



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 01.10.2021

**SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0300 UTC OF 01.10.2021 BASED ON 0000 UTC OF 01.10.2021.**

**SUB: DEEP DEPRESSION INTENSIFIED INTO THE CYCLONIC STORM 'SHAHEEN' OVER NORTHEAST ARABIAN SEA AND NEIGHBORHOOD**

THE DEEP DEPRESSION OVER NORTHEAST ARABIAN SEA OFF GUJARAT COAST MOVED WEST-NORTHWESTWARDS WITH A SPEED OF ABOUT 25 KMPH DURING PAST 6 HOURS, INTENSIFIED INTO THE **CYCLONIC STORM 'SHAHEEN'** AND LAY CENTRED AT 0000 UTC OF THE 01<sup>ST</sup> OCTOBER, 2021, NEAR LATITUDE 23.2°N AND LONGITUDE 65.3°E, ABOUT 400 KM WEST-NORTHWEST OF DEVBHOO MI DWARKA (42731), 260 KM SOUTH-SOUTHWEST OF KARACHI (41780) AND 530 KM EAST-SOUTHEAST OF CHABAHAR PORT (IRAN).

IT IS VERY LIKELY TO FURTHER INTENSIFY INTO A SEVERE CYCLONIC STORM DURING THE NEXT 24 HOURS AND MOVE WEST-NORTHWESTWARDS DURING NEXT 36 HOURS. THEREAFTER IT IS LIKELY TO RE-CURVE WEST-SOUTHWESTWARDS, SKIRTING MAKRAN COAST, MOVING TOWARDS OMAN COAST ACROSS GULF OF OMAN AND WEAKEN GRADUALLY.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
01.10.21/0000	23.2/65.3	65-75 GUSTING TO 85	CYCLONIC STORM
01.10.21/0600	23.3/64.8	75-85 GUSTING TO 96	CYCLONIC STORM
01.10.21/1200	23.4/64.3	80-90 GUSTING TO 100	CYCLONIC STORM
01.10.21/1800	23.6/63.8	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
02.10.21/0000	23.9/63.2	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
02.10.21/1200	24.5/62.2	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
03.10.21/0000	24.7/60.9	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
03.10.21/1200	24.4/59.6	80-90 GUSTING TO 100	CYCLONIC STORM
04.10.21/0000	23.9/58.3	70-80 GUSTING TO 90	CYCLONIC STORM

AS PER INSAT 3D IMAGERY AT 0300 UTC, INTENSE CONVECTION IS SEEN OVER CENTRAL PARTS NORTHEAST ARABIAN SEA AROUND THE SYSTEM AREA. SPIRAL BANDS ARE SEEN WRAPPING THE OSCURED LOW LEVEL CYCLONIC CIRCULATION. ASSOCIATED MINIMUM CLOUD TOP TEMPERATURE IS -93°C. INTENSITY OF THE SYSTEM IS CATEGORISED AS T2.5. SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY AREA BETWEEN LATITUDE 19.0N & 25.0N AND LONGITUDE 62.0E & 68.0E.

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 35 KNOTS GUSTING TO 45 KNOTS. THE SEA CONDITION IS HIGH AROUND THE SYSTEM AREA. THE ESTIMATED CENTRAL PRESSURE IS 995 HPA.

