



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 22.09.2019

TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0900 UTC OF 22.09.2019 BASED ON 0600 UTC OF 22.09.2019.

DEPRESSION OVER EASTCENTRAL AND ADJOINING NORTHEAST ARABIAN

LATEST SATELLITE IMAGERIES AND SURFACE OBSERVATIONS INDICATE THAT A DEPRESSION HAS FORMED OVER EASTCENTRAL AND ADJOINING NORTHEAST ARABIAN SEA OFF GUJARAT COAST AND LAY CENTRED AT 0300 UTC OF TODAY, THE 22ND SEPTEMBER, 2019 NEAR LATITUDE 19.8°N AND LONGITUDE 69.4°E, ABOUT 150 KM SOUTHWEST OF VERAVAL (42909), GUJARAT, 610 KM SOUTH-SOUTHEAST OF KARACHI (41780), PAKISTAN AND 1220 KM EAST-SOUTHEAST OF MUSCAT (41256), OMAN. IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A DEEP DEPRESSION DURING NEXT 12 HOURS AND INTO A CYCLONIC STORM DURING SUBSEQUENT 24 HRS. IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS OMAN COAST DURING NEXT 72 HOURS.

REMARKS:

AS PER THE SATELLITE IMAGERY OF 0300 UTC ON 22ND SEPTEMBER, 2019. THE CURRENT INTENSITY OF THE SYSTEM IS T1.5. ASSOCIATED BROKEN LOW TO MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LIES OVER EASTCENTRAL AND ADJOINING NORTHEAST ARABIAN SEA BETWEEN LAT 18.0°N TO 22.5°N LONG 65.0°E TO 71.0°E & ADJOINING GUJARAT. SATELLITE IMAGES INDICATE INCREASE IN CONVECTION AND INCREASED ORGANISATION OF CLOUDS AROUND THE SYSTEM CENTRE DURING PAST SIX HRS. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 90 DEG °C.

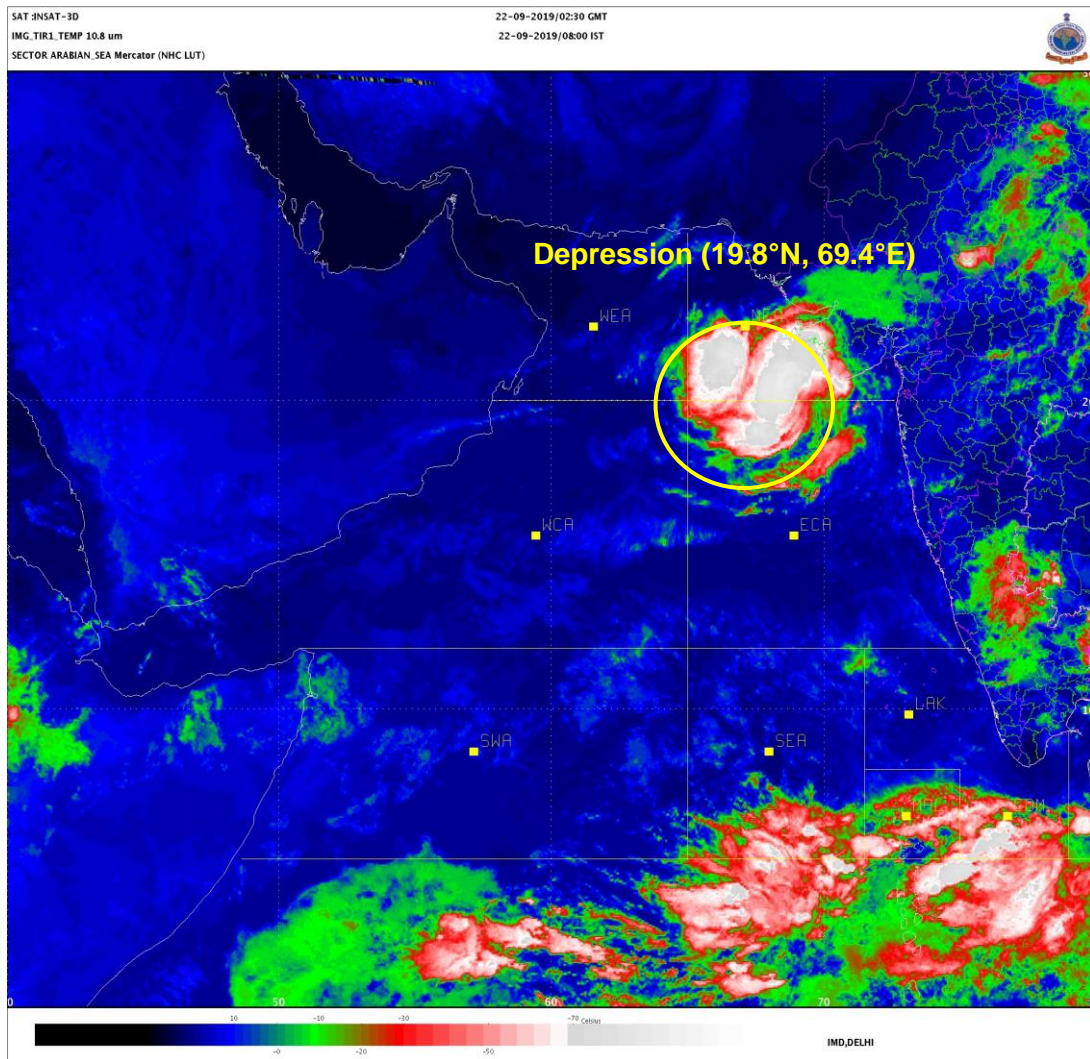
THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS GUSTING TO 35 KNOTS. THE SEA CONDITION IS VERY ROUGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS 1002 HPA. AT 0300 UTC OF 22ND SEPTEMBER, A BOUY LOCATED AT 18.5°N/67.4°E REPORTED A MEAN SEA LEVEL PRESSURE OF 1005.5 HPA AND MEAN SURFACE WIND SPEED OF 100°/14 KNOTS. THE LOWEST MEAN SEA LEVEL PRESSURE OF ABOUT 1006 HPA IS REPORTED AT ALONG GUJARAT COAST

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL CONTINUE IN SAME PHASE WITH AMPLITUDE GREATER THAN 1 FOR NEXT 4-5 DAYS. HENCE, MJO PHASE WILL BE UNFAVOURABLE FOR ENHANCEMENT OF CONVECTION AND INTENSIFICATION OF THE SYSTEM OVER ARABIAN SEA. CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE SEA SURFACE TEMPERATURE (SST) IS 27-28°C OVER CENTRAL AND NORTH ARABIAN SEA. THE TROPICAL CYCLONE HEAT POTENTIAL IS LESS THAN 50 KJ/CM² OVER THE SYSTEM AREA. HOWEVER, TOTAL PRECIPITABLE WATER IMAGERIES INDICATE WARM AIR ADVECTION TO THE SYSTEM CENTRE. THE LOW LEVEL RELATIVE VORTICITY INCREASED IN PAST 24 HOURS AND IS 100 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. POSITIVE VORTICITY IS EXTENDING UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE IS ABOUT 10 X10⁻⁵S⁻¹ AROUND THE SYSTEM CENTER. THE UPPER LEVEL DIVERGENCE IS ABOUT 20 X10⁻⁵S⁻¹ TO THE SOUTHEAST OF THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS MODERATE (15-20 KNOTS) OVER THE SYSTEM AREA. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 22° N. HENCE, THOUGH OCEAN HEAT CONTENT AND MJO ARE NOT FAVOURABLE, THE INCREASED VORTICITY, WARM AIR ADVECTION AND MODERATE WIND SHEAR WILL HELP THE SYSTEM TO FURTHER INTENSIFY UPTO A MARGINAL CYCLONIC STORM. AS THE SYSTEM LIES TO THE SOUTH OF UPPER TROPOSPHERIC RIDGE AND IS BEING STEERED BY MIDDLE AND UPPER TROPOSPHERIC WINDS, IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS OMAN COAST DURING NEXT 72 HRS. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, GLOBAL ENSEMBLE FORECASTING SYSTEM (GEFS) AGREE WITH THE ABOVE OBSERVATION.

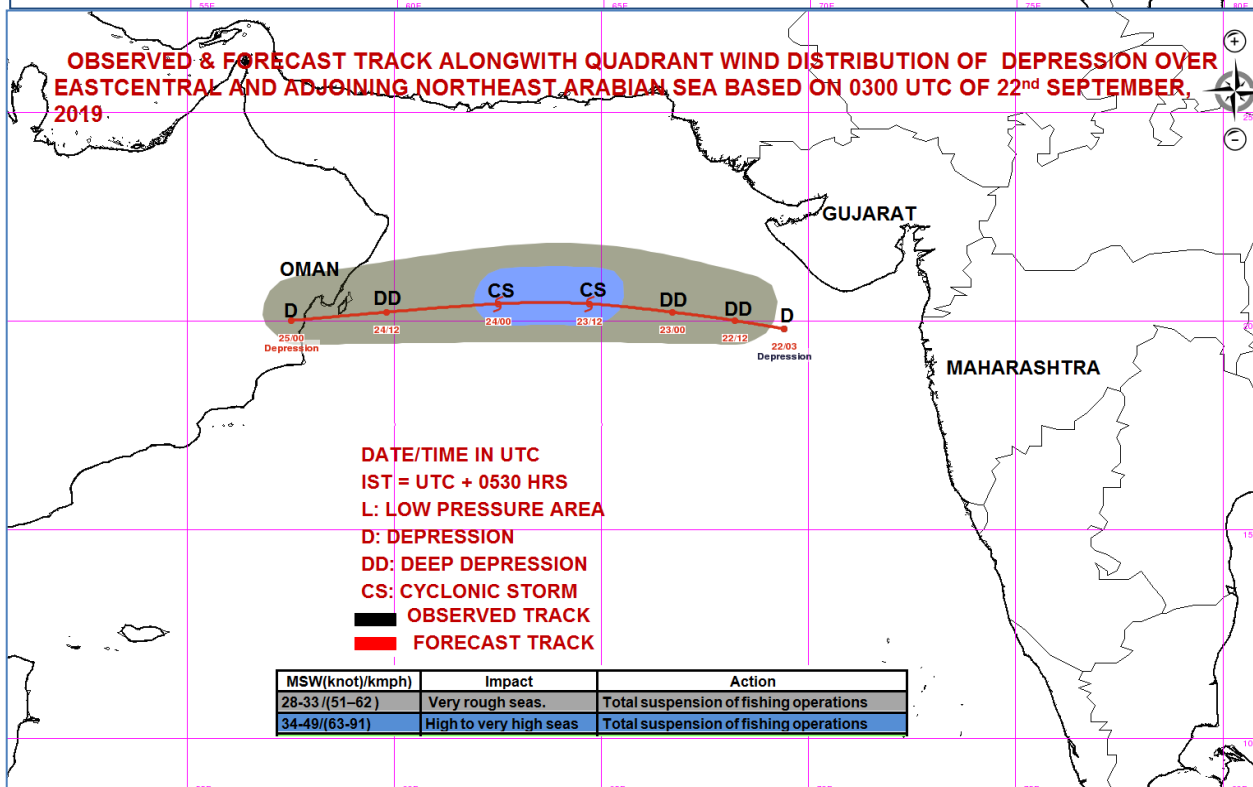
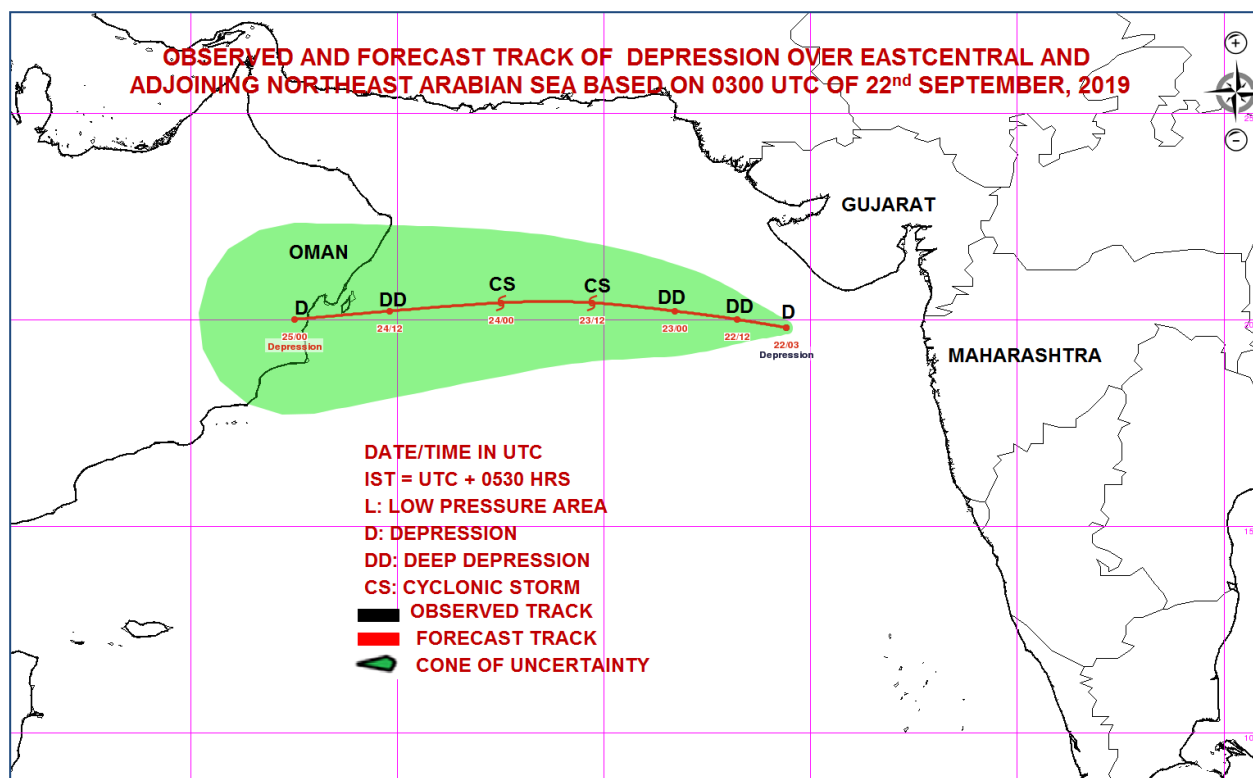
(NEETHA K GOPAL)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



MSW(knot)/kmph)	Impact	Action
28-33/(51-62)	Very rough seas.	Total suspension of fishing operations
34-49/(63-91)	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

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TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 72 HOURS ISSUED AT 0800 UTC OF 22.09.2019 BASED ON 0600 UTC OF 22.09.2019.

DEPRESSION OVER NORTHEAST AND ADJOINING EASTCENTRAL ARABIAN SEA

THE DEPRESSION OVER EASTCENTRAL AND ADJOINING NORTHEAST ARABIAN SEA OFF GUJARAT COAST MOVED WEST-NORTHWESTWARDS WITH A SPEED OF 15 KMPH DURING PAST 3 HOURS AND LAY CENTRED AT 0600 UTC OF TODAY, THE 22ND SEPTEMBER, 2019 OVER NORTHEAST AND

ADJOINING EASTCENTRAL ARABIAN SEA NEAR LATITUDE 20.0°N AND LONGITUDE 69.0°E, ABOUT 170 KM WEST-SOUTHWEST OF VERAVAL (42909), GUJARAT, 570 KM SOUTH-SOUTHEAST OF KARACHI (41780), PAKISTAN AND 1170 KM EAST-SOUTHEAST OF MUSCAT (41256), OMAN. IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A DEEP DEPRESSION DURING NEXT 12 HOURS AND INTO A CYCLONIC STORM DURING SUBSEQUENT 24 HOURS. IT IS VERY LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS OMAN COAST DURING NEXT 72 HOURS.

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
22.09.19/0600	20.0/69.0	45-55 GUSTING TO 66	DEPRESSION
22.09.19/1800	20.3/67.8	50-60 GUSTING TO 70	DEEP DEPRESSION
23.09.19/0600	20.5/66.3	55-65 GUSTING TO 75	DEEP DEPRESSION
23.09.19/1800	20.7/64.1	65-75 GUSTING TO 85	CYCLONIC STORM
24.09.19/0600	20.6/61.9	65-75 GUSTING TO 85	CYCLONIC STORM
24.09.19/1800	20.4/59.5	55-65 GUSTING TO 75	DEEP DEPRESSION
25.09.19/0600	20.3/57.3	40-50 GUSTING TO 60	DEPRESSION

REMARKS:

AS PER THE SATELLITE IMAGERY OF 0600 UTC ON 22ND SEPTEMBER, 2019, THE CURRENT INTENSITY OF THE SYSTEM IS T1.5. ASSOCIATED BROKEN LOW TO MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LIES OVER EASTCENTRAL AND ADJOINING NORTHEAST ARABIAN SEA BETWEEN LAT 18.0 °N TO 22.5 °N LONG 64.5 °E TO 70.0 °E AND OFF GULF OF KUTCH & ADJOINING WEST GUJARAT. SATELLITE IMAGES INDICATE NO SIGNIFICANT CHANGE IN CLOUD CONVECTION DURING PAST THREE HOURS. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 90 DEG °C.

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS GUSTING TO 35 KNOTS. THE SEA CONDITION IS VERY ROUGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS 1000 HPA. AT 0600 UTC OF 22ND SEPTEMBER, A SHIP LOCATED AT 19.0°N/66.0°E REPORTED A MEAN SEA LEVEL PRESSURE OF 1004 HPA AND MEAN SURFACE WIND SPEED OF 320°/22 KNOTS. ANOTHER SHIP LOCATED AT 19.0°N/66.9°E REPORTED MEAN SURFACE WIND SPEED OF 270°/03 KNOTS AND ANOTHER SHIP LOCATED AT 17.9°N/66.2°E REPORTED A MEAN SEA LEVEL PRESSURE OF 1007 HPA AND MEAN SURFACE WIND SPEED OF 290°/34 KNOTS. THE LOWEST MEAN SEA LEVEL PRESSURE OF ABOUT 1006 HPA IS REPORTED ALONG GUJARAT COAST.

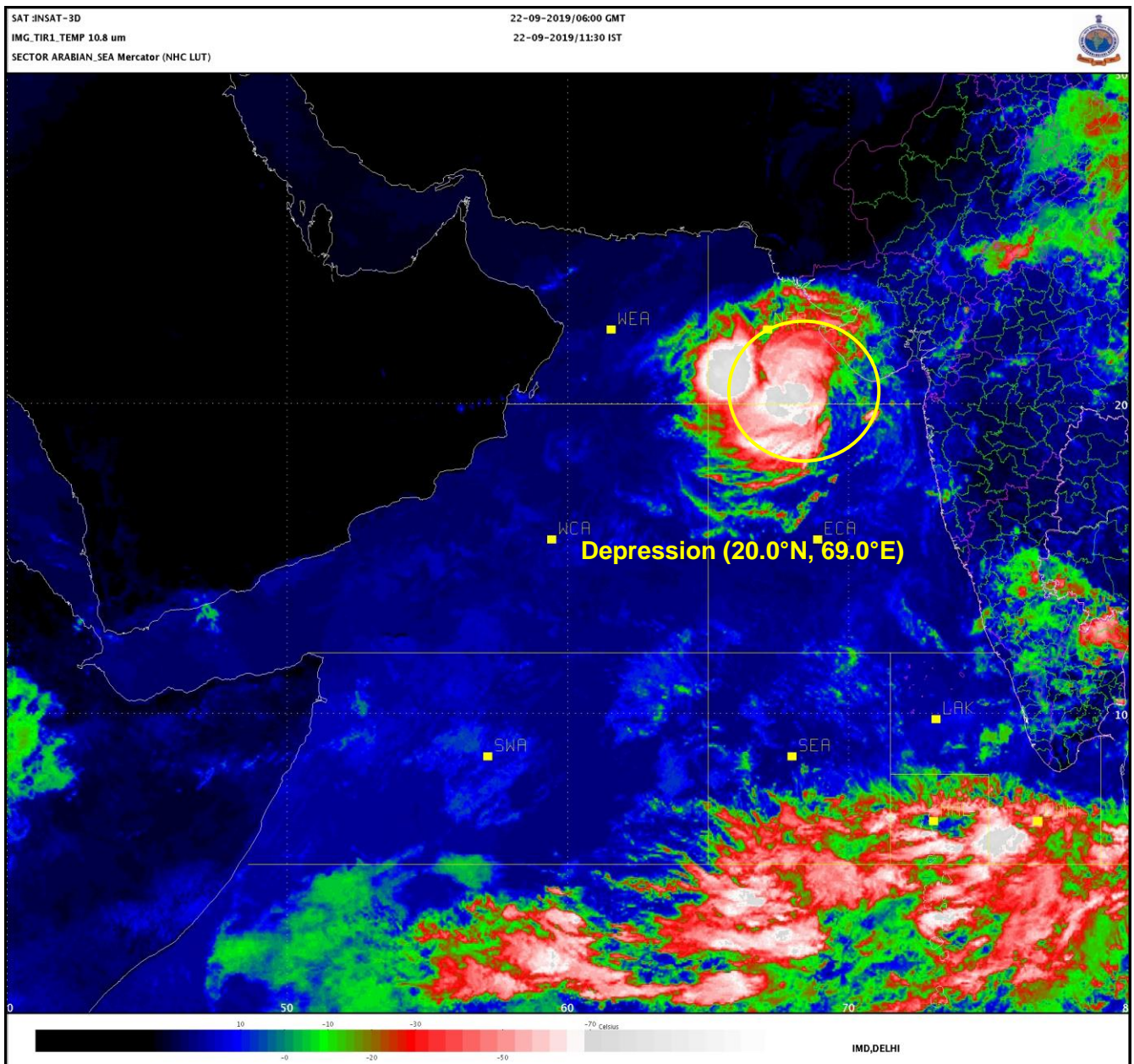
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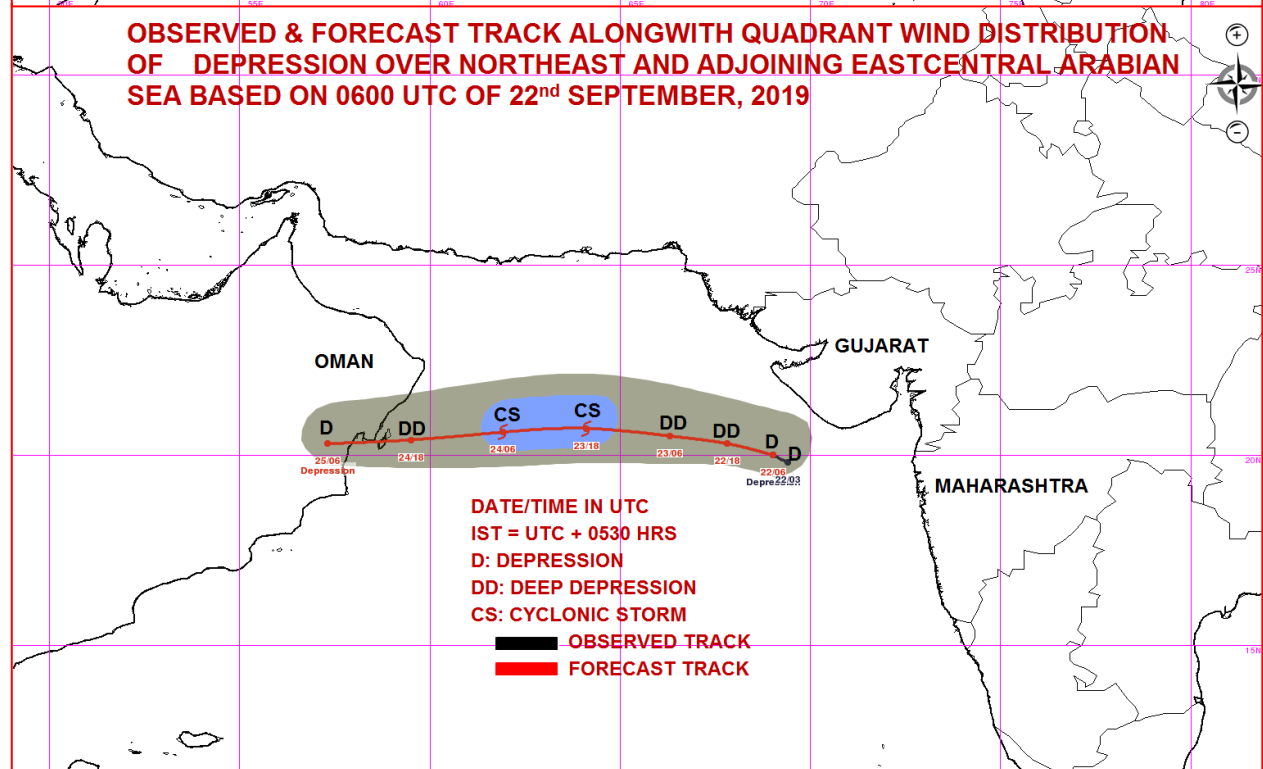
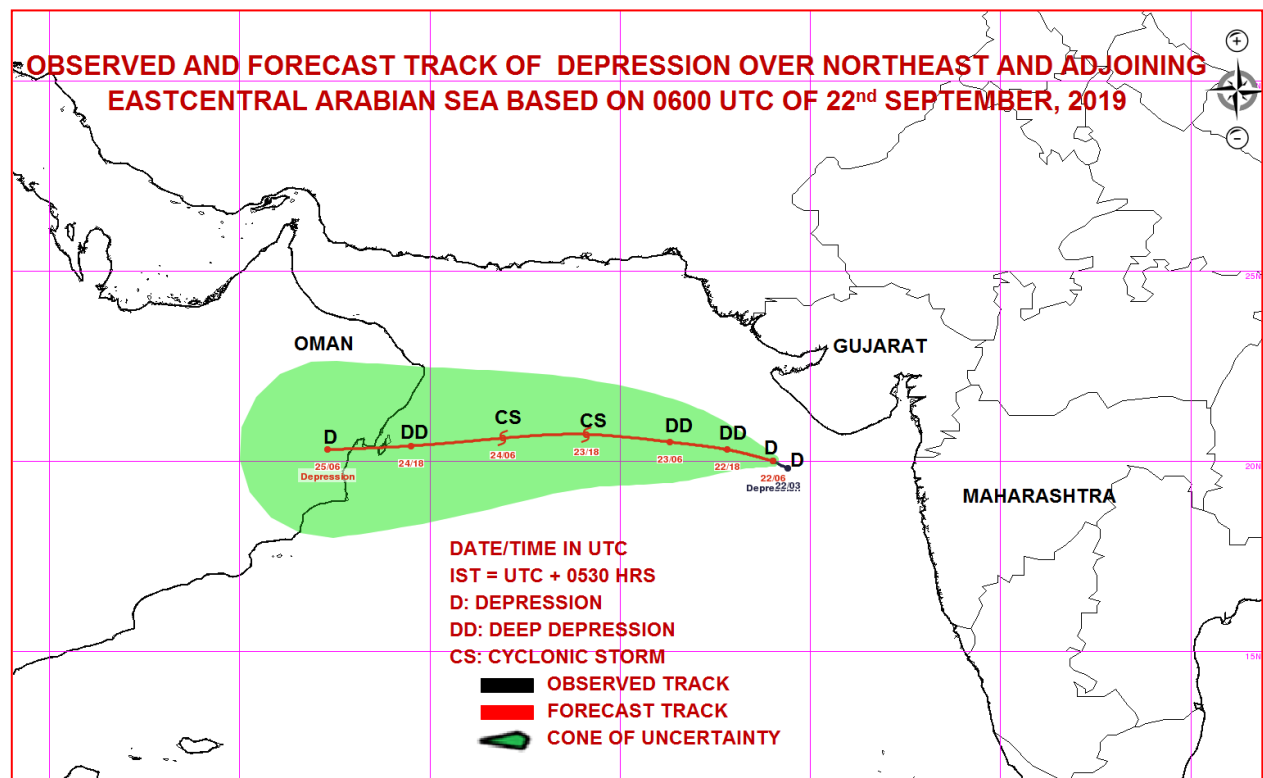
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TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 72 HOURS ISSUED AT 1430 UTC OF 22.09.2019 BASED ON 1200 UTC OF 22.09.2019.

DEEP DEPRESSION OVER NORTHEAST AND ADJOINING EASTCENTRAL ARABIAN SEA

THE DEPRESSION OVER EASTCENTRAL AND ADJOINING NORTHEAST ARABIAN SEA OFF GUJARAT COAST MOVED WEST-NORTHWESTWARDS WITH A SPEED OF 16 KMPH DURING PAST 06 HOURS INTENSIFIED INTO A DEEP DEPRESSION AND LAY CENTRED AT 1200 UTC OF TODAY, THE 22ND SEPTEMBER, 2019 OVER NORTHEAST AND ADJOINING EASTCENTRAL ARABIAN SEA NEAR LATITUDE 20.4°N AND LONGITUDE 68.2°E, ABOUT 230 KM WEST-SOUTHWEST OF VERAVAL (42909), GUJARAT, 510 KM SOUTH-SOUTHEAST OF KARACHI (41780), PAKISTAN AND 1080 KM EAST-SOUTHEAST OF MUSCAT (41256), OMAN. IT IS VERY LIKELY TO INTENSIFY FURTHER INTO A CYCLONIC STORM DURING NEXT 12 HOURS. IT IS VERY LIKELY TO MOVE INITIALLY WEST-NORTHWESTWARDS AND THEN NEARLY WESTWARDS TOWARDS OMAN COAST DURING NEXT 72 HOURS.

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22.09.19/1200	20.4/68.2	50-60 GUSTING TO 70	DEEP DEPRESSION
22.09.19/1800	20.5/67.5	55-65 GUSTING TO 75	CYCLONIC STORM
23.09.19/0000	20.6/66.9	60-70 GUSTING TO 80	CYCLONIC STORM
23.09.19/0600	20.6/66.0	65-75 GUSTING TO 85	CYCLONIC STORM
23.09.19/1200	20.6/65.0	65-75 GUSTING TO 85	CYCLONIC STORM
24.09.19/0000	20.6/62.9	60-70 GUSTING TO 80	CYCLONIC STORM
24.09.19/1200	20.5/60.8	50-60 GUSTING TO 70	DEEP DEPRESSION
25.09.19/0000	20.3/58.8	40-50 GUSTING TO 60	DEPRESSION
25.09.19/1200	20.1/56.8	20-30 GUSTING TO 40	LOW

REMARKS:

AS PER THE SATELLITE IMAGERY OF 1200 UTC ON 22ND SEPTEMBER, 2019, THE CURRENT INTENSITY OF THE SYSTEM IS T2.0. ASSOCIATED BROKEN LOW TO MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LIES OVER EASTCENTRAL AND ADJOINING NORTHEAST ARABIAN SEA BETWEEN LAT 18.0 °N TO 23.0 °N LONG 64.5 °E TO 69.5 °E AND OFF GULF OF KUTCH & ADJOINING WEST GUJARAT. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 91 DEG °C.

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THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL CONTINUE IN SAME PHASE WITH AMPLITUDE GREATER THAN 1 FOR NEXT 4-5 DAYS. HENCE, MJO PHASE WILL BE UNFAVOURABLE FOR ENHANCEMENT OF CONVECTION AND

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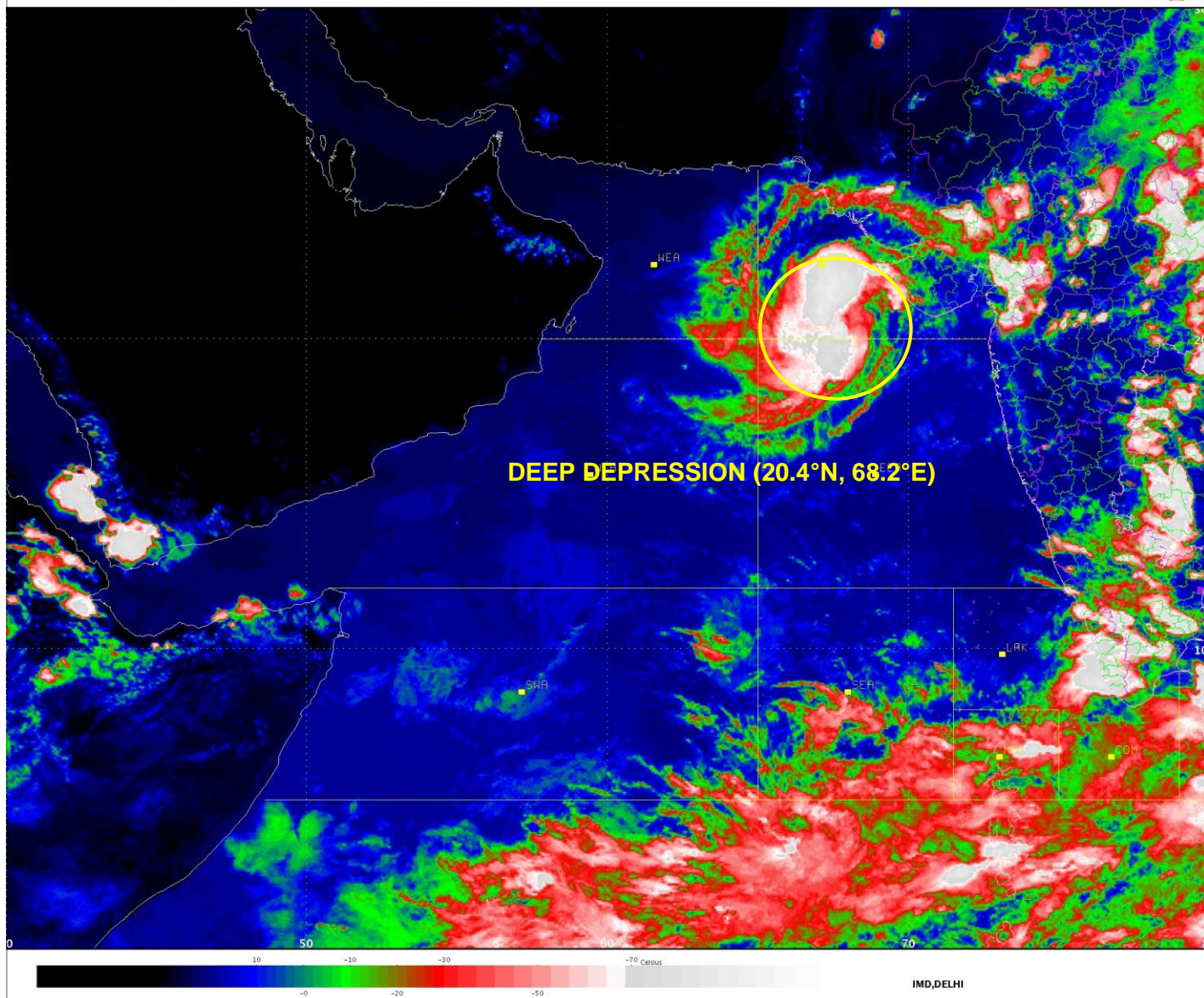
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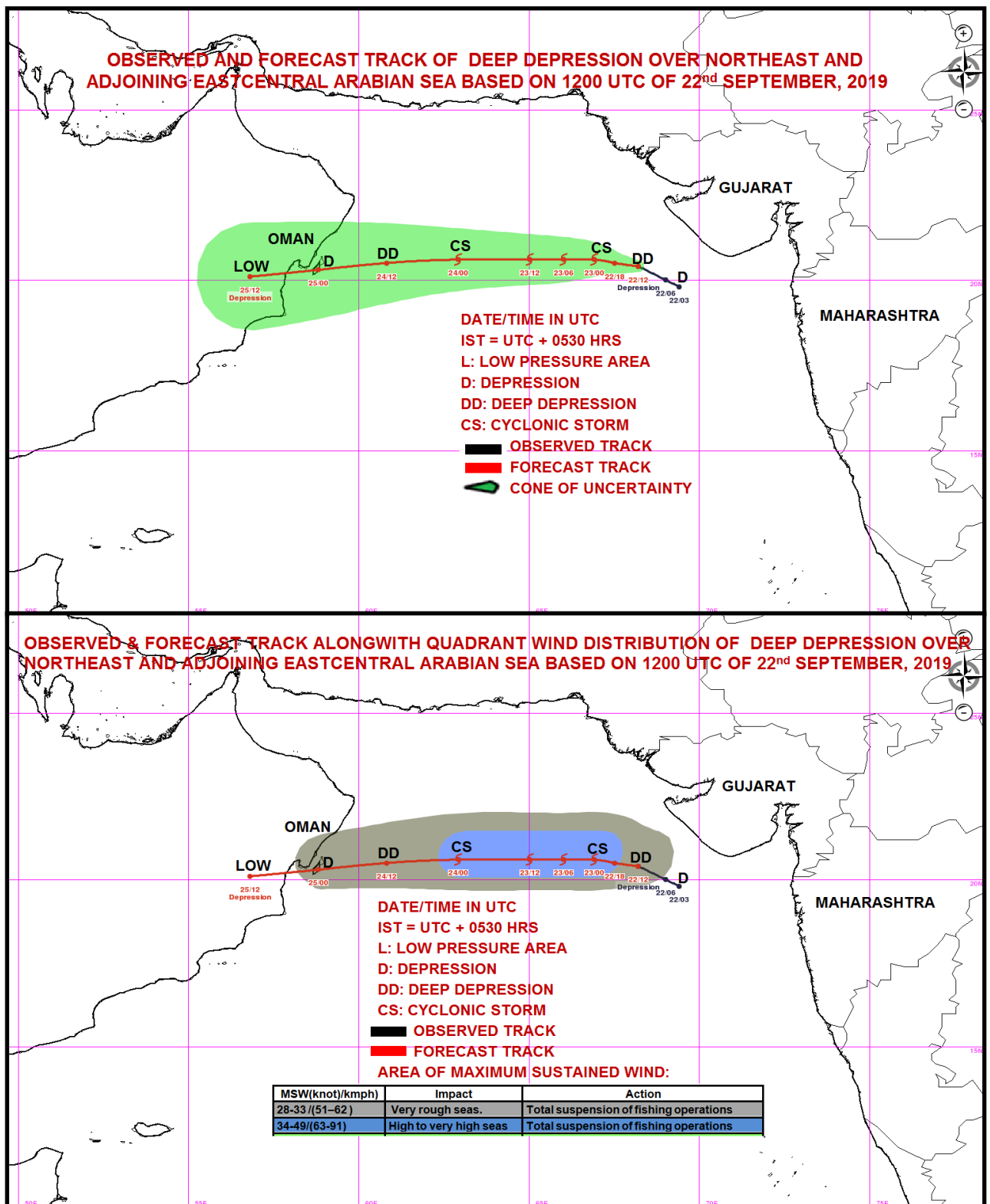
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SPECIAL TROPICAL WEATHER OUTLOOK

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 22.09.2019

TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 60 HOURS ISSUED AT 2100 UTC OF 22.09.2019 BASED ON 1800 UTC OF 22.09.2019.

