



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

**Tropical Cyclone Forecast Programme
Report Dated 11th December 2024**

Time of Issue: 1100 UTC

Synoptic features (based on 0300 UTC analysis):

Yesterday's well-marked low-pressure area over southeast Bay of Bengal & adjoining Equatorial Indian Ocean lay over southwest Bay of Bengal off Sri Lanka coast at 0300 UTC of today, the 11th December 2024 with the associated upper air cyclonic circulation extending up to mid-tropospheric levels. The system is very likely to continue to move west-northwestwards towards Sri Lanka-Tamil Nadu coasts during the 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">➤ 29-30°C over southeast BoB➤ 26-28°C over rest of BoB.	<ul style="list-style-type: none">➤ 29-30°C over southeast AS➤ 26-28°C over rest of AS
Tropical Cyclone Heat Potential (TCHP) kJ/cm²	<ul style="list-style-type: none">➤ 100-130 over east BoB, Andaman Sea and extreme southern parts of south BoB.➤ 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.➤ 20-60 over west central and southwest AS off Oman, Yemen & Somalia coasts, Comorin area and northeast AS off Gujarat coast.
Cyclonic Relative vorticity (X10⁻⁶s⁻¹)	<ul style="list-style-type: none">➤ 40-50 over southwest BoB off Sri Lanka coast	<ul style="list-style-type: none">➤ 20-30 over parts of eastcentral AS
Low-Level convergence (X10⁻⁵ s⁻¹)	<ul style="list-style-type: none">➤ 10 over southwest BoB off Sri Lanka coast➤ 10 over southwest BoB off Sumatra coast	<ul style="list-style-type: none">➤ 05-10 over southeast AS
Upper-Level divergence (X10⁻⁵ s⁻¹)	<ul style="list-style-type: none">➤ 10 over southwest BoB off Sri Lanka coast & adjoining southeast BoB➤ 10 over southwest BoB off Sumatra coast	<ul style="list-style-type: none">➤ 05-10 over southeast AS
Vertical Wind Shear (VWS knots) Low: 05-10 knots	<ul style="list-style-type: none">➤ Low-moderate over southeast BoB.➤ High over rest of BoB.	<ul style="list-style-type: none">➤ Low to moderate over southeast and adjoining east central & southwest AS.

Moderate: 10-20 knots High: >20 knots		➤ High over rest of AS.
Wind Shear Tendency (knots)	➤ Increasing over southwest BoB off Sumatra coast ➤ Decreasing over southwest BoB off Sri Lanka coast	➤ Decreasing over Comorin Area ➤ Increasing over rest of AS.
Upper tropospheric Ridge	➤ At 15° N.	➤ At 12° 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 central & south Bay of Bengal and south Andaman Sea. Scattered low and medium clouds with embedded moderate to intense convection lay over central north Andaman Sea, Tenasserim coast 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 southwest Arabian Sea, Lakshadweep Island area & Comorin area. Scattered low and medium clouds with embedded isolated weak to moderate convection lay over southeast & westcentral Arabian Sea.

c) Outside India:

Scattered low & medium clouds with embedded moderate to intense convection lay over North Sri Lanka, Palk Strait, Gulf of Mannar, Maldives, Tibet, China, Thailand, Gulf of Thailand, Cambodia, Laos, Vietnam, Gulf of Tonkin, Hainan, Sumatra, Strait of Malacca, Malaysia, Borneo, South China sea, Java Islands & Sea, Celebes Islands & Sea, Philippines, Sulu Sea, north 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:

MJO is currently in phase 5 with amplitude greater than 1. It will be in same phase till 17th December with amplitude greater 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 low over southwest and adjoining southeast Bay of Bengal & off Sri Lanka coast as on today. Less marked thereafter.	Model indicates no significant system over AS during next 7 days.
IMD-GEFS	The model indicates an extended low-pressure area over the northwest Sri Lanka coast and the Tamil Nadu coast as of today, which will become less marked by tomorrow the 12 th December.	Model indicates no significant system over AS during next 7 days.

