



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

**Tropical Cyclone Forecast Programme
Report Dated 04th December 2024**

Time of Issue: 1000 UTC

Synoptic features (based on 0300 UTC analysis):

The Well marked low pressure area over east central Arabian Sea & adjoining Coastal Karnataka weakened into a low pressure area over eastcentral & adjoining southeast Arabian sea at 0830 hours IST of today, the 04th December, 2024. The associated cyclonic circulation extends upto 5.8 km above mean sea level. It is likely to move westwards and become less marked during next 24 hours.

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 AS along and off Oman, Yemen & Somalia coast. ➤ 28-30°C over most parts of AS.
Tropical Cyclone Heat Potential (TCHP) kJ/cm²	<ul style="list-style-type: none"> ➤ 140-150 over north BoB & adjoining eastcentral BoB and southern parts of south BoB & adjoining EIO. ➤ 100-130 over Andaman Sea. ➤ 20-40 over southwest BoB off Sri Lanka, Tamil Nadu and Andhra Pradesh coasts. ➤ 60-90 over rest of BoB. 	<ul style="list-style-type: none"> ➤ 100-120 over southeast AS , Lakshadweep Island and adjoining EIO. ➤ 20-40 over westcentral and southwest AS off Oman, Yemen & Somalia coasts and Comorin area. ➤ 60-80 over rest of AS
Cyclonic Relative vorticity (X10⁻⁶s⁻¹)	-	40-50 over some parts of eastcentral AS, Lakshadweep Islands area, Maldives and Comorin area.
Low-Level convergence(X10⁻⁵ s⁻¹)	<ul style="list-style-type: none"> ➤ 05-10 over south Andaman Sea. 	5 over some parts of southeast AS, Lakshadweep Islands Area and adjoining eastcentral AS.
Upper-Level	<ul style="list-style-type: none"> ➤ 05-20 over south 	<ul style="list-style-type: none"> ➤ 05-10 over some parts of

divergence ($X10^{-5} s^{-1}$)	Andaman Sea, southern parts of southeast BoB and adjoining southwest BoB & EIO.	eastcentral AS and Lakshadweep Islands area.
Vertical Wind Shear (VWS knots) Low: 05-10 knots Moderate: 10-20 knots High: >20 knots	<ul style="list-style-type: none"> ➤ High over extreme north and extreme South BoB. ➤ Low-moderate over rest of BoB. 	<ul style="list-style-type: none"> ➤ Low to moderate over eastcentral AS, Lakshadweep island area. ➤ High over rest of AS.
Wind Shear Tendency (knots)	<ul style="list-style-type: none"> ➤ Decreasing over Andaman Sea. ➤ Increasing over rest of BoB. 	<ul style="list-style-type: none"> ➤ Increasing over westcentral AS. ➤ Decreasing over rest of AS.
Upper tropospheric Ridge	➤ At 17° N.	➤ At 17° N.

Satellite observations based on INSAT imagery (0300 UTC):

a) Over the BoB & Andaman Sea: -

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

b) Over the Arabian Sea:

Scattered low and medium clouds with embedded intense to very intense convection lay over the adjoining southeast Arabian Sea. Scattered low and medium clouds with embedded isolated weak to moderate convection lay over the northwest Arabian Sea, off the south Gujarat coast, Gulf of Cambay west central & south Arabian Sea, Lakshadweep Island Area, Maldives & Comorin Area, rest south Arabian Sea, Maldives & Comorin Area.

c) Outside India:

