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

DEMS-RSMC SPECIAL TROPICAL CYCLONES NEW DELHI DATED 16.12.2022

SPECIAL TROPICAL WEAHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0700 UTC OF 16.12.2022 BASED ON 0300 UTC OF 16.12.2022.

ARABIAN SEA:

(A) DEEP DEPRESSION OVER EASTCENTRAL & ADJOINING WESTCENTRAL ARABIAN SEA

DEEP DEPRESSION OVER EASTCENTRAL & ADJOINING WESTCENTRAL ARABIAN SEA MOVED WEST-SOUTHWESTWARDS WITH A SPEED OF 13 KMPH DURING PAST 06 HOURS AND LAY CENTERED AT 0300 UTC OF TODAY, THE 16TH DECEMBER 2022 OVER THE SAME REGION NEAR LATITUDE 13.9N AND LONGITUDE 64.7E ABOUT 930 KM WEST-NORTHWEST OF AMINIDIVI (43311), ABOUT 1000 KM WEST-SOUTHWEST OF PANJIM (43192) AND 1190 KM EAST-SOUTHEAST OF SALALAH (41316).

IT IS VERY LIKELY TO MOVE WEST-SOUTHWESTWARDS AND WEAKEN GRADUALLY INTO A DEPRESSION AROUND TODAY EVENING (1200 UTC) AND FURTHER INTO A WELL MARKED LOW PRESSURE AREA BY 17TH DECEMBER EVENING (1200 UTC).

FORECAST TRACK AND INTENSITY:

DATE/TIME(UTC)	FORECAST LEAD PERIOD	POSITION (LAT. ^{0}N/ LONG. ^{0}E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
15.12.22/0300	00	13.9/64.7	50-60 gusting to 70	Deep Depression
16.12.22/1200	09	13.7/63.7	45-55 gusting to 65	Depression
17.12.22/0000	21	13.5/62.3	40-50 gusting to 60	Depression
17.12.22/1200	33	13.2/60.6	25-35 gusting to 45	Well marked Low

AS PER INSAT 3D IMAGERY, INTENSITY OF THE SYSTEM IS T2.0. THE ASSOCIATED CLOUD MASS IS SHEARED TO THE NORTHEAST OF SYSTEM CENTRE, UNDER THE INFLUENCE OF MID-LATITUDE WESTERLY WINDS. SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER EASTCENTRAL ARABIAN SEA & ADJOINING WESTCENTRAL ARABIAN SEA BETWEEN LATITUDE 13.2°N & 17.5°N AND LONG 65.0°E & 68.5°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 84°CELCIUS.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 30 KNOTS GUSTING TO 40KTS. THE ESTIMATED CENTRAL PRESSURE IS 1000 HPA. SEA CONDITION IS LIKELY TO BE ROUGH TO VERY ROUGH OVER WESTCENTRAL AND ADJOINING AREAS OF EASTCENTRAL & SOUTHEAST ARABIAN SEA.

A SHIP NEAR 10.7N/60.4E REPORTED MAXIMUM SUSTAINED WIND SPEED (MSW) OF 12KT/350° AND MEAN SEA LEVEL PRESSURE (MSLP) OF 1011 HPA. ANOTHER SHIP NEAR 11.3N/70.7E REPORTED MSW OF 08KT/150° AND MSLP OF 1012 HPA. A BOUY NEAR 14.9N/69.0E REPORTED MSW OF 10KT/120° AND MSLP OF 1010 HPA.

BAY OF BENGAL:

(A) LOW PRESSURE AREA OVER SOUTHEAST BAY OF BENGAL AND ADJOINING AREAS OF EAST EQUATORIAL INDIAN OCEAN

THE **LOW PRESSURE AREA** OVER SOUTHEAST BAY OF BENGAL & ADJOINING AREAS OF EAST EQUATORIAL INDIAN OCEAN PERSISTS OVER THE SAME REGION AT 0000 UTC OF 16TH DECEMBER. IT IS LIKELY TO MOVE GRADUALLY WESTWARDS AND MAINTAIN ITS INTENSITY OVER SOUTH BAY OF BENGAL TILL 0000 UTC OF 17TH DECEMBER 2022.

SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTHEAST BAY OF BENGAL AND ADJOINING EQUTORIAL INDIAN OCEAN BETWEEN LATITUDE 4.0°N & 7.0°N AND LONG 88.0°E & 93.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 87°C.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 10-15 KNOTS GUSTING TO 25 KNOTS AROUND SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS 1007 HPA. SEA CONDITION IS LIKELY TO BE ROUGH OVER SOUTHEAST BAY OF BENGAL AND ADJOINING AREAS OF EQUATORIAL INDIAN OCEAN.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION) DURING NEXT 120 HRS:

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

REMARKS:

ARABIAN SEA:

SEA SURFACE TEMPERATURE IS ABOUT 26-28°C OVER WESTCENTRAL AND ADJOINING EASTCENTRAL & SOUTH ARABIAN SEA BECOMING 26°C TO THE WEST OF 65°E. LOW LEVEL RELATIVE VORTICITY IS AROUND $100X10^{-6}$ S^{-1} TO THE SOUTH OF THE SYSTEM CENTRE. LOW LEVEL CONVERGENCE IS ABOUT $10X10^{-5}$ S^{-1} TO THE SOUTH OF SYSTEM CENTRE. HOWEVER, NEGATIVE CONVERGENCE ZONE IS SEEN OVER WESTCENTRAL ARABIAN SEA ALONG FORECAST TRACK. SIMILARLY, UPPER LEVEL DIVERGENCE IS ABOUT $20X10^{-5}$ S^{-1} TO THE NORTHEAST OF THE SYSTEM CENTRE AND A ZONE OF NEGATIVE DIVERGENCE IS SEEN IN THE FORWARD SECTOR, ALONG THE FORECAST TRACK. MODERATE TO HIGH VERTICAL WIND SHEAR OF ABOUT 15-25 KNOTS IS PREVAILING AROUND THE SYSTEM CENTRE. TOTAL PRECIPITABLE WATER IMAGERY IS INDICATING WEAKENING IN WARM MOIST AIR AROUND THE SYSTEM AREA. DRY COLD AIR INTRUSION IS REACHING THE OUTER CORE UPTO SOUTHEAST SECTOR. TEMPERATURE ANOMALY CURVES ARE INDICATING, EXTENSION OF WARM ANOMALY IN LOWER TROPOSPHERIC LEVELS. MIDDLE AND UPPER TROPOSPHERIC LEVELS ARE INDICATING COLD CORE. THUS, INDICATING SIGNIFICANT REDUCTION IN LATENT HEAT RELEASE IN MIDDLE & UPPER TROPOSPHERIC LEVELS. THE SYSTEM IS CURRENTLY MOVING WEST-SOUTHWESTWARDS UNDER THE INFLUENCE OF EAST-NORTHEASTERLY WINDS PREVAILING IN THE LOWER TROPOSPHERIC LEVELS (800-950 HPA). MULTI-SATELLITE WINDS ARE INDICATING STRONGER WINDS IN THE NORTHEAST SECTOR AND THUS, THE SHEARING OF CONVECTIVE CLOUD MASS TO THE NORTHEAST.

THESE ENVIRONMENTAL FEATURES (COLDER SEA, DRY COLD AIR INTRUSION, HIGH TO MODERATE VERTICAL WIND SHEAR, DECREASE IN MOISTURE IN MIDDLE LEVELS) INDICATE THAT THE SYSTEM IS GRADUALLY ENTERING INTO UNFAVOURABLE

ENVIRONMENT LEADING TO WEAKENING OF THE SYSTEM INTO A DEPRESSION BY TODAY EVENING (1200 UTC)

VARIOUS MODELS INDICATE THAT THE SYSTEM IS LIKELY TO MOVE WEST-SOUTHWESTWARDS AND WEAKEN INTO A DEPRESSION BY TODAY EVENING (1200 UTC) AND FURTHER INTO A WELL MARKED LOW PRESSURE AREA BY 17TH DECEMBER EVENING (1200 UTC).

IN VIEW OF ABOVE, THE DEEP DEPRESSION IS VERY LIKELY TO MOVE WEST-SOUTHWESTWARDS AND WEAKEN GRADUALLY INTO A DEPRESSION AROUND TODAY EVENING (1200 UTC) AND FURTHER INTO A WELL MARKED LOW PRESSURE AREA BY 17TH DECEMBER EVENING (1200 UTC).