IMD-WRF	The model is indicating an extended low over southwest Bay of Bengal off Sri Lanka coast as on today, it will have west-north-westward and reach north Sri Lanka coast – off Tamil Nadu coast by tomorrow the 12 th December without intensification. Less marked thereafter.	Model indicates no significant system over AS during next 3 days.
NCMRWF-NCUM(G)	The model is indicating an extended low over north Sri Lanka coast – off Tamil Nadu coast as on today, it will have west-north-westward and reach Tamil Nadu coast by tomorrow the 12 th December without intensification. Less marked thereafter.	Model indicates no significant system over AS during next 7 days.
NCMRWF-NCUM(R)	The model is indicating an extended low over southwest Bay of Bengal off Sri Lanka coast as on today, it will have west-north-westward and reach north Sri Lanka coast – off Tamil Nadu coast by tomorrow the 12 th December without intensification. Less marked thereafter.	Model indicates no significant system over AS during next 3 days.
NCMRWF-NEPS	The model is indicating an extended low over southwest Bay of Bengal off Sri Lanka coast as on today, it will have west-north-westward and reach north Sri Lanka coast – off Tamil Nadu coast by tomorrow the 12 th December without intensification. Less marked thereafter.	Model indicates no significant system over AS during next 7 days.
ECMWF	The model is indicating an extended low over southwest Bay of Bengal off Sri Lanka coast as on today, it will have west-north-westward and reach north Sri Lanka coast – off Tamil Nadu coast by tomorrow the 12 th December without intensification. Less marked thereafter.	Model indicates no significant system over AS during next 7 days.
NCEP-GFS	The model is indicating an extended low over north Sri Lanka coast – off Tamil Nadu coast as on today, it will have west-north-westward and reach Tamil Nadu coast by tomorrow the 12 th December without intensification. Less marked thereafter.	Model indicates no significant system over AS during next 7 days.

Summary:

(a) Bay of Bengal:

Most of the models are indicating a low pressure area over southwest Bay of Bengal off Sri Lanka coast as of today having diurnal variation. It will have west-north-westwards movement, reaching Tamil Nadu coast by tomorrow, the 12th December without intensification, less marked thereafter.

(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:

Yesterday's well-marked low-pressure area over southeast Bay of Bengal & adjoining Equatorial Indian Ocean lay over southwest Bay of Bengal off Sri Lanka coast at 0300 UTC of today, the 11th December 2024 with the associated upper air cyclonic circulation extending up to mid-tropospheric levels. The system is very likely to continue to move west-northwestwards towards Sri Lanka-Tamil Nadu coasts during the 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

