



**REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL WEATHER OUTLOOK**

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 22.05.2024

TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 168 HOURS ISSUED AT 0800 UTC OF 22.05.2024 BASED ON 0300 UTC OF 22.05.2024.

BAY OF BENGAL:

UNDER THE INFLUENCE OF THE CYCLONIC CIRCULATION OVER SOUTHWEST BAY OF BENGAL, A LOW PRESSURE AREA FORMED OVER SOUTHWEST & ADJOINING WESTCENTRAL BAY OF BENGAL AT 0000 UTC AND PERSISTED OVER THE SAME REGION AT 0300 UTC OF TODAY, THE 22ND MAY, 2024. IT IS VERY LIKELY TO MOVE NORTHEASTWARDS AND CONCENTRATE INTO A DEPRESSION OVER CENTRAL PARTS OF BAY OF BENGAL BY 0000-0300 UTC OF 24TH MAY, 2024. IT IS LIKELY TO MOVE NORTHEASTWARDS, INTENSIFY FURTHER AND REACH NORTHEAST & ADJOINING NORTHWEST BAY OF BENGAL BY 1200 UTC OF 25TH MAY.

AS PER INSAT-3D IMAGERY, A LOW LEVEL CIRCULATION LAY OVER SOUTHWEST & ADJOINING WESTCENTRAL BAY OF BENGAL OFF NORTH TAMIL NADU – SOUTH ANDHRA PRADESH COASTS. ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTH & CENTRAL BAY OF BENGAL & NORTH COASTAL TAMIL NADU (MINIMUM CLOUD TOP TEMPERATURE -930C). THE WATER VAPOUR IMAGERY IS INDICATING HIGH HUMIDITY IN MID TROPOSPHERIC LEVELS.

SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTH & CENTRAL BAY OF BENGAL ANDAMAN SEA (MINIMUM CLOUD TOP TEMPERATURE -930C) TENASSERIM COAST AND GULF OF MARTABAN (MINIMUM CLOUD TOP TEMPERATURE -800C).

***PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION) DURING NEXT 168 HRS:**

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
LOW	MOD	HIGH	-	-	-	-

***NOTE: EVERY 24HR FORECAST IS VALID UPTO 0300 UTC (0830 IST) OF NEXT DAY**

AS PER LATEST OBSERVATIONS, ESTIMATED CENTRAL PRESSURE IS 1004 HPA. AT 0300 UTC A BUOY NEAR 13.440N/ 84.10E INDICATES MEAN SEA LEVEL PRESSURE (MSLP) OF 1004.3 HPA AND MAXIMUM SUSTAINED WIND SPEED (MSW) OF 13.1KT/300.

WIND WARNING:

SQUALLY WEATHER WITH WIND SPEED REACHING 35-45 KMPH GUSTING TO 55 KMPH IS LIKELY OVER SOUTH BAY OF BENGAL ON 22ND MAY. IT WOULD GRADUALLY INCREASE BECOMING SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH OVER CENTRAL AND ADJOINING SOUTH BAY OF BENGAL FROM 23RD/0000 UTC. IT WOULD EXTEND TO ADJOINING

Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION):NIL: 0%, LOW: 1-33%, , MODERATE: 34-66% AND HIGH: 67-100%
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AREAS OF NORTH BAY OF BENGAL WITH INCREASED WIND SPEED OF 50-60 KMPH GUSTING TO 70 KMPH FROM 24TH/0000 UTC AND OVER NORTHEAST AND ADJOINING NORTHWEST & EASTCENTRAL BAY OF BENGAL FROM 25TH/0000 UTC TILL 26TH/1200 UTC.

SEA CONDITION:

SEA CONDITION IS LIKELY TO BE MODERATE TO ROUGH OVER SOUTHWEST BAY OF BENGAL ON 22ND MAY, ROUGH TO VERY ROUGH OVER CENTRAL & ADJOINING SOUTH BAY OF BENGAL FROM 23RD MAY AND OVER NORTH BAY OF BENGAL FROM 24TH MAY ONWARDS TILL 26TH MAY.

