



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

**Tropical Cyclone Forecast Programme  
Report Dated 07<sup>th</sup> December 2024**

**Time of Issue: 1030 UTC**

**Synoptic features (based on 0300 UTC analysis):**

- Under the influence of the upper air cyclonic circulation over southeast Bay of Bengal & adjoining east Equatorial Indian Ocean, a low-pressure area has formed over the same region at 0300 UTC of today, the 07th December. The associated cyclonic circulation extends up to middle tropospheric levels. It is likely to move west-northwestwards, become well marked low pressure area during next 24 hours. It is very likely to continue to move west-northwestwards thereafter and reach over southwest Bay of Bengal off Sri-Lanka – Tamil Nadu coasts around 11th December.
- Yesterday's cyclonic circulation over southwest & adjoining southeast Arabian sea extending up to 1.5 km above mean sea level persisted at 0300 UTC of today, 7th December, 2024.

**Environmental Features based on 03 UTC:**

| Parameter   | Bay of Bengal (BoB)   | Arabian Sea (AS)  |
|---|---|---|
| <b>Sea Surface Temperature (SST) °C</b>                             | <ul style="list-style-type: none"> <li>➤ 26-28°C along &amp; off west coast.</li> <li>➤ 28-30°C over rest of BoB.</li> </ul>  | <ul style="list-style-type: none"> <li>➤ 26-28°C over westcentral &amp; southwest AS along and off Oman, Yemen &amp; Somalia coast and Northeast AS over Gujarat coast.</li> <li>➤ 28-30°C over most parts of AS.</li> </ul>  |
| <b>Tropical Cyclone Heat Potential (TCHP) kJ/cm<sup>2</sup></b>     | <ul style="list-style-type: none"> <li>➤ 120-180 over north BoB &amp; adjoining eastcentral BoB.</li> <li>➤ 100-130 over Andaman Sea and southcentral parts of south BoB &amp; adjoining EIO.</li> <li>➤ 20-40 over southwest BoB and adjoining parts of westcentral BoB off Sri Lanka, Tamil Nadu and Andhra Pradesh coasts.</li> <li>➤ 60-80 over rest of BoB.</li> </ul> | <ul style="list-style-type: none"> <li>➤ 100-120 over southeast AS, Maldives Islands, Lakshadweep Islands and adjoining EIO.</li> <li>➤ 20-40 over westcentral and southwest AS off Oman, Yemen &amp; Somalia coasts, Comorin area and northeast AS off Gujarat coast.</li> <li>➤ 60-80 over rest of AS.</li> </ul> |
| <b>Cyclonic Relative vorticity (X10<sup>-6</sup>s<sup>-1</sup>)</b> | <ul style="list-style-type: none"> <li>➤ 40-50 over parts of southeast BoB &amp; south Andaman Sea.</li> <li>➤ 20-30 over eastcentral adjoining northeast BoB off Myanmar Coast.</li> </ul>   | <ul style="list-style-type: none"> <li>➤ 20-40 over some parts of southeast, southwest AS and Maldives Islands area.</li> <li>➤ 20-30 over northeast AS off Pakistan Coast.</li> </ul>  |

|  |   |  |
|--|---|--|
| <b>Low-Level convergence</b><br>( $\times 10^{-5} \text{ s}^{-1}$ )  | ➤ 05-20 over south Andaman Sea, southern parts of southeast BoB & adjoining EIO.  | ➤ 5 over southeast AS.   |
| <b>Upper-Level divergence</b><br>( $\times 10^{-5} \text{ s}^{-1}$ )   | ➤ 05-40 over southeast BoB & adjoining southwest, central BoB and adjoining Andaman Sea.  | ➤ 05-10 over southeast AS.<br>➤ 05 over some parts of westcentral AS off Oman coast.     |
| <b>Vertical Wind Shear (VWS knots)</b><br><b>Low: 05-10 knots</b><br><b>Moderate: 10-20 knots</b><br><b>High: &gt;20 knots</b> | ➤ Low-moderate over westcentral BoB and Andaman Sea & adjoining southeast BoB.<br>➤ High over rest of BoB.                              | ➤ Low to moderate over westcentral AS & adjoining south AS.<br>➤ High over rest of AS.   |
| <b>Wind Shear Tendency (knots)</b>   | ➤ Decreasing over south BoB and adjoining EIO.<br>➤ Decreasing over eastcentral BoB off Myanmar coast<br>➤ Increasing over rest of BoB. | ➤ Increasing over extreme north AS.<br>➤ Decreasing over rest of AS except southwest AS. |
| <b>Upper tropospheric Ridge</b>  | ➤ At $14^{\circ}$ N.  | ➤ At $12^{\circ}$ N.   |

### **Satellite observations based on INSAT imagery (0300 UTC):**

**a) Over the BoB & Andaman Sea:**

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

**b) Over the Arabian Sea:**

Scattered low & medium clouds with embedded intense to very intense convection over southwest Arabian Sea. Scattered low & medium clouds with embedded isolated moderate to intense convection over eastcentral & southeast Arabian Sea, Lakshadweep islands area, Maldives & Comorin area.

