



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 46 (ARB/03/2019) and BULLETIN NO. : 01 (ARB/04/2019)

TIME OF ISSUE: 1230 HOURS IST

DATED: 30.10.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0413-262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (A) Very Severe Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) over westcentral & adjoining northwest Arabian Sea.

(B) Depression over Maldives- Comorin and adjoining Lakshadweep area

BULLETIN NO. : 46 (ARB/03/2019)

(A) Very Severe Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) over westcentral & adjoining northwest Arabian Sea.

The **Very Severe Cyclonic Storm 'Kyarr'** moved further westwards with a speed of 08 Kmph during past 06 hrs, lay centred at 0830 hrs IST of today, the 30th October, 2019 over westcentral & adjoining northwest Arabian Sea near latitude 19.6°N and longitude 62.1°E, about 1130 km west-northwest of Mumbai (Maharashtra), 910 km east-northeast of Salalah (Oman) and 350 km east-southeast of Masirah (Oman). It is very likely to move west-southwestwards across westcentral Arabian Sea during next 4 days. It is very likely to weaken into a Severe Cyclonic Storm by early hours of 31st October and into a Cyclonic Storm by evening of 31st October, 2019.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
30.10.19/0830	19.6/62.1	145-155 gusting to 170	Very Severe Cyclonic Storm
30.10.19/1130	19.5/61.9	135-145 gusting to 160	Very Severe Cyclonic Storm
30.10.19/1730	19.4/61.6	120-130 gusting to 155	Very Severe Cyclonic Storm
30.10.19/2330	19.2/61.3	100-110 gusting to 125	Severe Cyclonic Storm
31.10.19/0530	19.0/61.0	90-100 gusting to 110	Severe Cyclonic Storm
31.11.19/1730	18.5/60.3	75-85 gusting to 95	Cyclonic Storm
01.11.19/0530	17.7/59.3	65-75 gusting to 85	Cyclonic Storm
01.11.19/1730	16.7/58.6	60-70 gusting to 80	Cyclonic Storm
02.11.19/0530	15.7/57.0	50-60 gusting to 70	Deep Depression
02.11.19/1730	14.7/55.9	40-50 gusting to 60	Depression
03.11.19/0530	13.7/54.8	30-40 gusting to 50	Depression

Warnings:

(i) Rainfall: NIL

(ii) Wind warning

- Gale wind, speed reaching 145-155 kmph gusting to 170 kmph, is prevailing around the system centre over westcentral & adjoining northwest Arabian Sea. It is very likely to reduce gradually becoming 90-100 kmph gusting to 110 kmph by morning of 31st October over westcentral Arabian Sea and 65-75 kmph gusting to 85 kmph by the morning of 1st November over westcentral Arabian Sea and further decrease thereafter.

(iii) Sea condition

- Sea condition will be phenomenal over westcentral & adjoining northwest Arabian Sea around the system centre till the evening of 30th October and become very high to high thereafter till 1st November, 2019 evening over westcentral Arabian Sea and very rough to rough on 2nd & 3rd November, 2019.
- Sea condition will be very high to high over adjoining eastcentral & northwest Arabian Sea during next 24 hours.

(iv) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea till 3rd November 2019 and into adjoining north & eastcentral Arabian Sea during next 24 hours.

BULLETIN NO. : 01 (ARB/04/2019)

(B) Depression over Maldives- Comorin and adjoining Lakshadweep area

The **Depression** over Maldives- Comorin areas moved northwestwards and lay centered at 0830 hrs IST of today, the 30th October, 2019 over Maldives- Comorin and adjoining Lakshadweep area near latitude 8.0°N and longitude 75.0°E, about 450 km north-northeast of Male (Maldives), 200 km east-southeast of Minicoy (Lakshadweep), 380 km southeast of Kavaratti (Lakshadweep) and 220 km west-southwest of Thiruvananthapuram (Kerala). It is very likely to move northwestwards across Lakshadweep Islands during next 36 hours and then emerge into eastcentral Arabian Sea. It is very likely to intensify into a Deep Depression during next 24 hours and into a Cyclonic Storm during the subsequent 36 hours.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
30.10.19/0830	8.0/75.0	40-50 gusting to 60	Depression
30.10.19/1730	9.1/74.1	40-50 gusting to 60	Depression
31.10.19/0530	10.8/72.9	50-60 gusting to 70	Deep Depression
31.11.19/1730	12.4/71.4	50-60 gusting to 70	Deep Depression
01.11.19/0530	13.7/70.0	50-60 gusting to 70	Deep Depression
01.11.19/1730	14.9/68.2	60-70 gusting to 80	Cyclonic Storm
02.11.19/0530	15.9/66.7	70-80 gusting to 90	Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy falls at isolated places very likely over Kerala, Lakshadweep, coastal Karnataka and south Tamilnadu during next 2 days. **Extremely heavy falls** at isolated places are likely over Lakshadweep Islands and heavy to very heavy falls at isolated place over Kerala during next 48 hours. Heavy to very heavy falls at isolated place are also likely over Tamil Nadu on 30th October and over coastal Karnataka on 31st October.

(ii) Wind warning

- Squally wind speed reaching 40-50 kmph gusting to 60 kmph, very likely to prevail over Comorin-Maldives area during next 24 hours. Squally wind speed reaching 40-50 kmph gusting to 60 kmph very likely to prevail over Lakshadweep area during next 24 hours and 50-60 Kmph gusting to 70 Kmph during the subsequent 24 hours.
- Squally wind speed reaching 35-45 kmph gusting to 55 kmph likely along & off Kerala-Karnataka coasts during next 48 hours.
- Squally wind speed reaching 50-60 kmph gusting to 70 kmph very likely to prevail over southeast & adjoining eastcentral Arabian Sea on 31st October and 60-80 kmph gusting to 90 kmph on 1st & 2nd November, 2019.

(iii) Sea condition

- Sea conditions will be rough to very rough over Comorin-Maldives area and along & off Kerala- Karnataka coasts during next 48 hours.
- Sea conditions will be very rough to high over Lakshadweep area during next 48 hours.
- Sea conditions will be very rough to high over southeast & adjoining eastcentral Arabian Sea during 31st October to 2nd November, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into Comorin-Maldives & Lakshadweep area and along & off Kerala-Karnataka coasts during next 48 hours.
- The fishermen are advised not to venture into southeast & eastcentral Arabian Sea during 31st October to 2nd November, 2019.

The next bulletin will be issued at 1430 hrs IST 30th October, 2019.

(Sunitha Devi S)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

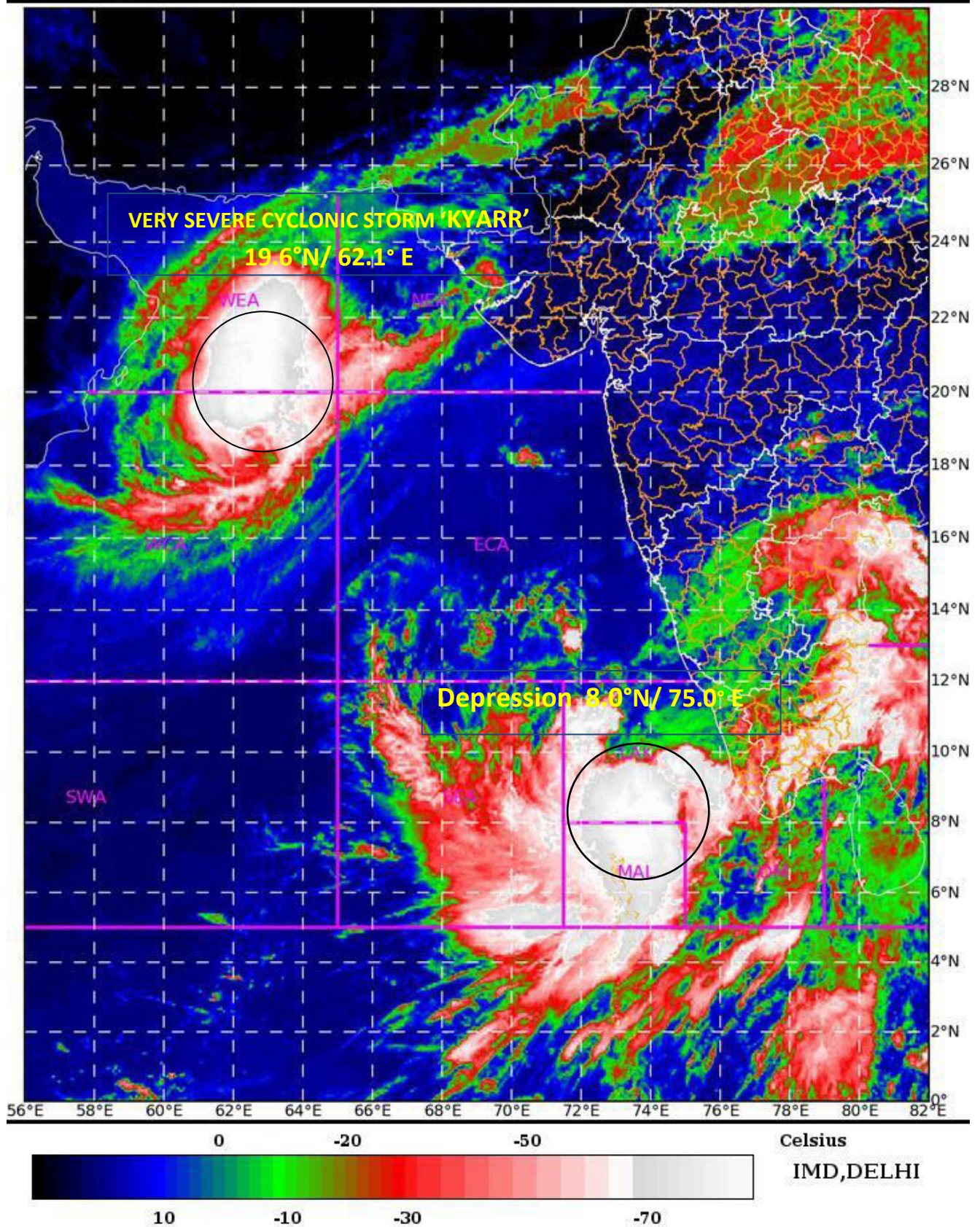
SAT : INSAT-3D IMG

30-10-2019/(0630 to 0657) GMT

IMG_TIR1_TEMP 10.8 um

30-10-2019/(1200 to 1227) IST

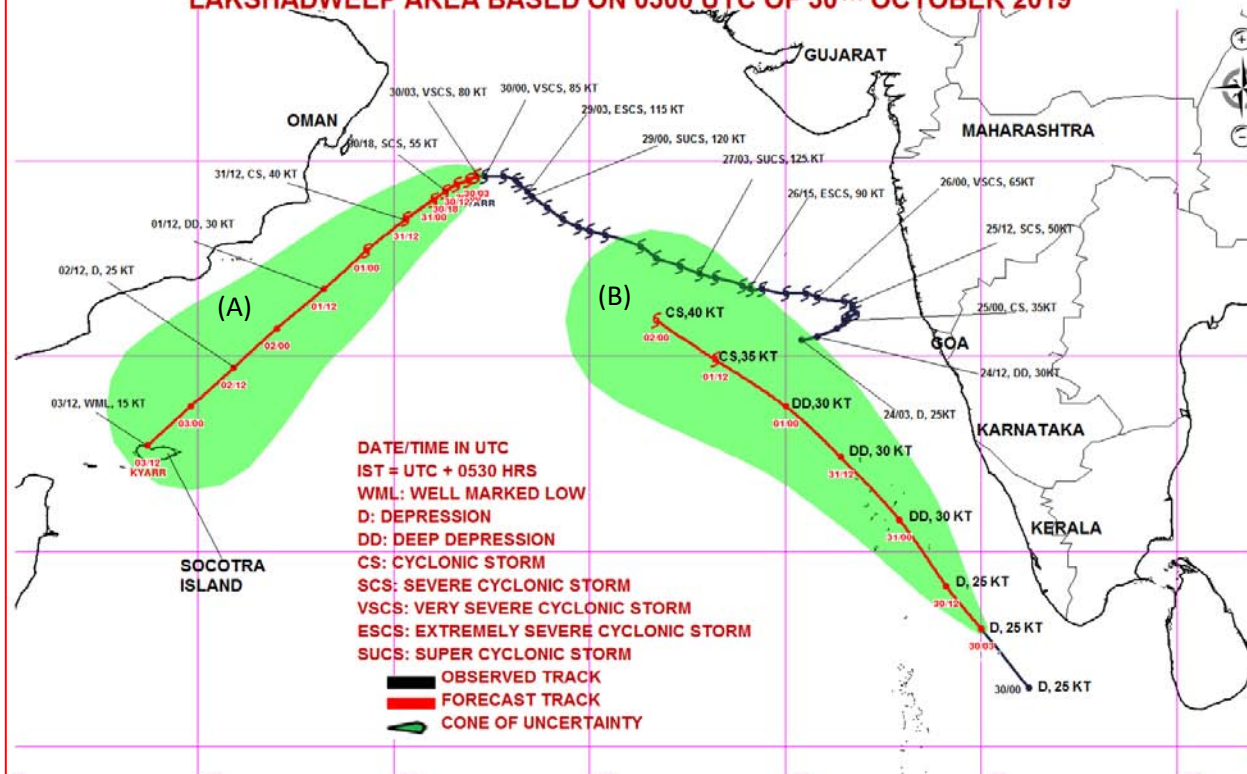
ARABIAN SEA



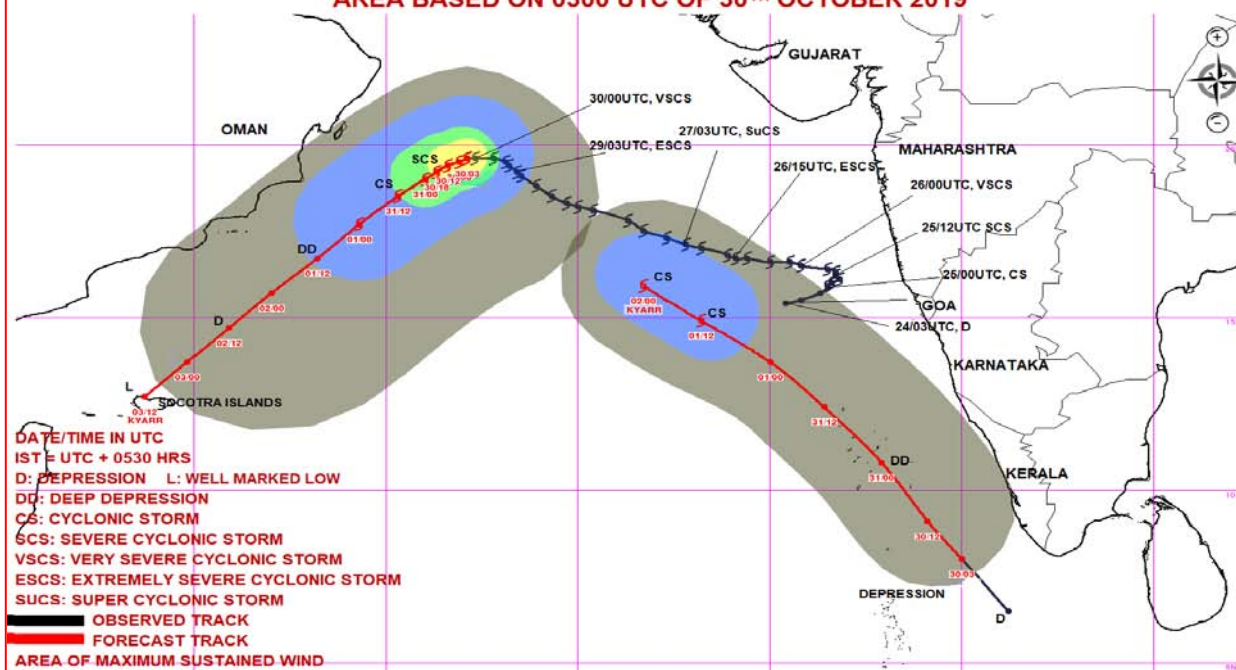
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH (A) VERY SEVERE CYCLONIC STORM “KYARR” OVER WESTCENTRAL AND ADJOINING NORTHWEST ARABIAN SEA AND (B) DEPRESSION OVER MALDIVES-COMORIN & ADJOINING LAKSHADWEEP AREA BASED ON 0300 UTC OF 30TH OCTOBER 2019



OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH (A) VERY SEVERE CYCLONIC STORM “KYARR” OVER WESTCENTRAL AND ADJOINING NW ARABIAN SEA AND (B) DEPRESSION OVER MALDIVES-COMORIN & ADJOINING LAKSHADWEEP AREA BASED ON 0300 UTC OF 30TH OCTOBER 2019



MSW(knot)/kmph	Impact	Action
28-33 / (62-61)	Very rough seas.	Total suspension of fishing operations
34-40 / (62-74)	High to very high seas	Total suspension of fishing operations
41-63 / (75-117)	Very High seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
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(Ministry of Earth Sciences)**

BULLETIN NO. : 47 (ARB/03/2019) and BULLETIN NO. : 02 (ARB/04/2019)

TIME OF ISSUE: 1500 HOURS IST

DATED: 30.10.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

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ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (B) Depression over Maldives- Comorin and adjoining Lakshadweep area: PRE-CYCLONE WATCH FOR LAKSHADWEEP ISLANDS

(A) Very Severe Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) over westcentral & adjoining northwest Arabian Sea.

BULLETIN NO. : 02 (ARB/04/2019)

(B) Depression over Maldives- Comorin and adjoining Lakshadweep area: PRE- CYCLONE WATCH FOR LAKSHADWEEP ISLANDS

The **Depression** over Maldives- Comorin areas moved northwestwards with a speed of 35 kmph during past 6 hours and lay centered at 1130 hrs IST of today, the 30th October, 2019 over Maldives-Comorin and adjoining Lakshadweep area near latitude 8.0°N and longitude 75.0°E, about 450 km north-northeast of Male (Maldives), 200 km east-southeast of Minicoy (Lakshadweep), 380 km southeast of Kavaratti (Lakshadweep) and 220 km west-southwest of Thiruvananthapuram (Kerala). It is very likely to continue to move northwestwards across Lakshadweep Islands during next 36 hours and then emerge into eastcentral Arabian Sea. It is very likely to intensify into a Deep Depression during next 12 hours and into a Cyclonic Storm during the subsequent 12 hours.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
30.10.19/1130	8.0/75.0	45-55 gusting to 65	Depression
30.10.19/2330	10.0/73.5	50-60 gusting to 70	Deep Depression
31.10.19/1130	11.6/72.1	80-90 gusting to 100	Cyclonic Storm
31.11.19/2330	13.0/70.7	80-90 gusting to 100	Cyclonic Storm
01.11.19/1130	14.3/69.1	90-100 gusting to 110	Severe Cyclonic Storm
01.11.19/2330	15.4/67.5	100-110 gusting to 125	Severe Cyclonic Storm
02.11.19/1130	16.5/65.9	100-110 gusting to 125	Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy falls at isolated places very likely over Kerala, Lakshadweep, coastal Karnataka and south Tamilnadu during next 2 days. **Extremely heavy falls** at isolated places are likely over Lakshadweep Islands and heavy to very heavy falls at isolated place over Kerala during next 48 hours. Heavy to very heavy falls at isolated place are also likely over Tamil Nadu on 30th October and over coastal Karnataka on 31st October.

(ii) Wind warning

- Squally wind speed reaching 45-55 kmph gusting to 60 kmph, very likely to prevail over Comorin-Maldives area during next 24 hours. Squally wind speed reaching 45-55 kmph gusting to 65 kmph very likely to prevail over Lakshadweep area during next 12 hours and become gale wind speed reaching 70-80 Kmph gusting to 90 Kmph during the subsequent 24 hours.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Kerala-Karnataka coasts during next 48 hours.
- Squally wind speed reaching 70-80 kmph gusting to 90 kmph very likely to prevail over southeast & adjoining eastcentral Arabian Sea on 31st October and becoming 80-100 kmph gusting to 110 kmph during early hours of 1st November, 2019 onwards.

(iii) Sea condition

- Sea conditions will be rough to very rough over Comorin-Maldives area and along & off Kerala- Karnataka coasts during next 48 hours.
- Sea conditions will be very rough to high over Lakshadweep area during next 48 hours.
- Sea conditions will be high to very high over southeast & adjoining eastcentral Arabian Sea during 31st October to 2nd November, 2019.

(iv) Fishermen Warning

- Total suspension of fishing operations over Comorin-Maldives & Lakshadweep area and along & off Kerala-Karnataka coasts during next 48 hours.
- The fishermen are advised not to venture into southeast & eastcentral Arabian Sea during 31st October to 2nd November, 2019.

(v) Damage Expected:

- Damage to thatched huts.
- Minor damage to power and communication lines due to breaking of branches.
- Major damage to Kutcha and minor damage to Pucca roads.
- Some damage to paddy crops, banana, papaya trees and orchards.
- Sea water inundation in low lying areas after erosion of Kutcha embankments.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

BULLETIN NO. : 47 (ARB/03/2019)**(A) Very Severe Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) over westcentral & adjoining northwest Arabian Sea.**

The **Very Severe Cyclonic Storm 'Kyarr'** moved west-southwestwards with a speed of 08 Kmph during past 06 hrs, lay centred at 1130 hrs IST of today, the 30th October, 2019 over westcentral & adjoining northwest Arabian Sea near latitude 19.4°N and longitude 61.8°E, about 1160 km west-northwest of Mumbai (Maharashtra), 870 km east-northeast of Salalah (Oman) and 330 km east-southeast of Masirah (Oman). It is very likely to continue to move west-southwestwards across westcentral Arabian Sea during next 4 days. It is very likely to weaken into a Severe Cyclonic Storm by early hours of 31st October and into a Cyclonic Storm by forenoon of 31st October, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
30.10.19/1130	19.4/61.8	125-135 gusting to 150	Very Severe Cyclonic Storm
30.10.19/1730	19.2/61.6	120-130 gusting to 155	Very Severe Cyclonic Storm
30.10.19/2330	19.0/61.3	100-110 gusting to 125	Severe Cyclonic Storm
31.10.19/0530	18.8/61.0	90-100 gusting to 110	Severe Cyclonic Storm
31.11.19/1130	18.5/60.6	70-80 gusting to 90	Cyclonic Storm
31.11.19/2330	17.9/59.8	65-75 gusting to 85	Cyclonic Storm
01.11.19/1130	17.0/58.7	55-65 gusting to 75	Deep Depression
01.11.19/2330	16.0/57.6	50-60 gusting to 70	Deep Depression
02.11.19/1130	15.0/56.5	40-50 gusting to 60	Depression
02.11.19/2330	14.0/55.4	30-40 gusting to 50	Depression
03.11.19/1130	13.0/54.3	20-30 gusting to 40	Well Marked Low

Warnings:**(i) Rainfall: NIL****(ii) Wind warning**

- Gale wind, speed reaching 125-135 kmph gusting to 150 kmph, is prevailing around the system centre over westcentral & adjoining northwest Arabian Sea. It is very likely to reduce gradually becoming 90-100 kmph gusting to 110 kmph by morning of 31st October over westcentral Arabian Sea and 65-75 kmph gusting to 85 kmph by the night of 31st October over westcentral Arabian Sea and further decrease thereafter.

(iii) Sea condition

- Sea condition will be phenomenal over westcentral & adjoining northwest Arabian Sea around the system centre till the evening of 30th October and become very high to high thereafter till the night of 31st October, 2019 over westcentral Arabian Sea and very rough to rough on 1st and 2nd November, 2019.
- Sea condition will be very high to high over adjoining eastcentral Arabian Sea during next 12 hours.

(iv) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea till 3rd November 2019 and into adjoining north & eastcentral Arabian Sea during next 24 hours.

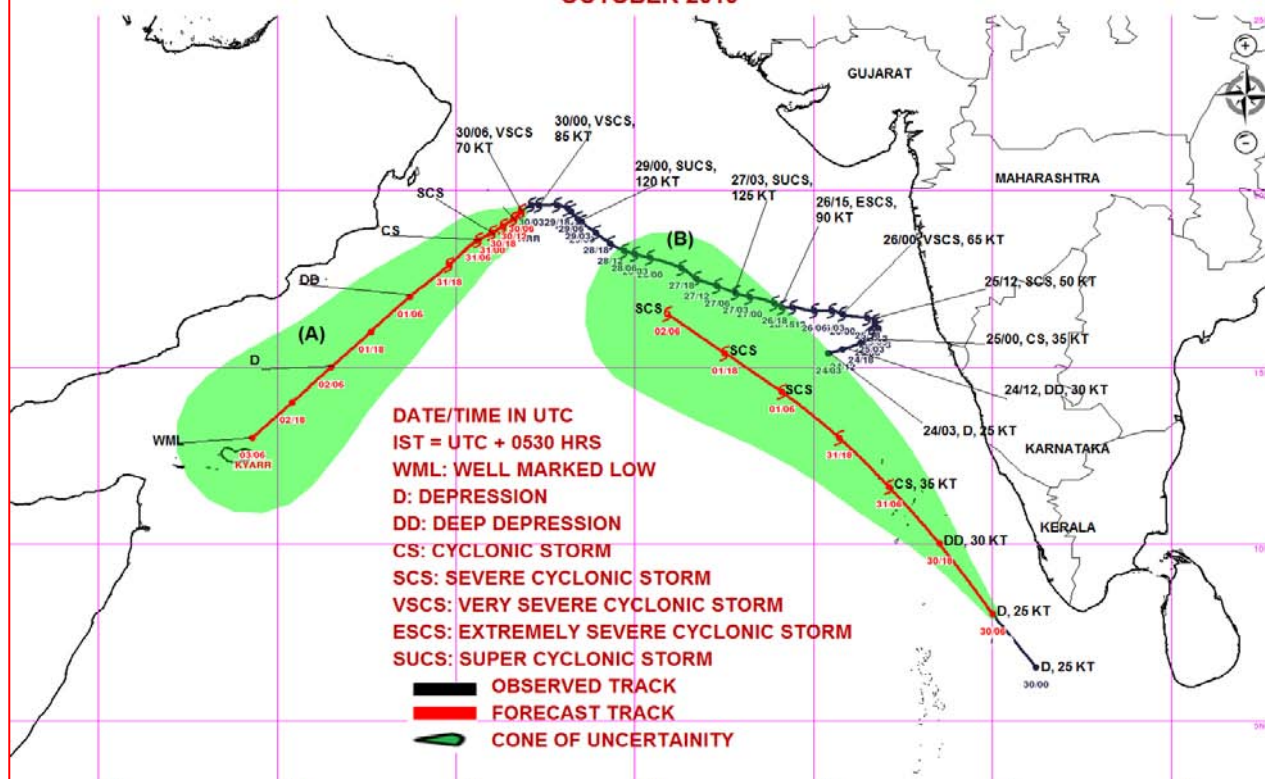
The next bulletin will be issued at 1730 hrs IST 30th October, 2019.

(Sunitha Devi S)
Scientist-E, RSMC, New Delhi

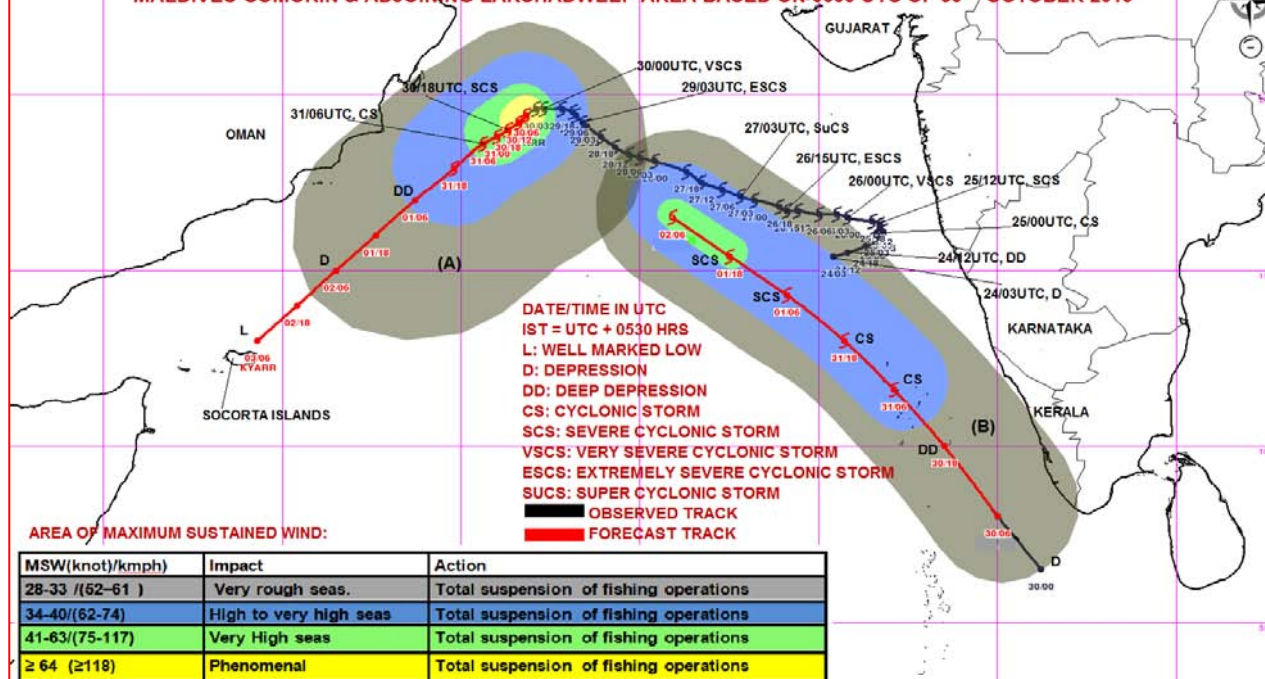
Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH (A) VERY SEVERE CYCLONIC STORM "KYARR" OVER WESTCENTRAL AND ADJOINING NORTH ARABIAN SEA AND (B) DEPRESSION OVER MALDIVES-COMORIN & ADJOINING LAKSHADWEEP AREA BASED ON 0600 UTC OF 30TH OCTOBER 2019



OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH (A) VERY SEVERE CYCLONIC STORM "KYARR" OVER WESTCENTRAL AND ADJOINING NORTH ARABIAN SEA AND (B) DEPRESSION OVER MALDIVES-COMORIN & ADJOINING LAKSHADWEEP AREA BASED ON 0600 UTC OF 30TH OCTOBER 2019



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
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BULLETIN NO. : 48 (ARB/03/2019) and BULLETIN NO. : 03 (ARB/04/2019)

TIME OF ISSUE: 1750 HOURS IST

DATED: 30.10.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

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CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (B) Depression over Maldives- Comorin and adjoining Lakshadweep area intensified into Deep Depression over Lakshadweep and adjoining southeast Arabian Sea and Maldives area: CYCLONE ALERT FOR LAKSHADWEEP ISLANDS (YELLOW MESSAGE)

(A) Very Severe Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) over westcentral & adjoining northwest Arabian Sea.

