





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

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 30.08.2024 SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE F

SPECIAL TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 168 HOURS ISSUED AT 0600 UTC OF 30.08.2024 BASED ON 0300UTC OF 30.08.2024.

## SUB: (A) DEEP DEPRESSION OVER KACHCHH COAST AND ADJOINING AREAS OF PAKISTAN & NORTHEAST ARABIAN SEA AND (B) WEL MARKED LOW PRESSURE AREA OVER WESTCENTRAL & ADJOINING NORTHWEST BAY OF BENGAL

## (I) ARABIAN SEA:

## (A) DEEP DEPRESSION OVER KACHCHH COAST AND ADJOINING AREAS OF PAKISTAN & NORTHEAST ARABIAN SEA

THE DEEP DEPRESSION OVER KACHCHH AND ADJOINING AREAS OF SAURASHTRA, NORTHEAST ARABIAN SEA & PAKISTAN MOVED WESTWARDS WITH A SPEED OF 5 KMPH DURING PAST 6 HOURS AND LAY CENTERED AT 0300 UTC OF 30TH AUGUST, 2024 OVER KACHCHH COAST AND ADJOINING AREAS OF PAKISTAN & NORTHEAST ARABIAN SEA NEAR LATITUDE 23.5°N AND LONGITUDE 68.2°E, 160 KM WEST OF BHUJ (42364), 70 KM WEST-NORTHWEST OF NALIYA (42631) AND 190 KM EAST-SOUTHEAST OF KARACHI (41780).

IT IS LIKELY TO MOVE NEARLY WESTWARDS, EMERGE INTO NORTHEAST ARABIAN SEA OFF KACHCHH AND ADJOINING PAKISTAN COASTS AND INTENSIFY INTO A CYCLONIC STORM DURING NEXT 06 HOURS. THEREAFTER, IT WOULD CONTINUE TO MOVE NEARLY WEST-NORTHWESTWARDS OVER NORTHEAST ARABIAN SEA AWAY FROM INDIAN COAST DURING SUBSEQUENT 2 DAYS.

ACCORDING TO THE INSAT 3DR IMAGERY AT 0315 UTC OF 30<sup>TH</sup> AUGUST, INTENSITY IS CHARACTERISED AS T2.0. ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTH PAKISTAN, NORTHEAST ARABIAN SEA AND GULF OF KATCHCHH (MINIMUM CTT MINUS 93<sup>0</sup>C). MODERATE TO INTENSE CONVECTION LAY OVER SOUTH PAKISTAN AND KATCHCHH & SAURASHTRA.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 30 KTS GUSTING TO 40 KTS. ESTIMATED CENTRAL PRESSURE IS 991 HPA. AT 0300 UTC, NALIYA REPORTED MEAN SEA LEVEL PRESSURE OF 993.2 HPA, DEPARTURE FROM NORMAL AS -11.3 HPA AND PRESSURE CHANGE IN PAST 24 HOURS AS -1.7 HPA. REPORTED MEAN WIND SPEED IS 230<sup>0</sup>/18 KT.

DATE/TIME (UTC)	POSITION (LAT. <sup>®</sup> N/ LONG. <sup>®</sup> E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
30.08.24/0300	23.5/68.2	55-65 GUSTING TO 75	DEEP DEPRESSION
30.08.24/0600	23.5/68.0	60-70 GUSTING TO 80	CYCLONIC STORM
30.08.24/1200	23.5/67.5	65-75 GUSTING TO 85	CYCLONIC STORM
30.08.24/1800	23.6/66.8	70-80 GUSTING TO 90	CYCLONIC STORM
31.08.24/0000	23.7/65.9	70-80 GUSTING TO 90	CYCLONIC STORM
31.08.24/1200	23.9/64.3	65-75 GUSTING TO 85	CYCLONIC STORM
01.09.24/0000	23.8/62.4	60-70 GUSTING TO 80	CYCLONIC STORM
01.09.24/1200	23.4/61.1	50-60 GUSTING TO 70	DEEP DEPRESSION
02.09.24/0000	22.5/59.9	40-50 GUSTING TO 60	DEPRESSION

### FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

### Warnings:

SEA CONDITION AND ADVISORY FOR FISHERMEN IN ASSOCIATION WITH THE MOVEMENT OF THE SYSTEM OVER SAURASHTRA & KUTCH AND ADJOINING PAKISTAN AND NORTHEAST ARABIAN SEA FROM INDIA TILL 01<sup>ST</sup> SEPTEMBER:

### WIND WARNING:

- SQUALLY WIND SPEED REACHING 45-55 KMPH GUSTING TO 65 KMPH IS LIKELY OVER THE INTERIOR DISTRICTS OF SOUTH GUJARAT REGION AND SAURASHTRA & KUTCH ON THE 30<sup>TH</sup> AUGUST.
- SQUALLY WIND SPEED REACHING 55-65 KMPH GUSTING TO 75 KMPH IS VERY LIKELY TO PREVAIL ALONG & OFF GUJARAT COASTS & ADJOINING PAKISTAN COASTS AND OVER NORTHEAST & ADJOINING EASTCENTRAL ARABIAN SEA DURING 30<sup>TH</sup> TO 31<sup>ST</sup> AUGUST.
- GALE WIND SPEED REACHING 60-70 KMPH GUSTING TO 80 KMPH IS LIKELY TO PREVAIL OVER NORTHEAST ARABIAN SEA OFF GUJARAT AND PAKISTAN COASTS FROM NOON OF 30TH AUGUST. IT IS LIKELY TO INCREASE BECOMING 70-80 KMPH GUSTING TO 90 KMPH FROM NIGHT OF 30<sup>TH</sup> AUGUST TILL 1<sup>ST</sup> SEPTEMBER 0000 UTC AND DECREASE GRADUALLY THEREAFTER.
- GALE WIND SPEED REACHING 65-75 KMPH GUSTING TO 85 KMPH IS LIKELY TO PREVAIL OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA OFF PAKISTAN AND SOUTHEAST IRAN COASTS FROM 0300 UTC OF 31<sup>ST</sup> AUGUST TILL 1<sup>ST</sup> SEPTEMBER, 0000 UTC. THEREAFTER, THE WINDS WOULD GRADUALLY DECREASE GRADUALLY BECOMING SQUALLY WIND SPEED REACHING 50-60 KMPH GUSTING TO 70 KMPH BY 12 UTC OF 1<sup>ST</sup> SEPTEMBER AND 40-50 KMPH GUSTING TO 60 KMPH BY 0300 UTC OF 2<sup>ND</sup> SEPTEMBER.
- STRONG WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY TO PREVAIL ALONG AND OFF NORTH MAHARASHTRA COASTS DURING 30<sup>TH</sup> TO 31<sup>ST</sup> AUGUST.

## **SEA CONDITION:**

- SQUALLY WEATHER WITH ROUGH TO VERY ROUGH SEA CONDITIONS IS VERY LIKELY TO PREVAIL ALONG & OFF GUJARAT & ADJOINING PAKISTAN AND NORTH MAHARASHTRA COASTS TILL 31<sup>ST</sup> AUGUST.
- VERY ROUGH TO HIGH SEA CONDITION IS LIKELY TO PREVAIL OVER NORTHEAST & ADJOINING EASTCENTRAL AND ARABIAN SEA OFF GUJARAT AND PAKISTAN COASTS DURING 30<sup>TH</sup> AUGUST TO 1<sup>ST</sup> SEPTEMBER.
- VERY ROUGH TO HIGH SEA CONDITION IS LIKELY TO PREVAIL OVER NORTHWEST AND ADJOINING WESTCENTRAL ARABIAN SEA OFF PAKISTAN AND SOUTHEAST IRAN COASTS FROM 31<sup>ST</sup> AUGUST TILL 2<sup>ND</sup> SEPTEMBER.

