



**REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI TROPICAL  
TROPICAL CYCLONE ADVISORY BULLETIN NO. 20**

**FROM: RSMC –TROPICAL CYCLONES, NEW DELHI**

**TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)  
STORM WARNING CENTRE, BANGKOK (THAILAND)  
STORM WARNING CENTRE, COLOMBO (SRILANKA)  
STORM WARNING CENTRE, DHAKA (BANGLADESH)  
STORM WARNING CENTRE, KARACHI (PAKISTAN)  
METEOROLOGICAL OFFICE, MALE (MALDIVES)  
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)  
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)  
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH) NATIONAL  
CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)  
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)  
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)  
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)**

**TROPICAL CYCLONE ADVISORY NO. 20 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND  
ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1200 UTC OF 03.10.2021 BASED ON 0900  
UTC OF 03.10.2021.**

**SUB: SEVERE CYCLONIC STORM ‘SHAHEEN’ OVER GULF OF OMAN AND ADJOINING  
NORTHWEST ARABIAN SEA**

THE SEVERE CYCLONIC STORM ‘SHAHEEN’ OVER GULF OF OMAN AND ADJOINING  
NORTHWEST ARABIAN SEA MOVED WEST-SOUTHWESTWARDS WITH A SPEED OF  
ABOUT 12 KMPH, DURING PAST 6 HOURS, LAY CENTRED AT 0900 UTC OF THE 3<sup>RD</sup>  
OCTOBER, 2021 OVER GULF OF OMAN AND ADJOINING NORTHWEST ARABIAN SEA  
NEAR LATITUDE 24.1°N AND LONGITUDE 58.3°E, ABOUT 1120 KM WEST-NORTHWEST  
OF DEVBHOOMI DWARKA (42731), 270 KM WEST-SOUTHWEST OF CHABAHAR PORT  
(40898) AND 50 KM NORTH-NORTHWEST OF MUSCAT (41278).

THE SYSTEM IS VERY LIKELY TO CONTINUE TO MOVE WEST-SOUTHWESTWARDS  
TOWARDS OMAN COAST AND WEAKEN GRADUALLY. IT IS VERY LIKELY TO CROSS OMAN  
COAST BETWEEN LONG.56°E & 58°E, AROUND 57°E(ABOUT 130 KM WEST-NORTHWEST OF  
MUSCAT), BETWEEN 1800 AND 2100 UTC OF 3<sup>RD</sup> OCTOBER 2021, AS A SEVERE CYCLONIC  
STORM WITH A MAXIMUM SUSTAINED WIND SPEED OF 90 – 100 KMPH GUSTING TO 110  
KMPH.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

<b>DATE/TIME (UTC)</b>	<b>POSITION (LAT. °N/ LONG. °E)</b>	<b>MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)</b>	<b>CATEGORY OF CYCLONIC DISTURBANCE</b>
03.10.21/0900	24.1/58.3	115-125 GUSTING TO 135	SEVERE CYCLONIC STORM
03.10.21/1200	24.0/57.9	105-115 GUSTING TO 125	SEVERE CYCLONIC STORM
03.10.21/1800	23.9/57.3	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
04.10.21/0000	23.8/56.5	60-70 GUSTING TO 80	CYCLONIC STORM
04.10.21/0600	23.7/55.9	45-55 GUSTING TO 65	DEPRESSION

AS PER INSAT-3D IMAGERY AT 0900 UTC, CLOUD MASS IS SEEN ENGULFING THE EYE. STRONG CONVECTIVE CLOUD BANDS WRAPPING THE SYSTEM CENTRE ARE CLEARLY SEEN IN THE VISIBLE AND IR IMAGERY. THE PRIMARY CLOUD BANDS ASSOCIATED WITH CENTRAL FEATURE OF THE SYSTEM HAS ENTERED NORTH COAST OF OMAN. OUTER CLOUD BAND WITH EMBEDDED INTENSE CONVECTIVE CELLS HAS WEAKENED OVER LAST 3 HOURS. EYE TEMPERATURE HAS DECREASED SUGGESTING POSSIBLE WEAKENING OF THE SYSTEM. INTENSITY IS T 4.0. ASSOCIATED BROKEN LOW/MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION OVER ARABIAN SEA BET LAT 23.0N TO 26.0N AND LONG 57.0E TO 61.0E, MAKARAN COAST, GULF OF OMAN AND NORTH OMAN MINIMUM CLOUD TOP TEMPERATURE IS MINUS 80 DEG C

AS PER SURFACE OBSERVATIONS AT 0600 UTC, MUSCAT(41256) OF COASTAL OMAN REPORTED MSLP OF 1000.4 HPA & WIND 240<sup>0</sup>/32 KTS AND SUR(AWS-41268) OF COASTAL OMAN REPORTED MSLP OF 1002.4 HPA & WIND 240<sup>0</sup>/32 KTS.