DEEP DEPRESSION OVER NORTHEAST AND ADJOINING EASTCENTRAL ARABIAN SEA

THE DEEP DEPRESSION OVER NORTHEAST AND ADJOINING EASTCENTRAL ARABIAN SEA MOVED NEARLY WESTWARDS WITH A SPEED OF 18 KMPH DURING PAST 06 HOURS AND LAY CENTRED AT 1800 UTC OF TODAY, THE 22ND SEPTEMBER, 2019 OVER NORTHEAST AND ADJOINING EASTCENTRAL ARABIAN SEA NEAR LATITUDE 20.5°N AND LONGITUDE 67.2°E, ABOUT 330 KM WEST OF VERAVAL (42909), GUJARAT, 490 KM SOUTH OF KARACHI (41780), PAKISTAN AND 980 KM EAST-SOUTHEAST OF MUSCAT (41256), OMAN. IT IS VERY LIKELY TO INTENSIFY INTO A CYCLONIC STORM DURING NEXT 06 HOURS. IT IS VERY LIKELY TO MOVE INITIALLY WEST-NORTHWESTWARDS AND THEN NEARLY WESTWARDS TOWARDS OMAN COAST DURING NEXT 60 HOURS.

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
22.09.19/1800	20.5/67.2	55-65 gusting to 75	Deep Depression
23.09.19/0000	20.6/66.6	60-70 gusting to 80	Cyclonic Storm
23.09.19/0600	20.6/65.7	65-75 gusting to 85	Cyclonic Storm
23.09.19/1200	20.6/64.7	70-80 gusting to 90	Cyclonic Storm
23.09.19/1800	20.6/63.6	75-85 gusting to 95	Cyclonic Storm
24.09.19/0600	20.5/61.5	65-75 gusting to 85	Cyclonic Storm
24.09.19/1800	20.4/59.6	55-65 gusting to 75	Deep Depression
25.09.19/0600	20.2/57.5	40-50 gusting to 60	Depression

REMARKS:

AS PER THE SATELLITE IMAGERY OF 1800 UTC ON 22ND SEPTEMBER, 2019, THE CURRENT INTENSITY OF THE SYSTEM IS T2.0. ASSOCIATED BROKEN LOW TO MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LIES OVER NORTHEAST AND ADJOINING EASTCENTRAL ARABIAN SEA BETWEEN LAT 18.5 °N TO 22.0 °N LONG 63.5 °E TO 68.0 °E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93 DEG °C.

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 30 KNOTS GUSTING TO 40 KNOTS. THE SEA CONDITION IS VERY ROUGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS 998 HPA. AT 1800 UTC OF 22ND SEPTEMBER, A BUOY LOCATED AT 18.5°N/67.4°E REPORTED A MEAN SURFACE WIND SPEED OF 140°/12 KNOTS AND A SHIP LOCATED AT 21.1°N/66.0°E REPORTED A MEAN SURFACE WIND SPEED OF 10°/26 KNOTS. THE LOWEST MEAN SEA LEVEL PRESSURE OF ABOUT 1004 HPA IS REPORTED OVER VERAVAL (42909) ALONG GUJARAT COAST.

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 1 WITH AMPLITUDE MORE THAN 1. IT WILL CONTINUE IN SAME PHASE WITH AMPLITUDE GREATER THAN 1 FOR NEXT 4-5 DAYS. HENCE, MJO PHASE WILL BE UNFAVOURABLE FOR ENHANCEMENT OF CONVECTION AND INTENSIFICATION OF THE SYSTEM OVER ARABIAN SEA. CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE SEA SURFACE TEMPERATURE (SST) IS 27-28°C OVER CENTRAL AND NORTH

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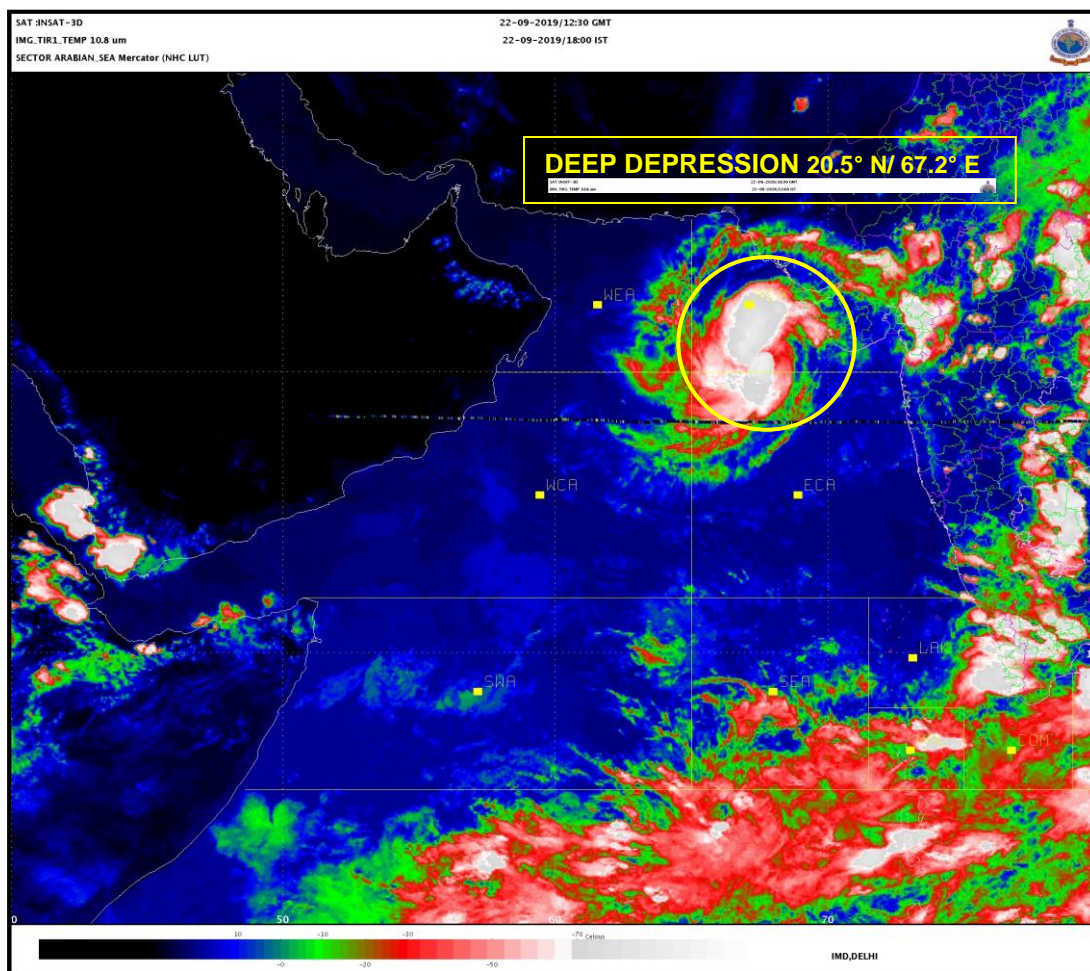
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

ARABIAN SEA. THE TROPICAL CYCLONE HEAT POTENTIAL IS LESS THAN 50 KJ/CM² OVER THE SYSTEM AREA. HOWEVER, TOTAL PRECIPITABLE WATER IMAGERIES INDICATE WARM AIR ADVECTION TO THE SYSTEM CENTRE. THE LOW LEVEL RELATIVE VORTICITY HAS INCREASED AND IS ABOUT 150 X10⁻⁵SEC⁻¹ AROUND THE SYSTEM CENTRE. THE LOWER LEVEL CONVERGENCE IS ABOUT 05 X10⁻⁵S⁻¹ AROUND THE SYSTEM CENTER. THE UPPER LEVEL DIVERGENCE IS ABOUT 10 X10⁻⁵S⁻¹ OVER THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS MODERATE (15-20 KNOTS) OVER THE SYSTEM AREA. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 22° N. HENCE, THOUGH OCEAN HEAT CONTENT AND MJO ARE NOT FAVOURABLE, THE INCREASED VORTICITY, WARM AIR ADVECTION AND MODERATE WIND SHEAR HAS HELPED THE SYSTEM TO FURTHER INTENSIFY INTO A DEEP DEPRESSION. IT IS LIKELY TO FURTHER INTENSIFY INTO A CYCLONIC STORM DURING NEXT 06 HOURS. AS THE SYSTEM LIES TO THE SOUTH OF UPPER TROPOSPHERIC RIDGE AND IS BEING STEERED BY MIDDLE AND UPPER TROPOSPHERIC WINDS, IT IS VERY LIKELY TO MOVE INITIALLY WEST-NORTHWESTWARDS AND THEN NEARLY WESTWARDS TOWARDS OMAN COAST DURING NEXT 60 HRS. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, GLOBAL ENSEMBLE FORECASTING SYSTEM (GEFS) AGREE WITH THE ABOVE FORECAST.

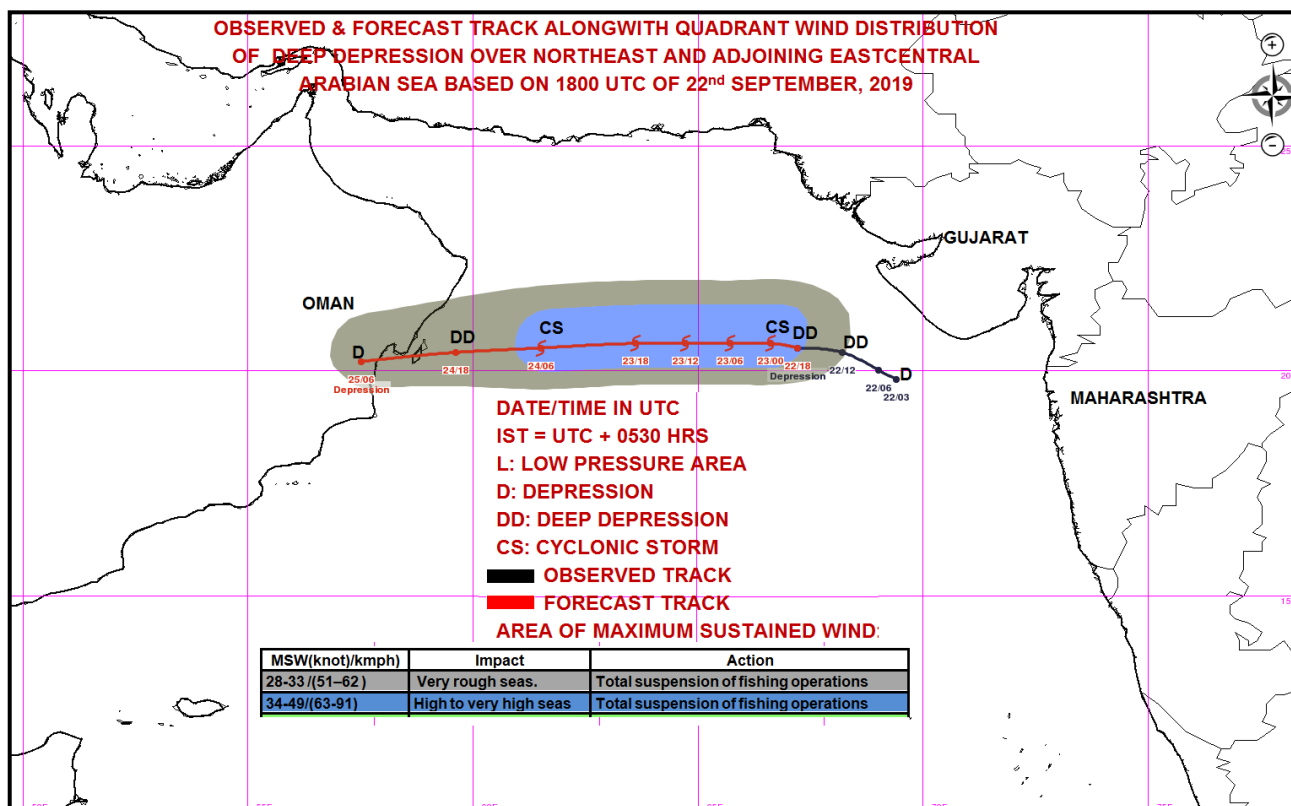
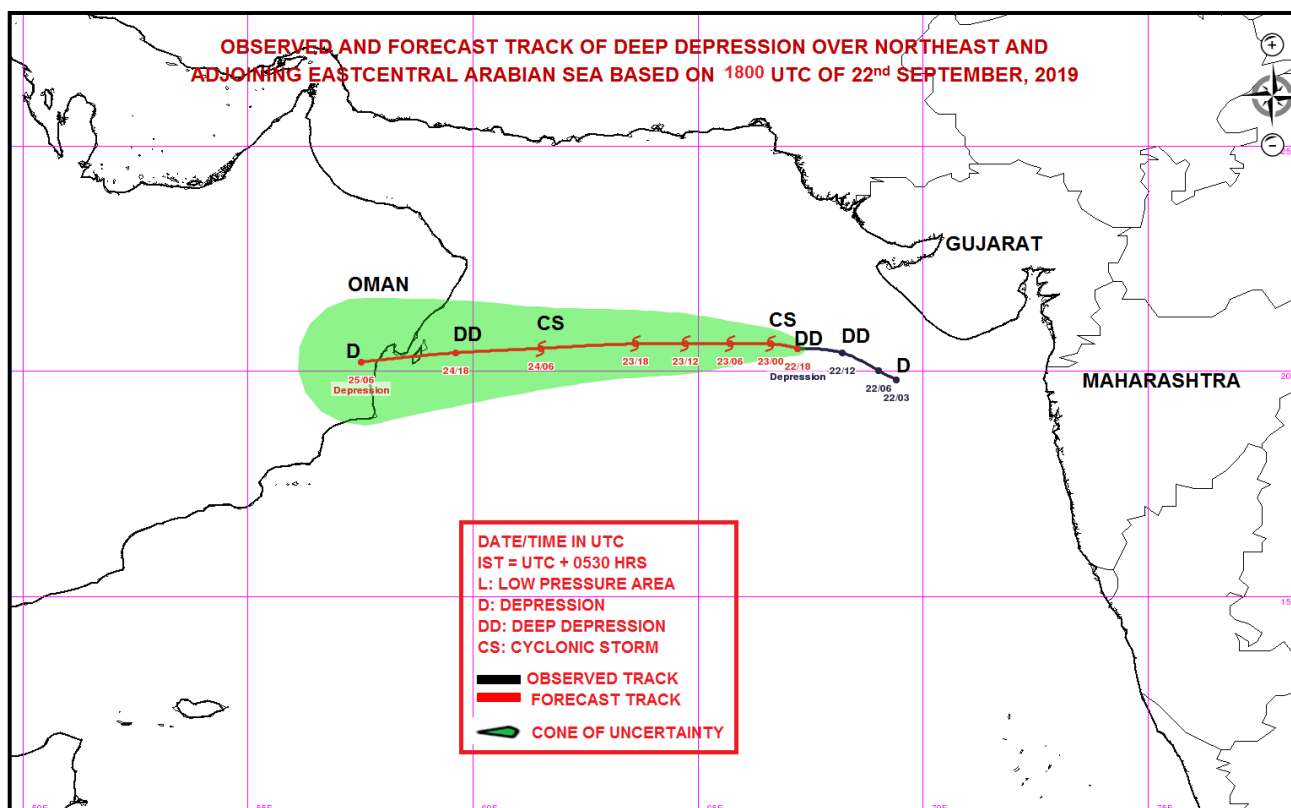
(KRISHNA MISHRA)
SCIENTIST-B, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 23.09.2019

TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 60 HOURS ISSUED AT 0300 UTC OF 23.09.2019 BASED ON 0000 UTC OF 23.09.2019.

**DEEP DEPRESSION OVER NORTHEAST AND ADJOINING EASTCENTRAL ARABIAN SEA
INTENSIFIED INTO CYCLONIC STORM 'HIKAA'**

THE DEEP DEPRESSION OVER NORTHEAST AND ADJOINING EASTCENTRAL ARABIAN SEA MOVED NEARLY WESTWARDS WITH A SPEED OF 17 KMPH DURING PAST 06 HOURS, INTENSIFIED INTO A **CYCLONIC STORM 'HIKAA'** AND LAY CENTRED AT 0000 UTC OF TODAY, THE 23RD SEPTEMBER, 2019 OVER NORTHEAST AND ADJOINING EASTCENTRAL ARABIAN SEA NEAR LATITUDE 20.5°N AND LONGITUDE 66.2°E, ABOUT 500 KM WEST-SOUTHWEST OF VERAVAL (42909), GUJARAT, 430 KM SOUTH-SOUTHWEST OF KARACHI (41780), PAKISTAN AND 760 KM EAST-SOUTHEAST OF MASIRAH (41288), OMAN. IT IS VERY LIKELY TO MOVE NEARLY WESTWARDS AND REACH OMAN COAST BY 25TH SEPTEMBER EARLY MORNING. IT IS LIKELY TO INTENSIFY FURTHER DURING NEXT 24 HOURS AND WEAKEN GRADUALLY THEREAFTER.

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
23.09.19/0000	20.5/66.2	60-70 GUSTING TO 80	CYCLONIC STORM
23.09.19/0600	20.5/65.3	65-75 GUSTING TO 85	CYCLONIC STORM
23.09.19/1200	20.4/64.5	70-80 GUSTING TO 90	CYCLONIC STORM
23.09.19/1800	20.4/63.2	75-85 GUSTING TO 95	CYCLONIC STORM
24.09.19/0000	20.4/62.0	70-80 GUSTING TO 90	CYCLONIC STORM
24.09.19/1200	20.2/60.0	60-70 GUSTING TO 80	CYCLONIC STORM
25.09.19/0000	19.9/57.6	45-55 GUSTING TO 65	DEPRESSION
25.09.19/1200	19.5/55.5	35-45 GUSTING TO 55	WELL MARKED LOW

REMARKS:

AS PER THE SATELLITE IMAGERY OF 0000 UTC ON 23RD SEPTEMBER, 2019, THE CURRENT INTENSITY OF THE SYSTEM IS T2.5. ASSOCIATED BROKEN LOW TO MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LIES OVER NORTH AND ADJOINING CENTRAL ARABIAN SEA BETWEEN LAT 18.0 °N TO 22.0 °N LONG 62.0 °E TO 67.0 °E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93 DEG °C. THE CONVECTION HAS ORGANISED FURTHER DURING PAST SIX HOURS. THE SYSTEM SHOWS CURVED BAND PATTERN.

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 35 KNOTS GUSTING TO 45 KNOTS. THE SEA CONDITION IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS 997 HPA. AT 0000 UTC OF 23RD SEPTEMBER, A SHIP LOCATED AT 21.9°N/62.5°E REPORTED MEAN SEA LEVEL PRESSURE OF 1004 HPA AND MEAN SURFACE WIND SPEED OF 320°/24 KNOTS.

CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE SEA SURFACE TEMPERATURE (SST) IS 27-28°C OVER CENTRAL AND NORTH ARABIAN SEA. THE TROPICAL CYCLONE HEAT POTENTIAL IS LESS THAN 50 KJ/CM² OVER THE SYSTEM AREA. HOWEVER, TOTAL PRECIPITABLE WATER IMAGERIES INDICATE WARM AIR ADVECTION TO THE SYSTEM CENTRE. THE LOW LEVEL RELATIVE VORTICITY IS ABOUT $150 \times 10^{-5} \text{SEC}^{-1}$ AROUND THE SYSTEM CENTRE. THE LOWER LEVEL CONVERGENCE IS ABOUT $10 \times 10^{-5} \text{S}^{-1}$

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

AROUND THE SYSTEM CENTER. THE UPPER LEVEL DIVERGENCE IS ABOUT $10 \times 10^{-5} \text{S}^{-1}$ OVER THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS MODERATE (15-20 KNOTS) OVER THE SYSTEM AREA. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 22°N . THOUGH OCEAN HEAT CONTENT AND MJO WERE NOT FAVOURABLE, THE INCREASED VORTICITY, WARM AIR ADVECTION AND MODERATE WIND SHEAR HAS HELPED THE SYSTEM TO FURTHER INTENSIFY INTO A CYCLONIC STORM. AS THE SYSTEM LIES TO THE SOUTH OF UPPER TROPOSPHERIC RIDGE AND IS BEING STEERED BY MIDDLE AND UPPER TROPOSPHERIC WINDS, IT IS VERY LIKELY TO MOVE NEARLY WESTWARDS AND REACH OMAN COAST BY 25TH SEPTEMBER EARLY MORNING. HOWEVER, IT IS LIKELY TO WEAKEN GRADUALLY AFTER 24 HRS AS IT ENTERS INTO COLDER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA. HENCE IT IS VERY LIKELY TO REACH OMAN COAST AS A DEEP DEPRESSION/ DEPRESSION. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, GLOBAL ENSEMBLE FORECASTING SYSTEM (GEFS) AGREE WITH THE ABOVE FORECAST.

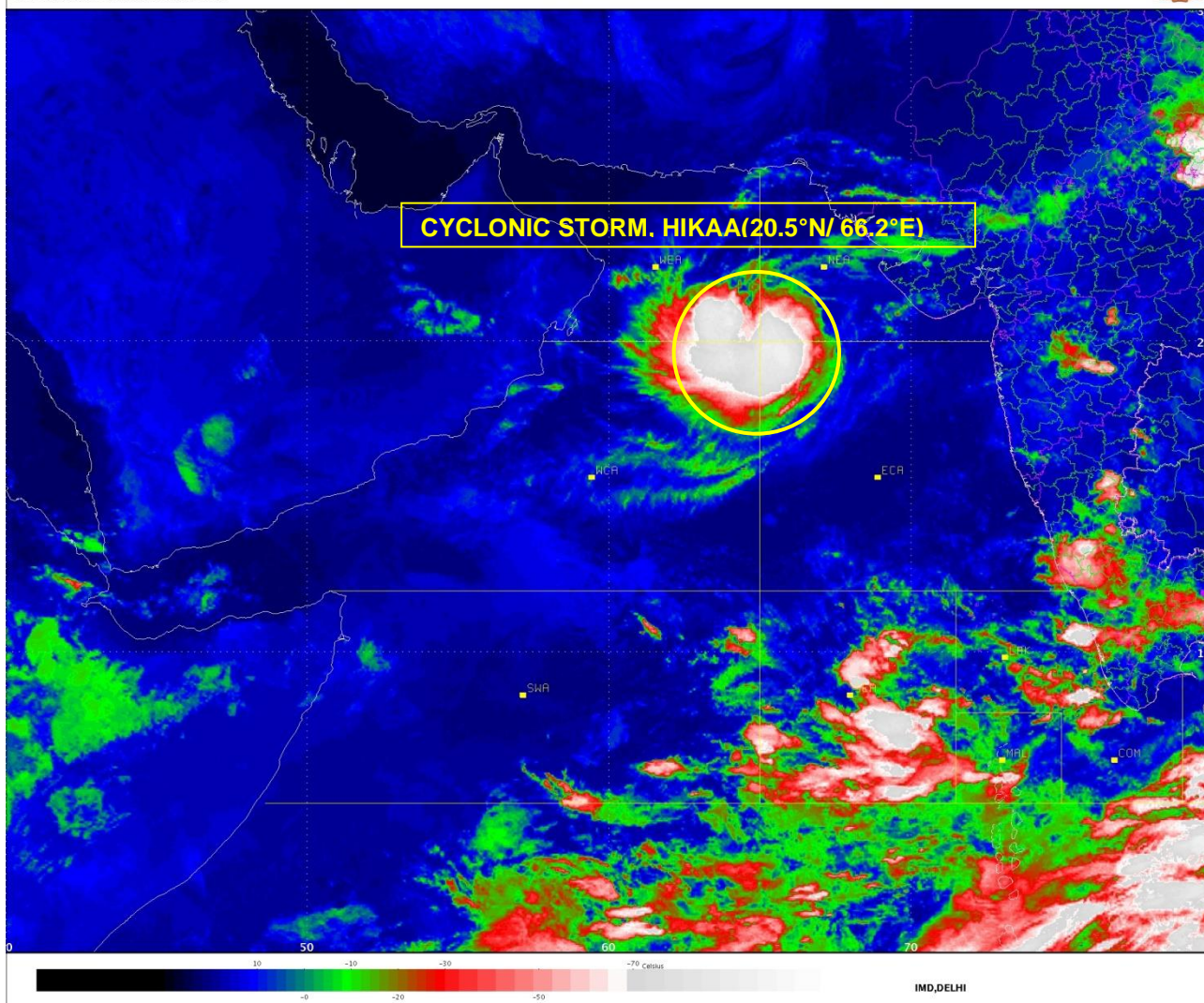
(SHIBIN B)
SCIENTIST-C, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

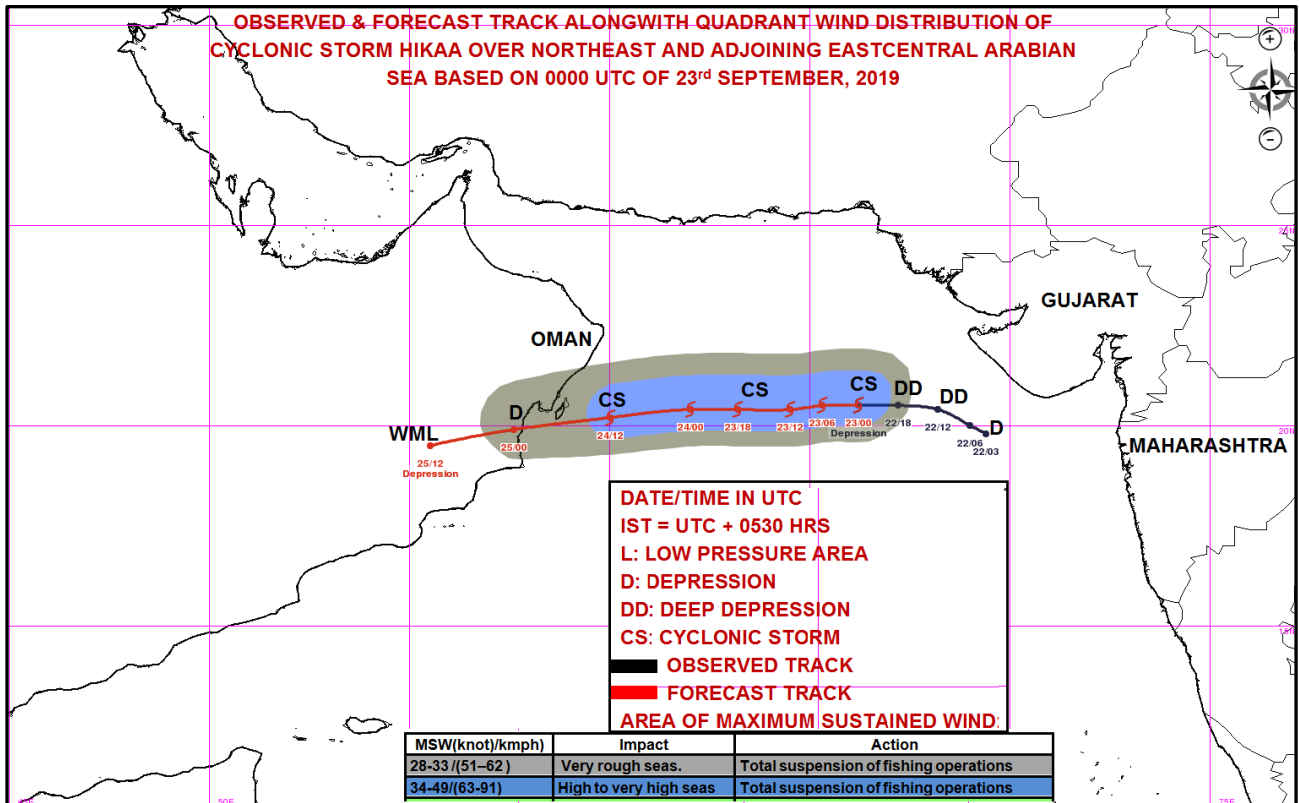
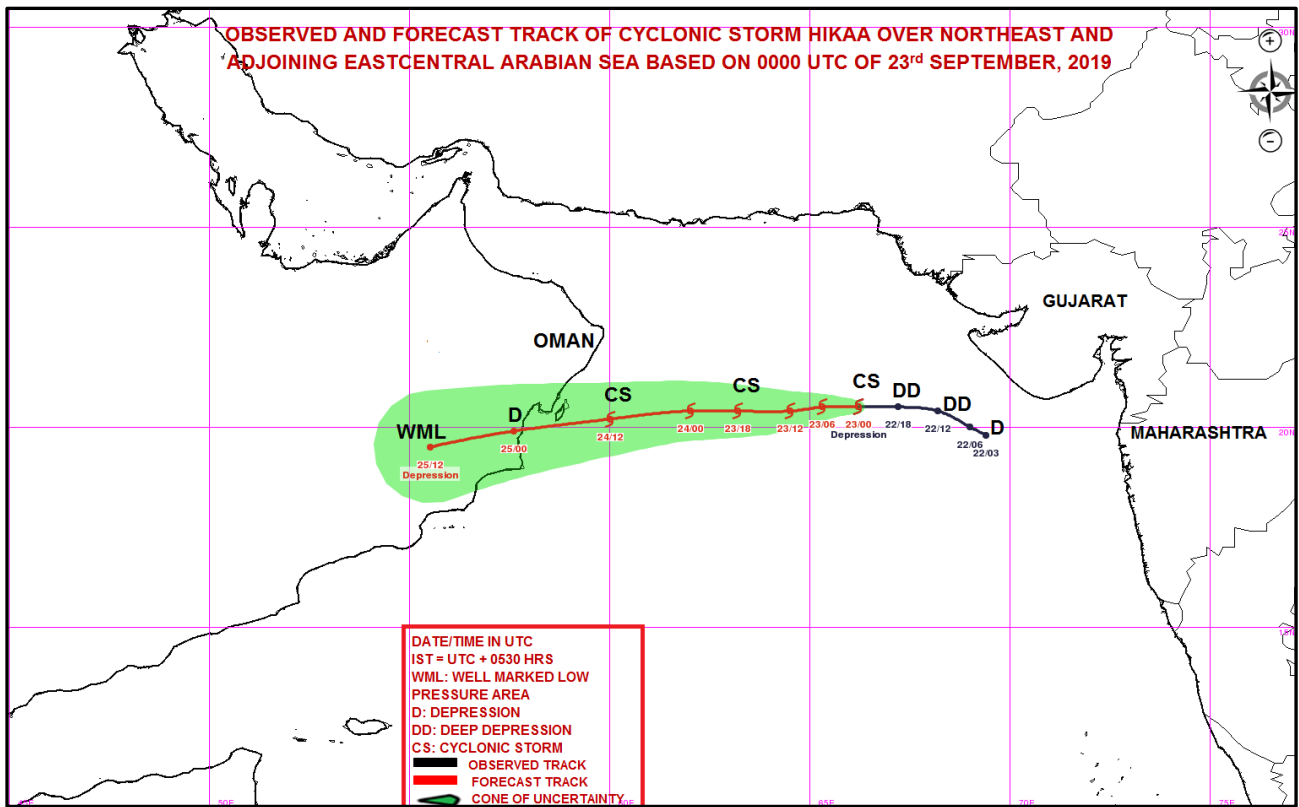
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23-09-2019/01:30 GMT
23-09-2019/07:00 IST



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 1

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)
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. 1 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 60 HOURS ISSUED AT 0600 UTC OF 23.09.2019 BASED ON 0300 UTC OF 23.09.2019.

SUB: CYCLONIC STORM 'HIKAA' OVER NORTHEAST AND ADJOINING EASTCENTRAL ARABIAN SEA

THE **CYCLONIC STORM 'HIKAA'** OVER NORTHEAST AND ADJOINING EASTCENTRAL ARABIAN SEA MOVED NEARLY WESTWARDS WITH A SPEED OF 17 KMPH DURING PAST 06 HOURS AND LAY CENTRED AT 0300 UTC OF TODAY, THE 23RD SEPTEMBER, 2019 OVER THE SAME REGION NEAR LATITUDE 20.4°N AND LONGITUDE 65.7°E, ABOUT 490 KM WEST-SOUTHWEST OF VERAVAL (42909), GUJARAT (INDIA), 520 KM SOUTH-SOUTHWEST OF KARACHI (41780), PAKISTAN AND 710 KM EAST-SOUTHEAST OF MASIRAH (41288), OMAN. IT IS LIKELY TO INTENSIFY FURTHER DURING NEXT 24 HOURS AND WEAKEN GRADUALLY THEREAFTER. IT IS VERY LIKELY TO MOVE NEARLY WESTWARDS AND CROSS OMAN COAST BETWEEN LATITUDE 19°N AND 20°N AROUND 2100 UTC 24TH SEPTEMBER 2019 AS A DEEP DEPRESSION.

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
23.09.19/0300	20.4/65.7	60-70 GUSTING TO 80	CYCLONIC STORM
23.09.19/0600	20.3/65.3	65-75 GUSTING TO 85	CYCLONIC STORM
23.09.19/1200	20.2/64.5	70-80 GUSTING TO 90	CYCLONIC STORM
23.09.19/1800	20.1/63.2	75-85 GUSTING TO 95	CYCLONIC STORM
24.09.19/0000	20.0/62.0	70-80 GUSTING TO 90	CYCLONIC STORM
24.09.19/1200	19.8/60.0	60-70 GUSTING TO 80	CYCLONIC STORM
25.09.19/0000	19.6/57.6	45-55 GUSTING TO 65	DEPRESSION
25.09.19/1200	19.4/55.5	35-45 GUSTING TO 55	WELL MARKED LOW

REMARKS:

AS PER THE SATELLITE IMAGERY OF 0300 UTC ON 23RD SEPTEMBER, 2019, THE CURRENT INTENSITY OF THE SYSTEM IS T2.5. ASSOCIATED BROKEN LOW TO MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTH AND ADJOINING CENTRAL ARABIAN SEA BETWEEN LATITUDE 18.0°N TO 21.5°N AND LONGITUDE 61.5°E TO 66.5°E. THE CONVECTION HAS ORGANISED FURTHER DURING PAST SIX HOURS. THE SYSTEM SHOWS CURVED BAND PATTERN.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

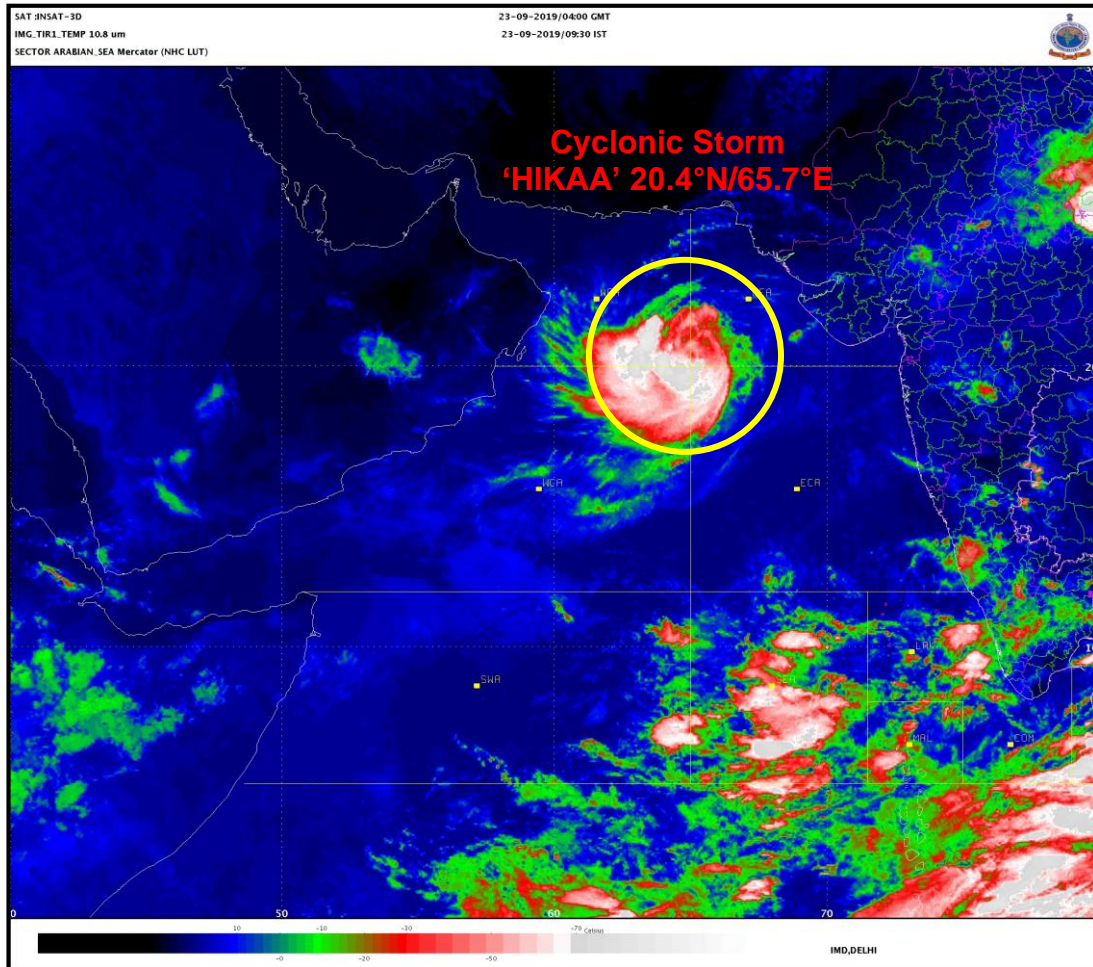
THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 35 KNOTS GUSTING TO 45 KNOTS. THE SEA CONDITION IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS 997 HPA.

CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE SEA SURFACE TEMPERATURE (SST) IS 27-28°C OVER CENTRAL AND NORTH ARABIAN SEA. THE TROPICAL CYCLONE HEAT POTENTIAL IS LESS THAN 50 KJ/CM² OVER THE SYSTEM AREA AND ALONG THE FORECAST TRACK. MADDEN JULIAN OSCILLATION (MJO) LIES IN PHASE 1 WITH AMPLITUDE GREATER THAN 1 AND WILL CONTINUE IN SAME PHASE DURING NEXT 4 DAYS. HOWEVER, TOTAL PRECIPITABLE WATER IMAGERIES INDICATE WARM AIR ADVECTION TO THE SYSTEM CENTRE. THE LOW LEVEL RELATIVE VORTICITY IS ABOUT $150 \times 10^{-5} \text{SEC}^{-1}$ AROUND THE SYSTEM CENTRE. THE LOWER LEVEL CONVERGENCE IS ABOUT $10 \times 10^{-5} \text{S}^{-1}$ AROUND THE SYSTEM CENTER. THE UPPER LEVEL DIVERGENCE IS ABOUT $10 \times 10^{-5} \text{S}^{-1}$ OVER THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS MODERATE (15-20 KNOTS) OVER THE SYSTEM AREA. IT IS LIKELY TO DECREASE BECOMING 10-15 KTS ALONG THE FORECAST TRACK. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 22° N. THOUGH OCEAN HEAT CONTENT AND MJO ARE NOT FAVOURABLE, THE INCREASED VORTICITY, WARM AIR ADVECTION AND MODERATE WIND SHEAR MAY HELP THE SYSTEM TO INTENSIFY FURTHER SLIGHTLY DURING NEXT 24 HOURS. THEREAFTER, THE SYSTEM WILL START WEAKENING DUE TO UNFAVOURABLE OCEAN CONDITIONS. AS THE SYSTEM LIES TO THE SOUTH OF UPPER TROPOSPHERIC RIDGE AND IS BEING STEERED BY MIDDLE AND UPPER TROPOSPHERIC WINDS, IT IS VERY LIKELY TO MOVE NEARLY WESTWARDS AND CROSS OMAN COAST AS A DEEP DEPRESSION AROUND 2100 UTC OF 24TH SEPTEMBER. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, GLOBAL ENSEMBLE FORECASTING SYSTEM (GEFS) AGREE WITH THE ABOVE FORECAST.