**c) Outside India:**

Scattered low & medium clouds with embedded moderate to intense convection over Sri Lanka, Maldives, China, Yellow Sea, South Thailand, Gulf of Thailand, South 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  $50^{\circ}$ N to  $200^{\circ}$ S longitude  $400^{\circ}$ E to  $1200^{\circ}$ E.

**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:**

| <b>MODEL GUIDANCE</b> | <b>Bay of Bengal (BoB)</b>   | <b>Arabian Sea (AS)</b>   |
|-----------------------|--|---|
| <b>IMD-GFS</b>        | Model is indicating an extended low 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 <sup>th</sup> December without intensification.                                     | Model indicates no significant system over AS during next 7 days. |
| <b>IMD-GEFS</b>       | Model is indicating an extended low 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 <sup>th</sup> December without intensification.                                     | Model indicates no significant system over AS during next 7 days. |
| <b>IMD-WRF</b>        | Model is indicating an extended low over southeast Bay of Bengal and adjoining east equatorial Indian Ocean as of today. It will have west-northwestwards and lay over southwest and adjoining southeast BoB as LPA on 10 <sup>th</sup> .                                      | Model indicates no significant system over AS during next 3 days. |
| <b>NCMRWF-NCUM(G)</b> | Model is indicating an extended low 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 <sup>th</sup> December without intensification.                                     | Model indicates no significant system over AS during next 7 days. |
| <b>NCMRWF-NCUM(R)</b> | Model is indicating an extended low over southeast Bay of Bengal and adjoining east equatorial Indian Ocean as of today. It will have west-northwestwards and lay over southwest and adjoining southeast BoB as LPA on 9 <sup>th</sup> , deep depression on 10 <sup>th</sup> . | Model indicates no significant system over AS during next 3 days. |
| <b>NCMRWF-NEPS</b>    | Model is indicating an extended low 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 <sup>th</sup> December without intensification.                                     | Model indicates no significant system over AS during next 7 days. |
| <b>ECMWF</b>          | Model is indicating an extended low 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 <sup>th</sup> December without intensification.                                      | Model indicates no significant system over AS during next 7 days. |
| <b>NCEP-GFS</b>       | Model is indicating an extended low 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 <sup>th</sup> December without intensification.                                     | Model indicates no significant system over AS during next 7 days. |

**Summary:**

**(a) Bay of Bengal:**

Most of the models indicating an extended low over southeast Bay of Bengal and adjoining east equatorial Indian Ocean as of today having diurnal variation. It will have west-northwestwards towards Tamil Nadu coast till 12<sup>th</sup> December without intensification. NCUM regional model is indicating its intensification upto deep depression.

**(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:**

Under the influence of the upper air cyclonic circulation over southeast Bay of Bengal & adjoining east Equatorial Indian Ocean, a low-pressure area has formed over the same region at 0300 UTC of today, the 07<sup>th</sup> December. The associated cyclonic circulation extends up to middle tropospheric levels. It is likely to move west-northwestwards, become well marked low pressure area during next 24 hours. It is very likely to continue to move west-northwestwards thereafter and reach over southwest Bay of Bengal off Sri-Lanka – Tamil Nadu coasts around 11<sup>th</sup> 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:**

