



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

**Tropical Cyclone Forecast Programme
Report Dated 06th December 2024**

Time of Issue: 1200 UTC

Synoptic features (based on 0300 UTC analysis):

- A fresh cyclonic circulation lay over Equatorial Indian Ocean & adjoining southeast Bay of Bengal at 0300 UTC of today, 6th December, 2024 and extending up to 3.1 km above mean sea level. Under its influence, a Low-Pressure Area is likely to form over central parts of south Bay of Bengal around 07th December. The system is likely to move west-northwestwards and reach over southwest Bay of Bengal off Sri-Lanka – Tamil Nadu coasts around 12th December.
- Yesterday's cyclonic circulation over east-central & adjoining southeast Arabian sea lay over southwest & adjoining southeast Arabian sea at 0300 UTC of today, 6th December, 2024 and extending up to 1.5 km above mean sea level.

Environmental Features based on 03 UTC:

Parameter	Bay of Bengal (BoB)	Arabian Sea (AS)
Sea Surface Temperature (SST) °C	<ul style="list-style-type: none">➤ 26-28°C along & off west coast.➤ 28-30°C over rest of BoB.	<ul style="list-style-type: none">➤ 26-28°C over west-central & southwest AS along and off Oman, Yemen & Somalia coast and Northeast AS over Gujarat coast.➤ 28-30°C over most parts of AS.
Tropical Cyclone Heat Potential (TCHP) kJ/cm²	<ul style="list-style-type: none">➤ 120-180 over north BoB & adjoining eastcentral BoB.➤ 100-130 over Andaman Sea and southcentral parts of south BoB & adjoining EIO.➤ 20-40 over southwest BoB and adjoining parts of westcentral BoB off Sri Lanka, Tamil Nadu and Andhra Pradesh coasts.➤ 60-80 over rest of BoB.	<ul style="list-style-type: none">➤ 100-120 over southeast AS, Maldives Islands, Lakshadweep Islands and adjoining EIO.➤ 20-40 over westcentral and southwest AS off Oman, Yemen & Somalia coasts, Comorin area and northeast AS off Gujarat coast.➤ 60-80 over rest of AS.

Cyclonic Relative vorticity ($\times 10^{-6} \text{s}^{-1}$)	40-50 over extreme parts of southeast BoB & south Andaman Sea.	20-30 over some parts of southeast, southwest AS and Maldives Islands area.
Low-Level convergence ($\times 10^{-5} \text{s}^{-1}$)	➤ 05-15 over south Andaman Sea, southern parts of southeast BoB & adjoining EIO.	5 over northcentral parts of south AS.
Upper-Level divergence ($\times 10^{-5} \text{s}^{-1}$)	➤ 05-30 over southeast BoB & adjoining southwest, central BoB and adjoining Andaman Sea.	➤ 05-10 over southwest AS & northeast AS Gujarat coast. ➤ 05 over some parts of westcentral AS off Oman coast.
Vertical Wind Shear (VWS knots) Low: 05-10 knots Moderate: 10-20 knots High: >20 knots	➤ Low-moderate over westcentral BoB and Andaman Sea & adjoining southeast BoB. ➤ High over rest of BoB.	➤ Low to moderate over north & westcentral AS. ➤ High over rest of AS.
Wind Shear Tendency (knots)	➤ Decreasing over extreme south BoB and adjoining EIO. ➤ Increasing over rest of BoB.	➤ Increasing over extreme north AS. ➤ Decreasing over rest of AS except southwest AS. ➤
Upper tropospheric Ridge	➤ At 18° N.	➤ At 15° N.

Satellite observations based on INSAT imagery (0300 UTC):

a) Over the BoB & Andaman Sea: -

Scattered low and medium clouds with embedded intense to very intense convection lay over south Bay of Bengal and Andaman Sea. Scattered low and medium clouds with embedded moderate to intense convection lay over central Bay of Bengal and isolated weak to moderate convection lay over north Bay of Bengal.

b) Over the Arabian Sea:

Scattered low and medium clouds with embedded moderate to intense convection lay over central, adjoining southwest Arabian Sea, Lakshadweep Island Area, Maldives & Comorin Area. Scattered low and medium clouds with embedded isolated weak convection lay over east-central & north Arabian Sea.

c) Outside India:

Scattered low & medium clouds with embedded moderate to intense convection over Sri Lanka, Maldives, Tibet China, Yellow Sea, South Myanmar, Thailand, Gulf of Thailand, Cambodia, Vietnam, Sumatra, Strait of Malacca, Malaysia, Borneo, South China Sea, Java Islands & Sea, Celebes Islands & Sea, Philippines, Sulu Sea, Madagascar, North Mozambique channel and over Indian Ocean between latitude 5.0N to 20.0S longitude 40.0E to 120.0E.

