



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

**Tropical Cyclone Forecast Programme
Report Dated 25th November, 2022**

Time of Issue: 1200 UTC

Synoptic features (based on 0600 UTC analysis):

- Yesterday's cyclonic circulation over North Tamil Nadu and neighbourhood lay over southeast Arabian sea and neighbourhood at 0830 hours IST of today, the 25th November, 2022.
- A fresh cyclonic circulation lay over North & adjoining South Andaman Sea at 0530 hours IST of today, the 25th November, 2022.

Dynamical and thermo-dynamical features

Parameter	Bay of Bengal (BoB)	Arabian Sea (AS)
Sea Surface Temperature (SST) °C	About 28-29°C over the system and major parts of BoB, 29-30°C over eastcentral & adjoining southeast BoB and along south Sri Lanka coast.	About 29-30°C over the southeast AS and adjoining southwest, eastcentral AS, off south Gujarat and Maharashtra coasts, 26-28°C over eastcentral and adjoining north AS, adjoining southwest AS, less than 24°C over southwest AS off Oman and Yemen coasts and adjoining sea areas.
Tropical Cyclone Heat Potential (TCHP) kJ/cm²	>110 over south Andaman sea & eastcentral BoB, 70-80 over north Andaman Sea, north parts of southwest BoB and adjoining westcentral BoB, off Sri Lanka, north BoB, and less than 40 over westcentral BoB, along and off east coast of India, west coast of Sri Lanka, Gulf of Mannar, some parts of southwest BoB.	70-90 over southeast and adjoining eastcentral and adjoining southwest AS, Maldives & adjoining EIO, Comorin area and less than 40 over remaining AS and also off west coast of India, Comorin area.
Cyclonic Relative vorticity (X10⁻⁶s⁻¹)	40-50 over south Andaman sea & adjoining southeast BoB, southwest BoB along & off east Sri Lanka coast. 20-30 over southeast & adjoining eastcentral BoB.	40-50 over Lakshadweep and Comorin area. 20-30 over southeast & adjoining eastcentral AS.
Low Level convergence (X10⁻⁵ s⁻¹)	5-10 over small part of westcentral BoB. Small zone of 5 over southwest BoB.	Small zone of 5 over Lakshadweep area.

Upper Level divergence ($\times 10^{-5} \text{ s}^{-1}$)	5-10 over Andaman Sea.	05-10 over southeast AS, Lakshadweep area.
Vertical Wind Shear (VWS knots)	10-15 over Andaman Sea and central BoB.	15 over southeast AS. 5-10 over EIO.
Wind Shear Tendency (knots)	Decreasing over Andaman Sea and central BoB.	Decreasing over southeast AS, Lakshadweep and Comorin area
Upper tropospheric Ridge	Along 17.0°N over the BoB.	Along 15.0°N over the AS.
Trough in westerlies	No significant trough	

Satellite observations based on INSAT imagery (0900 UTC):

a) Over the BoB & Andaman Sea:-

Scattered to broken low and medium clouds with embedded intense to very intense convection lay over north Andaman sea, eastcentral Bay of Bengal and adjoining southeast Bay of Bengal. Scattered low and medium clouds with embedded moderate to intense convection lay over westcentral Bay of Bengal off north Andhra Pradesh coast, rest of south Bay of Bengal and south Andaman sea.

b) Over the Arabian Sea:-

Scattered low and medium clouds with embedded moderate to intense convection lay over northwest & eastcentral Arabian sea . Scattered low and medium clouds with embedded isolated weak to moderate convection lay over westcentral & south Arabian sea.

M.J.O. Index:

The Madden Julian Oscillation (MJO) Index is currently in Phase 7 with amplitude more than 1. It will continue in same phase for next 7 days and continue there with gradually decreasing amplitude during subsequent 4 days.

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

NIL

Model guidance based on 0000 UTC for the next 7 days

MODEL GUIDANCE	Bay of Bengal (BoB)	Arabian Sea (AS)
IMD-GFS	A cyclonic circulation (cycir) over South & adjoining North Andaman Sea on 25^{th} , to move west-northwestwards till 28^{th} & less marked thereafter. Cycir over Gulf of Thailand on 5^{th} December.	Cycir over Southeast AS on 24^{th} , to move west-southwestwards and become less marked on 28^{th} Nov.
IMD-GEFS	A cyclonic circulation (cycir) over South & adjoining North Andaman Sea on 25^{th} , to move west-northwestwards till 28^{th} & less marked thereafter. LPA over South China Sea on 3^{rd} Dec.	Cycir over Southeast AS on 24^{th} , to move west-southwestwards and become less marked on 28^{th} Nov.
GEFS Probablistic	No significant system	Not available