## FISHERMEN WARNING:

FISHERMEN ARE ADVISED NOT VENTURE INTO

- NORTHEAST & ADJOINING EASTCENTRAL ARABIAN SEA AND ALONG & OFF GUJARAT & ADJOINING NORTH MAHARASHTRA COASTS TILL 31<sup>ST</sup> AUGUST.
- NORTHEAST & ADJOINING EASTCENTRAL ARABIAN SEA OFF GUJARAT COAST AND ALONG & OFF PAKISTAN COASTS DURING 30<sup>TH</sup> AUGUST TO 1<sup>ST</sup> SEPTEMBER.
- NORTHWEST & ADJOINING WESTCENTRAL ARABIAN SEA AND ALONG & OFF PAKISTAN AND SOUTHEAST IRAN COASTS FROM 31<sup>ST</sup> AUGUST TILL 2<sup>ND</sup> SEPTEMBER.

### **CLOUDS OVER ARABIAN SEA:**

INSAT 3DR IMAGERY, AT 0000 UTC OF 30<sup>TH</sup> AUGUST SHOWS SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION OVER SAURASHTRA, KATCHCHH, SOUTH PAKISTAN, NORTHEAST ARABIAN SEA, GULF OF KATCHCHH (MINIMUM CTT MINUS 93<sup>0</sup>C). MODERATE TO INTENSE CONVECTION OVER ADJOINING AREAS OF NORTHWEST AND CENTRAL ARABIAN SEA AND PATCHES OVER SOUTHEAST ARABIAN SEA & ADJOINING AREAS.

#### \*PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION) DURING NEXT 168 HRS OVER ARABIAN SEA:

24	24-48	48-72	72-96	96-120	120-144	144-168
HOURS	HOURS	HOURS	HOURS	HOURS	HOURS	HOURS
HIGH	-	-	-	-	-	-

\*NOTE: EVERY 24HR FORECAST IS VALID UPTO 0300 UTC (0830 IST) OF NEXT DAY (-) INDICATES GENESIS HAS ALREADY OCCURRED.

## (II) BAY OF BENGAL:

# (B) WELL MARKED LOW PRESSURE AREA OVER WESTCENTRAL & ADJOINING NORTHWEST BAY OF BENGAL

THE LOW PRESSURE AREA OVER WESTCENTRAL & ADJOINING NORTHWEST BAY OF BENGAL OFF NORTH ANDHRA PRADESH & SOUTH ODISHA MOVED WEST-NORTHWESTWARDS, BECAME A WELL MARKED LOW PRESSURE AREA OVER THE SAME REGION AT 0300 UTC OF 30TH AUGUST, 2024.

IT IS LIKELY TO MOVE FURTHER WEST-NORTHWESTWARDS TOWARDS NORTH ANDHRA PRADESH AND ADJOINING SOUTH ODISHA COASTS, INTENSIFY INTO A DEPRESSION OVER WESTCENTRAL AND ADJOINING NORTHWEST BAY OF BENGAL DURING NEXT 36 HOURS.

# SEA CONDITION AND ADVISORY FOR FISHERMEN IN ASSOCIATION WITH THE MOVEMENT OF THE SYSTEM OVER THE BAY OF BENGAL

### WIND WARNING:

- SQUALLY WEATHER WITH WIND SPEED REACHING 30-40 KMPH GUSTING TO 50 KMPH IS LIKELY TO PREVAIL OVER WESTCENTRAL AND ADJOINING NORTHWEST BAY OF BENGAL ON 30<sup>TH</sup> BECOMING 45-55 KMPH GUSTING TO 65 KMPH ON 31<sup>ST</sup> AUGUST.
- SQUALLY WIND SPEED REACHING 45-55 KMPH GUSTING TO 65 KMPH IS LIKELY TO PREVAIL ALONG & OFF NORTH ANDHRA PRADESH & SOUTH ODISHA COASTS ON 31<sup>ST</sup> AUGUST.