FISHERMEN WARNING:

FISHERMEN ARE ADVISED NOT TO VENTURE INTO CENTRAL & ADJOINING SOUTH BAY OF BENGAL FROM 23RD MAY AND INTO NORTH BAY OF BENGAL FROM 24TH MAY ONWARDS TILL 26TH MAY. FISHERMEN OUT AT SEA ARE ADVISED TO RETURN TO THE COAST BEFORE 23RD MAY.

ARABIAN SEA:

ANOTHER LOW LEVEL CIRCULATION LAY OVER SOUTHEAST ARABIAN SEA OFF KERALA COASTS & NEIGHBOURHOOD AT 0300 UTC OF 22ND MAY. ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTHEAST ARABIAN SEA & LAKSHADWEEP ISLANDS AREA (MINIMUM CLOUD TOP TEMPERATURE -930C).

SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTH ARABIAN SEA, LAKSHADWEEP ISLANDS AREA, MALDIVES AND COMORIN AREA (MINIMUM CLOUD TOP TEMPERATURE -930C). SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED ISOLATED WEAK TO MODERATE CONVECTION LAY OVER EASTCENTRAL ARABIAN SEA.

***PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION) DURING NEXT 168 HRS:**

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

***NOTE: EVERY 24HR FORECAST IS VALID UPTO 0300 UTC (0830 IST) OF NEXT DAY**

REMARKS:

THE MADDEN JULIAN INDEX (MJO) CURRENTLY LIES IN PHASE 4 WITH AMPLITUDE MORE THAN 1. IT WILL CONTINUE IN SAME PHASE DURING NEXT 7 DAYS. THUS, MJO PHASE & AMPLITUDE ARE HIGHLY CONDUCIVE FOR CYCLOGENESIS AND FURTHER INTENSIFICATION OVER THE BAY OF BENGAL (BOB) DURING NEXT 5 DAYS.

STRONG EASTERLY WINDS (5-7 MPS) ARE LIKELY TO PREVAIL OVER CENTRAL BOB DURING NEXT 2 DAYS & NORTH BOB DURING SUBSEQUENT 3-5 DAYS IN THE LOWER TROPOSPHERIC LEVELS. STRONG WESTERLY WINDS (5-7 MPS) ARE LIKELY TO PREVAIL OVER THE SOUTH BOB AND ANDAMAN SEA DURING NEXT 5 DAYS AND OVER CENTRAL BOB DURING 25TH TO 27TH MAY. IN ADDITION, KELVIN WAVES, EQUATORIAL ROSSBY WAVES ARE PREVAILING OVER SOUTH BOB & COUPLED WITH MJO. THESE WAVES WILL PROVIDE A CONDUCIVE ENVIRONMENT FOR CYCLOGENESIS AND INTENSIFICATION OF SYSTEM OVER BOB.

THE TROPICAL CYCLONE HEAT POTENTIAL (TCHP) IS MORE THAN 100 KJ/CM2 OVER MAJOR PARTS OF BOB. IT IS INDICATING SLIGHTLY DECREASING TENDENCY TOWARDS NORTH BOB AND ALONG THE COASTS. SEA SURFACE TEMPERATURE (SST) IS AROUND 30-32°C OVER ENTIRE BOB. THE SEA CONDITIONS OVER BOB ARE ALSO CONDUCIVE FOR

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CYCLOGENESIS AND INTENSIFICATION.