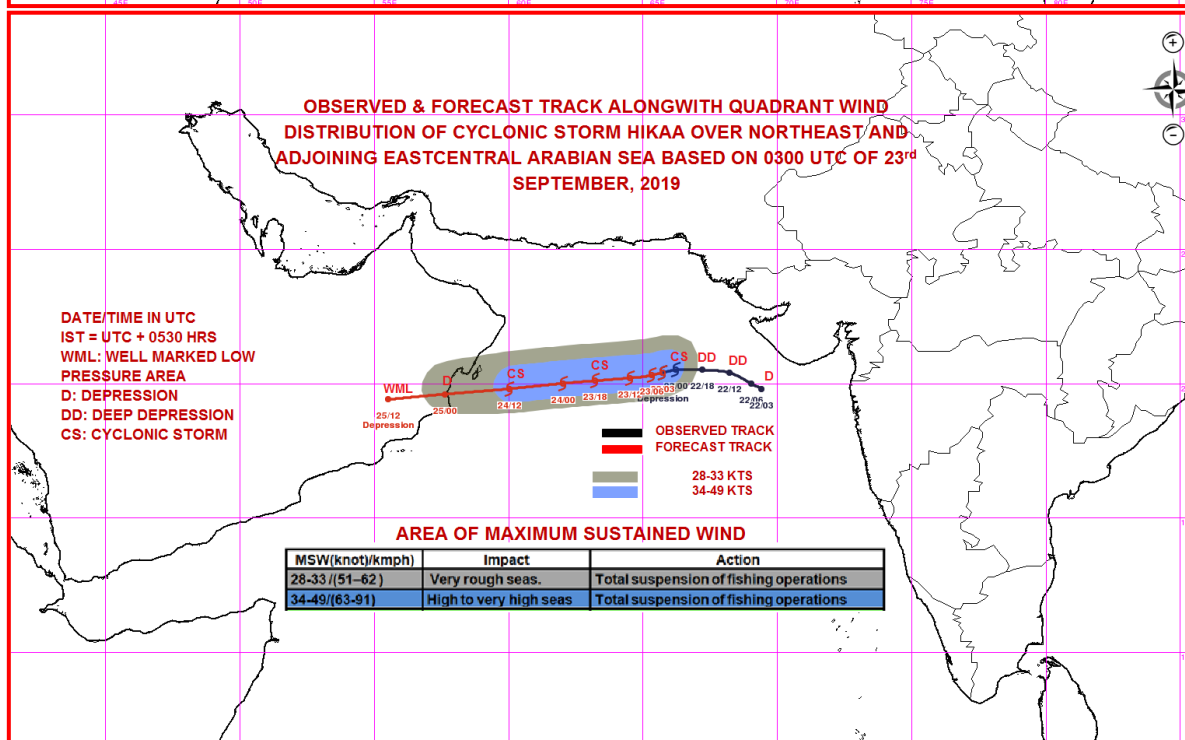
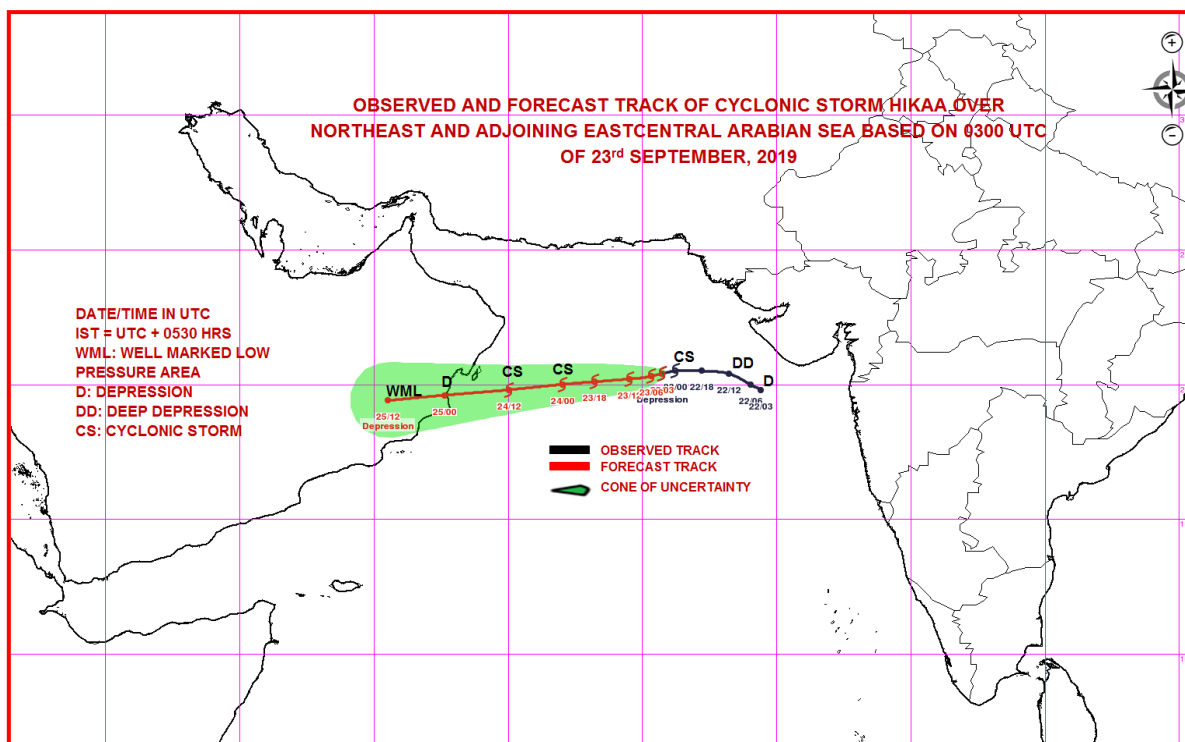
(NEETHA K GOPAL)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 2

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)
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. 2 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 60 HOURS ISSUED AT 0800 UTC OF 23.09.2019 BASED ON 0600 UTC OF 23.09.2019.

SUB: CYCLONIC STORM 'HIKAA' OVER NORTHEAST AND ADJOINING EASTCENTRAL ARABIAN SEA

THE **CYCLONIC STORM 'HIKAA'** OVER NORTHEAST AND ADJOINING EASTCENTRAL ARABIAN SEA MOVED NEARLY WESTWARDS WITH A SPEED OF 21 KMPH DURING PAST 06 HOURS AND LAY CENTRED AT 0600 UTC OF TODAY, THE 23RD SEPTEMBER, 2019 OVER THE SAME REGION NEAR LATITUDE 20.3°N AND LONGITUDE 65.0°E, ABOUT 560 KM WEST-SOUTHWEST OF VERAVAL (42909), GUJARAT (INDIA), 560 KM SOUTH-SOUTHWEST OF KARACHI (41780), PAKISTAN AND 630 KM EAST-SOUTHEAST OF MASIRAH (41288), OMAN. IT IS LIKELY TO INTENSIFY FURTHER DURING NEXT 12 HOURS AND WEAKEN GRADUALLY FROM 24TH MORNING. IT IS VERY LIKELY TO MOVE NEARLY WESTWARDS AND CROSS OMAN COAST BETWEEN LATITUDE 19°N AND 20°N AROUND 2100 UTC OF 24TH SEPTEMBER 2019 AS A DEEP DEPRESSION.

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
23.09.19/0600	20.3/65.0	70-80 GUSTING TO 90	CYCLONIC STORM
23.09.19/1200	20.2/64.0	80-90 GUSTING TO 100	CYCLONIC STORM
23.09.19/1800	20.1/62.9	80-90 GUSTING TO 100	CYCLONIC STORM
24.09.19/0000	20.0/61.7	70-80 GUSTING TO 90	CYCLONIC STORM
24.09.19/0600	19.9/60.5	60-70 GUSTING TO 80	CYCLONIC STORM
24.09.19/1800	19.7/58.7	50-60 GUSTING TO 70	DEEP DEPRESSION
25.09.19/0600	19.5/56.8	35-45 GUSTING TO 55	DEPRESSION

REMARKS:

AS PER THE SATELLITE IMAGERY OF 0600 UTC ON 23RD SEPTEMBER, 2019, THE CURRENT INTENSITY OF THE SYSTEM IS T3.0. ASSOCIATED BROKEN LOW TO MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTH AND ADJOINING CENTRAL ARABIAN SEA BETWEEN LATITUDE 17.0°N TO 21.5°N AND LONGITUDE 61.0°E TO 66.0°E. THE CONVECTION HAS ORGANISED FURTHER DURING PAST SIX HOURS. THE SYSTEM SHOWS CURVED BAND PATTERN.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 40 KNOTS GUSTING TO 50 KNOTS. THE SEA CONDITION IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS 996 HPA. AT 0600 UTC OF 23RD SEPTEMBER, A SHIP LOCATED AT 17.8°N/66.1°E REPORTED A MEAN SEA LEVEL PRESSURE OF 1007.3 HPA AND MEAN SURFACE WIND SPEED OF 290°/24 KNOTS.

CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE SEA SURFACE TEMPERATURE (SST) IS 27-28°C OVER CENTRAL AND NORTH ARABIAN SEA. THE TROPICAL CYCLONE HEAT POTENTIAL IS LESS THAN 50 KJ/CM² OVER THE SYSTEM AREA AND ALONG THE FORECAST TRACK. MADDEN JULIAN OSCILLATION (MJO) LIES IN PHASE 1 WITH AMPLITUDE GREATER THAN 1 AND WILL CONTINUE IN SAME PHASE DURING NEXT 4 DAYS. HOWEVER, TOTAL PRECIPITABLE WATER IMAGERIES INDICATE WARM AIR ADVECTION TO THE SYSTEM CENTRE. THE LOW LEVEL RELATIVE VORTICITY IS ABOUT $170 \times 10^{-5} \text{SEC}^{-1}$ AROUND THE SYSTEM CENTRE. THE LOWER LEVEL CONVERGENCE IS ABOUT $15 \times 10^{-5} \text{S}^{-1}$ AROUND THE SYSTEM CENTER. THE UPPER LEVEL DIVERGENCE IS ABOUT $20 \times 10^{-5} \text{S}^{-1}$ OVER THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS MODERATE (15-20 KNOTS) OVER THE SYSTEM AREA. IT IS LIKELY TO DECREASE BECOMING 10-15 KTS ALONG THE FORECAST TRACK. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 22° N. THOUGH OCEAN HEAT CONTENT AND MJO ARE NOT FAVOURABLE, THE INCREASED VORTICITY, WARM AIR ADVECTION AND MODERATE WIND SHEAR MAY HELP THE SYSTEM TO INTENSIFY FURTHER SLIGHTLY DURING NEXT 12 HOURS. THEREAFTER, THE SYSTEM WILL START WEAKENING DUE TO UNFAVOURABLE OCEAN CONDITIONS. AS THE SYSTEM LIES TO THE SOUTH OF UPPER TROPOSPHERIC RIDGE AND IS BEING STEERED BY MIDDLE AND UPPER TROPOSPHERIC WINDS, IT IS VERY LIKELY TO MOVE NEARLY WESTWARDS AND CROSS OMAN COAST AS A DEEP DEPRESSION AROUND 2100 UTC OF 24TH SEPTEMBER. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, GLOBAL ENSEMBLE FORECASTING SYSTEM (GEFS) AGREE WITH THE ABOVE FORECAST.

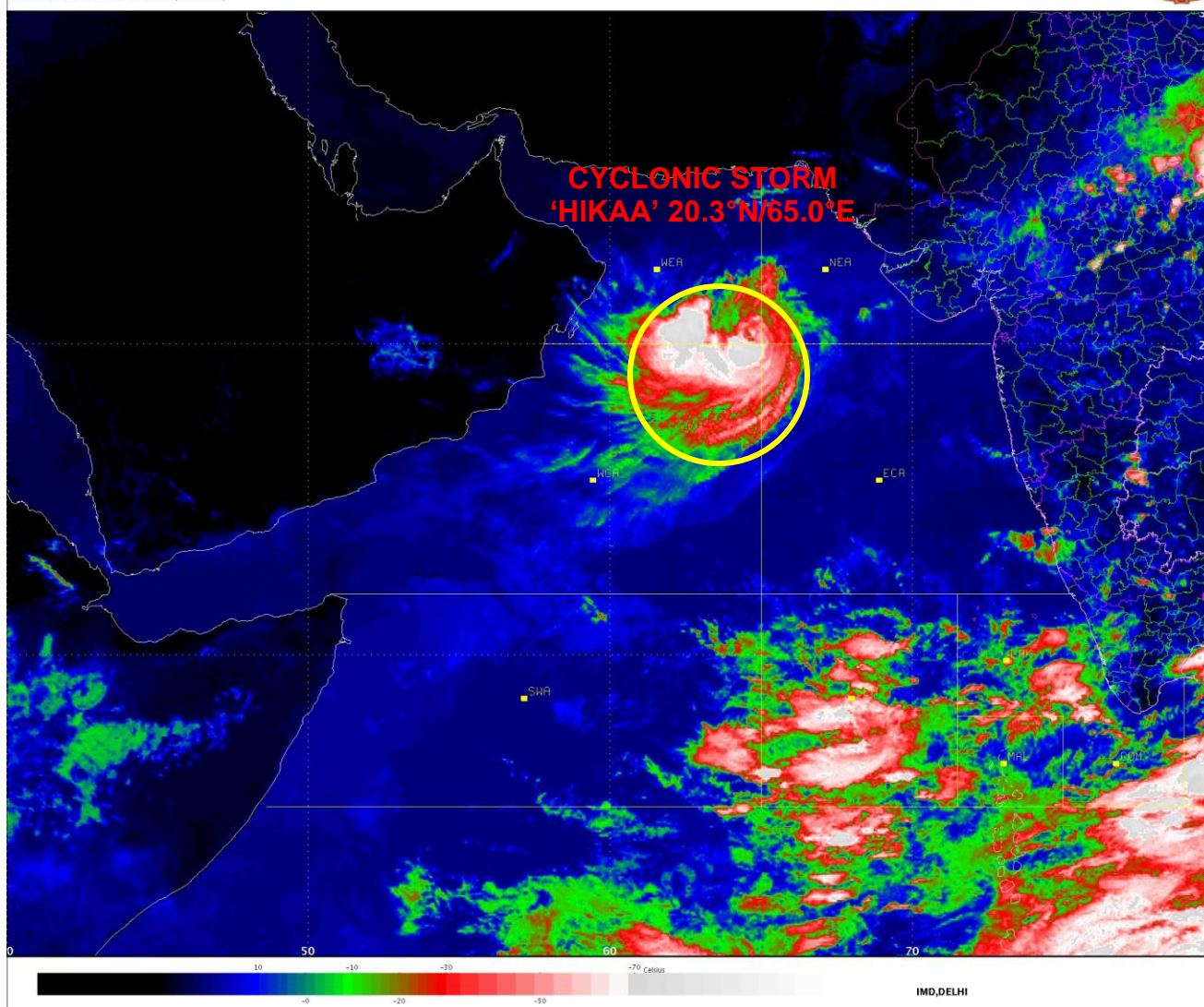
(NEETHA K GOPAL)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

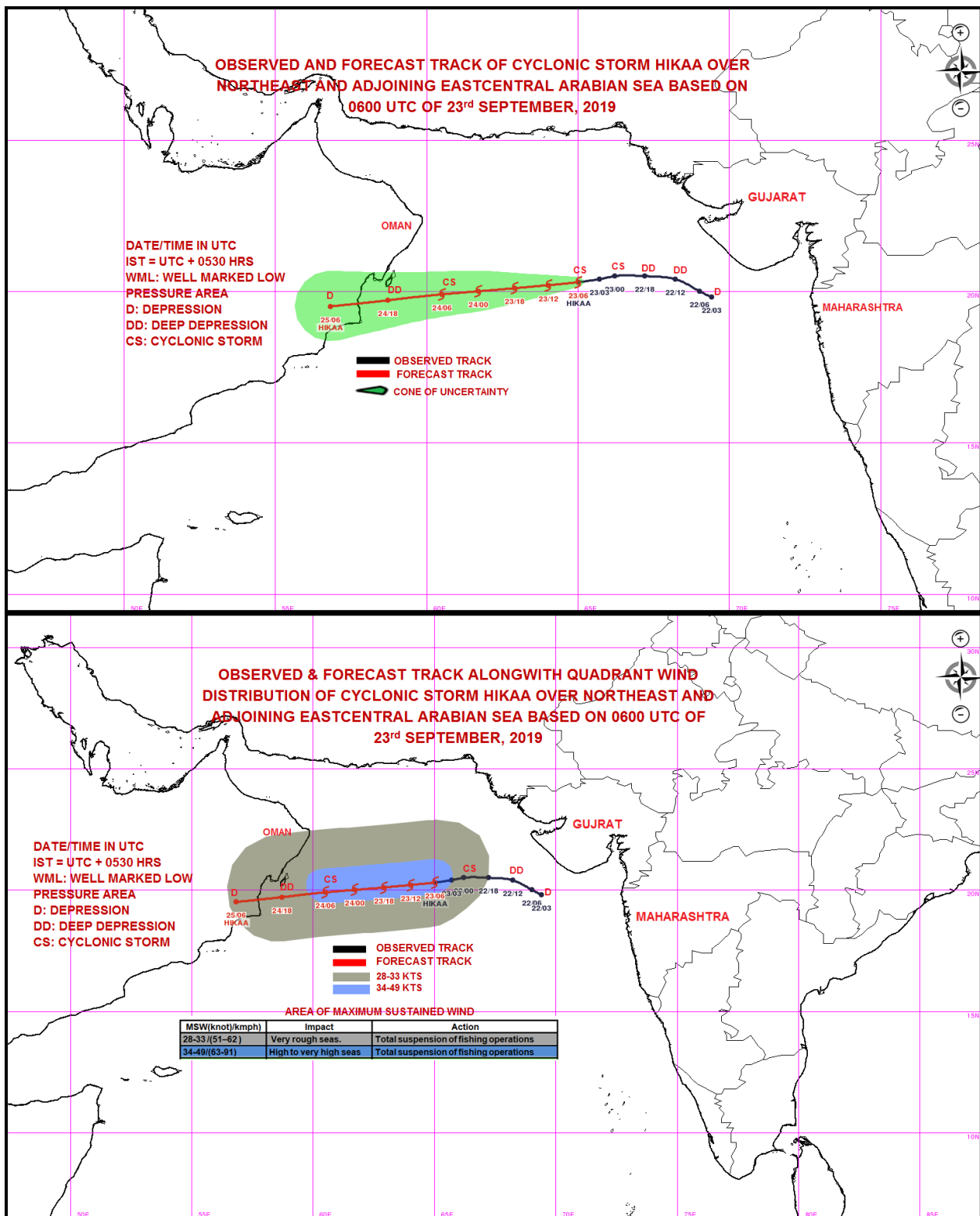
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23-09-2019/06:00 GMT
23-09-2019/11:30 IST



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 3

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)
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. 3 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 48 HOURS ISSUED AT 1200 UTC OF 23.09.2019 BASED ON 0900 UTC OF 23.09.2019.

SUB: CYCLONIC STORM 'HIKAA' INTENSIFIED INTO A SEVERE CYCLONIC STORM OVER NORTHEAST AND ADJOINING NORTH WEST & CENTRAL ARABIAN SEA

THE **CYCLONIC STORM 'HIKAA'** OVER NORTHEAST AND ADJOINING EASTCENTRAL ARABIAN SEA MOVED NEARLY WESTWARDS WITH A SPEED OF 26 KMPH DURING PAST 06 HOURS AND INTENSIFIED INTO A SEVERE CYCLONIC STORM AND LAY CENTRED AT 0900 UTC OF TODAY, THE 23RD SEPTEMBER, 2019 OVER NORTHEAST AND ADJOINING NORTH WEST & CENTRAL ARABIAN SEA NEAR LATITUDE 20.2°N AND LONGITUDE 64.2°E, ABOUT 640 KM WEST-SOUTHWEST OF VERAVAL (42909), GUJARAT (INDIA), 600 KM SOUTHWEST OF KARACHI (41780), PAKISTAN AND 550 KM EAST-SOUTHEAST OF MASIRAH (41288), OMAN. IT IS LIKELY TO INTENSIFY FURTHER DURING NEXT 12 HOURS AND WEAKEN GRADUALLY FROM 24TH MORNING. IT IS VERY LIKELY TO MOVE NEARLY WESTWARDS AND CROSS OMAN COAST BETWEEN LATITUDE 19°N AND 20°N AROUND 2100 UTC OF 24TH SEPTEMBER 2019 AS A CYCLONIC STORM.

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
23.09.19/0900	20.2/64.2	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
23.09.19/1200	20.2/63.7	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
23.09.19/1800	20.1/62.6	110-120 GUSTING TO 130	SEVERE CYCLONIC STORM
24.09.19/0000	20.0/61.5	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
24.09.19/0600	19.9/60.4	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
24.09.19/1800	19.7/58.2	70-80 GUSTING TO 90	CYCLONIC STORM
25.09.19/0600	19.5/56.0	45-55 GUSTING TO 65	DEPRESSION

REMARKS:

AS PER THE SATELLITE IMAGERY OF 0900 UTC ON 23RD SEPTEMBER, 2019, THE CURRENT INTENSITY OF THE SYSTEM IS T3.5. ASSOCIATED BROKEN LOW TO MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTH AND ADJOINING CENTRAL ARABIAN SEA BETWEEN LATITUDE 18.0°N TO 21.5°N AND LONGITUDE 59.0°E TO 65.0°E. THE CONVECTION HAS ORGANISED FURTHER DURING PAST SIX HOURS. THE SYSTEM SHOWS CURVED BAND PATTERN.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 55 KNOTS GUSTING TO 65 KNOTS. THE SEA CONDITION IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS 990 HPA.

CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE SEA SURFACE TEMPERATURE (SST) IS 27-28°C OVER CENTRAL AND NORTH ARABIAN SEA. THE TROPICAL CYCLONE HEAT POTENTIAL IS LESS THAN 50 KJ/CM² OVER THE SYSTEM AREA AND ALONG THE FORECAST TRACK. MADDEN JULIAN OSCILLATION (MJO) LIES IN PHASE 1 WITH AMPLITUDE GREATER THAN 1 AND WILL CONTINUE IN SAME PHASE DURING NEXT 4 DAYS. HOWEVER, TOTAL PRECIPITABLE WATER IMAGERIES INDICATE WARM AIR ADVECTION TO THE SYSTEM CENTRE. THE LOW LEVEL RELATIVE VORTICITY IS ABOUT 150 X10⁻⁵SEC⁻¹ SOUTH OF THE SYSTEM CENTRE. THE LOWER LEVEL CONVERGENCE INCREASED AND IS ABOUT 20 X10⁻⁵S⁻¹ AROUND THE SYSTEM CENTER. THE UPPER LEVEL DIVERGENCE IS ABOUT 10 X10⁻⁵S⁻¹ OVER THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS MODERATE (10-15 KNOTS) OVER THE SYSTEM AREA. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 22° N. THOUGH OCEAN HEAT CONTENT AND MJO ARE NOT FAVOURABLE, THE INCREASED VORTICITY, WARM AIR ADVECTION AND MODERATE WIND SHEAR HAS HELP THE SYSTEM TO INTENSIFY INTO SEVERE CYCLONIC STORM AND MAY FURTHER SLIGHT INTENSIFICATION DURING NEXT 12 HOURS. THEREAFTER, THE SYSTEM WILL START WEAKENING DUE TO UNFAVOURABLE OCEAN CONDITIONS. AS THE SYSTEM LIES TO THE SOUTH OF UPPER TROPOSPHERIC RIDGE AND IS BEING STEERED BY MIDDLE AND UPPER TROPOSPHERIC WINDS, IT IS VERY LIKELY TO MOVE NEARLY WESTWARDS AND CROSS OMAN COAST AS A CYCLONIC STORM AROUND 2100 UTC OF 24TH SEPTEMBER. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, GLOBAL ENSEMBLE FORECASTING SYSTEM (GEFS) AGREE WITH THE ABOVE FORECAST.

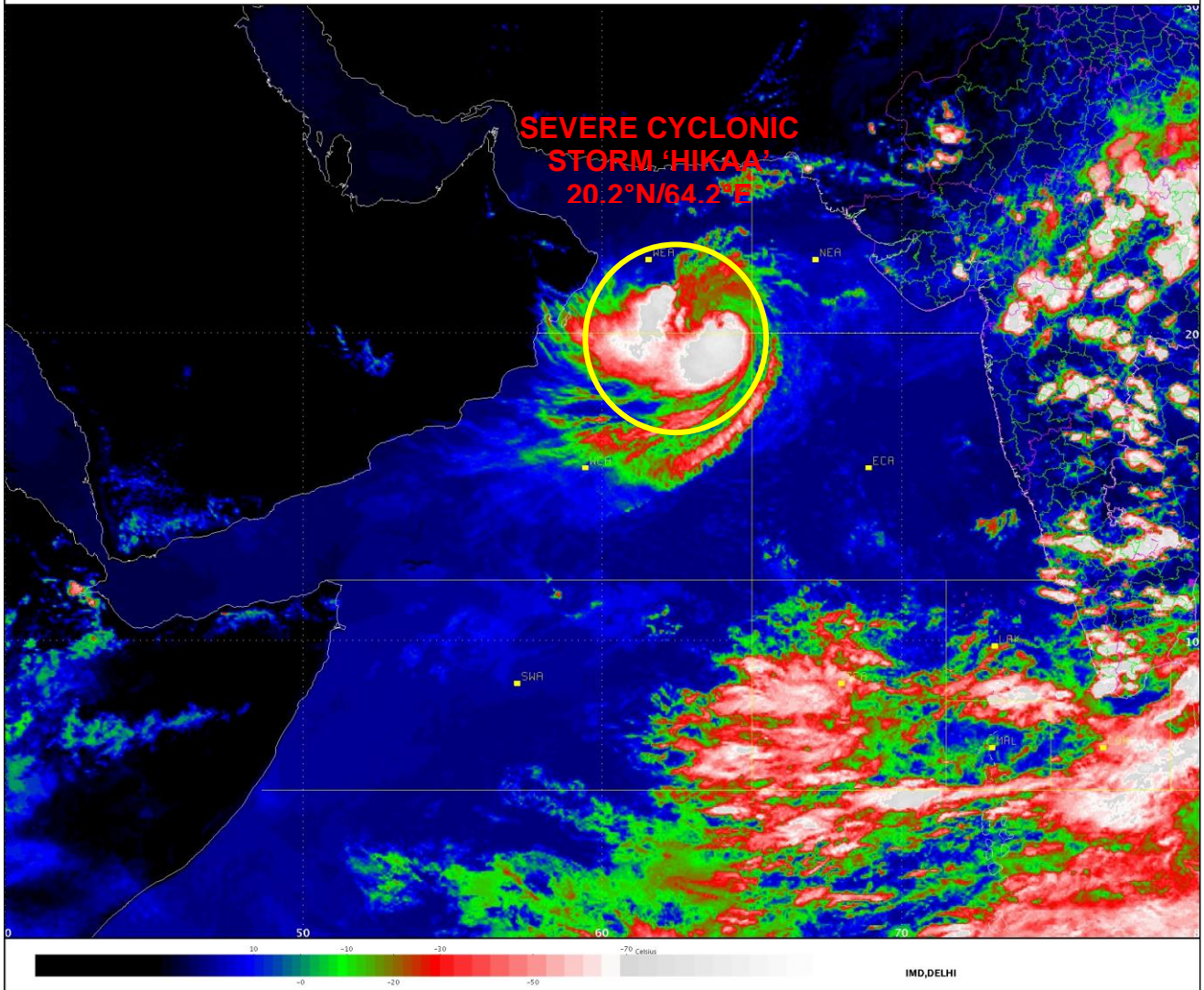
(NEETHA K GOPAL)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

SAT :INSAT-3D
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SECTOR ARABIAN_SEA Mercator (NHC LUT)

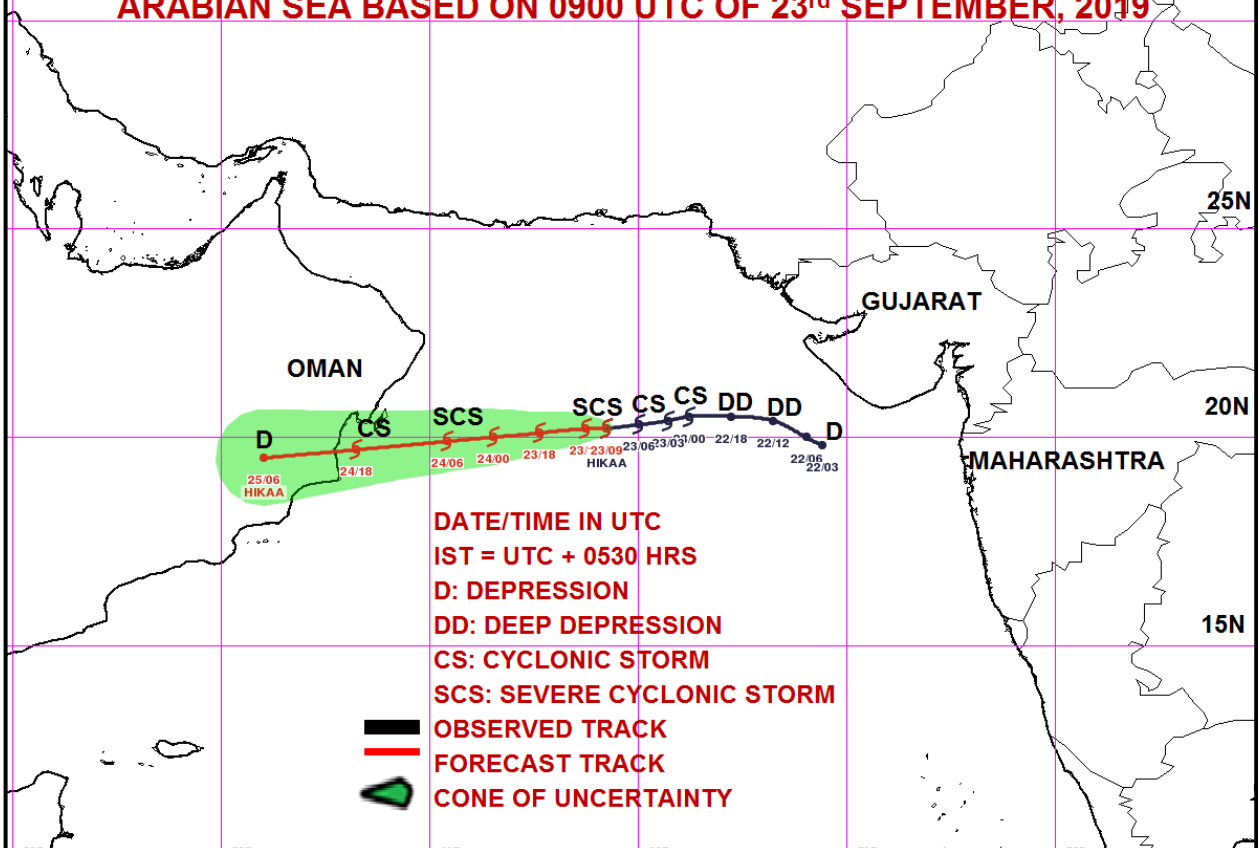
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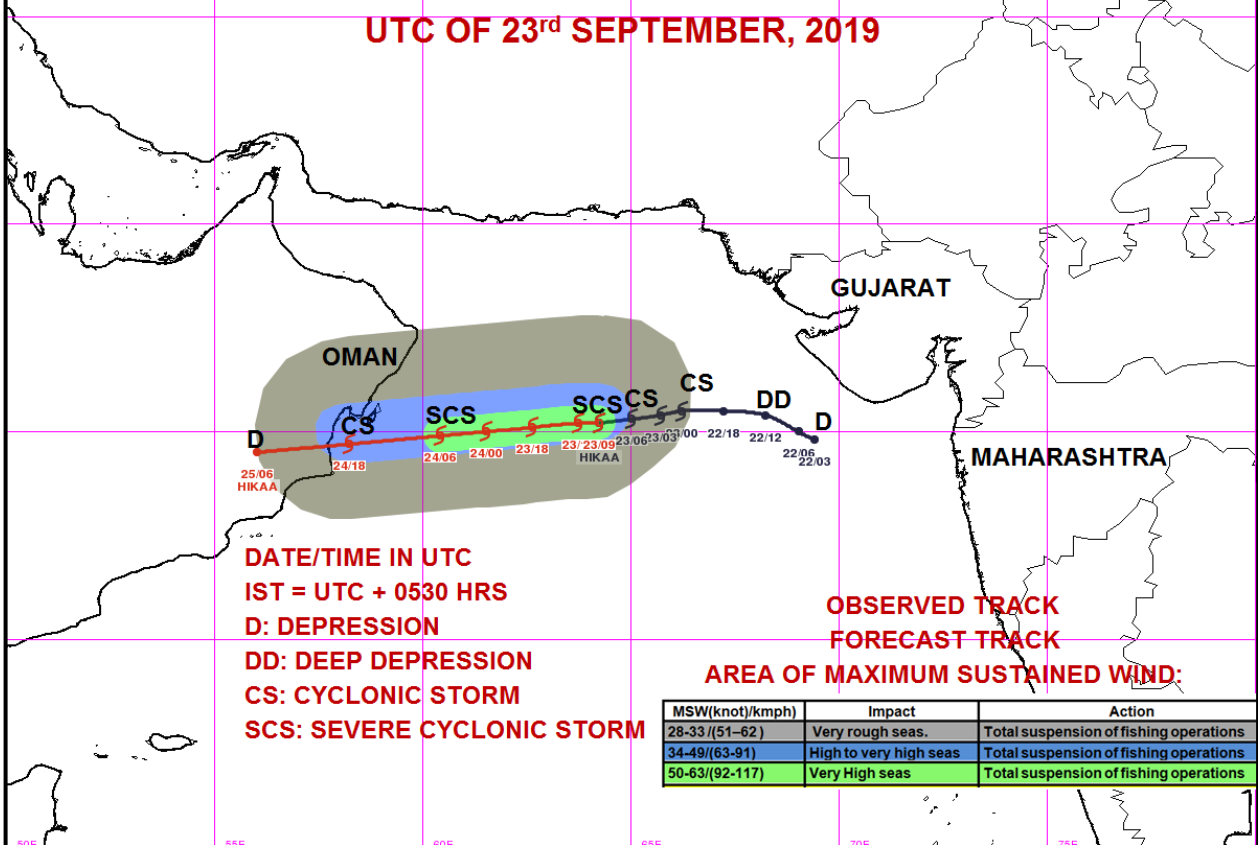
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

**OBSERVED AND FORECAST TRACK OF SEVERE CYCLONIC STORM
HIKAA OVER NORTHEAST AND ADJOINING NORTHWEST & CENTRAL
ARABIAN SEA BASED ON 0900 UTC OF 23rd SEPTEMBER, 2019**



**OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND
DISTRIBUTION OF SEVERE CYCLONIC STORM HIKAA OVER NORTHEAST
AND ADJOINING NORTHWEST & CENTRAL ARABIAN SEA BASED ON 0900
UTC OF 23rd SEPTEMBER, 2019**



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 4

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)
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. 4 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 48 HOURS ISSUED AT 1500 UTC OF 23.09.2019 BASED ON 1200 UTC OF 23.09.2019.

SUB: SEVERE CYCLONIC STORM 'HIKAA' OVER NORTHWEST AND ADJOINING NORTHEAST & CENTRAL ARABIAN SEA

THE **CYCLONIC STORM 'HIKAA'** OVER NORTHEAST AND ADJOINING NORTH WEST & CENTRAL ARABIAN SEA MOVED NEARLY WESTWARDS WITH A SPEED OF 22 KMPH DURING PAST 06 HOURS AND LAY CENTRED AT 1200 UTC OF TODAY, THE 23RD SEPTEMBER, 2019 OVER NORTHWEST AND ADJOINING NORTHEAST & CENTRAL ARABIAN SEA NEAR LATITUDE 20.2°N AND LONGITUDE 63.7°E, ABOUT 700 KM WEST-SOUTHWEST OF VERAVAL (42909), GUJARAT (INDIA), 630 KM SOUTH-SOUTHWEST OF KARACHI (41780), PAKISTAN AND 500 KM EAST-SOUTHEAST OF MASIRAH (41288), OMAN. IT IS LIKELY TO INTENSIFY FURTHER DURING NEXT 12 HOURS AND WEAKEN GRADUALLY FROM 24TH MORNING. IT IS VERY LIKELY TO MOVE NEARLY WESTWARDS AND CROSS OMAN COAST BETWEEN LATITUDE 19°N AND 20°N CLOSE TO DUQM (41290) AROUND 2100 UTC OF 24TH SEPTEMBER 2019 AS A CYCLONIC STORM WITH A WIND SPEED OF 70-80 KMPH GUSTING TO 90 KMPH.

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
23.09.19/1200	20.2/63.7	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
23.09.19/1800	20.1/62.7	110-120 GUSTING TO 130	SEVERE CYCLONIC STORM
24.09.19/0000	20.0/61.6	110-120 GUSTING TO 130	SEVERE CYCLONIC STORM
24.09.19/0600	19.9/60.5	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
24.09.19/1200	19.8/58.7	80-90 GUSTING TO 110	CYCLONIC STORM
25.09.19/0000	19.7/56.9	60-70 GUSTING TO 80	CYCLONIC STORM
25.09.19/0600	19.5/55.2	40-50 GUSTING TO 60	DEPRESSION

STORM SURGE WARNING: STORM SURGE OF 0.5 METER ABOVE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE THE LOW LYING AREAS OF MASIRAH ISLAND AND COSTAL OMAN NEAR THE LANDFALL POINT.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

REMARKS:

AS PER THE SATELLITE IMAGERY OF 1200 UTC ON 23RD SEPTEMBER, 2019, THE CURRENT INTENSITY OF THE SYSTEM IS T3.5. ASSOCIATED BROKEN LOW TO MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTH AND ADJOINING CENTRAL ARABIAN SEA BETWEEN LATITUDE 17.5°N TO 21.5°N AND LONGITUDE 60.0°E TO 64.5°E. THE CONVECTION HAS ORGANISED FURTHER DURING PAST SIX HOURS. THE SYSTEM SHOWS CURVED BAND PATTERN.

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 55 KNOTS GUSTING TO 65 KNOTS. THE SEA CONDITION IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS 988 HPA. AT 1200 UTC OF 23RD SEPTEMBER, A SHIP LOCATED AT 23.2°N/63.0°E REPORTED A MEAN SEA LEVEL PRESSURE OF 1004.0 HPA AND A MEAN SURFACE WIND SPEED OF 070°/16 KNOTS.

CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE SEA SURFACE TEMPERATURE (SST) IS 27-28°C OVER CENTRAL AND NORTH ARABIAN SEA. THE TROPICAL CYCLONE HEAT POTENTIAL IS LESS THAN 50 KJ/CM² OVER THE SYSTEM AREA AND ALONG THE FORECAST TRACK. MADDEN JULIAN OSCILLATION (MJO) LIES IN PHASE 1 WITH AMPLITUDE GREATER THAN 1 AND WILL CONTINUE IN SAME PHASE DURING NEXT 4 DAYS. HOWEVER, TOTAL PRECIPITABLE WATER IMAGERIES INDICATE WARM AIR ADVECTION TO THE SYSTEM CENTRE. THE LOW LEVEL RELATIVE VORTICITY IS ABOUT $150 \times 10^{-5} \text{SEC}^{-1}$ SOUTH OF THE SYSTEM CENTRE. THE LOWER LEVEL CONVERGENCE IS ABOUT $10 \times 10^{-5} \text{S}^{-1}$ AROUND THE SYSTEM CENTER. THE UPPER LEVEL DIVERGENCE IS ABOUT $10 \times 10^{-5} \text{S}^{-1}$ OVER THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS MODERATE (10-15 KNOTS) OVER THE SYSTEM AREA. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 22° N. THOUGH OCEAN HEAT CONTENT AND MJO ARE NOT FAVOURABLE, THE INCREASED VORTICITY, WARM AIR ADVECTION AND MODERATE WIND SHEAR MAY HELP THE SYSTEM TO INTENSIFY SLIGHT INTENSIFICATION FURTHER DURING NEXT 12 HOURS. THEREAFTER, THE SYSTEM WILL START WEAKENING DUE TO UNFAVOURABLE OCEAN CONDITIONS. AS THE SYSTEM LIES TO THE SOUTH OF UPPER TROPOSPHERIC RIDGE AND IS BEING STEERED BY MIDDLE AND UPPER TROPOSPHERIC WINDS, IT IS VERY LIKELY TO MOVE NEARLY WESTWARDS AND CROSS OMAN COAST AS A CYCLONIC STORM AROUND 2100 UTC OF 24TH SEPTEMBER. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, GLOBAL ENSEMBLE FORECASTING SYSTEM (GEFS) AGREE WITH THE ABOVE FORECAST.

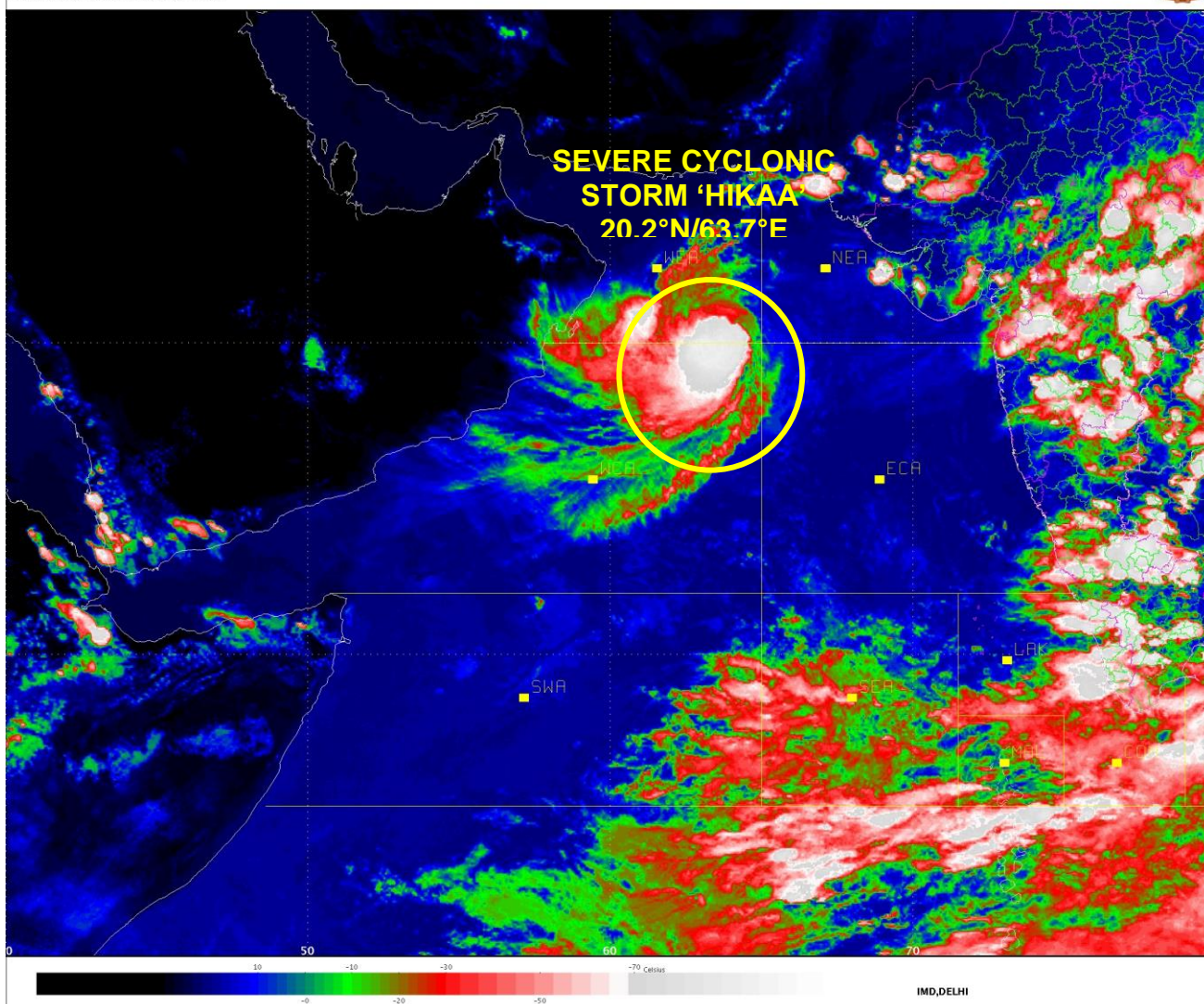
(NEETHA K GOPAL)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

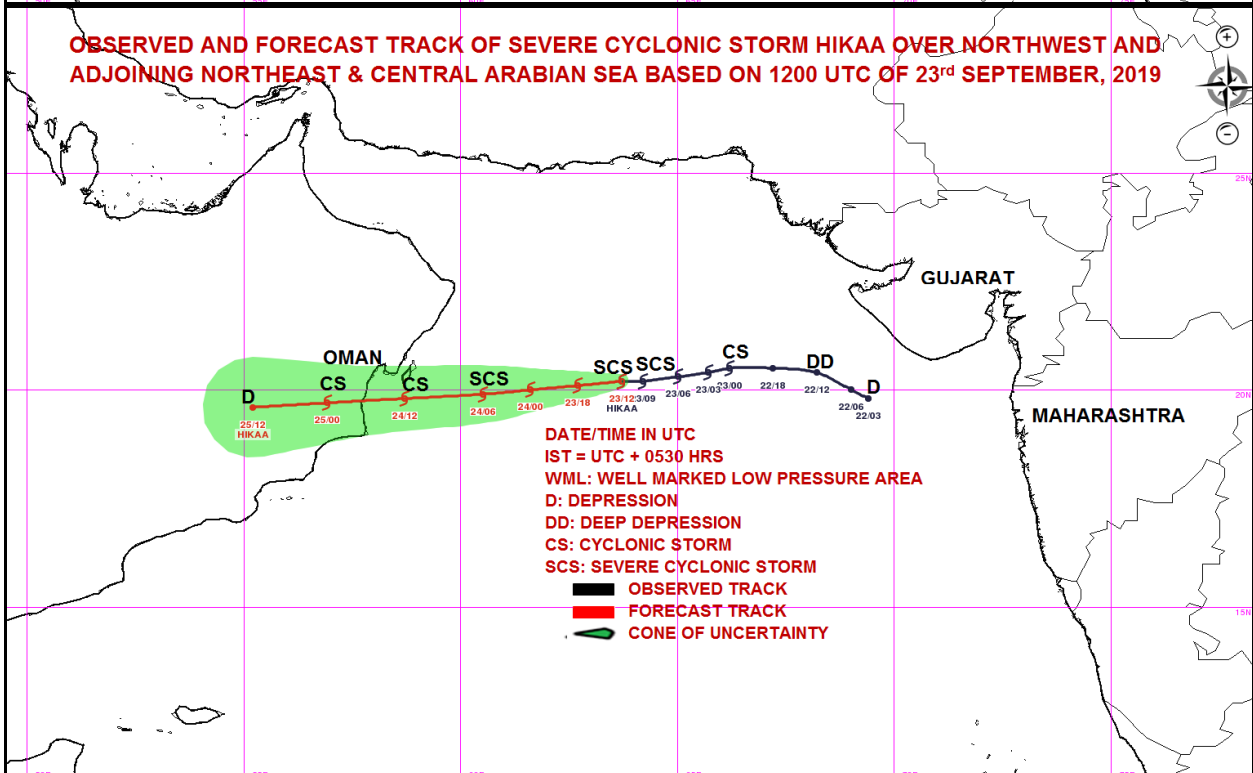
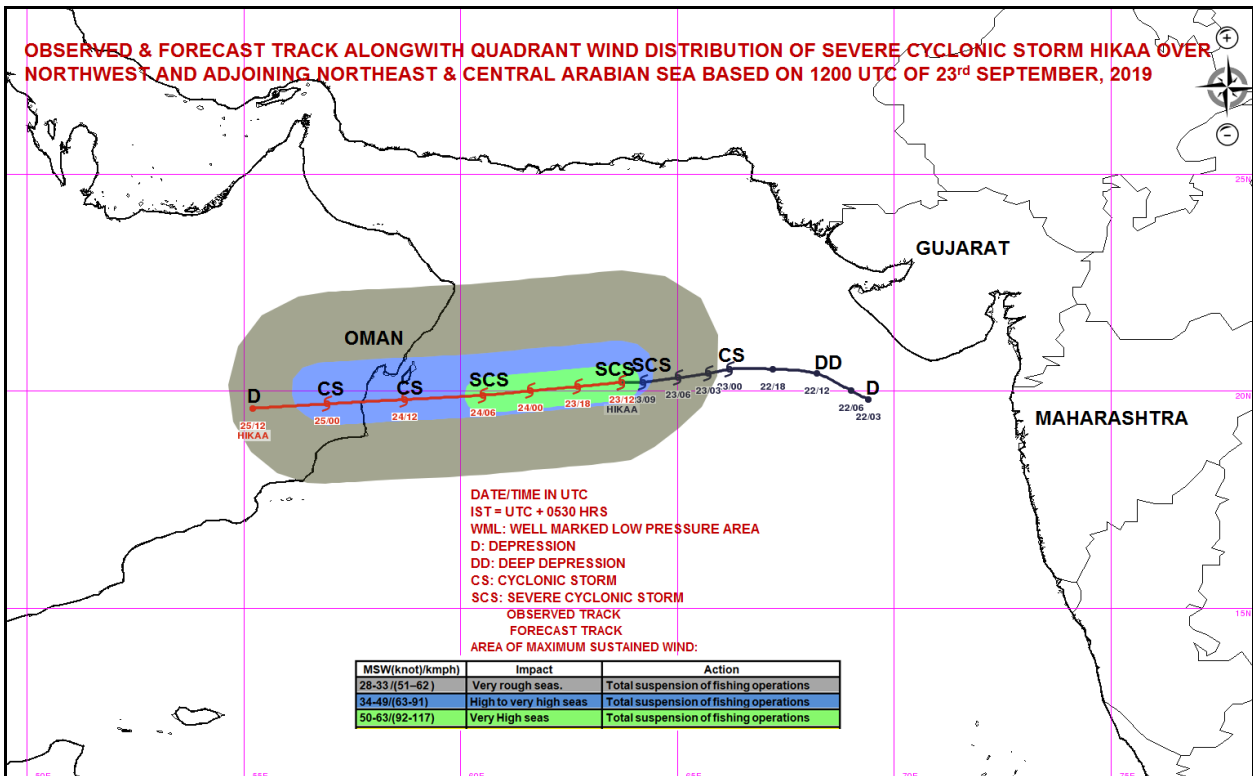
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PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 5

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)
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. 5 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 48 HOURS ISSUED AT 1730 UTC OF 23.09.2019 BASED ON 1500 UTC OF 23.09.2019.

SUB: SEVERE CYCLONIC STORM 'HIKAA' OVER NORTHWEST AND ADJOINING NORTHEAST & CENTRAL ARABIAN SEA

THE **SEVERE CYCLONIC STORM 'HIKAA'** OVER NORTHWEST AND ADJOINING NORTHEAST AND CENTRAL ARABIAN SEA MOVED WESTWARDS WITH A SPEED OF 34 KMPH DURING PAST 06 HOURS AND LAY CENTRED AT 1500 UTC OF TODAY, THE 23RD SEPTEMBER, 2019 NEAR LATITUDE 20.2°N AND LONGITUDE 62.9°E, OVER THE SAME REGION ABOUT 780 KM WEST-SOUTHWEST OF VERAVAL (GUJARAT), 680 KM SOUTH-SOUTHWEST OF KARACHI (PAKISTAN) AND 420 KM EAST-SOUTHEAST OF MASIRAH (OMAN). IT IS LIKELY TO INTENSIFY FURTHER DURING NEXT 12 HOURS AND WEAKEN GRADUALLY FROM 24TH MORNING. IT IS VERY LIKELY TO MOVE NEARLY WESTWARDS AND CROSS OMAN COAST BETWEEN LATITUDE 19°N AND 20°N CLOSE TO DUQM AROUND 1500 UTC 24TH SEPTEMBER 2019 AS A CYCLONIC STORM WITH A WIND SPEED OF 70-80 KMPH GUSTING TO 90 KMPH.

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
23.09.19/1500	20.2/62.9	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
23.09.19/1800	20.1/62.2	110-120 GUSTING TO 130	SEVERE CYCLONIC STORM
24.09.19/0000	20.0/61.1	110-120 GUSTING TO 130	SEVERE CYCLONIC STORM
24.09.19/0600	19.9/60.0	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
24.09.19/1200	19.8/58.2	80-90 GUSTING TO 100	CYCLONIC STORM
25.09.19/0000	19.7/56.4	60-70 GUSTING TO 80	CYCLONIC STORM
25.09.19/1200	19.6/54.7	40-50 GUSTING TO 60	DEPRESSION

STORM SURGE WARNING: STORM SURGE OF 0.5 METER ABOVE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE THE LOW LYING AREAS OF MASIRAH ISLAND AND COSTAL OMAN NEAR THE LANDFALL POINT.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

REMARKS:

AS PER THE SATELLITE IMAGERY OF 1500 UTC ON 23RD SEPTEMBER, 2019, THE CURRENT INTENSITY OF THE SYSTEM IS T3.5. ASSOCIATED BROKEN LOW TO MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA BETWEEN LATITUDE 18.5°N TO 21.5°N AND LONGITUDE 61.5°E TO 64.5°E. THE SYSTEM SHOWS CURVED BAND PATTERN.

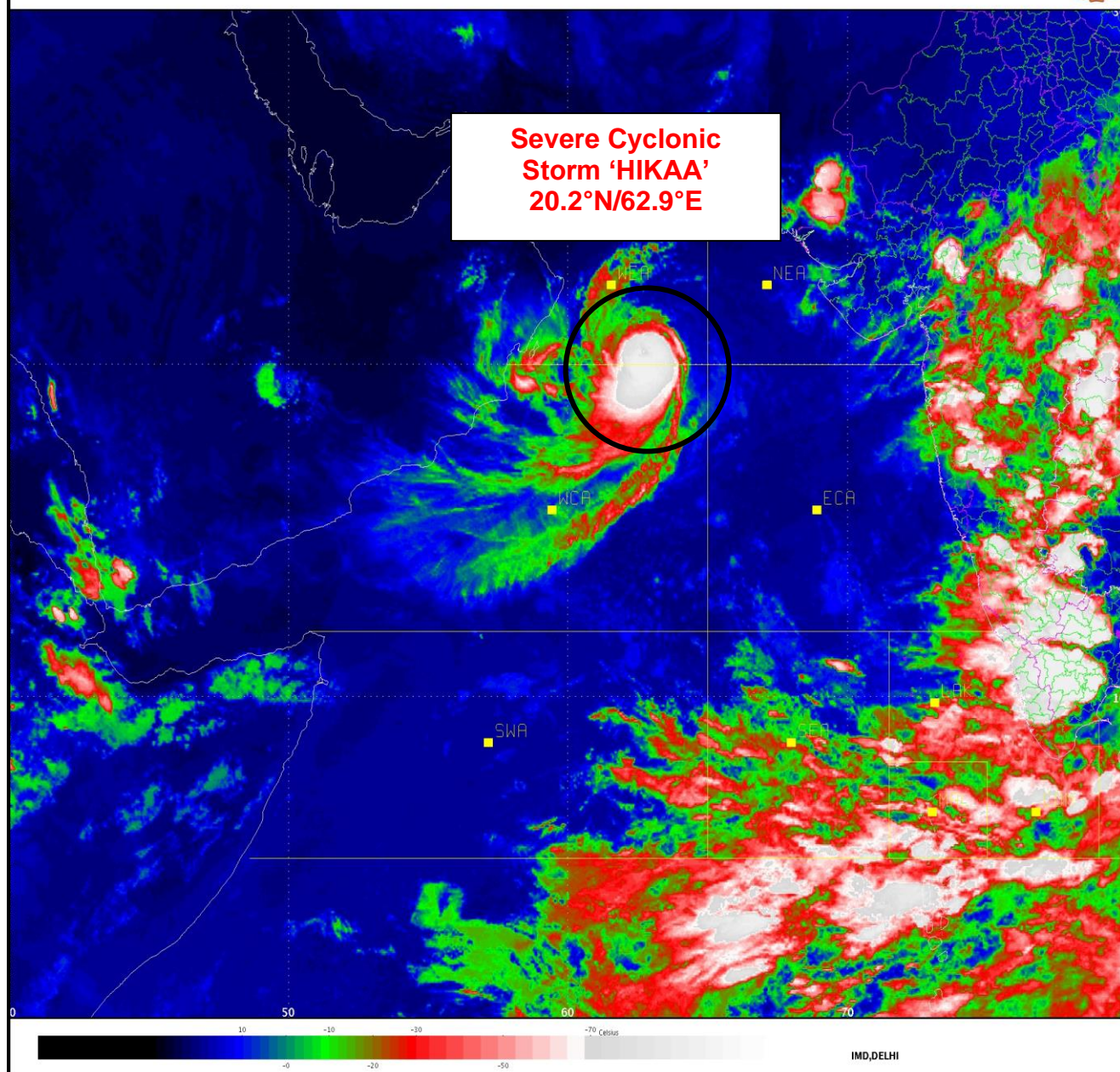
THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 55 KNOTS GUSTING TO 65 KNOTS. THE SEA CONDITION IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS 988 HPA.

CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE SEA SURFACE TEMPERATURE (SST) IS 27-28°C OVER CENTRAL AND NORTH ARABIAN SEA. THE TROPICAL CYCLONE HEAT POTENTIAL IS LESS THAN 50 KJ/CM² OVER THE SYSTEM AREA AND ALONG THE FORECAST TRACK. MADDEN JULIAN OSCILLATION (MJO) LIES IN PHASE 1 WITH AMPLITUDE GREATER THAN 1 AND WILL CONTINUE IN SAME PHASE DURING NEXT 4 DAYS. HOWEVER, TOTAL PRECIPITABLE WATER IMAGERIES INDICATE WARM AIR ADVECTION TO THE SYSTEM CENTRE. THE LOW LEVEL RELATIVE VORTICITY IS ABOUT $150 \times 10^{-5} \text{SEC}^{-1}$ SOUTH OF THE SYSTEM CENTRE. THE LOWER LEVEL CONVERGENCE IS ABOUT $10 \times 10^{-5} \text{S}^{-1}$ AROUND THE SYSTEM CENTER. THE UPPER LEVEL DIVERGENCE IS ABOUT $10 \times 10^{-5} \text{S}^{-1}$ OVER THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS MODERATE (10-15 KNOTS) OVER THE SYSTEM AREA. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 22° N. THOUGH OCEAN HEAT CONTENT AND MJO ARE NOT FAVOURABLE, THE INCREASED VORTICITY, WARM AIR ADVECTION AND MODERATE WIND SHEAR MAY HELP THE SYSTEM TO INTENSIFY SLIGHT INTENSIFICATION FURTHER DURING NEXT 12 HOURS. THEREAFTER, THE SYSTEM WILL START WEAKENING DUE TO UNFAVOURABLE OCEAN CONDITIONS. AS THE SYSTEM LIES TO THE SOUTH OF UPPER TROPOSPHERIC RIDGE AND IS BEING STEERED BY MIDDLE AND UPPER TROPOSPHERIC WINDS, IT IS VERY LIKELY TO MOVE NEARLY WESTWARDS AND CROSS OMAN COAST AS A CYCLONIC STORM AROUND 1500 UTC OF 24TH SEPTEMBER. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, GLOBAL ENSEMBLE FORECASTING SYSTEM (GEFS) AGREE WITH THE ABOVE FORECAST.

(D.R. Pattanaik)
Scientist-E, RSMC, New Delhi

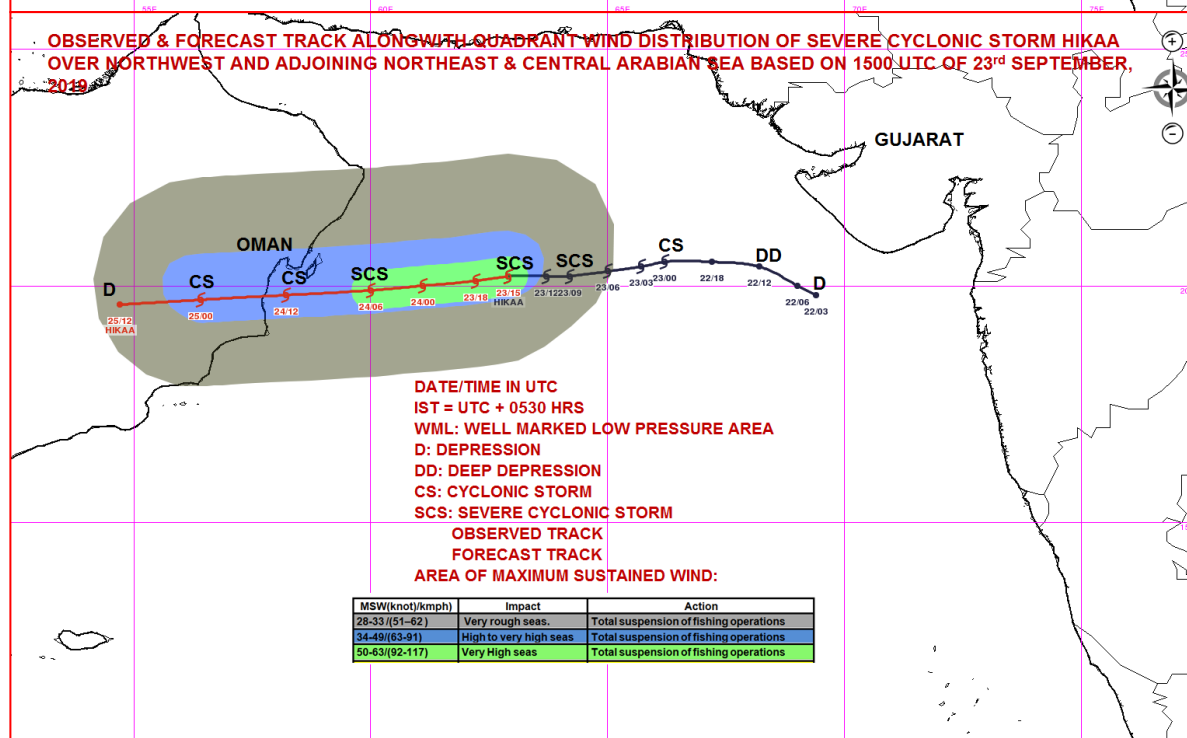
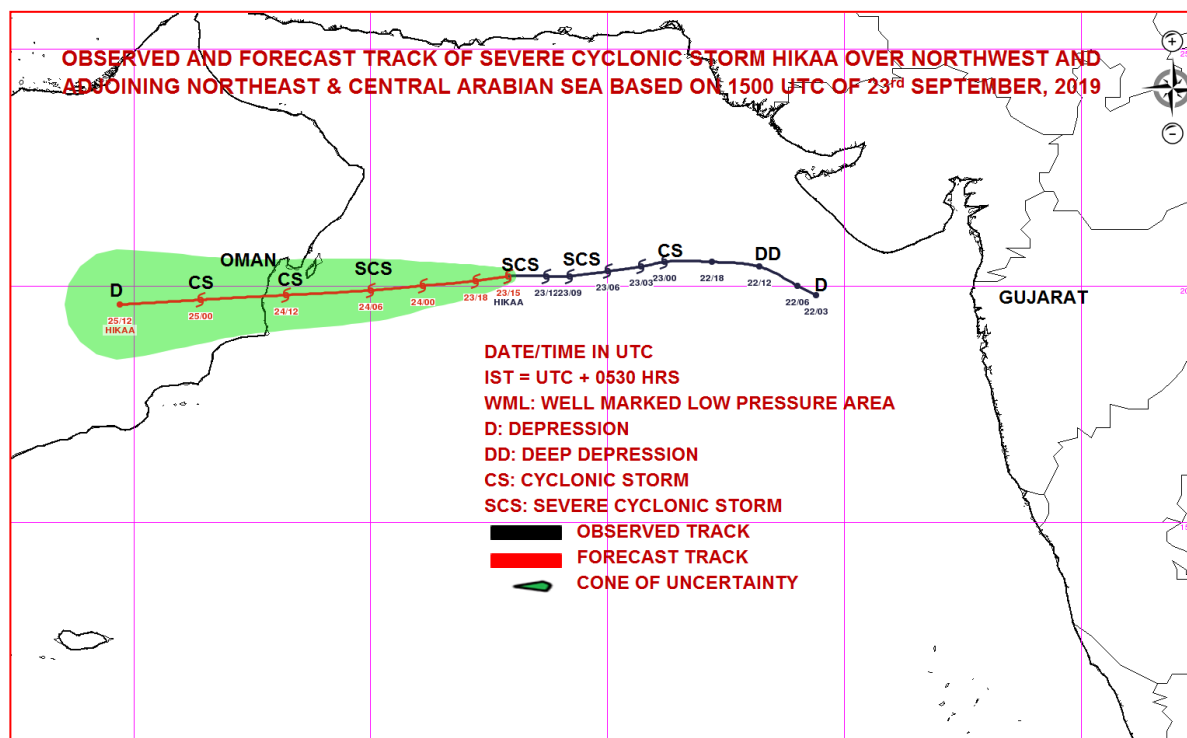
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 6

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)
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. 6 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 48 HOURS ISSUED AT 2000 UTC OF 23.09.2019 BASED ON 1800 UTC OF 23.09.2019.

SUB: SEVERE CYCLONIC STORM 'HIKAA' OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA

THE **SEVERE CYCLONIC STORM 'HIKAA'** OVER NORTHWEST AND ADJOINING NORTHEAST AND CENTRAL ARABIAN SEA MOVED WESTWARDS WITH A SPEED OF 24 KMPH DURING PAST 06 HOURS AND LAY CENTRED AT 1800 UTC OF 23RD SEPTEMBER, 2019 NEAR LATITUDE 20.2°N AND LONGITUDE 62.3°E, OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA ABOUT 840 KM WEST-SOUTHWEST OF VERAVAL (GUJARAT), 720 KM SOUTHWEST OF KARACHI (PAKISTAN) AND 350 KM EAST-SOUTHEAST OF MASIRAH (OMAN). IT IS LIKELY TO WEAKEN GRADUALLY FROM 24TH MORNING. IT IS VERY LIKELY TO MOVE NEARLY WESTWARDS AND CROSS OMAN COAST BETWEEN LATITUDE 19°N AND 20°N CLOSE TO DUQM AROUND 1500 UTC OF 24TH SEPTEMBER 2019 AS A CYCLONIC STORM WITH A WIND SPEED OF 70-80 KMPH GUSTING TO 90 KMPH.

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
23.09.19/1800	20.2/62.3	110-120 GUSTING TO 130	SEVERE CYCLONIC STORM
24.09.19/0000	20.0/61.1	110-120 GUSTING TO 130	SEVERE CYCLONIC STORM
24.09.19/0600	19.9/60.0	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
24.09.19/1200	19.8/58.2	80-90 GUSTING TO 100	CYCLONIC STORM
24.09.19/1800	19.7/57.3	70-80 GUSTING TO 90	CYCLONIC STORM
25.09.19/0600	19.6/55.6	40-50 GUSTING TO 60	DEPRESSION

STORM SURGE WARNING: STORM SURGE OF 0.5 METER ABOVE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE THE LOW LYING AREAS OF MASIRAH ISLAND AND COSTAL OMAN NEAR THE LANDFALL POINT.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

REMARKS:

AS PER THE SATELLITE IMAGERY OF 1800 UTC ON 23RD SEPTEMBER, 2019, THE CURRENT INTENSITY OF THE SYSTEM IS T3.5. ASSOCIATED BROKEN LOW TO MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA BETWEEN LATITUDE 18.5°N TO 21.5°N AND LONGITUDE 61.0°E TO 64.0°E.

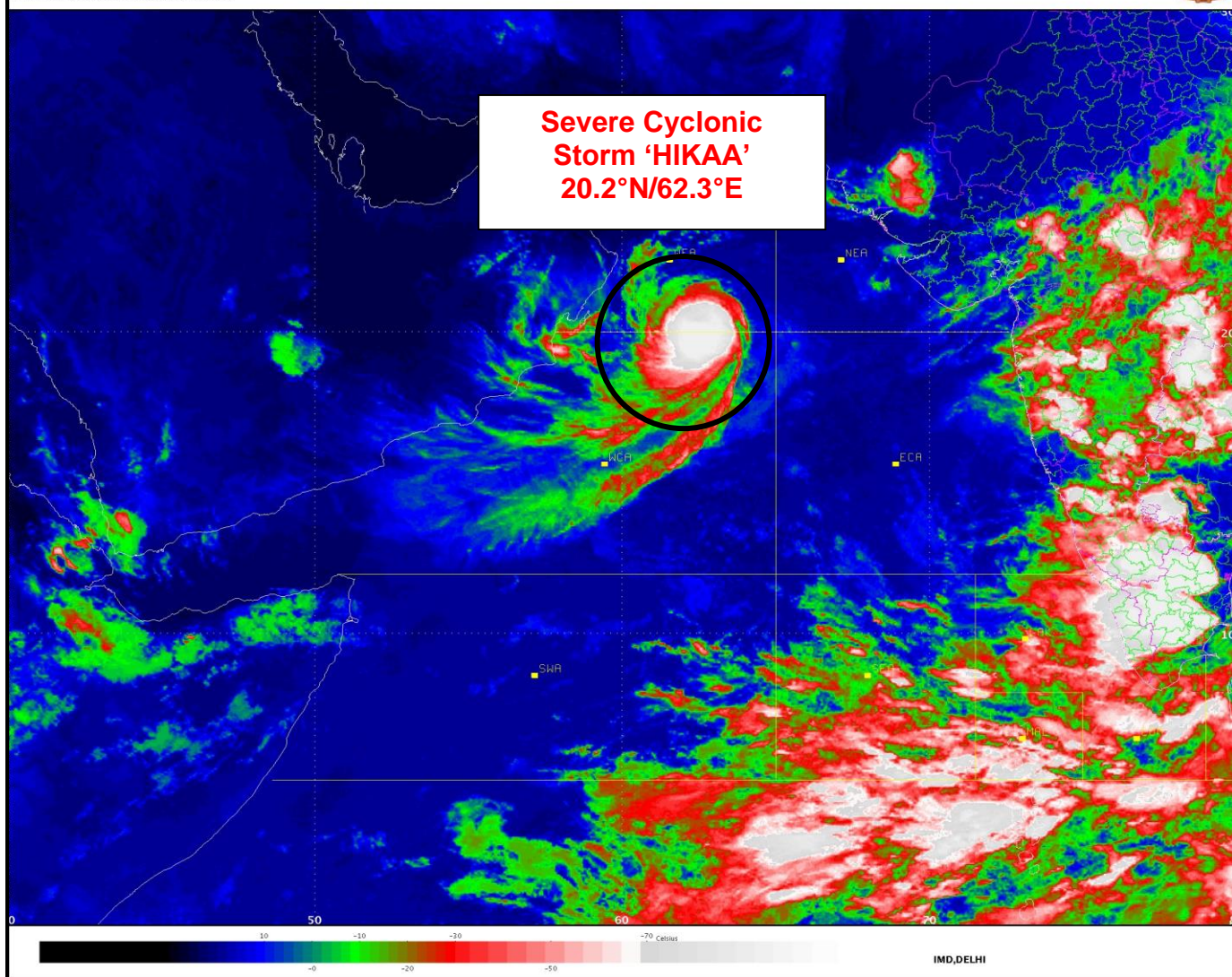
THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 60 KNOTS GUSTING TO 70 KNOTS. THE SEA CONDITION IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS 988 HPA.

CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE SEA SURFACE TEMPERATURE (SST) IS 27-28°C OVER CENTRAL AND NORTH ARABIAN SEA. THE TROPICAL CYCLONE HEAT POTENTIAL IS LESS THAN 50 KJ/CM² OVER THE SYSTEM AREA AND ALONG THE FORECAST TRACK. Madden Julian Oscillation (MJO) LIES IN PHASE 1 WITH AMPLITUDE GREATER THAN 1 AND WILL CONTINUE IN SAME PHASE DURING NEXT 4 DAYS. HOWEVER, TOTAL PRECIPITABLE WATER IMAGERIES INDICATE WARM AIR ADVECTION TO THE SYSTEM CENTRE. THE LOW LEVEL RELATIVE VORTICITY IS ABOUT $170 \times 10^{-5} \text{SEC}^{-1}$ SOUTH SOUTHEAST OF THE SYSTEM CENTRE. THE LOWER LEVEL CONVERGENCE IS ABOUT $05 \times 10^{-5} \text{S}^{-1}$ TO THE SOUTH OF THE SYSTEM CENTER. THE UPPER LEVEL DIVERGENCE IS ABOUT $10 \times 10^{-5} \text{S}^{-1}$ OVER THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS MODERATE (10-15 KNOTS) OVER THE SYSTEM AREA. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 24° N. THOUGH OCEAN HEAT CONTENT AND MJO ARE NOT FAVOURABLE, DUE TO INCREASED VORTICITY, WARM AIR ADVECTION AND MODERATE WIND SHEAR THE SYSTEM IS VERY LIKELY TO MAINTAIN ITS INTENSIFY DURING NEXT 06 HOURS. THEREAFTER, THE SYSTEM WILL START WEAKENING DUE TO UNFAVOURABLE OCEAN CONDITIONS. AS THE SYSTEM LIES TO THE SOUTH OF UPPER TROPOSPHERIC RIDGE AND IS BEING STEERED BY MIDDLE AND UPPER TROPOSPHERIC WINDS, IT IS VERY LIKELY TO MOVE NEARLY WESTWARDS AND CROSS OMAN COAST AS A CYCLONIC STORM AROUND 1500 UTC OF 24TH SEPTEMBER. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, GLOBAL ENSEMBLE FORECASTING SYSTEM (GEFS) AGREE WITH THE ABOVE FORECAST.

(D.R. Pattanaik)
Scientist-E, RSMC, New Delhi

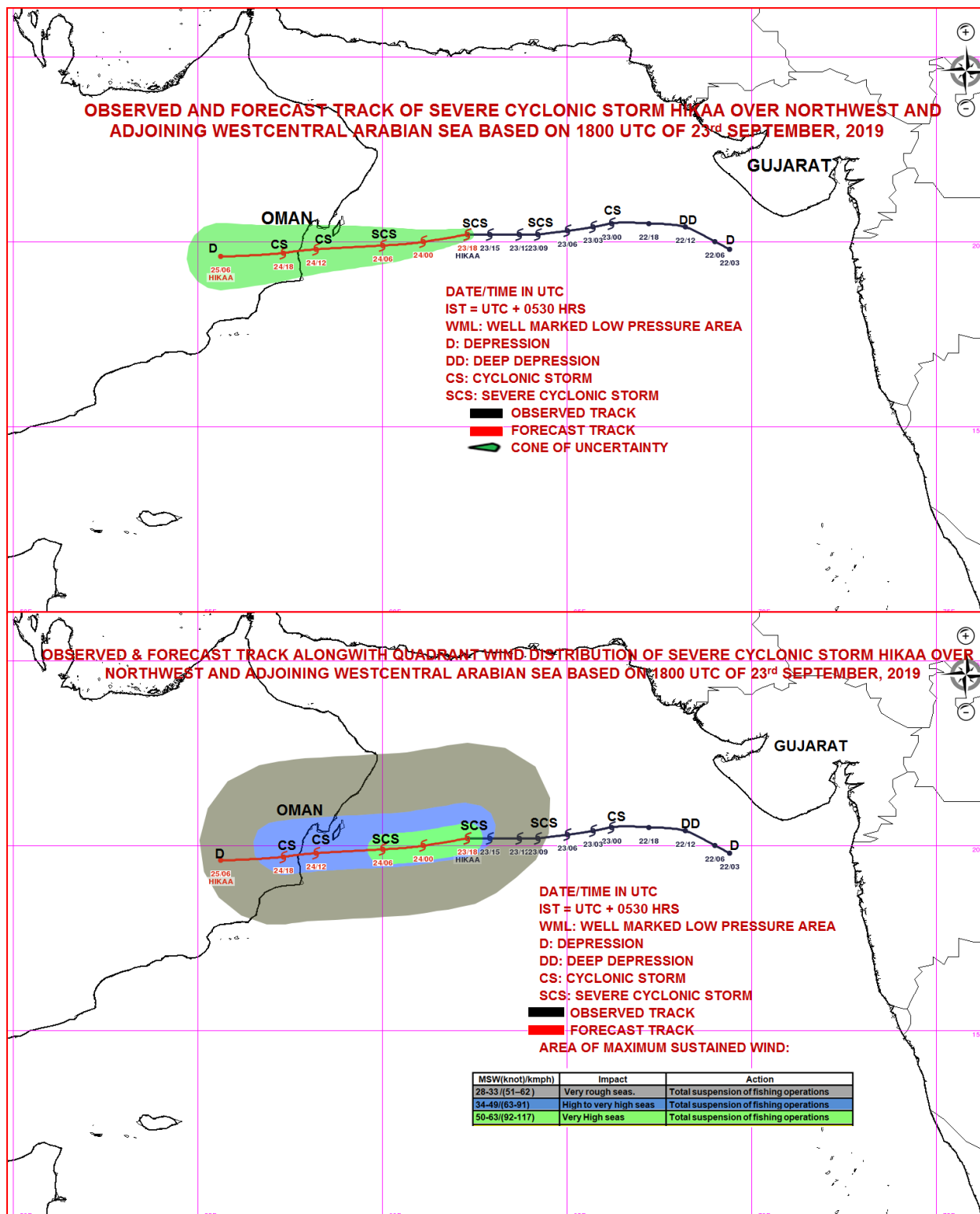
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 7

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)
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. 7 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 48 HOURS ISSUED AT 0000 UTC OF 24.09.2019 BASED ON 2100 UTC OF 23.09.2019.