BAY OF BENGAL:

SEA SURFACE TEMPERATURE IS ABOUT 28-29°C OVER SOUTH BOB AND ADJOINING EQUATORIAL INDIAN OCEAN. LOW LEVEL RELATIVE VORTICITY IS AROUND 60X10^{-6} S^{-1} OVER SOUTH ANDAMAN SEA AND ADJOINING EQUATORIAL INDIAN OCEAN. LOW LEVEL CONVERGENCE IS ABOUT 10X10^{-5} S^{-1} OVER SOUTHEAST BOB AND ADJOINING AREAS. UPPER LEVEL DIVERGENCE IS ABOUT 10X10^{-5} S^{-1} OVER SOUTHEAST BOB AND ADJOINING EQUTORIAL INDIAN OCEAN. MODERATE VERTICAL WIND SHEAR OF ABOUT 15-20 KNOTS IS PREVAILING AROUND SYSTEM AREA OVER SOUTHEAST BOB & ADJOINING AREAS. UPPER TROPOSPHERIC RIDGE IS SEEN NEAR 12.5N. THE EASTERLY WINDS IN THE LOWER TROPOSPHERIC LEVELS ARE STEERING THE SYSTEM NEARLY WESTWARDS.

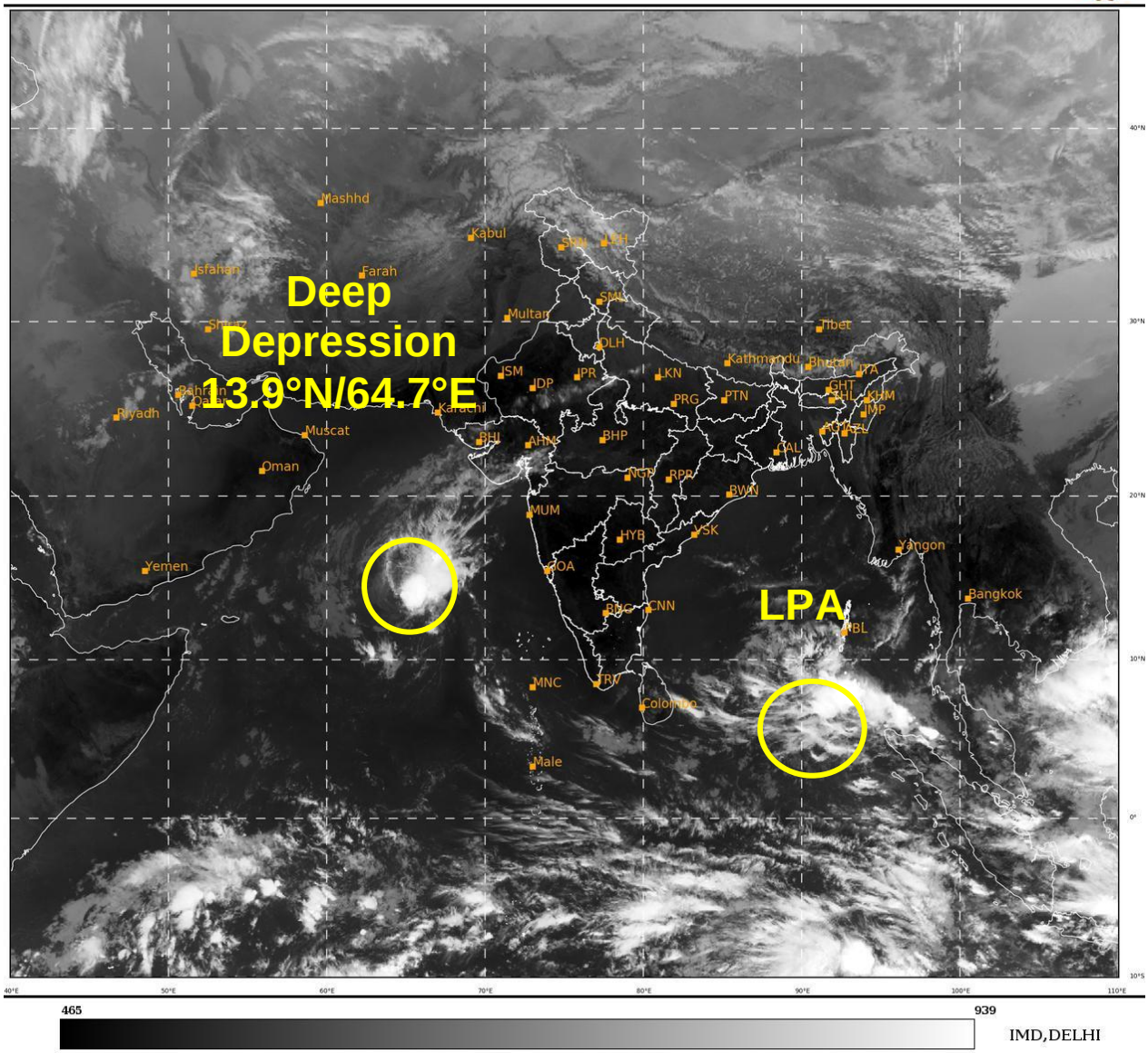
MOST OF THE MODELS ARE INDICATING EXISTING LOW PRESSURE AREA OVER SOUTHEAST BOB AND ADJOINING EAST INDIAN OCEAN TO MOVE WESTWARDS TILL 17TH MORNING AND WEAKEN THEREAFTER.

