



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

**DEMS-RSMC SPECIAL TROPICAL CYCLONES NEW DELHI DATED 15.12.2022**

**SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1500 UTC OF 15.12.2022 BASED ON 1200 UTC OF 15.12.2022.**

**ARABIAN SEA:**

**(A) DEEP DEPRESSION OVER EASTCENTRAL ARABIAN SEA**

DEEP DEPRESSION OVER EASTCENTRAL ARABIAN SEA MOVED WEST-NORTHWESTWARDS WITH A SPEED OF 13 KMPH DURING PAST 06 HOURS AND LAY CENTERED AT 1200UTC OF TODAY, THE 15<sup>TH</sup> DECEMBER 2022 OVER THE SAME REGION NEAR LATITUDE 14.1<sup>0</sup>N AND LONGITUDE 66.8<sup>0</sup>E ABOUT 720 KM WEST-NORTHWEST OF AMINIDIVI (4331), ABOUT 770 KM WEST-SOUTHWEST OF PANJIM (43192) AND 1400 KM EAST-SOUTHEAST OF SALALAH (41316).

IT IS VERY LIKELY TO MOVE WESTWARDS OVER CENTRAL ARABIAN SEA AWAY FROM INDIAN COAST, MAINTAIN INTENSITY OF DEEP DEPRESSION BY 0000UTC OF TOMMORROW, 16<sup>TH</sup> DECEMBER AND WEAKEN GRADUALLY THEREAFTER. IT WOULD MOVE NEARLY WESTWARD TILL 1200 UTC 16<sup>TH</sup> DECEMBER AND THEN RECURVE WEST-SOUTHWESTWARDS/SOUTHWESTWARDS.

**FORECAST TRACK AND INTENSITY:**

AS PER INSAT 3D IMAGERY, INTENSITY OF THE SYSTEM IS T2.0. ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER EASTCENTRAL BETWEEN LATITUDE 13.5°N & 16.5°N AND LONG 65.8°E & 69.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 90°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 EASTCENTRAL & ADJOINING SOUTHEAST ARABIAN SEA.

**BAY OF BENGAL:**

**(B) 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 1200 UTC OF TODAY, THE 15<sup>TH</sup> DECEMBER. IT IS LIKELY TO MOVE GRADUALLY WESTWARDS AND BECOME **WELL MARKED LOW PRESSURE AREA** OVER THE SAME REGION DURING NEXT 12 HOURS. THEREAFTER, IT WOULD CONTINUE TO MOVE WESTWARDS AND MAINTAIN ITS INTENSITY OVER SOUTH BAY OF BENGAL TILL 0000 UTC OF 17<sup>TH</sup> DECEMBER 2022.

SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTHEAST BAY OF BENGAL AND ADJOINING EQUATORIAL INDIAN OCEAN BETWEEN LATITUDE 2.0°N & 7.0°N AND LONG 86.0°E & 94.0°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 74°C.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 10-15 KNOTS AND NORTH OF THE SYSTEM IS 25 KNOTS. 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 28-29°C OVER EASTCENTRAL AND ADJOINING SOUTHEAST ARABIAN SEA BECOMING 27°C TO THE WEST OF 67°E. LOW LEVEL RELATIVE VORTICITY IS AROUND  $150 \times 10^{-5} \text{ S}^{-1}$  AT THE SOUTHWEST OF THE SYSTEM CENTRE. LOW LEVEL CONVERGENCE IS ABOUT  $5 \times 10^{-5} \text{ S}^{-1}$  TO THE NORTHEAST SECTOR OF SYSTEM CENTRE. UPPER LEVEL DIVERGENCE IS ABOUT  $40 \times 10^{-5} \text{ S}^{-1}$  AROUND THE SYSTEM CENTRE. MODERATE VERTICAL WIND SHEAR OF ABOUT 20-25 KNOTS IS PREVAILING AROUND THE SYSTEM. MULTI-SATELLITE WINDS ARE INDICATING STRONGER WINDS IN THE NORTHEAST SECTOR.