SUB: SEVERE CYCLONIC STORM 'HIKAA' OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA

THE **SEVERE CYCLONIC STORM 'HIKAA'** OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA MOVED WESTWARDS WITH A SPEED OF 24 KMPH DURING PAST 06 HOURS AND LAY CENTRED AT 2100 UTC OF 24TH SEPTEMBER, 2019 NEAR LATITUDE 20.2°N AND LONGITUDE 61.5°E, OVER SAME AREA ABOUT 770 KM WEST-SOUTHWEST OF KARACHI (PAKISTAN), 270 KM EAST-SOUTHEAST OF MASIRAH (OMAN) AND ABOUT 410 KM EAST-NORTHEAST OF DUQM (OMAN). IT IS LIKELY TO WEAKEN GRADUALLY, MOVE NEARLY WESTWARDS AND CROSS OMAN COAST BETWEEN LATITUDE 19°N AND 20°N CLOSE TO DUQM AROUND 1500 UTC OF 24TH SEPTEMBER 2019 AS A CYCLONIC STORM WITH A WIND SPEED OF 70-80 KMPH GUSTING TO 90 KMPH.

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
23.09.19/2100	20.2/61.5	110-120 GUSTING TO 130	SEVERE CYCLONIC STORM
24.09.19/0000	20.0/61.1	110-120 GUSTING TO 130	SEVERE CYCLONIC STORM
24.09.19/0600	19.9/60.0	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
24.09.19/1200	19.8/58.2	80-90 GUSTING TO 100	CYCLONIC STORM
24.09.19/1800	19.7/57.3	70-80 GUSTING TO 90	CYCLONIC STORM
25.09.19/0600	19.6/55.6	40-50 GUSTING TO 60	DEPRESSION

STORM SURGE WARNING: STORM SURGE OF 0.5 METER ABOVE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE THE LOW LYING AREAS OF MASIRAH ISLAND AND COSTAL OMAN NEAR THE LANDFALL POINT.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

REMARKS:

AS PER THE SATELLITE IMAGERY OF 2100 UTC ON 23RD SEPTEMBER, 2019, THE CURRENT INTENSITY OF THE SYSTEM IS T3.5. ASSOCIATED BROKEN LOW TO MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER WESTCENTRAL AND ADJOINING NORTHWEST ARABIAN SEA BETWEEN LATITUDE 18.5°N TO 21.5°N AND LONGITUDE 60.0°E TO 63.0°E.

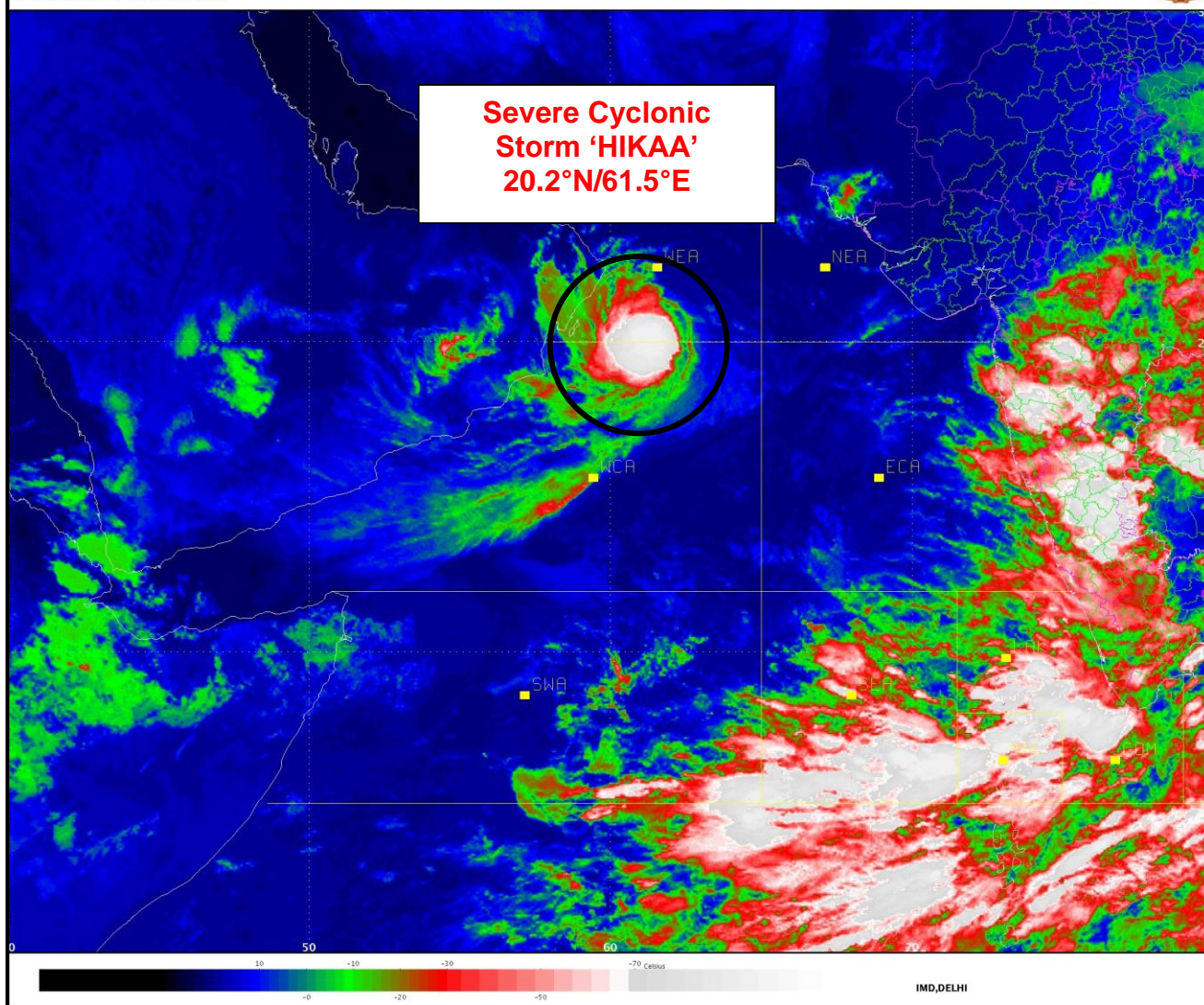
THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 60 KNOTS GUSTING TO 70 KNOTS. THE SEA CONDITION IS HIGH AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS 988 HPA.

CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE SEA SURFACE TEMPERATURE (SST) IS 27-28°C OVER CENTRAL AND NORTH ARABIAN SEA. THE TROPICAL CYCLONE HEAT POTENTIAL IS LESS THAN 50 KJ/CM² OVER THE SYSTEM AREA AND ALONG THE FORECAST TRACK. MADDEN JULIAN OSCILLATION (MJO) LIES IN PHASE 1 WITH AMPLITUDE GREATER THAN 1 AND WILL CONTINUE IN SAME PHASE DURING NEXT 4 DAYS. HOWEVER, TOTAL PRECIPITABLE WATER IMAGERIES INDICATE WARM AIR ADVECTION TO THE SYSTEM CENTRE. THE LOW LEVEL RELATIVE VORTICITY IS ABOUT $170 \times 10^{-6} \text{SEC}^{-1}$ TO THE SOUTH OF THE SYSTEM CENTRE. THE LOWER LEVEL CONVERGENCE IS ABOUT $20 \times 10^{-5} \text{S}^{-1}$ AROUND THE SYSTEM CENTER. THE UPPER LEVEL DIVERGENCE IS ABOUT $10 \times 10^{-5} \text{S}^{-1}$ TO THE SOUTHWEST OF THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS MODERATE (10-15 KNOTS) OVER THE SYSTEM AREA AND ALONG THE FORECAST TRACK. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 24° N. THOUGH OCEAN HEAT CONTENT AND MJO ARE NOT FAVOURABLE, DUE TO INCREASED VORTICITY, WARM AIR ADVECTION AND MODERATE WIND SHEAR THE SYSTEM IS VERY LIKELY TO MAINTAIN ITS INTENSIFY DURING NEXT 06 HOURS. THEREAFTER, THE SYSTEM WILL START WEAKENING DUE TO UNFAVOURABLE OCEAN CONDITIONS. AS THE SYSTEM LIES TO THE SOUTH OF UPPER TROPOSPHERIC RIDGE AND IS BEING STEERED BY MIDDLE AND UPPER TROPOSPHERIC WINDS, IT IS VERY LIKELY TO MOVE NEARLY WESTWARDS AND CROSS OMAN COAST AS A CYCLONIC STORM AROUND 1500 UTC OF 24TH SEPTEMBER. MAJORITY OF NUMERICAL MODELS INCLUDING ECMWF, NCMRWF UNIFIED MODELS (NCUM), NCMRWF ENSEMBLE PREDICTION SYSTEM (NEPS), IMD GLOBAL FORECAST SYSTEM (GFS), NCEP GFS, GLOBAL ENSEMBLE FORECASTING SYSTEM (GEFS) AGREE WITH THE ABOVE FORECAST.

(D.R. Pattanaik)
Scientist-E, RSMC, New Delhi

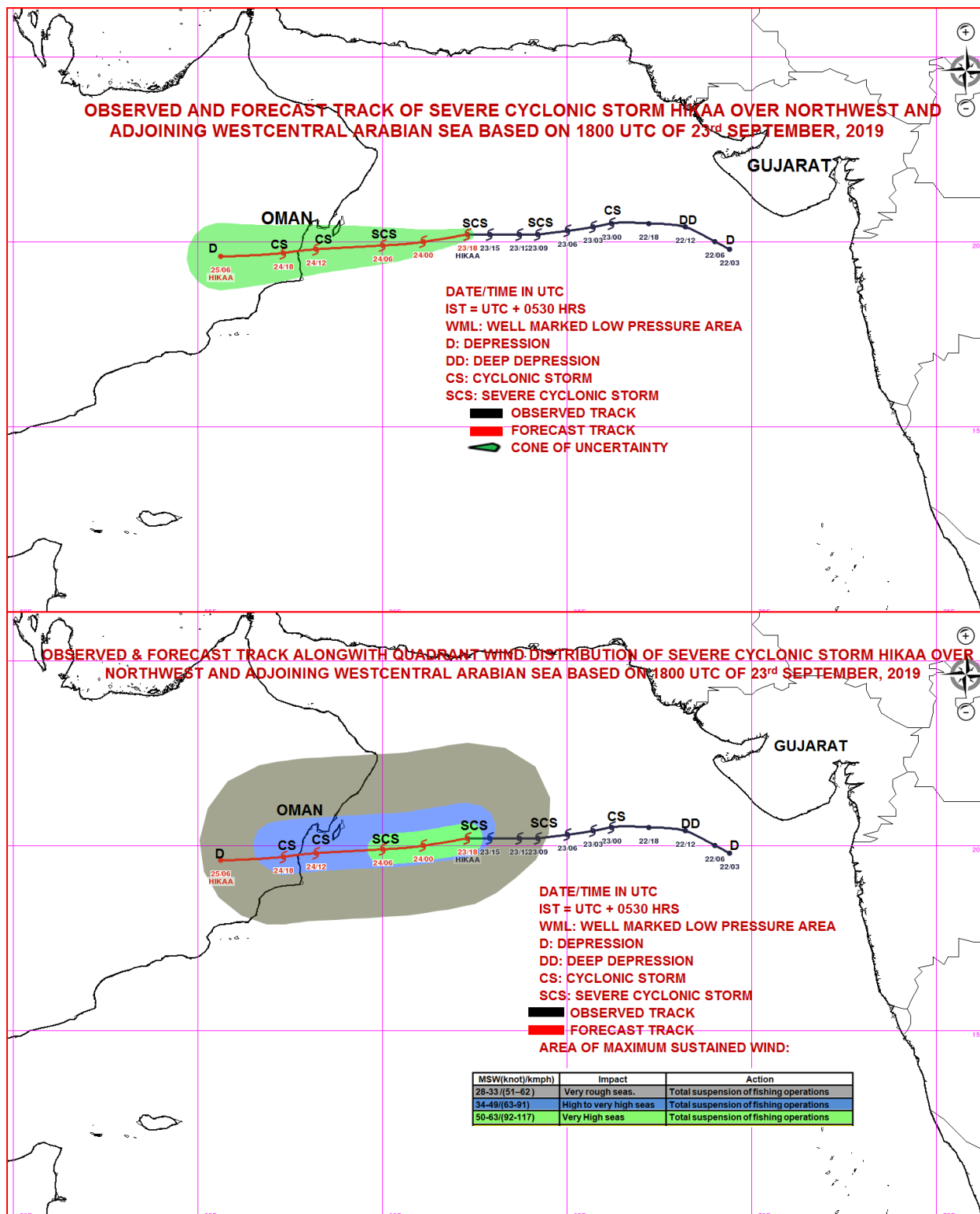
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 8

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)
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. 8 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 36 HOURS ISSUED AT 0300 UTC OF 24.09.2019 BASED ON 0000 UTC OF 24.09.2019.

SUB: SEVERE CYCLONIC STORM 'HIKAA' INTENSIFIED INTO A VERY SEVERE CYCLONIC STORM OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA

THE **SEVERE CYCLONIC STORM 'HIKAA'** OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA MOVED NEARLY WESTWARDS WITH A SPEED OF 22 KMPH DURING PAST 06 HOURS AND INTENSIFIED RAPIDLY INTO A VERY SEVERE CYCLONIC STORM OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA AND LAY CENTRED AT 0000 UTC OF 24TH SEPTEMBER, 2019 NEAR LATITUDE 20.1°N AND LONGITUDE 61.0°E, ABOUT 820 KM WEST-SOUTHWEST OF KARACHI (PAKISTAN), 220 KM EAST-SOUTHEAST OF MASIRAH (OMAN) AND ABOUT 350 KM EAST-NORTHEAST OF DUQM (OMAN). IT IS LIKELY TO MAINTAIN ITS INTENSITY FOR NEXT SIX HOURS AND WEAKEN GRADUALLY THEREAFTER. IT IS VERY LIKELY TO MOVE WEST-SOUTHWESTWARDS AND CROSS OMAN COAST BETWEEN LAT. 19.5°N AND 20°N CLOSE TO DUQM DURING NIGHT OF 24TH SEPTEMBER 2019 AS A SEVERE CYCLONIC STORM WITH A WIND SPEED OF 110-120 KMPH GUSTING TO 135 KMPH.

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
24.09.19/0000	20.1/61.0	130-140 GUSTING TO 155	VERY SEVERE CYCLONIC STORM
24.09.19/0600	20.0/59.6	125-135 GUSTING TO 150	VERY SEVERE CYCLONIC STORM
24.09.19/1200	19.9/58.3	115-125 GUSTING TO 140	SEVERE CYCLONIC STORM
24.09.19/1800	19.8/57.0	80-90 GUSTING TO 100	CYCLONIC STORM
25.09.19/0000	19.7/56.0	55-65 GUSTING TO 75	DEEP DEPRESSION
25.09.19/1200	19.5/55.0	25-35 GUSTING TO 45	LOW

STORM SURGE WARNING: STORM SURGE OF 1.0 METER ABOVE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE THE LOW LYING AREAS OF MASIRAH ISLAND AND COSTAL OMAN NEAR THE LANDFALL POINT.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

REMARKS:

AS PER THE SATELLITE IMAGERY OF 0000 UTC ON 24TH SEPTEMBER, 2019, THE CURRENT INTENSITY OF THE SYSTEM IS T4.0. THE SYSTEM SHOWS EYE PATTERN. ASSOCIATED BROKEN LOW TO MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER WESTCENTRAL AND ADJOINING NORTHWEST ARABIAN SEA BETWEEN LATITUDE 18.5°N TO 21.5°N AND LONGITUDE 59.0°E TO 62.0°E.

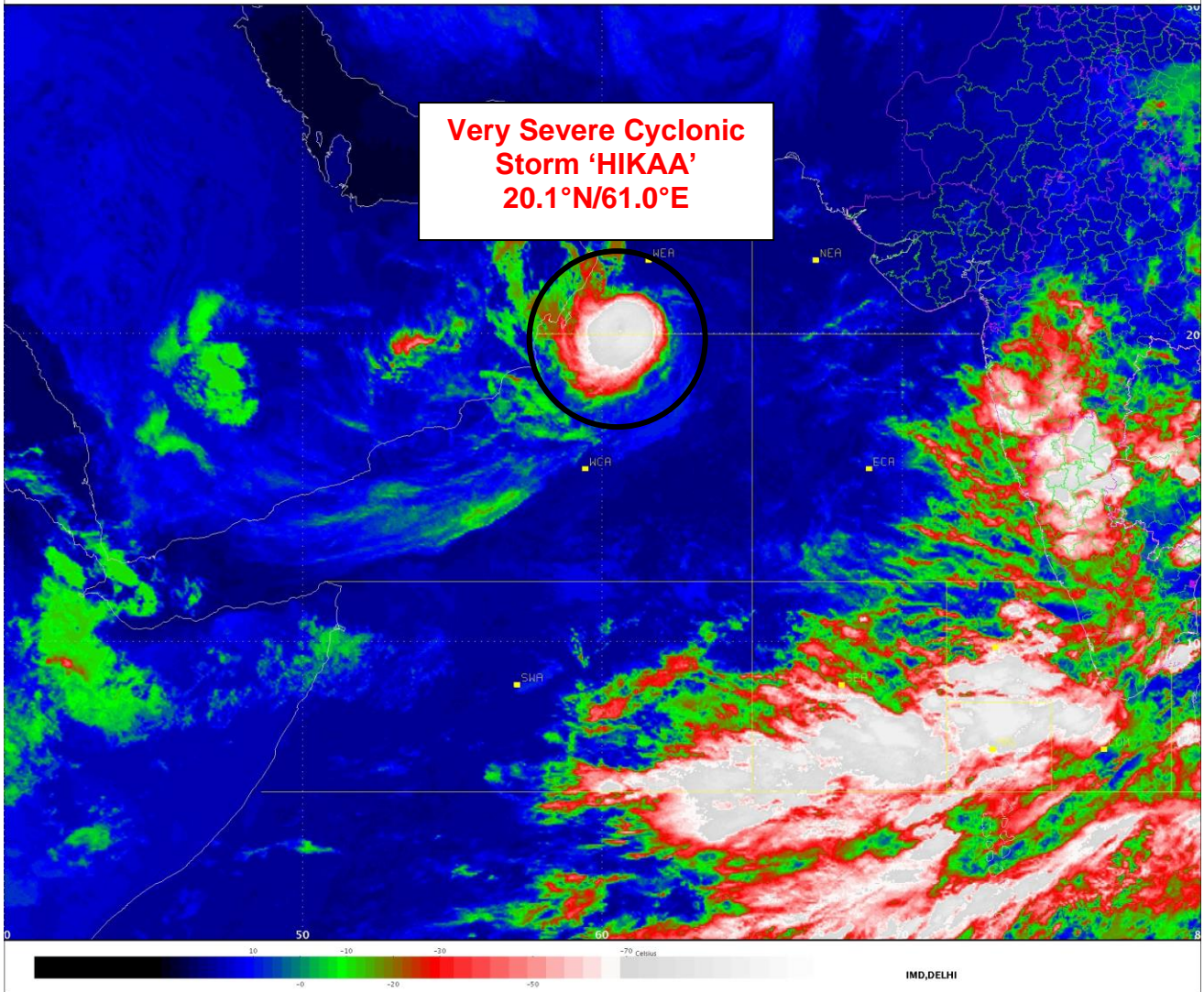
THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 75 KNOTS GUSTING TO 85 KNOTS. THE SEA CONDITION IS PHENOMENAL AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS 980 HPA.

THE SYSTEM RAPIDLY INTENSIFIED INTO A VERY SEVERE CYCLONIC STORM AS IT ENTERED INTO AREA OF DECREASED WIND SHEAR AND THERE IS CONTINUOUS ADVECTION OF WARM AIR INTO THE CORE OF THE SYSTEM. FURTHER EQUATORWARD OUTFLOW INCREASED SIGNIFICANTLY DURING PAST SIX HOURS. TOTAL PRECIPITABLE WATER IMAGERIES INDICATE CONTINUOUS WARM AIR ADVECTION TO THE SYSTEM CENTRE. THE LOW LEVEL RELATIVE VORTICITY IS ABOUT $170 \times 10^{-6} \text{ SEC}^{-1}$ TO THE SOUTH OF THE SYSTEM CENTRE. THE LOWER LEVEL CONVERGENCE IS ABOUT $20 \times 10^{-5} \text{ S}^{-1}$ AROUND THE SYSTEM CENTER. THE UPPER LEVEL DIVERGENCE IS ABOUT $10 \times 10^{-5} \text{ S}^{-1}$ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS MODERATE (10-15 KNOTS) OVER THE SYSTEM AREA AND ALONG THE FORECAST TRACK. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 24° N. THE SYSTEM IS VERY LIKELY TO MAINTAIN ITS INTENSIFY DURING NEXT 06 HOURS. THEREAFTER, THE SYSTEM WILL START WEAKENING DUE TO UNFAVOURABLE OCEAN CONDITIONS AND INTERACTION OF LAND SURFACE. AS THE SYSTEM LIES TO THE SOUTH OF UPPER TROPOSPHERIC RIDGE AND IS BEING STEERED BY MIDDLE AND UPPER TROPOSPHERIC WINDS, IT IS VERY LIKELY TO MOVE NEARLY WESTWARDS AND CROSS OMAN COAST AS A CYCLONIC STORM AROUND 1500 UTC OF 24TH SEPTEMBER.

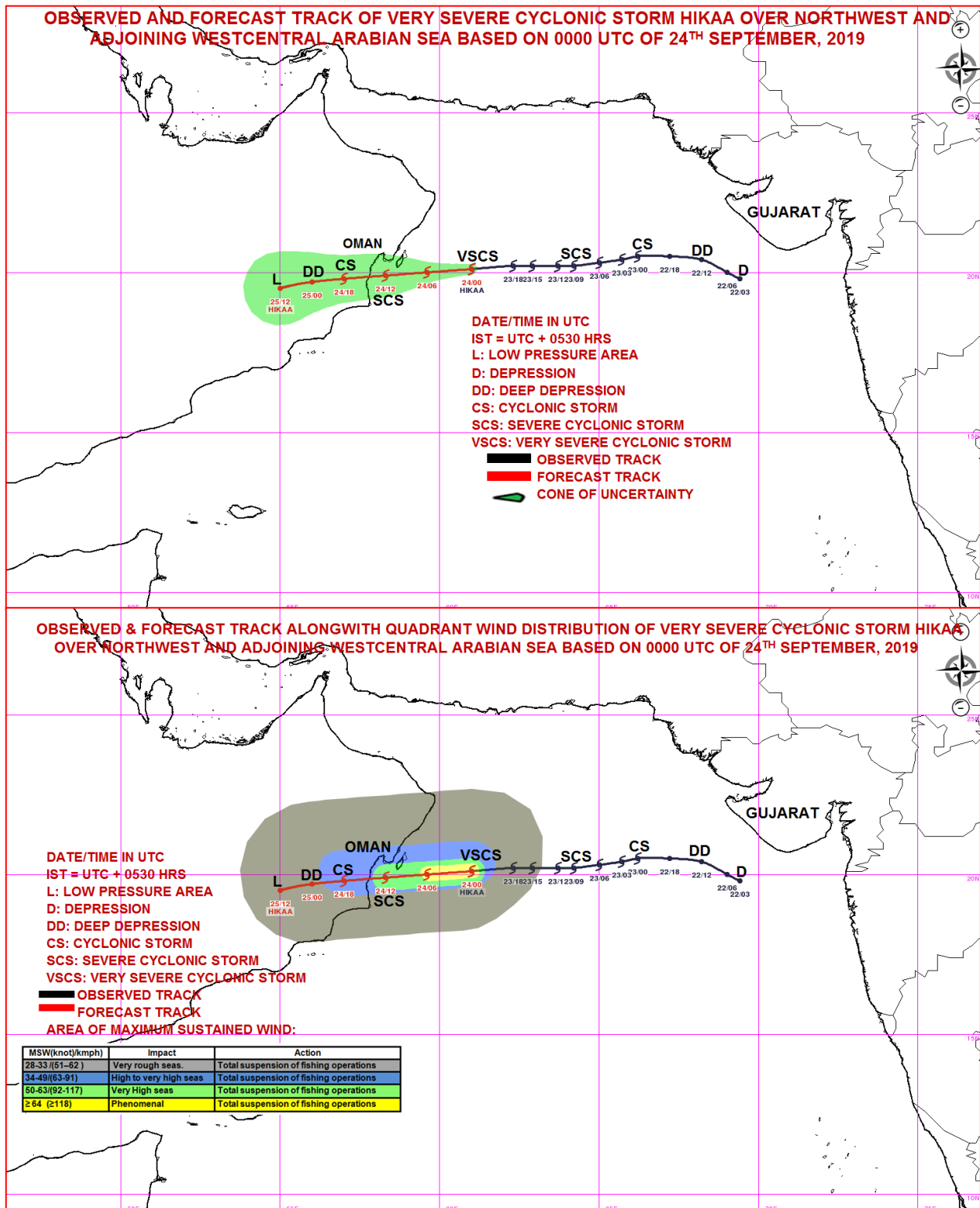
(D.R. Pattanaik)
Scientist-E, RSMC, New Delhi

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 9

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)
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. 9 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 36 HOURS ISSUED AT 0600 UTC OF 24.09.2019 BASED ON 0300 UTC OF 24.09.2019.

SUB: VERY SEVERE CYCLONIC STORM 'HIKAA' OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA

THE **VERY SEVERE CYCLONIC STORM 'HIKAA'** OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA MOVED NEARLY WESTWARDS WITH A SPEED OF 21 KMPH DURING PAST 06 HOURS AND LAY CENTRED AT 0300 UTC OF 24TH SEPTEMBER, 2019 NEAR LATITUDE 20.1°N AND LONGITUDE 60.3°E, OVER THE SAME REGION ABOUT 880 KM WEST-SOUTHWEST OF KARACHI (41780) (PAKISTAN), 160 KM EAST-SOUTHEAST OF MASIRAH (41288) (OMAN) AND ABOUT 280 KM EAST-NORTHEAST OF DUQM (41290) (OMAN). IT IS LIKELY TO MAINTAIN ITS INTENSITY FOR NEXT SIX HOURS AND WEAKEN GRADUALLY THEREAFTER. IT IS VERY LIKELY TO MOVE WEST-SOUTHWESTWARDS AND CROSS OMAN COAST BETWEEN LAT. 19.5°N AND 20°N CLOSE TO DUQM (41290) AROUND 1500 UTC OF 24TH SEPTEMBER 2019 AS A SEVERE CYCLONIC STORM WITH A WIND SPEED OF 110-120 KMPH GUSTING TO 135 KMPH.

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
24.09.19/0300	20.1/60.3	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
24.09.19/0600	20.0/59.6	130-140 GUSTING TO 155	VERY SEVERE CYCLONIC STORM
24.09.19/1200	19.9/58.3	120-130 GUSTING TO 145	VERY SEVERE CYCLONIC STORM
24.09.19/1800	19.8/57.0	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
25.09.19/0000	19.7/56.0	60-70 GUSTING TO 80	CYCLONIC STORM
25.09.19/1200	19.5/55.0	40-50 GUSTING TO 60	DEPRESSION

STORM SURGE WARNING: STORM SURGE OF 1.5-2.0 METER ABOVE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE THE LOW LYING AREAS OF MASIRAH ISLAND AND COSTAL OMAN NEAR THE LANDFALL POINT.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

REMARKS:

AS PER THE SATELLITE IMAGERY OF 0000 UTC ON 24TH SEPTEMBER, 2019, THE CURRENT INTENSITY OF THE SYSTEM IS T4.5. THE SYSTEM SHOWS EYE PATTERN WITH EMBEDDED RAGGED EYE. ASSOCIATED BROKEN LOW TO MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER WESTCENTRAL AND ADJOINING NORTHWEST ARABIAN SEA BETWEEN LATITUDE 17.5°N TO 21.5°N AND LONGITUDE 59.0°E TO 62.0°E.

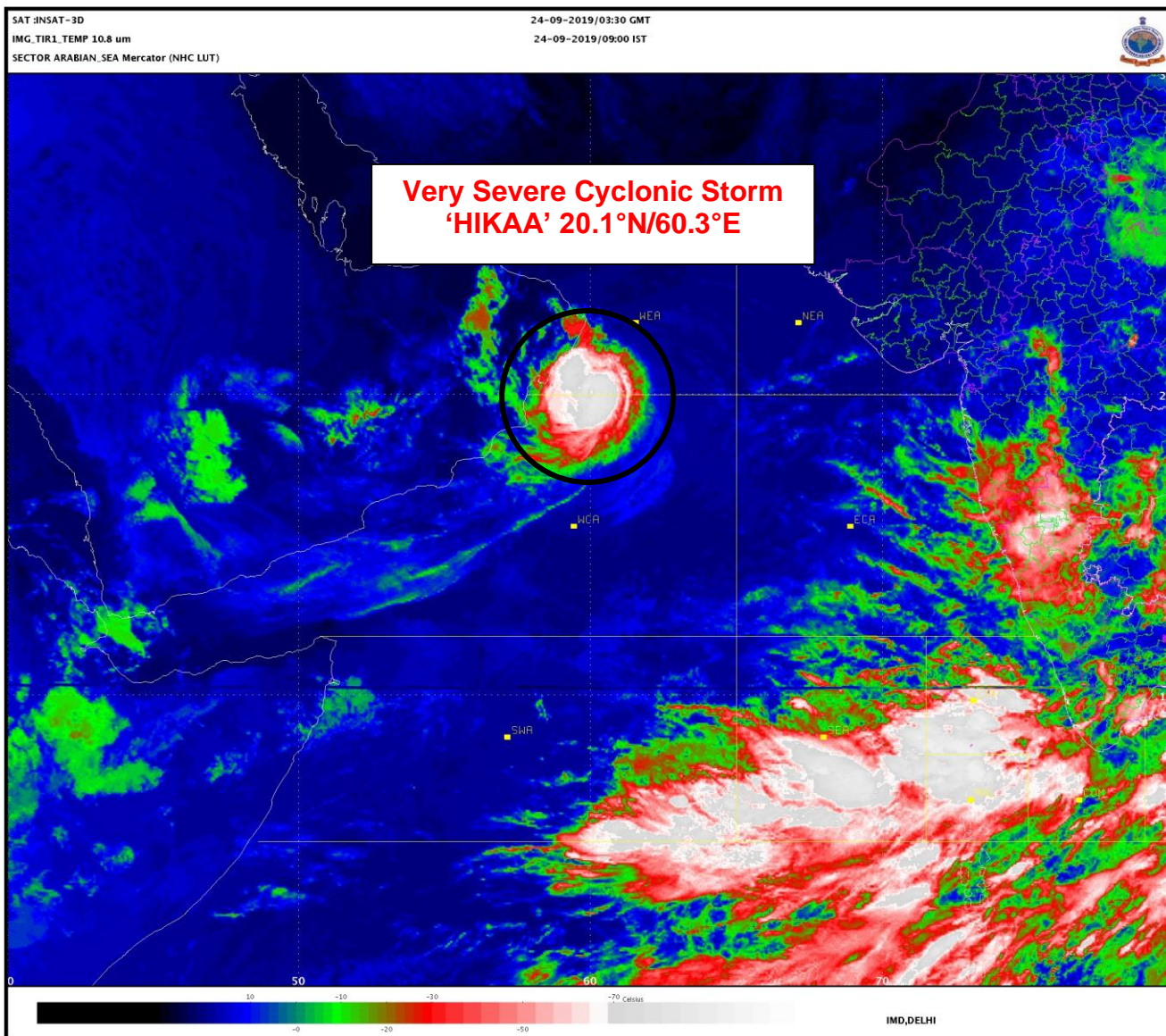
THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 80 KNOTS GUSTING TO 90 KNOTS. THE SEA CONDITION IS PHENOMENAL AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS 976 HPA.

THE SYSTEM RAPIDLY INTENSIFIED INTO A VERY SEVERE CYCLONIC STORM AS IT ENTERED INTO AN AREA OF DECREASED WIND SHEAR AND THERE IS CONTINUOUS ADVECTION OF WARM AIR INTO THE CORE OF THE SYSTEM. FURTHER EQUATOR WARD OUTFLOW INCREASED SIGNIFICANTLY DURING PAST SIX HOURS. TOTAL PRECIPITABLE WATER IMAGERIES INDICATE CONTINUOUS WARM AIR ADVECTION TO THE SYSTEM CENTRE. THE LOW LEVEL RELATIVE VORTICITY IS ABOUT $170 \times 10^{-6} \text{ SEC}^{-1}$ TO THE SOUTH OF THE SYSTEM CENTRE. THE LOWER LEVEL CONVERGENCE IS ABOUT $20 \times 10^{-5} \text{ S}^{-1}$ AROUND THE SYSTEM CENTER. THE UPPER LEVEL DIVERGENCE IS ABOUT $10 \times 10^{-5} \text{ S}^{-1}$ AROUND THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS MODERATE (10-15 KNOTS) OVER THE SYSTEM AREA AND ALONG THE FORECAST TRACK. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 24° N. THE SYSTEM IS VERY LIKELY TO MAINTAIN ITS INTENSIFY DURING NEXT 06 HOURS. THEREAFTER, THE SYSTEM WILL START WEAKENING DUE TO UNFAVOURABLE OCEAN CONDITIONS AND INTERACTION OF LAND SURFACE. AS THE SYSTEM LIES TO THE SOUTH OF UPPER TROPOSPHERIC RIDGE AND IS BEING STEERED BY MIDDLE AND UPPER TROPOSPHERIC WINDS, IT IS VERY LIKELY TO MOVE NEARLY WESTWARDS AND CROSS OMAN COAST AS A CYCLONIC STORM AROUND 1500 UTC OF 24TH SEPTEMBER.

(NEETHA K GOPAL)
SCIENTIST-E, RSMC, NEW DELHI

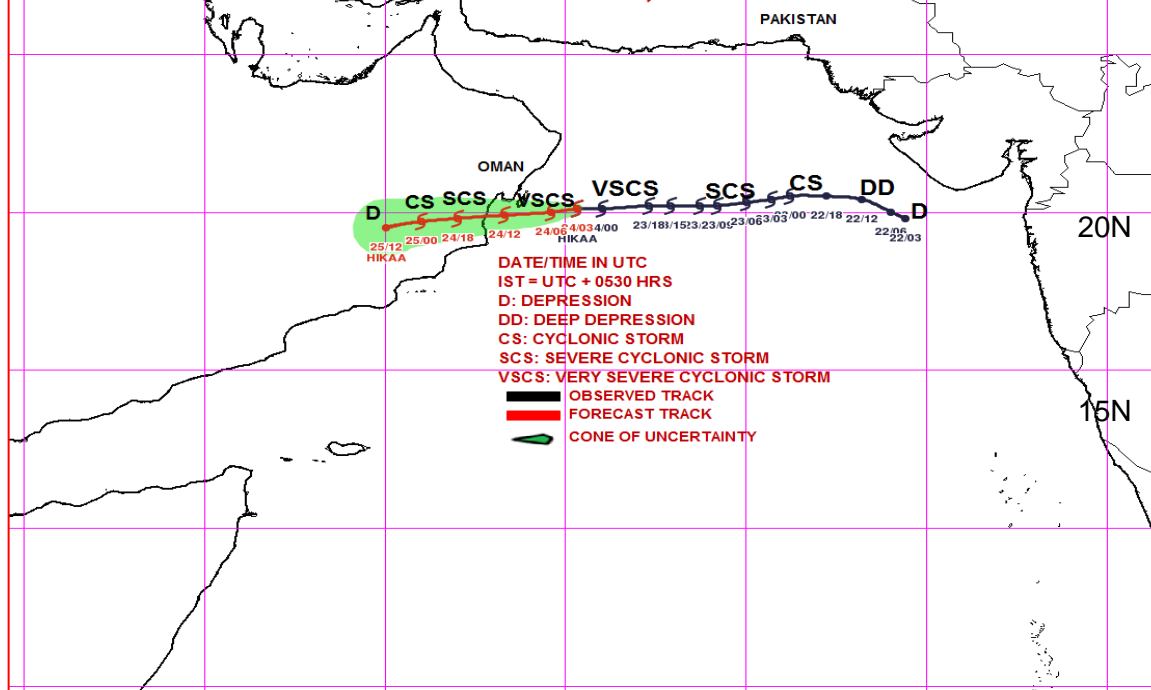
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

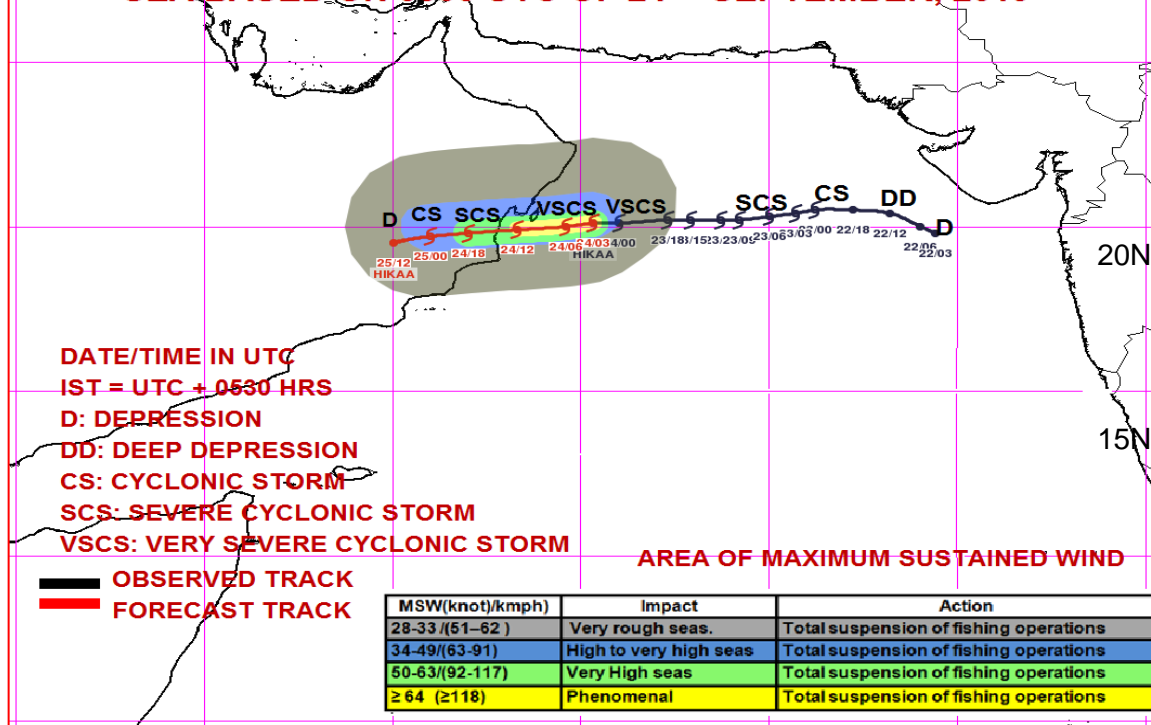


PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

OBSERVED AND FORECAST TRACK OF VERY SEVERE CYCLONIC STORM HIKAA OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA BASED ON 0300 UTC OF 24TH SEPTEMBER, 2019



OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF VERY SEVERE CYCLONIC STORM HIKAA OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA BASED ON 0300 UTC OF 24TH SEPTEMBER, 2019



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 10

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)
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. 10 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 36 HOURS ISSUED AT 0900 UTC OF 24.09.2019 BASED ON 0600 UTC OF 24.09.2019.