**REMARKS:**

SEA SURFACE TEMPERATURE (SST) OF ABOUT 28-29°C OVER NORTHEAST AND EASTCENTRAL ARABIAN SEA WITH DECREASING TREND TOWARDS WEST. SIMILARLY, TROPICAL CYCLONE HEAT POTENTIAL (TCHP) IS ABOUT 80-90 KJ/CM<sup>2</sup> OVER NORTHEAST ARABIAN SEA WITH DECREASING TREND TOWARDS THE NORTHWEST ARABIAN SEA. POSITIVE VORTICITY HAS INCREASED AND IS ABOUT 200 X10<sup>-6</sup>S<sup>-1</sup> LAY OVER NORTHEAST ARABIAN SEA AND ADJOINING GULF OF KUTCH WITH VERTICAL EXTENSION UPTO 200 HPA. A ZONE OF POSITIVE LOWER LEVEL CONVERGENCE OF 20 X10<sup>-5</sup>S<sup>-1</sup> IS SEEN OVER NORTHEAST ARABIAN SEA AROUND THE SYSTEM CENTRE. ELONGATED POSITIVE UPPER LEVEL DIVERGENCE OF 20 X10<sup>-5</sup>S<sup>-1</sup> IS SEEN OVER NORTHEAST ARABIAN SEA EXTENDING FROM GUJARAT TO WESTCENTRAL ARABIAN SEA. LOW VERTICAL WIND SHEAR (VWS) ABOUT (5-10 KTS) IS PREVAILING AROUND THE SYSTEM CENTER.

SATELLITE DERIVED TOTAL PRECIPITABLE WATER VAPOUR IMAGERY INDICATES THAT THE SYSTEM IS UNDER FAVOURABLE ENVIRONMENT OF WARM MOIST AIR. ALSO OTHER DYNAMIC & TERMODYNAMIC PARAMETERS INCLUDING WARM SEA, HIGH OCEAN THERMAL ENERGY AND LOW VERTICAL WIND SHEAR ARE FAVOURABLE FOR FURTHER INTENSIFICATION OF THE SYSTEM INTO SEVERE CYCLONIC STORM DURING NEXT 24 HOURS. THE EAST-SOUTHEASTERLY WINDS IN THE MID & UPPER TROPOSPHERIC LEVELS WILL STEER THE SYSTEM WEST-NORTHWESTWARDS DURING NEXT 36 HOURS. THEREAFTER, THE SYSTEM WILL BE STEERED WEST-SOUTHWESTWARDS UNDER THE INFLUENCE OF EAST-NORTHEASTERLY WINDS IN THE PERIPHERY OF ANTICYCLONE OVER IRAN.