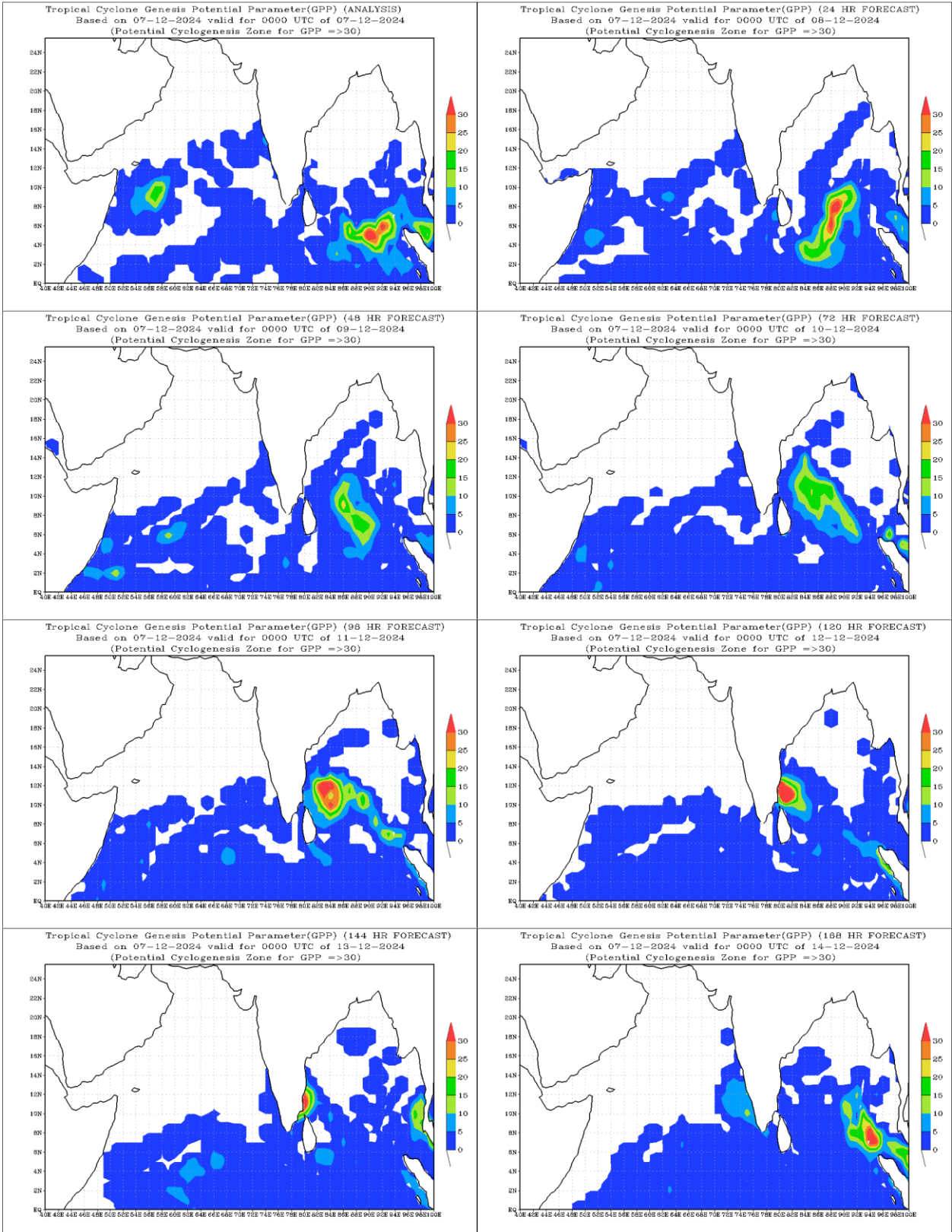
| 24 HOURS | 24-48 HOURS | 48-72 HOURS | 72-96 HOURS | 96-120 HOURS | 120-144 HOURS | 144-168 HOURS |
|----------|-------------|-------------|-------------|--------------|---------------|---------------|
| NIL      | NIL         | NIL         | NIL         | NIL          | NIL           | NIL       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

“- “indicates genesis has already occurred.

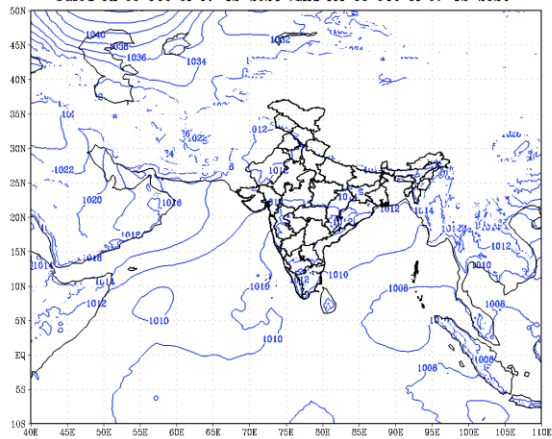
Probability is indicated as NIL for 0%, LOW for 1-33%, MOD for 34-67% and High for 68-100%.

**Intense Observation Period (IOP): NIL**

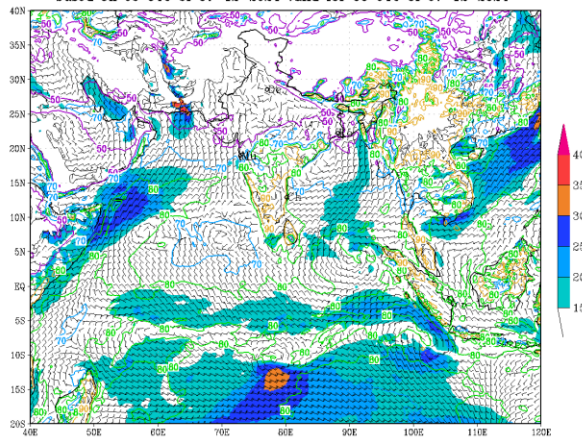
# ANNEXURE



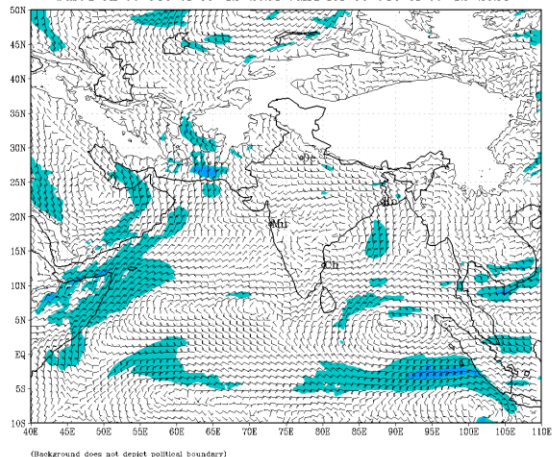
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based on 00 UTC of 07-12-2024 valid for 00 UTC of 07-12-2024