M.J.O. Index:

Madden Julian Oscillation (MJO) is in phase 5 with amplitude more than 1 and would remain in same phase during next 7 days with amplitude more than 1.

NWP Guidance for FDP Cyclone based on 0000 UTC for the next 7 days:

MODEL GUIDANCE	Bay of Bengal (BoB)	Arabian Sea (AS)
IMD-GFS	Model is indicating an extended cycir over southeast Bay of Bengal and adjoining east equatorial Indian Ocean as of today. It will have west-northwestwards towards Tamil Nadu coast till 12 th December without intensification.	Model indicates no significant system over AS during next 7 days.
IMD-GEFS	Model is indicating an extended cycir over southeast Bay of Bengal and adjoining east equatorial Indian Ocean as of today. It will have west-northwestwards towards Tamil Nadu coast till 12 th December without intensification.	Model indicates no significant system over AS during next 7 days.
IMD-WRF	Model is indicating an extended cycir over southeast Bay of Bengal and adjoining east equatorial Indian Ocean as of today. It will have west-northwestwards without intensification.	Model indicates no significant system over AS during next 3 days.
NCMRWF-NCUM(G)	Model is indicating an extended cycir over southeast Bay of Bengal and adjoining east equatorial Indian Ocean as of today. It will have west-northwestwards towards Tamil Nadu coast till 12 th December without intensification.	Model indicates no significant system over AS during next 7 days.
NCMRWF-NCUM(R)	Model is indicating an extended cycir over southeast Bay of Bengal and adjoining east equatorial Indian Ocean as of today. It will have west-northwestwards without intensification.	Model indicates no significant system over AS during next 3 days.
NCMRWF-NEPS	Model is indicating an extended cycir over southeast Bay of Bengal and adjoining east equatorial Indian Ocean as of today. It will have west-northwestwards towards Tamil Nadu coast till 12 th December without intensification.	Model indicates no significant system over AS during next 7 days.
ECMWF	Model is indicating an extended cycir over southeast Bay of Bengal and adjoining east equatorial Indian Ocean as of today. It will have west-northwestwards towards Sri Lanka coast till 12 th December without intensification.	Model indicates no significant system over AS during next 7 days.

NCEP-GFS	Model is indicating an extended cycir over southeast Bay of Bengal and adjoining east equatorial Indian Ocean as of today. It will have west-northwestwards towards Tamil Nadu coast till 12 th December without intensification.	Model indicates no significant system over AS during next 7 days.
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Summary:

(a) Bay of Bengal:

Most of the models indicating an extended cycir over southeast Bay of Bengal and adjoining east equatorial Indian Ocean as of today. It will have west-northwestwards towards Tamil Nadu coast till 12th December without intensification.

(b) Arabian Sea

No significant cyclonic disturbance is indicated by any of the models.

Inference:

Considering various environmental conditions and model guidance, it is inferred that:

A fresh cyclonic circulation lay over Equatorial Indian Ocean & adjoining southeast Bay of Bengal at 0300 UTC of today, 6th December, 2024 and extending up to 3.1 km above mean sea level. Under its influence, a Low-Pressure Area is likely to form over central parts of south Bay of Bengal around 07th December. The system is likely to move west-northwestwards and reach over southwest Bay of Bengal off Sri-Lanka – Tamil Nadu coasts around 12th December.