BULLETIN NO. : 03 (ARB/04/2019)

(B) Depression over Maldives- Comorin and adjoining Lakshadweep area intensified into Deep Depression over Lakshadweep and adjoining southeast Arabian Sea and Maldives area: CYCLONE ALERT FOR LAKSHADWEEP ISLANDS (YELLOW MESSAGE)

The **Depression** over Maldives- Comorin and adjoining Lakshadweep areas moved northwestwards with a speed of 13 kmph during past 6 hours and intensified into a **Deep Depression** over Lakshadweep and adjoining southeast Arabian Sea and Maldives area and lay centered at 1430 hrs IST of today, the 30th October, 2019 over near latitude 8.5°N and longitude 74.5°E, about 490 km north-northeast of Male (Maldives), 150 km east-northeast of Minicoy (Lakshadweep), 300 km southeast of Kavaratti (Lakshadweep) and 270 km to the west of Thiruvananthapuram (Kerala). It is very likely to continue to move northwestwards across Lakshadweep Islands during next 36 hours and then emerge into eastcentral Arabian Sea. It is very likely to intensify into a Cyclonic Storm during next 12 hours.

Forecast track and intensity are given in the following table:

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
30.10.19/1430	8.5/74.5	50-60 gusting to 70	Deep Depression
30.10.19/2330	10.0/73.5	65-75 gusting to 85	Cyclonic Storm
31.10.19/1130	11.6/72.1	80-90 gusting to 100	Cyclonic Storm
31.11.19/2330	13.0/70.7	90-100 gusting to 100	Cyclonic Storm
01.11.19/1130	14.3/69.1	100-110 gusting to 125	Severe Cyclonic Storm
01.11.19/2330	15.4/67.5	110-120 gusting to 135	Severe Cyclonic Storm
02.11.19/1130	16.5/65.9	120-130 gusting to 145	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy falls at isolated places very likely over Kerala, Lakshadweep, coastal Karnataka and south Tamilnadu during next 2 days. **Extremely heavy falls** at isolated places are likely over Lakshadweep Islands and heavy to very heavy falls at isolated place over Kerala during next 48 hours. Heavy to very heavy falls at isolated place are also likely over Tamil Nadu on 30th October and over coastal Karnataka on 31st October.

(ii) Wind warning

- Squally wind speed reaching 50-60 kmph gusting to 70 kmph, very likely to prevail over Comorin-Maldives area during next 24 hours.
- Squally wind speed reaching 50-60 kmph gusting to 70 kmph prevails over Lakshadweep area. It is very likely to increase becoming gale wind speed reaching 65-75 kmph gusting to 85 kmph by tonight, 80-90 gusting to 100 kmph by tomorrow forenoon over the same area and increase to 90-100 Kmph gusting to 110 Kmph by tomorrow, the 31st October night over northern parts of Lakshadweep area.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Kerala-Karnataka coasts during next 48 hours.
- Gale wind speed reaching 70-80 kmph gusting to 90 kmph very likely to prevail over southeast & adjoining eastcentral Arabian Sea on 31st October and increase to become 110-120 kmph gusting to 135 kmph thereafter.

(iii) Sea condition

- Sea conditions will be rough to very rough over Comorin-Maldives area and along & off Kerala- Karnataka coasts during next 48 hours.
- Sea conditions will be very rough to high over Lakshadweep area during next 48 hours.
- Sea conditions will be high to very high over southeast & adjoining eastcentral Arabian Sea during 31st October to 2nd November, 2019.

(iv) Fishermen Warning

- Total suspension of fishing operations over Comorin-Maldives & Lakshadweep area and along & off Kerala-Karnataka coasts during next 48 hours.
- The fishermen are advised not to venture into southeast & eastcentral Arabian Sea during 31st October to 2nd November, 2019.

(v) Damage Expected:

- Damage to thatched huts.
- Uprooting of trees
- Damage to power and communication lines due to breaking of branches and uprooting of trees.
- Major damage to Kutcha and minor damage to Pucca roads.
- Some damage to paddy crops, banana, papaya trees and orchards.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- Sea water inundation in low lying areas after erosion of Kutcha embankments.

BULLETIN NO. : 48 (ARB/03/2019)

(A) Very Severe Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) over westcentral & adjoining northwest Arabian Sea.

The **Very Severe Cyclonic Storm 'Kyarr'** over westcentral and adjoining northwest Arabian Sea moved west-southwestwards with a speed of 09 Km/h during past 06 hrs and lay centred at 1430 hrs IST of today, the 30th October, 2019 over westcentral & adjoining northwest Arabian Sea near latitude 19.3°N and longitude 61.7°E, about 1170 km west-northwest of Mumbai (Maharashtra), 860 km east-northeast of Salalah (Oman) and 330 km east-southeast of Masirah (Oman). It is very likely to continue to move west-southwestwards across westcentral Arabian Sea during next 4 days. It is very likely to weaken into a Severe Cyclonic Storm by early hours of 31st October and into a Cyclonic Storm by forenoon of 31st October, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Km/h)	Category of cyclonic disturbance
30.10.19/1430	19.3/61.7	125-135 gusting to 150	Very Severe Cyclonic Storm
30.10.19/1730	19.2/61.6	120-130 gusting to 155	Very Severe Cyclonic Storm
30.10.19/2330	19.0/61.3	100-110 gusting to 125	Severe Cyclonic Storm
31.10.19/0530	18.8/61.0	90-100 gusting to 110	Severe Cyclonic Storm
31.11.19/1130	18.5/60.6	70-80 gusting to 90	Cyclonic Storm
31.11.19/2330	17.9/59.8	65-75 gusting to 85	Cyclonic Storm
01.11.19/1130	17.0/58.7	55-65 gusting to 75	Deep Depression
01.11.19/2330	16.0/57.6	50-60 gusting to 70	Deep Depression
02.11.19/1130	15.0/56.5	40-50 gusting to 60	Depression
02.11.19/2330	14.0/55.4	30-40 gusting to 50	Depression
03.11.19/1130	13.0/54.3	20-30 gusting to 40	Well Marked Low

Warnings:

(i) Rainfall: NIL

(ii) Wind warning

- Gale wind, speed reaching 125-135 km/h gusting to 150 km/h, is prevailing around the system centre over westcentral & adjoining northwest Arabian Sea. It is very likely to reduce gradually becoming 90-100 km/h gusting to 110 km/h by morning of 31st October over westcentral Arabian Sea and 65-75 km/h gusting to 85 km/h by the night of 31st October over westcentral Arabian Sea and further decrease thereafter.

(iii) Sea condition

- Sea condition will be phenomenal over westcentral & adjoining northwest Arabian Sea around the system centre till the evening of 30th October and become very high to high thereafter till the night of 31st October, 2019 over westcentral Arabian Sea and very rough to rough on 1st and 2nd November, 2019.
- Sea condition will be very high to high over adjoining eastcentral Arabian Sea during next 12 hours.

(iv) Fishermen Warning

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- The fishermen are advised not to venture into westcentral Arabian Sea till 3rd November 2019 and into adjoining north & eastcentral Arabian Sea during next 24 hours.

The next bulletin will be issued at 2030 hrs IST 30th October, 2019.

**(Sunitha Devi S)
Scientist-E, RSMC, New Delhi**

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

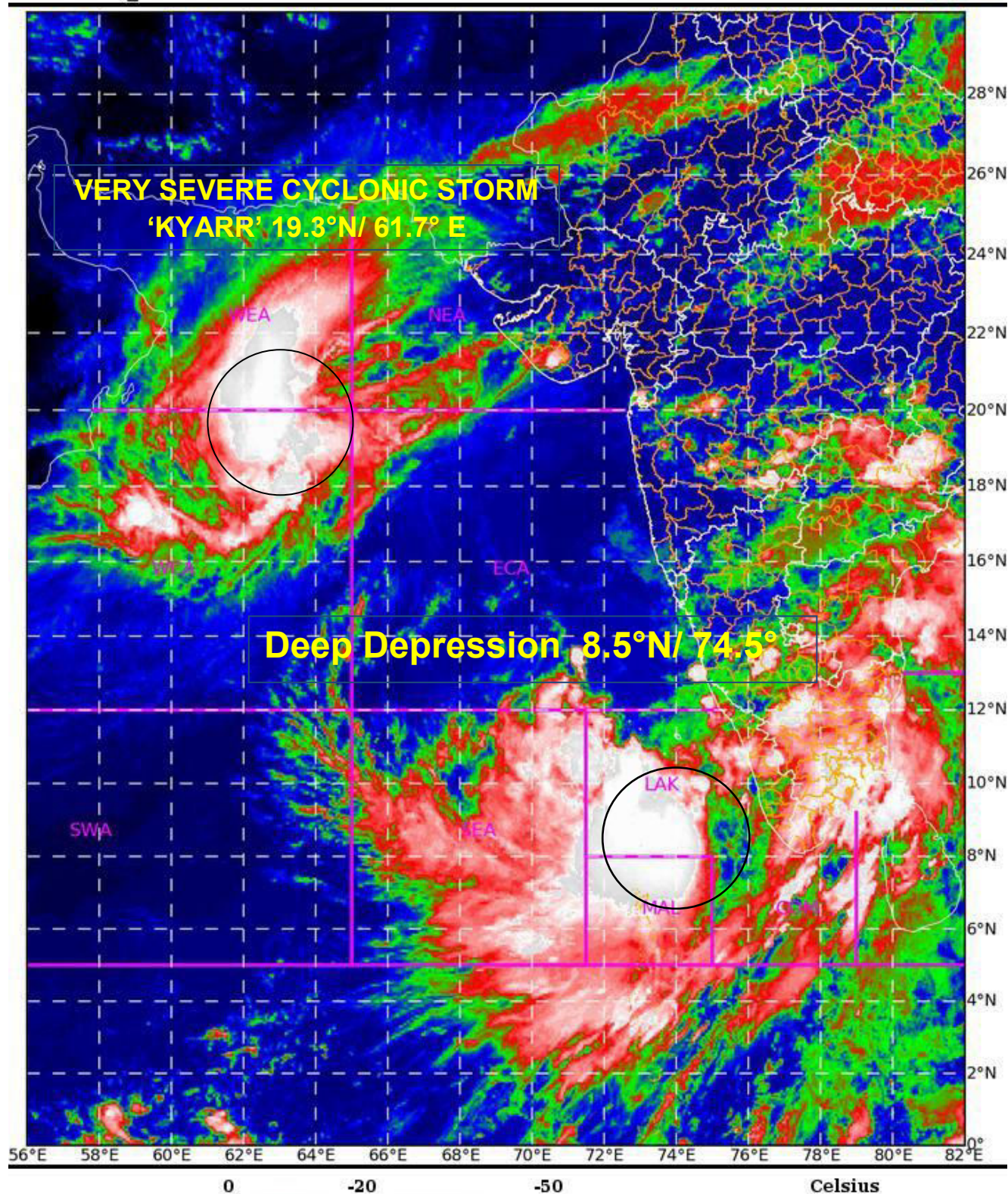
SAT : INSAT-3D IMG

30-10-2019/(1130 to 1156) GMT

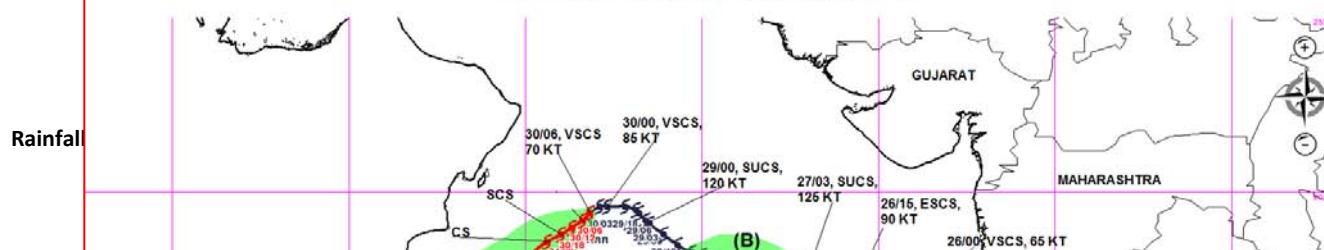
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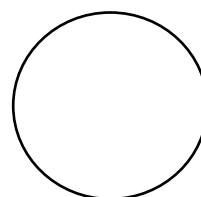
30-10-2019/(1700 to 1726) IST

ARABIAN_SEA



OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH (A) VERY SEVERE CYCLONIC STORM "KYARR" OVER WESTCENTRAL AND ADJOINING NORTH ARABIAN SEA AND (B) DEEP DEPRESSION OVER LAKSHADWEEP & ADJOINING MALDIVES AREA & SOUTHEAST ARABIAN SEA BASED ON 0900 UTC OF 30TH OCTOBER 2019





Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 49 (ARB/03/2019) and BULLETIN NO. : 04 (ARB/04/2019) (Modified)

TIME OF ISSUE: 2030 HOURS IST

DATED: 30.10.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0413-262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (A) Deep Depression intensified into Cyclonic Storm MAHA (Pronounced as M'maha) over Lakshadweep and adjoining southeast Arabian Sea & Maldives area: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (ORANGE MESSAGE)

(B) Very Severe Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) over westcentral & adjoining northwest Arabian Sea.

BULLETIN NO. : 04 (ARB/04/2019)

(A) Deep Depression intensified into Cyclonic Storm MAHA (Pronounced as M'maha) over Lakshadweep and adjoining southeast Arabian Sea & Maldives area: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (ORANGE MESSAGE)

Deep Depression over Lakshadweep and adjoining southeast Arabian Sea and Maldives area moved northwestwards with a speed of 25 kmph during past 6 hours and intensified into **Cyclonic Storm MAHA (Pronounced as M'maha)** and lay centered at 1730 hrs IST of today, the 30th October, 2019 near latitude 9.0°N and longitude 74.1°E over Lakshadweep and adjoining southeast Arabian Sea and Maldives area, about 540 km north-northeast of Male (Maldives), 130 km northeast of Minicoy (Lakshadweep), 240 km southeast of Kavaratti (Lakshadweep) and 320 km to the west-northwest of Thiruvananthapuram (Kerala). It is very likely to continue to move northwestwards across Lakshadweep Islands during next 24 hours and then emerge into eastcentral Arabian Sea. It is very likely to intensify into a Severe Cyclonic Storm during the forenoon of tomorrow over Lakshadweep area.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
30.10.19/1730	9.0/74.1	65-75 gusting to 85	Cyclonic Storm
30.10.19/2330	10.0/73.5	70-80 gusting to 90	Cyclonic Storm
31.10.19/0530	10.9/72.9	80-90 gusting to 100	Cyclonic Storm
31.10.19/1130	11.9/72.4	90-100 gusting to 115	Severe Cyclonic Storm
31.10.19/1730	12.9/71.8	100-110 gusting to 125	Severe Cyclonic Storm
01.11.19/0530	14.4/70.4	110-120 gusting to 135	Severe Cyclonic Storm
01.11.19/1730	15.4/69.0	115-125 gusting to 140	Severe Cyclonic Storm
02.11.19/0530	16.3/68.0	120-130 gusting to 150	Very Severe Cyclonic Storm
02.11.19/1730	16.9/67.1	130-140 gusting to 160	Very Severe Cyclonic Storm
03.11.19/0530	17.2/66.2	140-150 gusting to 170	Very Severe Cyclonic Storm
03.11.19/1730	17.3/65.2	150-160 gusting to 180	Very Severe Cyclonic Storm
04.11.19/0530	17.1/64.2	160-170 gusting to 190	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy falls at isolated places very likely over Kerala, Lakshadweep, coastal Karnataka and south Tamilnadu during next 2 days. **Extremely heavy falls** at isolated places are likely over Lakshadweep Islands and heavy to very heavy falls at isolated place over Kerala during next 48 hours. Heavy to very heavy falls at isolated place are also likely over Tamil Nadu on 30th October and over coastal Karnataka on 31st October.

(ii) Wind warning

- Squally wind speed reaching 50-60 kmph gusting to 70 kmph very likely to prevail over Comorin-Maldives area during next 12 hours and decrease thereafter.
- Gale wind speed reaching 65-75 kmph gusting to 85 kmph prevails over Lakshadweep area around the system centre. It is very likely to increase becoming 80-90 kmph gusting to 100 kmph by 31st morning and 90-100 kmph gusting to 115 kmph in the afternoon over northern parts of Lakshadweep area and 60-70 kmph gusting to 80 kmph over southern parts of Lakshadweep area during the afternoon of 31st.
- Gale wind speed reaching 100-110 kmph gusting to 125 kmph likely to prevail over southeast and adjoining eastcentral Arabian Sea from 31st evening and increase to 160-170 Kmph gusting to 190 Kmph over eastcentral & adjoining westcentral Arabian Sea by morning of 4th November.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Kerala-Karnataka coasts during next 48 hours.

(iii) Sea condition

- Sea conditions will be high to very high over Comorin-Maldives area and very rough to high along & off Kerala- Karnataka coasts during next 48 hours.
- Sea conditions will be very rough to high over Lakshadweep area on 30th and high to very high on 31st.
- Sea condition will be rough to very rough on 30th and very high to phenomenal over southeast & adjoining eastcentral Arabian Sea on 31st and become phenomenal over eastcentral & adjoining westcentral Arabian Sea by morning of 2nd November onwards.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(iv) Storm Surge Warning

- Tidal wave by about 1 meter height above the astronomical tides is very likely to inundate low lying areas of Lakshadweep Islands during next 24 hours.

(v) Fishermen Warning

- Total suspension of fishing operations over Comorin-Maldives & Lakshadweep area and along & off Kerala-Karnataka coasts during next 48 hours.
- The fishermen are advised not to venture into southeast Arabian Sea till 31st October and over eastcentral Arabian Sea till 4th November, 2019.

(vi) Damage Expected:

- Major damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly.
- Damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Dead limbs blown from trees.
- Major damage to coastal crops.
- Damage to embankments/ salt pans.

BULLETIN NO. : 49 (ARB/03/2019)

(B) Very Severe Cyclonic Storm ‘Kyarr’ (Pronounced as Kyarr) over westcentral & adjoining northwest Arabian Sea.

The **Very Severe Cyclonic Storm ‘Kyarr’** over westcentral and adjoining northwest Arabian Sea moved southwestwards with a speed of 09 Kmph during past 06 hrs and lay centred at 1730 hrs IST of today, the 30th October, 2019 over westcentral & adjoining northwest Arabian Sea near latitude 19.0°N and longitude 61.5°E, about 1190 km west of Mumbai (Maharashtra), 830 km east-northeast of Salalah (Oman) and 330 km east-southeast of Masirah (Oman). It is very likely to move west-southwestwards across westcentral Arabian Sea during next 4 days. It is very likely to weaken into a Severe Cyclonic Storm by early hours of 31st October and into a Cyclonic Storm by forenoon of 31st October, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
30.10.19/1730	19.0/61.5	120-130 gusting to 155	Very Severe Cyclonic Storm
30.10.19/2330	18.8/61.0	110-120 gusting to 135	Severe Cyclonic Storm
31.10.19/0530	18.5/60.5	100-110 gusting to 125	Severe Cyclonic Storm
31.10.19/1130	18.1/60.2	90-100 gusting to 115	Severe Cyclonic Storm
31.10.19/1730	17.6/59.8	80-90 gusting to 100	Cyclonic Storm
01.11.19/0530	16.5/58.7	70-80 gusting to 90	Cyclonic Storm
01.11.19/1730	15.2/57.1	60-70 gusting to 80	Cyclonic Storm
02.11.19/0530	13.8/55.2	50-60 gusting to 70	Deep Depression
02.11.19/1730	12.8/53.0	40-50 gusting to 60	Depression

Warnings:

(i) Rainfall: NIL

(ii) Wind warning

- Gale wind speed reaching 120-130 kmph gusting to 155 kmph is prevailing around the system centre over westcentral & adjoining northwest Arabian Sea. It is very likely to reduce gradually becoming 90-100 kmph gusting to 110 kmph by morning of 31st October over westcentral Arabian

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Sea and 70-80 kmph gusting to 90 kmph by the morning of 1st November over westcentral Arabian Sea and further decrease thereafter.

(iii) Sea condition

- Sea condition is phenomenal over westcentral & adjoining northwest Arabian Sea around the system centre. It will become very high to high by morning of 31st October over westcentral Arabian Sea and high to very rough on 1st and 2nd November, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea till 3rd November 2019 and into adjoining north & eastcentral Arabian Sea during next 24 hours.

The next bulletin will be issued at 2330 hrs IST 30th October, 2019.

(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

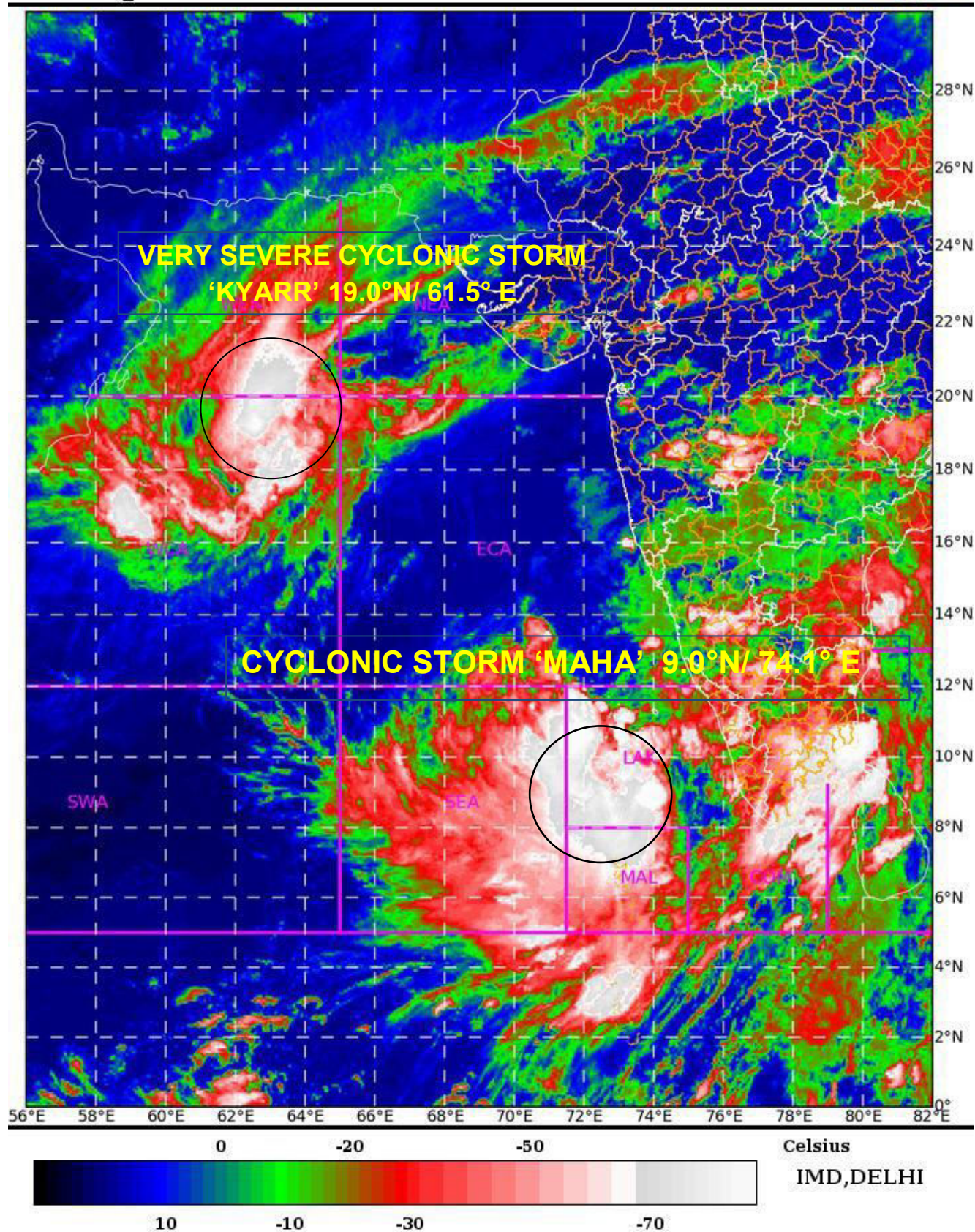
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30-10-2019/(1330 to 1356) GMT

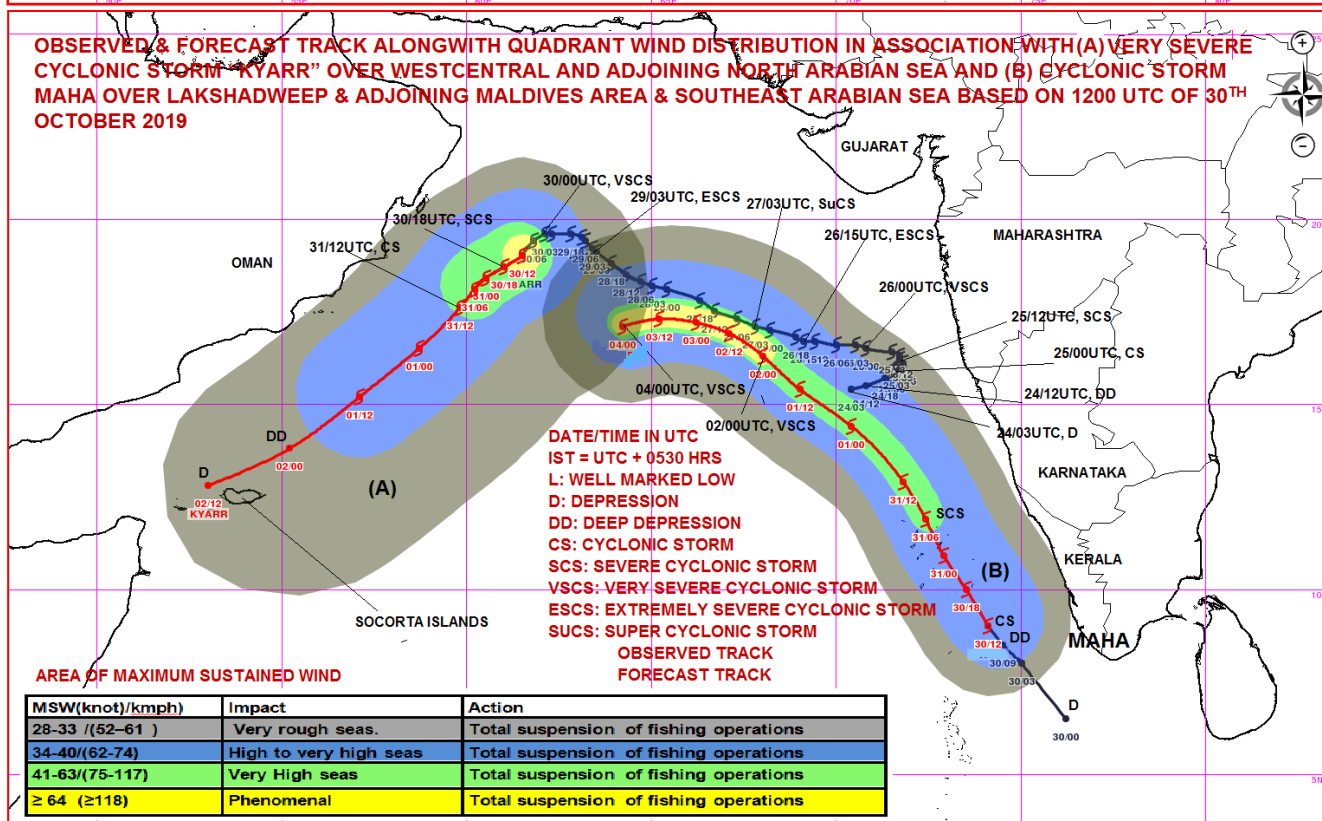
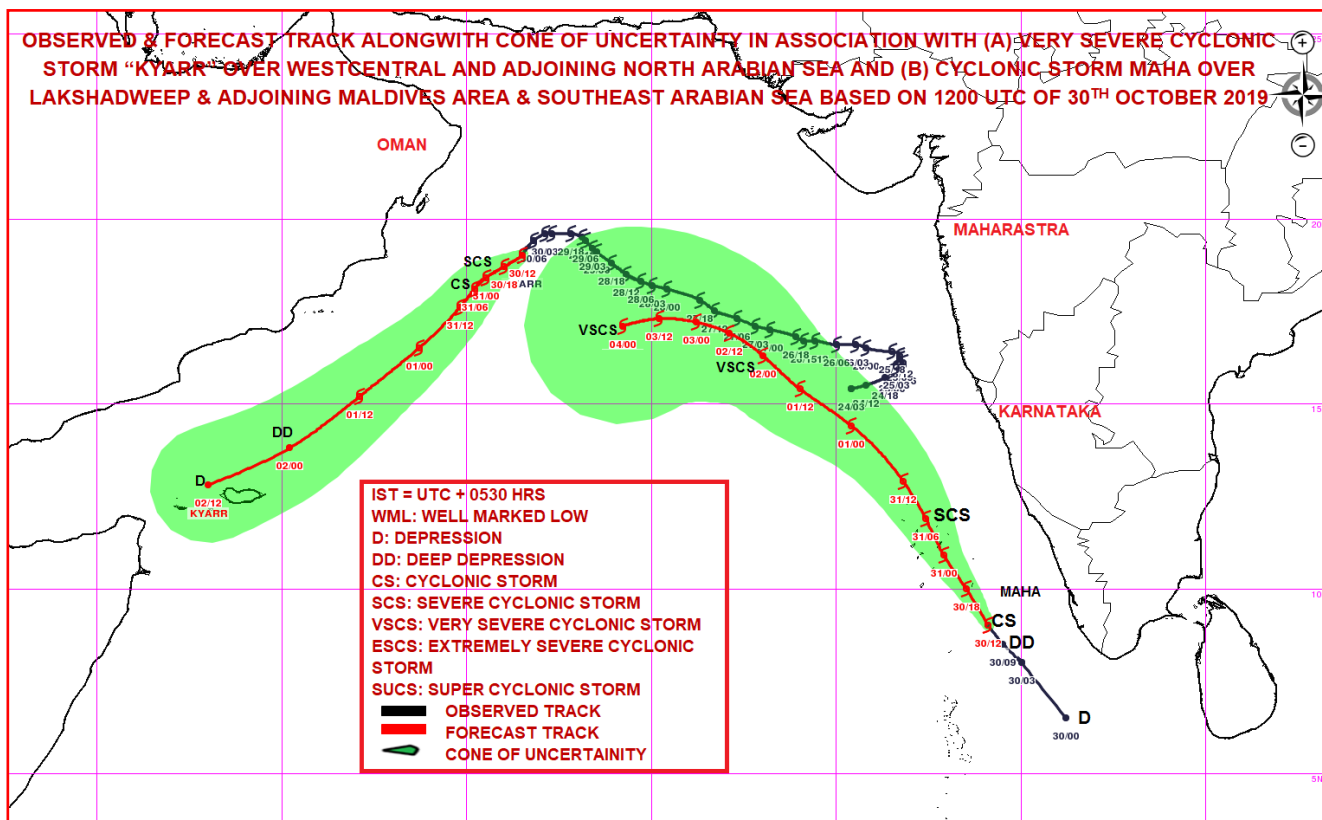
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30-10-2019/(1900 to 1926) IST

ARABIAN_SEA



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 50 (ARB/03/2019) and BULLETIN NO. : 05 (ARB/04/2019)

TIME OF ISSUE: 2200 HOURS IST

DATED: 30.10.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0413-262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (A) Cyclonic Storm MAHA (Pronounced as M'maha) over Lakshadweep and adjoining southeast Arabian Sea & Maldives area: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (ORANGE MESSAGE)

(B) Very Severe Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) weakened into Severe Cyclonic Storm over westcentral & adjoining northwest Arabian Sea.