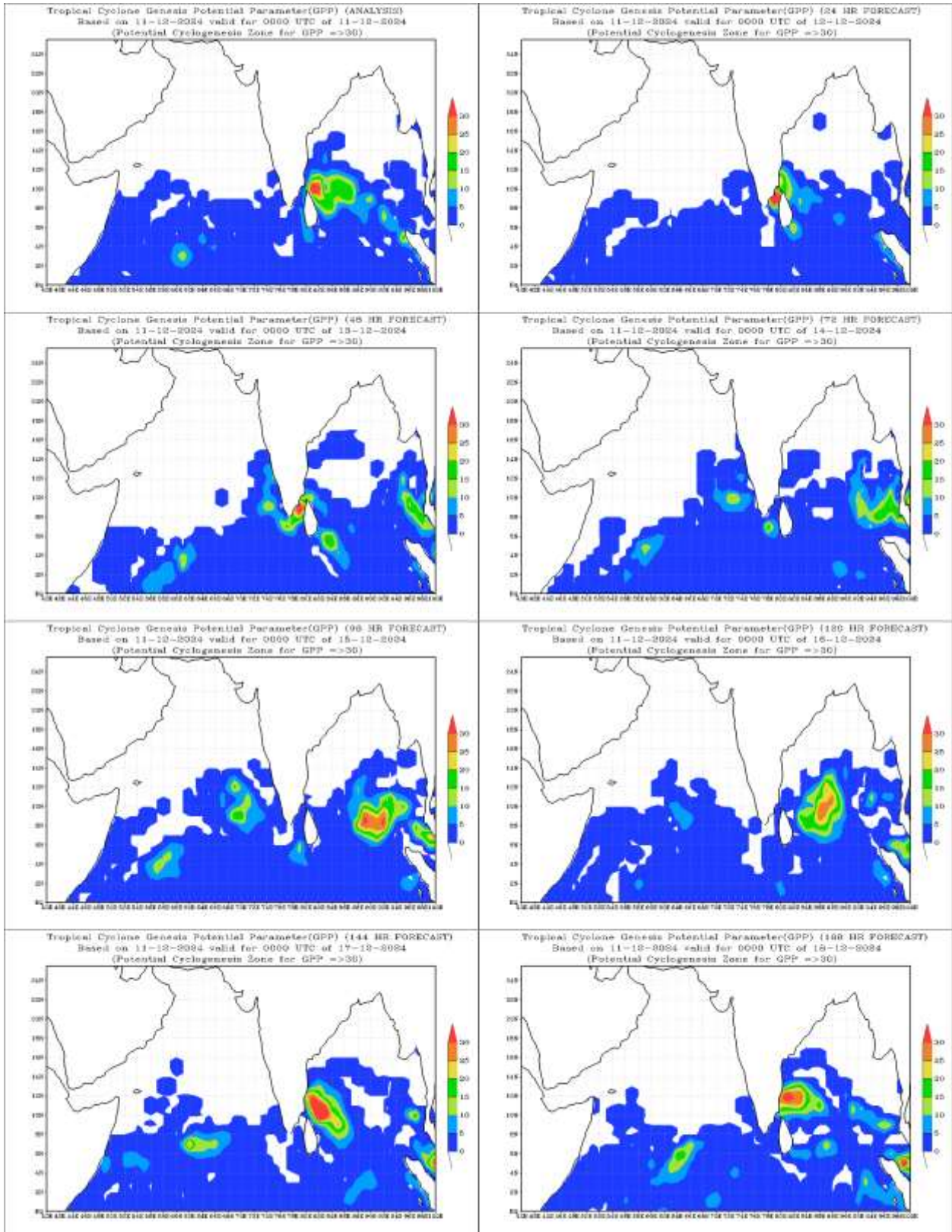
Probability of cyclogenesis (formation of depression and above intensity systems) over the Arabian Sea during next 168 hours:

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

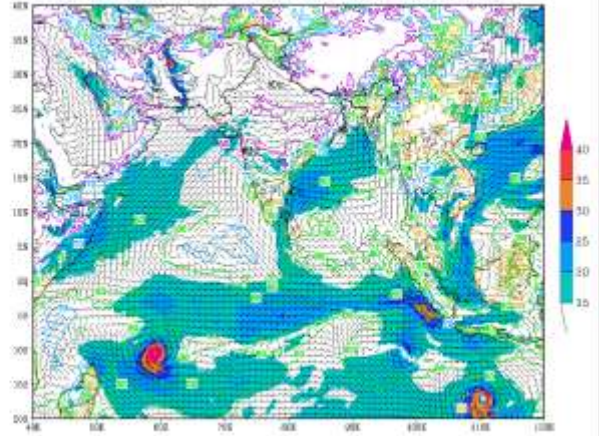


IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (00 HR)
based on 00 UTC of 11-12-2024 valid for 00 UTC of 11-12-2024



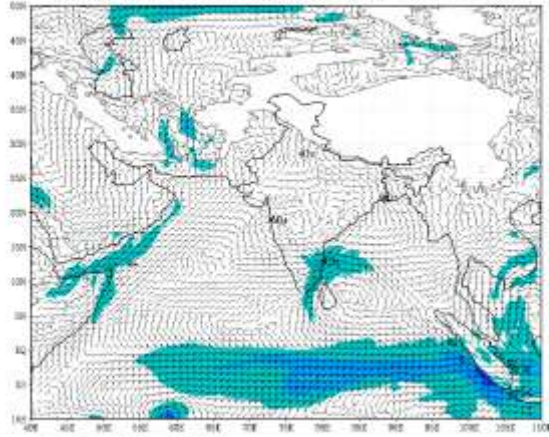
(Background area not depict political boundary)

IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (00 HR)
based on 00 UTC of 11-12-2024 valid for 00 UTC of 11-12-2024



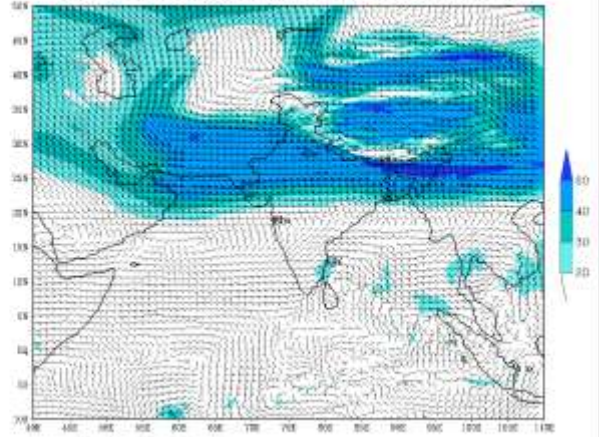
(Background area not depict political boundary)

IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (00 HR)
based on 00 UTC of 11-12-2024 valid for 00 UTC of 11-12-2024



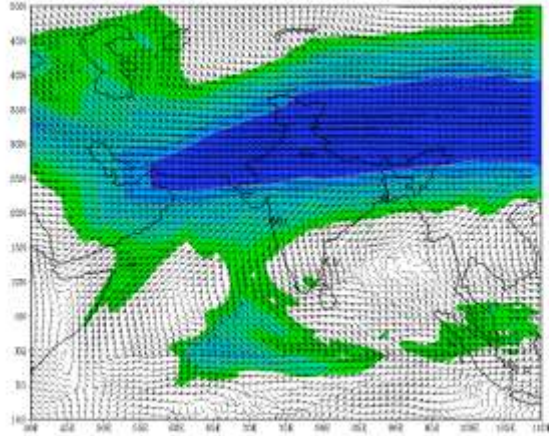
(Background area not depict political boundary)

IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (00 HR)
based on 00 UTC of 11-12-2024 valid for 00 UTC of 11-12-2024



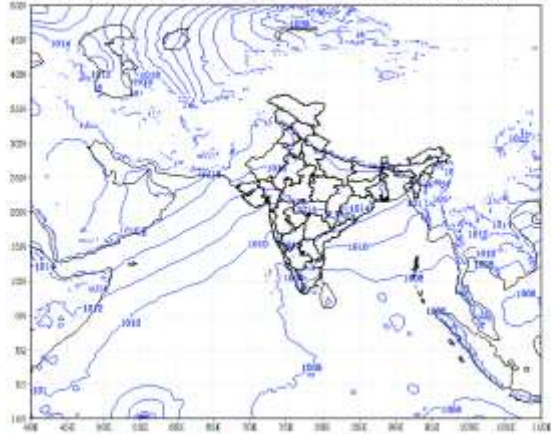
(Background area not depict political boundary)

IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (00 HR)
based on 00 UTC of 11-12-2024 valid for 00 UTC of 11-12-2024



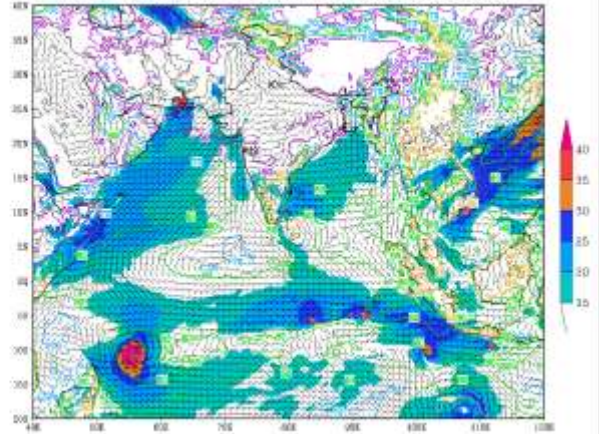
(Background area not depict political boundary)

IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (24 HR)
based on 00 UTC of 11-12-2024 valid for 00 UTC of 12-12-2024