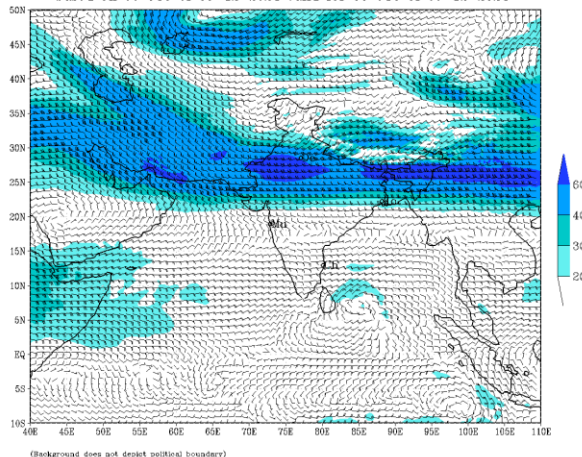
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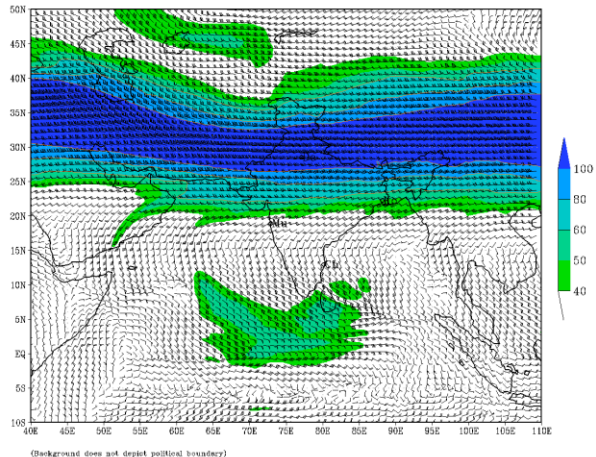
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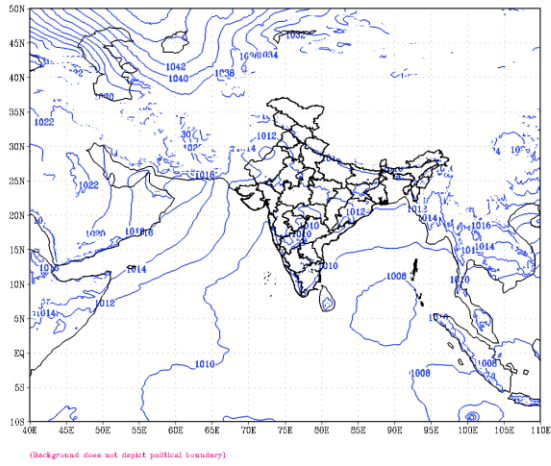
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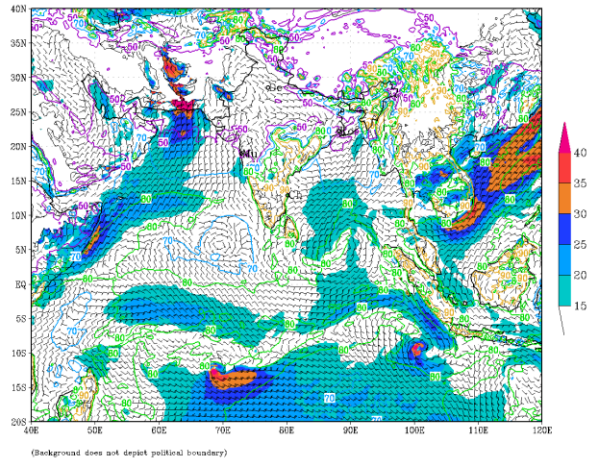
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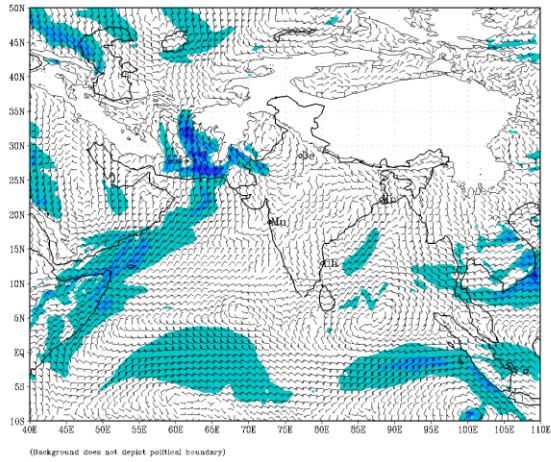
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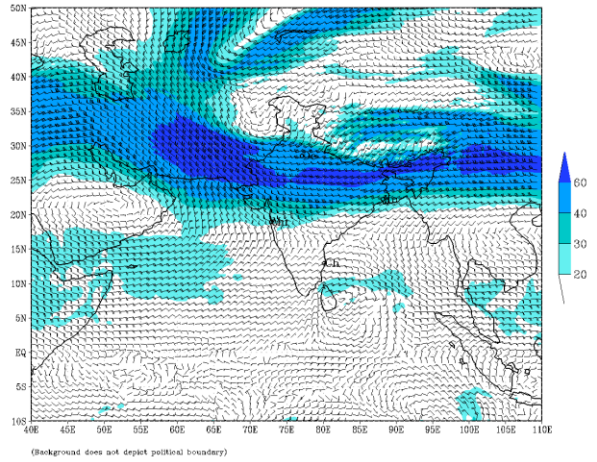
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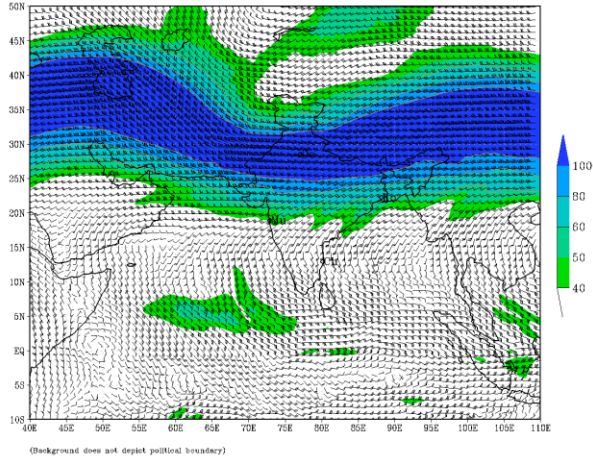