TOTAL PRECIPITABLE WATER VAPOUR IMAGERY INDICATES COLD AND DRY AIR ADVECTION FROM NORTHWEST SECTOR TO THE SYSTEM AND THE SYSTEM IS MOVING TOWARDS STRONGER VERTICAL WIND SHEAR OF 25-30 KTS. THESE ENVIRONMENTAL FEATURES INDICATE, THE SYSTEM IS LIKELY TO REMAIN AT INTENSITY OF DEEP DEPRESSION TILL 0000 UTC OF 16<sup>TH</sup> DEC AND THEN LIKELY TO WEAKEN INTO DEPRESSION THEREAFTER. THE SYSTEM IS CURRENTLY MOVING WEST-NORTHWESTWARDS UNDER THE INFLUENCE OF EAST-SOUTHEASTERLY WINDS PREVAILING IN THE PERIPHERY OF THE RIDGE NEAR 16°N IN THE MIDDLE AND UPPER TROPOSPHERIC LEVELS.

AS THE SYSTEM WEAKENS THE VERTICAL EXTENSION IS EXPECTED TO DECREASE FROM TOMORROW, 16<sup>TH</sup> DECEMBER. AS A RESULT THE STEERING LEVEL WILL CHANGE TO LOWER TO MIDDLE TROPOSPHERIC LEVELS. IN THE LOWER AND MIDDLE TROPOSPHERIC LEVELS, NORTHEASTERLY/EAST-NORTHEASTERLY WINDS ARE LIKELY TO PREVAIL LEADING TO GRADUAL SOUTHWESTWARDS MOVEMENT OF THE SYSTEM FROM 17<sup>TH</sup> DECEMBER ONWARDS.

VARIOUS MODELS INDICATE THAT THE SYSTEM IS LIKELY TO MOVE WESTWARDS TILL 0000UTC OF 17<sup>TH</sup> DECEMBER AND SOUTHWESTWARDS THEREAFTER.

IN VIEW OF ABOVE, IT IS VERY LIKELY TO MOVE WESTWARDS OVER CENTRAL ARABIAN SEA AWAY FROM INDIAN COAST, MAINTAIN INTENSITY OF DEEP DEPRESSION BY 0000 UTC OF TOMMORROW, THE 16<sup>TH</sup> DECEMBER AND WEAKEN GRADUALLY THEREAFTER. IT WOULD MOVE NEARLY WESTWARD TILL 1200UTC 16<sup>TH</sup> DECEMBER AND THEN RECURVE WEST-SOUTHWESTWARDS/SOUTHWESTWARDS.