Scattered low & medium clouds with embedded moderate to intense convection over Maldives, China, South 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 and over Indian Ocean between Latitude 5.0N to 15.0S Longitude 45.0E 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	No Significant cyclonic circulation over Bay of Bengal.	The Low Pressure Area over eastcentral & adjoining southeast Arabian Sea as of today, 04 th December. It will move in west-southwestward direction without further intensification till 6 th Dec and become less marked thereafter.
IMD-GEFS	No Significant cyclonic circulation Over Bay of Bengal.	The Low Pressure Area over eastcentral & adjoining southeast Arabian Sea as of today, 04 th December. It will move in west-southwestward direction without further intensification till 6 th Dec and become less marked thereafter.
IMD-WRF	No Significant cyclonic circulation over Bay of Bengal.	The Low Pressure Area over eastcentral & adjoining southeast Arabian Sea as of today, 04 th December. It will move in west-southwestward direction without further intensification till 5 th Dec and become less marked thereafter.
NCMRWF-NCUM(G)	No Significant cyclonic circulation over Bay of Bengal.	The Low Pressure Area over eastcentral & adjoining southeast Arabian Sea as of today, 04 th December. It will move in west-southwestward direction without further intensification and become less marked tomorrow 05 th Dec.
NCMRWF-NCUM(R)	No Significant cyclonic circulation over Bay of Bengal.	The Low Pressure Area over eastcentral & adjoining southeast Arabian Sea as of today, 04 th December. It will move in west-southwestward direction without further intensification and become less marked tomorrow 05 th Dec.
NCMRWF-NEPS	No Significant cyclonic circulation over Bay of Bengal.	The Low Pressure Area over eastcentral & adjoining southeast Arabian Sea as of today, 04 th December. It will move in west-southwestward direction without further intensification till 6 th Dec and become less marked

		thereafter.
ECMWF	No Significant cyclonic circulation over Bay of Bengal.	The Low Pressure Area over eastcentral & adjoining southeast Arabian Sea as of today, 04 th December. It will move in west-southwestward direction without further intensification till 1800 UTC of 5 th Dec and become less marked thereafter.
NCEP-GFS	No Significant cyclonic circulation over Bay of Bengal.	The Low Pressure Area over eastcentral & adjoining southeast Arabian Sea as of today, 04 th December. It will move in west-southwestward direction without further intensification till 0600 UTC of 6 th Dec and become less marked thereafter.

Summary:

(a) Bay of Bengal:

Most of the models indicate no significant cyclonic circulation over Bay of Bengal for the next seven days.

(b) Arabian Sea

All the models are indicating that the Low Pressure Area over eastcentral & adjoining southeast Arabian Sea as of today, 04th December. Models are also indicating that system will move west-southwestwards till 6th December and will become less marked thereafter.

Inference:

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

The Well marked low pressure area over east central Arabian Sea & adjoining Coastal Karnataka weakened into a low pressure area over eastcentral & adjoining southeast Arabian sea at 0830 hours IST of today, the 04th December, 2024. The associated cyclonic circulation extends upto 5.8 km above mean sea level. It is likely to move westwards and become less marked during next 24 hours.