### SEA CONDITION:

- ROUGH SEA CONDITION IS VERY LIKELY TO PREVAIL OVER WESTCENTRAL AND ADJOINING NORTHWEST BAY OF BENGAL TILL 31<sup>ST</sup> AUGUST.
- ROUGH SEA CONDITION IS VERY LIKELY TO PREVAIL ALONG & OFF NORTH ANDHRA PRADESH & SOUTH ODISHA COASTS ON 31 AUGUST.

### FISHERMEN WARNING:

FISHERMEN ARE ADVISED NOT VENTURE INTO

 WESTCENTRAL & ADJOINING NORTHWEST BAY OF BENGAL TILL 31<sup>ST</sup> AUGUST AND ALONG & OFF SOUTH ODISHA AND NORTH ANDHRA PRADESH COASTS ON 31<sup>ST</sup> AUGUST.

## ADVISORY FOR OFFSHORE/ONSHORE EXPLORATION AND PRODUCTION (E & P) OPERATORS:

THE SMALL SHIPS AND OFFSHORE -ONSHORE E & P OPERATORS, SHIPPING AND PORT AUTHORITIES ALONG & OFF GUJARAT & NORTH MAHARASHTRA COASTS AND NORTHEAST & ADJOINING EASTCENTRAL ARABIAN SEA ARE ADVISED TO KEEP WATCH ON DEVELOPING WEATHER AND TAKE NECESSARY ACTIONS ON 30<sup>TH</sup> AUGUST.

SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER CENTRAL BAY OF BENGAL.

\*PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION) DURING NEXT 168 HRS:

24	24-48	48-72	72-96	96-120	120-144	144-168
HOURS	HOURS	HOURS	HOURS	HOURS	HOURS	HOURS
LOW	LOW	MOD	-	-	-	

\*NOTE: EVERY 24HR FORECAST IS VALID UPTO 0300 UTC (0830 IST) OF NEXT DAY

#### **REMARKS**:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 4 AND WOULD MOVE TO PHASE 5 FROM 30<sup>TH</sup> AUGUST WITH AMPLITUDE GREATER THAN 1. IT WILL MOVE ACROSS THE SAME PHASE DURING NEXT 2 WEEKS WITH AMPLITUDE REMAINING HIGHER THAN 1 THROUGHOUT. MJO PHASE AND AMPLITUDE IS HIGHLY FAVOURABLE FOR ENHANCEMENT OF CONVECTIVE ACTIVITY OVER THE BAY OF BENGAL.

THE NCICS FORECASTS INDICATE MJO WAVE MOVING EASTWARDS AND IS SEEN OVER ENTIRE SOUTH ARABIAN SEA (AS), SOUTHERN PENINSULAR INDIA AND SOUTH BAY OF BENGAL DURING WEEK 1. WESTERLY WINDS (1-3 MPS) OVER SOUTH AS AND HIGHER WINDS (3-5 MPS) OVER SOUTH BOB ALONGWITH STRONG

EASTERLY WINDS (3-5 MPS) OVER NORTH BOB AND EASTERN STATES OF INDIA ARE ALSO SEEN DURING WEEK 1. OVER THE EASTERN PARTS OF INDIA ROSSBY ARE ALSO SEEN PROPAGATING WESTWARDS. THESE FEATURES INDICATE A CONDUCIVE ENVIRONMENT FOR CYCLOGENESIS OVER BOB. THE DEEP DEPRESSION OVER COASTAL KACHCHH & ADJOINING AREAS OF SAURASHTRA, NORTHEAST ARABIAN SEA AND PAKISTAN WILL ALSO GET ENHANCED MOISTURE FEED BACK FROM ARABIAN SEA DURING WEEK 1.