CONSIDERING THE ENVIRONMENTAL CONDITIONS, LOW LEVEL VORTICITY IS ABOUT $50-60 \times 10^{-5} \text{S}^{-1}$ OVER SOUTHWEST & ADJOINING WESTCENTRAL BAY OF BENGAL TO THE SOUTH OF SYSTEM CENTRE WITH VERTICAL EXTENSION UPTO 500 HPA LEVELS. TWO VORTICITY CENTERS ONE OVER SOUTHEAST & OTHER OVER SOUTHWEST BOB ARE SEEN AT 850 HPA LEVEL. LOW LEVEL CONVERGENCE HAS INCREASED DURING PAST 24 HOURS AND IS ABOUT $10-15 \times 10^{-5} \text{S}^{-1}$ OVER SOUTH BOB AND IS EAST-WEST ORIENTED. UPPER LEVEL DIVERGENCE IS $10-20 \times 10^{-5} \text{S}^{-1}$ OVER SOUTH BOB & SOUTH ANDAMAN SEA. IT IS ALSO EAST-WEST ORIENTED. VERTICAL WIND SHEAR (VWS) IS LOW TO MODERATE OVER MAJOR PARTS OF BOB. MID LEVEL WIND SHEAR IS ANTICYCLONIC OVER SOUTH BOB. VWS WILL THUS SUPPORT FURTHER INTENSIFICATION OF SYSTEM. THE UPPER TROPOSPHERIC RIDGE AT 200 HPA IS LOCATED NEAR 12.0°N IN ASSOCIATION WITH AN ANTICYCLONE OVER EASTCENTRAL BOB. RIDGE IS LOCATED TO THE SOUTH OF SYSTEM CENTRE, INDICATING NORTHEASTWARDS MOVEMENT OF THE SYSTEM.