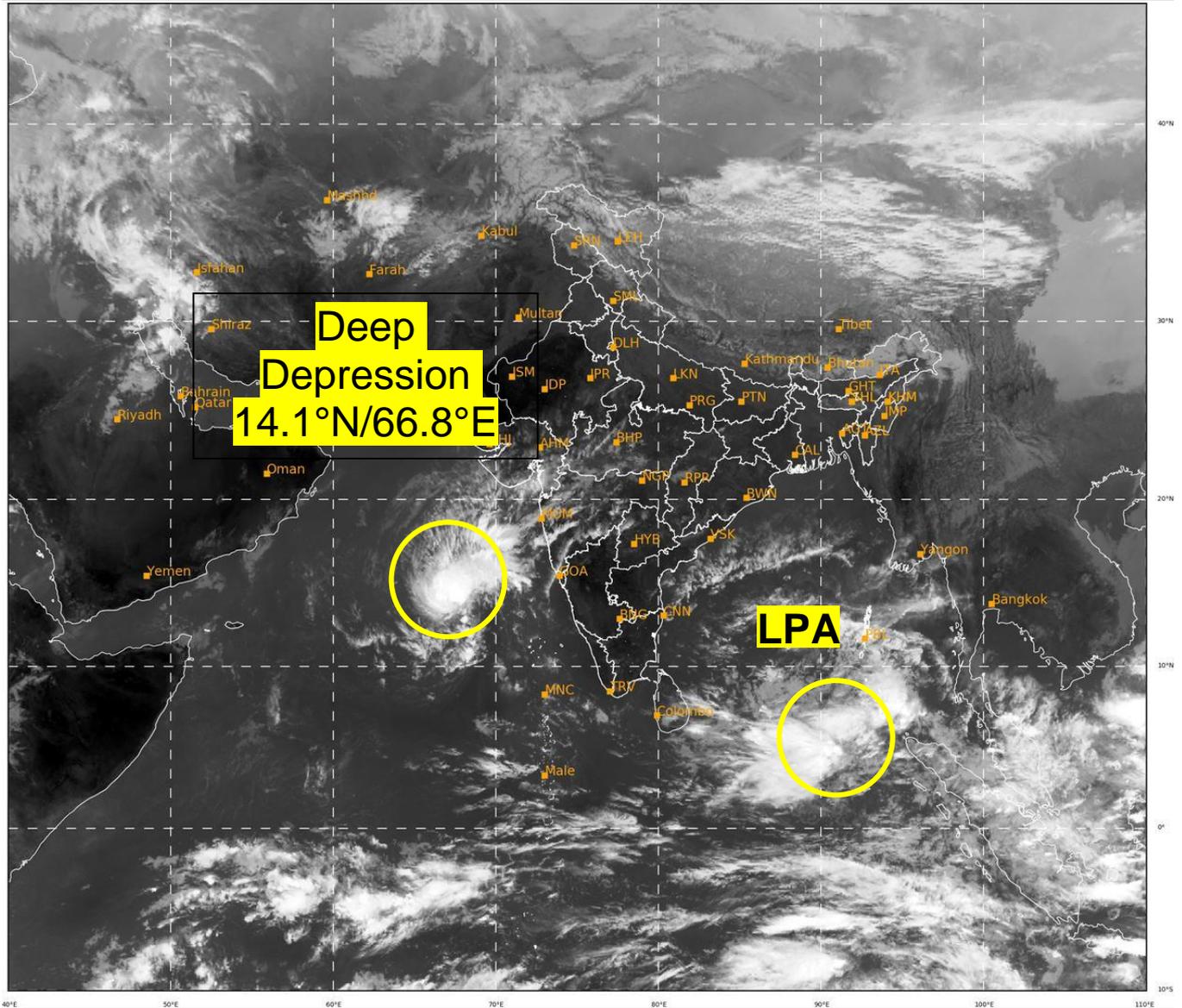
**BAY OF BENGAL:**

SEA SURFACE TEMPERATURE IS ABOUT 28-29°C OVER SOUTH BOB AND ADJOINING EQUATORIAL INDIAN OCEAN. LOW LEVEL RELATIVE VORTICITY IS AROUND  $60 \times 10^{-5} \text{ S}^{-1}$  OVER SOUTH ANDAMAN SEA AND ADJOINING EQUATORIAL INDIAN OCEAN. LOW LEVEL CONVERGENCE IS ABOUT  $10 \times 10^{-5} \text{ S}^{-1}$  OVER SOUTHEAST BOB AND ADJOINING AREAS. UPPER LEVEL DIVERGENCE IS ABOUT  $15-20 \times 10^{-5} \text{ S}^{-1}$  OVER SOUTHEAST BOB AND ADJOINING EQUATORIAL 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.

MOST OF THE MODELS ARE INDICATING EXISTING LOW PRESSURE AREA OVER SOUTHEAST BOB AND ADJOINING EAST INDIAN OCEAN TO MOVE WESTWARDS WITH SLIGHT INTENSIFICATION 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 BECOME WELL MARKED LOW PRESSURE AREA OVER THE SAME REGION DURING NEXT 12 HOURS. THEREAFTER, IT WOULD CONTINUE TO MOVE WESTWARDS AND MAINTAIN ITS INTENSITY OVER SOUTH BAY OF BENGAL TILL 0000UTC OF 17<sup>TH</sup> DECEMBER 2022.