guidance		
IMD WRF	<p>A cyclonic circulation (cycir) over South & adjoining North Andaman Sea on 25th, to move west-northwestwards till 28th & less marked thereafter.</p> <p>Cycir over Gulf of Thailand on 5th December.</p>	Cycir over Southeast AS on 25 th , to move west-southwestwards and become less marked on 28 th Nov.
NCMRWF-NCUM	<p>Cycir over central Andaman Sea on 25th, to move north-northwestwards till 28th towards eastcentral BoB, becoming less marked thereafter.</p> <p>A fresh cycir to emerge into South Andaman Sea on 5th Dec..</p>	Cycir over south Tamil Nadu on 25 th , southeast Arabian Sea on 26 th to move nearly west-southwestwards towards Somalia coast till 1 st Dec. as a cycir. No further intensification is predicted.
NCMRWF-NEPS	<p>Cycir over central Andaman Sea on 25th, to move north-northwestwards till 28th towards eastcentral BoB, becoming less marked thereafter.</p> <p>A fresh cycir to emerge into South Andaman Sea on 5th Dec..</p>	Cycir over south Tamil Nadu on 25 th , southeast Arabian Sea on 26 th to move nearly west-southwestwards towards Somalia coast till 1 st Dec. as a cycir. No further intensification is predicted.
NCMRWF-UM (Regional)	Cycir over central Andaman Sea on 25 th , to move north-northwestwards till 28 th towards eastcentral BoB.	Cycir over south Tamil Nadu on 25 th , over southeast Arabian Sea on 26 th to move nearly west-southwestwards till 28 th Nov. as a cycir.
ECMWF	<p>Cycir over central parts of Andaman Sea on 25th, to move initially westwards and then northwards without any intensification, till 29th and become less marked thereafter.</p> <p>Fresh low pressure area (remnant from South China Sea) is likely to emerge into South Andaman Sea on 5th Dec.</p>	Cycir over southeast AS on 25 th . To move nearly westwards till 28 th Nov. No significant intensification of system.
ECMWF ensemble	Likely cyclogenesis (30-40% probability) over South BoB during next 3-4 days with intensification upto depression only. Another cyclogenesis expected over South BoB during 4 th -8 th Dec. with intensification upto Cyclonic Storm (50-60% probability). 20-30% Enesml members indicate likely northwestwards movement towards Andhra Pradesh coast.	No significant system
NCEP-GFS	<p>Cycir over North Andaman Sea on 25th, to move west-northwestwards till 27th & less marked thereafter.</p> <p>A fresh cycir/low pressure area to emerge into Andaman Sea around 4th December from South China Sea. To move northwestwards towards westcentral & adjoining northwest BoB without significant intensification.</p>	Cycir over southeast AS on 25 th , to move west-southwestwards and become less marked on 27 th Nov.
IMD MME		No significant system
IMD HWRF	Available during cyclonic disturbance period only	No significant system

IMD-Genesis Potential Parameter	No potential zone over Bay of Bengal during next 7 days	No potential zone over Arabian Sea during next 7 days
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Summary and conclusion:

- Most of the models are indicating that the cyclonic circulation over North interior Tamil Nadu on today, the 24th November would move southwestwards and emerge into southeast Arabian Sea. Thereafter, it would move westwards with no significant intensification for subsequent 2-3 days.
- Most of the models are indicating emergence of a fresh cyclonic circulation (remnant from South China Sea) into North Andaman Sea around 25th with initial northwestwards movement followed by northwards movement towards North Bay of Bengal with no significant intensification.
- Most of the models are also indicating likely emergence of another cyclonic circulation/low pressure area (remnant from South China Sea) into Andaman Sea around 4th/5th December.

In view of all the above, it is inferred that

1. For the Bay of Bengal:

The cyclonic circulation over North and adjoining South Andaman Sea is likely to move west-northwestwards initially followed by nearly northwards movement with no significant intensification. Thus, Nil probability is assigned to it's intensification into a depression.

Another cyclonic circulation (remnant from South China Sea) is likely to emerge into Andaman Sea around 4th/5th December. The movement and intensification of this system need to be critically monitored during 4th-10th December.

2. For the Arabian Sea:

No significant system.

Probability of cyclogenesis (formation of depression and above intensity systems) over the BAY OF BENGAL of Bengal and Andaman 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

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

Advisory:

The movement and intensification of the cyclonic circulation over North & adjoining South Andaman Sea need to be monitored.

IOP: NIL

