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

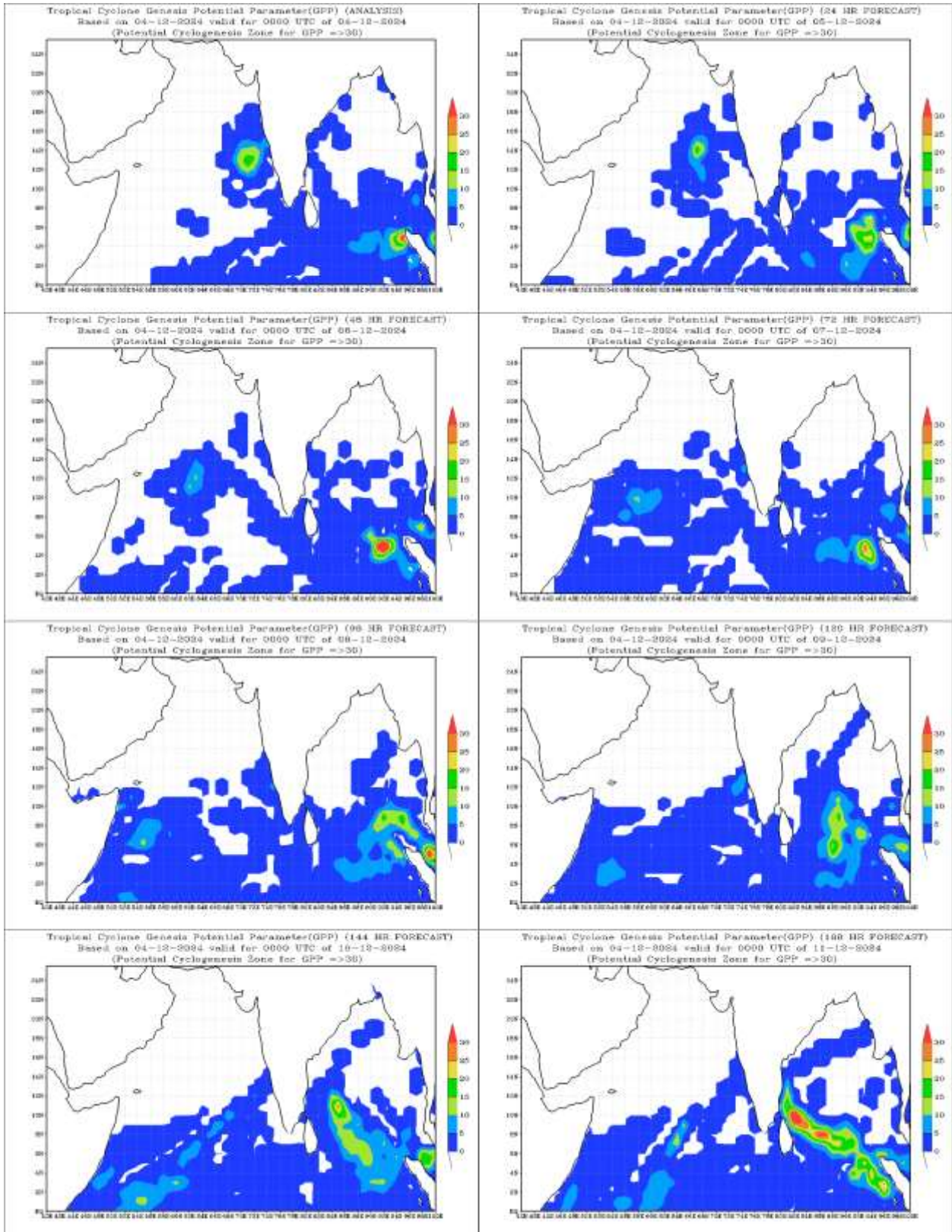
Probability of cyclogenesis (formation of depression and above intensity systems) over the Arabian Sea during next 168 hours:

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

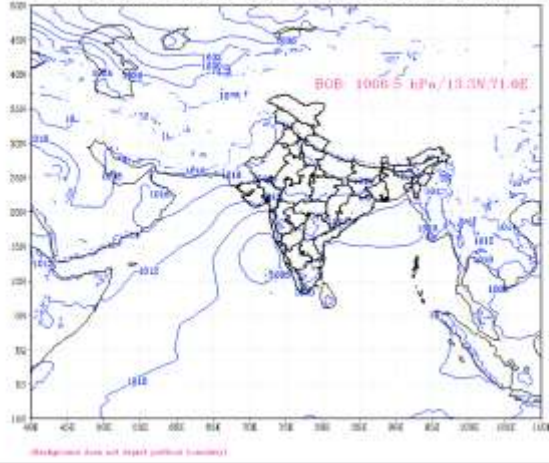
“- “indicates genesis has already occurred.