**S P SINGH  
SCIENTIST-C  
RSMC NEW DELHI**



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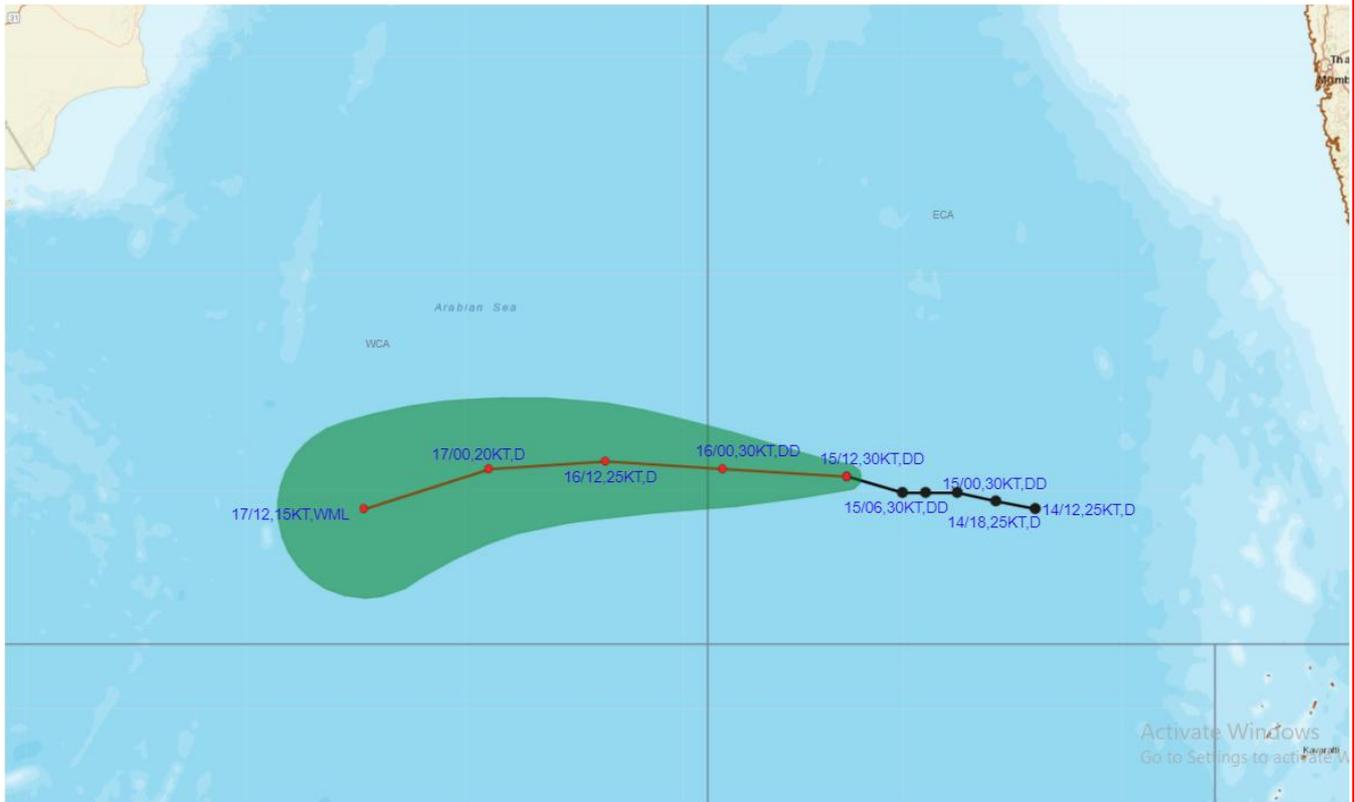
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IMD, DELHI

### LPA – Low Pressure Area



## OBSERVED AND FORECAST TRACK OF DEEP DEPRESSION OVER EASTCENTRAL ARABIAN SEA BASED ON 1200 UTC OF 15<sup>TH</sup> 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 ( $\geq$  120 KT)