SUB: VERY SEVERE CYCLONIC STORM 'HIKAA' OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA

THE **VERY SEVERE CYCLONIC STORM 'HIKAA'** OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA MOVED WEST-SOUTHWESTWARDS WITH A SPEED OF 26 KMPH DURING PAST 06 HOURS AND LAY CENTRED AT 0600 UTC OF 24TH SEPTEMBER, 2019 NEAR LATITUDE 20.0°N AND LONGITUDE 59.5°E, OVER THE SAME REGION ABOUT 960 KM WEST-SOUTHWEST OF KARACHI (41780) (PAKISTAN), 95 KM SOUTHEAST OF MASIRAH (41288) (OMAN) AND ABOUT 195 KM EAST-NORTHEAST OF DUQM (41290) (OMAN). IT IS VERY LIKELY TO MOVE WEST-SOUTHWESTWARDS AND CROSS OMAN COAST BETWEEN LAT. 19.5°N AND 20°N CLOSE TO DUQM (41290) AROUND 1500 UTC OF 24TH SEPTEMBER 2019 AS A SEVERE CYCLONIC STORM WITH A WIND SPEED OF 110-120 KMPH GUSTING TO 135 KMPH.

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
24.09.19/0600	20.0/59.5	130-140 GUSTING TO 155	VERY SEVERE CYCLONIC STORM
24.09.19/1200	19.9/58.2	120-130 GUSTING TO 145	VERY SEVERE CYCLONIC STORM
24.09.19/1800	19.8/56.9	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
25.09.19/0000	19.7/55.8	60-70 GUSTING TO 80	CYCLONIC STORM
25.09.19/0600	19.5/54.8	40-50 GUSTING TO 60	DEPRESSION
25.09.19/1800	19.1/53.0	20-30 GUSTING TO 40	LOW

STORM SURGE WARNING: STORM SURGE OF 1.5-2.0 METER ABOVE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE THE LOW LYING AREAS OF MASIRAH ISLAND AND COSTAL OMAN NEAR THE LANDFALL POINT.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

REMARKS:

AS PER THE SATELLITE IMAGERY OF 0600 UTC ON 24TH SEPTEMBER, 2019, THE CURRENT INTENSITY OF THE SYSTEM IS T4.5. THE SYSTEM SHOWS EYE PATTERN WITH EMBEDDED RAGGED EYE. LOWEST CLOUD TOP TEMPERATURE IS -86°C. ASSOCIATED BROKEN LOW TO MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER WESTCENTRAL AND ADJOINING NORTHWEST ARABIAN SEA BETWEEN LATITUDE 18.5°N TO 21.0°N AND LONGITUDE 58.5°E TO 60.5°E.

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 75 KNOTS GUSTING TO 85 KNOTS. THE SEA CONDITION IS PHENOMENAL AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS 978 HPA.

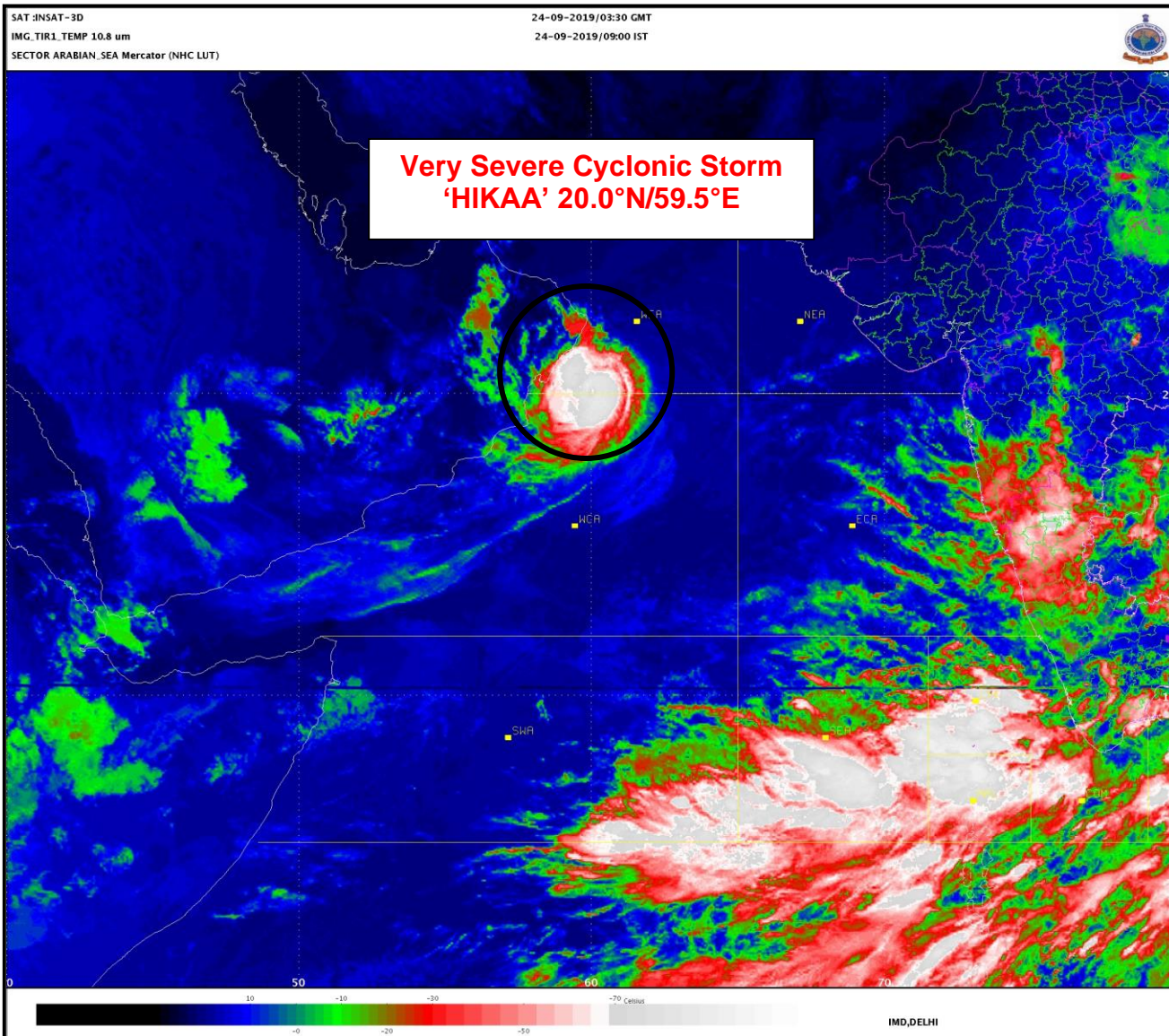
THE OUTER BAND OF THE SYSTEM HAS ENTERED THE LAND. HENCE THE SYSTEM IS INTERACTING WITH LAND SURFACE. THE INCURSION OF WARM MOIST AIR TO THE CORE OF THE SYSTEM HAS REDUCED MARGINALLY. THE LOW LEVEL RELATIVE VORTICITY IS ABOUT $150 \times 10^{-6} \text{ SEC}^{-1}$ TO THE SOUTH OF THE SYSTEM CENTRE. HOWEVER, THE VORTICITY FIELD HAS CHANGED ITS ORIENTATION BECOMING ELLIPTICALLY ORIENTED TOWARDS SOUTHWEST INDICATING POSSIBLE WEST-SOUTHWESTWARD MOVEMENT TOWARDS OMAN COAST. THE SYSTEM HAS ALREADY COMMENCED WEST-SOUTHWESTWARD MOVEMENT. THE LOWER LEVEL CONVERGENCE IS ABOUT $20 \times 10^{-5} \text{ S}^{-1}$ AROUND THE SYSTEM CENTER. THE UPPER LEVEL DIVERGENCE IS ABOUT $20 \times 10^{-5} \text{ S}^{-1}$ TO THE SOUTHWEST OF THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS MODERATE (10-15 KNOTS) OVER THE SYSTEM AREA AND ALONG THE FORECAST TRACK. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 24° N.

AS THE SYSTEM LIES TO THE SOUTH OF UPPER TROPOSPHERIC RIDGE AND IS BEING STEERED BY MIDDLE AND UPPER TROPOSPHERIC WINDS, IT IS VERY LIKELY TO MOVE WEST-SOUTHWESTWARDS AND CROSS OMAN COAST AS A SEVERE CYCLONIC STORM AROUND 1500 UTC OF 24TH SEPTEMBER.

(NEETHA K GOPAL)
SCIENTIST-E, RSMC, NEW DELHI

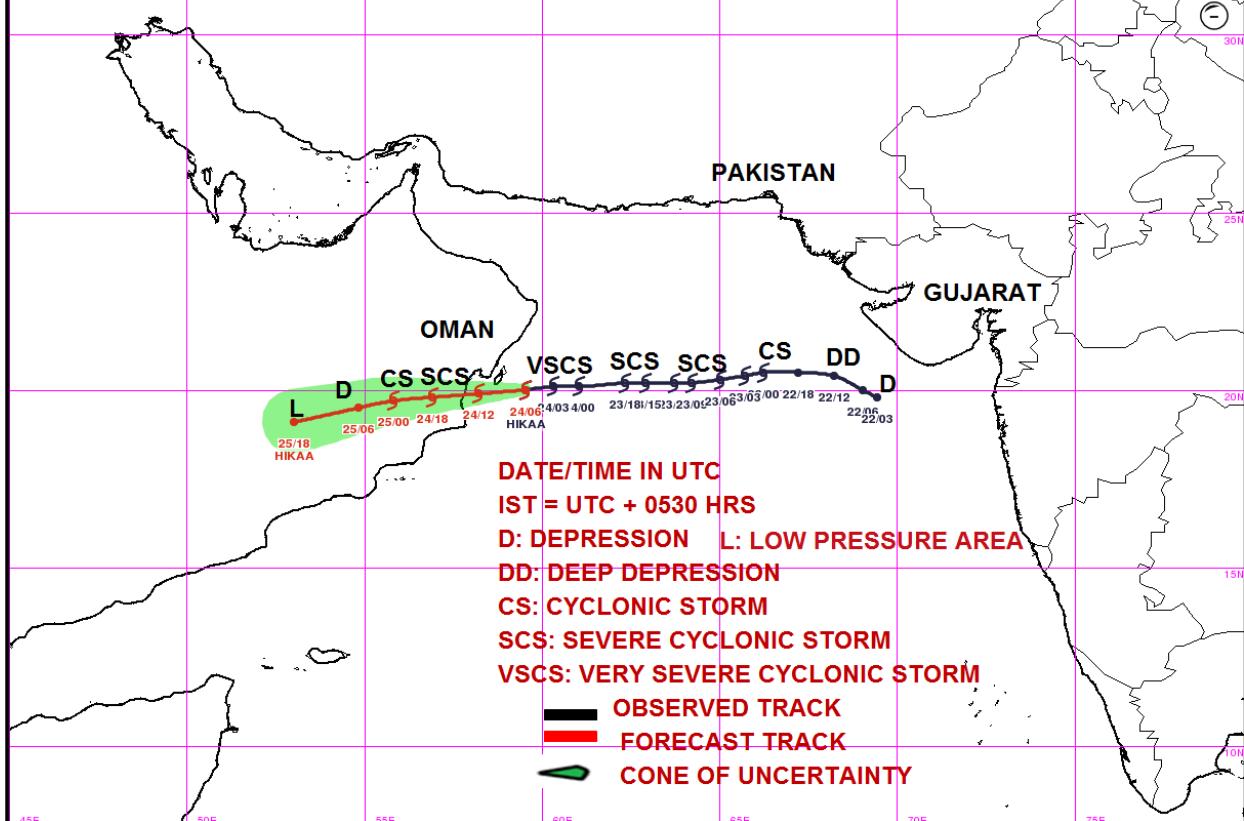
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

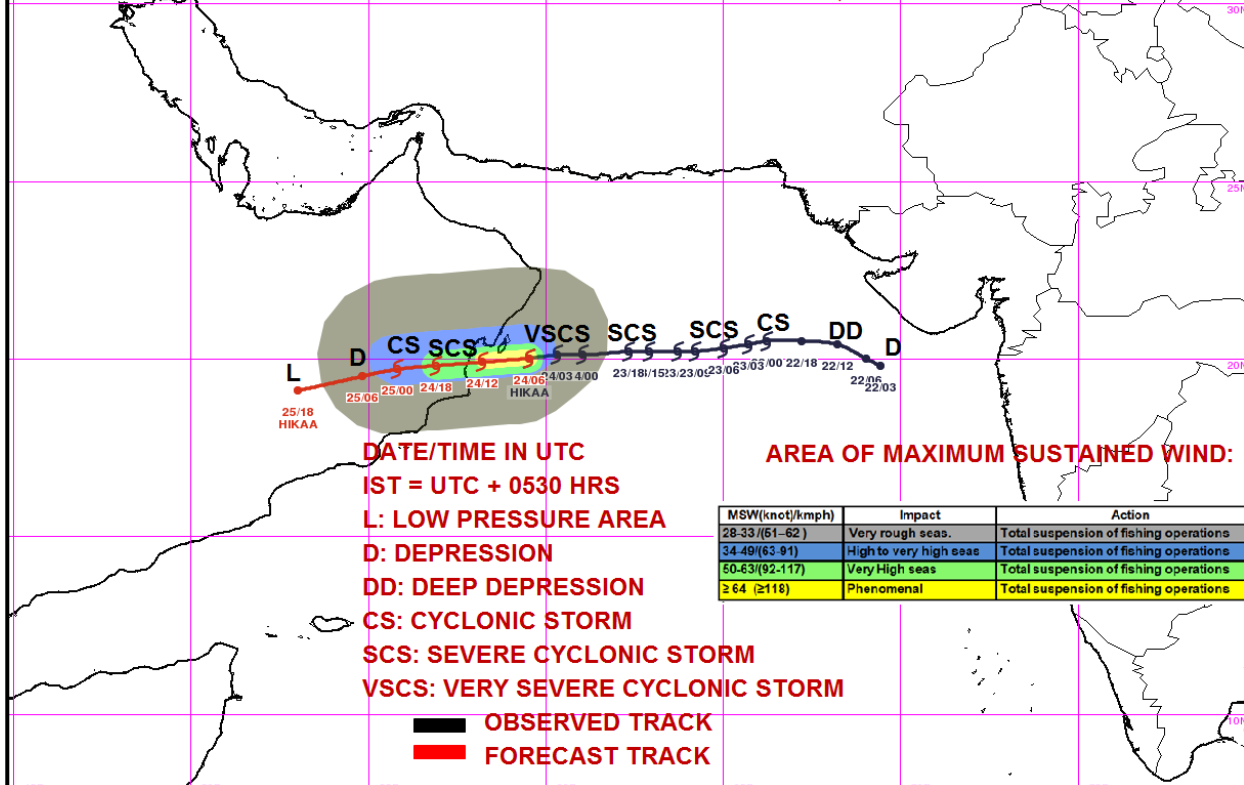


PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

OBSERVED AND FORECAST TRACK OF VERY SEVERE CYCLONIC STORM HIKAA OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA BASED ON 0600 UTC OF 24TH SEPTEMBER, 2019



OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF VERY SEVERE CYCLONIC STORM HIKAA OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA BASED ON 0600 UTC OF 24TH SEPTEMBER, 2019



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 11

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)
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. 11 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 36 HOURS ISSUED AT 1100 UTC OF 24.09.2019 BASED ON 0900 UTC OF 24.09.2019.

SUB: VERY SEVERE CYCLONIC STORM 'HIKAA' OVER WESTCENTRAL AND NORTHWEST ADJOINING ARABIAN SEA

THE **VERY SEVERE CYCLONIC STORM 'HIKAA'** OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA MOVED WEST-SOUTHWESTWARDS WITH A SPEED OF 24 KMPH DURING PAST 06 HOURS AND LAY CENTRED AT 0900 UTC OF TODAY, THE 24TH SEPTEMBER, 2019 NEAR LATITUDE 19.9°N AND LONGITUDE 58.9°E, OVER WESTCENTRAL AND ADJOINING NORTHWEST ARABIAN SEA ABOUT 1010 KM WEST-SOUTHWEST OF KARACHI (41780) (PAKISTAN), 85 KM SOUTHEAST OF MASIRAH (41288) (OMAN) AND ABOUT 135 KM EAST-NORTHEAST OF DUQM (41290) (OMAN). IT IS VERY LIKELY TO CONTINUE TO MOVE WEST-SOUTHWESTWARDS AND CROSS OMAN COAST BETWEEN LAT. 19.5°N AND 20°N CLOSE TO DUQM (41290) AROUND 1500 UTC OF 24TH SEPTEMBER 2019 AS A SEVERE CYCLONIC STORM WITH A WIND SPEED OF 110-120 KMPH GUSTING TO 135 KMPH.

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
24.09.19/0900	19.9/58.9	130-140 GUSTING TO 155	VERY SEVERE CYCLONIC STORM
24.09.19/1200	19.8/58.2	120-130 GUSTING TO 145	VERY SEVERE CYCLONIC STORM
24.09.19/1800	19.7/56.9	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
25.09.19/0000	19.6/55.8	60-70 GUSTING TO 80	CYCLONIC STORM
25.09.19/0600	19.4/54.8	40-50 GUSTING TO 60	DEPRESSION
25.09.19/1800	19.1/53.0	20-30 GUSTING TO 40	LOW

STORM SURGE WARNING: STORM SURGE OF 1.5-2.0 METER ABOVE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE THE LOW LYING AREAS OF MASIRAH ISLAND AND COSTAL OMAN NEAR THE LANDFALL POINT.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

REMARKS:

AS PER THE SATELLITE IMAGERY OF 0600 UTC ON 24TH SEPTEMBER, 2019, THE CURRENT INTENSITY OF THE SYSTEM IS T4.5. THE SYSTEM SHOWS EYE PATTERN WITH EMBEDDED RAGGED EYE. LOWEST CLOUD TOP TEMPERATURE IS -88°C. ASSOCIATED BROKEN LOW TO MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER WESTCENTRAL AND ADJOINING NORTHWEST ARABIAN SEA BETWEEN LATITUDE 18.5°N TO 21.0°N AND LONGITUDE 57.0°E TO 59.5°E.

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 75 KNOTS GUSTING TO 85 KNOTS. THE SEA CONDITION IS PHENOMENAL AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS 978 HPA.

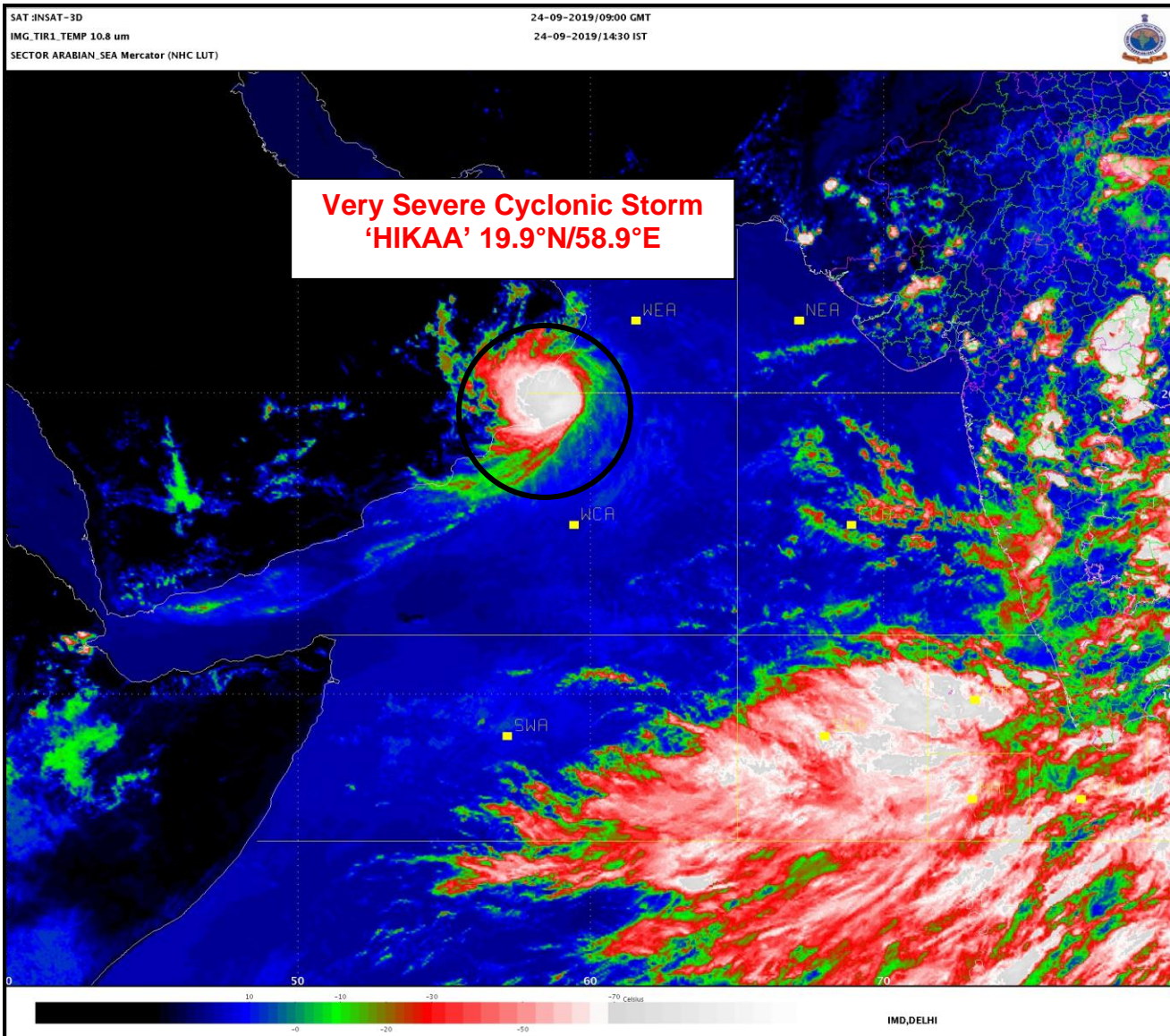
THE OUTER BAND OF THE SYSTEM HAS ENTERED THE LAND. HENCE THE SYSTEM IS INTERACTING WITH LAND SURFACE. THE INCURSION OF WARM MOIST AIR TO THE CORE OF THE SYSTEM HAS REDUCED MARGINALLY. THE LOW LEVEL RELATIVE VORTICITY IS ABOUT $150 \times 10^{-6} \text{ SEC}^{-1}$ TO THE SOUTH OF THE SYSTEM CENTRE. HOWEVER, THE VORTICITY FIELD HAS CHANGED ITS ORIENTATION BECOMING ELLIPTICALLY ORIENTED TOWARDS SOUTHWEST INDICATING POSSIBLE WEST-SOUTHWESTWARD MOVEMENT TOWARDS OMAN COAST. THE SYSTEM HAS ALREADY COMMENCED WEST-SOUTHWESTWARD MOVEMENT. THE LOWER LEVEL CONVERGENCE IS ABOUT $20 \times 10^{-5} \text{ S}^{-1}$ AROUND THE SYSTEM CENTER. THE UPPER LEVEL DIVERGENCE IS ABOUT $20 \times 10^{-5} \text{ S}^{-1}$ TO THE SOUTHWEST OF THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS MODERATE (10-15 KNOTS) OVER THE SYSTEM AREA AND ALONG THE FORECAST TRACK. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 24° N.

AS THE SYSTEM LIES TO THE SOUTH OF UPPER TROPOSPHERIC RIDGE AND IS BEING STEERED BY MIDDLE AND UPPER TROPOSPHERIC WINDS, IT IS VERY LIKELY TO MOVE WEST-SOUTHWESTWARDS AND CROSS OMAN COAST AS A SEVERE CYCLONIC STORM AROUND 1500 UTC OF 24TH SEPTEMBER.

(NEETHA K GOPAL)
SCIENTIST-E, RSMC, NEW DELHI

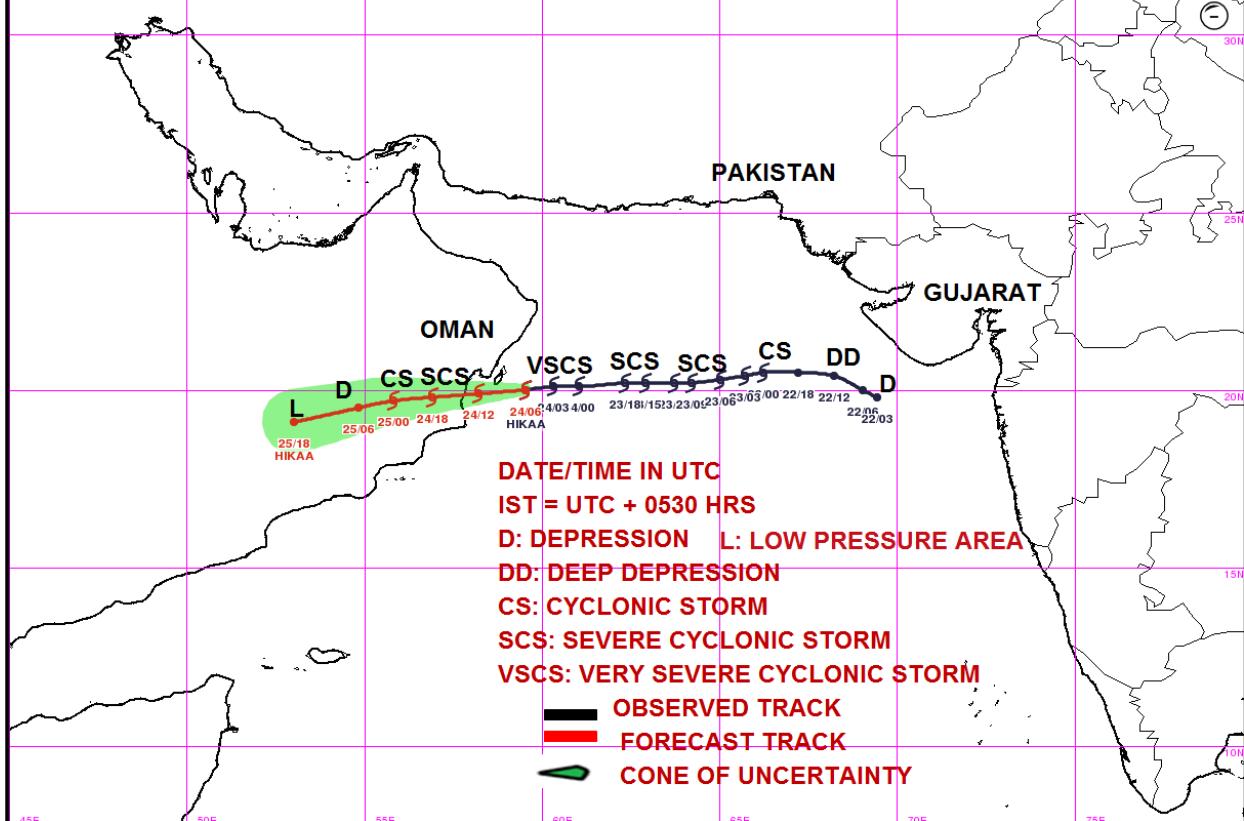
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

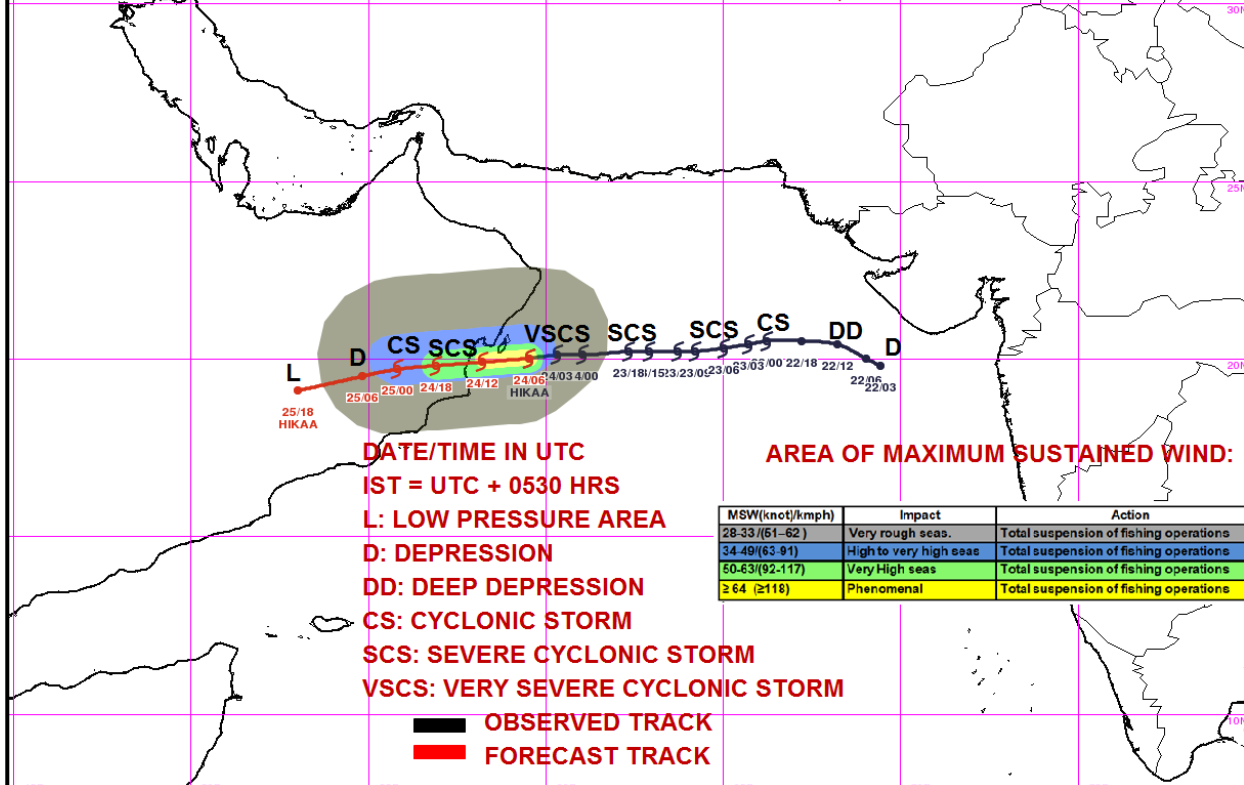


PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

OBSERVED AND FORECAST TRACK OF VERY SEVERE CYCLONIC STORM HIKAA OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA BASED ON 0600 UTC OF 24TH SEPTEMBER, 2019



OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF VERY SEVERE CYCLONIC STORM HIKAA OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA BASED ON 0600 UTC OF 24TH SEPTEMBER, 2019



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 12

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)
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. 12 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 36 HOURS ISSUED AT 1400 UTC OF 24.09.2019 BASED ON 1200 UTC OF 24.09.2019.

SUB: VERY SEVERE CYCLONIC STORM 'HIKAA' OVER WESTCENTRAL AND NORTHWEST ADJOINING ARABIAN SEA

THE **VERY SEVERE CYCLONIC STORM 'HIKAA'** OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA CONTINUED TO MOVE WEST-SOUTHWESTWARDS WITH A SPEED OF 21 KMPH DURING PAST 06 HOURS AND LAY CENTRED AT 1200 UTC OF TODAY, THE 24TH SEPTEMBER, 2019 NEAR LATITUDE 19.9°N AND LONGITUDE 58.9°E, OVER WESTCENTRAL AND ADJOINING NORTHWEST ARABIAN SEA ABOUT 1070 KM WEST-SOUTHWEST OF KARACHI (41780) (PAKISTAN), 115 KM SOUTH-SOUTHWEST OF MASIRAH (41288) (OMAN) AND ABOUT 70 KM EAST-NORTHEAST OF DUQM (41290) (OMAN). IT IS VERY LIKELY TO CONTINUE TO MOVE WEST-SOUTHWESTWARDS AND CROSS OMAN COAST BETWEEN LAT. 19.5°N AND 20°N CLOSE TO DUQM (41290) AROUND 1500 UTC OF 24TH SEPTEMBER 2019 AS A **VERY SEVERE CYCLONIC STORM** WITH A WIND SPEED OF 120-130 KMPH GUSTING TO 145 KMPH.

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
24.09.19/1200	19.8/58.3	130-140 GUSTING TO 155	VERY SEVERE CYCLONIC STORM
24.09.19/1800	19.7/56.9	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM
25.09.19/0000	19.6/55.8	70-80 GUSTING TO 90	CYCLONIC STORM
25.09.19/0600	19.4/54.8	40-50 GUSTING TO 60	DEPRESSION
25.09.19/1200	19.2/53.9	20-30 GUSTING TO 40	LOW

STORM SURGE WARNING: STORM SURGE OF 1.5-2.0 METER ABOVE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE THE LOW LYING AREAS OF MASIRAH ISLAND AND COSTAL OMAN NEAR THE LANDFALL POINT.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

REMARKS:

AS PER THE SATELLITE IMAGERY OF 1200 UTC ON 24TH SEPTEMBER, 2019, THE CURRENT INTENSITY OF THE SYSTEM IS T4.5. THE SYSTEM SHOWS EYE PATTERN WITH EMBEDDED RAGGED EYE. LOWEST CLOUD TOP TEMPERATURE IS -91°C. ASSOCIATED BROKEN LOW TO MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER WESTCENTRAL AND ADJOINING NORTHWEST ARABIAN SEA BETWEEN LATITUDE 18.5°N TO 21.0°N AND LONGITUDE 56.0°E TO 58.5°E.

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 75 KNOTS GUSTING TO 85 KNOTS. THE SEA CONDITION IS PHENOMENAL AROUND THE SYSTEM CENTRE. THE ESTIMATED CENTRAL PRESSURE IS 978 HPA.

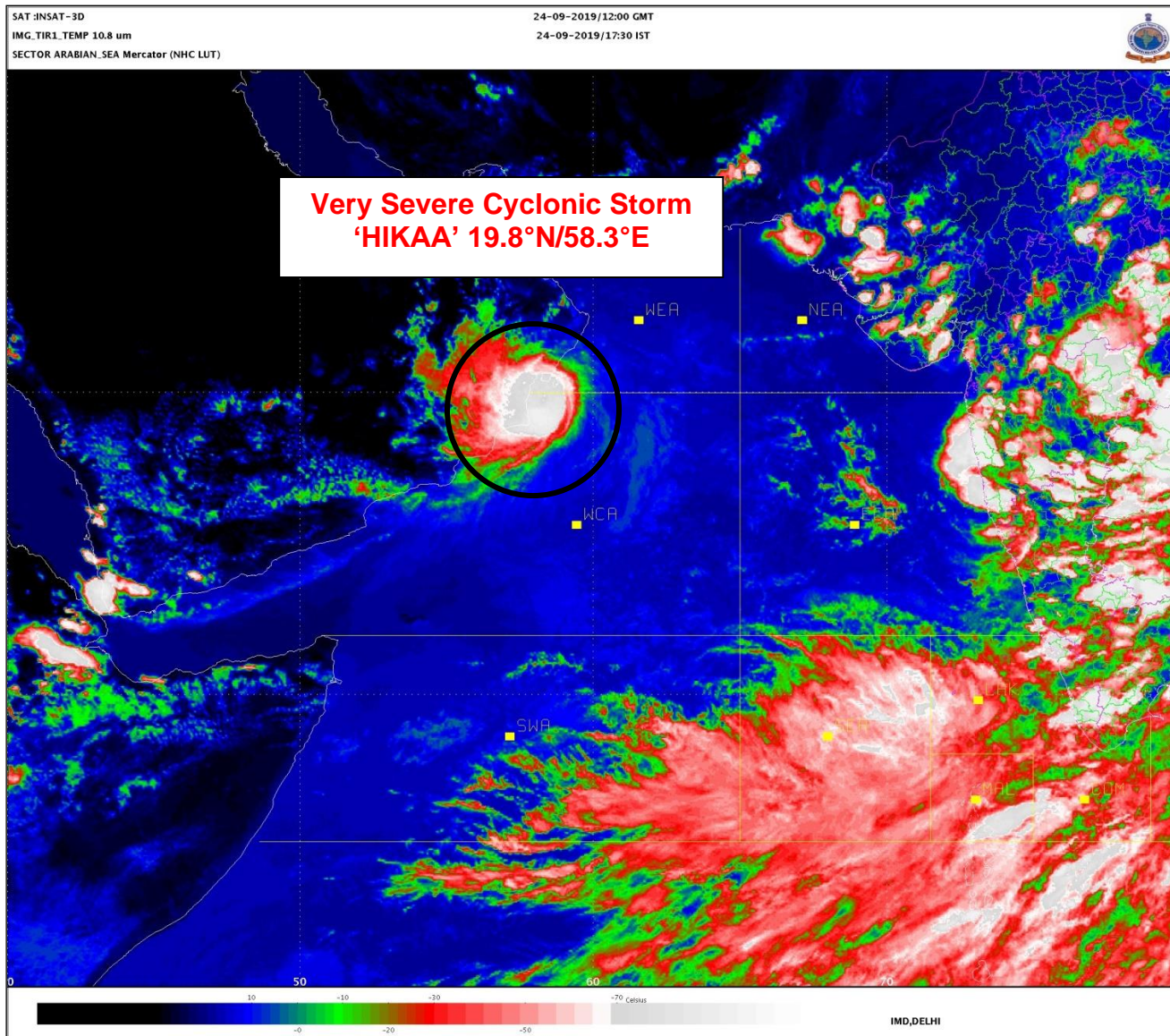
THE OUTER BAND OF THE SYSTEM HAS ENTERED THE LAND. HENCE THE SYSTEM IS INTERACTING WITH LAND SURFACE. THE INCURSION OF WARM MOIST AIR TO THE CORE OF THE SYSTEM HAS REDUCED marginally. THE LOW LEVEL RELATIVE VORTICITY IS ABOUT $150 \times 10^{-6} \text{ SEC}^{-1}$ TO THE SOUTHWEST OF THE SYSTEM CENTRE. HOWEVER, THE VORTICITY FIELD HAS CHANGED ITS ORIENTATION BECOMING ELLIPTICALLY ORIENTED TOWARDS SOUTHWEST INDICATING POSSIBLE WEST-SOUTHWESTWARD MOVEMENT TOWARDS OMAN COAST. THE SYSTEM HAS ALREADY COMMENCED WEST-SOUTHWESTWARD MOVEMENT. THE LOWER LEVEL CONVERGENCE IS ABOUT $10 \times 10^{-5} \text{ S}^{-1}$ TO THE SOUTH OF THE SYSTEM CENTER. THE UPPER LEVEL DIVERGENCE IS ABOUT $20 \times 10^{-5} \text{ S}^{-1}$ TO THE SOUTHWEST OF THE SYSTEM CENTER. THE VERTICAL WIND SHEAR IS MODERATE (10-15 KNOTS) OVER THE SYSTEM AREA AND ALONG THE FORECAST TRACK. THE UPPER TROPOSPHERIC RIDGE RUNS ALONG 24° N.