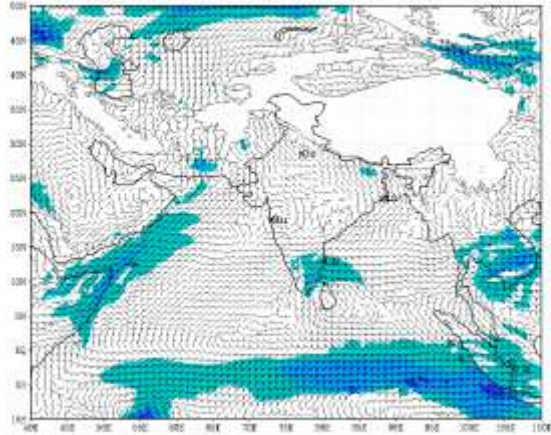
(Background does not depict political boundaries)

IMD:GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (24 HR)
based on 00 UTC of 11-12-2024 valid for 00 UTC of 12-12-2024



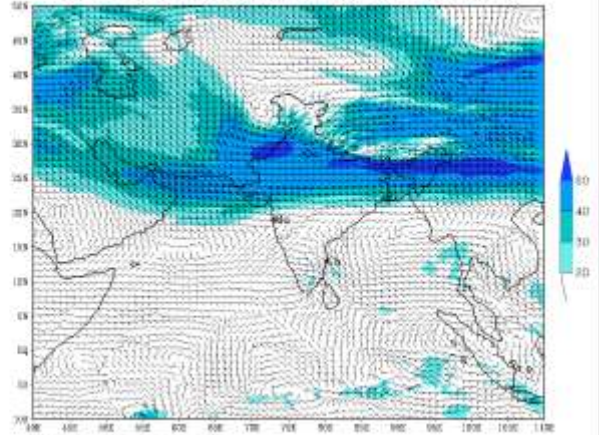
(Background does not depict political boundaries)

IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (24 HR)
based on 00 UTC of 11-12-2024 valid for 00 UTC of 12-12-2024



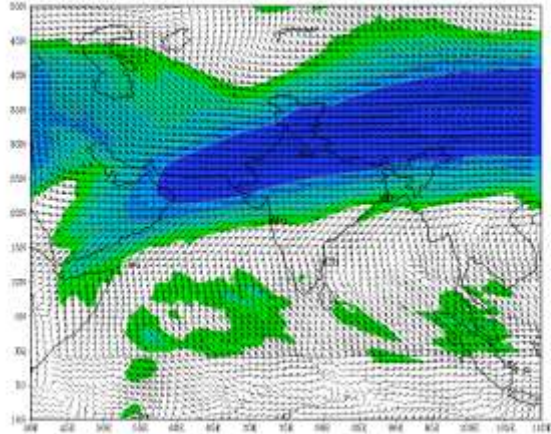
(Background does not depict political boundaries)

IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (24 HR)
based on 00 UTC of 11-12-2024 valid for 00 UTC of 12-12-2024



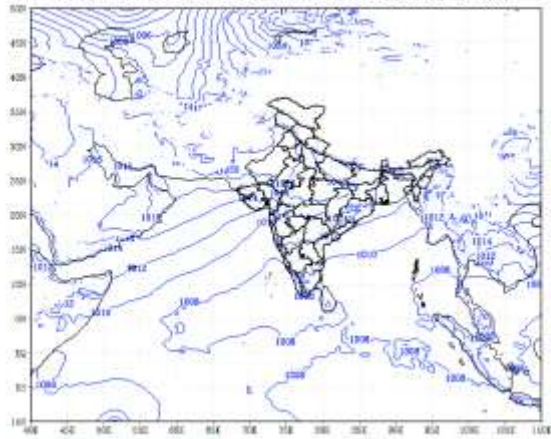
(Background does not depict political boundaries)

IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (24 HR)
based on 00 UTC of 11-12-2024 valid for 00 UTC of 12-12-2024