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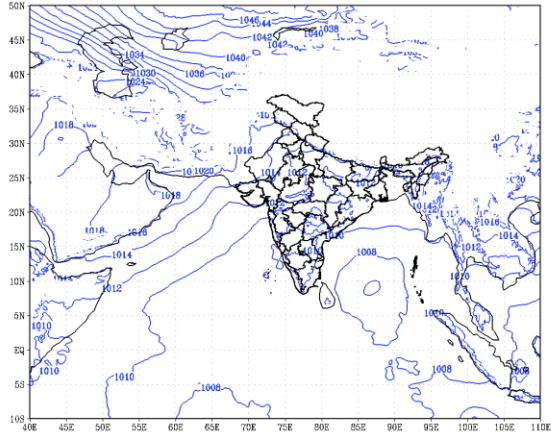
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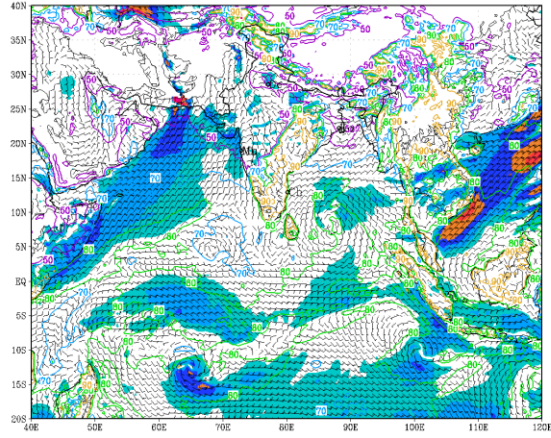
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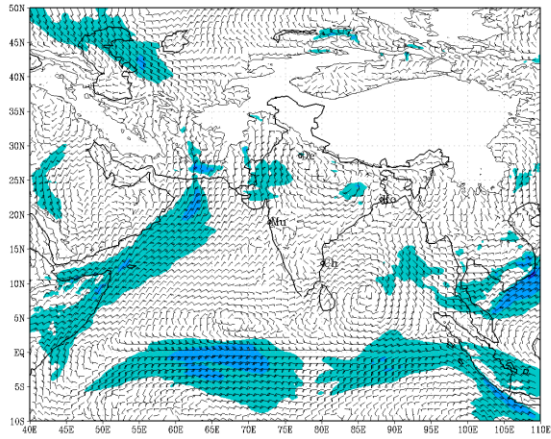
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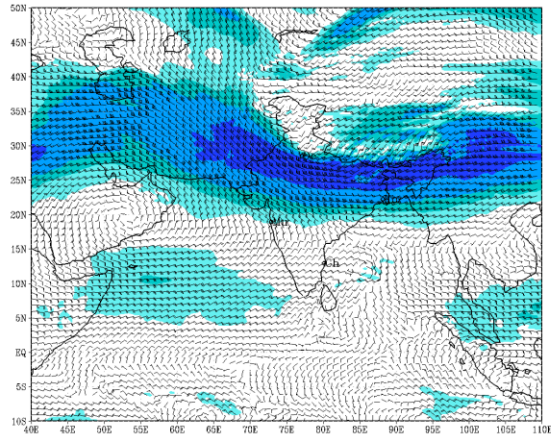
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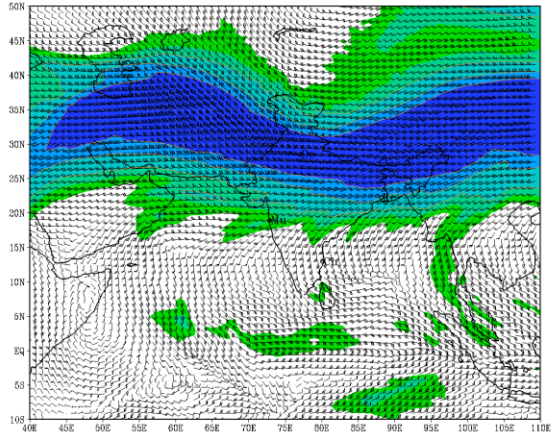
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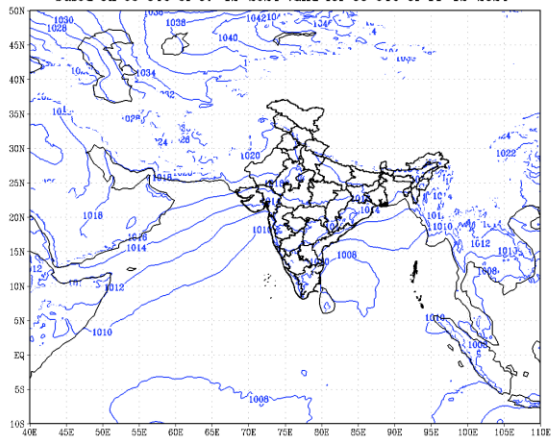
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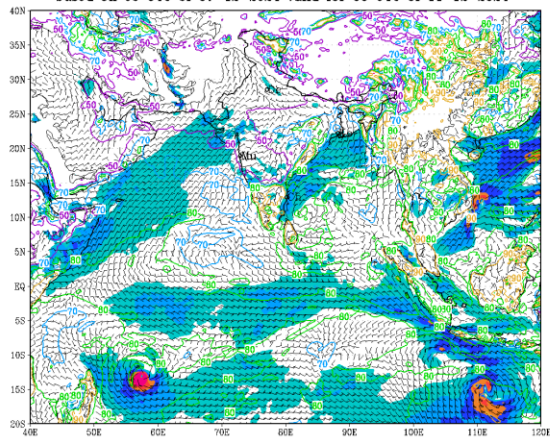