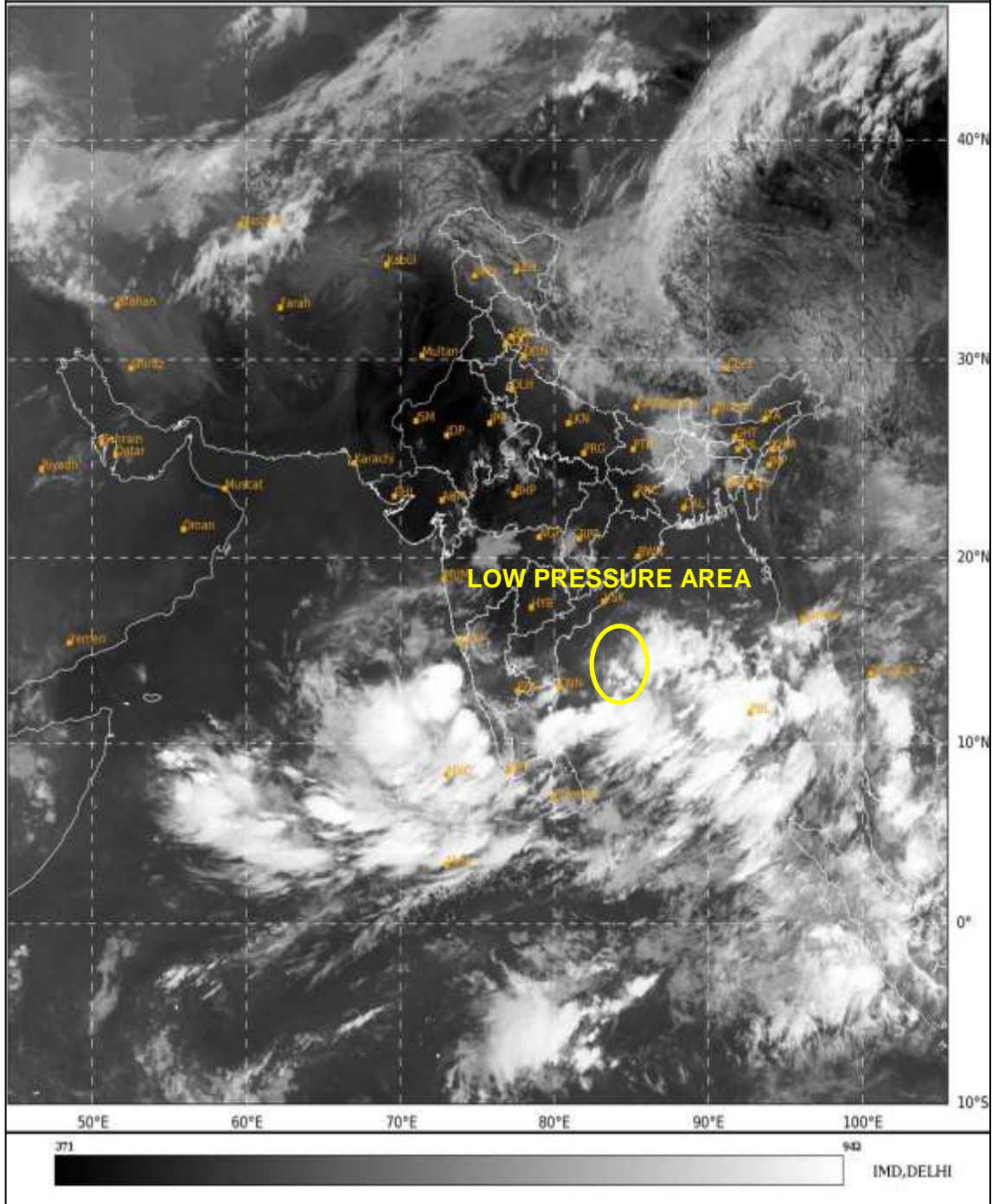
THERE IS LARGE VARIATION AMONG VARIOUS MODELS WITH RESPECT TO MOVEMENT OF THE SYSTEM. THE MODELS INCLUDING IMD GFS, NCUM AND IMD MME ARE INDICATING MOVEMENT TOWARDS BANGLADESH-MYANMAR COASTS. HOWEVER, NCEP GFS, ECMWF AND ECAI ARE INDICATING MOVEMENT TOWARDS WEST BENGAL COAST. THERE IS CONSENSUS AMONG VARIOUS MODELS THAT THE SYSTEM WOULD REACH CENTRAL PARTS OF NORTH BAY OF BENGAL AROUND 1200 UTC OF 25TH MAY. THERE IS ALSO LARGE VARIATION AMONG VARIOUS MODELS W.R.T. PEAK INTENSIFICATION. MOST OF THE MODELS ARE INDICATING INTENSIFICATION UPTO CYCLONIC STORM STAGE WITH NCUM & NCEP GFS INDICATING HIGHER INTENSIFICATION.

CONSIDERING ALL THE ABOVE, THE LOW PRESSURE AREA OVER SOUTHWEST & ADJOINING WESTCENTRAL BAY OF BENGAL IS VERY LIKELY TO MOVE NORTHEASTWARDS AND CONCENTRATE INTO A DEPRESSION OVER CENTRAL PARTS OF BAY OF BENGAL BY 0000-0300 UTC OF 24TH MAY, 2024. IT IS LIKELY TO MOVE NORTHEASTWARDS, INTENSIFY FURTHER AND REACH NORTHEAST & ADJOINING NORTHWEST BAY OF BENGAL BY 1200 UTC OF 25TH MAY. CURRENT INFERENCE IS BASED ON SYNOPTIC ANALYSIS, ENVIRONMENTAL FEATURES AND GUIDANCE FROM VARIOUS NUMERICAL MODELS.