IN VIEW OF ABOVE, THE LOW PRESSURE AREA OVER SOUTHEAST BAY OF BENGAL & ADJOINING AREAS OF EAST EQUATORIAL INDIAN OCEAN IS LIKELY TO MOVE GRADUALLY WESTWARDS AND MAINTAIN ITS INTENSITY OVER SOUTH BAY OF BENGAL TILL 0000UTC OF 17TH DECEMBER 2022.

(M. SHARMA)
SCIENTIST-D
RSMC NEW DELHI

SAT : INSAT-3D IMG
IMG_TIR1 10.8 um
L1C Mercator

16-12-2022/(0530 to 0557) GMT
16-12-2022/(1100 to 1127) IST



LPA: Low Pressure Area

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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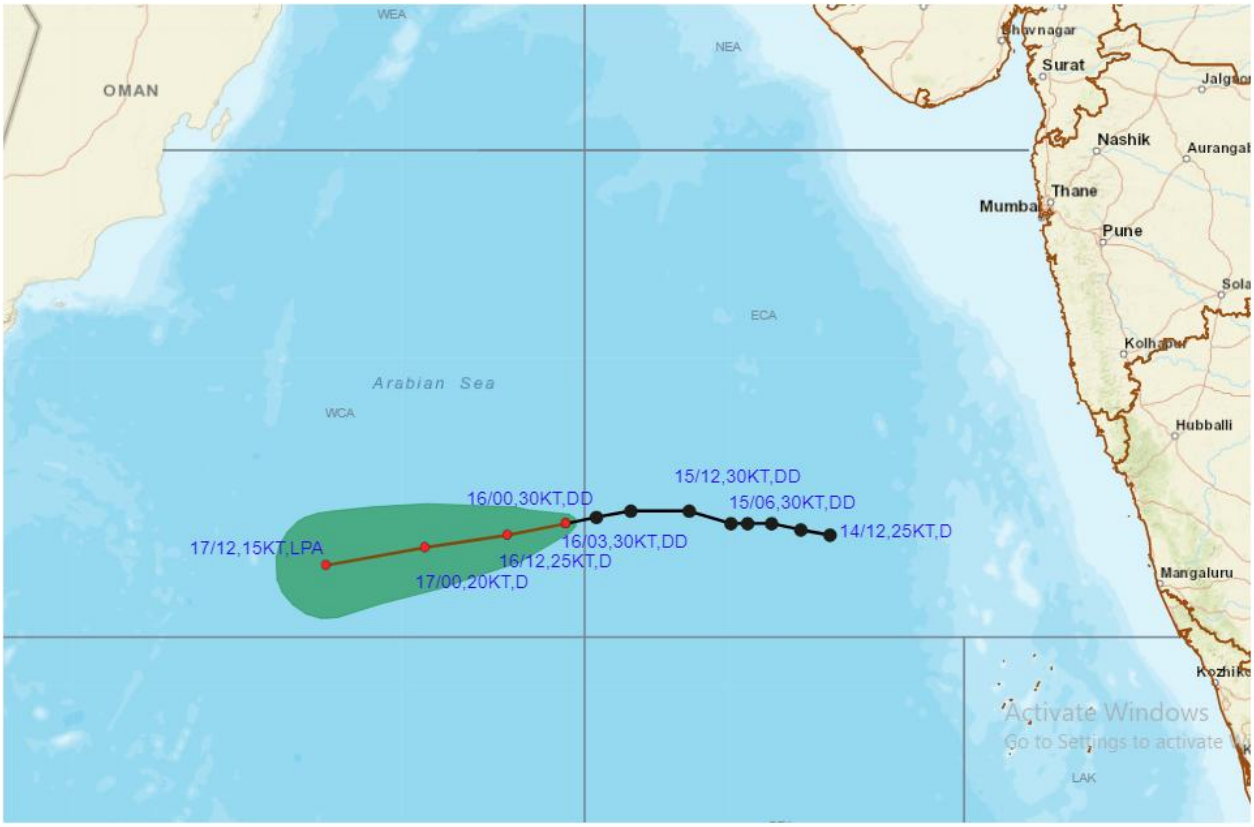
OBSERVED AND FORECAST TRACK OF DEEP DEPRESSION OVER EASTCENTRAL & ADJOINING WESTCENTRAL ARABIAN SEA BASED ON 0300 UTC OF 16TH DECEMBER, 2022