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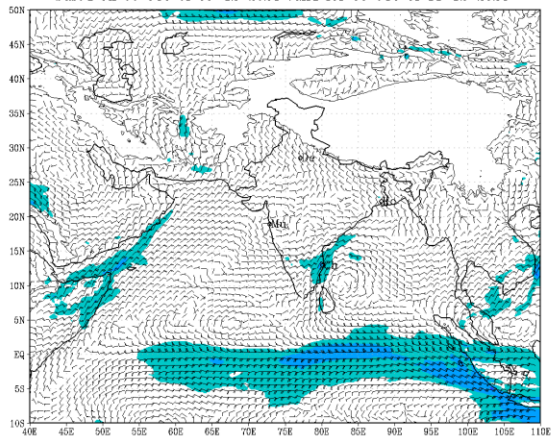
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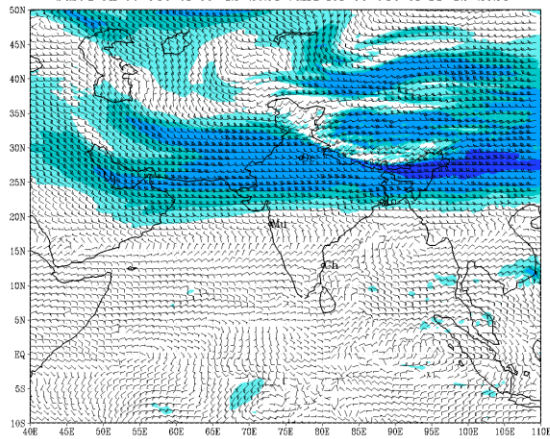
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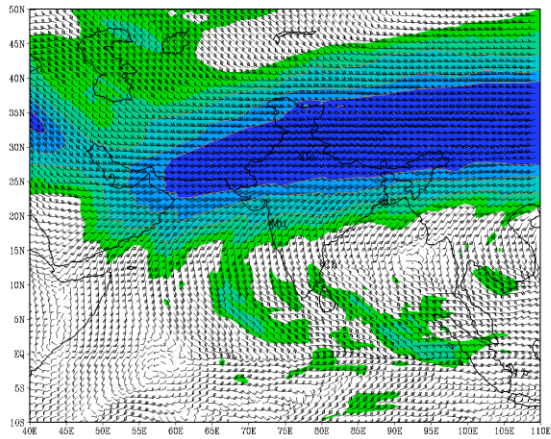
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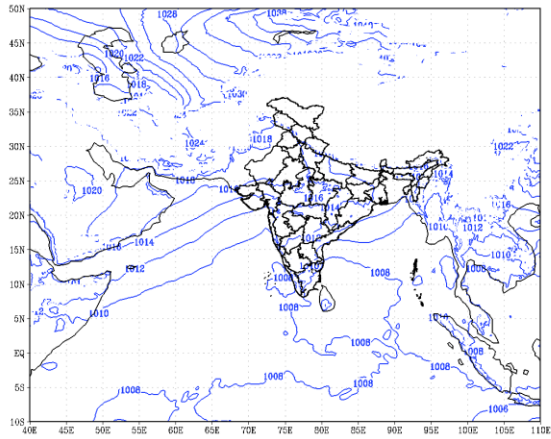
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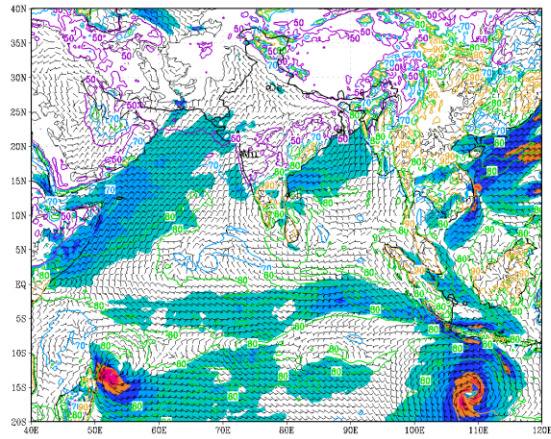
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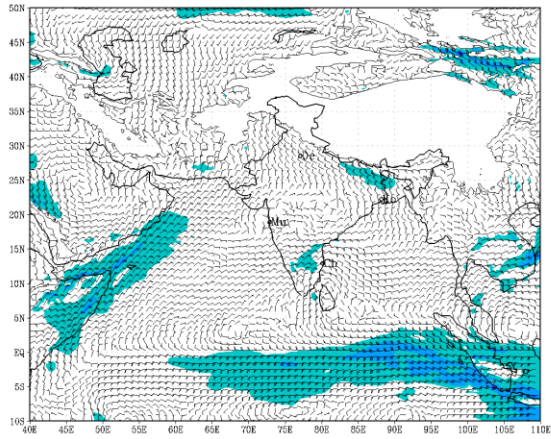