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

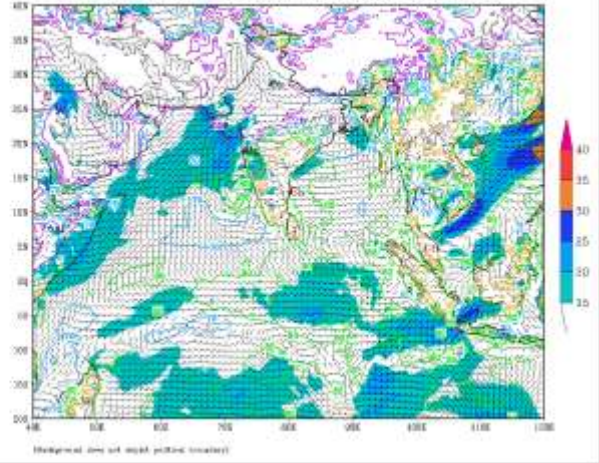
Intense Observation Period (IOP): NIL



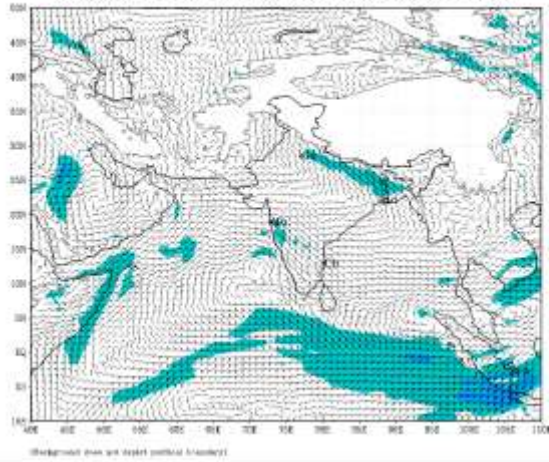
IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (00 HR)
based on 00 UTC of 04-12-2024 valid for 00 UTC of 04-12-2024



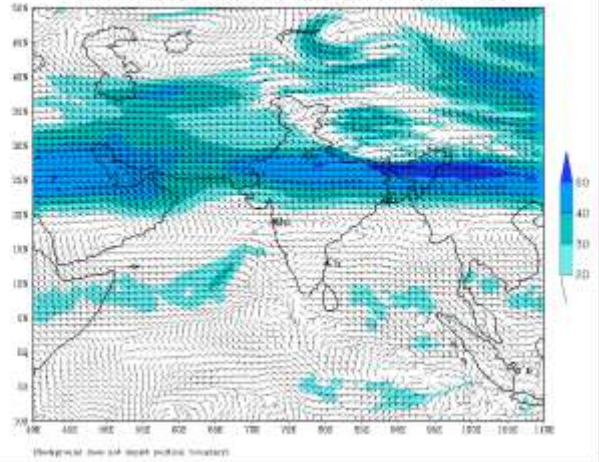
IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (00 HR)
based on 00 UTC of 04-12-2024 valid for 00 UTC of 04-12-2024