DATE/TIME IN UTC
IST=UTC + 0530
L: LOW PRESSURE AREA
WML: WELL MARKED LOW PRESSURE AREA
D: DEPRESSION (17-27 KT)
DD: DEEP DEPRESSION (28-33 KT)
CS: CYCLONIC STORM (34-47 KT)
SCS: SEVERE CYCLONIC STORM (48-63KT)
VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)
SuCS: SUPER CYCLONIC STORM (≥20 KT)

LESS THAN 34 KT
34-47 KT
≥ 48 KT
OBSERVED TRACK
FORECAST TRACK
CONE OF UNCERTAINTY

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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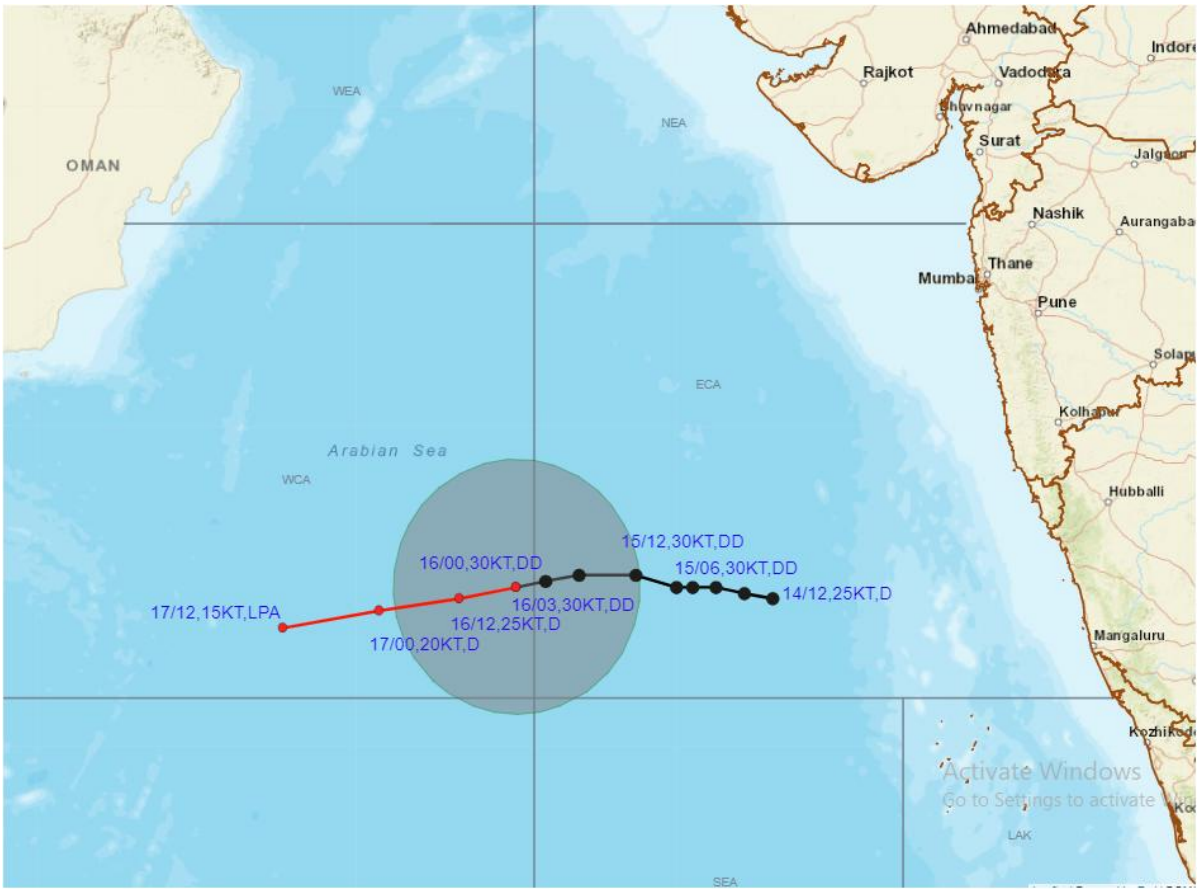
OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEEP DEPRESSION OVER EASTCENTRAL & ADJOINING WESTCENTRAL ARABIAN SEA BASED ON 0300 UTC OF 16TH DECEMBER, 2022