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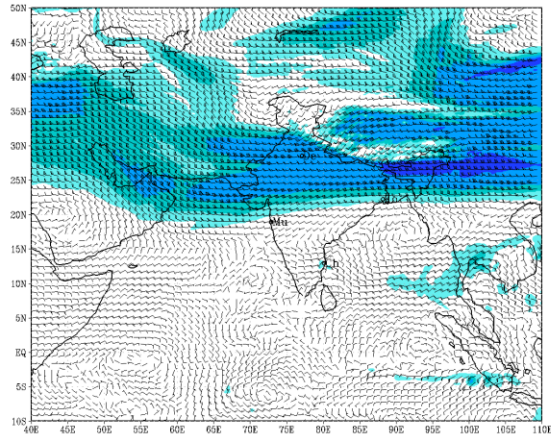
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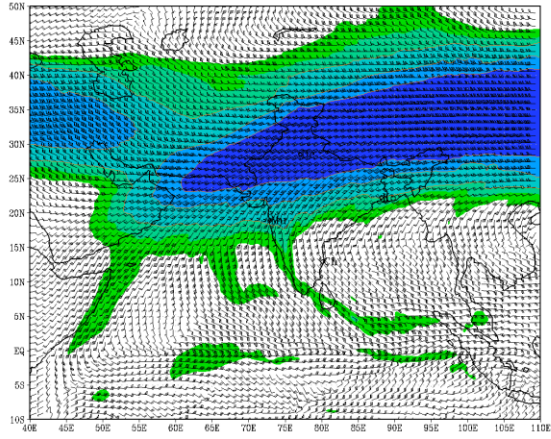
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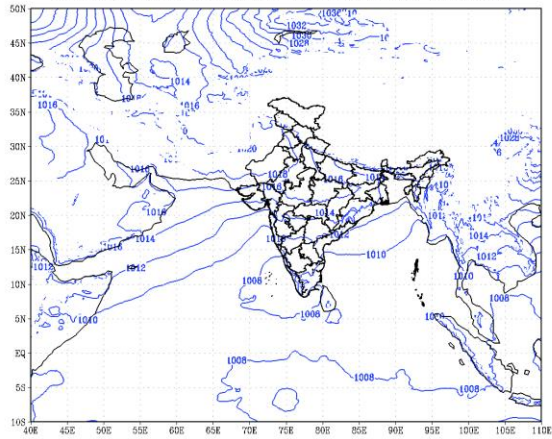
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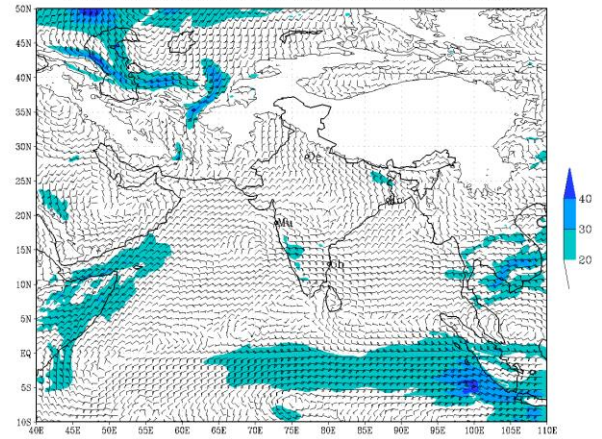
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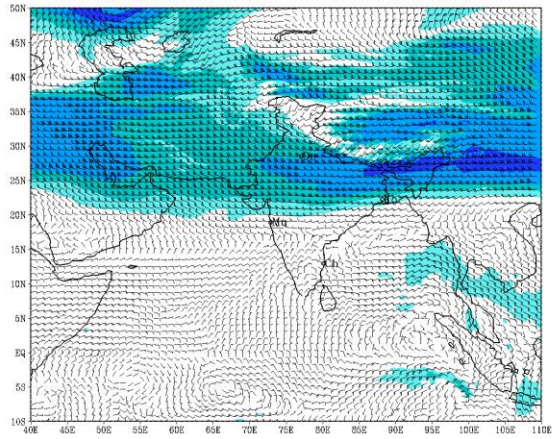