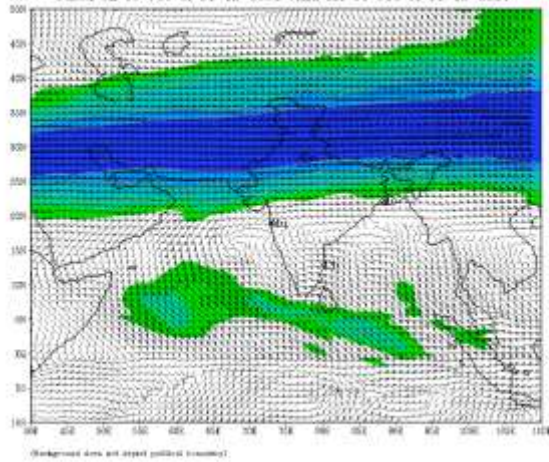
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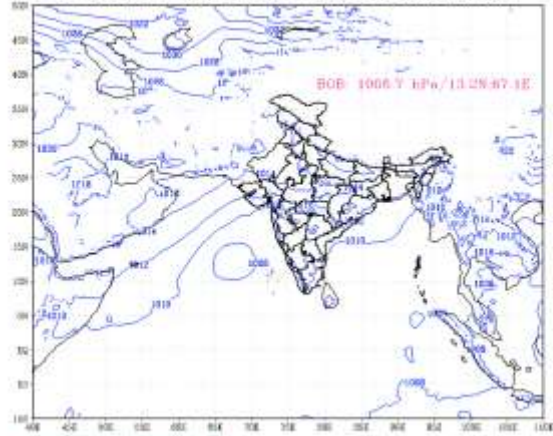
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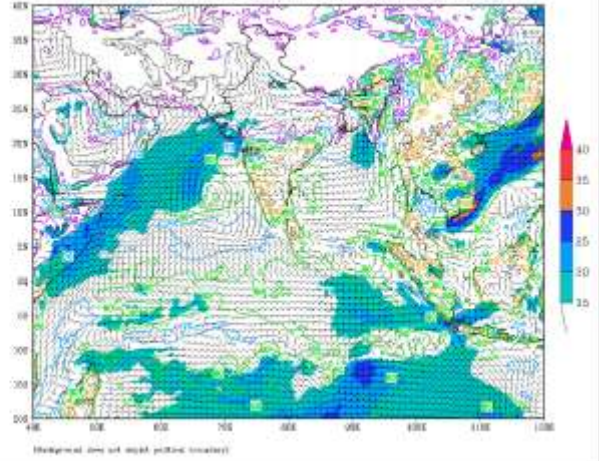
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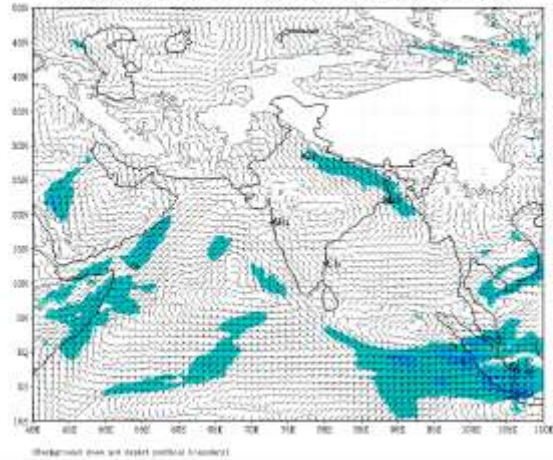
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based on 00 UTC of 04-12-2024 valid for 00 UTC of 05-12-2024