BULLETIN NO. : 05 (ARB/04/2019)

(A) Cyclonic Storm MAHA (Pronounced as M'maha) over Lakshadweep and adjoining southeast Arabian Sea & Maldives area: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (ORANGE MESSAGE)

The Cyclonic storm MAHA (Pronounced as M'maha) over Lakshadweep and adjoining southeast Arabian Sea and Maldives area moved north-northwestwards with a speed of 24 kmph during past 06 hours and lay centered at 2030 hrs IST of today, the 30th October, 2019 near latitude 9.6°N and longitude 73.8°E over Lakshadweep and adjoining southeast Arabian Sea & Maldives area, about 600 km north-northeast of Male (Maldives), 170 km north-northeast of Minicoy (Lakshadweep), 160 km east-southeast of Kavaratti (Lakshadweep) and 370 km west-northwest of Thiruvananthapuram (Kerala). It is very likely to continue to move northwestwards across Lakshadweep Islands during next 24 hours and then emerge into eastcentral Arabian Sea. It is very likely to intensify into a Severe Cyclonic Storm during the forenoon of 31st October 2019 over Lakshadweep area.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
30.10.19/2030	9.6/73.8	65-75 gusting to 85	Cyclonic Storm
30.10.19/2330	10.0/73.5	70-80 gusting to 90	Cyclonic Storm
31.10.19/0530	10.9/72.9	80-90 gusting to 100	Cyclonic Storm
31.10.19/1130	11.9/72.4	90-100 gusting to 115	Severe Cyclonic Storm
31.10.19/1730	12.9/71.8	100-110 gusting to 125	Severe Cyclonic Storm
01.11.19/0530	14.4/70.4	110-120 gusting to 135	Severe Cyclonic Storm
01.11.19/1730	15.4/69.0	115-125 gusting to 140	Severe Cyclonic Storm
02.11.19/0530	16.3/68.0	120-130 gusting to 150	Very Severe Cyclonic Storm
02.11.19/1730	16.9/67.1	130-140 gusting to 160	Very Severe Cyclonic Storm
03.11.19/0530	17.2/66.2	140-150 gusting to 170	Very Severe Cyclonic Storm
03.11.19/1730	17.3/65.2	150-160 gusting to 180	Very Severe Cyclonic Storm
04.11.19/0530	17.1/64.2	160-170 gusting to 190	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy falls at isolated places very likely over Kerala, Lakshadweep, coastal Karnataka and south Tamilnadu during next 2 days. **Extremely heavy falls** at isolated places are likely over Lakshadweep Islands and heavy to very heavy falls at isolated place over Kerala during next 48 hours. Heavy to very heavy falls at isolated place are also likely over Tamil Nadu during next 12 hours and over coastal Karnataka on 31st October.

(ii) Wind warning

- Squally wind speed reaching 65-75 kmph gusting to 85 kmph very likely to prevail over Comorin-Maldives area during next 12 hours and decrease thereafter.
- Gale wind speed reaching 65-75 kmph gusting to 85 kmph prevails over Lakshadweep area around the system centre. It is very likely to increase becoming 80-90 kmph gusting to 100 kmph by 31st morning and 90-100 kmph gusting to 115 kmph in the afternoon over northern parts of Lakshadweep area and 60-70 kmph gusting to 80 kmph over southern parts of Lakshadweep area during the afternoon of 31st October 2019.
- Gale wind speed reaching 100-110 kmph gusting to 125 kmph likely to prevail over southeast and adjoining eastcentral Arabian Sea from evening of 31st October and increase to 160-170 Kmph gusting to 190 Kmph over eastcentral & adjoining westcentral Arabian Sea by morning of 4th November.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Kerala-Karnataka coasts during next 48 hours.

(iii) Sea condition

- Sea conditions will be high to very high over Comorin-Maldives area and very rough to high along & off Kerala- Karnataka coasts during next 48 hours.
- Sea conditions will be very rough to high over Lakshadweep area during next 12 hours and high to very high on 31st October.
- Sea condition will be rough to very rough during next 12 hours and very high to phenomenal over southeast & adjoining eastcentral Arabian Sea on 31st October and will become phenomenal over eastcentral & adjoining westcentral Arabian Sea by morning of 2nd November onwards.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(iv) Storm Surge Warning

- Tidal wave by about 1 meter height above the astronomical tides is very likely to inundate low lying areas of Lakshadweep Islands during next 24 hours.

(v) Fishermen Warning

- Total suspension of fishing operations over Comorin-Maldives & Lakshadweep area and along & off Kerala-Karnataka coasts during next 48 hours.
- The fishermen are advised not to venture into southeast Arabian Sea till 31st October and over eastcentral Arabian Sea till 4th November, 2019.

(vi) Damage Expected:

- Major damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly.
- Damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Dead limbs blown from trees.
- Major damage to coastal crops.
- Damage to embankments/ salt pans.

BULLETIN NO. : 50 (ARB/03/2019)

(B) Very Severe Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) weakened into a Severe Cyclonic Storm over westcentral & adjoining northwest Arabian Sea

The **Very Severe Cyclonic Storm 'Kyarr'** over westcentral and adjoining northwest Arabian Sea moved southwestwards with a speed of 11 Kmph during past 06 hrs, weakened into a **Severe Cyclonic Storm** and lay centred at 2030 hrs IST of today, the 30th October, 2019 over westcentral & adjoining northwest Arabian Sea near latitude 18.9°N and longitude 61.2°E, about 1220 km west of Mumbai (Maharashtra), 780 km east-northeast of Salalah (Oman) and 310 km east-southeast of Masirah (Oman). It is very likely to move west-southwestwards across westcentral Arabian Sea during next 4 days. It is very likely to weaken into a Cyclonic Storm by forenoon of 31st October, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
30.10.19/2030	18.9/61.2	110-120 gusting to 135	Severe Cyclonic Storm
30.10.19/2330	18.8/61.0	105-115 gusting to 130	Severe Cyclonic Storm
31.10.19/0530	18.5/60.5	100-110 gusting to 125	Severe Cyclonic Storm
31.10.19/1130	18.1/60.2	90-100 gusting to 115	Severe Cyclonic Storm
31.10.19/1730	17.6/59.8	80-90 gusting to 100	Cyclonic Storm
01.11.19/0530	16.5/58.7	70-80 gusting to 90	Cyclonic Storm
01.11.19/1730	15.2/57.1	60-70 gusting to 80	Cyclonic Storm
02.11.19/0530	13.8/55.2	50-60 gusting to 70	Deep Depression
02.11.19/1730	12.8/53.0	40-50 gusting to 60	Depression

Warnings:

(i) Rainfall: NIL

(ii) Wind warning

- Gale wind speed reaching 110-120 kmph gusting to 135 kmph is prevailing around the system centre over westcentral & adjoining northwest Arabian Sea. It is very likely to reduce gradually becoming 90-100 kmph gusting to 110 kmph by morning of 31st October over westcentral Arabian

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Sea and 70-80 kmph gusting to 90 kmph by the morning of 1st November over westcentral Arabian Sea and decrease thereafter.

(iii) Sea condition

- Sea condition is phenomenal over westcentral & adjoining northwest Arabian Sea around the system centre. It will become very high to high by morning of 31st October over westcentral Arabian Sea and high to very rough on 1st and 2nd November, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea till 3rd November 2019 and into adjoining north & eastcentral Arabian Sea during next 24 hours.

The next bulletin will be issued at 0230 hrs IST of 31st October, 2019.

(Ananda Kumar Das)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

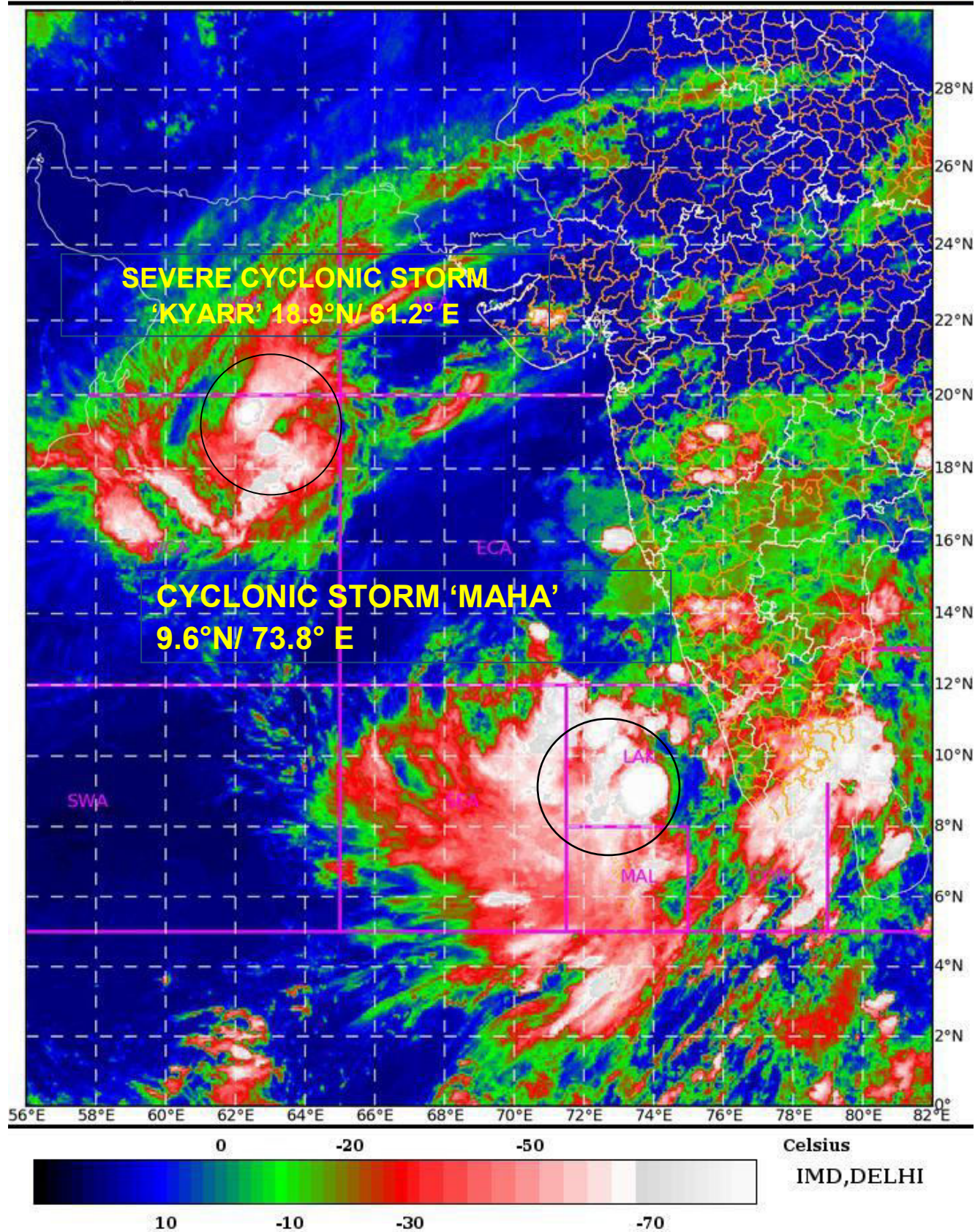
SAT : INSAT-3D IMG

30-10-2019/(1500 to 1526) GMT

IMG_TIR1_TEMP 10.8 um

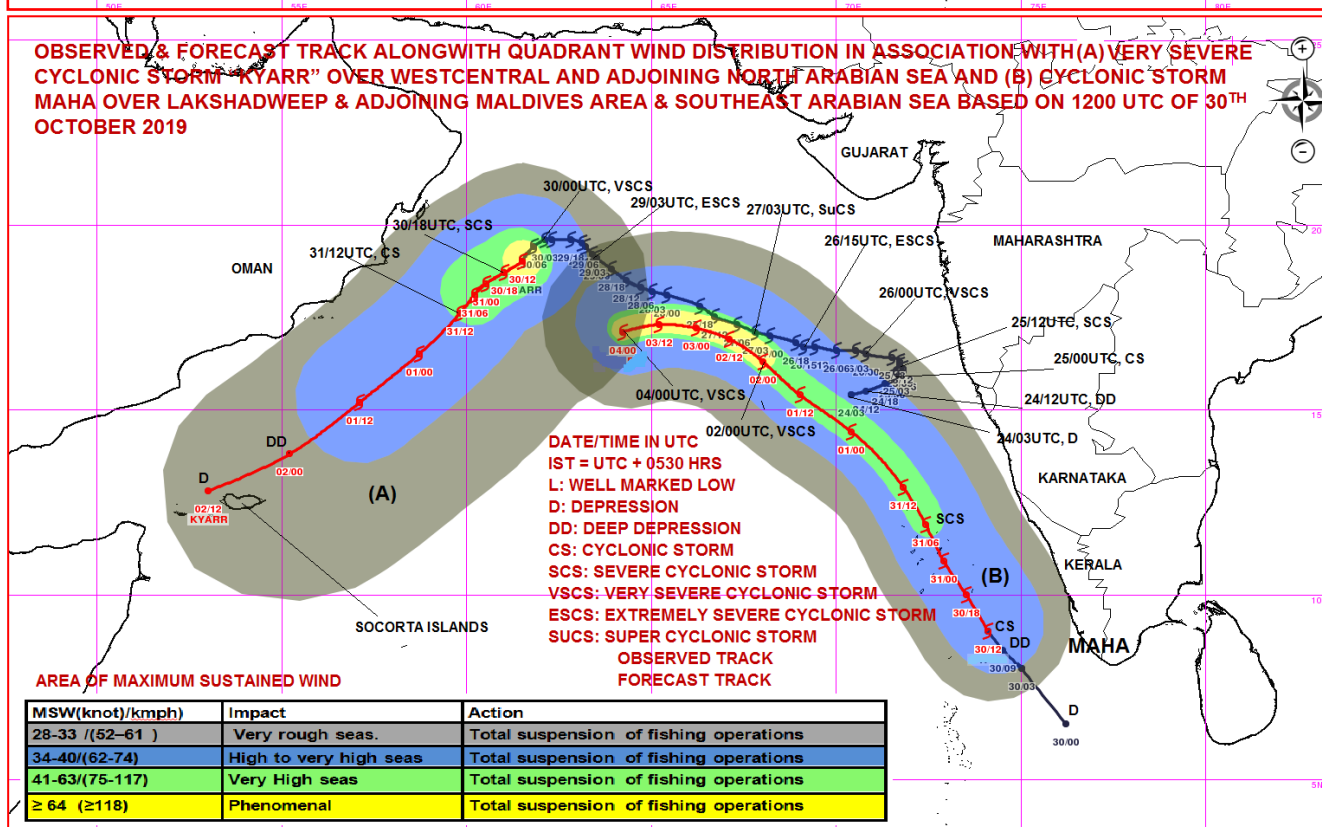
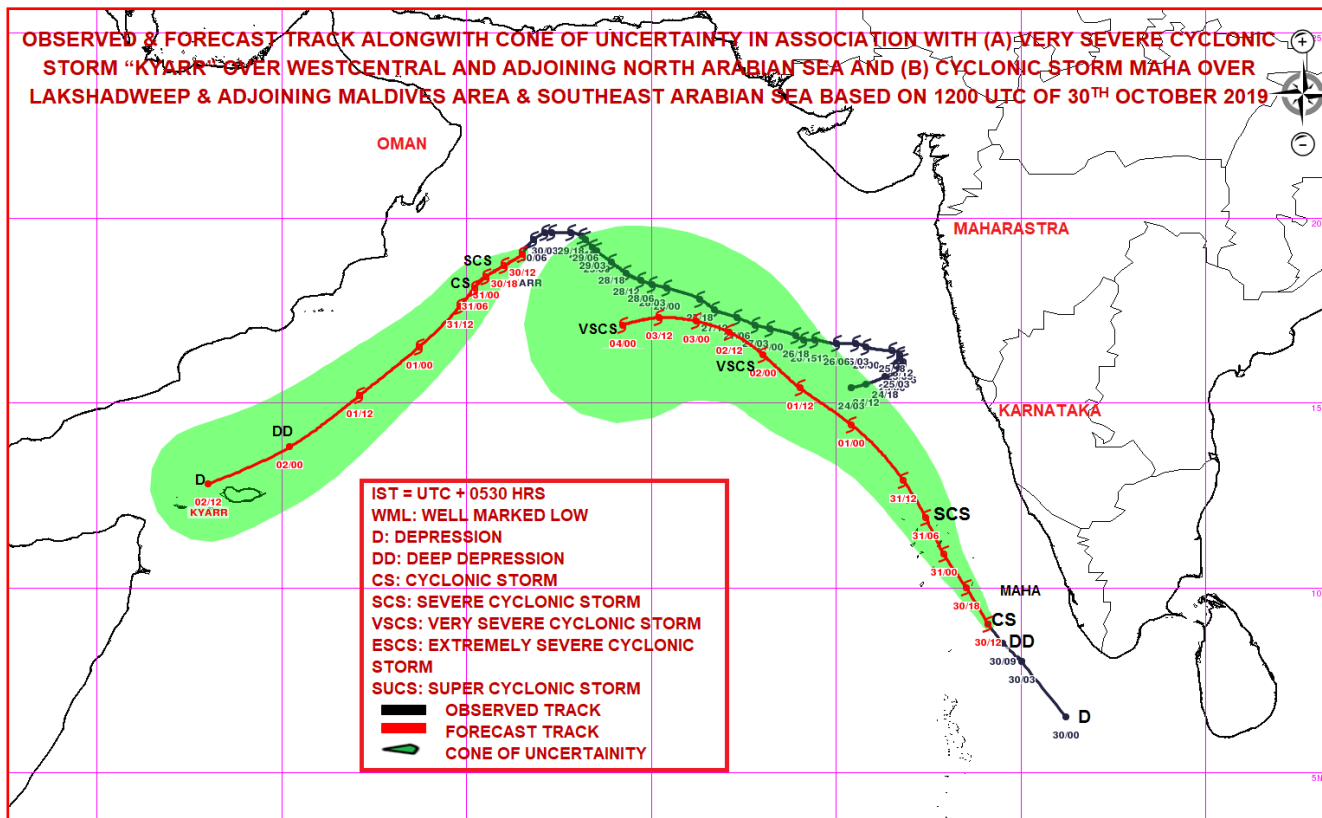
30-10-2019/(2030 to 2056) IST

ARABIAN SEA



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 51 (ARB/03/2019) and BULLETIN NO. : 06 (ARB/04/2019)

TIME OF ISSUE: 0230 HOURS IST

DATED: 31.10.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0413-262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (A) Cyclonic Storm MAHA (Pronounced as M'maha) over Lakshadweep and adjoining southeast Arabian Sea & Maldives area: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (ORANGE MESSAGE)

(B) Severe Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) over westcentral & adjoining northwest Arabian Sea.

BULLETIN NO. : 06 (ARB/04/2019)

(A) Cyclonic Storm MAHA (Pronounced as M'maha) over Lakshadweep and adjoining southeast Arabian Sea & Maldives area: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (ORANGE MESSAGE)

The Cyclonic storm MAHA (Pronounced as M'maha) over Lakshadweep and adjoining southeast Arabian Sea and Maldives area moved northwestwards with a speed of 26 kmph during past 06 hours and lay centered at 2330 hrs IST of yesterday, the 30th October, 2019 near latitude 10.2°N and longitude 73.3°E over Lakshadweep and adjoining southeast Arabian Sea & Maldives area, about 670 km nearly north of Male (Maldives), 210 km north-northeast of Minicoy (Lakshadweep), 80 km east-southeast of Kavaratti (Lakshadweep) and 440 km west-northwest of Thiruvananthapuram (Kerala). It is very likely to continue to move northwestwards across Lakshadweep Islands during next 12 hours and then emerge into eastcentral Arabian Sea. It is very likely to intensify into a Severe Cyclonic Storm during the forenoon of 31st October 2019 over Lakshadweep area.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
30.10.19/2330	10.2/73.3	70-80 gusting to 90	Cyclonic Storm
31.10.19/0530	11.0/72.9	75-85 gusting to 95	Cyclonic Storm
31.10.19/1130	11.9/72.4	85-95 gusting to 105	Severe Cyclonic Storm
31.10.19/1730	12.9/71.8	95-105 gusting to 115	Severe Cyclonic Storm
31.10.19/2330	13.6/71.1	100-110 gusting to 125	Severe Cyclonic Storm
01.11.19/1130	14.9/69.7	110-120 gusting to 135	Severe Cyclonic Storm
01.11.19/2330	15.9/68.5	115-125 gusting to 140	Very Severe Cyclonic Storm
02.11.19/1130	16.6/67.6	120-130 gusting to 150	Very Severe Cyclonic Storm
02.11.19/2330	17.0/66.7	130-140 gusting to 160	Very Severe Cyclonic Storm
03.11.19/1130	17.2/65.7	140-150 gusting to 170	Very Severe Cyclonic Storm
03.11.19/2330	17.3/64.9	150-160 gusting to 180	Very Severe Cyclonic Storm
04.11.19/1130	17.4/64.1	160-170 gusting to 190	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy falls at isolated places very likely over Kerala, Lakshadweep, coastal Karnataka and south Tamilnadu during next 2 days. **Extremely heavy falls** at isolated places are likely over Lakshadweep Islands and heavy to very heavy falls at isolated place over Kerala during next 48 hours. Heavy to very heavy falls at isolated place are also likely over Tamil Nadu during next 12 hours and over coastal Karnataka on 31st October.

(ii) Wind warning

- Squally wind speed reaching 60-70 kmph gusting to 80 kmph very likely to prevail over Comorin-Maldives area during next 12 hours and decrease thereafter.
- Gale wind speed reaching 70-80 kmph gusting to 90 kmph prevails over Lakshadweep area around the system centre. It is very likely to increase becoming 80-90 kmph gusting to 100 kmph by 31st morning and 95-105 kmph gusting to 115 kmph in the afternoon over northern parts of Lakshadweep area and 60-70 kmph gusting to 80 kmph over southern parts of Lakshadweep area during the afternoon of 31st October 2019.
- Gale wind speed reaching 100-110 kmph gusting to 125 kmph likely to prevail over southeast and adjoining eastcentral Arabian Sea from evening of 31st October and increase to 160-170 Kmph gusting to 190 Kmph over eastcentral & adjoining westcentral Arabian Sea by morning of 4th November.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Kerala-Karnataka coasts during next 48 hours.

(iii) Sea condition

- Sea conditions will be high to very high over Comorin-Maldives area and very rough to high along & off Kerala- Karnataka coasts during next 48 hours.
- Sea conditions will be very rough to high over Lakshadweep area during next 12 hours and high to very high on 31st October.
- Sea condition will be rough to very rough during next 12 hours and very high to phenomenal over southeast & adjoining eastcentral Arabian Sea on 31st October and will become phenomenal over eastcentral & adjoining westcentral Arabian Sea by morning of 2nd November onwards.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(iv) Storm Surge Warning

- Tidal wave by about 1 meter height above the astronomical tides is very likely to inundate low lying areas of Lakshadweep Islands during next 24 hours.

(v) Fishermen Warning

- Total suspension of fishing operations over Comorin-Maldives & Lakshadweep area and along & off Kerala-Karnataka coasts during next 48 hours.
- The fishermen are advised not to venture into southeast Arabian Sea till 31st October and over eastcentral Arabian Sea till 4th November, 2019.

(vi) Damage Expected:

- Major damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly.
- Damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Dead limbs blown from trees.
- Major damage to coastal crops.
- Damage to embankments/ salt pans.

BULLETIN NO. : 51 (ARB/03/2019)

(B) Severe Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) over westcentral & adjoining northwest Arabian Sea

The **Severe Cyclonic Storm 'Kyarr'** over westcentral and adjoining northwest Arabian Sea moved southwestwards with a speed of 10 Kmph during past 06 hrs and lay centred at 2330 hrs IST of yesterday, the 30th October, 2019 over westcentral & adjoining northwest Arabian Sea near latitude 18.7°N and longitude 61.0°E, about 1250 km west-southwest of Mumbai (Maharashtra), 750 km east-northeast of Salalah (Oman) and 310 km east-southeast of Masirah (Oman). It is very likely to move southwestwards across westcentral Arabian Sea during next 4 days. It is very likely to weaken into a Cyclonic Storm by forenoon of 31st October, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
30.10.19/2330	18.7/61.0	100-110 gusting to 120	Severe Cyclonic Storm
31.10.19/0530	18.4/60.6	95-105 gusting to 115	Severe Cyclonic Storm
31.10.19/1130	18.1/60.3	85-95 gusting to 105	Severe Cyclonic Storm
31.10.19/1730	17.6/59.8	75-85 gusting to 95	Cyclonic Storm
31.10.19/2330	17.1/59.3	70-80 gusting to 90	Cyclonic Storm
01.11.19/1130	15.9/57.9	60-70 gusting to 80	Deep Depression
01.11.19/2330	14.5/56.1	40-50 gusting to 60	Depression
02.11.19/1130	13.3/54.0	30-40 gusting to 50	Depression

Warnings:

(i) Wind warning

- Gale wind speed reaching 100-110 kmph gusting to 120 kmph is prevailing around the system centre over westcentral & adjoining northwest Arabian Sea. It is very likely to reduce gradually becoming 95-105 kmph gusting to 115 kmph by morning of 31st October over westcentral Arabian

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Sea and 60-70 kmph gusting to 80 kmph by the morning of 1st November over westcentral Arabian Sea and decrease thereafter.

(ii) Sea condition

- Sea condition is phenomenal over westcentral & adjoining northwest Arabian Sea around the system centre. It will become very high to high by morning of 31st October over westcentral Arabian Sea and high to very rough on 1st and 2nd November, 2019 over the same region.

(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea till 3rd November 2019 and into adjoining north & eastcentral Arabian Sea during next 24 hours.

The next bulletin will be issued at 0530 hrs IST of 31st October, 2019.