LESS THAN 34 KT



34-47 KT



$\geq$  48 KT



OBSERVED TRACK



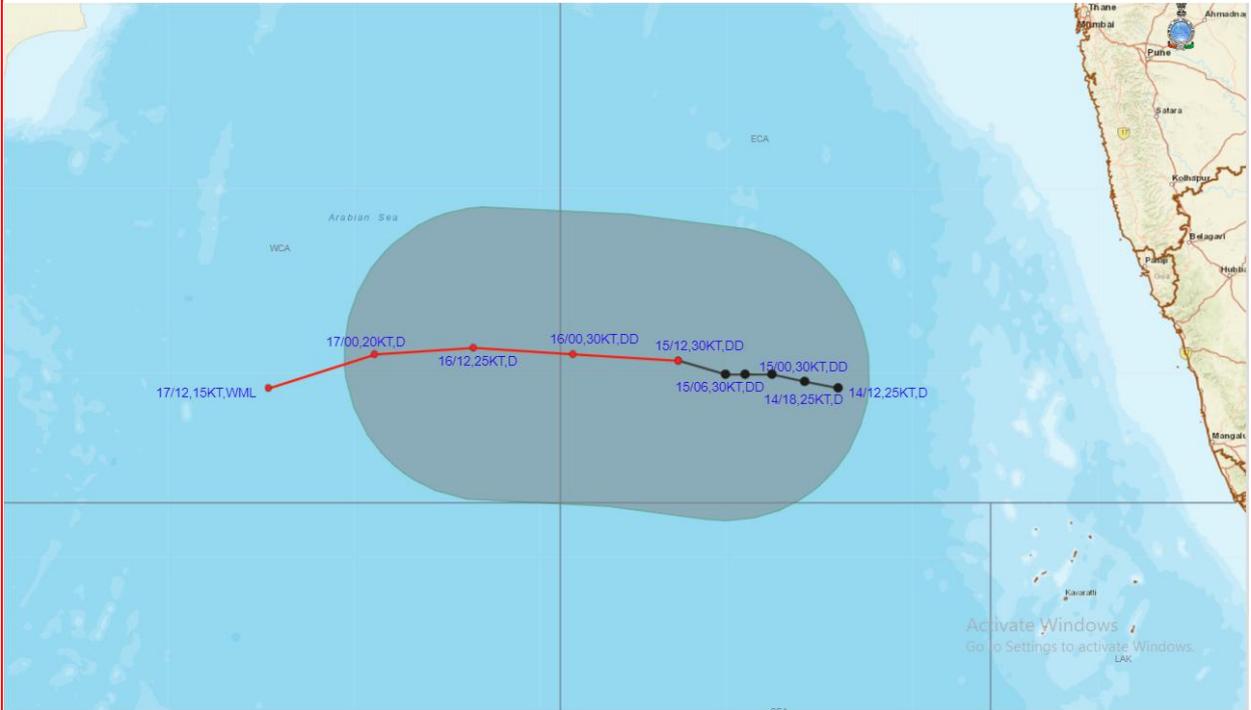
FORECAST TRACK



CONE OF UNCERTAINTY



## OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEEP DEPRESSION OVER EASTCENTRAL ARABIAN SEA BASED ON 1200 UTC OF 15<sup>TH</sup> 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  
 PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION): NIL: 0%, LOW: 1-33%, , MODERATE: 34-66% AND HIGH: 67-100%  
 This is a guidance Bulletin for WMO/ESCAP Panel Member countries. Visit respective National websites for Country specific Bulletins