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:

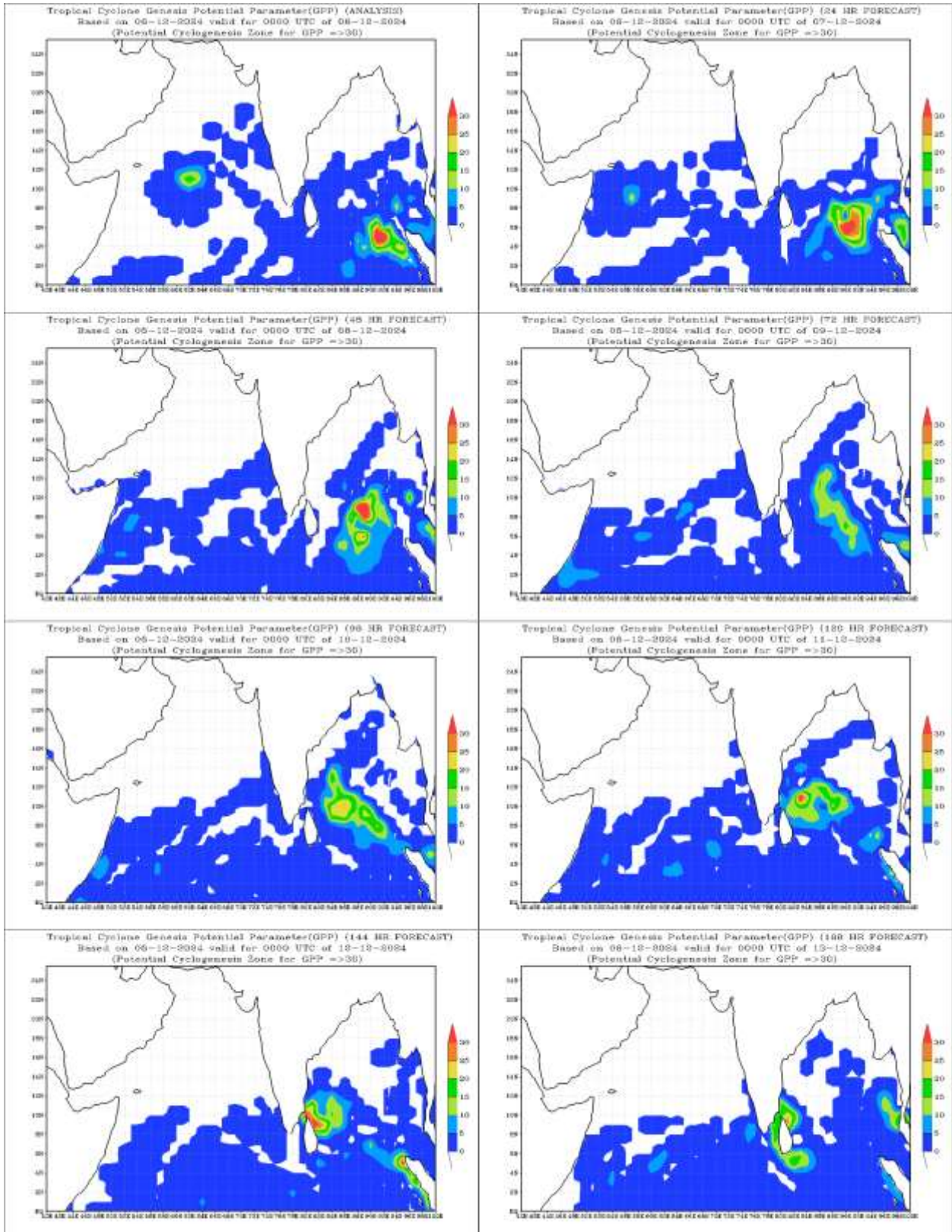
24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
NIL	NIL	NIL	NIL	NIL	NIL	NIL

“- “indicates genesis has already occurred.

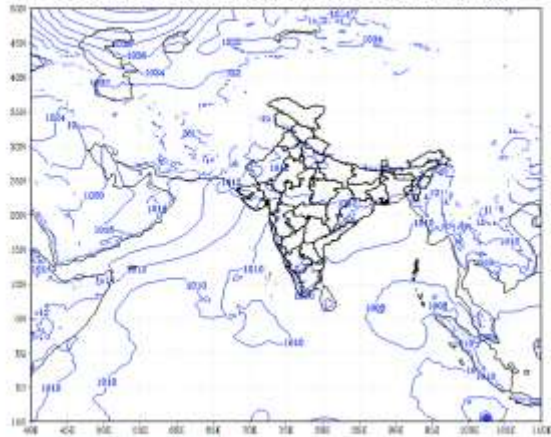
Probability is indicated as NIL for 0%, LOW for 1-33%, MOD for 34-67% and High for 68-100%.