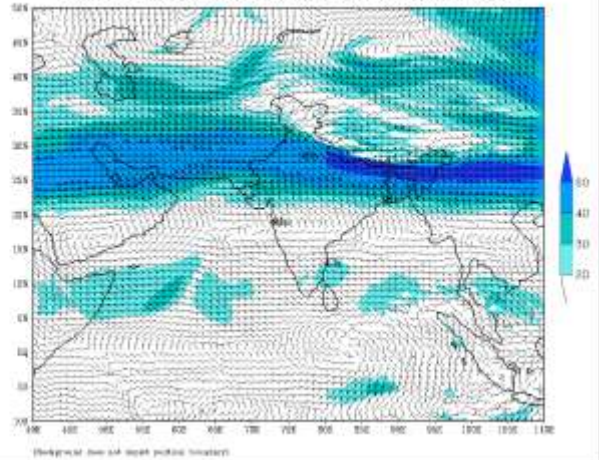
IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (24 HR)
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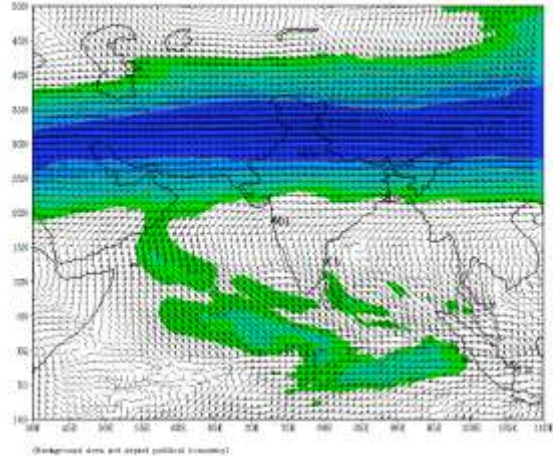
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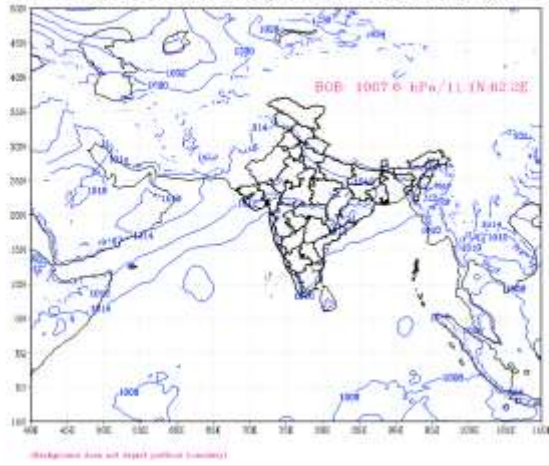
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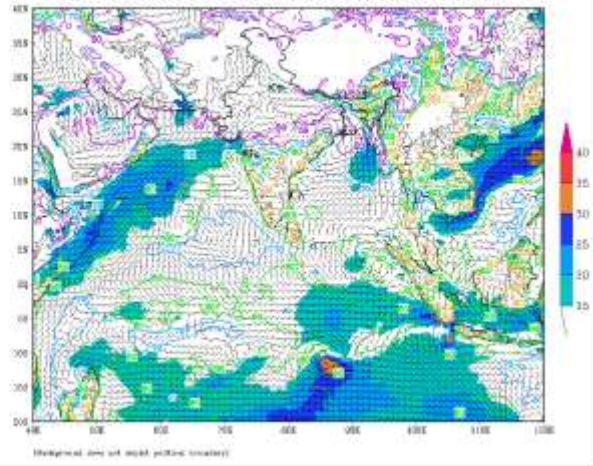
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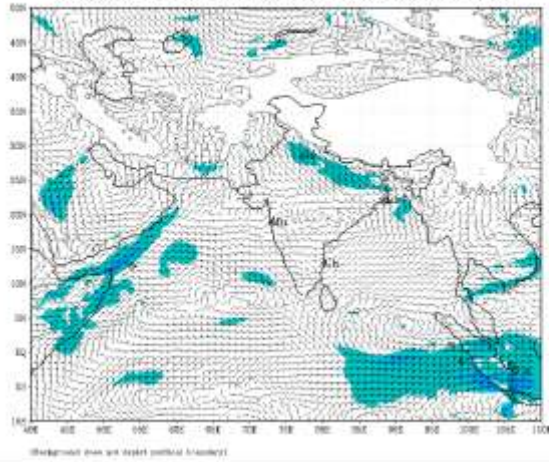
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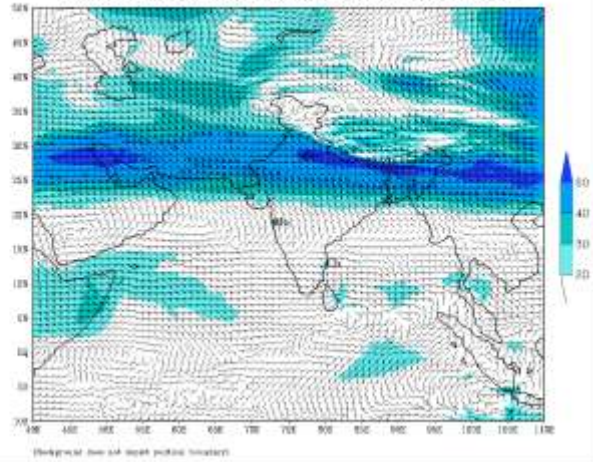
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based on 00 UTC of 04-12-2024 valid for 00 UTC of 06-12-2024