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 60 KNOTS GUSTING TO 70 KNOTS. THE SEA CONDITION IS HIGH TO VERY HIGH OVER THE SYSTEM AREA. THE ESTIMATED CENTRAL PRESSURE IS 986 HPA.

**STORM SURGE GUIDANCE:** STORM SURGE OF HEIGHT ABOUT 1M ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE THE LOW LYING AREAS OF NORTH COASTAL OMAN AT THE TIME OF LANDFALL (MODEL OUTPUT GRAPHICS ATTACHED).

**REMARKS:**

SEA SURFACE TEMPERATURE (SST) IS ABOUT 28-29°C OVER NORTHWEST ARABIAN SEA. HOWEVER, A WARM TONGUE OF SST (29-30°C) WITH STEEP GRADIENT PREVAILS OVER GULF OF OMAN. TROPICAL CYCLONE HEAT POTENTIAL (TCHP) IS ABOUT 60-70 KJ/CM<sup>2</sup> OVER NORTHWEST ARABIAN SEA AND ADJOINING GULF OF OMAN. POSITIVE VORTICITY IS ABOUT 80-100 X10<sup>-6</sup>S<sup>-1</sup> TO THE SOUTH OF THE SYSTEM CENTER. POSITIVE LOWER LEVEL CONVERGENCE IS AROUND 20 X10<sup>-5</sup>S<sup>-1</sup> AND UPPER LEVEL DIVERGENCE IS ABOUT 20 X10<sup>-5</sup>S<sup>-1</sup> SOUTH OF THE SYSTEM CENTER. LOW LEVEL VERTICAL WIND SHEAR (VWS) OF 10-15 KTS IS PREVAILING AROUND THE SYSTEM CENTRE AND ALONG THE FORECAST TRACK OVER ENTIRE GULF OF OMAN. INCREASING SHEAR TENDENCY PREVAILS OVER THE GULF OF OMAN AND OVER THE OMAN COAST.

AS PER SATELLITE WATER VAPOUR IMAGERIES, THE SYSTEM CONTINUES TO REMAIN UNDER FAVOURABLE ENVIRONMENT OF WARM MOIST AIR OVER THE GULF REGION. HOWEVER, DRY AIR PREVAILS TO THE SOUTHERN SECTOR WHICH HAS NOT YET STARTED ENTERING INTO THE CORE OF THE SYSTEM. OTHER DYNAMIC & THERMODYNAMIC PARAMETERS INCLUDING WARM SEA, LOW VERTICAL WIND SHEAR, STRONG EQUATORWARD OUTFLOW ARE FAVOURABLE FOR THE SYSTEM TO MAINTAIN ITS INTENSITY DURING NEXT 06 HOURS. THE SYSTEM WILL BE STEERED WEST-SOUTHWESTWARDS GRADUALLY UNDER THE INFLUENCE OF EAST-NORTHEASTERLY WINDS IN THE PERIPHERY OF AN ANTICYCLONE OVER PERSIAN GULF. AS THE SYSTEM WILL MOVE WEST-SOUTHWESTWARDS, THE SYSTEM WILL BEGIN TO WEAKEN GRADUALLY DUE TO LAND INTERACTION.