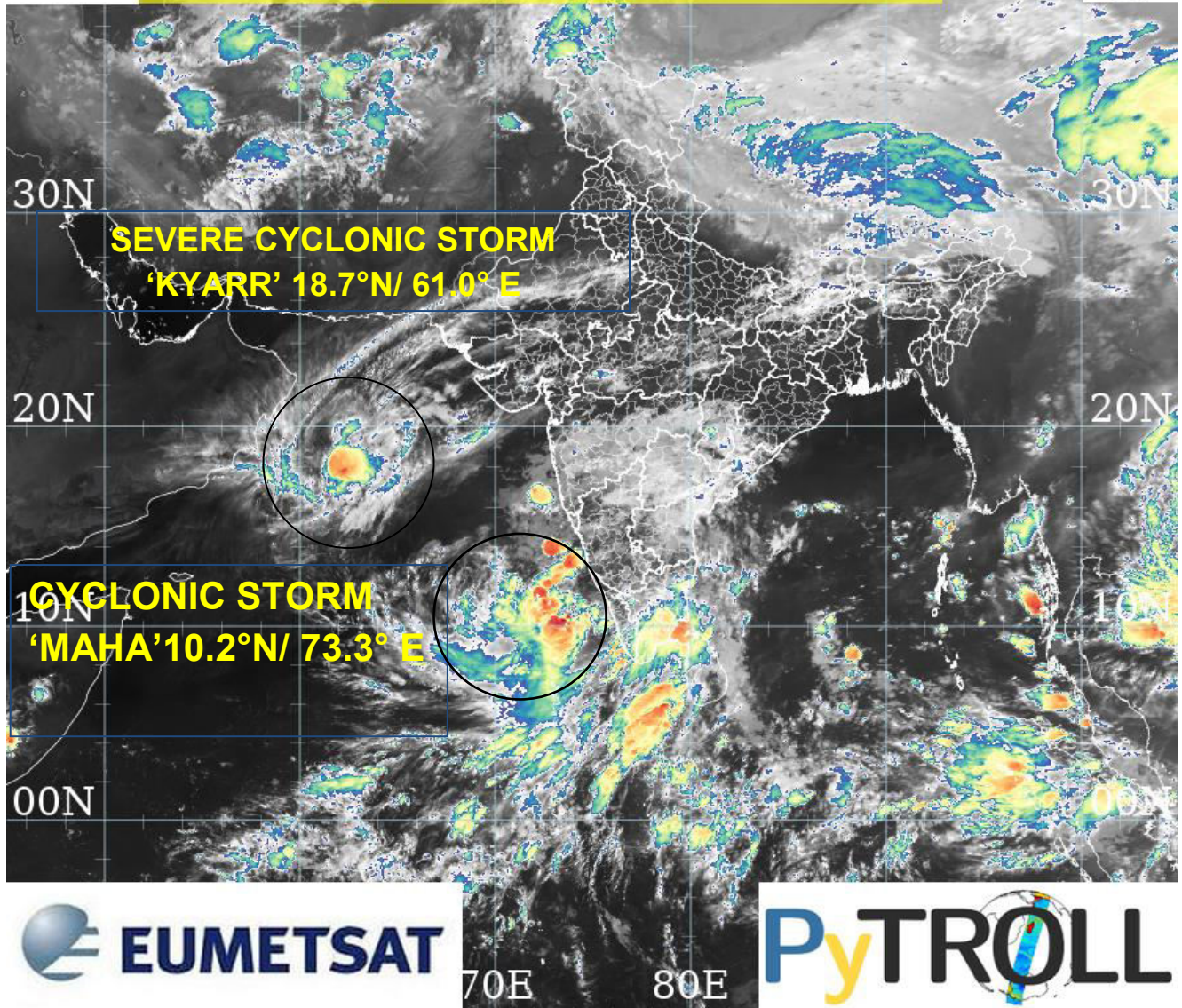
(Ananda Kumar Das)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

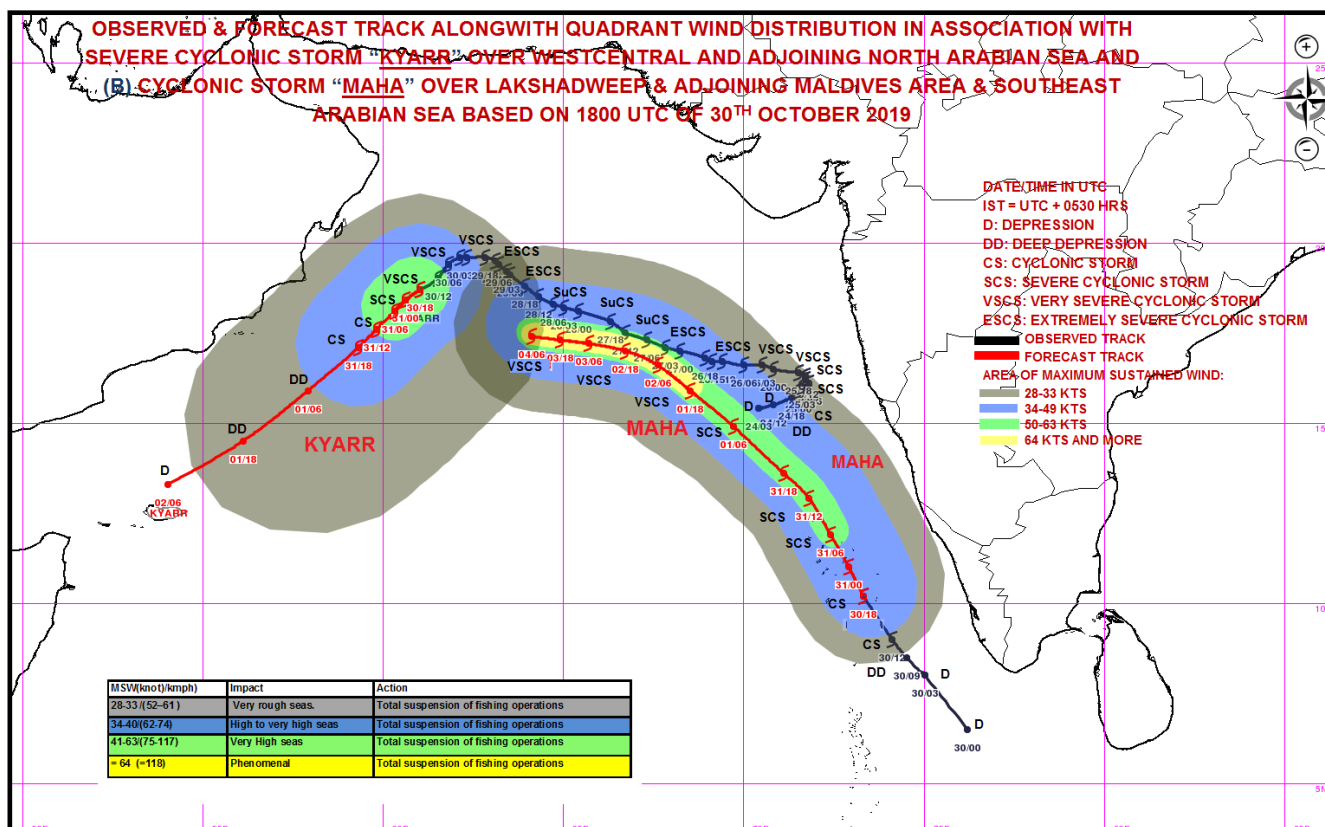
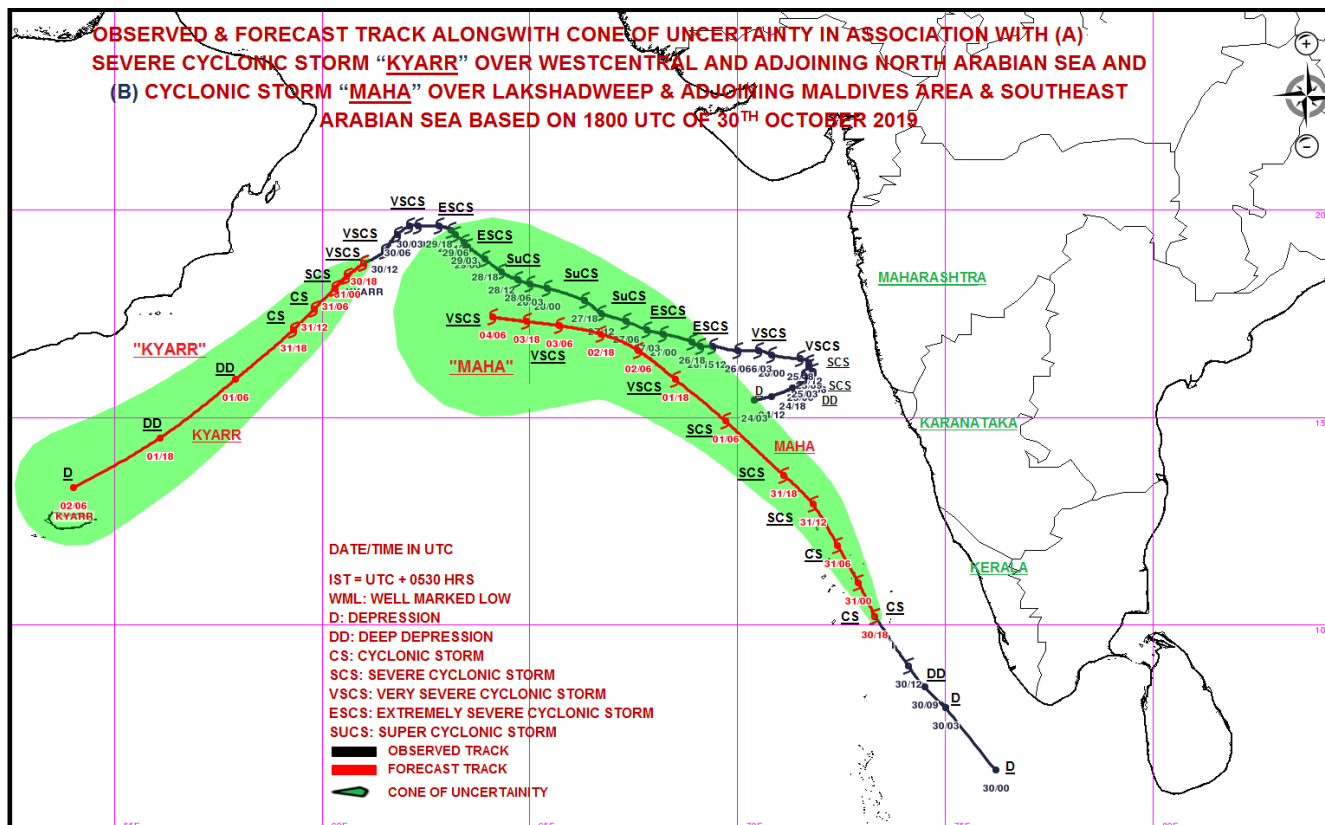
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



60E 70E 80E 90E 10
MSG-1: SEVIRI [colorized_ir_clouds]
20191030_1845UTC



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 52 (ARB/03/2019) and BULLETIN NO. : 07 (ARB/04/2019)

TIME OF ISSUE: 0600 HOURS IST

DATED: 31.10.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0413-262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (A) Cyclonic Storm MAHA (Pronounced as M'maha) over Lakshadweep and adjoining southeast Arabian Sea: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (ORANGE MESSAGE)

(B) Severe Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) over westcentral Arabian Sea.

BULLETIN NO. : 07 (ARB/04/2019)

(A) Cyclonic Storm MAHA (Pronounced as M'maha) over Lakshadweep and adjoining southeast Arabian Sea: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (ORANGE MESSAGE)

The Cyclonic storm MAHA (Pronounced as M'maha) over Lakshadweep and adjoining southeast Arabian Sea and Maldives area moved north-northwestwards with a speed of 22 kmph during past 06 hours and lay centered at 0230 hrs IST of 31st October, 2019 near latitude 10.6°N and longitude 73.1°E over Lakshadweep and adjoining southeast Arabian Sea about 710 km nearly north-northwest of Male (Maldives), 250 km nearly north of Minicoy (Lakshadweep), 50 km east of Kavaratti (Lakshadweep) and 480 km north-northwest of Thiruvananthapuram (Kerala). It is very likely to continue to move northwestwards across Lakshadweep Islands during next 12 hours and then emerge into eastcentral Arabian Sea. It is very likely to intensify into a Severe Cyclonic Storm during the forenoon of 31st October 2019 over Lakshadweep area.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
31.10.19/0230	10.6/73.1	75-85 gusting to 95	Cyclonic Storm
31.10.19/0530	11.0/72.9	80-90 gusting to 100	Cyclonic Storm
31.10.19/1130	11.9/72.4	85-95 gusting to 105	Severe Cyclonic Storm
31.10.19/1730	12.9/71.8	95-105 gusting to 115	Severe Cyclonic Storm
31.10.19/2330	13.6/71.1	100-110 gusting to 125	Severe Cyclonic Storm
01.11.19/1130	14.9/69.7	110-120 gusting to 135	Severe Cyclonic Storm
01.11.19/2330	15.9/68.5	115-125 gusting to 140	Very Severe Cyclonic Storm
02.11.19/1130	16.6/67.6	120-130 gusting to 150	Very Severe Cyclonic Storm
02.11.19/2330	17.0/66.7	130-140 gusting to 160	Very Severe Cyclonic Storm
03.11.19/1130	17.2/65.7	140-150 gusting to 170	Very Severe Cyclonic Storm
03.11.19/2330	17.3/64.9	150-160 gusting to 180	Very Severe Cyclonic Storm
04.11.19/1130	17.4/64.1	160-170 gusting to 190	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy falls at isolated places very likely over Kerala, Lakshadweep, coastal Karnataka and south Tamilnadu during next 2 days. **Extremely heavy falls** at isolated places are likely over Lakshadweep Islands and heavy to very heavy falls at isolated place over Kerala during next 48 hours. Heavy to very heavy falls at isolated place are also likely over Tamil Nadu during next 06 hours and over coastal Karnataka on 31st October.

(ii) Wind warning

- Squally wind speed reaching 60-70 kmph gusting to 80 kmph very likely to prevail over Comorin-Maldives area during next 06 hours and decrease thereafter.
- Gale wind speed reaching 75-85 kmph gusting to 95 kmph prevails over Lakshadweep area around the system centre. It is very likely to increase becoming 80-90 kmph gusting to 100 kmph by 31st morning and 95-105 kmph gusting to 115 kmph in the afternoon over northern parts of Lakshadweep area and 60-70 kmph gusting to 80 kmph over southern parts of Lakshadweep area during the afternoon of 31st October 2019.
- Gale wind speed reaching 100-110 kmph gusting to 125 kmph likely to prevail over southeast and adjoining eastcentral Arabian Sea from evening of 31st October and increase to 160-170 Kmph gusting to 190 Kmph over eastcentral & adjoining westcentral Arabian Sea by morning of 4th November.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Kerala- Karnataka coasts during next 48 hours.

(iii) Sea condition

- Sea conditions will be high to very high over Comorin-Maldives area and very rough to high along & off Kerala- Karnataka coasts during next 48 hours.
- Sea conditions over Lakshadweep area will be high to very high during 31st October and rough to very rough by 2nd November onwards.
- Sea condition over southeast & adjoining eastcentral Arabian Sea will be rough to very rough during next 06hours and very high to phenomenal during 31st October and will become phenomenal over eastcentral & adjoining westcentral Arabian Sea by morning of 2nd November onwards.

(iv) Storm Surge Warning

- Tidal wave by about 1 meter height above the astronomical tides is very likely to inundate low lying areas of Lakshadweep Islands during next 24 hours.

(v) Fishermen Warning

- Total suspension of fishing operations over Comorin-Maldives & Lakshadweep area and along & off Kerala-Karnataka coasts during next 48 hours.
- The fishermen are advised not to venture into southeast Arabian Sea till 31st October and over eastcentral Arabian Sea till 4th November, 2019.

(vi) Damage Expected:

- Major damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly.
- Damage to power and communication lines.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Dead limbs blown from trees.
- Major damage to coastal crops.
- Damage to embankments/ salt pans.

BULLETIN NO. : 52 (ARB/03/2019)

(B) Severe Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) over westcentral Arabian Sea

The **Severe Cyclonic Storm 'Kyarr'** over westcentral and adjoining northwest Arabian Sea moved southwestwards with a speed of 11 Kmph during past 06 hrs and lay centred at 0230 hrs IST of 31st October, 2019 over westcentral Arabian Sea near latitude 18.5°N and longitude 60.7°E, about 1280 km west-southwest of Mumbai (Maharashtra), 720 km east-northeast of Salalah (Oman) and 300 km southeast of Masirah (Oman). It is very likely to move southwestwards across westcentral Arabian Sea during next 4 days. It is very likely to weaken into a Cyclonic Storm by forenoon of 31st October, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
31.10.19/0230	18.5/60.7	95-105 gusting to 115	Severe Cyclonic Storm
31.10.19/0530	18.4/60.6	90-100 gusting to 110	Severe Cyclonic Storm
31.10.19/1130	18.1/60.3	85-95 gusting to 105	Severe Cyclonic Storm
31.10.19/1730	17.6/59.8	75-85 gusting to 95	Cyclonic Storm
31.10.19/2330	17.1/59.3	70-80 gusting to 90	Cyclonic Storm
01.11.19/1130	15.9/57.9	60-70 gusting to 80	Deep Depression
01.11.19/2330	14.5/56.1	40-50 gusting to 60	Depression
02.11.19/1130	13.3/54.0	30-40 gusting to 50	Depression

Warnings:

(i) Wind warning

- Gale wind speed reaching 95-105 kmph gusting to 115 kmph is prevailing around the system centre over westcentral & adjoining northwest Arabian Sea. It is very likely to reduce gradually becoming 90-100 kmph gusting to 110 kmph in the morning of 31st October over westcentral Arabian Sea and 60-70 kmph gusting to 80 kmph by the morning of 1st November over westcentral Arabian Sea and decrease thereafter.

(ii) Sea condition

- Sea condition is phenomenal over westcentral & adjoining northwest Arabian Sea around the system centre. It will become very high to high during 31st October over westcentral Arabian Sea and high to very rough on 1st and 2nd November, 2019 over the same region.

(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea till 3rd November 2019 and into adjoining north & eastcentral Arabian Sea during next 12 hours.

The next bulletin will be issued at 0830 hrs IST of 31st October, 2019.

(Ananda Kumar Das)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

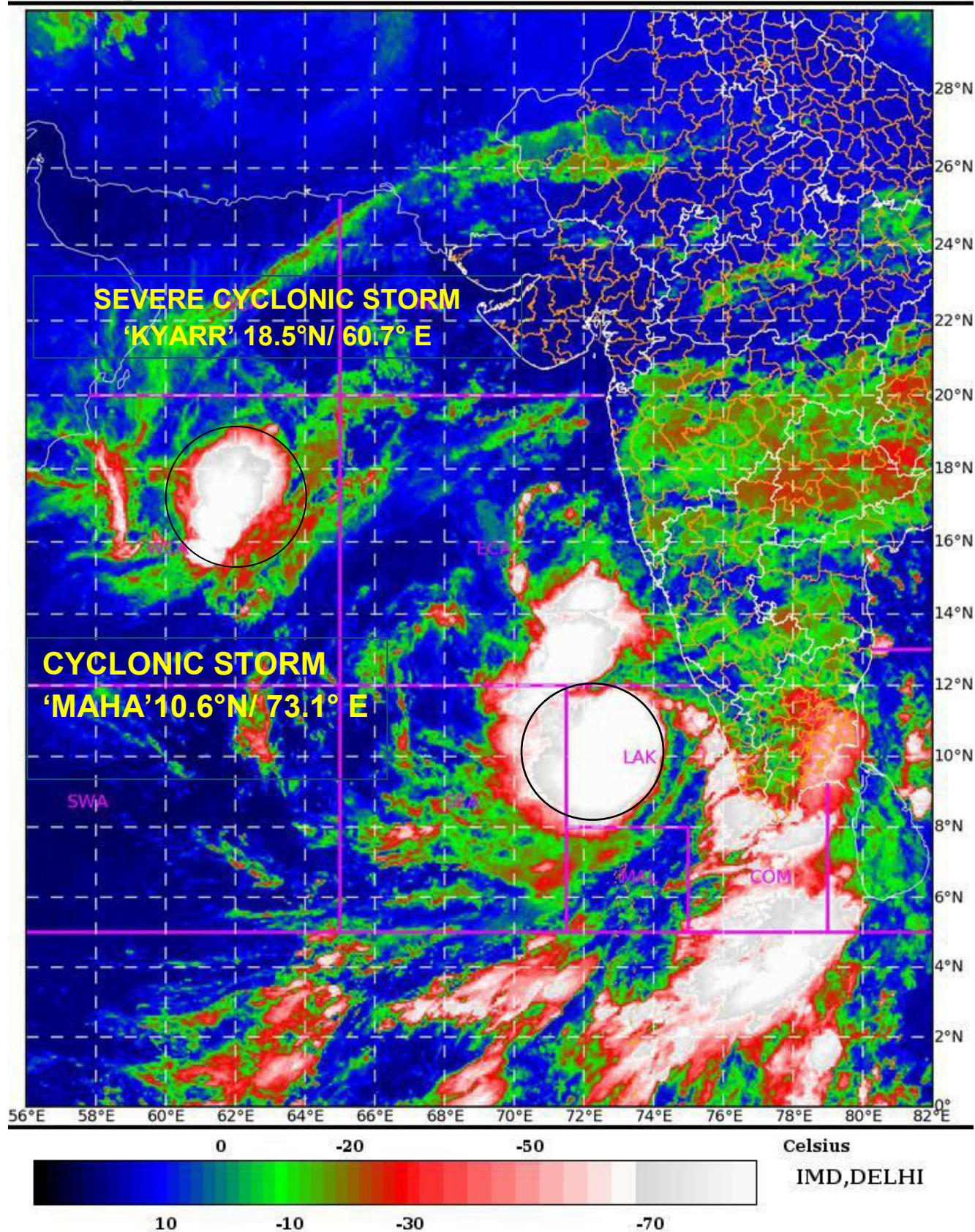
SAT : INSAT-3D IMG

30-10-2019/(2230 to 2256) GMT

IMG_TIR1_TEMP 10.8 um

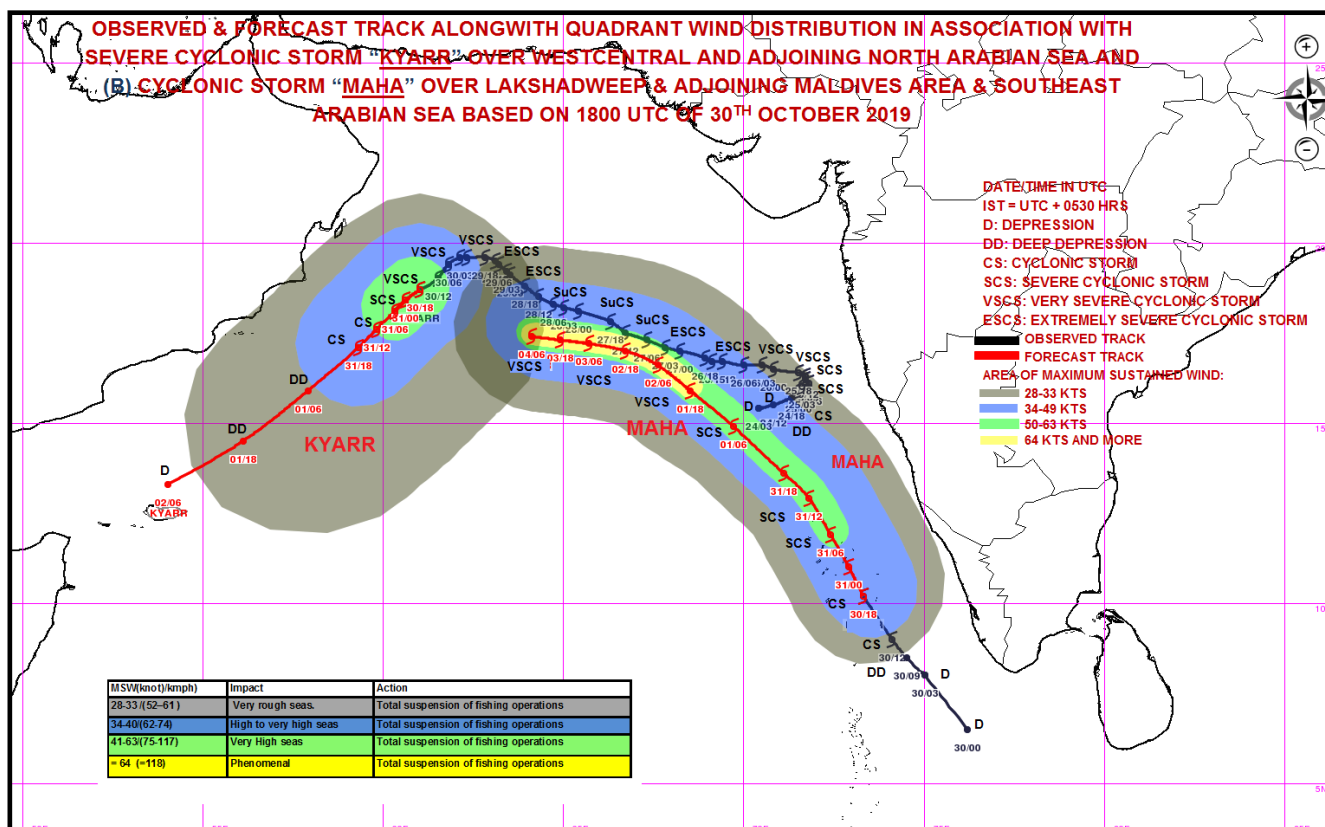
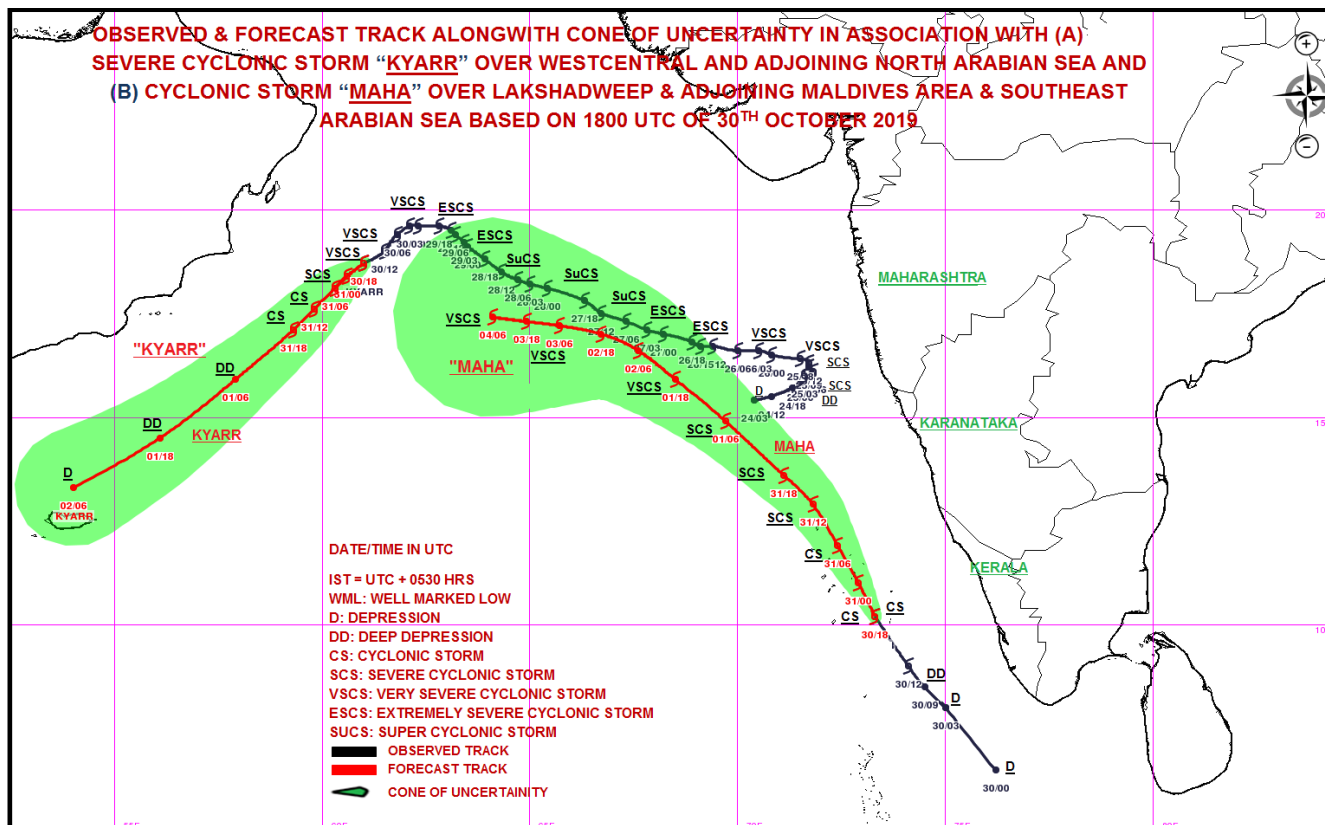
31-10-2019/(0400 to 0426) IST

ARABIAN SEA



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 08 (ARB/04/2019) and BULLETIN NO. : 53 (ARB/03/2019)

TIME OF ISSUE: 0900 HOURS IST

DATED: 31.10.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (A) Cyclonic Storm MAHA (Pronounced as M'maha) over Lakshadweep and adjoining southeast Arabian Sea: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (RED MESSAGE)

(B) Severe Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) over westcentral Arabian Sea.

BULLETIN NO. : 08 (ARB/04/2019)

(A) Cyclonic Storm MAHA (Pronounced as M'maha) over Lakshadweep and adjoining southeast Arabian Sea: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (RED MESSAGE)

The Cyclonic storm MAHA (Pronounced as M'maha) over Lakshadweep and adjoining southeast Arabian Sea moved north-northwestwards with a speed of 15 kmph during past 06 hours and lay centered at 0530 hrs IST of 31st October, 2019 near latitude 11.0°N and longitude 73.0°E over Lakshadweep and adjoining southeast Arabian Sea about 30 km east-southeast of Aminidivi (Lakshadweep), 60 km north-northeast of Kavaratti (Lakshadweep), 300 km north of Minicoy (Lakshadweep) and 300 km west-southwest of Kozhikode (Kerala). It is very likely to continue to move north-northwestwards across Lakshadweep Islands during next 12 hours. Then, it is very likely to move northwestwards, emerge into eastcentral Arabian Sea during subsequent 12 hours and thereafter move west-northwestwards. It is very likely to intensify into a Severe Cyclonic Storm during next 06 hours over Lakshadweep area and into a very severe cyclonic storm over east central Arabian Sea during subsequent 24 hours.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
31.10.19/0530	11.0/73.0	80-90 gusting to 100	Cyclonic Storm
31.10.19/1130	11.8/72.6	90-100 gusting to 110	Severe Cyclonic Storm
31.10.19/1730	12.6/72.2	100-110 gusting to 120	Severe Cyclonic Storm
31.10.19/2330	13.5/71.6	110-120 gusting to 135	Severe Cyclonic Storm
01.11.19/0530	14.3/71.1	120-130 gusting to 145	Very Severe Cyclonic Storm
01.11.19/1730	15.4/69.6	120-130 gusting to 145	Very Severe Cyclonic Storm
02.11.19/0530	16.2/68.4	130-140 gusting to 155	Very Severe Cyclonic Storm
02.11.19/1730	16.8/67.1	130-140 gusting to 155	Very Severe Cyclonic Storm
03.11.19/0530	17.2/65.9	140-150 gusting to 170	Very Severe Cyclonic Storm
03.11.19/1730	17.3/64.8	140-150 gusting to 170	Very Severe Cyclonic Storm
04.11.19/0530	17.3/63.2	150-160 gusting to 180	Very Severe Cyclonic Storm
04.11.19/1730	17.4/61.8	150-160 gusting to 180	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at a few places and extremely heavy falls at isolated places very likely over Lakshadweep Islands during next 24 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over Kerala, coastal Karnataka and south Tamil Nadu during next 24 hours.