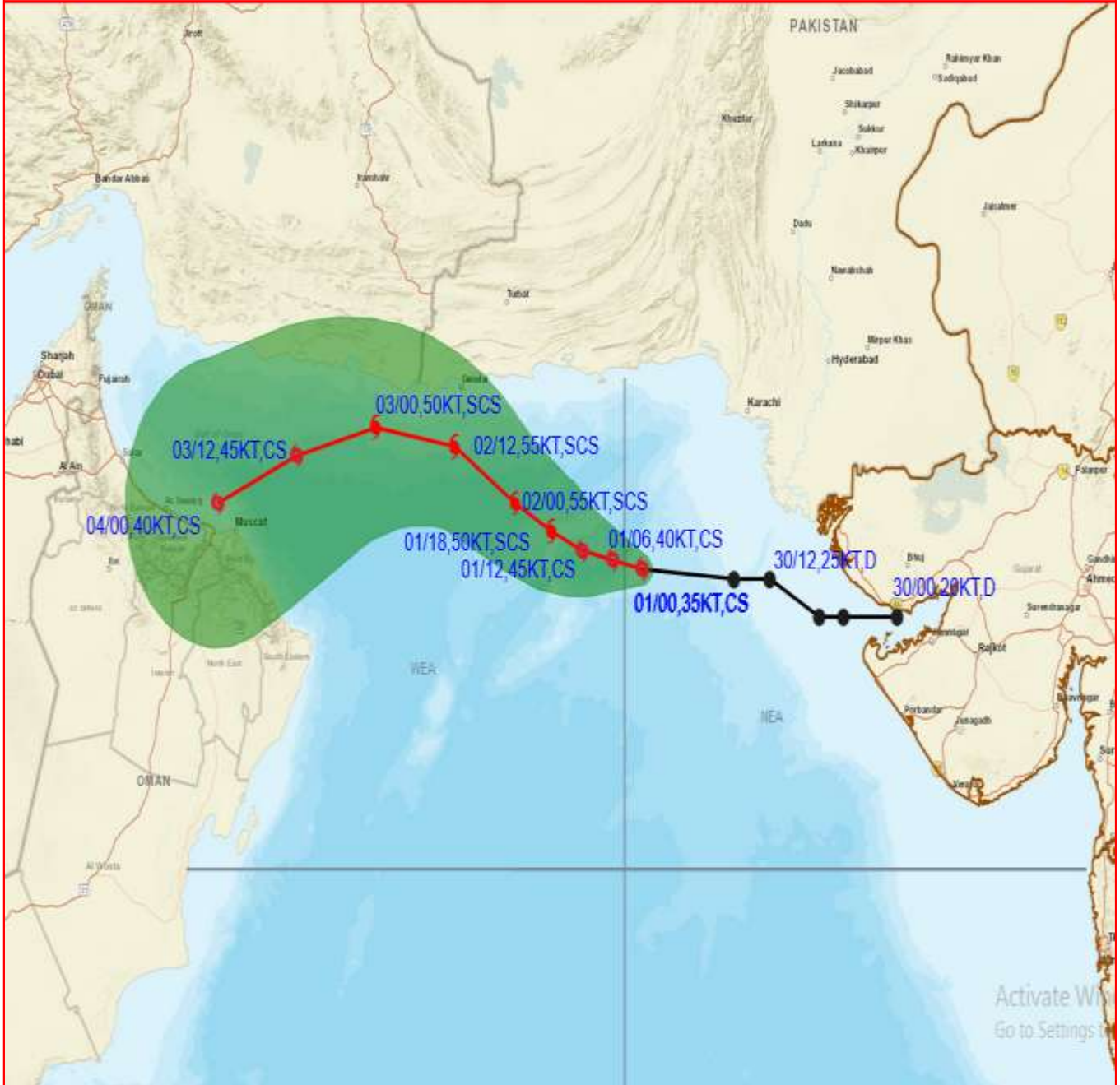
MOST THE MODELS ARE INDICATING THAT THE SYSEYEM WOULD INTENSIFY FURTHER WHILE MOVING WEST-NORTHWESTWARDS ACROSS NORTH ARABIAN SEA. HOWEVER, THERE IS LARGE VARIATION W.R.T. THE PEAK INTENSITY AS WELL AS THE LANDFALL OF SYSTEM. SOME OF THE MODELS ARE INDICATING THAT THE SYSTEM WOULD CROSS MAKRAN COAST AS A CYCLONIC STORM WITH SUBSEQUENT RAPID WEAKENING, WHILE A FEW MODELS ARE INDICATING THE SYSTEM WILL SKIRT ALONG PAKISTAN – MAKRAN COASTS, MOVE INTO GULF OF OMAN AND WEAKEN THERE AROUND 5<sup>TH</sup> OCTOBER.

**IT MAY BE CONCLUDED THAT THE SYSTEM IS LIKELY TO MOVE WEST-NORTHWESTWARDS & INTENSIFY GRADUALLY INTO A SEVERE CYCLONIC STORM DURING NEXT 24 HOURS AND THEREAFTER RECURVE WEST-SOUTHWESTWARDS AND WEAKEN GRADUALLY.**

(SUNITHA DEVI.S )  
SCIENTIST-F, RSMC, NEW DELHI



# OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF CYCLONIC STORM "SHAHEEN" OVER NORTHEAST ARABIAN SEA BASED ON 0000 UTC OF 1ST 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 ( $\geq$  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 CYCLONIC STORM "SHAHEEN" OVER NORTHEAST ARABIAN SEA BASED ON 0000 UTC OF 1ST 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 ( $\geq$  120 KT)**

● LESS THAN 34 KT  
 ○ 34-47 KT  
 ●  $\geq$  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)  
 ■  $\geq$  64 KT ( $\geq$ 118 KMPH)