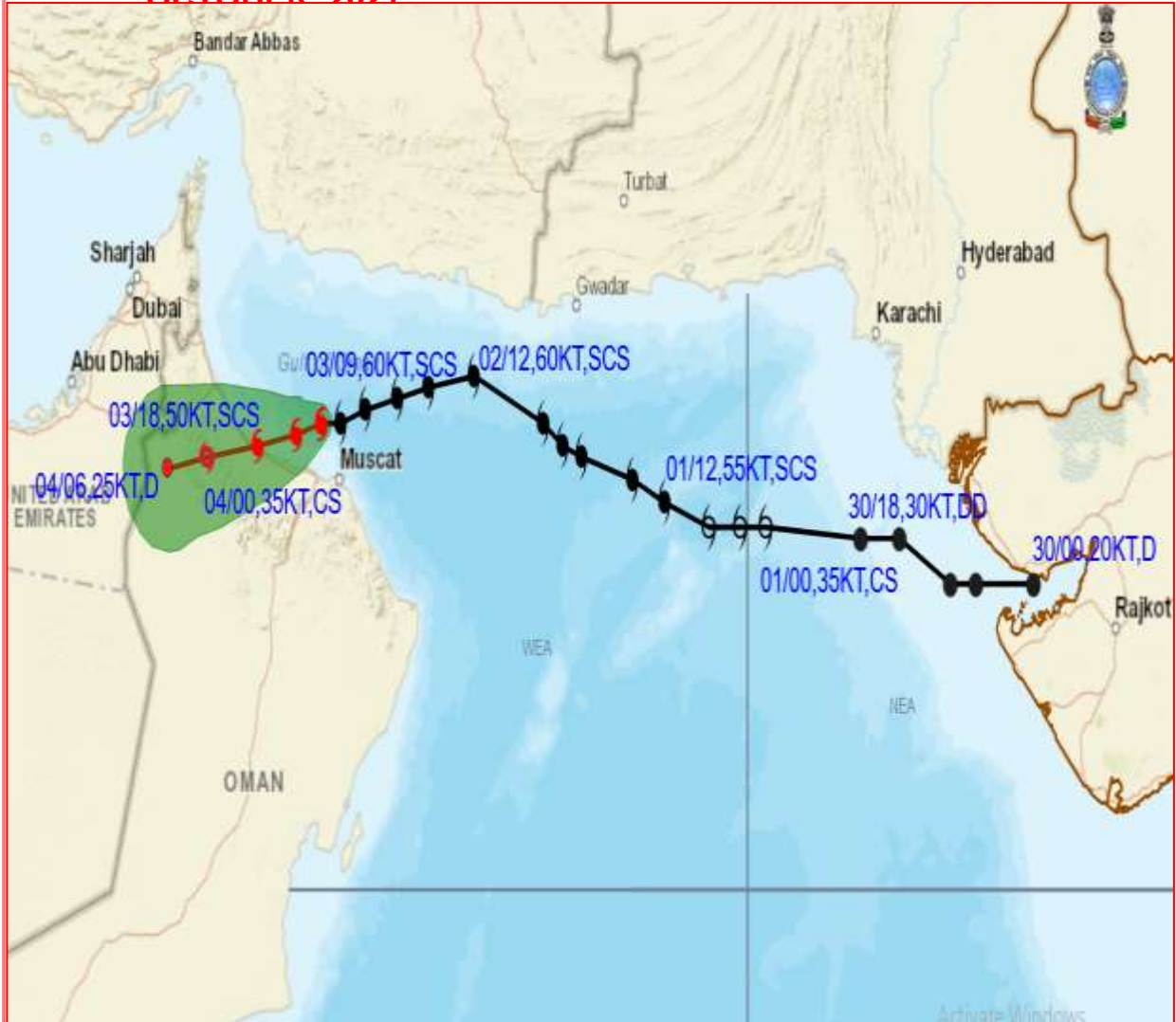
MOST OF THE MODELS ARE INDICATING THAT THE SYSTEM WOULD MOVE WEST-SOUTHWESTWARDS, WEAKEN GRADUALLY AND CROSS NORTH OMAN COAST AROUND 2100 UTC OF 3<sup>RD</sup> OCTOBER.

**HENCE IT IS CONCLUDED THAT, THE SEVERE CYCLONIC STORM "SHAHEEN" WOULD GRADUALLY WEAKEN, MOVE WEST-SOUTHWESTWARDS AND CROSS NORTH OMAN COAST AROUND LONG. 57°E (ABOUT 130 KM WEST-NORTHWEST OF MUSCAT), BETWEEN 1800 & 2100 UTC OF 3<sup>RD</sup> OCTOBER AS A SEVERE CYCLONIC STORM WITH MAXIMUM SUSTAINED WIND SPEED OF 50 KNOTS GUSTING TO 60 KNOTS.**

(SUNITHA DEVLIS )  
SCIENTIST-F, RSMC, NEW DELHI



**OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF SEVERE CYCLONIC STORM "SHAHEEN" OVER GULF OF OMAN AND ADJOINING NORTHWEST ARABIAN SEA BASED ON 0900 UTC OF 3<sup>RD</sup> OCTOBER 2021**