(ii) Wind warning

- Gale wind speed reaching 80-90 kmph gusting to 100 kmph is prevailing over Lakshadweep area around the system centre. It is very likely to increase becoming 100-110 kmph gusting to 120 kmph over north Lakshadweep Islands and adjoining southeast & east-central Arabian Sea and 65-75 kmph gusting to 85 kmph over south Lakshadweep Islands and adjoining sea areas during next 12 hours. It is very likely decrease gradually over these areas thereafter.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 120-130 kmph gusting to 145 kmph by 1st November Morning, 130-140 kmph gusting to 155 kmph likely over eastcentral Arabian Sea by 2nd November morning and 150-160 kmph gusting to 180 kmph by 04th November morning.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Kerala- Karnataka coasts during next 24 hours.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph very likely to prevail over Comorin-Maldives area during next 06 hours and decrease thereafter.

(iii) Sea condition

- Sea conditions will be rough to very rough over Comorin-Maldives area during next 06 hours and along & off Kerala- Karnataka coasts during next 24 hours.
- Sea conditions over Lakshadweep area and adjoining southeast Arabian Sea will be high to very high during next 24 hours and rough to very rough for subsequent 24 hours.
- Sea condition over eastcentral Arabian Sea will be very rough to high during next 06 hours and very high to phenomenal during subsequent 3 days.

(iv) Storm Surge Warning

- Tidal wave by about 1 meter height above the astronomical tides is very likely to inundate low lying areas of Lakshadweep Islands during next 12 hours.

(v) Fishermen Warning

- Total suspension of fishing operations over Comorin-Maldives during next 12 hours & Lakshadweep area and adjoining southeast Arabian Sea and along & off Kerala-Karnataka coasts during next 24 hours.
- The fishermen are advised not to venture over eastcentral Arabian Sea till 4th November, 2019.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(vi) Damage Expected over Lakshadweep Islands during next 12 hours:

- Major damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly.
- Damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Dead limbs blown from trees.
- Major damage to coastal crops.
- Damage to embankments/ salt pans.

BULLETIN NO. : 53 (ARB/03/2019)

(B) Severe Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) over westcentral Arabian Sea

The **Severe Cyclonic Storm 'Kyarr'** over westcentral and adjoining northwest Arabian Sea moved southwestwards with a speed of 13 Kmph during past 06 hrs and lay centred at 0530 hrs IST of 31st October, 2019 over westcentral Arabian Sea near latitude 18.4°N and longitude 60.3°E, about 1320 km west-southwest of Mumbai (Maharashtra), 680 km east-northeast of Salalah (Oman) and 290 km southeast of Masirah (Oman). It is very likely to move southwestwards across westcentral Arabian Sea during next 3 days. It is very likely to weaken into a Cyclonic Storm by forenoon of 31st October, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
31.10.19/0530	18.4/60.3	85-95 gusting to 105	Severe Cyclonic Storm
31.10.19/1130	18.1/60.1	80-90 gusting to 100	Severe Cyclonic Storm
31.10.19/1730	17.6/59.8	70-80 gusting to 90	Cyclonic Storm
31.10.19/2330	17.1/59.3	60-70 gusting to 80	Cyclonic Storm
01.11.19/0530	15.9/57.9	50-60 gusting to 70	Deep Depression
01.11.19/1730	14.5/56.1	40-50 gusting to 60	Depression
02.11.19/0530	13.3/54.0	30-40 gusting to 50	Depression
02.11.19/1730	13.3/54.0	20-30 gusting to 40	Low

Warnings:

(i) Wind warning

- Gale wind speed reaching 85-95 kmph gusting to 105 kmph is prevailing around the system centre over westcentral Arabian Sea. It is very likely to reduce gradually becoming 50-60 kmph gusting to 70 kmph in the morning of 1st November over westcentral Arabian Sea and 30-40 kmph gusting to 50 kmph by the morning of 2nd November over westcentral Arabian Sea and decrease thereafter.

(ii) Sea condition

- Sea condition is very high over westcentral Arabian Sea around the system centre. It will become very rough from 1st November morning and rough from 2nd November morning over the same region.

(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea till 2nd November forenoon.

The next bulletin will be issued at 1130 hrs IST of 31st October, 2019.

(Ananda Kumar Das)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

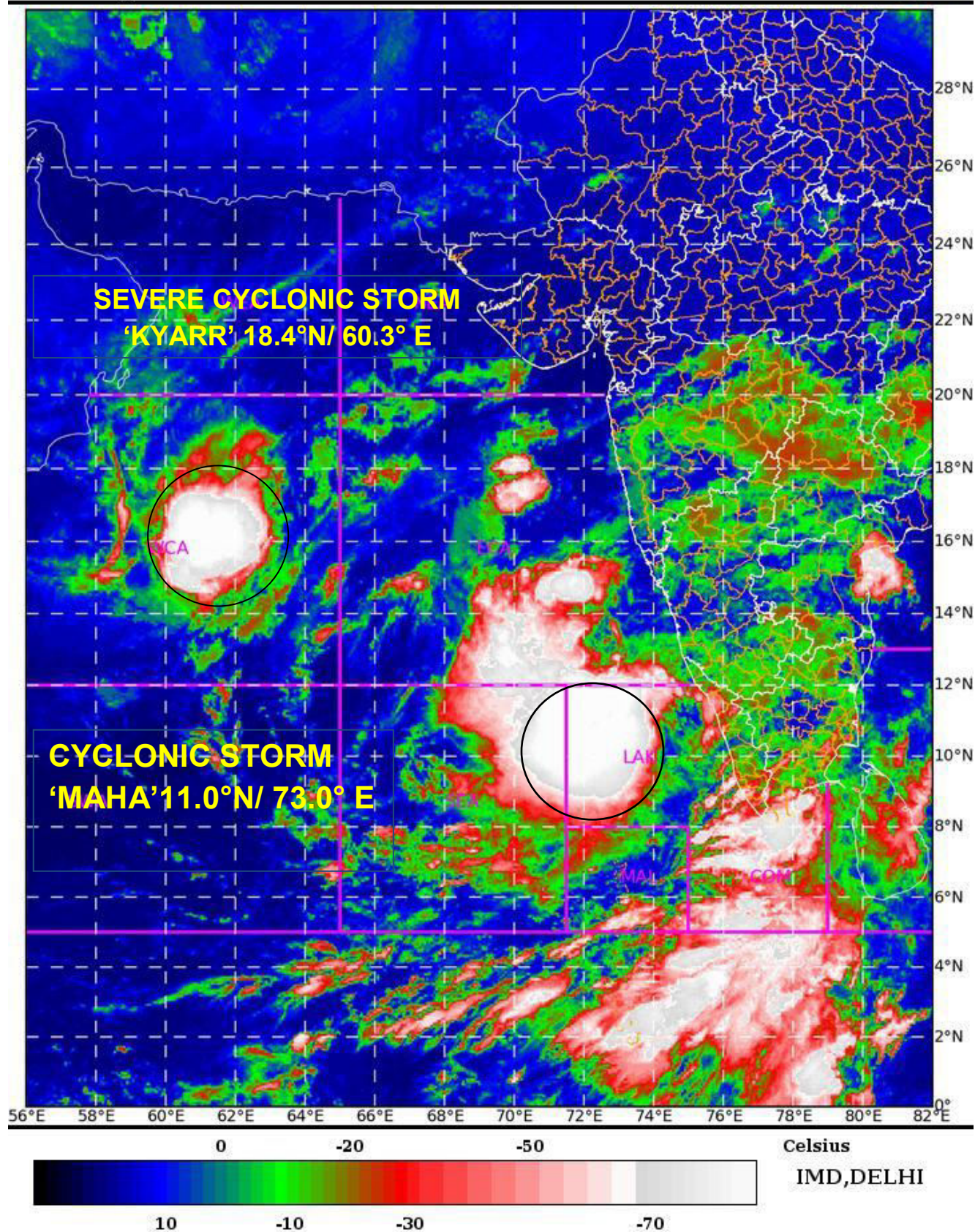
SAT : INSAT-3D IMG

31-10-2019/(0200 to 0226) GMT

IMG_TIR1_TEMP 10.8 um

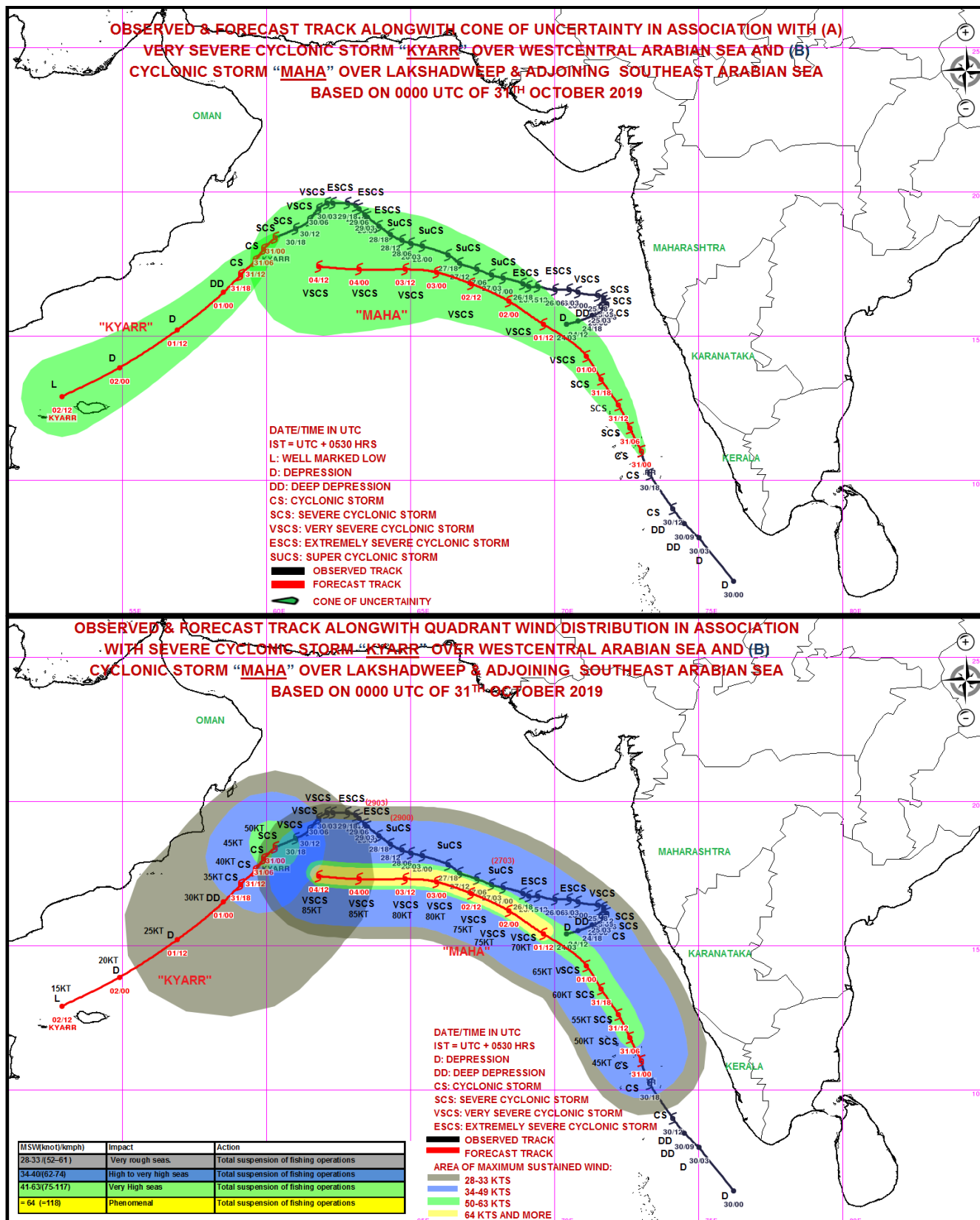
31-10-2019/(0730 to 0756) IST

ARABIAN SEA



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 09 (ARB/04/2019) and BULLETIN NO. : 54 (ARB/03/2019)

TIME OF ISSUE: 1115 HOURS IST

DATED: 31.10.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (A) Cyclonic Storm MAHA (Pronounced as M'maha) over Lakshadweep and adjoining southeast Arabian Sea: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (RED MESSAGE)

(B) Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) over westcentral Arabian Sea.

BULLETIN NO. : 09 (ARB/04/2019)

(A) Cyclonic Storm MAHA (Pronounced as M'maha) over Lakshadweep and adjoining southeast Arabian Sea: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (RED MESSAGE)

The Cyclonic storm MAHA (Pronounced as M'maha) over Lakshadweep and adjoining southeast Arabian Sea moved north-northwestwards with a speed of 17 kmph during past 06 hours and lay centered at 0830 hrs IST of 31st October, 2019 near latitude 11.5°N and longitude 72.8°E over Lakshadweep and adjoining southeast Arabian Sea about 40 km north-northeast of Aminidivi (Lakshadweep), 110 km north-northeast of Kavaratti (Lakshadweep), 350 km north-northwest of Minicoy (Lakshadweep) and 325 km west-northwest of Kozhikode (Kerala). It is very likely to continue to move north-northwestwards across Lakshadweep Islands during next 12 hours. Then, it is very likely to move northwestwards, emerge into eastcentral Arabian Sea during subsequent 12 hours and thereafter move west-northwestwards. It is very likely to intensify into a Severe Cyclonic Storm during next 06 hours over Lakshadweep area and into a very severe cyclonic storm over eastcentral Arabian Sea during subsequent 24 hours.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
31.10.19/0830	11.5/72.8	80-90 gusting to 100	Cyclonic Storm
31.10.19/1130	11.8/72.6	90-100 gusting to 110	Severe Cyclonic Storm
31.10.19/1730	12.6/72.2	100-110 gusting to 120	Severe Cyclonic Storm
31.10.19/2330	13.5/71.6	110-120 gusting to 135	Severe Cyclonic Storm
01.11.19/0530	14.3/71.1	120-130 gusting to 145	Very Severe Cyclonic Storm
01.11.19/1730	15.4/69.6	120-130 gusting to 145	Very Severe Cyclonic Storm
02.11.19/0530	16.2/68.4	130-140 gusting to 155	Very Severe Cyclonic Storm
02.11.19/1730	16.8/67.1	130-140 gusting to 155	Very Severe Cyclonic Storm
03.11.19/0530	17.2/65.9	140-150 gusting to 170	Very Severe Cyclonic Storm
03.11.19/1730	17.3/64.8	140-150 gusting to 170	Very Severe Cyclonic Storm
04.11.19/0530	17.3/63.2	150-160 gusting to 180	Very Severe Cyclonic Storm
04.11.19/1730	17.4/61.8	150-160 gusting to 180	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at a few places and extremely heavy falls at isolated places very likely over Lakshadweep Islands during next 24 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over Kerala, coastal Karnataka and south Tamil Nadu during next 24 hours.

(ii) Wind warning

- Gale wind speed reaching 80-90 kmph gusting to 100 kmph is prevailing over Lakshadweep area around the system centre. It is very likely to increase becoming 100-110 kmph gusting to 120 kmph over north Lakshadweep Islands and adjoining southeast & east-central Arabian Sea and 65-75 kmph gusting to 85 kmph over south Lakshadweep Islands and adjoining sea areas during next 12 hours. It is very likely decrease gradually over these areas thereafter.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 120-130 kmph gusting to 145 kmph by 1st November Morning, 130-140 kmph gusting to 155 kmph likely over eastcentral Arabian Sea by 2nd November morning and 150-160 kmph gusting to 180 kmph by 04th November morning.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Kerala- Karnataka coasts during next 24 hours.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph very likely to prevail over Comorin-Maldives area during next 06 hours and decrease thereafter.

(iii) Sea condition

- Sea conditions will be rough to very rough over Comorin-Maldives area during next 06 hours and along & off Kerala- Karnataka coasts during next 24 hours.
- Sea conditions over Lakshadweep area and adjoining southeast Arabian Sea will be high to very high during next 24 hours and rough to very rough for subsequent 24 hours.
- Sea condition over eastcentral Arabian Sea will be very rough to high during next 06 hours and very high to phenomenal during subsequent 3 days.

(iv) Storm Surge Warning

- Tidal wave by about 1 meter height above the astronomical tides is very likely to inundate low lying areas of Lakshadweep Islands during next 12 hours.

(v) Fishermen Warning

- Total suspension of fishing operations over Comorin-Maldives during next 12 hours & Lakshadweep area and adjoining southeast Arabian Sea and along & off Kerala-Karnataka coasts during next 24 hours.
- The fishermen are advised not to venture over eastcentral Arabian Sea till 4th November, 2019.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(vi) Damage Expected over Lakshadweep Islands during next 12 hours:

- Major damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly.
- Damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Dead limbs blown from trees.
- Major damage to coastal crops.
- Damage to embankments/ salt pans.

BULLETIN NO. : 54 (ARB/03/2019)

(B) Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) over westcentral Arabian Sea

The **Severe Cyclonic Storm 'Kyarr'** over westcentral Arabian Sea moved southwestwards with a speed of 13 Kmph during past 06 hrs, weakened into a **Cyclonic Storm** and lay centred at 0830 hrs IST of 31st October, 2019 over westcentral Arabian Sea near latitude 18.0°N and longitude 60.2°E, about 1330 km west-southwest of Mumbai (Maharashtra), 670 km east-northeast of Salalah (Oman) and 320 km south-southeast of Masirah (Oman). It is very likely to move southwestwards across westcentral Arabian Sea during next 3 days. It is very likely to weaken into a Deep Depression during next 18 hours and further into a Depression during subsequent 06 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
31.10.19/0830	18.0/60.2	80-90 gusting to 100	Cyclonic Storm
31.10.19/1130	17.7/59.9	75-85 gusting to 95	Cyclonic Storm
31.10.19/1730	17.4/59.6	65-75 gusting to 85	Cyclonic Storm
31.10.19/2330	17.0/59.1	55-65 gusting to 75	Deep Depression
01.11.19/0530	16.5/58.5	45-55 gusting to 65	Depression
01.11.19/1730	15.2/56.9	35-45 gusting to 55	Depression
02.11.19/0530	13.9/54.9	25-35 gusting to 45	Well Marked Low

Warnings:

(i) Wind warning

- Gale wind speed reaching 80-90 kmph gusting to 100 kmph is prevailing around the system centre over westcentral Arabian Sea. It is very likely to reduce gradually becoming 45-55 kmph gusting to 65 kmph in the morning of 01st November over westcentral Arabian Sea and 25-35 kmph gusting to 45 kmph by the morning of 2nd November over westcentral Arabian Sea and decrease thereafter.

(ii) Sea condition

- Sea condition is very high over westcentral Arabian Sea around the system centre. It will become very rough from 1st November morning and rough from 2nd November morning over the same region.

(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea till 2nd November forenoon.

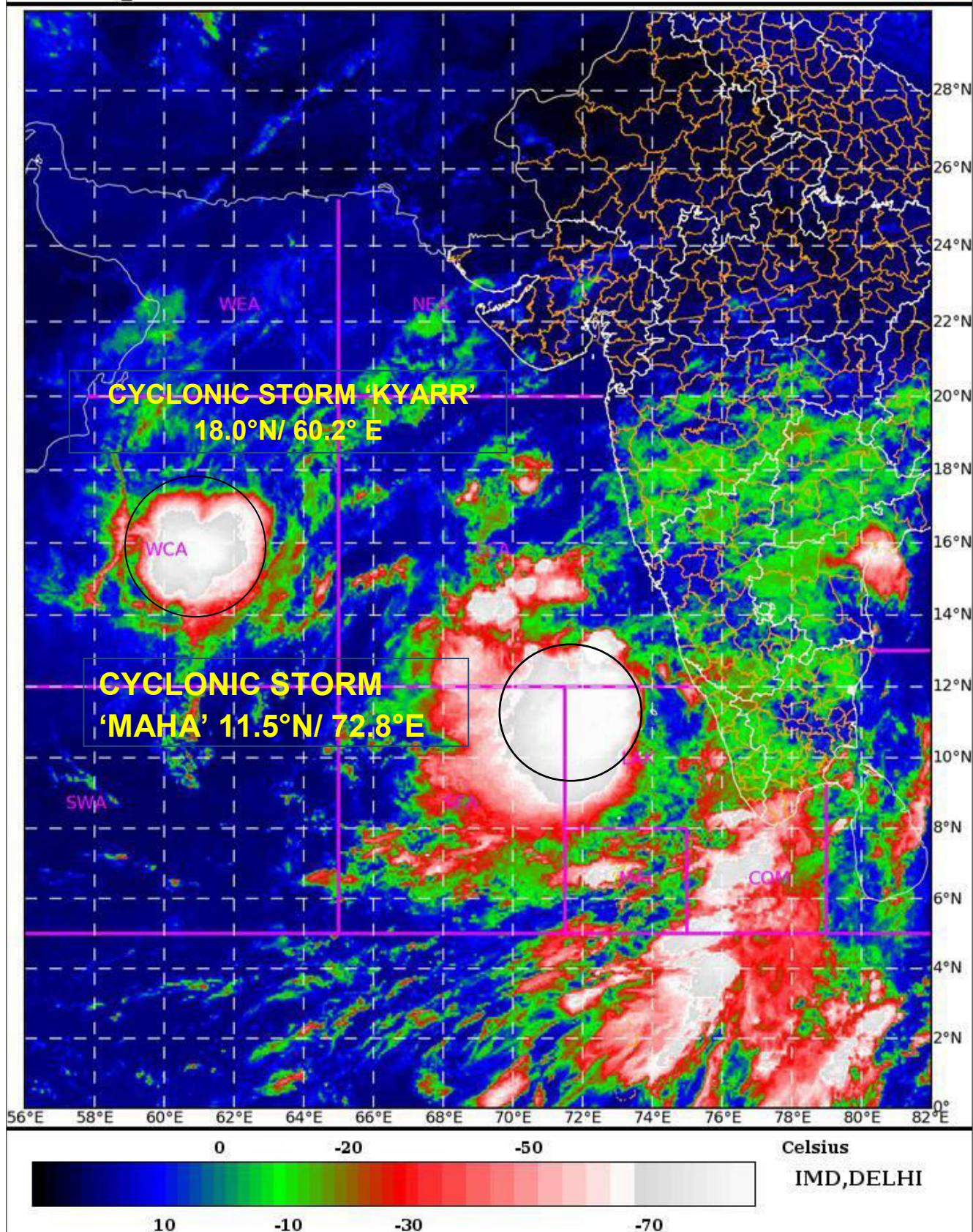
The next bulletin will be issued at 1430 hrs IST of 31st October, 2019.

**(Sunitha Devi S)
Scientist-E, RSMC, New Delhi**

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

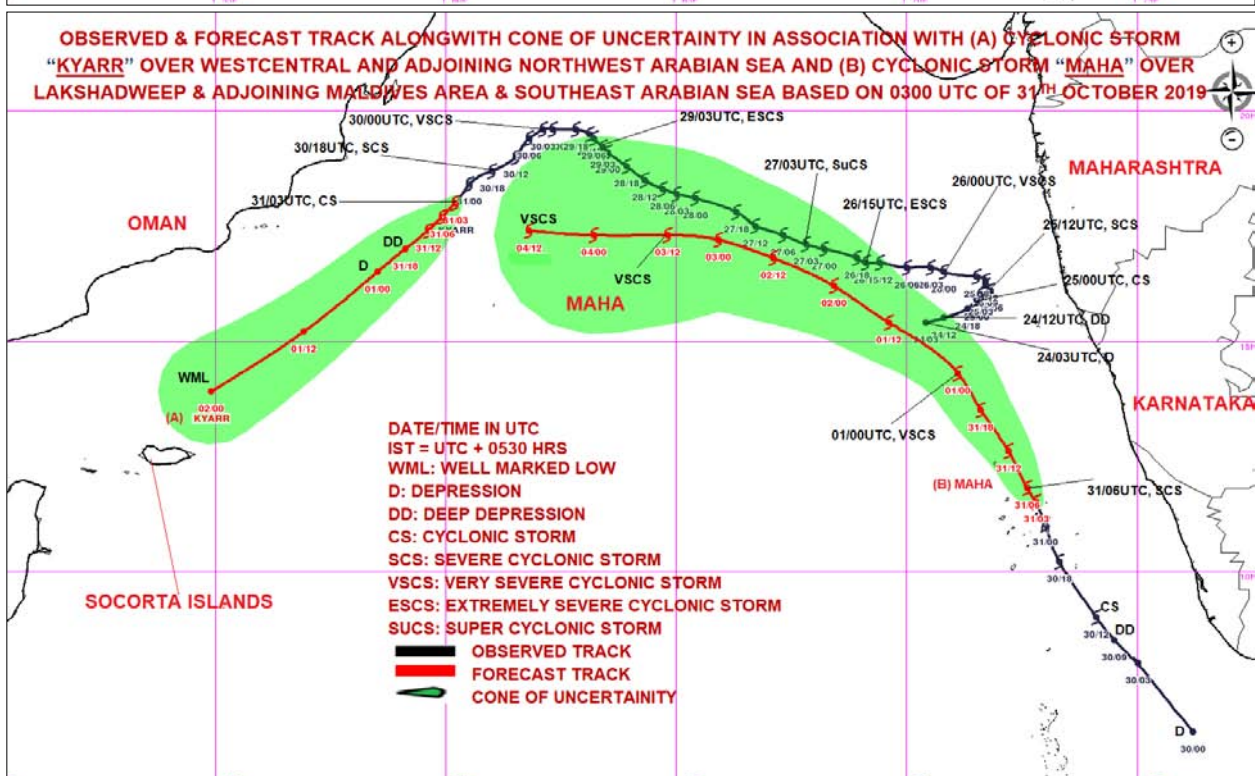
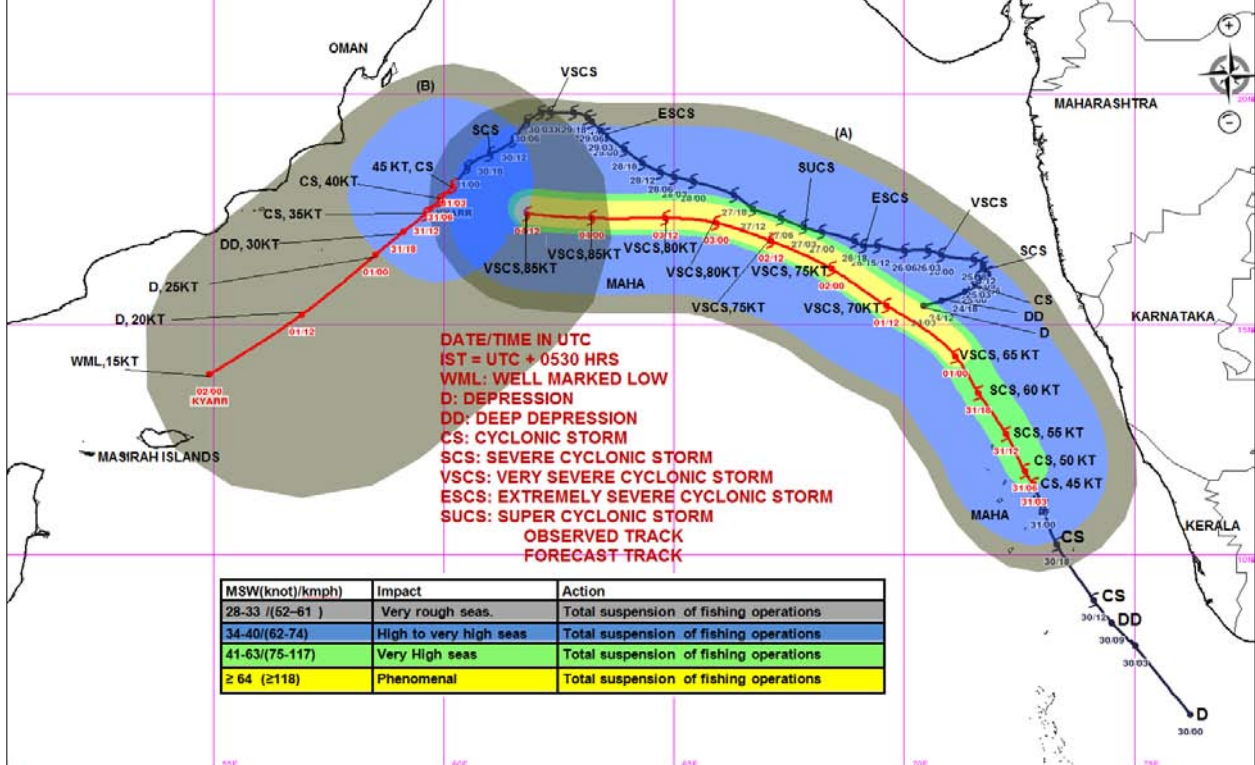
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

SAT : INSAT-3D IMG 31-10-2019/(0430 to 0456) GMT
 IMG_TIR1_TEMP 10.8 um 31-10-2019/(1000 to 1026) IST
 ARABIAN_SEA



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH (A) CYCLONIC STORM “MAHA” OVER LAKSHADWEEP & ADJOINING SOUTHEAST ARABIAN SEA AND (B) VERY SEVERE CYCLONIC STORM “KYARR” OVER WESTCENTRAL ARABIAN SEA AND BASED ON 0300 UTC OF 31ST OCTOBER 2019



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 10 (ARB/04/2019) and BULLETIN NO. : 55 (ARB/03/2019)

TIME OF ISSUE: 1430 HOURS IST

DATED: 31.10.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea and adjoining Lakshadweep area: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (RED MESSAGE)

(B) Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) over westcentral Arabian Sea.