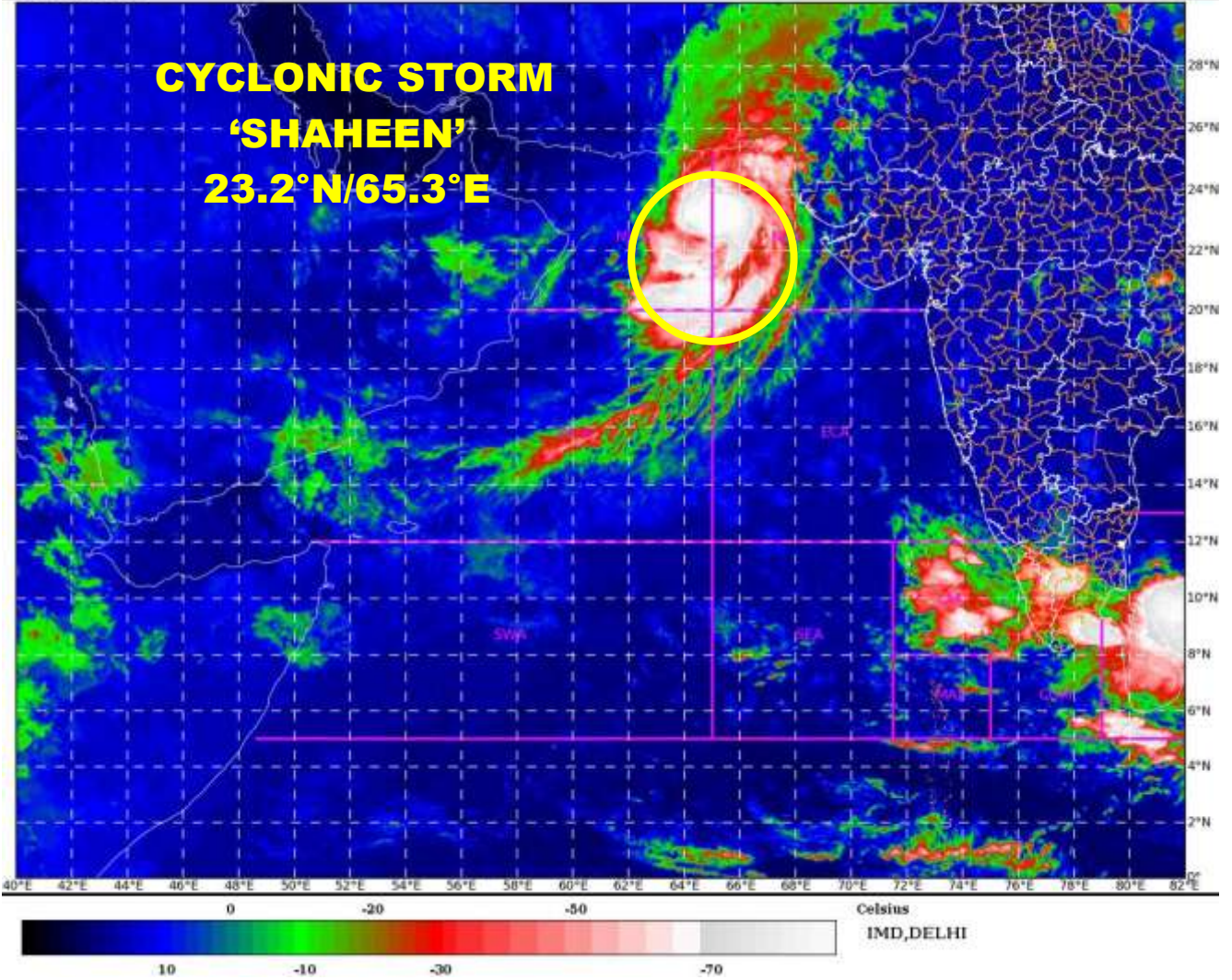
### IMPACT OVER THE SEA

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
$\geq$ 64 ( $\geq$ 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

SAT : INSAT-3D IMG  
IMG\_TIR1\_TEMP 10.8 um  
ARABIAN\_SEA

01-10-2021/(0130 to 0156) GMT  
01-10-2021/(0700 to 0726) IST



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