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)

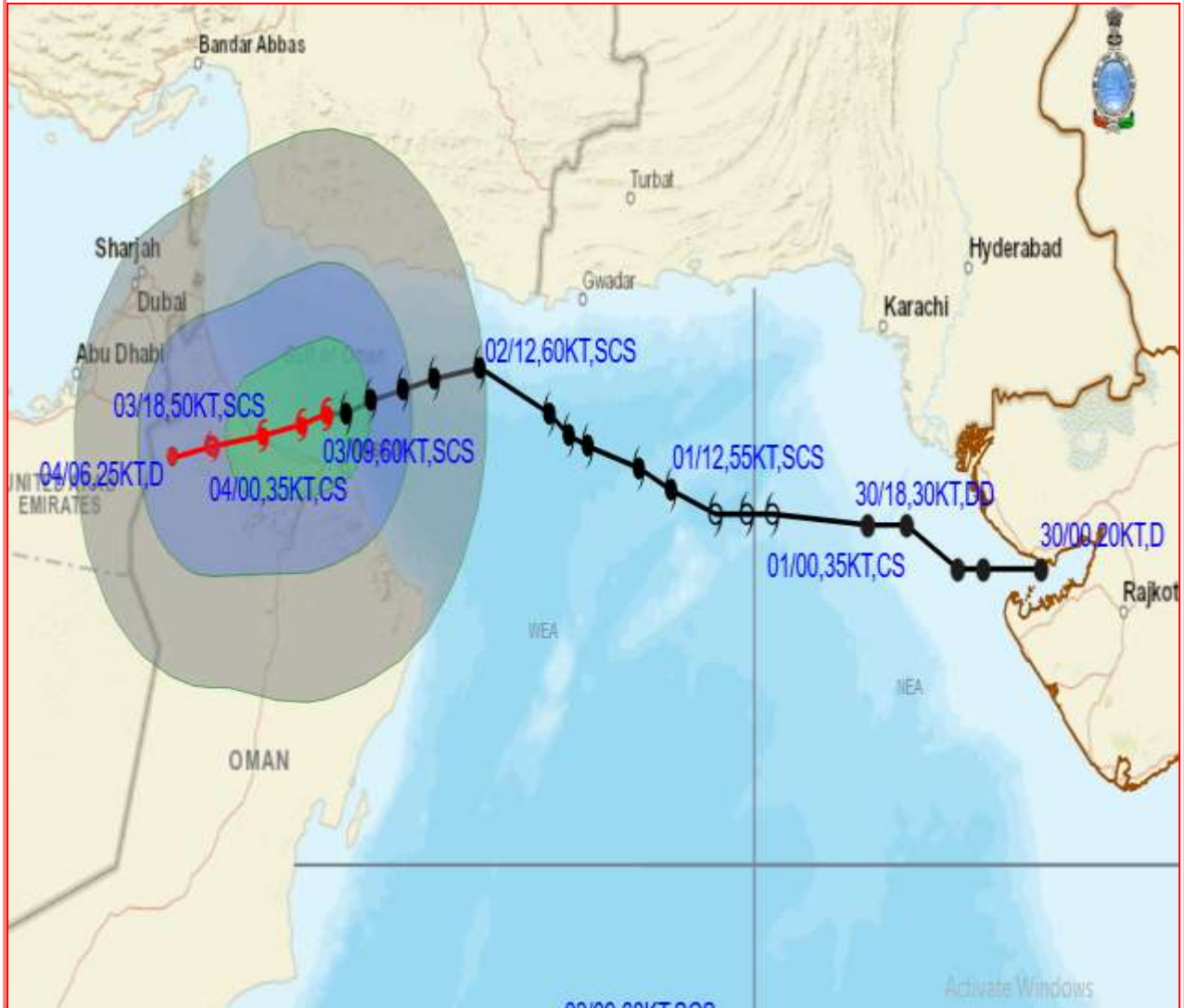
● LESS THAN 34 KT  
 ○ 34-47 KT  
 ● ≥ 48 KT  
 — OBSERVED TRACK  
 — FORECAST TRACK  
 ▲ CONE OF UNCERTAINTY  
 AREA OF MAXIMUM SUSTAINED WIND SPEED:  
 ■ 28-33 KT (52-61 KMPH)  
 ■ 34-49 KT (62-91 KMPH)  
 ■ 50-63 KT (92-117 KMPH)  
 ■ ≥ 64 KT (≥118 KMPH)

