moderate over south BoB.	➤ High over north and adjoining central AS off Oman coast. ➤ Low-Moderate over rest of AS.
Wind Shear Tendency (knots)	➤ Increasing over most parts of BoB along and off Andhra, south Sri Lanka coast. ➤ Decreasing over extreme south BoB	➤ Decreasing over some parts of north AS & adjoining westcentral AS
Upper tropospheric Ridge	➤ At 12 ⁰ N.	➤ At 12 ⁰ N.

Satellite observations based on INSAT imagery (0300 UTC):

a) Over the BoB & Andaman Sea:

Scattered to broken low and medium clouds with embedded intense to very intense convection lay over central & south Bay of Bengal and south Andaman Sea (minimum CTT minus 70-80 Degree Celsius). Scattered low and medium clouds with embedded moderate to intense convection lay over northwest Bay of Bengal.

b) Over the Arabian Sea:

Scattered to broken low and medium clouds with embedded intense to very intense convection lay over southcentral Arabian Sea, Maldives area & adjoining Equatorial Indian Ocean (minimum CTT minus 75-85 Degree Celsius). Isolated low and medium clouds with embedded moderate to intense convection lay over Comorin Area and Isolated weak to moderate convection lay over north Arabian Sea.

c) Outside India:

Scattered low & medium clouds with embedded moderate to intense convection over Sri Lanka, Palk Strait, Gulf of Mannar, Maldives, West Nepal, Tibet, China, Yellow Sea, East China Sea, Sumatra, Strait of Malacca, Malaysia, Borneo, South China Sea, Java Islands & Sea, Celebes Islands & Sea, Philippines, Sulu Sea, and over Indian Ocean between latitude 5.0N to 10.0S longitude 40.0E to 110.0E & between latitude 10.0S to 20.0S longitude 100.0E to 125.0E (.)

M.J.O. Index:

MJO is currently in phase 5 with amplitude greater than 1. It will be in same phase till 19th December with amplitude greater than 1 afterwards it will be in phase 6 with amplitude greater than 1 till 23rd December.

NWP Guidance for FDP Cyclone:

MODEL GUIDANCE	Bay of Bengal (BoB)	Arabian Sea (AS)
IMD-GFS	The model is indicating a Low Pressure area (LPA) over southwest Bay of Bengal as of 17 th /12 UTC, it will have west-northwestwards movement till 19 th as LPA/WML, it will then recurve northeastwards and move off the Tamil Nadu – Andhra Pradesh coast till 21 st , less marked thereafter.	The model indicates extended cyclonic circulation over equatorial Indian Ocean and adjoining southwest Arabian Sea as on 17 th /12 UTC, it will move west-southwestwards till 18 th without intensification.
IMD-WRF	The model is indicating a Low Pressure area (LPA) over southwest Bay of Bengal as of 17 th /12 UTC, it will have west-northwestwards movement while weakening.	The model indicates extended cyclonic circulation over equatorial Indian Ocean and adjoining southwest Arabian Sea as on 17 th /12 UTC, it will move west-southwestwards till 18 th without intensification.
NCMRWF-NCUM(G)	The model is indicating a Low Pressure area (LPA) over southwest Bay of Bengal as of 17 th /12 UTC, it will have west-northwestwards movement till 19 th as LPA/WML, it will then move off Tamil Nadu – Andhra Pradesh coast till 21 st , recurve northeastwards thereafter and less marked thereafter.	The model indicates extended cyclonic circulation over equatorial Indian Ocean and adjoining southwest Arabian Sea as on 17 th /12 UTC, it will move west-southwestwards till 18 th without intensification.
ECMWF	The model is indicating a LPA over southwest Bay of Bengal as of 18 th December, it will have west-northwestwards movement and will lay close to the north Tamil Nadu & south Andhra coast as WML on 20 th /00 UTC it will then recurve northeastwards and lay over westcentral BoB off Andhra coast as WML on 21 st /12 UTC, less marked thereafter.	The model indicates extended cyclonic circulation over equatorial Indian Ocean and adjoining southwest Arabian Sea as on today 18 th , it will move west-southwestwards till 19 th without intensification.
NCEP-GFS	The model is indicating a LPA over southwest Bay of Bengal as of today, 18 th December, it will have west-northwestwards movement and will lay over westcentral BoB as LPA on 20 th /00 UTC. It will then recurve and move northeastwards till 22 nd /06 UTC without significant intensification, less marked thereafter.	The model indicates extended cyclonic circulation over equatorial Indian Ocean and adjoining southwest Arabian Sea as on today 18 th , it will move west-southwestwards till 19 th /12 UTC without intensification.