M. SHARMA
SCIENTIST D
RSMC, NEW DELHI

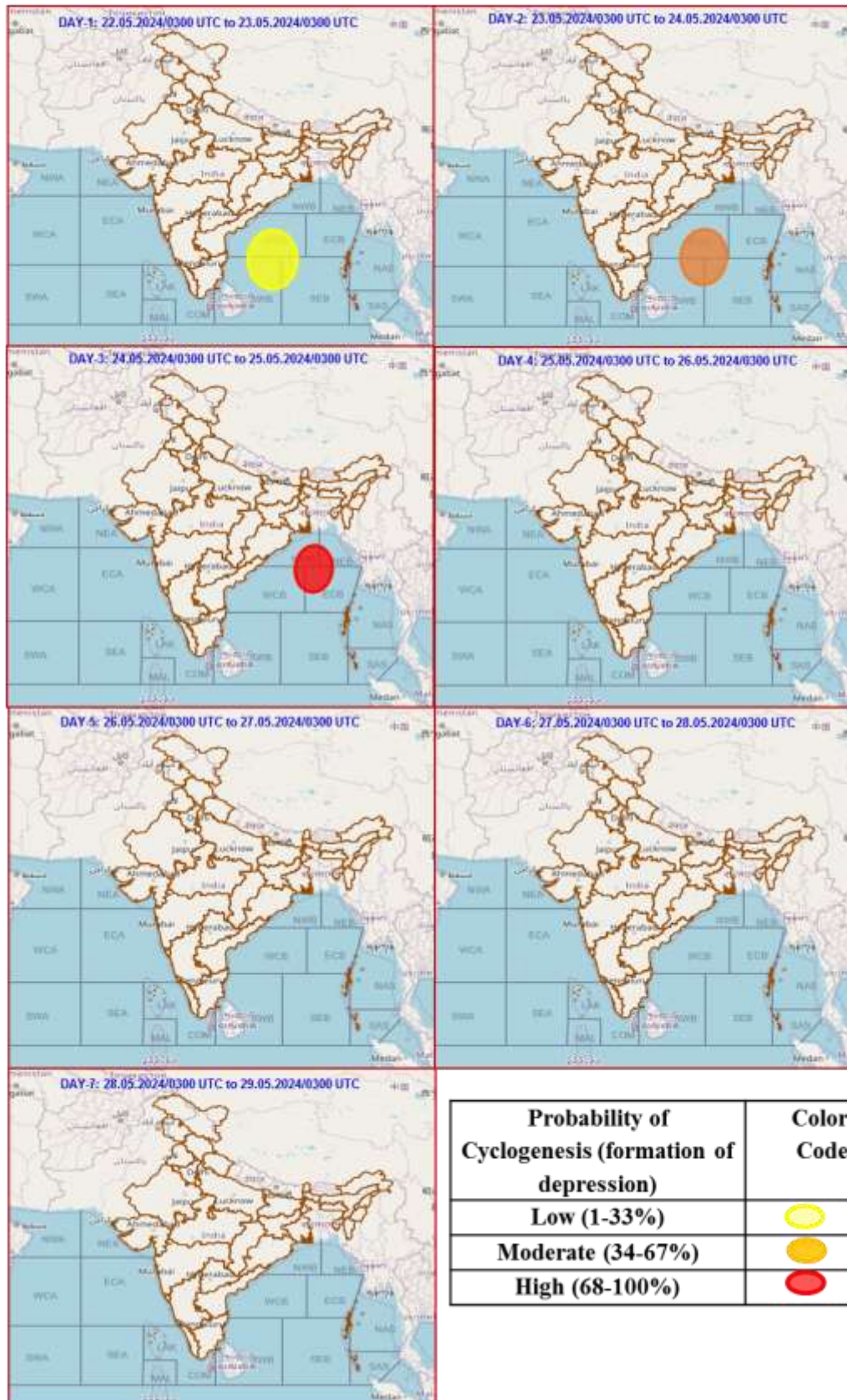
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22-05-2024/(0300 to 0327) GMT
22-05-2024/(0830 to 0857) IST