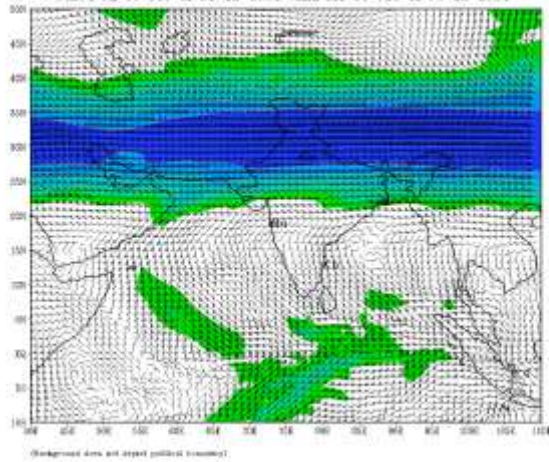
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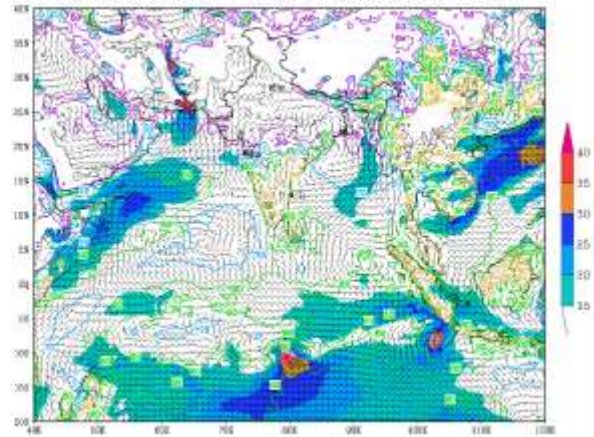
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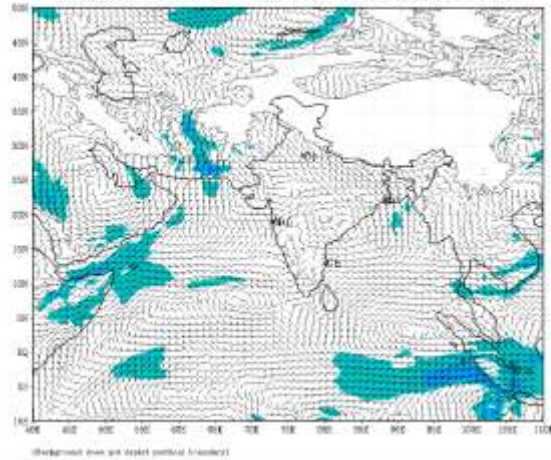
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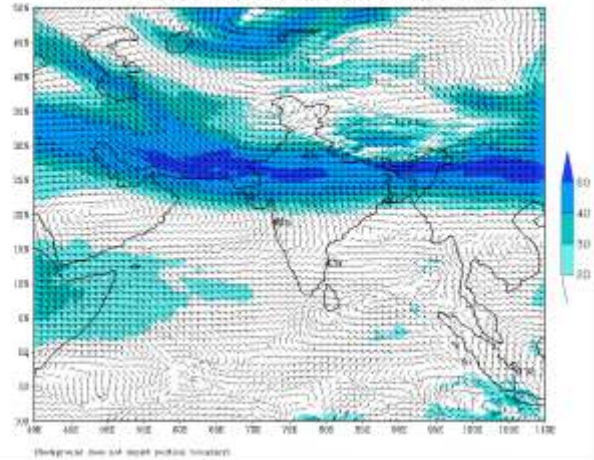
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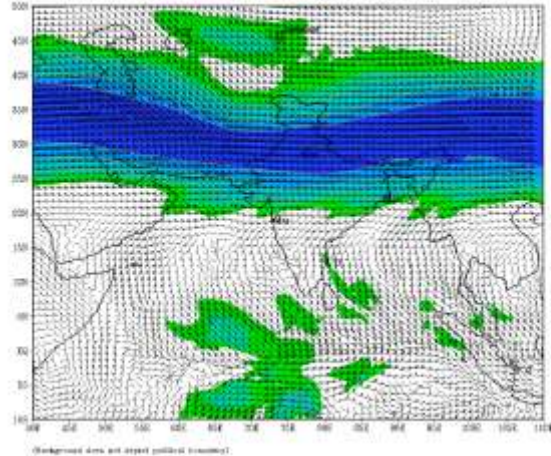
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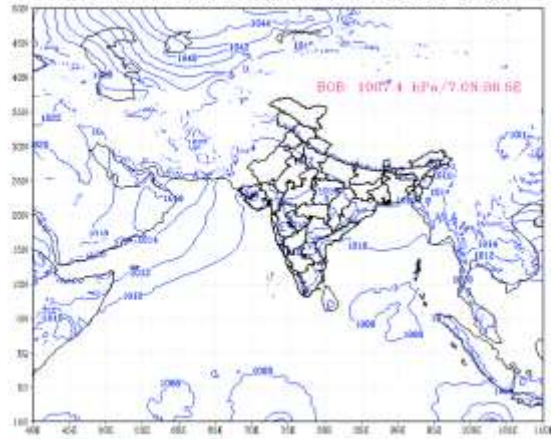
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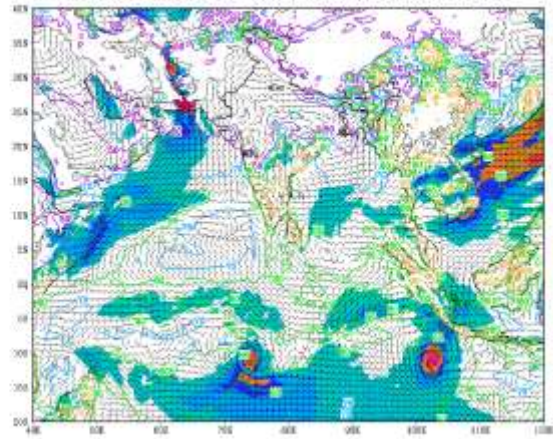