DURING WEEK 2, SIMILAR FEATURES ARE SEEN OVER THE BOB. PRESENCE OF ROSSBY WAVES, MJO, STRONG WESTERLY WINDS (5-7 MPS) OVER SOUTH BOB AND EASTERLY WINDS (3-5MPS) OVER NORTH BOB AND ADJOINING EASTERN STATES OF INDIA. THESE FEATURES INDICATE FAVOURABLE ENVIRONMENT FOR CYCLOGENESIS OVER THE BOB DURING WEEK 2 AS WELL.

NEUTRAL ENSO CONDITIONS ARE CURRENTLY PREVAILING WITH DECLINING EL NINO OVER CENTRAL PACIFIC. NEUTRAL INDIAN OCEAN DIPOLE CONDITIONS ARE PREVAILING WITH SLIGHT POSITIVE DIPOLE MODE INDEX. THESE FEATURES ARE FAVOURABLE FOR INDIAN SUMMER MONSOON AND MAY SUPPORT DEVELOPMENT OF LOW PRESSURE SYSTEMS OVER BOB DURING BOTH THE WEEKS.

CONSIDERING THE EXISTING ENVIRONMENTAL CONDITIONS, THE SEA SURFACE TEMPERATURE OVER THE BOB IS 28-30<sup>°</sup>C AND OVER ARABIAN SEA SST IS AROUND 27-28<sup>°</sup>C. IT IS COLDER (<26<sup>°</sup>C) OVER WESTCENTRAL AS) AND VERY WARM (>32<sup>°</sup>C) OVER GULF OF ADEN. TROPICAL CYCLONE HEAT POTENTIAL (TCHP) IS HIGH (>100 KJ/CM<sup>2</sup>) OVER CENTRAL BOB AND LESS (<50 KJ/CM<sup>2</sup>) OVER NORTH & ADJOINING CENTRAL AS. SEA CONDITIONS INDICATE THAT THE DEEP DEPRESSION OVER KACHCHH COAST & ADJOINING AREAS OF PAKISTAN AND NORTHEAST ARABIAN SEA WILL ENCOUNTER COLDER SEA CONDITIONS IN AS AND HENCE WOULD NOT INTENSIFY SIGNIFICANTLY.

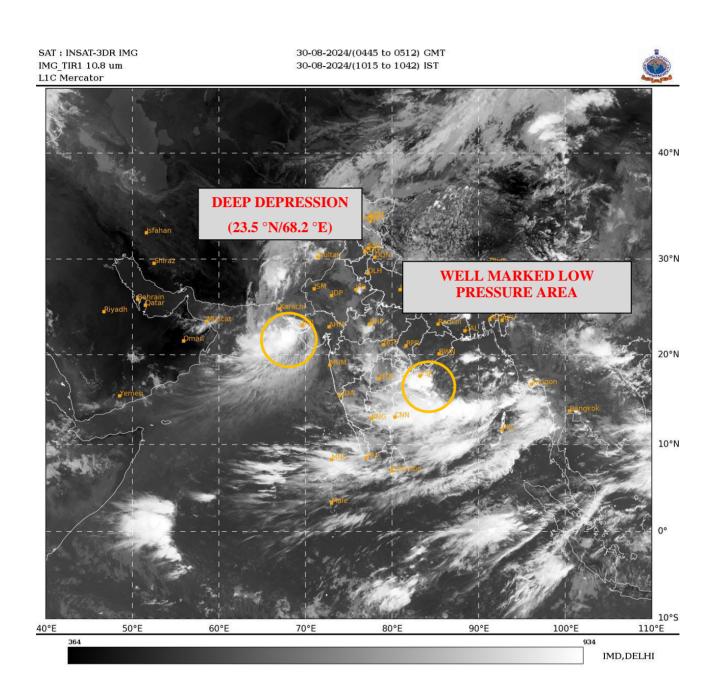
THE LOW LEVEL VORTICITY IS 250X10<sup>-5</sup> S<sup>-1</sup> NEAR SYSTEM AREA OVER THE SAURASHTRA & KACHCHH REGION. LOW LEVEL CONVERGENCE IS 10X10<sup>-5</sup> S<sup>-1</sup> OVER SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS ALSO 20X10<sup>-5</sup> S<sup>-1</sup> OVER SYSTEM AREA EXTENDING UPTO WESTCENTRAL AS. WIND SHEAR IS LOW TO MODERATE OVER SAURASHTRA & KACHCHH AND ADJOINING NORTHEAST AS. THESE FEATURES INDICATE THAT THE DEEP DEPRESSION OVER KACHCHH COAST & ADJOINING AREAS OF PAKISTAN AND NORTHEAST ARABIAN SEA IS IN A FAVOURABLE ENVIRONMENT AND INTENSIFICATION OF THIS SYSTEM IS VERY LIKLEY. THE UPPER TROPOSPHERIC RIDGE IS NEAR 27<sup>0</sup>N IN ASSOCIATION WITH ANTICYCLONIC CIRCULATION OVER COASTAL IRAN. A WESTERLY TROUGH IS APPROACHING THE INDIAN REGION AND IS CURRENTLY EXTENDING UPTO 30<sup>0</sup> N ALONG 62<sup>0</sup> E. THE SYSTEM IS THUS TRACKING SLOWLY NEARLY WEST-SOUTHWESTWARDS.