BULLETIN NO. : 10 (ARB/04/2019)

(A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea and adjoining Lakshadweep area: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (RED MESSAGE)

The Cyclonic storm MAHA (Pronounced as M'maha) over Lakshadweep and adjoining southeast Arabian Sea moved further north-northwestwards with a speed of 17 kmph during past 06 hours, intensified into a **Severe Cyclonic Storm** and lay centered at 1130 hrs IST of 31st October, 2019 near latitude 11.9°N and longitude 72.8°E over eastcentral Arabian Sea and adjoining Lakshadweep area about 90 km north-northeast of Aminidivi (Lakshadweep), 150 km north-northeast of Kavaratti (Lakshadweep), 25 km east-northeast of Chetlat (Lakshadweep) and 330 km west-northwest of Kozhikode (Kerala). It is very likely to continue to move north-northwestwards across north Lakshadweep Islands during next 06 hours. Then, it is very likely to move northwestwards during subsequent 12 hours and thereafter move west-northwestwards. It is very likely to intensify into a very severe cyclonic storm over eastcentral Arabian Sea during 24 hours.

Aminidivi reported maximum wind speed of 83 kmph at 1130 hrs IST of today.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
31.10.19/1130	11.9/72.8	90-100 gusting to 110	Severe Cyclonic Storm
31.10.19/1730	12.8/72.2	100-110 gusting to 120	Severe Cyclonic Storm
31.10.19/2330	13.6/71.7	110-120 gusting to 135	Severe Cyclonic Storm
01.11.19/0530	14.3/71.2	120-130 gusting to 145	Very Severe Cyclonic Storm
01.11.19/1130	14.7/70.6	120-130 gusting to 145	Very Severe Cyclonic Storm
01.11.19/2330	15.8/69.2	130-140 gusting to 155	Very Severe Cyclonic Storm
02.11.19/1130	16.4/68.1	130-140 gusting to 155	Very Severe Cyclonic Storm
02.11.19/2330	16.9/67.0	135-145 gusting to 165	Very Severe Cyclonic Storm
03.11.19/1130	17.2/65.8	140-150 gusting to 170	Very Severe Cyclonic Storm
03.11.19/2330	17.2/64.4	145-155 gusting to 175	Very Severe Cyclonic Storm
04.11.19/1130	17.4/63.0	150-160 gusting to 180	Very Severe Cyclonic Storm
04.11.19/2330	17.6/61.7	150-160 gusting to 180	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at a few places and extremely heavy falls at isolated places very likely over Lakshadweep Islands during next 24 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over Kerala, coastal Karnataka and south Tamil Nadu during next 24 hours.

(ii) Wind warning

- Gale wind speed reaching 90-100 kmph gusting to 110 kmph is prevailing over eastcentral Arabian Sea and adjoining Lakshadweep area around the system centre. It is very likely to increase becoming 100-110 kmph gusting to 120 kmph over eastcentral Arabian Sea from from the midnight of today. Gale wind, speed reaching 80-90 kmph gusting to 100 kmph, likely to prevail over northern parts of Lakshadweep area and adjoining southeast Arabian Sea during the subsequent 24 hours and decrease gradually thereafter.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 120-130 kmph gusting to 145 kmph by 1st November Morning, 130-140 kmph gusting to 155 kmph likely over eastcentral Arabian Sea by midnight of 01st November and 150-160 kmph gusting to 180 kmph by 04th November morning.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Kerala- Karnataka coasts during next 24 hours.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph very likely to prevail over Comorin-Maldives area during next 06 hours and decrease thereafter.

(iii) Sea condition

- Sea conditions over Lakshadweep area and adjoining southeast Arabian Sea will be high to very high during next 24 hours and rough to very rough for subsequent 24 hours.
- Sea conditions will be rough to very rough over eastcentral & adjoining southeast Arabian Sea along & off Karnataka-Kerala coasts during next 24 hours.
- Sea condition over eastcentral Arabian Sea around the system centre will be high to very high during next 24 hours and phenomenal during subsequent 3 days.

(iv) Storm Surge Warning

- Tidal wave by about 1 meter height above the astronomical tides is very likely to inundate low lying areas of Lakshadweep Islands during next 12 hours.

(v) Fishermen Warning

- Total suspension of fishing operations over Comorin-Maldives during next 12 hours & Lakshadweep area and adjoining southeast Arabian Sea and along & off Kerala-Karnataka coasts during next 24 hours.
- The fishermen are advised not to venture over eastcentral Arabian Sea till 4th November, 2019.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(vi) Damage Expected over Lakshadweep Islands during next 12 hours:

- Major damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly.
- Damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Dead limbs blown from trees.
- Major damage to coastal crops.
- Damage to embankments/ salt pans.

BULLETIN NO. : 55 (ARB/03/2019)

(B) Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) over westcentral Arabian Sea

The **Cyclonic Storm 'Kyarr'** over westcentral Arabian Sea moved south-southwestwards with a speed of 13 Kmph during past 06 hrs and lay centred at 1130 hrs IST of 31st October, 2019 over westcentral Arabian Sea near latitude 17.7°N and longitude 60.1°E, about 1350 km west-southwest of Mumbai (Maharashtra), 640 km east-northeast of Salalah (Oman) and 350 km south-southeast of Masirah (Oman). It is very likely to move southwestwards across westcentral Arabian Sea during next 36 hours. It is very likely to weaken into a Deep Depression during next 12 hours and further into a Depression during subsequent 06 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
31.10.19/1130	17.7/60.1	70-80 gusting to 90	Cyclonic Storm
31.10.19/1730	17.4/59.8	60-70 gusting to 80	Cyclonic Storm
31.10.19/2330	17.0/59.4	50-60 gusting to 70	Deep Depression
01.11.19/0530	16.4/58.8	40-50 gusting to 60	Depression
01.11.19/1130	15.8/58.2	30-40 gusting to 50	Depression
01.11.19/2330	14.5/56.5	20-30 gusting to 40	Well Marked Low

Warnings:

(i) Wind warning

- Gale wind speed reaching 70-80 kmph gusting to 90 kmph is prevailing around the system centre over westcentral Arabian Sea. It is very likely to reduce gradually becoming 40-50 kmph gusting to 60 kmph in the morning of 01st November over westcentral Arabian Sea and 20-30 kmph gusting to 40 kmph by the midnight of 02nd November over westcentral Arabian Sea and decrease thereafter.

(ii) Sea condition

- Sea condition is very high over westcentral Arabian Sea around the system centre. It will become very rough on 01st November and rough during subsequent 12 hours and improve gradually thereafter.

(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea till 2nd November forenoon.

The next bulletin will be issued at 1730 hrs IST of 31st October, 2019.

**(Sunitha Devi S)
Scientist-E, RSMC, New Delhi**

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

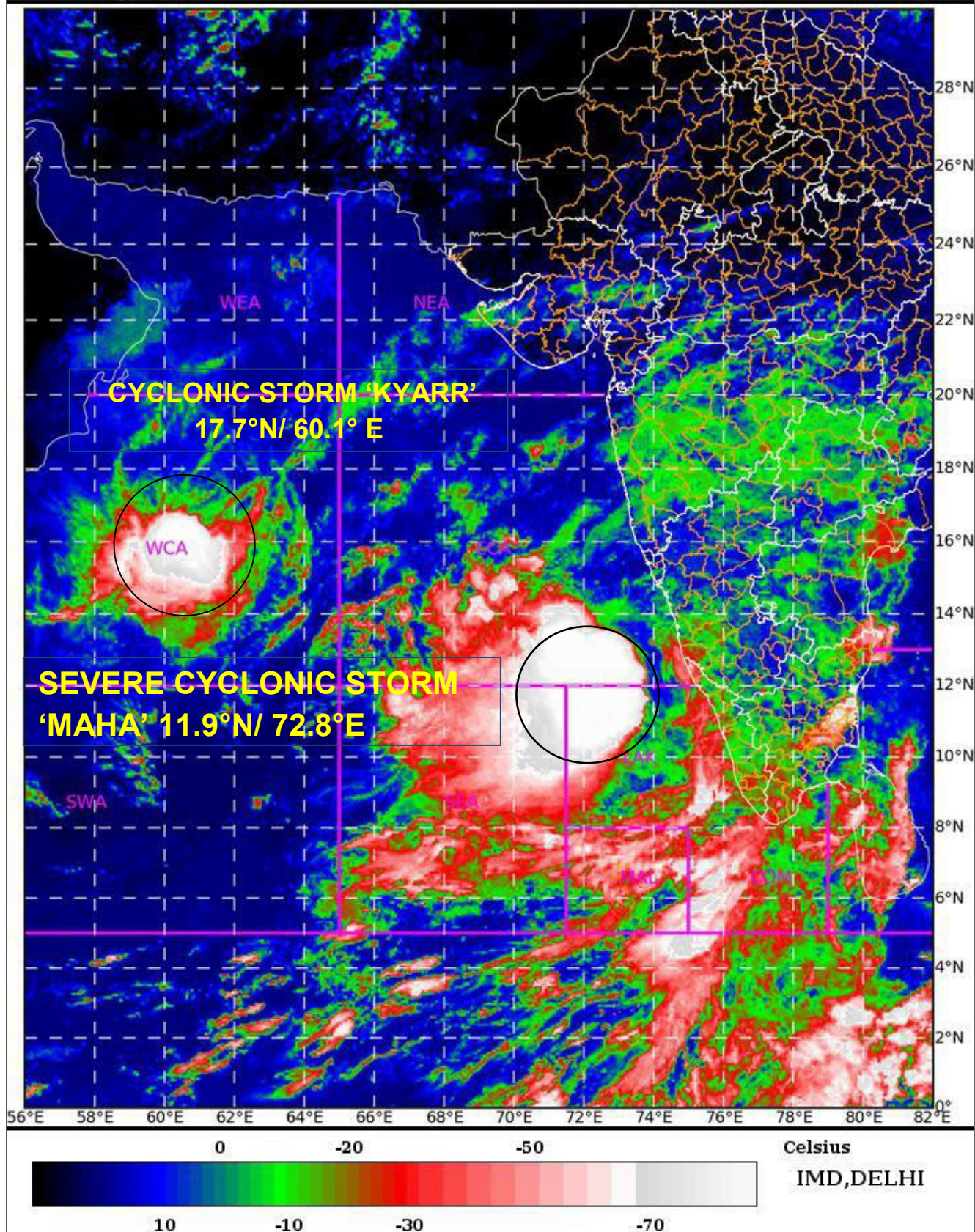
SAT : INSAT-3D IMG

31-10-2019/(0800 to 0827) GMT

IMG_TIR1_TEMP 10.8 um

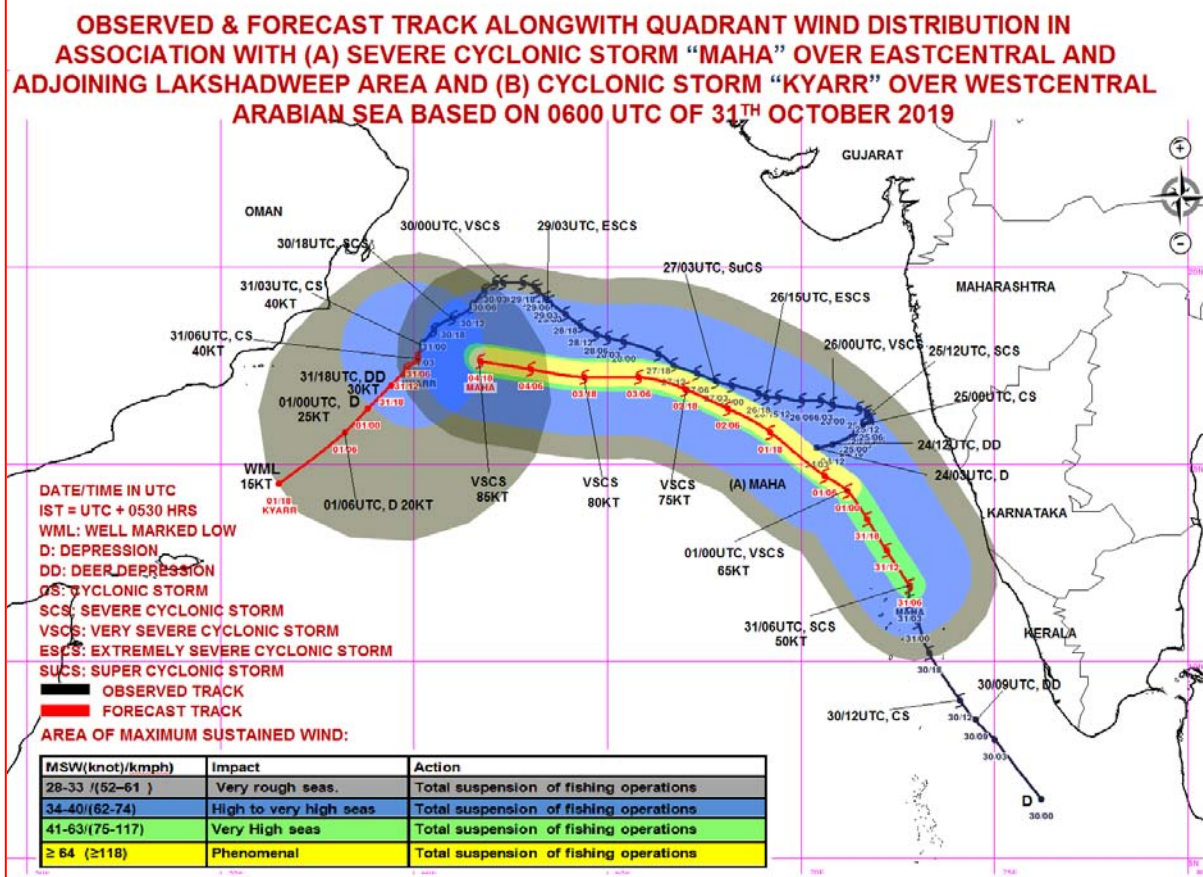
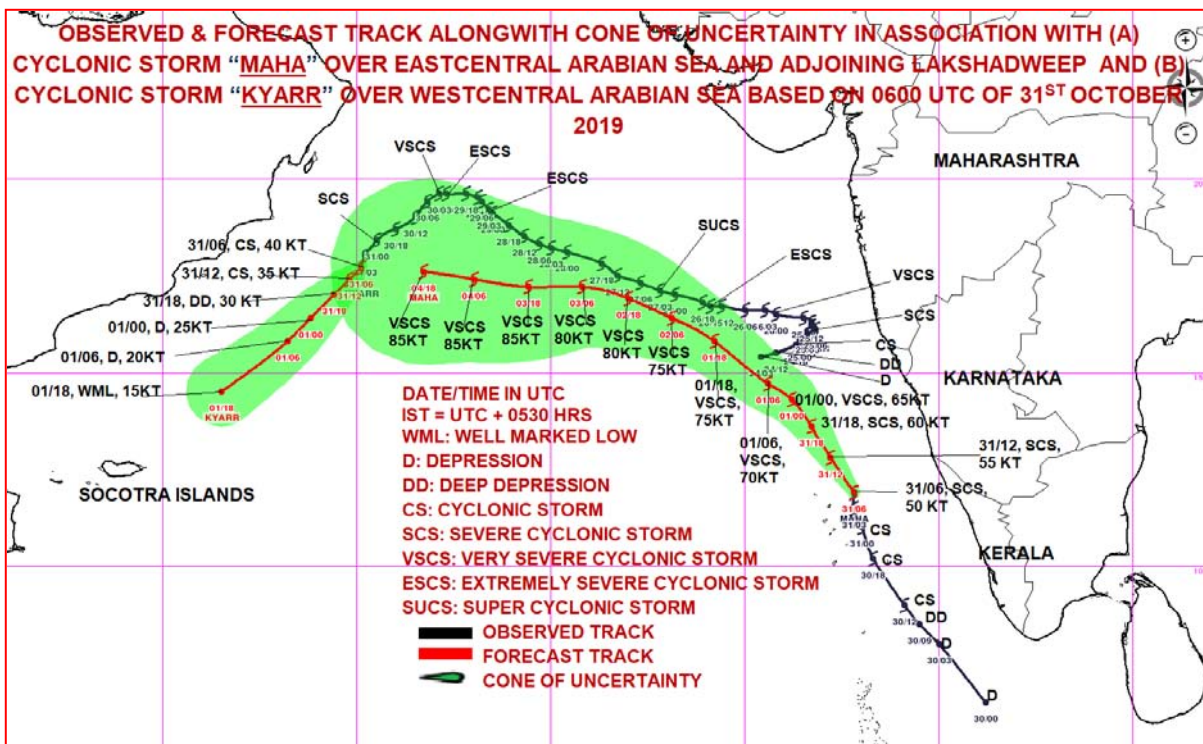
31-10-2019/(1330 to 1357) IST

ARABIAN_SEA



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 11 (ARB/04/2019) and BULLETIN NO. : 56 (ARB/03/2019)

TIME OF ISSUE: 1650 HOURS IST

DATED: 31.10.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea and adjoining Lakshadweep area: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (RED MESSAGE)

(B) Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) over westcentral Arabian Sea.

BULLETIN NO. : 11 (ARB/04/2019)

(A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea and adjoining Lakshadweep area: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (RED MESSAGE)

The Severe cyclonic storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea and adjoining Lakshadweep area moved northwards with a speed of 13 kmph during past 06 hours, and lay centered at 1430 hrs IST of 31st October, 2019 near latitude 12.3°N and longitude 72.8°E over eastcentral Arabian Sea and adjoining Lakshadweep area about 130 km north-northeast of Aminidivi (Lakshadweep), 200 km north-northeast of Kavaratti (Lakshadweep), 100 km northeast of Chetlat (Lakshadweep) and 340 km west-northwest of Kozhikode (Kerala). It is very likely to move north-northwestwards during next 06 hours. Then, it is very likely to move northwestwards during subsequent 06 hours and thereafter move west-northwestwards. It is very likely to intensify into a very severe cyclonic storm over eastcentral Arabian Sea during next 24 hours.

Aminidivi reported maximum wind speed of 72 kmph at 1430 hrs IST of today.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
31.10.19/1430	12.3/72.8	95-105 gusting to 115	Severe Cyclonic Storm
31.10.19/1730	12.8/72.2	100-110 gusting to 120	Severe Cyclonic Storm
31.10.19/2330	13.6/71.7	110-120 gusting to 135	Severe Cyclonic Storm
01.11.19/0530	14.3/71.2	120-130 gusting to 145	Very Severe Cyclonic Storm
01.11.19/1130	14.7/70.6	120-130 gusting to 145	Very Severe Cyclonic Storm
01.11.19/2330	15.8/69.2	130-140 gusting to 155	Very Severe Cyclonic Storm
02.11.19/1130	16.4/68.1	130-140 gusting to 155	Very Severe Cyclonic Storm
02.11.19/2330	16.9/67.0	135-145 gusting to 165	Very Severe Cyclonic Storm
03.11.19/1130	17.2/65.8	140-150 gusting to 170	Very Severe Cyclonic Storm
03.11.19/2330	17.2/64.4	145-155 gusting to 175	Very Severe Cyclonic Storm
04.11.19/1130	17.4/63.0	150-160 gusting to 180	Very Severe Cyclonic Storm
04.11.19/2330	17.6/61.7	150-160 gusting to 180	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at a few places and extremely heavy falls at isolated places very likely over Lakshadweep Islands during next 12 hours and isolated heavy to very heavy falls over north Lakshadweep during subsequent 12 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over Kerala, coastal Karnataka and south Tamil Nadu during next 24 hours.

(ii) Wind warning

- Gale wind speed reaching 95-105 kmph gusting to 115 kmph is prevailing over eastcentral Arabian Sea and adjoining Lakshadweep area around the system centre.
- It is very likely to decrease gradually over Lakshadweep area as the system moves northward, becoming 60-70 kmph gusting to 80 kmph by early hours of 1st November and 45-55kmph gusting to 65 kmph by 1st November morning.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 120-130 kmph gusting to 145 kmph by 1st November Morning, 130-140 kmph gusting to 155 kmph likely over eastcentral Arabian Sea by midnight of 01st November and 150-160 kmph gusting to 180 kmph by 04th November morning.
- Squally wind speed reaching 45-55 kmph gusting to 65 kmph likely along & off Kerala- Karnataka coasts and strong winds, speed reaching 30-40 kmph gusting to 50 kmph along & off Goa- south Maharashtra coasts during next 24 hours.

(iii) Sea condition

- Sea conditions over Lakshadweep area and adjoining southeast Arabian Sea will be high to very high during next 12 hours and rough to very rough for subsequent 12 hours.
- Sea conditions will be rough to very rough over eastcentral & adjoining southeast Arabian Sea along & off Karnataka-Kerala coasts and rough along and off Goa – south Maharashtra coast during next 24 hours.
- Sea condition over eastcentral Arabian Sea around the system centre will be high to very high during next 24 hours and phenomenal during subsequent 3 days.

(iv) Storm Surge Warning

- Tidal wave by about 1 meter height above the astronomical tides is very likely to inundate low lying areas of north Lakshadweep Islands during next 06 hours.

(v) Fishermen Warning

- Total suspension of fishing operations over Comorin-Maldives during next 12 hours & Lakshadweep area and adjoining southeast Arabian Sea and along & off Kerala-Karnataka coasts during next 24 hours.
- The fishermen are advised not to venture over eastcentral Arabian Sea till 4th November, 2019.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(vi) Damage Expected over Lakshadweep Islands during next 06 hours:

- Major damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly.
- Damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Dead limbs blown from trees.
- Major damage to coastal crops.
- Damage to embankments/ salt pans.

BULLETIN NO. : 56 (ARB/03/2019)

(B) Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) over westcentral Arabian Sea

The **Cyclonic Storm 'Kyarr'** over westcentral Arabian Sea moved south-southwestwards with a speed of 10 Kmph during past 06 hrs and lay centred at 1430 hrs IST of 31st October, 2019 over westcentral Arabian Sea near latitude 17.5°N and longitude 60.0°E, about 1360 km west-southwest of Mumbai (Maharashtra), 650 km east-northeast of Salalah (Oman) and 350 km south-southeast of Masirah (Oman). It is very likely to move southwestwards across westcentral Arabian Sea during next 36 hours. It is very likely to weaken into a Deep Depression during next 12 hours and further into a Depression during subsequent 06 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
31.10.19/1430	17.5/60.0	65-75 gusting to 85	Cyclonic Storm
31.10.19/1730	17.3/59.8	60-70 gusting to 80	Cyclonic Storm
31.10.19/2330	17.0/59.4	50-60 gusting to 70	Deep Depression
01.11.19/0530	16.4/58.8	40-50 gusting to 60	Depression
01.11.19/1130	15.8/58.2	30-40 gusting to 50	Depression
01.11.19/2330	14.5/56.5	20-30 gusting to 40	Well Marked Low

Warnings:

(i) Wind warning

- Gale wind speed reaching 65-75 kmph gusting to 85 kmph is prevailing around the system centre over westcentral Arabian Sea. It is very likely to reduce gradually becoming 40-50 kmph gusting to 60 kmph in the morning of 01st November over westcentral Arabian Sea and 20-30 kmph gusting to 40 kmph by the midnight of 02nd November over westcentral Arabian Sea and decrease thereafter.

(ii) Sea condition

- Sea condition is high over westcentral Arabian Sea around the system centre. It will become very rough on 01st November and rough during subsequent 12 hours and improve gradually thereafter.

(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea during next 24 hours.

The next bulletin will be issued at 2030 hrs IST of 31st October, 2019.

**(Sunitha Devi S)
Scientist-E, RSMC, New Delhi**

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

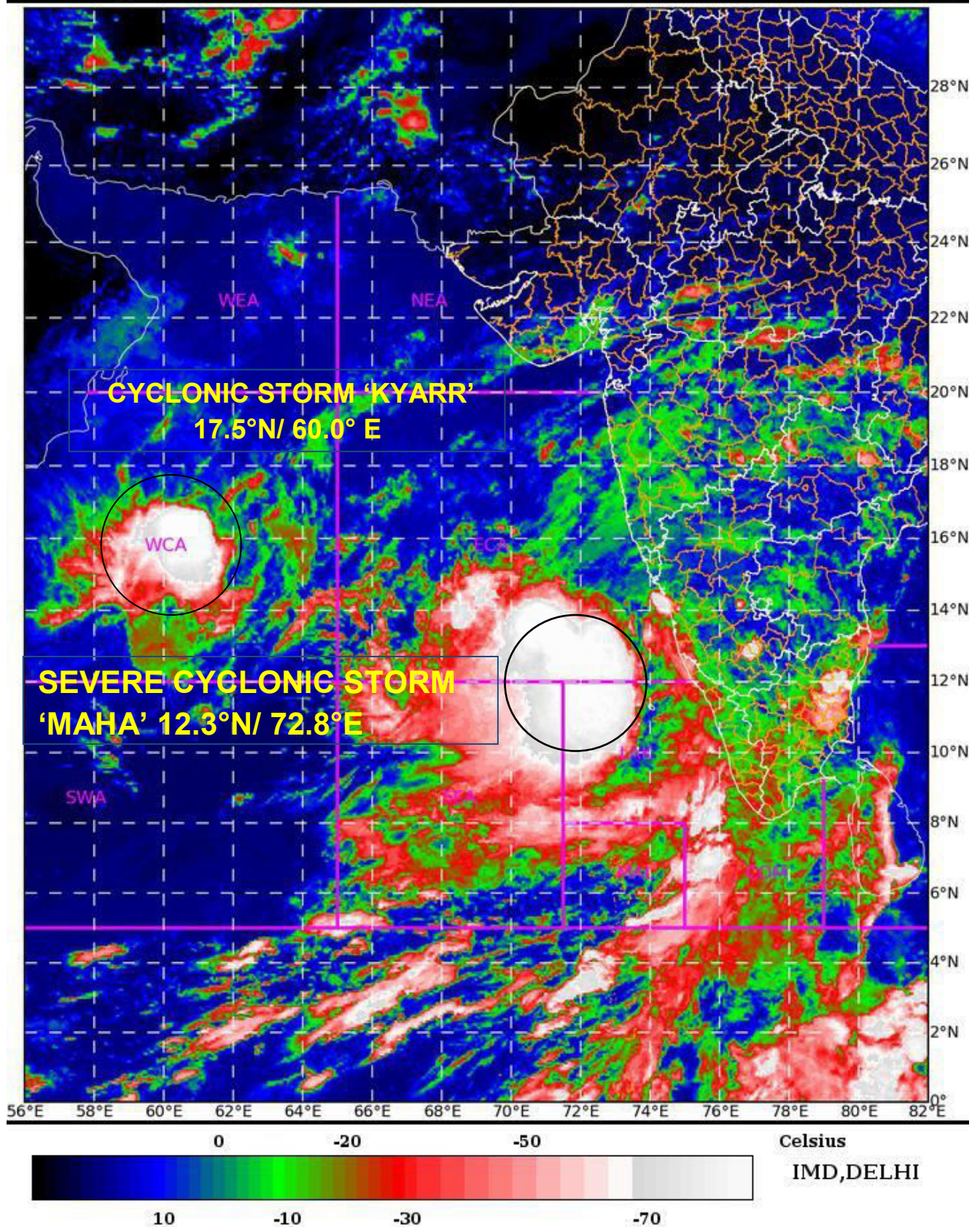
SAT : INSAT-3D IMG

31-10-2019/(1000 to 1026) GMT

IMG_TIR1_TEMP 10.8 um

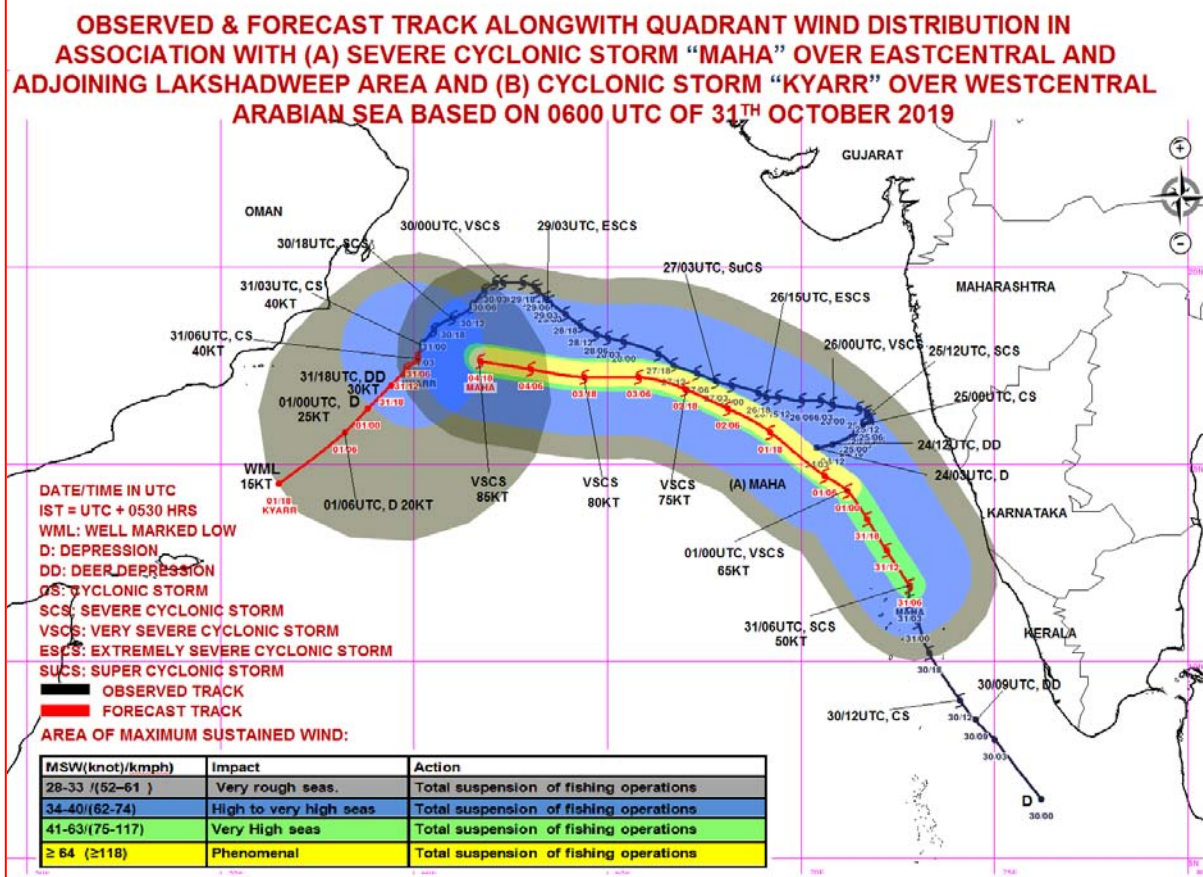
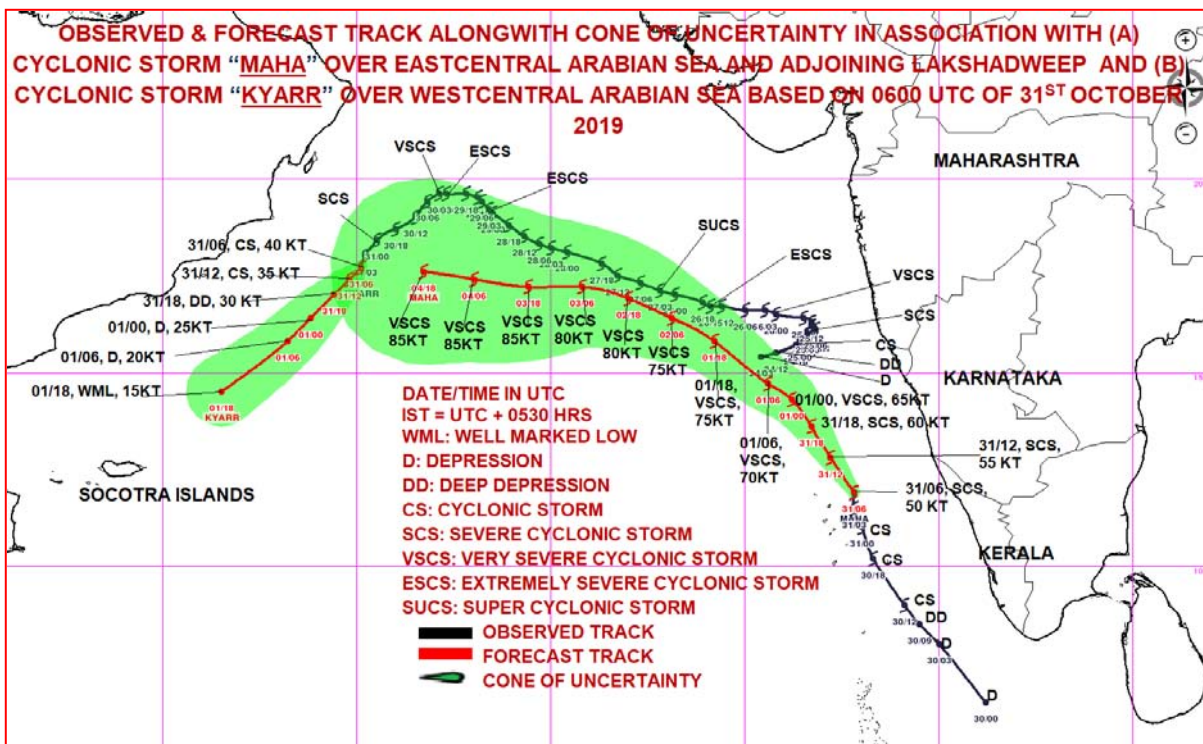
31-10-2019/(1530 to 1556) IST