**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



**OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF SEVERE CYCLONIC STORM "SHAHEEN" OVER GULF OF OMAN AND ADJOINING NORTHWEST ARABIAN SEA BASED ON 0900 UTC OF 3<sup>RD</sup> OCTOBER, 2021**

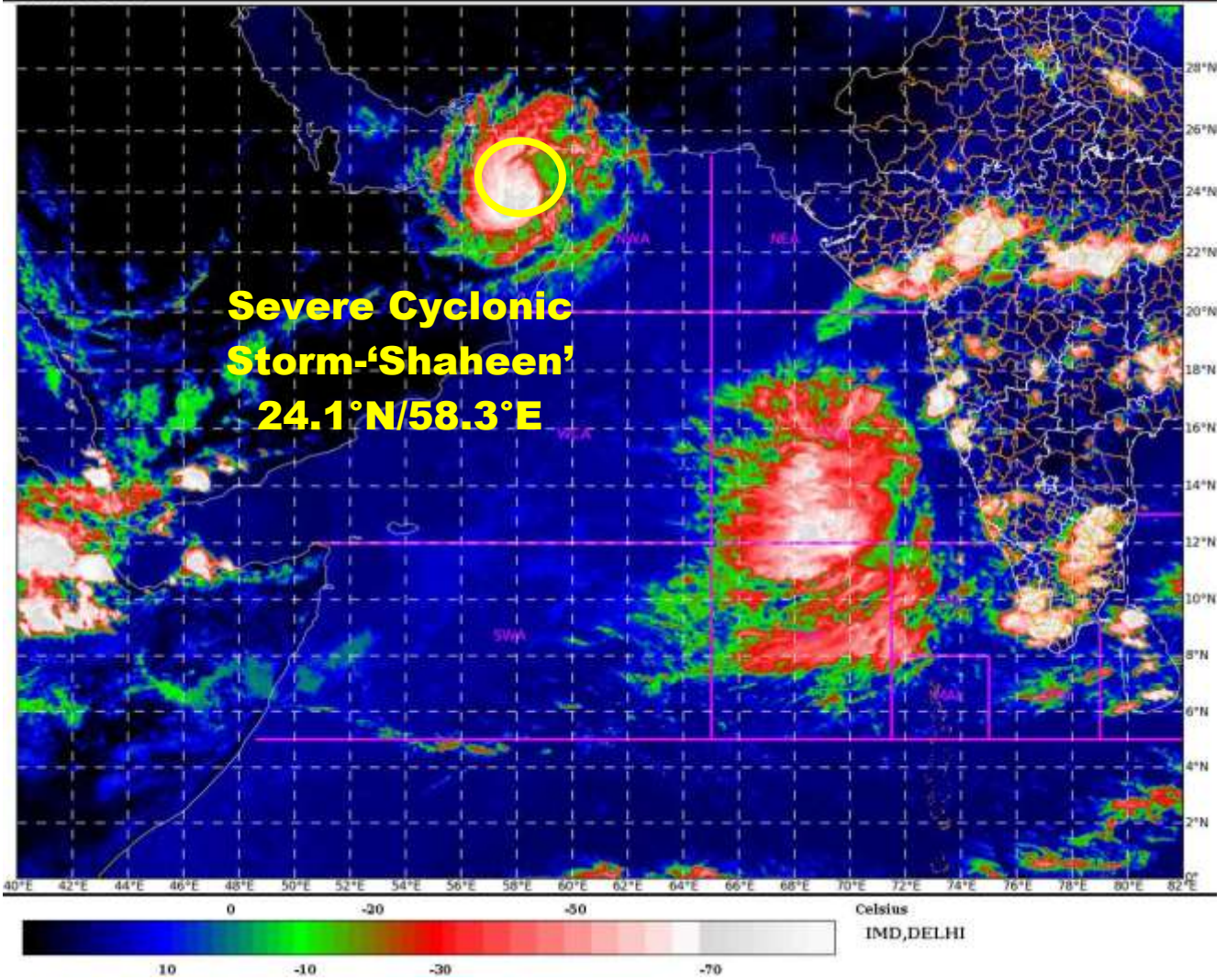


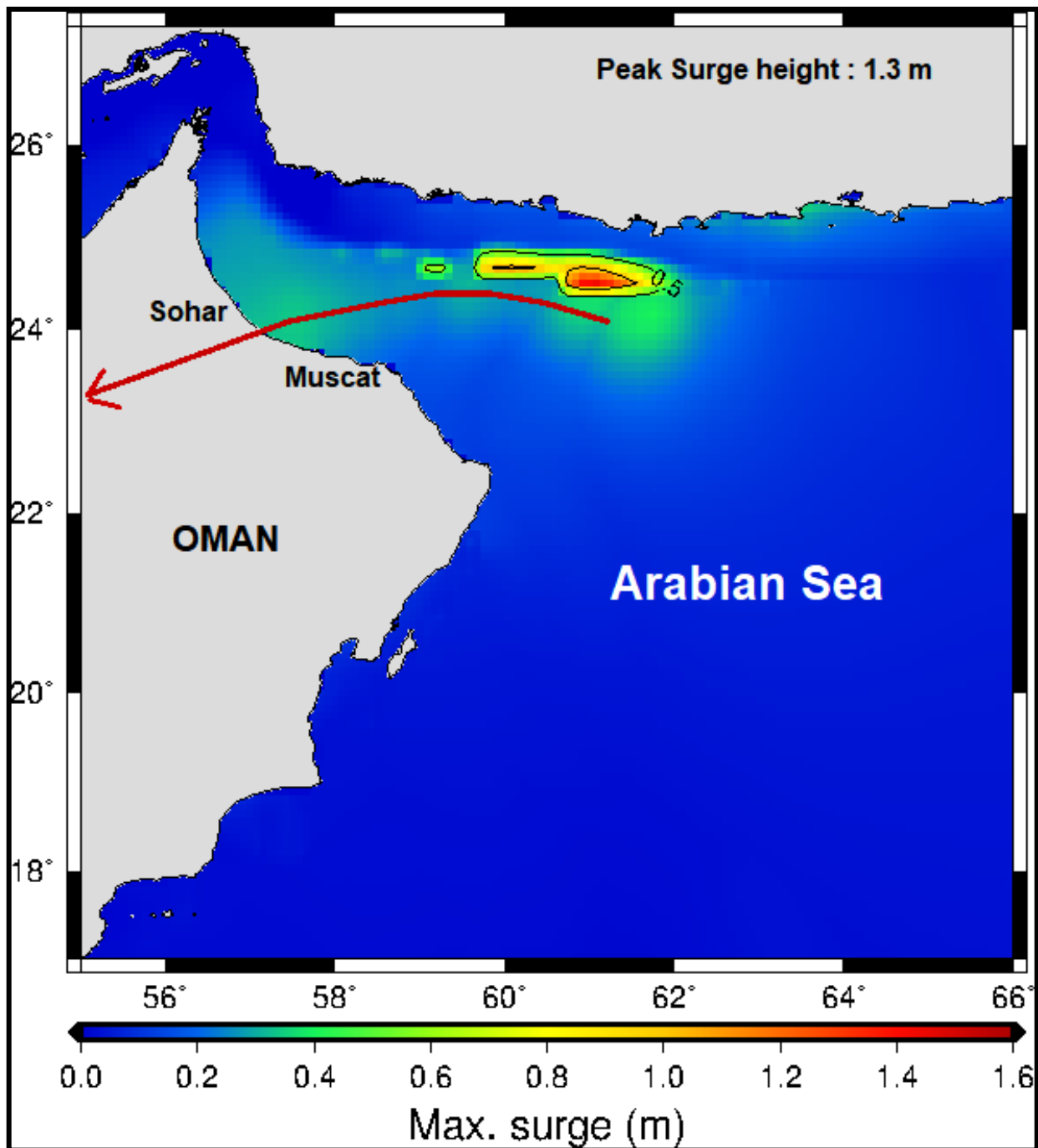
DATE/TIME IN UTC  
 IST=UTC + 0530  
 L: LOW PRESSURE AREA  
 WML: WELL MARKED LOW PRESSURE AREA  
 D: DEPRESSION (17-27 KT)  
 DD: DEEP DEPRESSION (28-33 KT)  
 CS: CYCLONIC STORM (34-47 KT)  
 SCS: SEVERE CYCLONIC STORM (48-63KT)  
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)  
 ESCS: EXTREMELY SEVERE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





PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION):NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%  
 This is a guidance Bulletin for the WMO/ESCAP Panel Member countries,. Please visit respective National websites for Country specific Bulletins