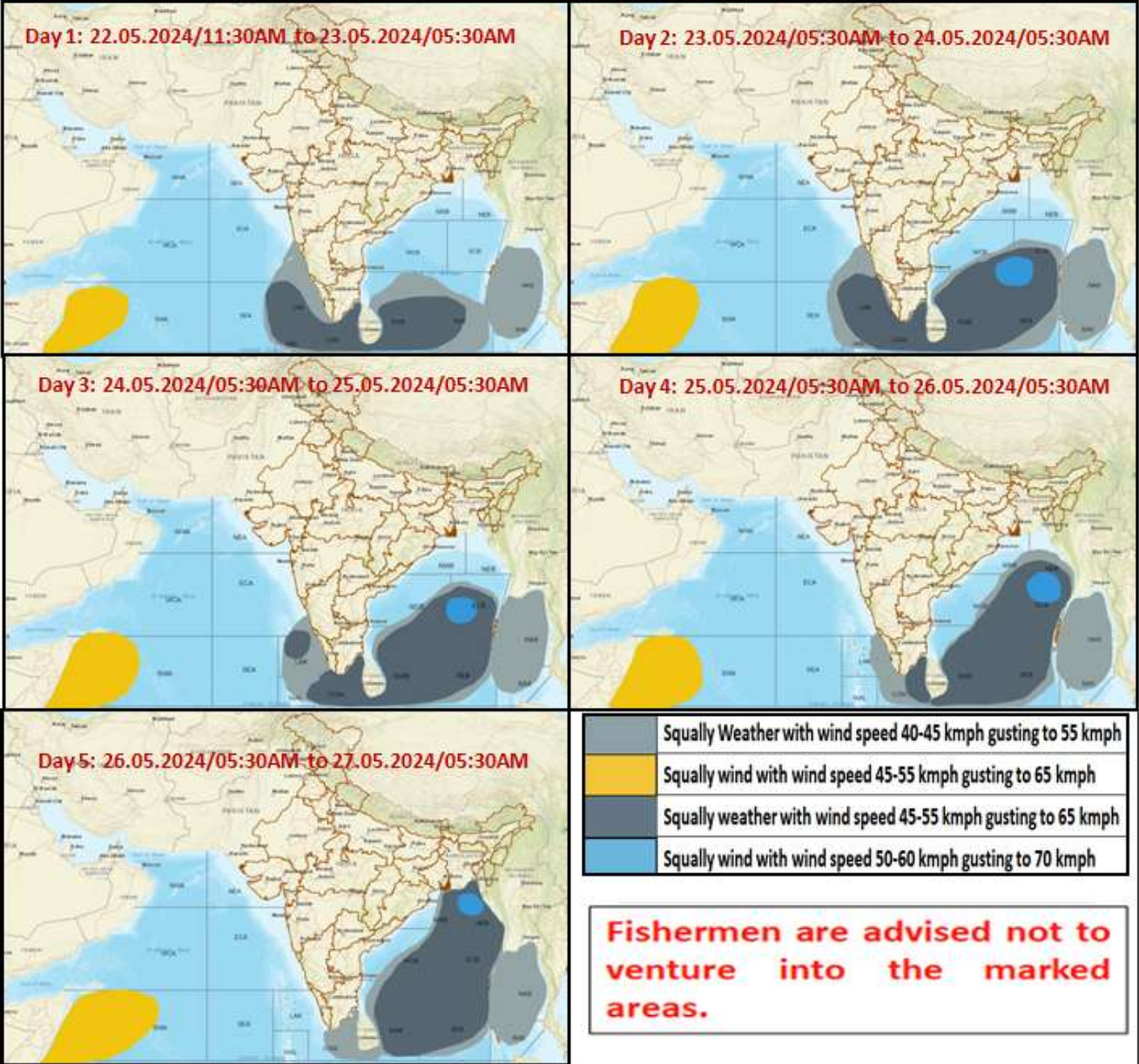
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Graphical Tropical Weather Outlook indicating probable area of cyclogenesis (formation of depression)