Intense Observation Period (IOP): NIL

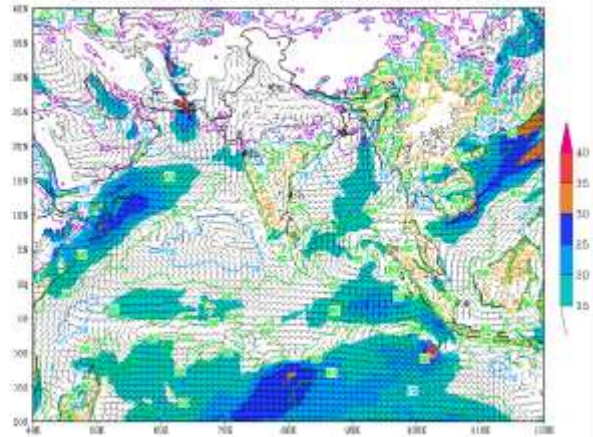
ANNEXURE



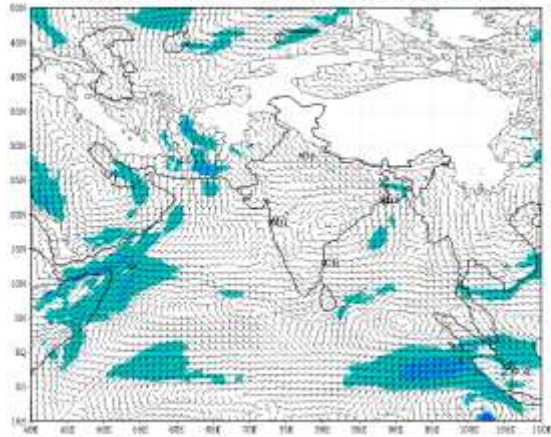
IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (24 HR)
based on 00 UTC of 06-12-2024 valid for 00 UTC of 07-12-2024



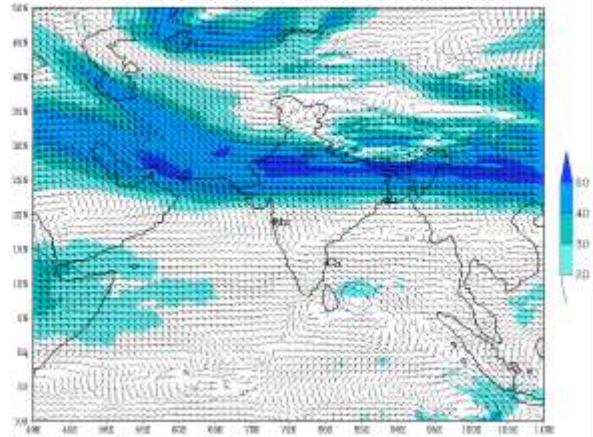
IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (24 HR)
based on 00 UTC of 06-12-2024 valid for 00 UTC of 07-12-2024



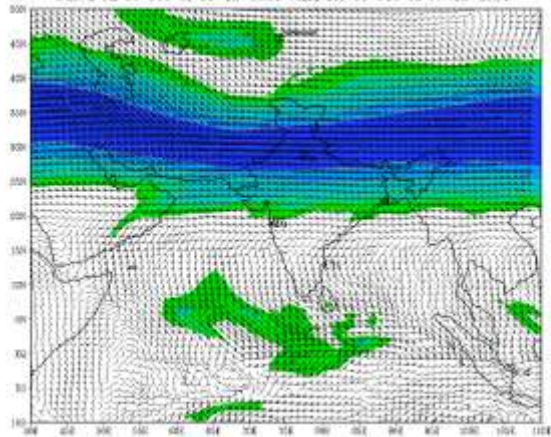
IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (24 HR)
based on 00 UTC of 06-12-2024 valid for 00 UTC of 07-12-2024