ARABIAN_SEA



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 12 (ARB/04/2019) and BULLETIN NO. : 57 (ARB/03/2019)

TIME OF ISSUE: 1900 HOURS IST

DATED: 31.10.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea and adjoining Lakshadweep area: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (RED MESSAGE)

(B) Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) over westcentral Arabian Sea.

BULLETIN NO. : 12 (ARB/04/2019)

(A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea and adjoining Lakshadweep area: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (RED MESSAGE)

The Severe cyclonic storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea and adjoining Lakshadweep area moved north-northwestwards with a speed of 18 kmph during past 06 hours, crossed Lakshadweep Islands and lay centered at 1730 hrs IST of today, the 31st October, 2019 near latitude 12.8°N and longitude 72.4°E over eastcentral Arabian Sea and adjoining Lakshadweep area about 080 km northeast of Cherbaniani Reef (Lakshadweep), 120 km north-northeast of Cheriapani Reef (Lakshadweep), 130 km northeast of Chetlat (Lakshadweep), 190 km north-northeast of Aminidivi (Lakshadweep), 250 km north-northeast of Kavaratti (Lakshadweep), and 400 km west-northwest of Kozhikode (Kerala). It is very likely to move north-northwestwards during next 06 hours. Then, it is very likely to move northwestwards during subsequent 06 hours and thereafter move west-northwestwards. It is very likely to intensify into a very severe cyclonic storm over eastcentral Arabian Sea during next 24 hours.

Aminidivi reported maximum wind speed of 59 kmph at 1730 hrs IST of today.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
31.10.19/1730	12.8/72.4	90-100 gusting to 110	Severe Cyclonic Storm
31.10.19/2330	13.6/71.7	100-110 gusting to 120	Severe Cyclonic Storm
01.11.19/0530	14.3/71.2	110-120 gusting to 135	Severe Cyclonic Storm
01.11.19/1130	14.7/70.6	120-130 gusting to 145	Very Severe Cyclonic Storm
01.11.19/1730	15.3/69.9	120-130 gusting to 145	Very Severe Cyclonic Storm
02.11.19/0530	16.1/68.7	130-140 gusting to 155	Very Severe Cyclonic Storm
02.11.19/1730	16.6/67.6	130-140 gusting to 155	Very Severe Cyclonic Storm
03.11.19/0530	17.0/66.4	135-145 gusting to 160	Very Severe Cyclonic Storm
03.11.19/1730	17.2/65.1	135-145 gusting to 160	Very Severe Cyclonic Storm
04.11.19/0530	17.3/63.7	145-155 gusting to 170	Very Severe Cyclonic Storm
04.11.19/1730	17.5/62.3	145-155 gusting to 170	Very Severe Cyclonic Storm
05.11.19/0530	17.7/60.9	150-160 gusting to 175	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at a few places and extremely heavy falls at isolated places very likely over Lakshadweep Islands during next 12 hours and isolated heavy to very heavy falls over north Lakshadweep during subsequent 12 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over Kerala, coastal Karnataka and south Tamil Nadu during next 24 hours.

(ii) Wind warning

- Gale wind speed reaching 90-100 kmph gusting to 110 kmph is prevailing over eastcentral Arabian Sea and adjoining Lakshadweep area around the system centre.
- It is very likely to decrease gradually over Lakshadweep area as the system moves further away from the Islands, becoming 60-70 kmph gusting to 80 kmph by the night of 31st October and 45-55kmph gusting to 65 kmph by 1st November morning.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 120-130 kmph gusting to 145 kmph by 1st November Morning, 130-140 kmph gusting to 155 kmph likely over eastcentral Arabian Sea by midnight of 01st November and 150-160 kmph gusting to 175 kmph by 04th November night.
- Squally wind speed reaching 45-55 kmph gusting to 65 kmph likely along & off Kerala- Karnataka coasts and strong winds, speed reaching 30-40 kmph gusting to 50 kmph along & off Goa- south Maharashtra coasts during next 24 hours.

(iii) Sea condition

- Sea conditions over Lakshadweep area and adjoining southeast Arabian Sea will be high to very high during next 12 hours and rough to very rough for subsequent 12 hours.
- Sea conditions will be rough to very rough over eastcentral & adjoining southeast Arabian Sea along & off Karnataka-Kerala coasts and rough along and off Goa – south Maharashtra coast during next 24 hours.
- Sea condition over eastcentral Arabian Sea around the system centre will be high to very high during next 24 hours and phenomenal during subsequent 3 days.

(iv) Storm Surge Warning

- Tidal wave by about 0.5 meter height above the astronomical tides is very likely to inundate low lying areas of north Lakshadweep Islands during next 03 hours.

(v) Fishermen Warning

- Total suspension of fishing operations over Comorin-Maldives during next 12 hours & Lakshadweep area and adjoining southeast Arabian Sea and along & off Kerala-Karnataka coasts during next 24 hours.
- The fishermen are advised not to venture over eastcentral Arabian Sea till 4th November, 2019.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(vi) Damage Expected over Lakshadweep Islands during next 06 hours:

- Major damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly.
- Damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Dead limbs blown from trees.
- Major damage to coastal crops.
- Damage to embankments/ salt pans.

BULLETIN NO. : 57 (ARB/03/2019)

(B) Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) over westcentral Arabian Sea

The **Cyclonic Storm 'Kyarr'** over westcentral Arabian Sea moved south-southwestwards with a speed of 07 Kmph during past 06 hrs and lay centred at 1730 hrs IST of 31st October, 2019 over westcentral Arabian Sea near latitude 17.4°N and longitude 59.9°E, about 1380 km west-southwest of Mumbai (Maharashtra), 620 km east-northeast of Salalah (Oman) and 380 km south-southeast of Masirah (Oman). It is very likely to move southwestwards across westcentral Arabian Sea during next 24 hours. It is very likely to weaken into a Deep Depression during next 06 hours and further into a Depression during subsequent 06 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
31.10.19/1730	17.4/59.9	60-70 gusting to 80	Cyclonic Storm
31.10.19/2330	17.0/59.6	50-60 gusting to 70	Deep Depression
01.11.19/0530	16.4/59.2	40-50 gusting to 60	Depression
01.11.19/1130	15.8/58.7	30-40 gusting to 50	Depression

Warnings:

(i) Wind warning

- Gale wind speed reaching 60-70 kmph gusting to 80 kmph is prevailing around the system centre over westcentral Arabian Sea. It is very likely to reduce gradually becoming 40-50 kmph gusting to 60 kmph in the morning of 01st November over westcentral Arabian Sea and 30-40 kmph gusting to 50 kmph by the forenoon of 1st November over westcentral Arabian Sea and decrease thereafter.

(ii) Sea condition

- Sea condition is high over westcentral Arabian Sea around the system centre. It will become very rough on 01st November and rough during subsequent 12 hours and improve gradually thereafter.

(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea during next 24 hours.

The next bulletin will be issued at 2330 hrs IST of 31st October, 2019.

(RK JENAMANI)
Scientist-F, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

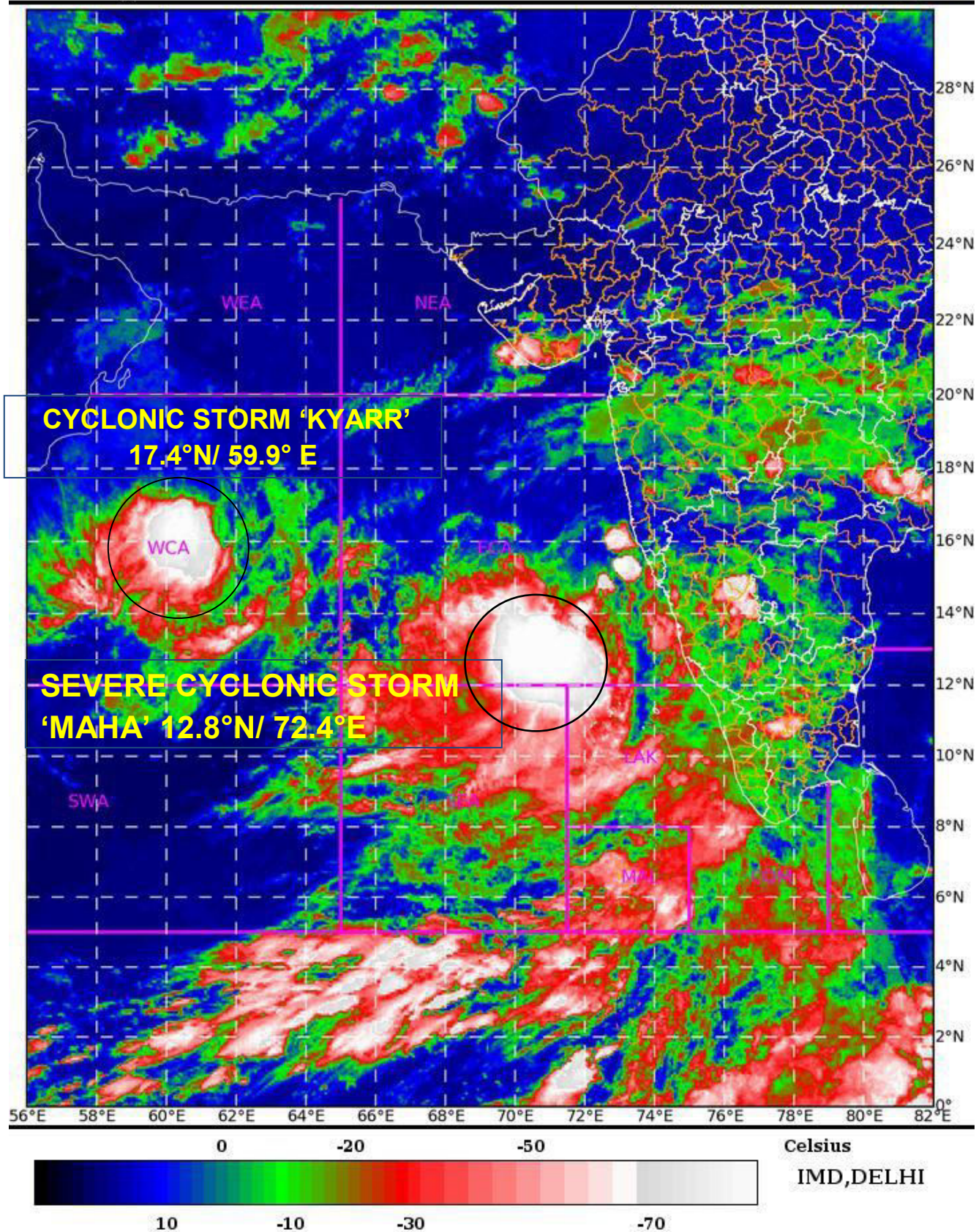
SAT : INSAT-3D IMG

31-10-2019/(1330 to 1356) GMT

IMG_TIR1_TEMP 10.8 um

31-10-2019/(1900 to 1926) IST

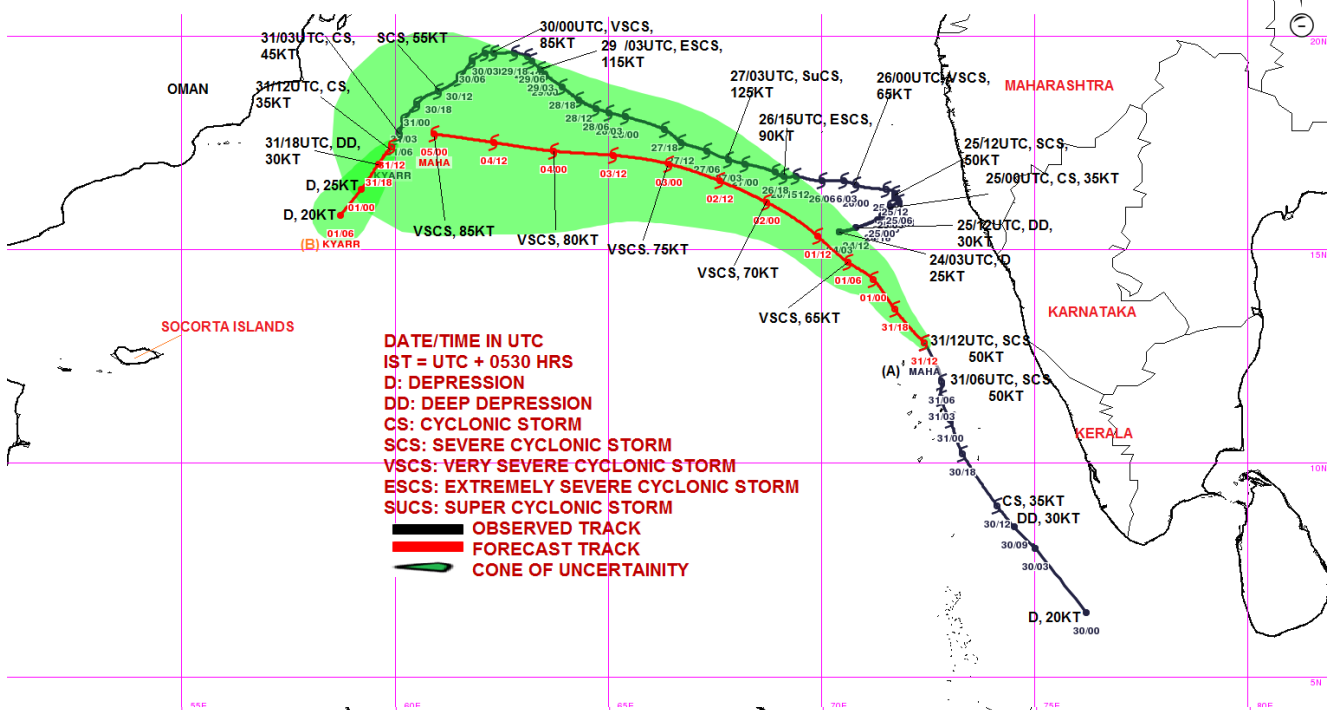
ARABIAN SEA



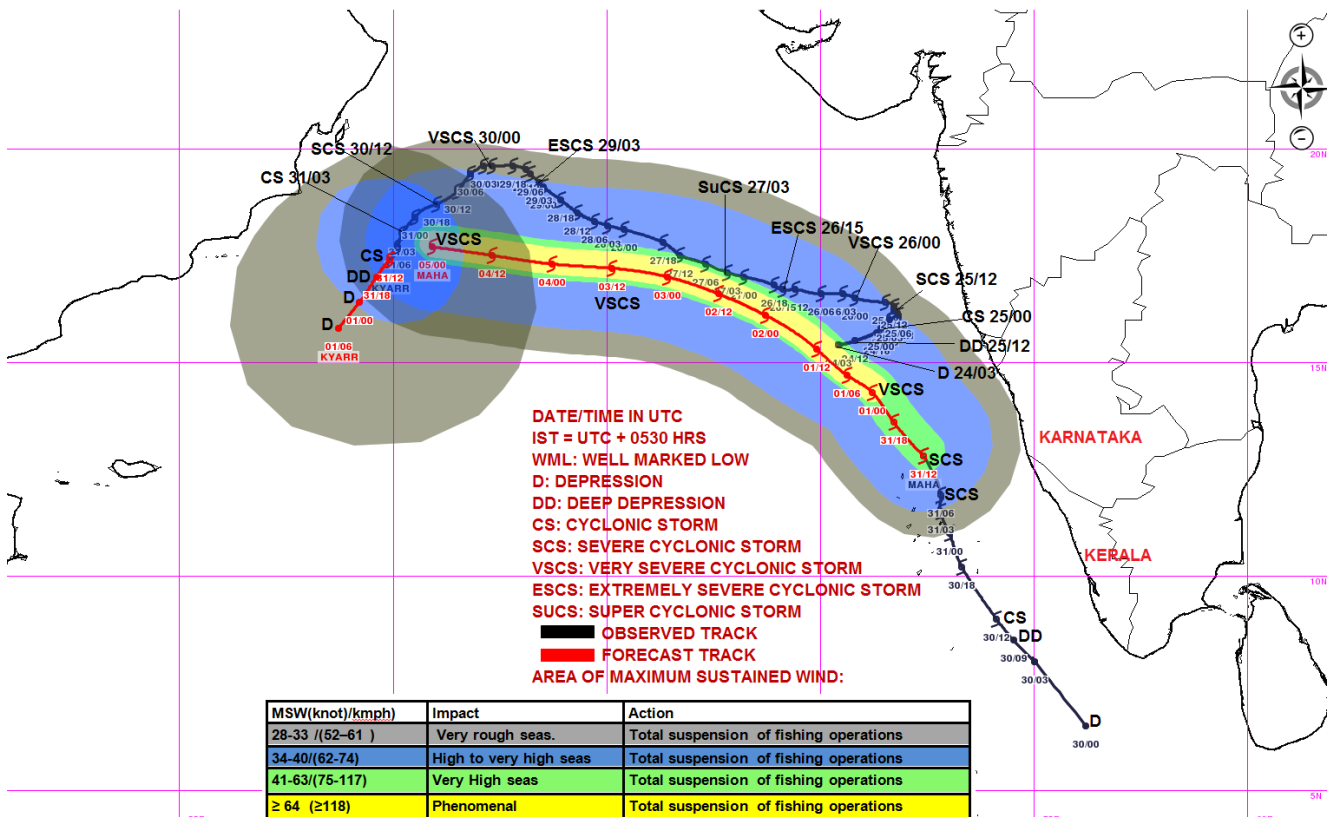
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH (A) SEVERE CYCLONIC STORM “MAHA” OVER EASTCENTRAL ARABIAN SEA AND ADJOINING LAKSHADWEEP AREA AND (B) CYCLONIC STORM “KYARR” OVER WESTCENTRAL ARABIAN SEA BASED ON 1200 UTC OF 31ST OCTOBER 2019



OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH (A) SEVERE CYCLONIC STORM “MAHA” OVER EASTCENTRAL ARABIAN SEA AND ADJOINING LAKSHADWEEP AREA AND (B) CYCLONIC STORM “KYARR” OVER WESTCENTRAL ARABIAN SEA BASED ON 1200 UTC OF 31ST OCTOBER 2019



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 13 (ARB/04/2019) and BULLETIN NO. : 58 (ARB/03/2019)

TIME OF ISSUE: 2230 HOURS IST

DATED: 31.10.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea and adjoining Lakshadweep area: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (RED MESSAGE)

(B) Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) weakened into a Deep Depression over westcentral Arabian Sea.

BULLETIN NO. : 13 (ARB/04/2019)

(A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea and adjoining Lakshadweep area: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (RED MESSAGE)

The Severe cyclonic storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea and adjoining Lakshadweep area moved north-northwestwards with a speed of 21 kmph during past 06 hours, crossed Lakshadweep Islands and lay centered at 2030 hrs IST of today, the 31st October, 2019 near latitude 13.3°N and longitude 72.2°E over eastcentral Arabian Sea and adjoining Lakshadweep area about 110 km north-northwest of Cherbaniani Reef (Lakshadweep), 160 km north-northwest of Cheriapani Reef (Lakshadweep), 190 km north-northwest of Chetlat (Lakshadweep), 250 km north-northwest of Aminidivi (Lakshadweep), 310 km north of Kavaratti (Lakshadweep), and 450 km northwest of Kozhikode (Kerala). It is very likely to move north-northwestwards during next 06 hours. Then, it is very likely to move northwestwards during subsequent 06 hours and thereafter move west-northwestwards. It is very likely to intensify into a very severe cyclonic storm over eastcentral Arabian Sea during next 24 hours.

Aminidivi reported maximum wind speed of 45 kmph at 2030 hrs IST of today.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
31.10.19/2030	13.3/72.2	95-105 gusting to 115	Severe Cyclonic Storm
31.10.19/2330	13.6/71.7	100-110 gusting to 120	Severe Cyclonic Storm
01.11.19/0530	14.3/71.2	105-115 gusting to 125	Severe Cyclonic Storm
01.11.19/1130	14.7/70.6	110-120 gusting to 130	Very Severe Cyclonic Storm
01.11.19/1730	15.3/69.9	120-130 gusting to 145	Very Severe Cyclonic Storm
02.11.19/0530	16.1/68.7	125-135 gusting to 150	Very Severe Cyclonic Storm
02.11.19/1730	16.6/67.6	130-140 gusting to 155	Very Severe Cyclonic Storm
03.11.19/0530	17.0/66.4	135-145 gusting to 160	Very Severe Cyclonic Storm
03.11.19/1730	17.2/65.1	140-150 gusting to 165	Very Severe Cyclonic Storm
04.11.19/0530	17.3/63.7	145-155 gusting to 170	Very Severe Cyclonic Storm
04.11.19/1730	17.5/62.3	145-155 gusting to 170	Very Severe Cyclonic Storm
05.11.19/0530	17.7/60.9	150-160 gusting to 175	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at a few places and extremely heavy falls at isolated places very likely over Lakshadweep Islands during next 12 hours and isolated heavy to very heavy falls over north Lakshadweep during subsequent 12 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over Kerala, coastal Karnataka and south Tamil Nadu during next 24 hours.

(ii) Wind warning

- Gale wind speed reaching 95-105 kmph gusting to 115 kmph is prevailing over eastcentral Arabian Sea and adjoining Lakshadweep area around the system centre.
- It is very likely to decrease gradually over Lakshadweep area as the system moves further away from the Islands, becoming 60-70 kmph gusting to 80 kmph by the night of 31st October and 45-55kmph gusting to 65 kmph by 1st November morning.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 120-130 kmph gusting to 145 kmph by 1st November Morning, 130-140 kmph gusting to 155 kmph likely over eastcentral Arabian Sea by midnight of 01st November and 145-155 kmph gusting to 170 kmph by 04th November night.
- Squally wind speed reaching 45-55 kmph gusting to 65 kmph likely along & off Kerala- Karnataka coasts and strong winds, speed reaching 30-40 kmph gusting to 50 kmph along & off Goa- south Maharashtra coasts during next 24 hours.

(iii) Sea condition

- Sea conditions over Lakshadweep area and adjoining southeast Arabian Sea will be high to very high during next 12 hours and rough to very rough for subsequent 12 hours.
- Sea conditions will be rough to very rough over eastcentral & adjoining southeast Arabian Sea along & off Karnataka-Kerala coasts and rough along and off Goa – south Maharashtra coast during next 24 hours.
- Sea condition over eastcentral Arabian Sea around the system centre will be high to very high during next 24 hours and phenomenal during subsequent 3 days.

(v) Fishermen Warning

- Total suspension of fishing operations over Comorin-Maldives during next 12 hours & Lakshadweep area and adjoining southeast Arabian Sea and along & off Kerala-Karnataka coasts during next 24 hours.
- The fishermen are advised not to venture over eastcentral Arabian Sea till 4th November, 2019.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(vi) Damage Expected over Lakshadweep Islands during next 06 hours:

- Major damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly.
- Damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Dead limbs blown from trees.
- Major damage to coastal crops.
- Damage to embankments/ salt pans.

BULLETIN NO. : 58(ARB/03/2019)

(B) Cyclonic Storm 'Kyarr' (Pronounced as Kyarr) weakened into a Deep Depression over westcentral Arabian Sea

The **Cyclonic Storm 'Kyarr'** over westcentral Arabian Sea moved west-southwestwards with a speed of 09 Kmph during past 06 hrs, weakened into a Deep Depression and lay centred at 2030 hrs IST of 31st October, 2019 over westcentral Arabian Sea near latitude 17.2°N and longitude 59.6°E, about 1410 km west-southwest of Mumbai (Maharashtra), 580 km east-northeast of Salalah (Oman) and 390 km south-southeast of Masirah (Oman). It is very likely to move southwestwards across westcentral Arabian Sea during next 24 hours. It is very likely to weaken further into a Depression during next 12 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
31.10.19/2030	17.2/59.6	55-65 gusting to 75	Deep Depression
31.10.19/2330	17.0/59.3	50-60 gusting to 70	Deep Depression
01.11.19/0530	16.4/59.0	40-50 gusting to 60	Depression
01.11.19/1130	15.8/58.7	35-45 gusting to 55	Depression

Warnings:

(i) Wind warning

- Gale wind speed reaching 55-65 kmph gusting to 75 kmph is prevailing around the system centre over westcentral Arabian Sea. It is very likely to reduce gradually becoming 40-50 kmph gusting to 60 kmph in the morning of 01st November over westcentral Arabian Sea and 35-45 kmph gusting to 55 kmph by the forenoon of 1st November over westcentral Arabian Sea and decrease thereafter.

(ii) Sea condition

- Sea condition is high over westcentral Arabian Sea around the system centre. It will become very rough on 01st November and rough during subsequent 12 hours and improve gradually thereafter.

(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea during next 24 hours.

The next bulletin will be issued at 0230 hrs IST of 01st November, 2019.