Summary:

(a) Bay of Bengal:

All the models are indicating a low pressure area over southwest Bay of Bengal as on 18th and its west-northwestwards movement and will reach off North Tamil Nadu – South Andhra Pradesh coast by 19th/20th as LPA/WML. Models also indicating its recurving northeastward movement thereafter without significant intensification.

(b) Arabian Sea

Most of the models are indicating an extended cyclonic circulation over equatorial Indian Ocean and adjoining southwest Arabian Sea as on today 18th, it will move west-southwestwards without intensification.

Inference:

- Yesterday's **low pressure** area over southwest Bay of Bengal with the associated cyclonic circulation extending upto 5.8 km above mean sea level has become more marked and now lay as a **well marked low pressure area** over the same region at 0300 UTC of today, the 18th of December 2024. It is likely to move nearly northwestwards towards north Tamil Nadu and south Andhra Pradesh coast during next 24 hours. Thereafter, it is likely to move nearly northwards along Andhra Pradesh coast in subsequent 24 hours.

A continuous watch is being maintained for further intensification and movement of the system.

Probability of cyclogenesis (formation of depression and above intensity systems) over the Bay of Bengal during next 168 hours:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
NIL	NIL	NIL	NIL	NIL	NIL	NIL

Probability of cyclogenesis (formation of depression and above intensity systems) over the Arabian Sea during next 168 hours:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
NIL	NIL	NIL	NIL	NIL	NIL	NIL

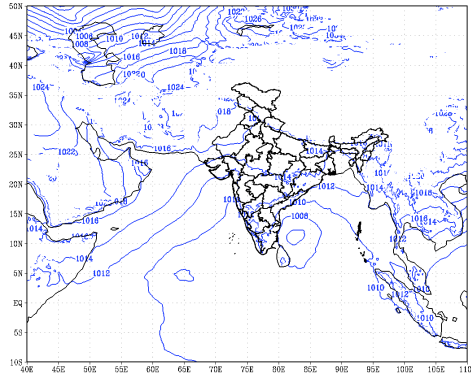
“- “indicates genesis has already occurred.

Probability is indicated as NIL for 0%, LOW for 1-33%, MOD for 34-67% and High for 68-100%.

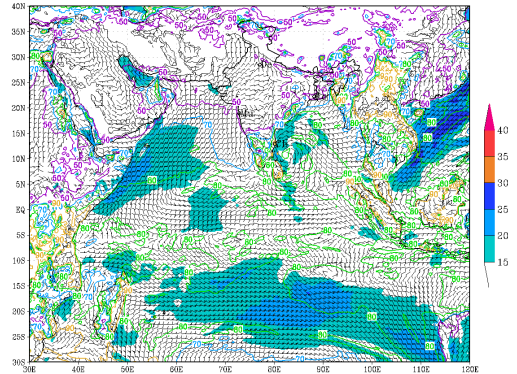
Intense Observation Period (IOP): NIL

ANNEXURE

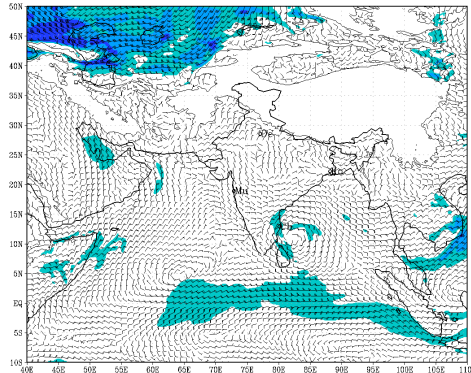
IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (24 HR)
based on 00 UTC of 17-12-2024 valid for 00 UTC of 18-12-2024



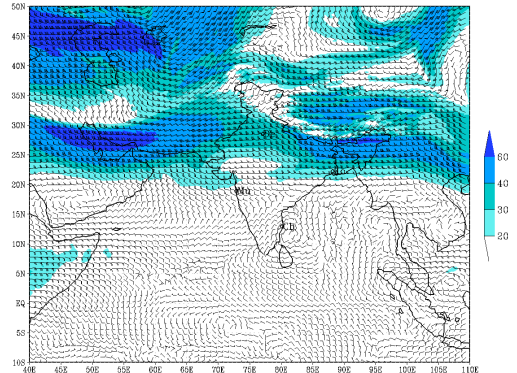
IMD GFS (T1534) 10m WIND (kt) AND 2m RH (%) FORECAST (24 HR)
based on 00 UTC of 17-12-2024 valid for 00 UTC of 18-12-2024



IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (24 HR)
based on 00 UTC of 17-12-2024 valid for 00 UTC of 18-12-2024



IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (24 HR)
based on 00 UTC of 17-12-2024 valid for 00 UTC of 18-12-2024



IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (24 HR)
based on 00 UTC of 17-12-2024 valid for 00 UTC of 18-12-2024