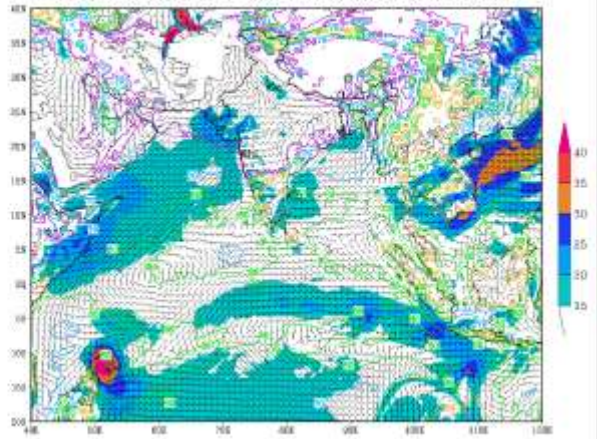


(Background does not depict political boundaries)

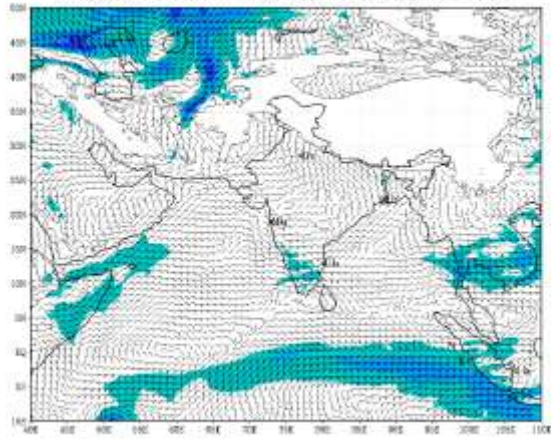
IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (48 HR)
based on 00 UTC of 11-12-2024 valid for 00 UTC of 13-12-2024



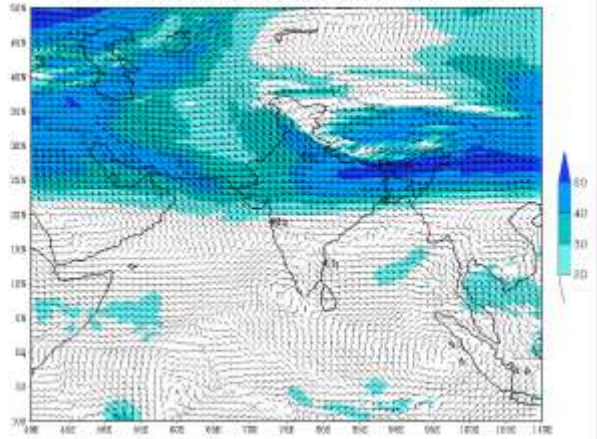
IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (48 HR)
based on 00 UTC of 11-12-2024 valid for 00 UTC of 13-12-2024



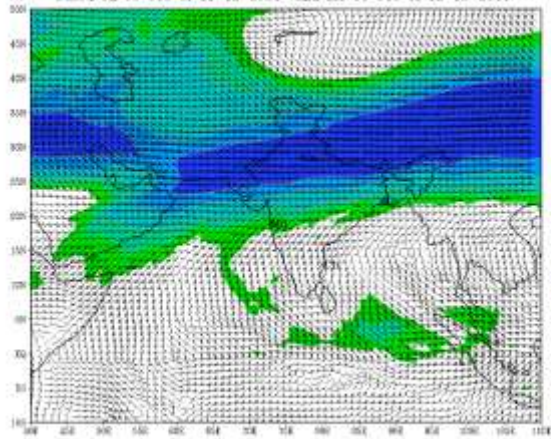
IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (48 HR)
based on 00 UTC of 11-12-2024 valid for 00 UTC of 13-12-2024



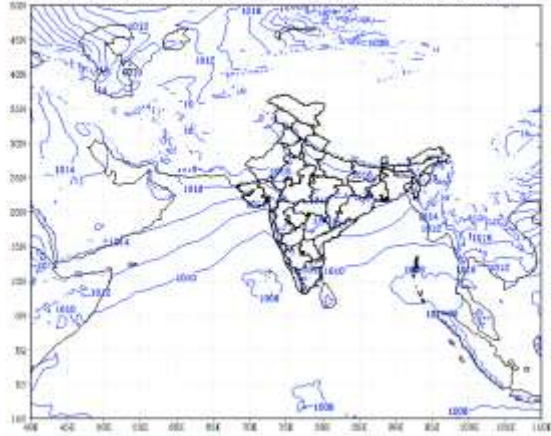
IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (48 HR)
based on 00 UTC of 11-12-2024 valid for 00 UTC of 13-12-2024