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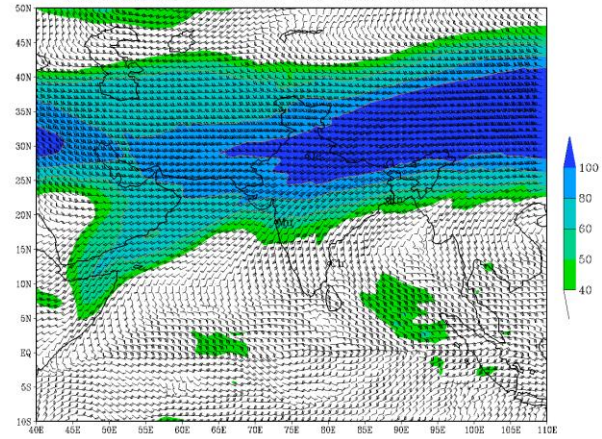
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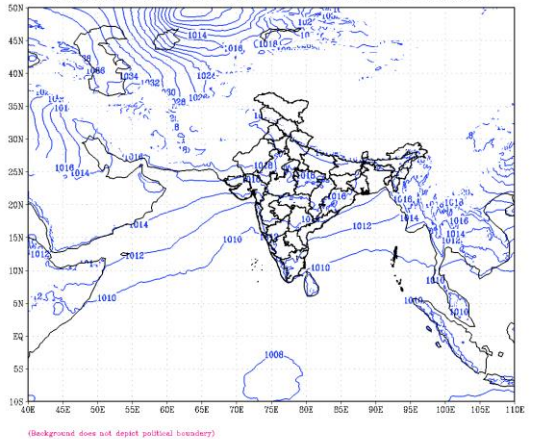
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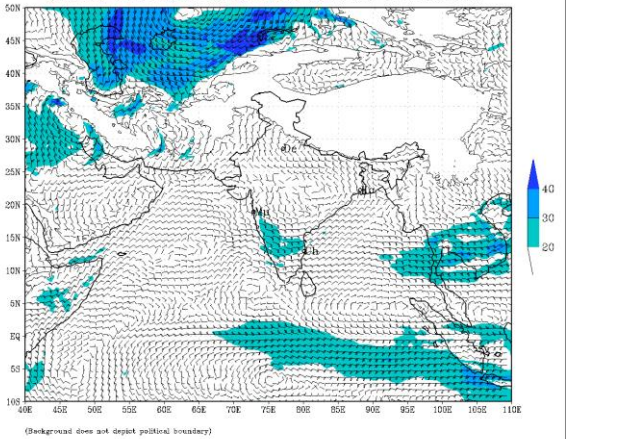
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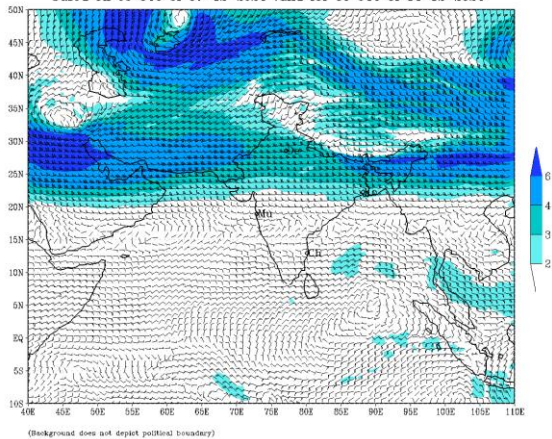
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based on 00 UTC of 07-12-2024 valid for 00 UTC of 14-12-2024



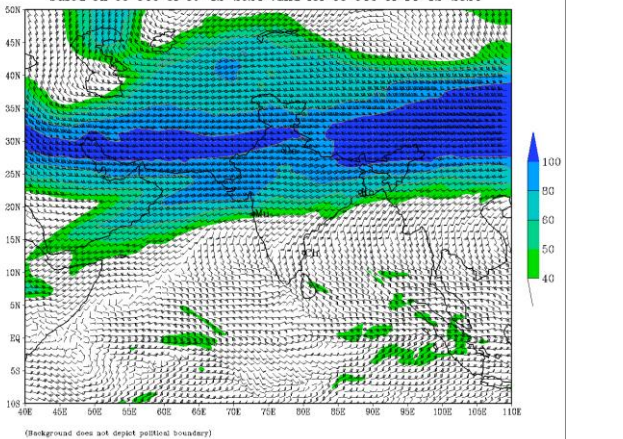
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