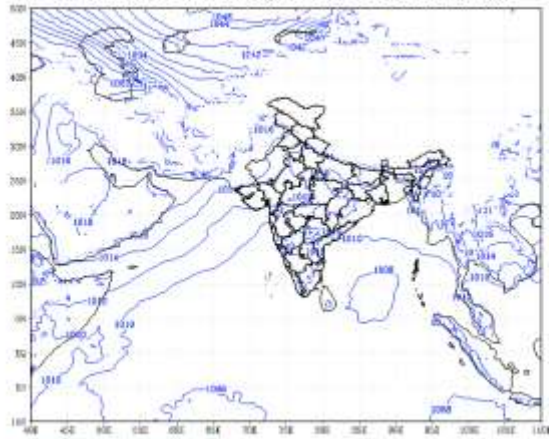
IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (24 HR)
based on 00 UTC of 06-12-2024 valid for 00 UTC of 07-12-2024



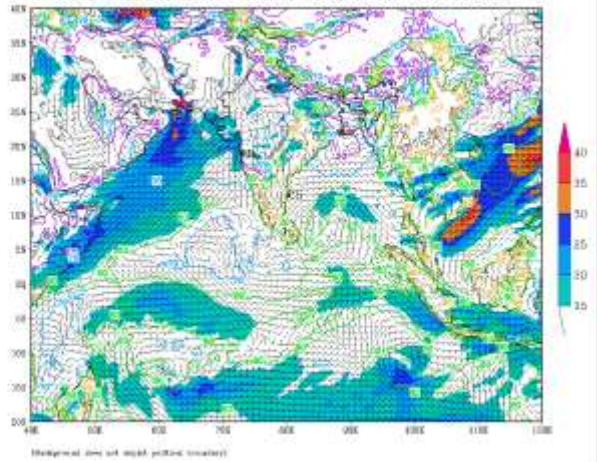
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based on 00 UTC of 06-12-2024 valid for 00 UTC of 07-12-2024



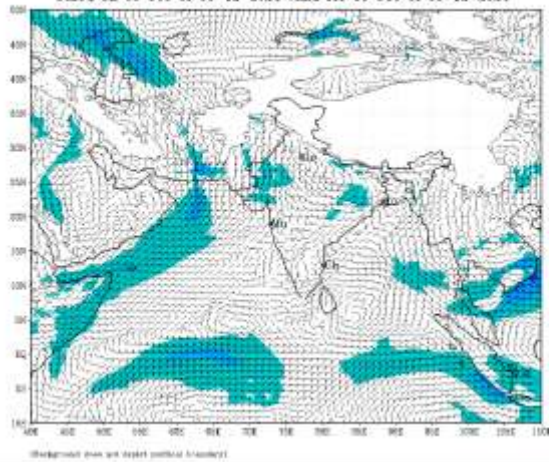
IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (72 HR)
based on 00 UTC of 06-12-2024 valid for 00 UTC of 09-12-2024



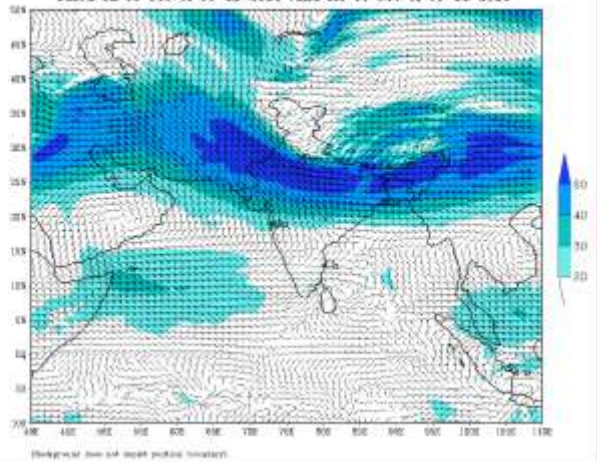
IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (72 HR)
based on 00 UTC of 06-12-2024 valid for 00 UTC of 09-12-2024



IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (72 HR)
based on 00 UTC of 06-12-2024 valid for 00 UTC of 09-12-2024



IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (72 HR)
based on 00 UTC of 06-12-2024 valid for 00 UTC of 09-12-2024



IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (72 HR)
based on 00 UTC of 06-12-2024 valid for 00 UTC of 09-12-2024