DATE/TIME IN UTC
IST=UTC +0530
L: LOW PRESSURE AREA
WML: WELL MARKED LOW PRESSURE AREA
D: DEPRESSION (17-27 KT)
DD: DEEP DEPRESSION (28-33 KT)
CS: CYCLONIC STORM (34-47 KT)
SCS: SEVERE CYCLONIC STORM (48-63KT)
VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)
SuCS: SUPER CYCLONIC STORM (≥ 120 KT)

LESS THAN 34 KT
34-47 KT
≥ 48 KT
OBSERVED TRACK
FORECAST TRACK
CONE OF UNCERTAINTY
AREA OF MAXIMUM SUSTAINED WIND SPEED:
28-33 KT (52-61 KMPH)
34-49 KT (62-91 KMPH)
50-63 KT (92-117 KMPH)
≥ 64 KT (≥118 KMPH)

IMPACT OVER THE SEA

MSW (knot/kmph)	Impact	Action
28-33 (52-61)	Very rough seas	Total suspension of fishing operations
34-49 (62-91)	High to very high seas	Total suspension of fishing operations
50-63 (92-117)	Very high seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations

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
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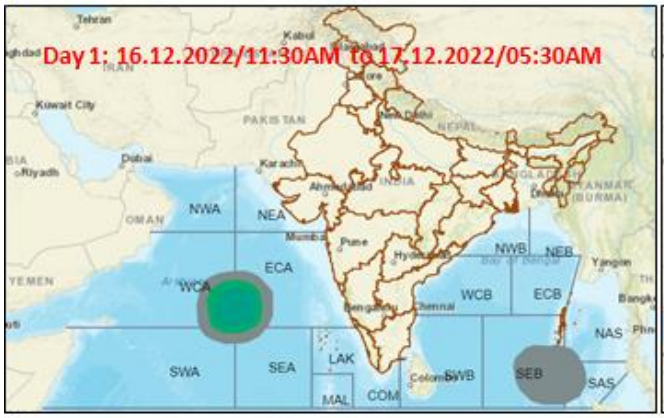
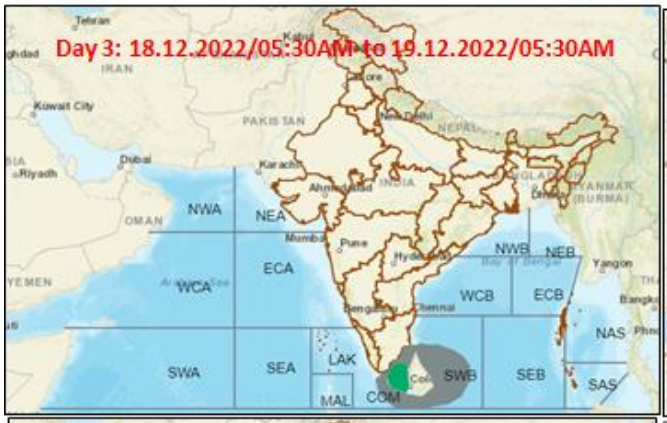
Fishermen warning graphics





Squally WX with wind speed 40-45 kmph gusting to 55 kmph
Squally wind speed 45-55 kmph gusting to 65 kmph
Squally wind speed 55-65 kmph gusting to 75 kmph

Fishermen are advised not to venture into the marked areas.

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
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