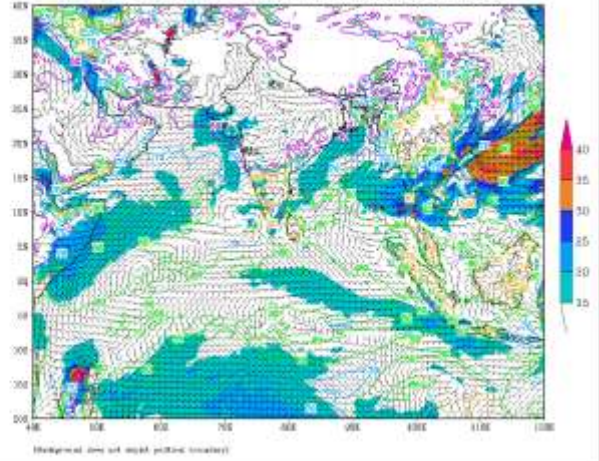
IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (48 HR)
based on 00 UTC of 11-12-2024 valid for 00 UTC of 13-12-2024



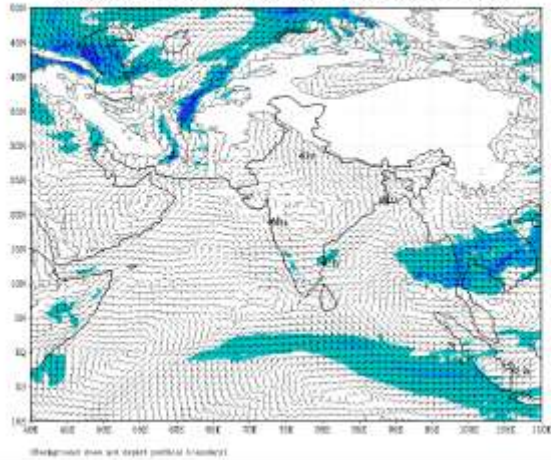
IMD :GFS MODEL(12 Km) MSL Pressure (hPa) FORECAST (72 HR)
based on 00 UTC of 11-12-2024 valid for 00 UTC of 14-12-2024



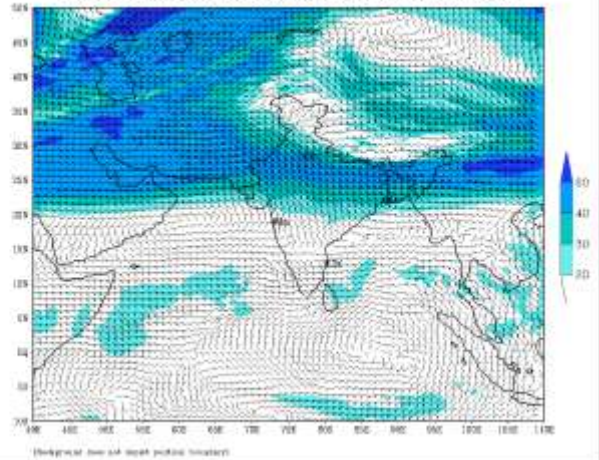
IMD: GFS(12Km) 10m WIND (barb)& GUST (shaded:kt) FORECAST (72 HR)
based on 00 UTC of 11-12-2024 valid for 00 UTC of 14-12-2024



IMD:GFS MODEL(12 Km) 850 hPa WIND (kt) FORECAST (72 HR)
based on 00 UTC of 11-12-2024 valid for 00 UTC of 14-12-2024



IMD:GFS MODEL(12 Km) 500 hPa WIND (kt) FORECAST (72 HR)
based on 00 UTC of 11-12-2024 valid for 00 UTC of 14-12-2024



IMD :GFS MODEL(12 Km) 200 hPa WIND (kt) FORECAST (72 HR)
based on 00 UTC of 11-12-2024 valid for 00 UTC of 14-12-2024