AS THE SYSTEM LIES TO THE SOUTH OF UPPER TROPOSPHERIC RIDGE AND IS BEING STEERED BY MIDDLE AND UPPER TROPOSPHERIC WINDS, IT IS VERY LIKELY TO CONTINUE MOVE WEST-SOUTHWESTWARDS AND CROSS OMAN COAST AS A VERY SEVERE CYCLONIC STORM AROUND 1500 UTC OF 24TH SEPTEMBER.

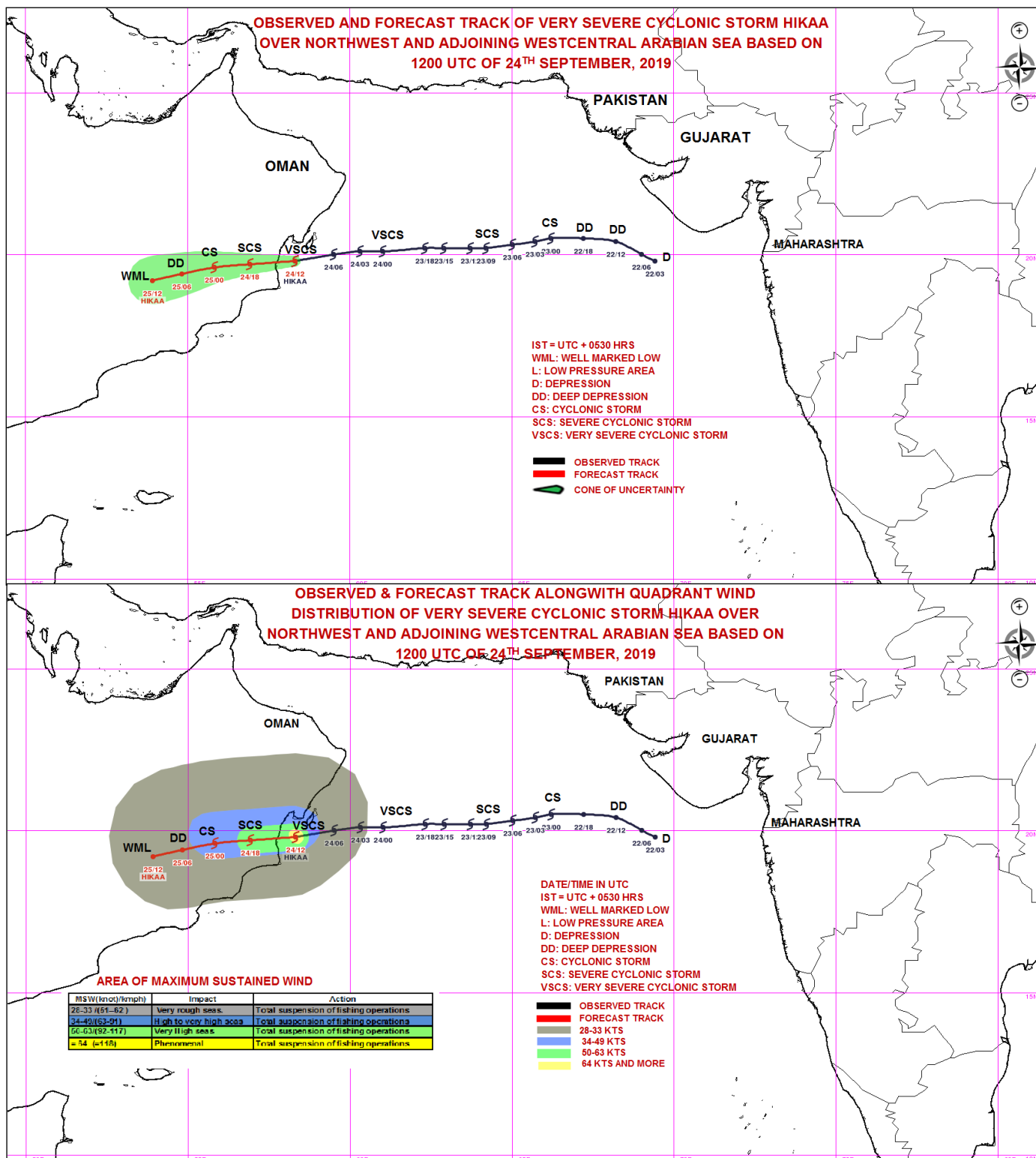
(NEETHA K GOPAL)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 13

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)
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. 13 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 36 HOURS ISSUED AT 1630 UTC OF 24.09.2019 BASED ON 1500 UTC OF 24.09.2019.

SUB: VERY SEVERE CYCLONIC STORM 'HIKAA' OVER WESTCENTRAL AND ADJOINING NORTHWEST ARABIAN SEA CROSSED OMAN COAST

THE **VERY SEVERE CYCLONIC STORM 'HIKAA'** OVER WESTCENTRAL AND ADJOINING NORTHWEST ARABIAN SEA MOVED WEST-SOUTHWESTWARDS WITH A SPEED OF 23 KMPH DURING PAST 06 HOURS AND CROSSED OMAN COAST NEAR LATITUDE 19.7°N AND LONGITUDE 57.6°E CLOSE TO NORTH OF DUQM DURING 1400 AND 1500 UTC, AS A VERY SEVERE CYCLONIC STORM WITH MAXIMUM SUSTAINED WIND SPEED OF 120-130 KMPH GUSTING TO 145 KMPH. IT THEN MOVED WESTWARDS, WEAKENED INTO A SEVERE CYCLONIC STORM AND LAY CENTRED AT 1500 UTC OF TODAY, THE 24TH SEPTEMBER, 2019 NEAR, LATITUDE 19.7°N AND LONGITUDE 57.6°E, CLOSE TO DUQM. IT IS VERY LIKELY TO MOVE WEST SOUTHWESTWARDS AND WEAKEN FURTHER INTO A CYCLONIC STORM DURING NEXT SIX HOURS AND INTO A DEPRESSION DURING SUBSEQUENT SIX HOURS.

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
24.09.19/1500	19.7/57.6	110-120 GUSTING TO 130	SEVERE CYCLONIC STORM
24.09.19/1800	19.6/56.9	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
25.09.19/0000	19.4/55.8	65-75 GUSTING TO 85	CYCLONIC STORM
25.09.19/0600	19.2/54.8	35-45 GUSTING TO 55	DEPRESSION

REMARKS:

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 60 KNOTS GUSTING TO 70 KNOTS. THE SEA CONDITION ALONG AND OFF OMAN COAST IS HIGH THE ESTIMATED CENTRAL PRESSURE IS 986 HPA.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

AS PER THE SATELLITE IMAGERY, THE SYSTEM SHOWS CURVED BAND PATTERN. LOWEST CLOUD TOP TEMPERATURE IS -80°C . ASSOCIATED BROKEN LOW TO MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LIE OVER OMAN AND ADJOINING AREAS OF SAUDI ARABIA AND ARABIAN SEA NORTHWEST ARABIAN SEA BETWEEN LATITUDE 18.5°N TO 21.5°N AND LONGITUDE 56.5°E TO 59.0°E

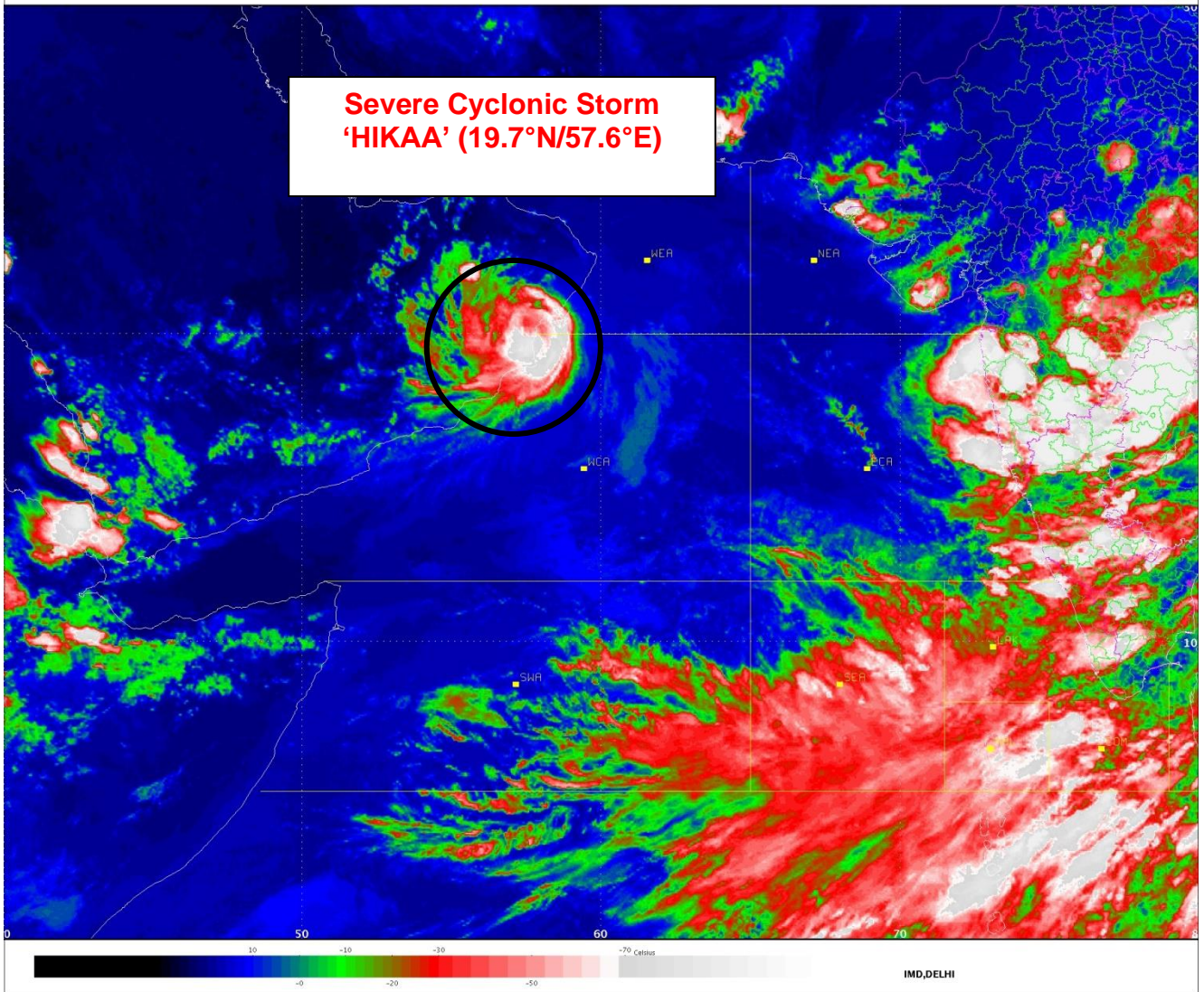
(ANANDA KUMAR DAS)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

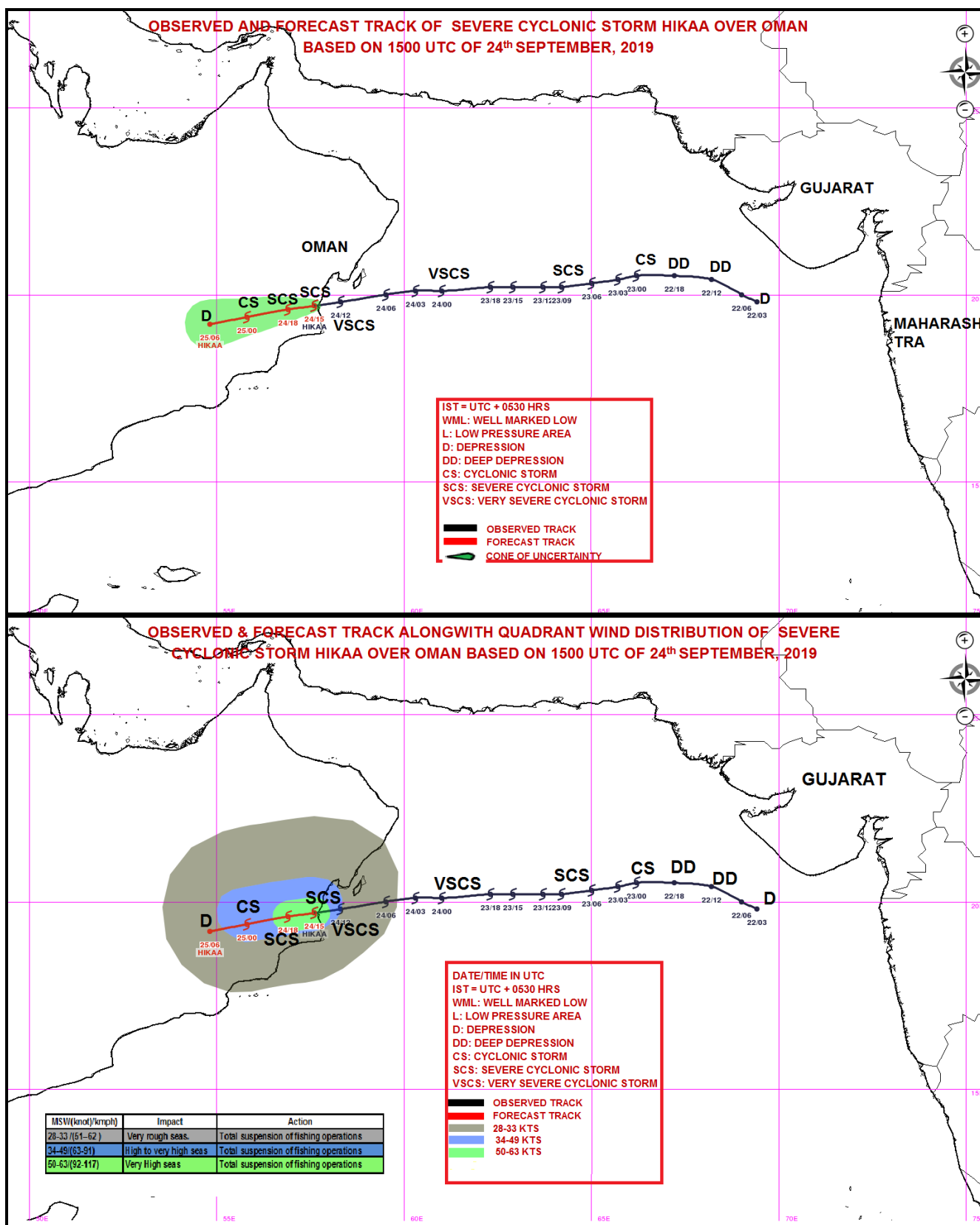
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



**Severe Cyclonic Storm
'HIKAA' (19.7°N/57.6°E)**



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 14

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)
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. 14 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 36 HOURS ISSUED AT 2000 UTC OF 24.09.2019 BASED ON 1800 UTC OF 24.09.2019.

SUB: SEVERE CYCLONIC STORM 'HIKAA' OVER OMAN AND ADJOINING WESTCENTRAL AND NORTHWEST ARABIAN SEA

THE **SEVERE CYCLONIC STORM 'HIKAA'** OVER OMAN AND ADJOINING WESTCENTRAL AND NORTHWEST ARABIAN SEA MOVED NEARLY WESTWARDS WITH A SPEED OF 21 KMPH DURING PAST 06 HOURS AND AND LAY CENTRED AT 1800 UTC OF 24TH SEPTEMBER, 2019 NEAR, LATITUDE 19.7°N AND LONGITUDE 57.1°E, 60 KM WEST OF DUQM (41290) AND 80 KM EAST SOUTHEAST OF HAIMA (41301). IT IS VERY LIKELY TO MOVE WEST SOUTHWESTWARDS AND WEAKEN FURTHER INTO A CYCLONIC STORM DURING NEXT SIX HOURS AND INTO A DEPRESSION DURING SUBSEQUENT SIX HOURS.

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
24.09.19/1800	19.7/57.1	100-110 GUSTING TO 125	SEVERE CYCLONIC STORM
25.09.19/0000	19.6/56.0	75-85 GUSTING TO 95	CYCLONIC STORM
25.09.19/0600	19.5/55.0	35-45 GUSTING TO 55	DEPRESSION
25.09.19/1200	19.3/53.9	20-30 GUSTING TO 40	LOW

REMARKS:

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 55 KNOTS GUSTING TO 65 KNOTS. THE SEA CONDITION ALONG AND OFF OMAN COAST IS HIGH THE ESTIMATED CENTRAL PRESSURE IS 988 HPA.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

AS PER THE SATELLITE IMAGERY, THE SYSTEM STILL SHOWS CURVED BAND PATTERN. LOWEST CLOUD TOP TEMPERATURE IS -88°C . ASSOCIATED BROKEN LOW TO MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LIE OVER OMAN AND ADJOINING AREAS OF SAUDI ARABIA AND ARABIAN SEA NORTHWEST ARABIAN SEA BETWEEN LATITUDE 18.7°N TO 20.2°N AND LONGITUDE 56.5°E TO 58.5°E

(ANANDA KUMAR DAS)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

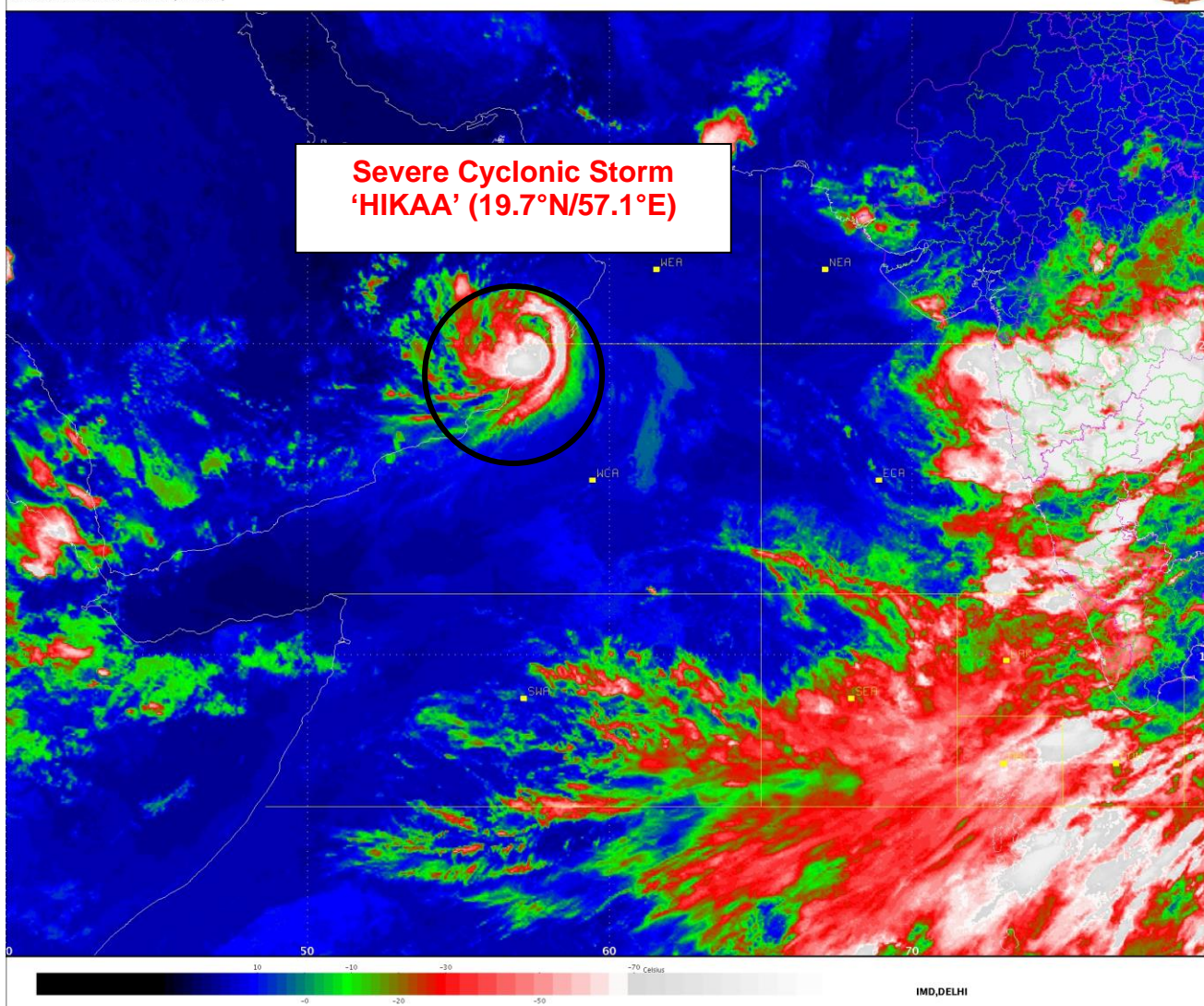
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

SAT:INSAT-3D
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SECTOR ARABIAN_SEA Mercator (NHC LUT)

24-09-2019/16:30 GMT
24-09-2019/22:00 IST

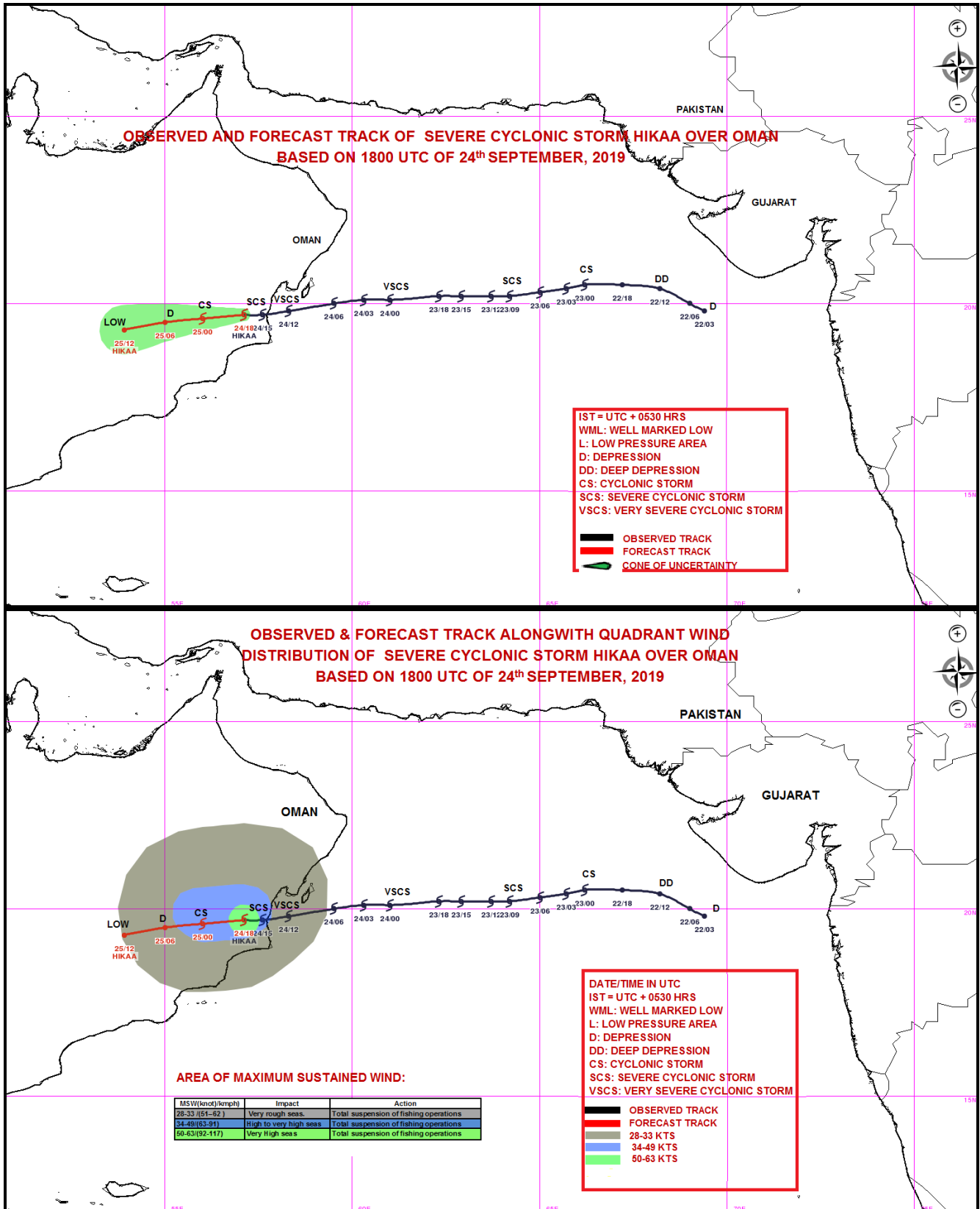


**Severe Cyclonic Storm
'HIKAA' (19.7°N/57.1°E)**



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 15

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)
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. 15 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 24 HOURS ISSUED AT 2330 UTC OF 24.09.2019 BASED ON 2100 UTC OF 24.09.2019.

SUB: SEVERE CYCLONIC STORM 'HIKAA' OVER OMAN WEAKENED INTO A CYCLONIC STORM

THE **SEVERE CYCLONIC STORM 'HIKAA'** OVER OMAN AND ADJOINING WESTCENTRAL AND NORTHWEST ARABIAN SEA MOVED NEARLY WESTWARDS WITH A SPEED OF 17 KMPH DURING PAST 06 HOURS, WEAKENED INTO A CYCLONIC STORM OVER OMAN AND LAY CENTRED AT 2100 UTC OF 24TH SEPTEMBER, 2019 NEAR, LATITUDE 19.6°N AND LONGITUDE 56.6°E, ABOUT 110 KM WEST OF DUQM (41290) AND 50 KM SOUTH SOUTHEAST OF HAIMA (41301). IT IS VERY LIKELY TO MOVE WEST SOUTHWESTWARDS AND WEAKEN FURTHER INTO A DEEP DEPRESSION DURING NEXT SIX HOURS AND INTO A DEPRESSION DURING SUBSEQUENT SIX HOURS.

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
24.09.19/2100	19.6/56.6	80-90 GUSTING TO 100	CYCLONIC STORM
25.09.19/0000	19.6/56.0	60-70 GUSTING TO 80	CYCLONIC STORM
25.09.19/0600	19.5/55.0	35-45 GUSTING TO 55	DEPRESSION
25.09.19/1200	19.3/53.9	20-30 GUSTING TO 40	LOW

REMARKS:

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 45 KNOTS GUSTING TO 55 KNOTS. THE SEA CONDITION ALONG AND OFF OMAN COAST IS ROUGH. THE ESTIMATED CENTRAL PRESSURE IS 992 HPA.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

AS PER THE SATELLITE IMAGERY, LOWEST CLOUD TOP TEMPERATURE OVER THE SYSTEM IS -65°C . ASSOCIATED BROKEN LOW TO MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LIE OVER OMAN AND ADJOINING AREAS OF SAUDI ARABIA AND ARABIAN SEA NORTHWEST ARABIAN SEA BETWEEN LATITUDE 18.0°N TO 21.0°N AND LONGITUDE 53.0°E TO 58.0°E

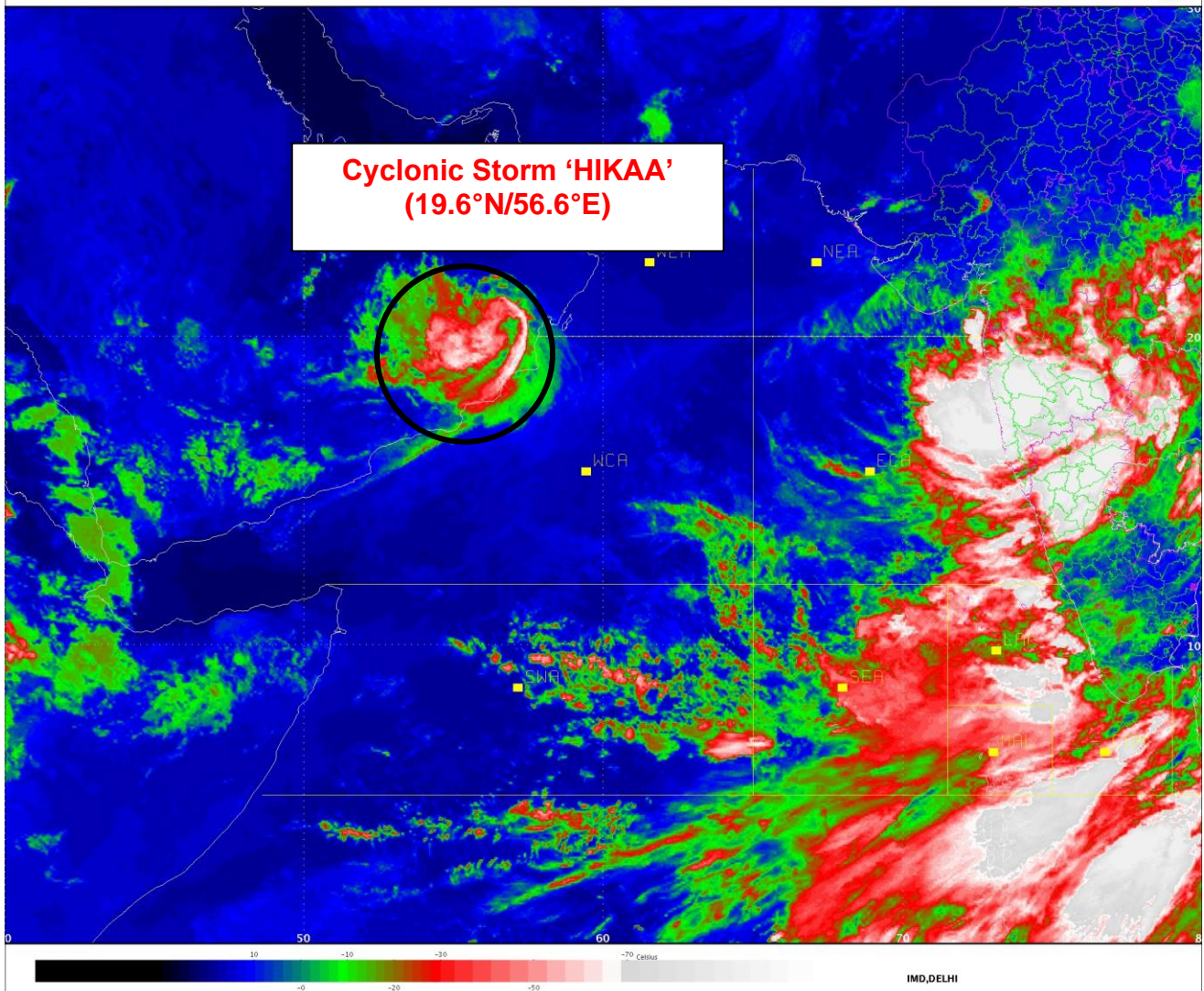
(ANANDA KUMAR DAS)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

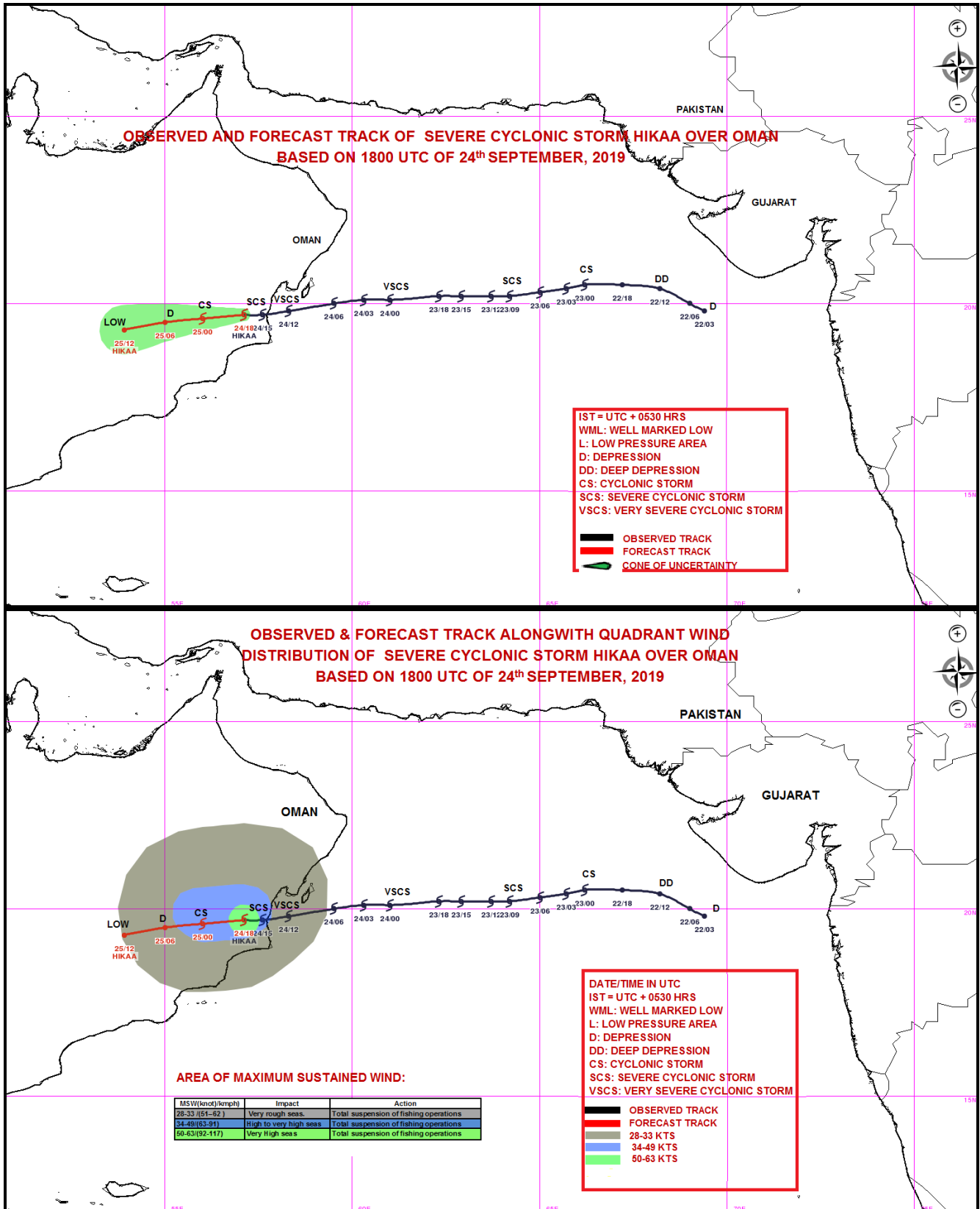
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24-09-2019/21:30 GMT
25-09-2019/03:00 IST



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 16

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)
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. 16 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 12 HOURS ISSUED AT 0230 UTC OF 25.09.2019 BASED ON 0000 UTC OF 25.09.2019.

SUB: CYCLONIC STORM 'HIKAA' OVER OMAN

THE **CYCLONIC STORM 'HIKAA'** OVER OMAN MOVED NEARLY WESTWARDS WITH A SPEED OF 21 KMPH DURING PAST 06 HOURS, AND LAY CENTRED AT 0000 UTC OF 25TH SEPTEMBER, 2019 NEAR, LATITUDE 19.6°N AND LONGITUDE 55.9°E, ABOUT 180 KM WEST OF DUQM (41290) AND 70 KM SOUTHWEST OF HAIMA (41301). IT IS VERY LIKELY TO MOVE WEST SOUTHWESTWARDS AND WEAKEN INTO A DEPRESSION DURING NEXT SIX HOURS AND INTO A WELL MARKED LOW DURING SUBSEQUENT SIX HOURS.

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
25.09.19/0000	19.6/55.9	60-70 GUSTING TO 80	CYCLONIC STORM
25.09.19/0600	19.5/55.0	35-45 GUSTING TO 55	DEPRESSION
25.09.19/1200	19.3/53.9	20-30 GUSTING TO 40	LOW

REMARKS:

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 35 KNOTS GUSTING TO 45 KNOTS. THE SEA CONDITION ALONG AND OFF OMAN COAST IS ROUGH. THE ESTIMATED CENTRAL PRESSURE IS 996 HPA.