OVER THE BOB, THE LOW LEVEL VORTICITY IS POSITIVE AND IS AROUND 100X10<sup>-5</sup> S<sup>-1</sup> OVER CENTRAL BOB WITH EXTENSION UPTO MID TROPOSPHERIC LEVELS. LOW LEVEL CONVERGENCE IS 20X10<sup>-5</sup> S<sup>-1</sup> TO THE SOUTH OF LOW PRESSURE AREA AND UPPER LEVEL DIVERGENCE IS ALSO 10-20X10<sup>-5</sup> S<sup>-1</sup> TO THE SOUTHWEST OF SYSTEM AREA EXTENDING UPTO SOUTHWEST BOB. WIND SHEAR IS LOW TO MODERATE OVER CENTRAL AND NORTH BOB. LOWER LEVEL WINDS INDICATE BROADSCALE CIRCULATION DEVELOPING OVER THE CENTRAL BOB. THESE FEATURES INDICATE A HIGHLY FAVOURABLE ENVIRONMENT FOR DEVELOPMENT OF DEPRESSION OVER THE BOB.

#### CONSIDERING ALL THE ABOVE, IT IS INFERRED THAT:

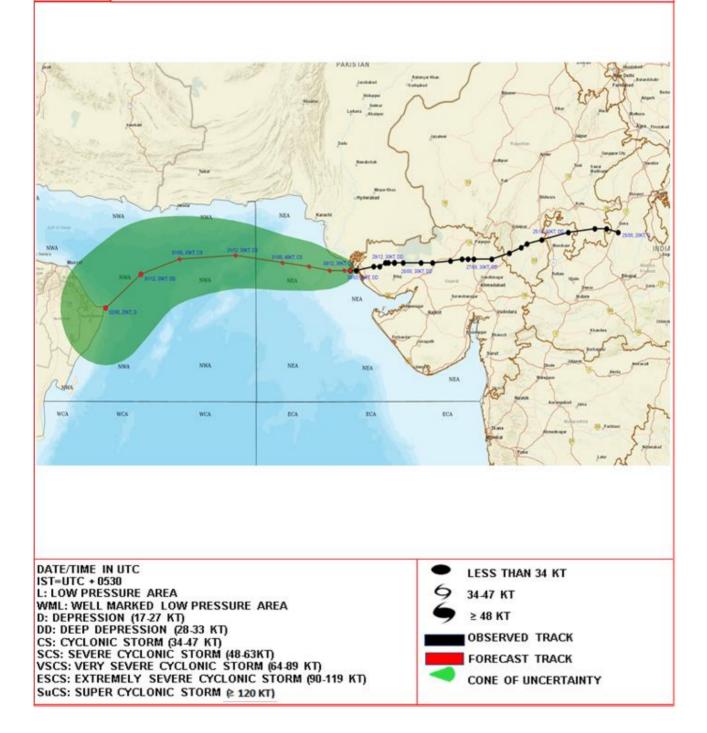
- (i) DEEP DEPRESSION OVER KACHCHH COAST AND ADJOINING AREAS OF PAKISTAN & NORTHEAST ARABIAN SEA IS LIKELY TO MOVE NEARLY WESTWARDS, EMERGE INTO NORTHEAST ARABIAN SEA OFF KACHCHH AND ADJOINING PAKISTAN COASTS AND INTENSIFY INTO A