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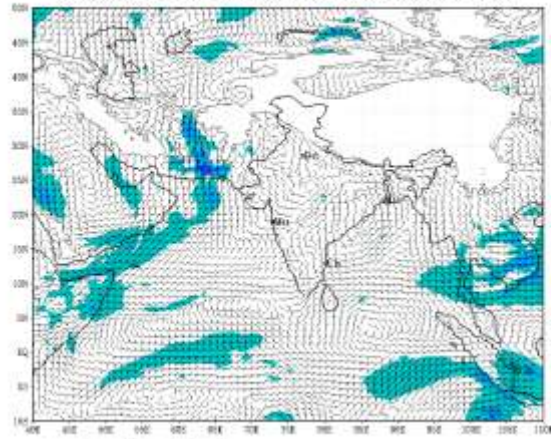
(Background Area not depict political boundary)

IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (96 HR)
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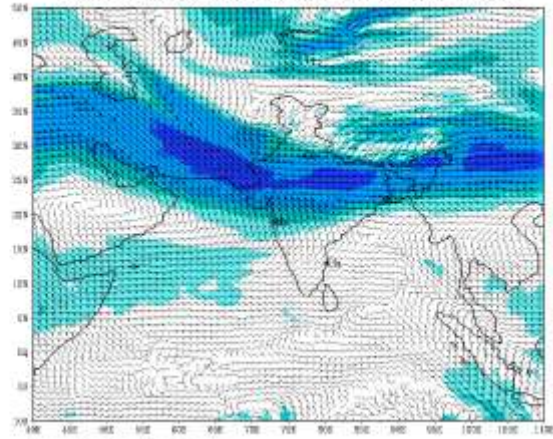
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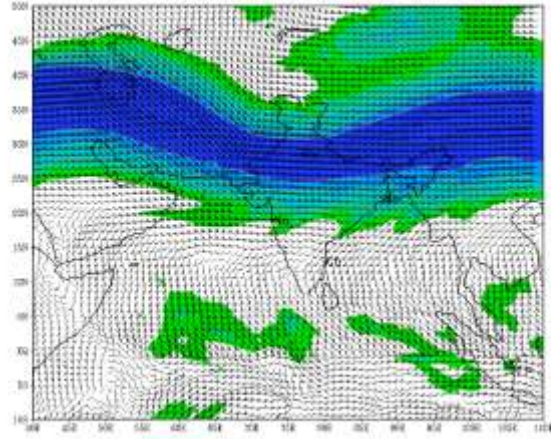
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