AS PER THE SATELLITE IMAGERY, LOWEST CLOUD TOP TEMPERATURE OVER THE SYSTEM IS -63°C. ASSOCIATED BROKEN LOW TO MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LIE OVER OMAN AREA BETWEEN LATITUDE 18.0°N TO 22.0°N AND LONGITUDE 53.0°E TO 57.2°E

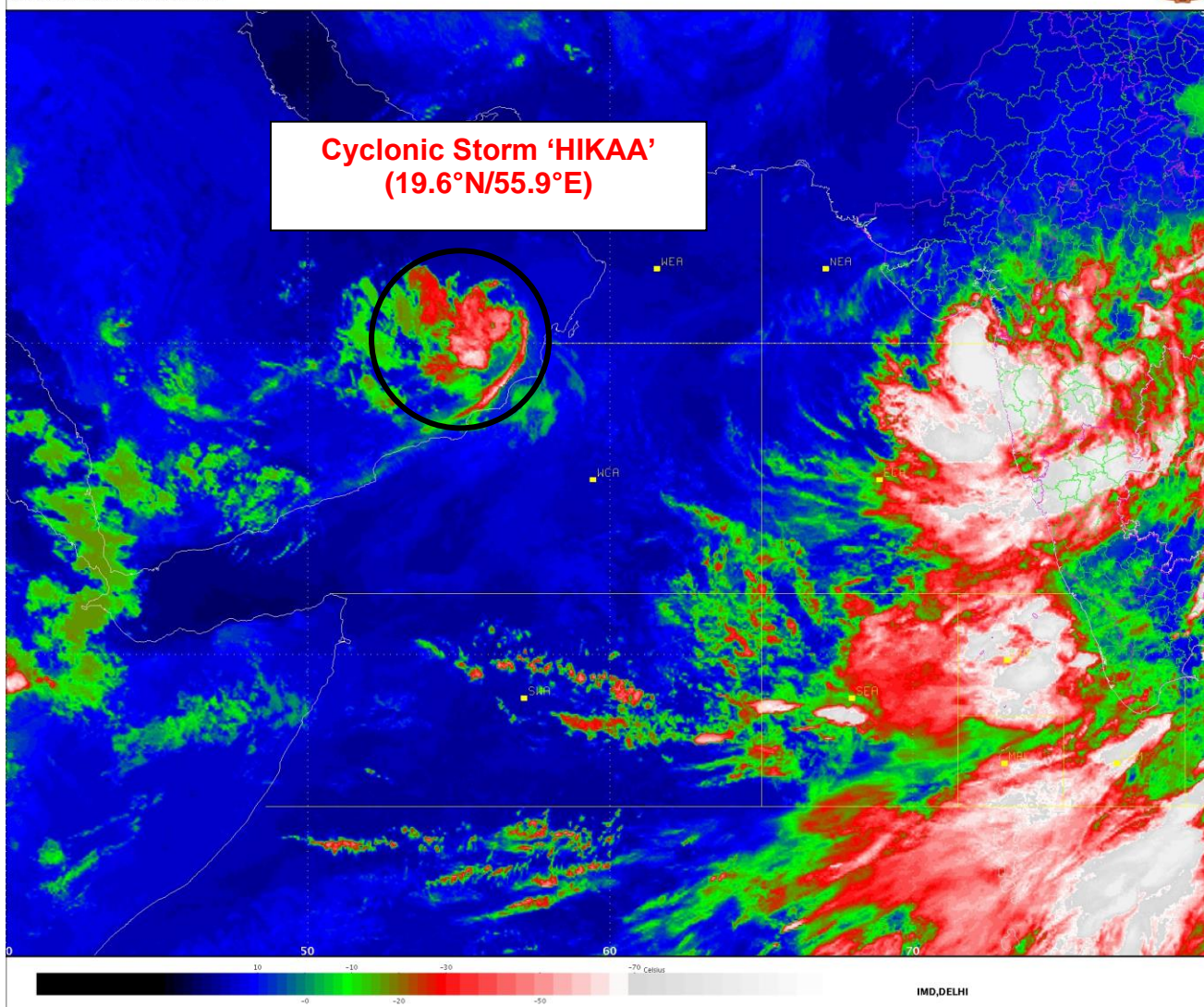
(ANANDA KUMAR DAS)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

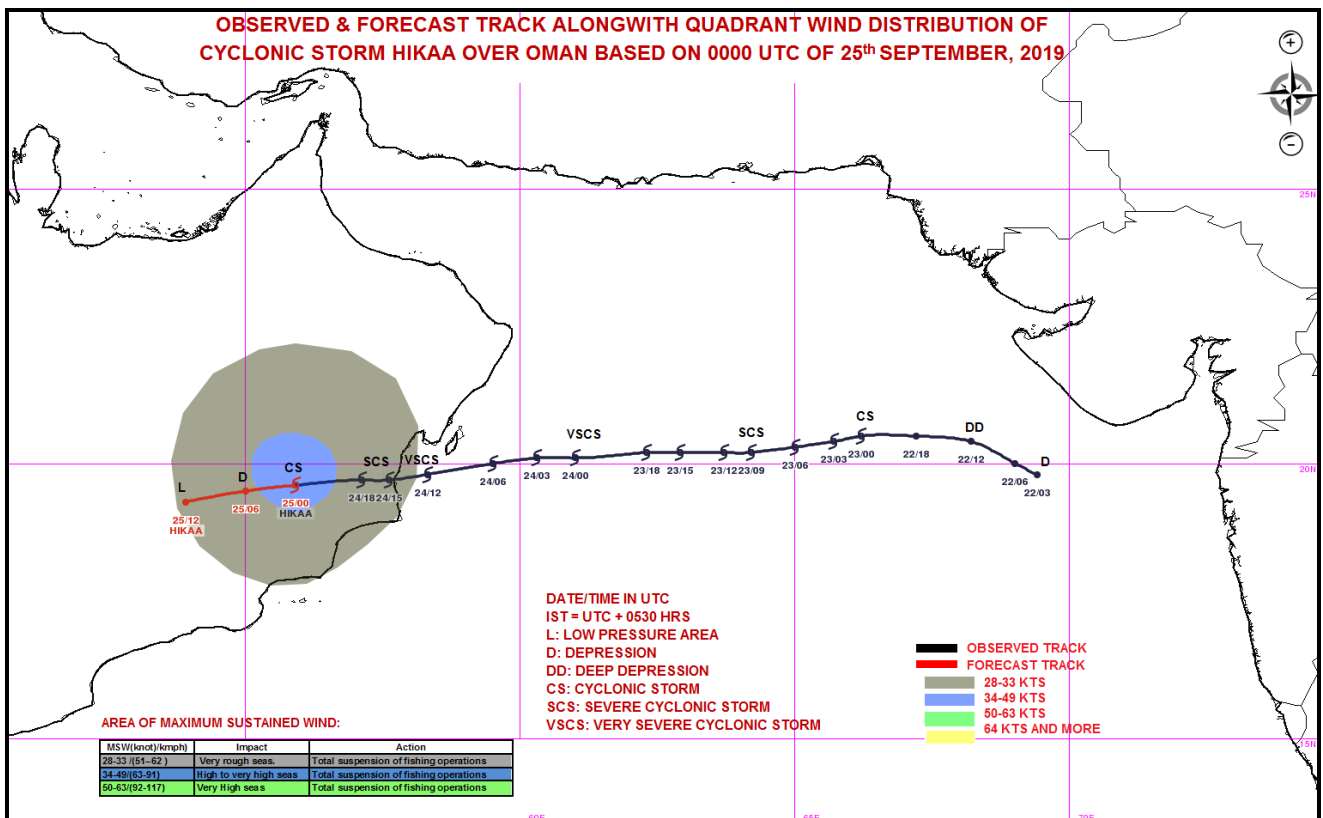
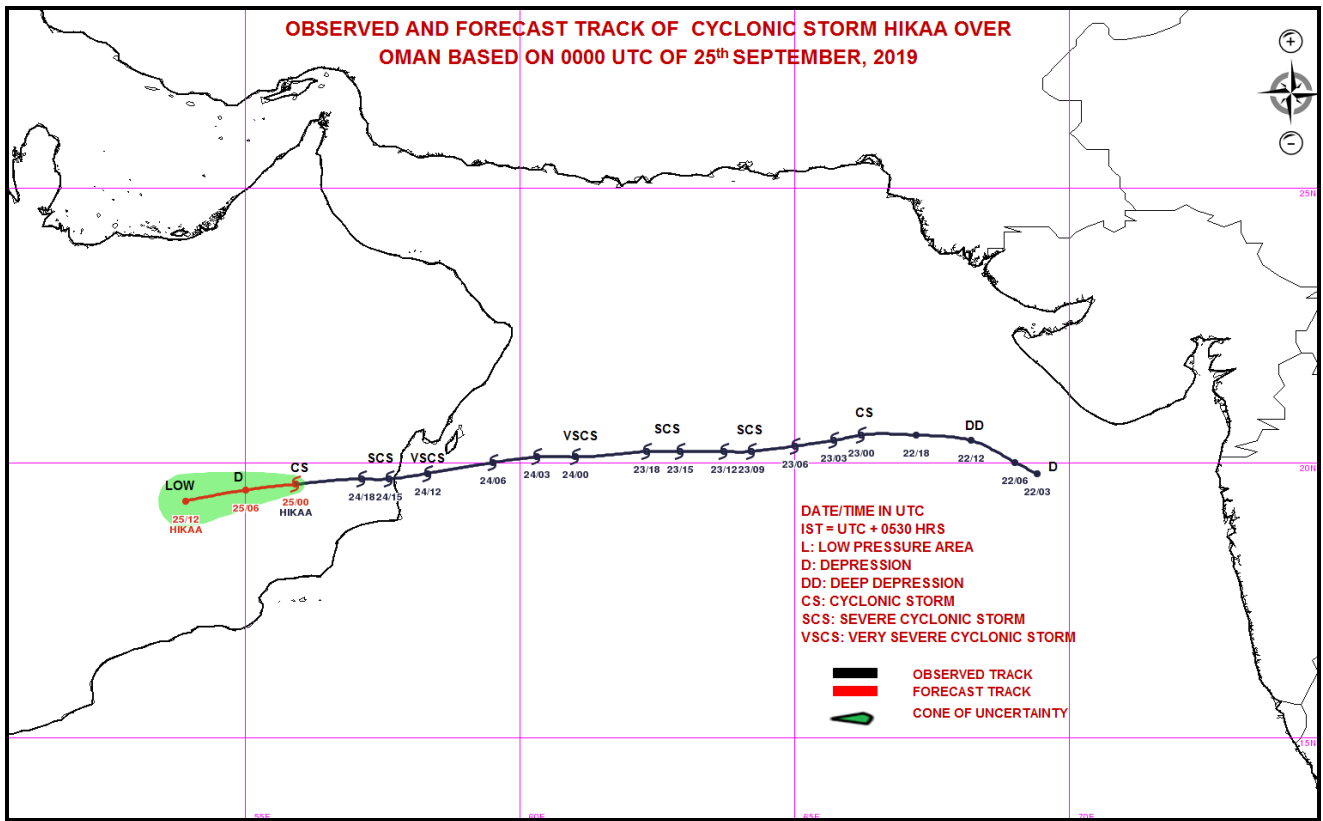
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25-09-2019/00:00 GMT
25-09-2019/05:30 IST



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 25.09.2019

TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 24 HOURS ISSUED AT 0500 UTC OF 25.09.2019 BASED ON 0300 UTC OF 25.09.2019.

CYCLONIC STORM 'HIKAA' WEAKENED INTO A DEEP DEPRESSION OVER OMAN

THE **CYCLONIC STORM 'HIKAA'** OVER OMAN MOVED NEARLY WESTWARDS WITH A SPEED OF 19 KMPH DURING PAST 06 HOURS, WEAKENED INTO A **DEEP DEPRESSION** AND LAY CENTRED AT 0300 UTC OF 25TH SEPTEMBER, 2019 NEAR, LATITUDE 19.5°N AND LONGITUDE 55.5°E, ABOUT 220 KM WEST OF DUQM (41290) AND 110 KM WEST-SOUTHWEST OF HAIMA (41301). IT IS VERY LIKELY TO MOVE WEST SOUTHWESTWARDS AND WEAKEN INTO A DEPRESSION DURING NEXT THREE HOURS AND INTO A WELL MARKED LOW DURING SUBSEQUENT THREE HOURS.

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
25.09.19/0300	19.5/55.5	50-60 GUSTING TO 70	DEEP DEPRESSION
25.09.19/0600	19.4/55.0	35-45 GUSTING TO 55	DEPRESSION
25.09.19/1200	19.3/53.9	20-30 GUSTING TO 40	LOW

REMARKS:

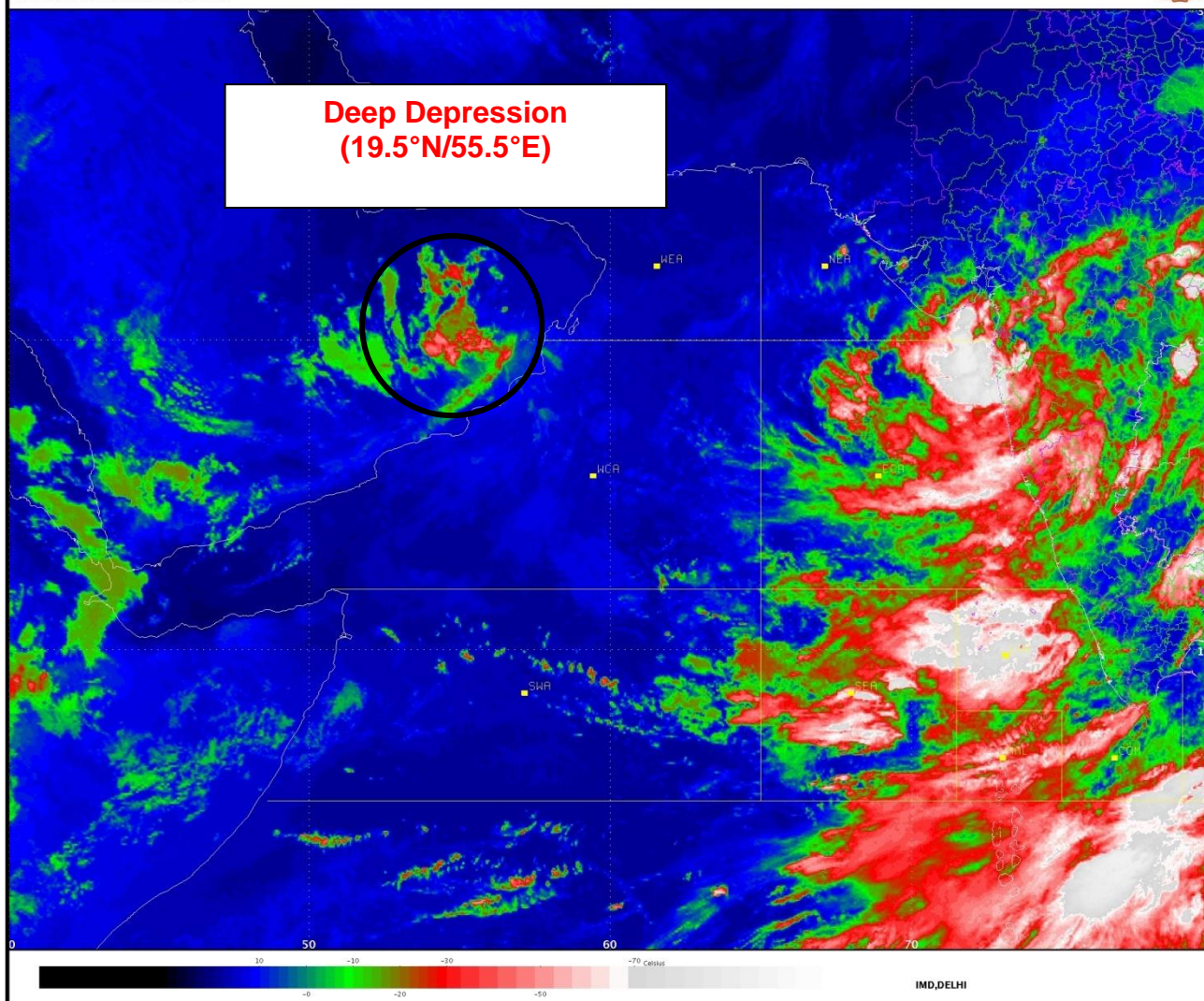
THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 30 KNOTS GUSTING TO 40 KNOTS. THE SEA CONDITION ALONG AND OFF OMAN COAST IS ROUGH. THE ESTIMATED CENTRAL PRESSURE IS 998 HPA.

AS PER THE SATELLITE IMAGERY, LOWEST CLOUD TOP TEMPERATURE OVER THE SYSTEM IS -46°C. ASSOCIATED SCATTERED LOW TO MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LIES OVER OMAN AND ADJOINING SAUDI ARABIA BETWEEN LATITUDE 18.0°N TO 22.5°N AND LONGITUDE 52.0°E TO 57.0°E.

(Sunitha Devi S.)
SCIENTIST-E, RSMC, NEW DELHI

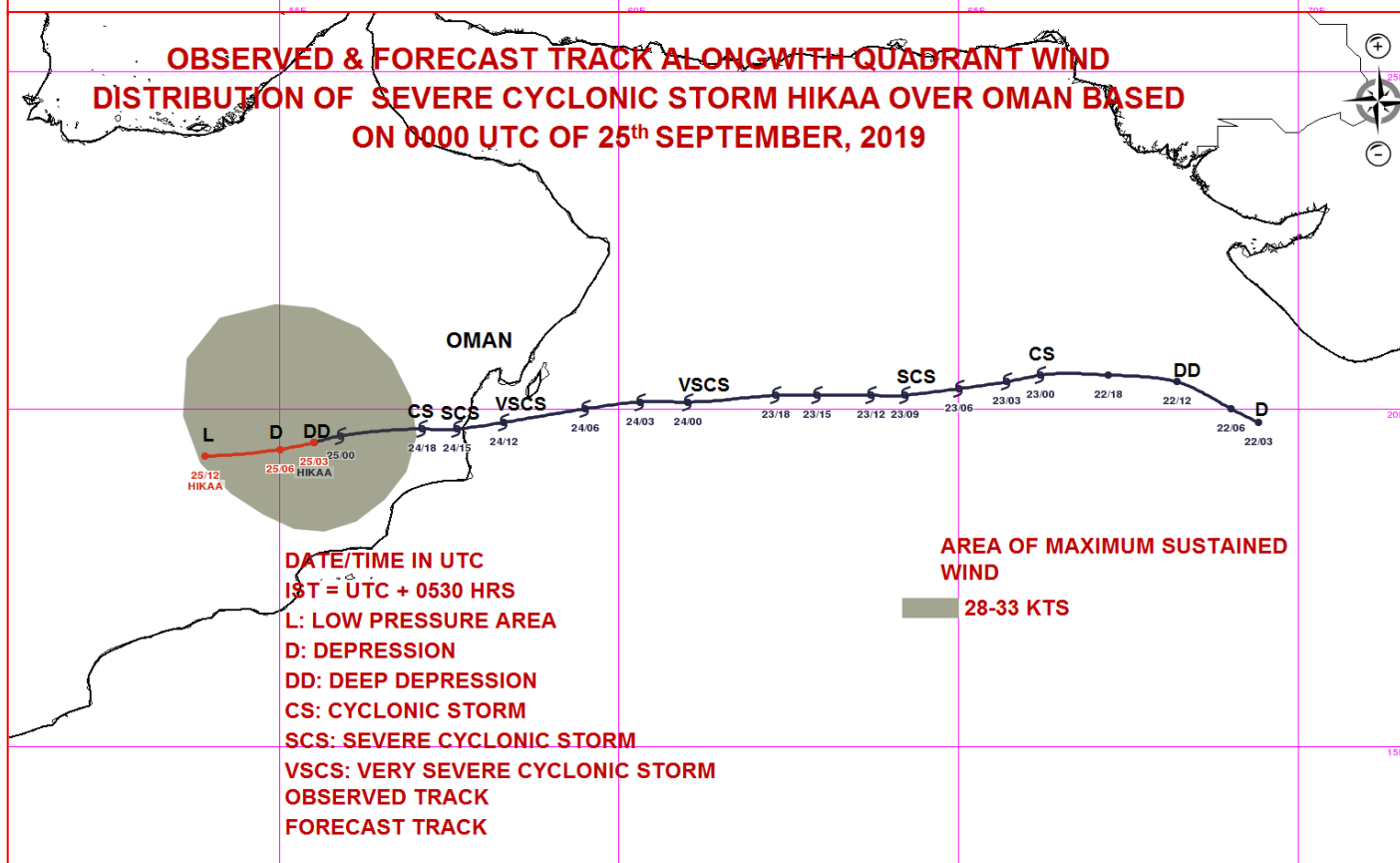
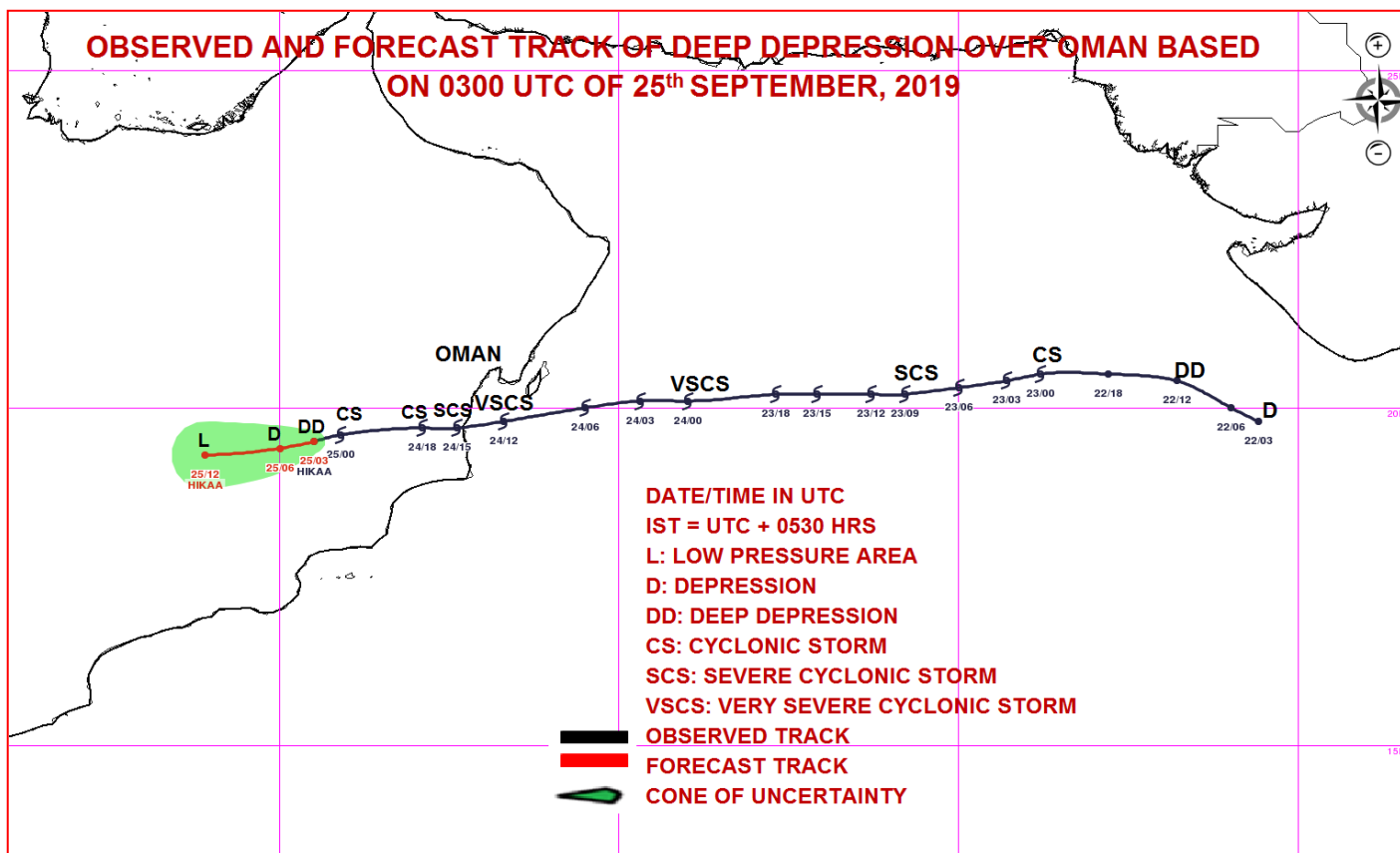
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 25.09.2019

TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 12 HOURS ISSUED AT 0800 UTC OF 25.09.2019 BASED ON 0600 UTC OF 25.09.2019.

DEEP DEPRESSION WEAKENED INTO DEPRESSION OVER OMAN

THE **DEEP DEPRESSION** OVER OMAN MOVED WEST-SOUTHWESTWARDS WITH A SPEED OF 17 KMPH DURING PAST 06 HOURS, WEAKENED INTO A **DEPRESSION** AND LAY CENTRED AT 0600 UTC OF 25TH SEPTEMBER, 2019 NEAR, LATITUDE 19.3°N AND LONGITUDE 55.0°E, ABOUT 280 KM WEST-SOUTHWEST OF DUQM (41290) AND 170 KM WEST-SOUTHWEST OF HAIMA (41301). IT IS VERY LIKELY TO MOVE WEST-SOUTHWESTWARDS AND WEAKEN INTO A WELL MARKED LOW DURING NEXT SIX HOURS.

REMARKS:

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS GUSTING TO 35 KNOTS. THE SEA CONDITION ALONG AND OFF OMAN COAST IS ROUGH. THE ESTIMATED CENTRAL PRESSURE IS 1000 HPA.

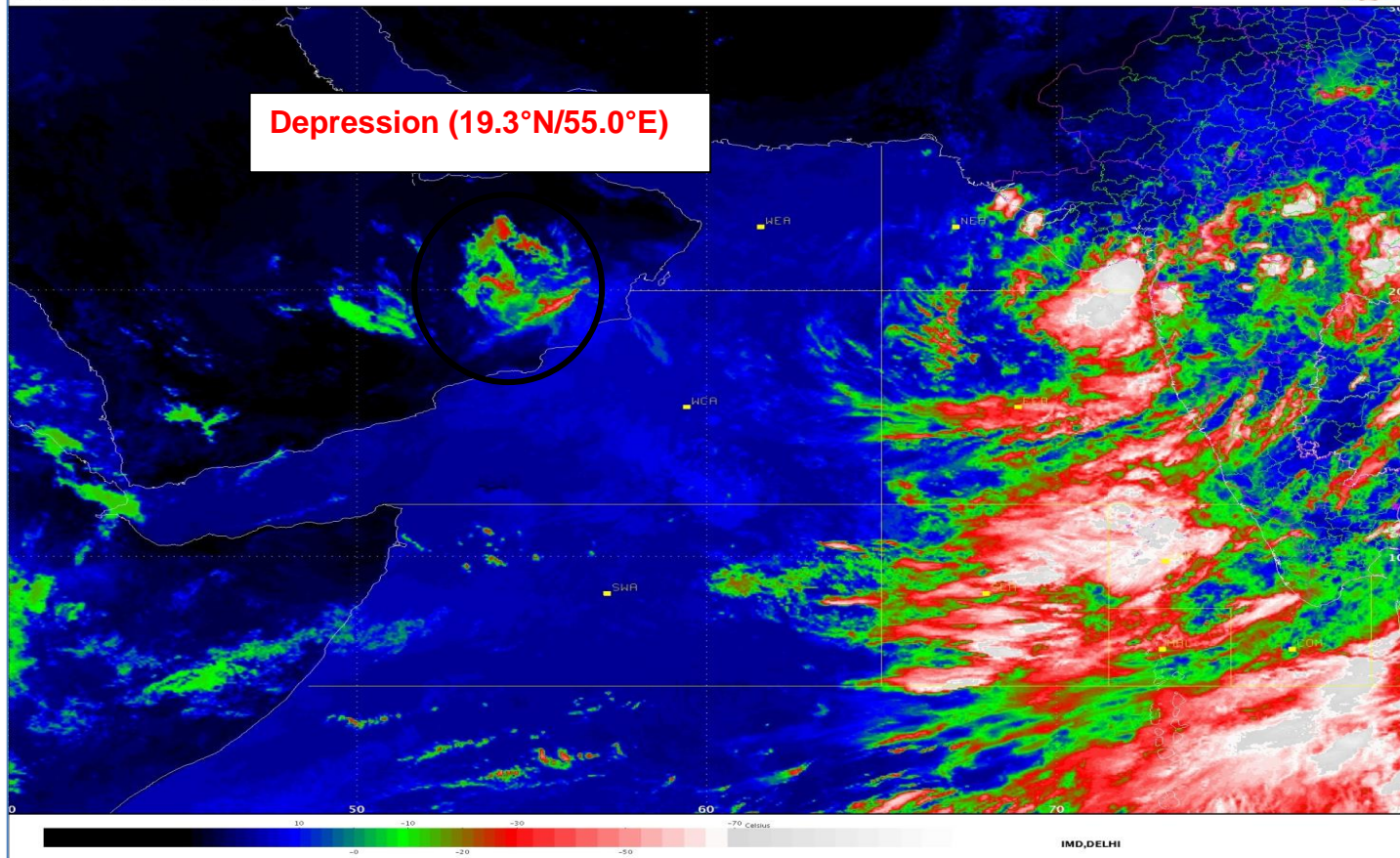
AS PER THE SATELLITE IMAGERY, LOWEST CLOUD TOP TEMPERATURE OVER THE SYSTEM IS -50°C. ASSOCIATED SCATTERED LOW TO MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LIES OVER OMAN AND ADJOINING SAUDI ARABIA BETWEEN LATITUDE 18.0°N TO 22.0°N AND LONGITUDE 53.0°E TO 56.0°E.

(Sunitha Devi S.)
SCIENTIST-E, RSMC, NEW DELHI

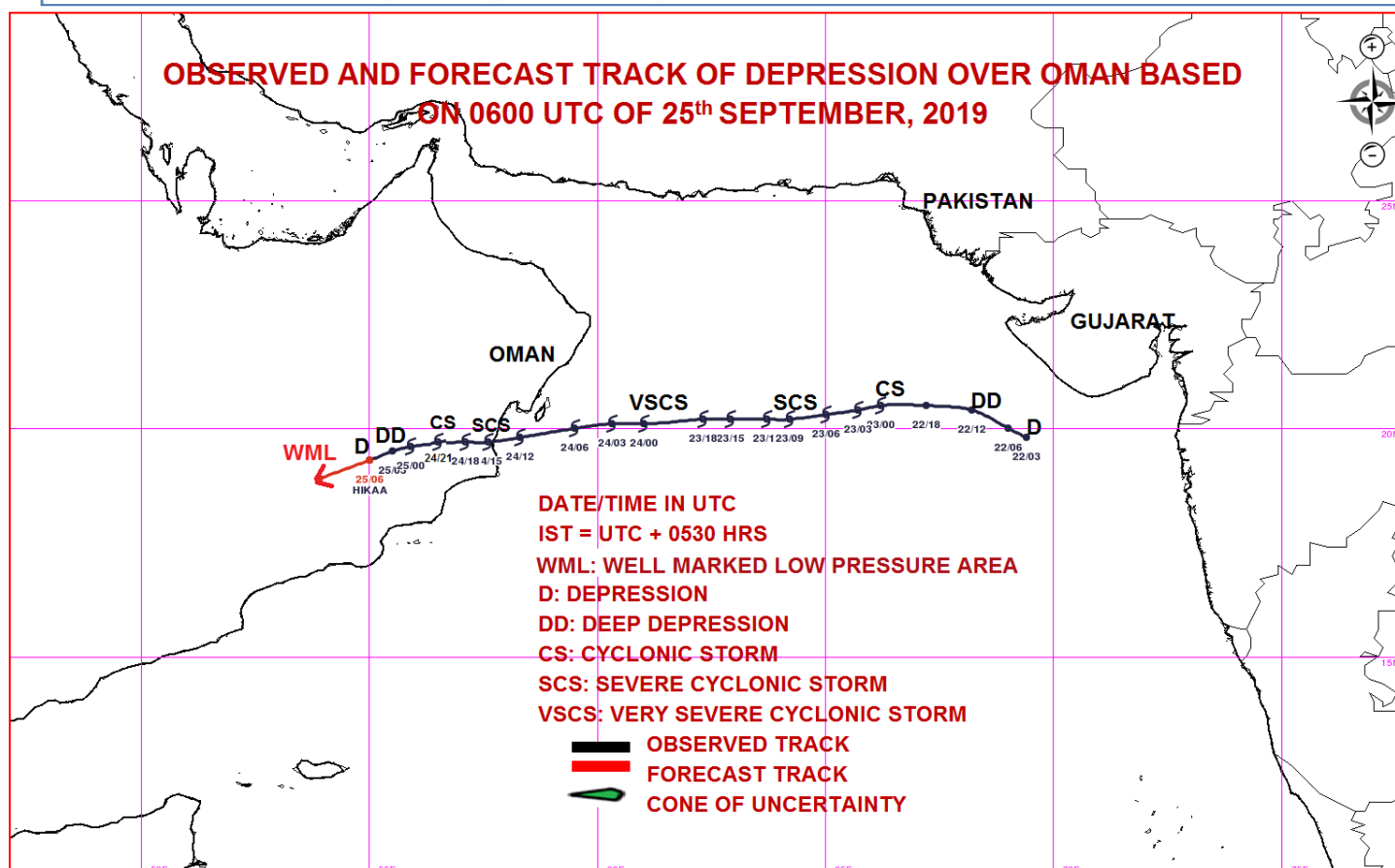
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

Depression (19.3°N/55.0°E)



OBSERVED AND FORECAST TRACK OF DEPRESSION OVER OMAN BASED ON 0600 UTC OF 25th SEPTEMBER, 2019



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 25.09.2019

TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 12 HOURS ISSUED AT 1100 UTC OF 25.09.2019 BASED ON 0900 UTC OF 25.09.2019.

**DEPRESSION WEAKENED INTO WELL MARKED LOW PRESSURE AREA OVER SOUTH OMAN
AND ADJOINING SAUDI ARABIA**

THE **DEPRESSION** OVER OMAN MOVED WEST-SOUTHWESTWARDS WITH A SPEED OF 19 KMPH DURING PAST 06 HOURS AND WEAKENED INTO A **WELL MARKED LOW PRESSURE AREA OVER SOUTH OMAN AND ADJOINING SAUDI ARABIA** AT 0900 UTC OF TODAY, THE 25TH SEPTEMBER, 2019.

REMARKS:

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 15 KNOTS GUSTING TO 25 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 1002 HPA.

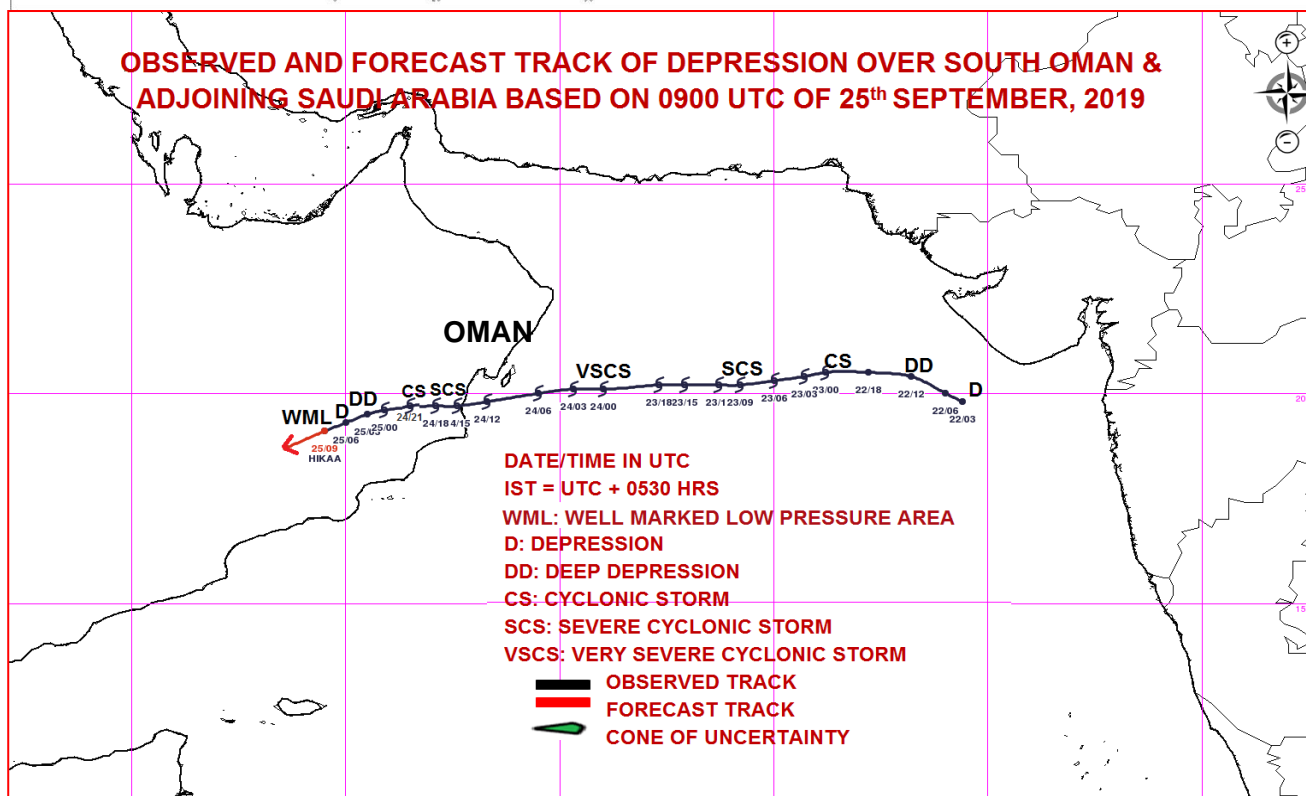
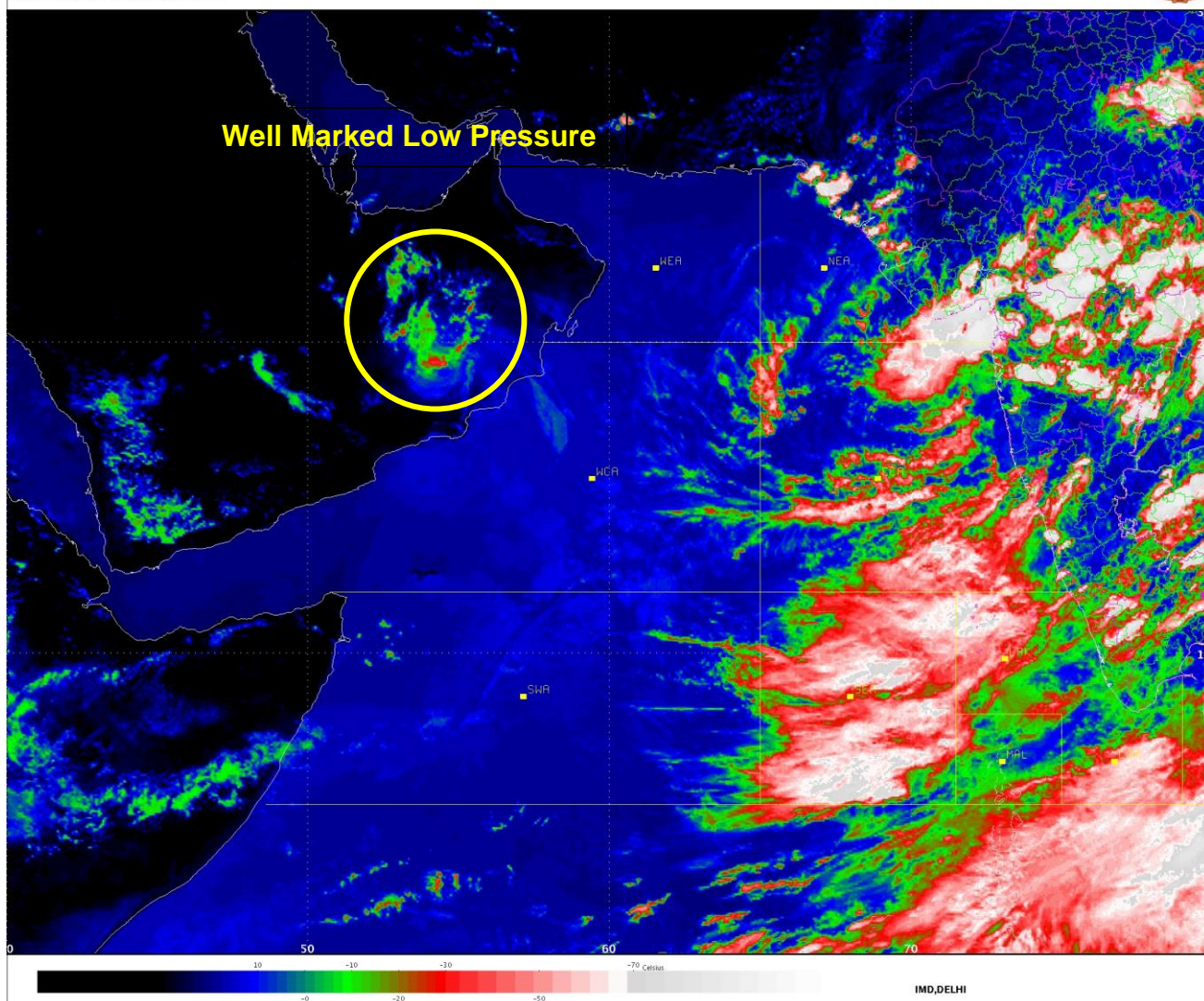
AS PER THE SATELLITE IMAGERY, LOWEST CLOUD TOP TEMPERATURE OVER THE SYSTEM IS -40°C. ASSOCIATED SCATTERED LOW TO MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER OMAN AND ADJOINING SAUDI ARABIA BETWEEN LATITUDE 18.0°N TO 20.0°N AND LONGITUDE 53.0°E TO 56.0°E.

THIS IS LAST UPDATE IN ASSOCIATION WITH THIS SYSTEM.

**(Sunitha Devi S.)
SCIENTIST-E, RSMC, NEW DELHI**

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%



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NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%