Today  
15/12/2022

**WARNING**



Tomorrow  
16/12/2022



17/12/2022



18/12/2022

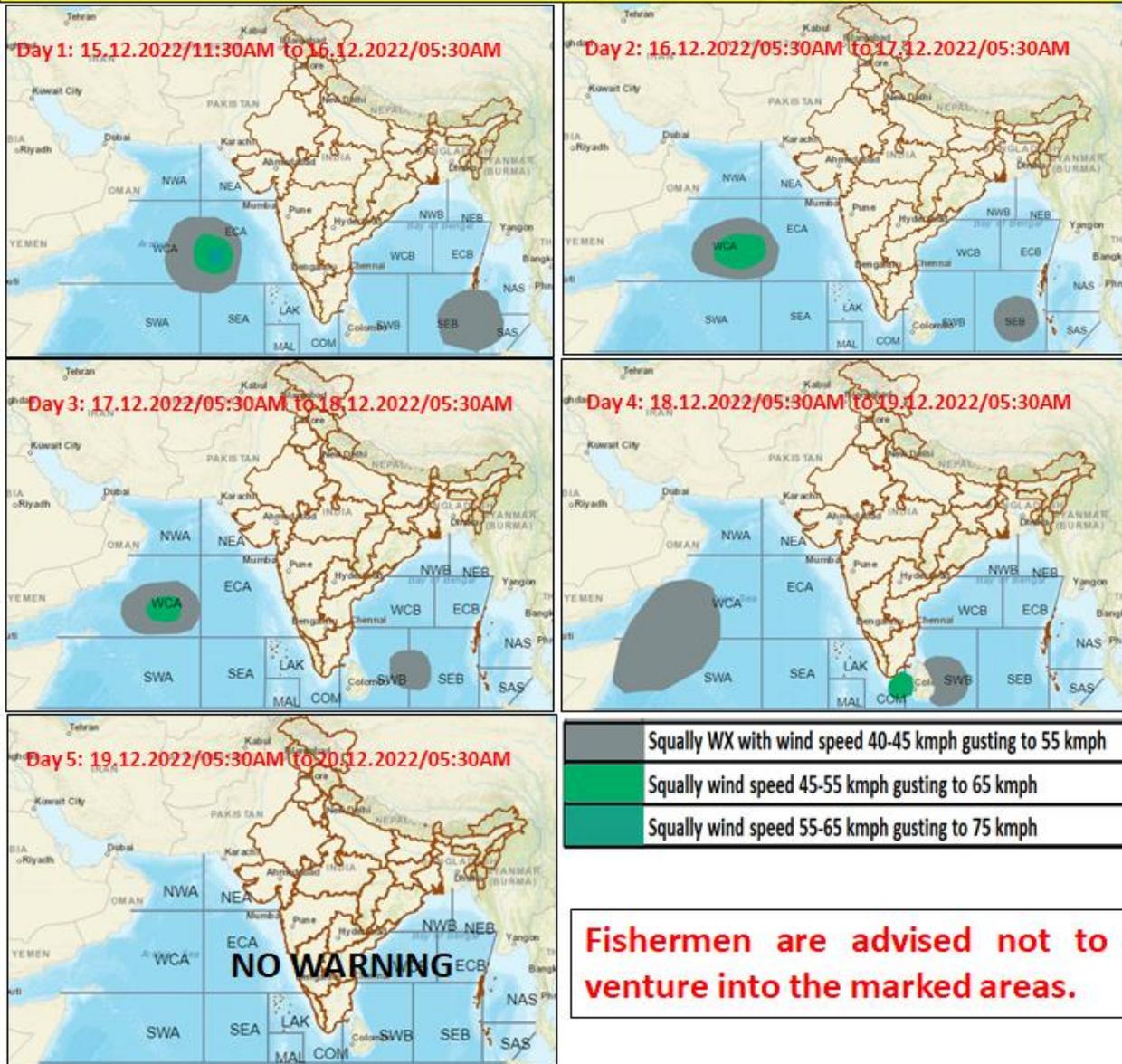


19/12/2022

- |              |            |              |              |
|--------------|------------|--------------|--------------|
| Heavy Rain   | Heavy Snow | Thunderstorm | Dust Storm   |
| Strong Winds | Visibility | Cyclone      | Squall/ Hail |
| Frost        | Cold Wave  | Heat Wave    | Sea State    |

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## Fishermen warning graphics



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