CYCLONIC STORM DURING NEXT 12 HOURS. THEREAFTER, IT WOULD CONTINUE TO MOVE NEARLY WEST-NORTHWESTWARDS OVER NORTHEAST ARABIAN SEA AWAY FROM INDIAN COAST DURING SUBSEQUENT 2 DAYS.
- (ii) WELL MRKED LOW PRESSURE IS LIKELY TO MOVE WEST-NORTHWESTWARDS TOWARDS NORTH ANDHRA PRADESH AND ADJOINING SOUTH ODISHA COASTS, INTENSIFY INTO A DEPRESSION OVER WESTCENTRAL AND ADJOINING NORTHWEST BAY OF BENGAL DURING SUBSEQUENT 36 HOURS.

(SHIBIN BALAKRISHNAN) SCIENTIST-D RSMC NEW DELHI

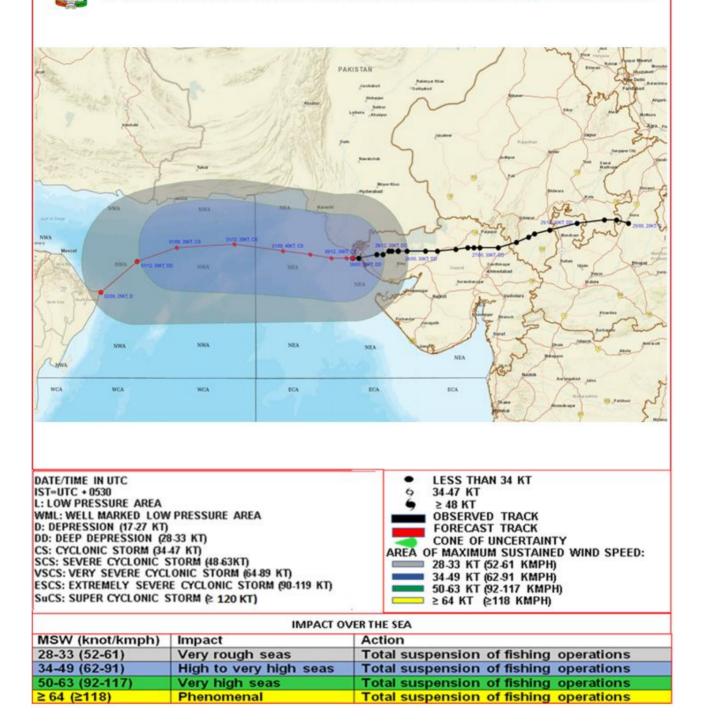




OBSERVED AND FORECAST TRACK OF DEEP DEPRESSION OVER KACHCHH COAST AND ADJOINING AREAS OF PAKISTAN & NORTHEAST ARABIAN SEA BASED ON 0300 UTC (0830 IST) OF 30<sup>TH</sup> AUGUST, 2024.



OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEEP DEPRESSION OVER KACHCHH COAST AND ADJOINING AREAS OF PAKISTAN & NORTHEAST ARABIAN SEA BASED ON 03 00 UTC (0830 IST) OF 30<sup>TH</sup> AUGUST, 2024.







## **Fishermen Warning Graphics**