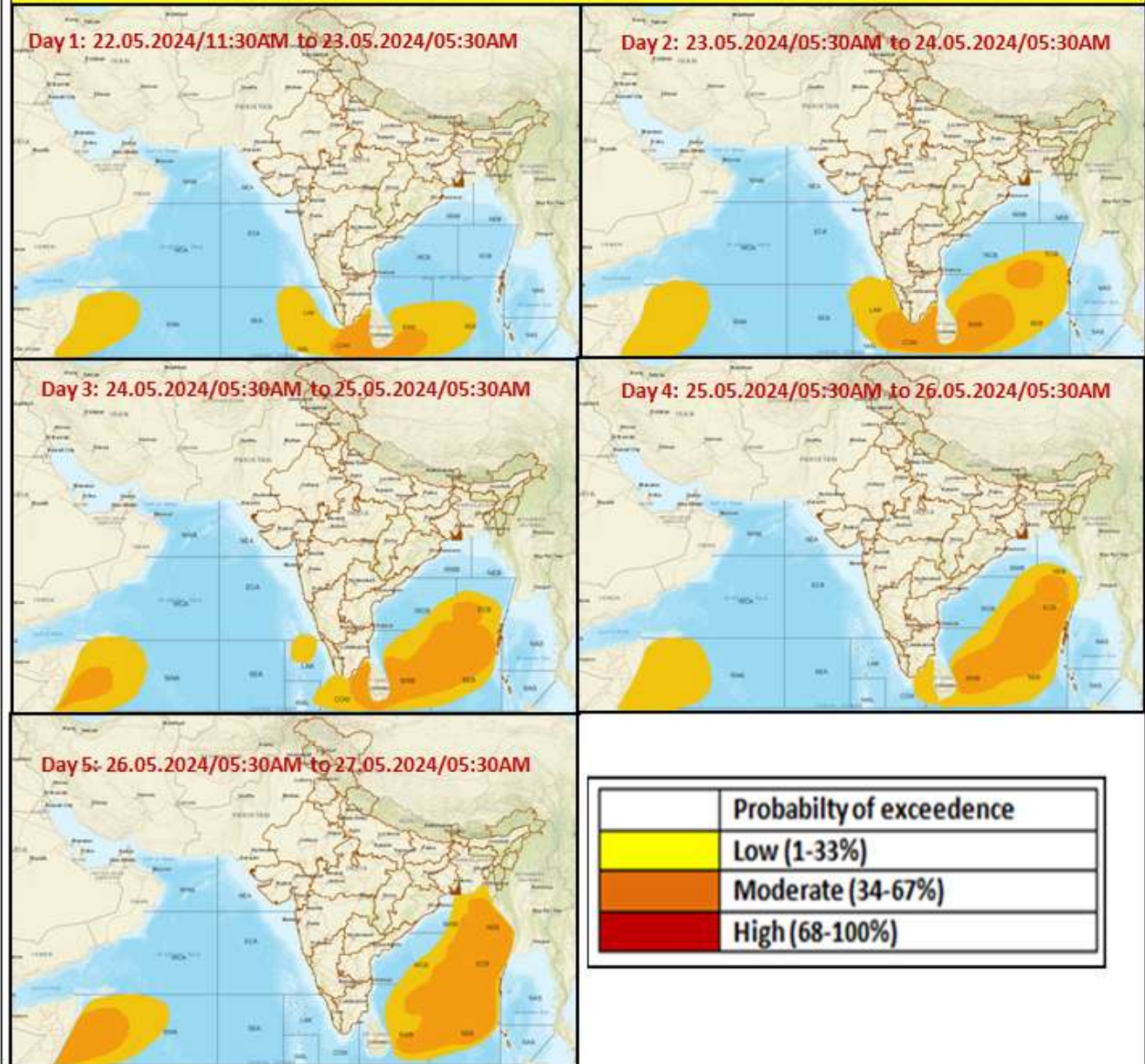


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Fishermen Warning Graphics



Probability of exceedance of maximum sustained winds ≥ 45 kmph



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