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

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

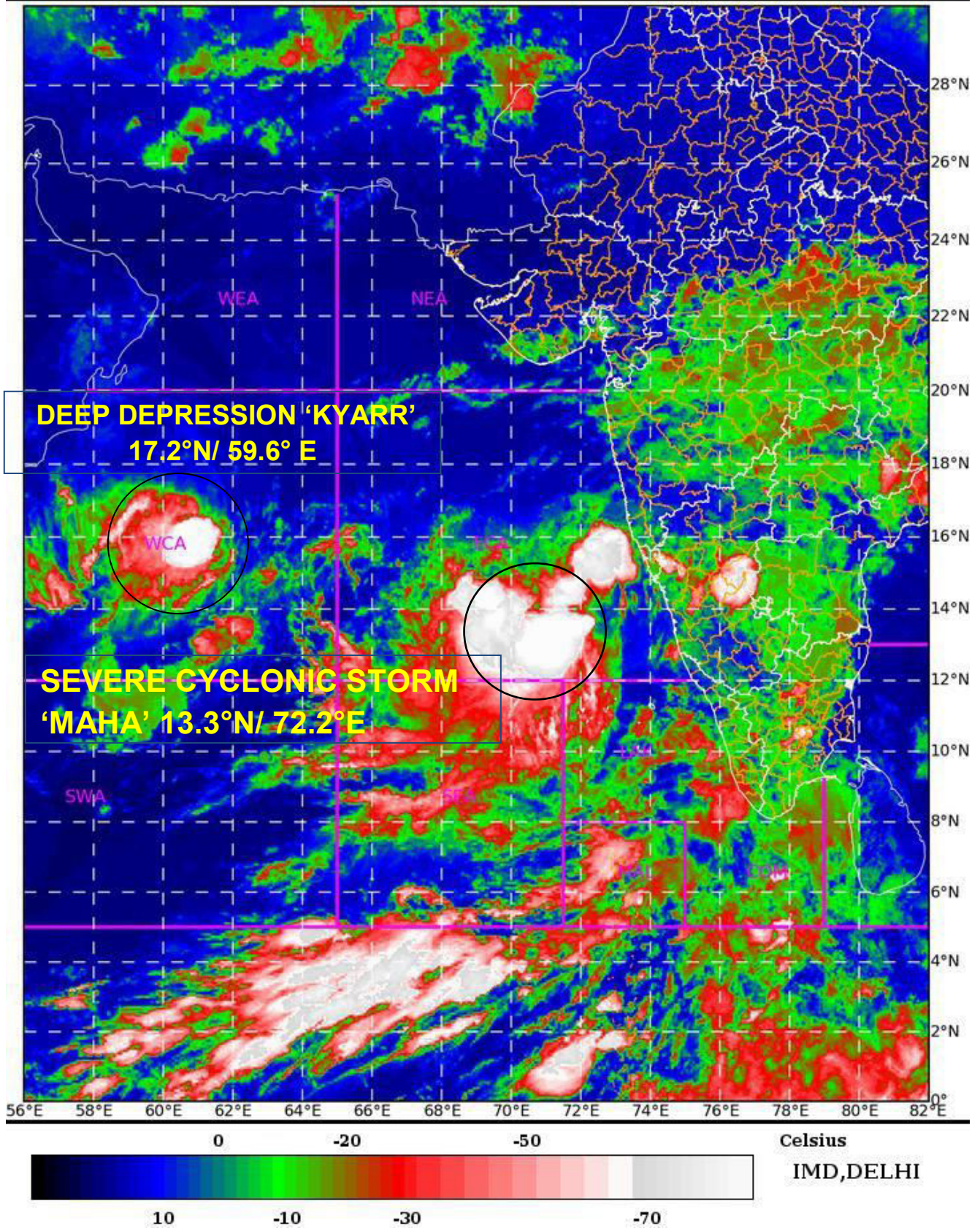
SAT : INSAT-3D IMG

31-10-2019/(1600 to 1626) GMT

IMG_TIR1_TEMP 10.8 um

31-10-2019/(2130 to 2156) IST

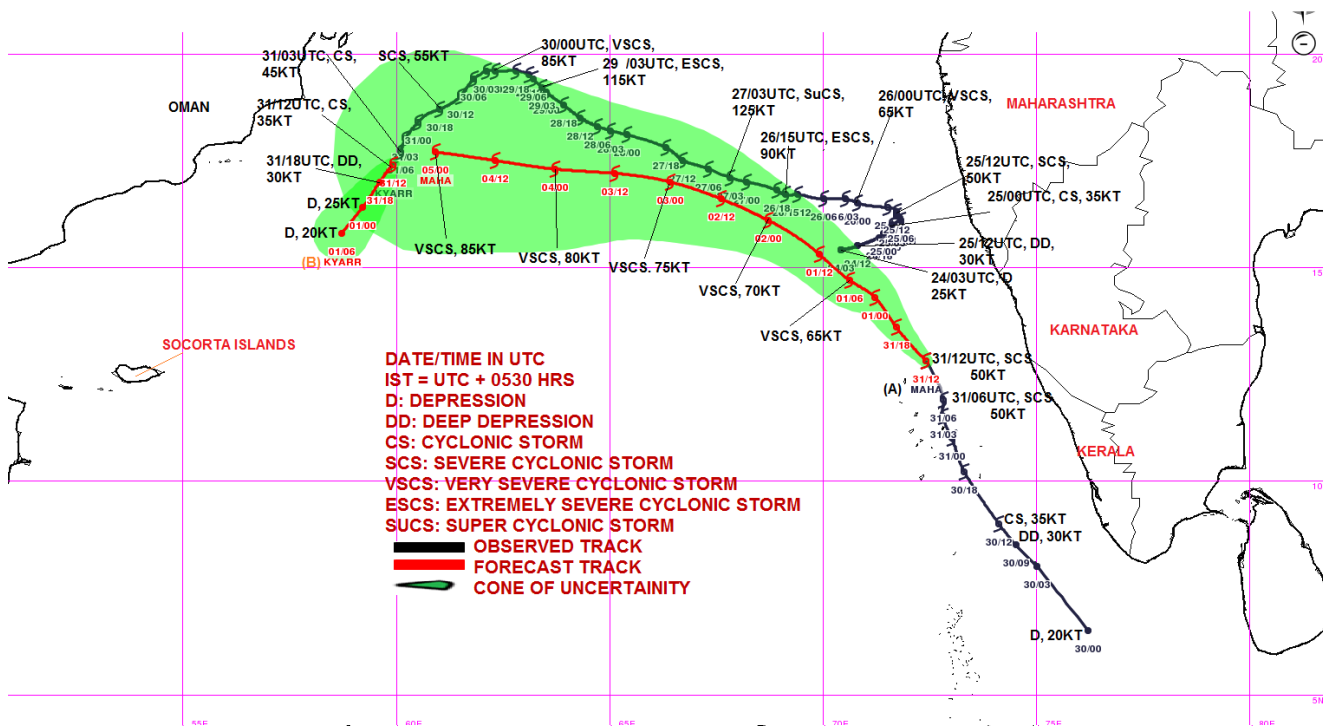
ARABIAN SEA



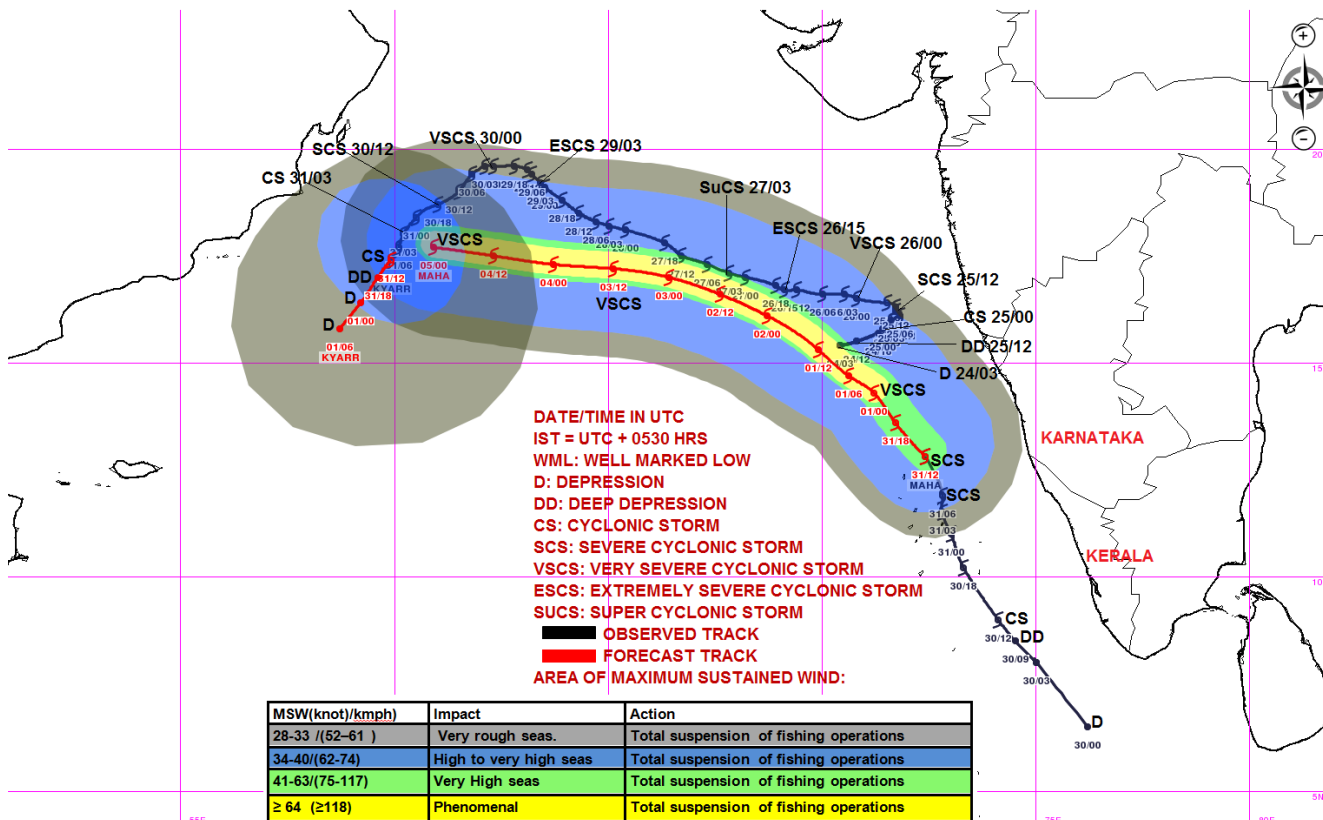
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH (A) SEVERE CYCLONIC STORM “MAHA” OVER EASTCENTRAL ARABIAN SEA AND ADJOINING LAKSHADWEEP AREA AND (B) CYCLONIC STORM “KYARR” OVER WESTCENTRAL ARABIAN SEA BASED ON 1200 UTC OF 31ST OCTOBER 2019



OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH (A) SEVERE CYCLONIC STORM “MAHA” OVER EASTCENTRAL ARABIAN SEA AND ADJOINING LAKSHADWEEP AREA AND (B) CYCLONIC STORM “KYARR” OVER WESTCENTRAL ARABIAN SEA BASED ON 1200 UTC OF 31ST OCTOBER 2019



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 14 (ARB/04/2019) and BULLETIN NO. : 59 (ARB/03/2019)

TIME OF ISSUE: 0230 HOURS IST

DATED: 01.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea and adjoining Lakshadweep area: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (RED MESSAGE)

(B) Deep Depression over westcentral Arabian Sea.

BULLETIN NO. : 14 (ARB/04/2019)

(A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea and adjoining Lakshadweep area: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (RED MESSAGE)

The Severe cyclonic storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea and adjoining Lakshadweep area moved north-northwestwards with a speed of 17 kmph during past 06 hours, and lay centered at 2330 hrs IST of 31st October, 2019 near latitude 13.7°N and longitude 72.1°E over eastcentral Arabian Sea and adjoining Lakshadweep area about 160 km north-northwest of Cherbaniani Reef (Lakshadweep), 200 km north-northwest of Cheriapani Reef (Lakshadweep), 230 km north-northwest of Chetlat (Lakshadweep), 290 km north-northwest of Aminidivi (Lakshadweep), 350 km north of Kavaratti (Lakshadweep), and 470 km northwest of Kozhikode (Kerala). It is very likely to move north-northwestwards during next 06 hours. Then, it is very likely to move northwestwards during subsequent 06 hours and thereafter move west-northwestwards. It is very likely to intensify into a very severe cyclonic storm over eastcentral Arabian Sea during next 24 hours.

Aminidivi reported maximum wind speed of 35 kmph at 2330 hrs IST of 31st October.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
31.10.19/2330	13.7/72.1	95-105 gusting to 115	Severe Cyclonic Storm
01.11.19/0530	14.4/71.5	105-115 gusting to 125	Severe Cyclonic Storm
01.11.19/1130	14.9/71.0	110-120 gusting to 130	Very Severe Cyclonic Storm
01.11.19/1730	15.4/70.4	120-130 gusting to 145	Very Severe Cyclonic Storm
01.11.19/2330	15.9/69.8	125-135 gusting to 150	Very Severe Cyclonic Storm
02.11.19/1130	16.3/68.5	130-140 gusting to 155	Very Severe Cyclonic Storm
02.11.19/2330	16.8/67.5	130-140 gusting to 155	Very Severe Cyclonic Storm
03.11.19/1130	17.1/66.4	135-145 gusting to 160	Very Severe Cyclonic Storm
03.11.19/2330	17.3/65.3	140-150 gusting to 165	Very Severe Cyclonic Storm
04.11.19/1130	17.4/63.5	145-155 gusting to 170	Very Severe Cyclonic Storm
04.11.19/2330	17.7/62.0	145-155 gusting to 170	Very Severe Cyclonic Storm
05.11.19/1130	17.8/60.8	150-160 gusting to 175	Very Severe Cyclonic Storm
05.11.19/2330	17.9/59.7	150-160 gusting to 175	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy falls at isolated places over Lakshadweep during next 24 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over Kerala, coastal Karnataka and south Tamil Nadu during next 24 hours.

(ii) Wind warning

- Gale wind speed reaching 95-105 kmph gusting to 115 kmph is prevailing over eastcentral Arabian Sea around the system centre.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 110-120 kmph gusting to 130 kmph by 1st November Morning, 130-140 kmph gusting to 155 kmph likely over eastcentral Arabian Sea by morning of 02nd November and 150-160 kmph gusting to 175 kmph by 05th November morning.
- Wind speed reaching 45-55 kmph gusting to 65 kmph is likely to prevail over Lakshadweep area during next 06 hours and decrease gradually thereafter.
- Squally wind speed reaching 45-55 kmph gusting to 65 kmph likely along & off Kerala- Karnataka coasts and strong winds, speed reaching 30-40 kmph gusting to 50 kmph along & off Goa- south Maharashtra coasts during next 24 hours.

(iii) Sea condition

- Sea conditions over Lakshadweep area and adjoining southeast Arabian Sea will be high to very high during next 12 hours and rough to very rough for subsequent 12 hours.
- Sea conditions will be rough to very rough over eastcentral & adjoining southeast Arabian Sea along & off Karnataka-Kerala coasts and rough along and off Goa – south Maharashtra coast during next 24 hours.
- Sea condition over eastcentral Arabian Sea around the system centre will be high to very high during next 24 hours and phenomenal during subsequent 3 days.

(v) Fishermen Warning

- Total suspension of fishing operations over Lakshadweep area and adjoining southeast Arabian Sea and along & off Kerala-Karnataka coasts during next 12 hours.
- The fishermen are advised not to venture over eastcentral Arabian Sea till 4th November, 2019.

(vi) Damage Expected over Lakshadweep Islands during next 06 hours:

- Major damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly.
- Damage to power and communication lines.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Dead limbs blown from trees.
- Major damage to coastal crops.
- Damage to embankments/ salt pans.

BULLETIN NO. : 59(ARB/03/2019)

(B) Deep Depression over westcentral Arabian Sea

The Deep Depression over westcentral Arabian Sea moved west-southwestwards with a speed of 12 Kmph during past 06 hrs and lay centred at 2330 hrs IST of 31st October, 2019 over westcentral Arabian Sea near latitude 16.8°N and longitude 59.6°E, about 1420 km west-southwest of Mumbai (Maharashtra), 590 km east-northeast of Salalah (Oman) and 430 km south-southeast of Masirah (Oman). It is very likely to move southwestwards across westcentral Arabian Sea during next 24 hours. It is very likely to weaken further into a Depression during next 12 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
31.10.19/2330	16.8/59.6	55-65 gusting to 75	Deep Depression
01.11.19/0530	16.4/59.2	50-60 gusting to 70	Deep Depression
01.11.19/1130	16.0/58.9	45-55 gusting to 65	Depression
01.11.19/1730	15.6/58.6	40-50 gusting to 60	Depression
01.11.19/2330	15.0/58.3	40-50 gusting to 60	Depression
02.11.19/1130	14.4/58.0	30-40 gusting to 50	Depression

Warnings:

(i) Wind warning

- Gale wind speed reaching 55-65 kmph gusting to 75 kmph is prevailing around the system centre over westcentral Arabian Sea. It is very likely to reduce gradually becoming 50-60 kmph gusting to 70 kmph in the morning of 01st November over westcentral Arabian Sea and 40-50 kmph gusting to 60 kmph by the evening of 1st November over westcentral Arabian Sea and decrease thereafter.

(ii) Sea condition

- Sea condition is high over westcentral Arabian Sea around the system centre. It will become very rough on 01st November and rough during subsequent 12 hours and improve gradually thereafter.

(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea during next 24 hours.

The next bulletin will be issued at 0530 hrs IST of 01st November, 2019.

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

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

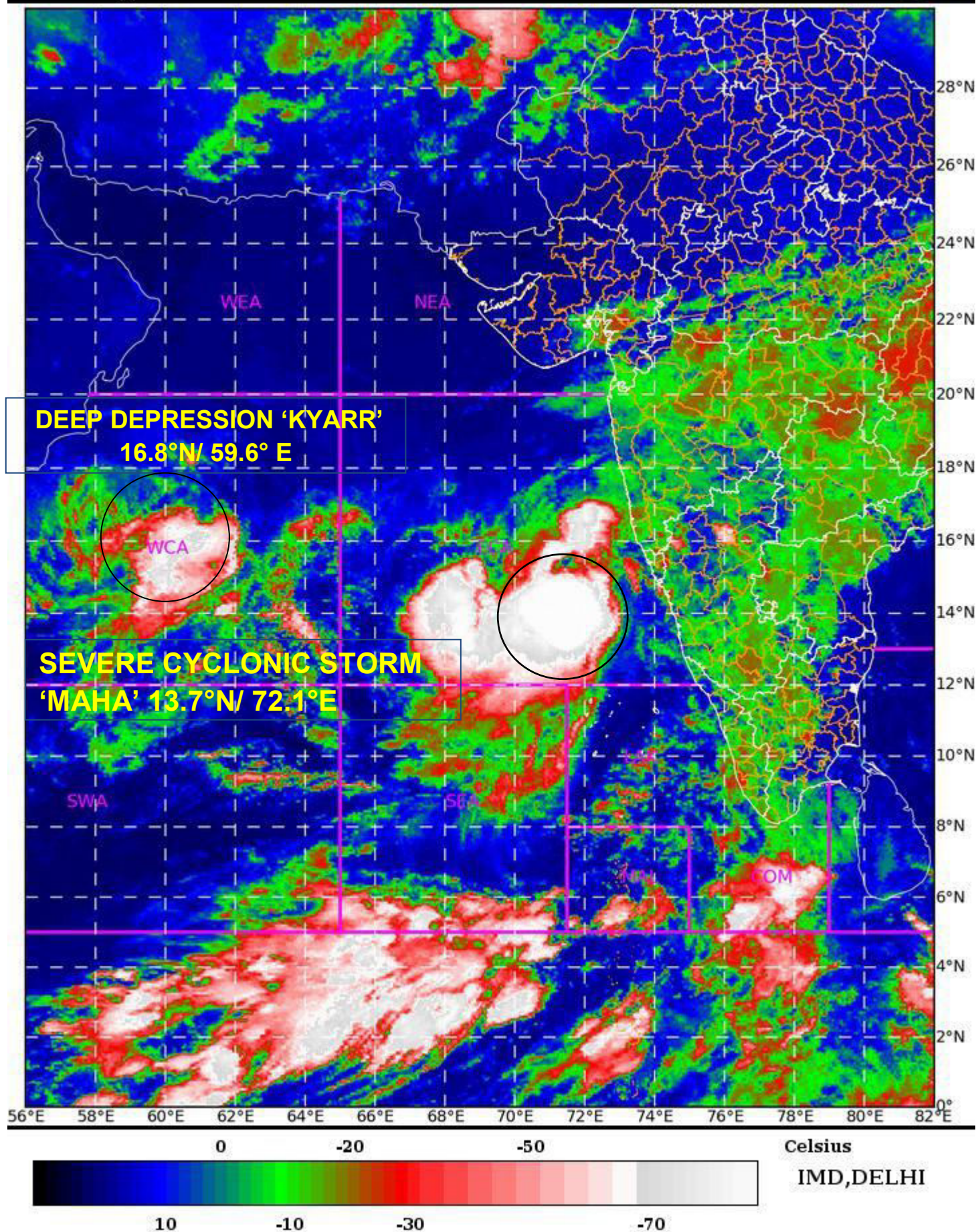
SAT : INSAT-3D IMG

31-10-2019/(2004 to 2026) GMT

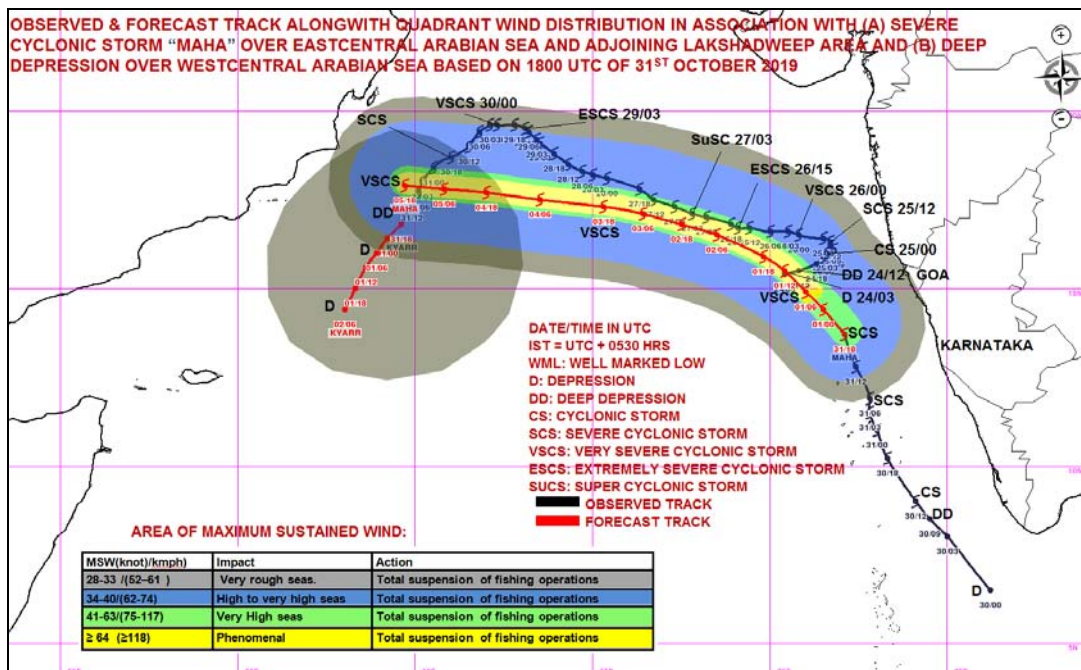
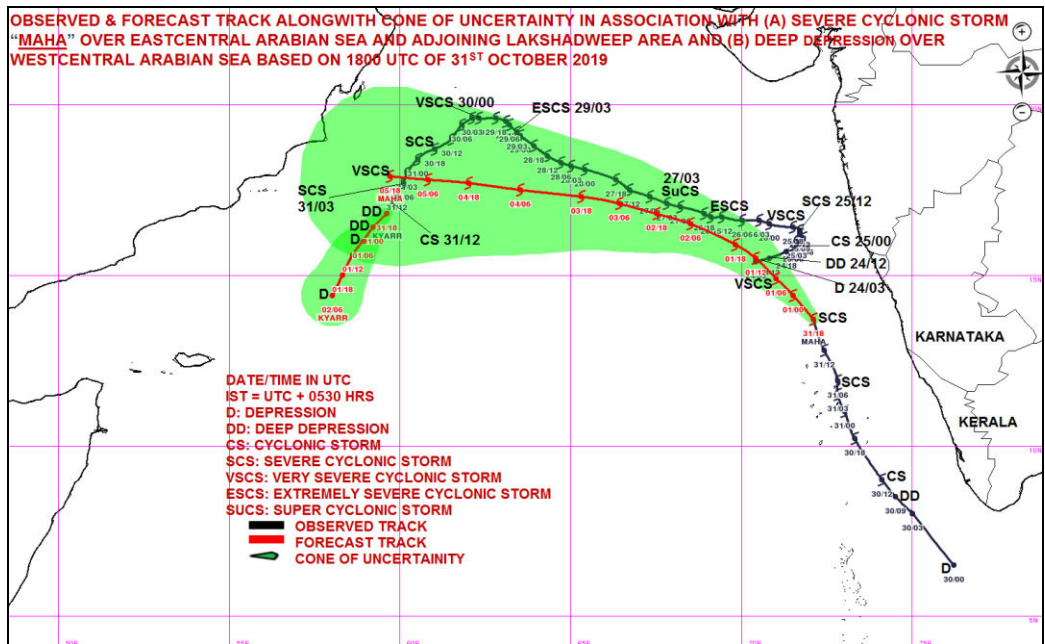
IMG_TIR1_TEMP 10.8 um

01-11-2019/(0134 to 0156) IST

ARABIAN_SEA



Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 15 (ARB/04/2019) and BULLETIN NO. : 60 (ARB/03/2019)

TIME OF ISSUE: 0445 HOURS IST

DATED: 01.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea and adjoining Lakshadweep area: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (RED MESSAGE)

(B) Deep Depression over westcentral Arabian Sea.

BULLETIN NO. : 15 (ARB/04/2019)

(A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea and adjoining Lakshadweep area: CYCLONE WARNING FOR LAKSHADWEEP ISLANDS (RED MESSAGE)

The Severe cyclonic storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea and adjoining Lakshadweep area moved north-northwestwards with a speed of 12 kmph during past 06 hours, and lay centered at 0230 hrs IST of 01st November, 2019 near latitude 13.9°N and longitude 72.0°E over eastcentral Arabian Sea and adjoining Lakshadweep area about 180 km north-northwest of Cherbaniani Reef (Lakshadweep), 220 km north-northwest of Cheriapani Reef (Lakshadweep), 260 km north-northwest of Chetlat (Lakshadweep), 320 km north-northwest of Aminidivi (Lakshadweep), 380 km north of Kavaratti (Lakshadweep), and 500 km northwest of Kozhikode (Kerala). It is very likely to move north-northwestwards during next 06 hours. Then, it is very likely to move northwestwards during subsequent 06 hours and thereafter move west-northwestwards. It is very likely to intensify into a very severe cyclonic storm over eastcentral Arabian Sea during next 24 hours.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
01.11.19/0230	13.9/72.0	95-105 gusting to 115	Severe Cyclonic Storm
01.11.19/0530	14.4/71.5	105-115 gusting to 125	Severe Cyclonic Storm
01.11.19/1130	14.9/71.0	110-120 gusting to 130	Very Severe Cyclonic Storm
01.11.19/1730	15.4/70.4	120-130 gusting to 145	Very Severe Cyclonic Storm
01.11.19/2330	15.9/69.8	125-135 gusting to 150	Very Severe Cyclonic Storm
02.11.19/1130	16.3/68.5	130-140 gusting to 155	Very Severe Cyclonic Storm
02.11.19/2330	16.8/67.5	130-140 gusting to 155	Very Severe Cyclonic Storm
03.11.19/1130	17.1/66.4	135-145 gusting to 160	Very Severe Cyclonic Storm
03.11.19/2330	17.3/65.3	140-150 gusting to 165	Very Severe Cyclonic Storm
04.11.19/1130	17.4/63.5	145-155 gusting to 170	Very Severe Cyclonic Storm
04.11.19/2330	17.7/62.0	145-155 gusting to 170	Very Severe Cyclonic Storm
05.11.19/1130	17.8/60.8	150-160 gusting to 175	Very Severe Cyclonic Storm
05.11.19/2330	17.9/59.7	150-160 gusting to 175	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy falls at isolated places over Lakshadweep during next 24 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over Kerala, coastal Karnataka and south Tamil Nadu during next 24 hours.

(ii) Wind warning

- Gale wind speed reaching 95-105 kmph gusting to 115 kmph is prevailing over eastcentral Arabian Sea around the system centre.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 110-120 kmph gusting to 130 kmph by 1st November Morning, 130-140 kmph gusting to 155 kmph likely over eastcentral Arabian Sea by morning of 02nd November and 150-160 kmph gusting to 175 kmph by 05th November morning.
- Wind speed reaching 45-55 kmph gusting to 65 kmph is likely to prevail over Lakshadweep area during next 06 hours and decrease gradually thereafter.
- Squally wind speed reaching 45-55 kmph gusting to 65 kmph likely along & off Kerala- Karnataka coasts and strong winds, speed reaching 30-40 kmph gusting to 50 kmph along & off Goa- south Maharashtra coasts during next 24 hours.

(iii) Sea condition

- Sea conditions over Lakshadweep area and adjoining southeast Arabian Sea will be high to very high during next 12 hours and rough to very rough for subsequent 12 hours.
- Sea conditions will be rough to very rough over eastcentral & adjoining southeast Arabian Sea along & off Karnataka-Kerala coasts and rough along and off Goa – south Maharashtra coast during next 24 hours.
- Sea condition over eastcentral Arabian Sea around the system centre will be high to very high during next 24 hours and phenomenal during subsequent 3 days.

(v) Fishermen Warning

- Total suspension of fishing operations over Lakshadweep area and adjoining southeast Arabian Sea and along & off Kerala-Karnataka coasts during next 12 hours.
- The fishermen are advised not to venture over eastcentral Arabian Sea till 4th November, 2019.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

BULLETIN NO. : 60 (ARB/03/2019)**(B) Deep Depression over westcentral Arabian Sea**

The Deep Depression over westcentral Arabian Sea moved west-southwestwards with a speed of 09 Kmph during past 06 hrs and lay centred at 0230 hrs IST of 01st November, 2019 over westcentral Arabian Sea near latitude 16.7°N and longitude 59.5°E, about 1430 km west-southwest of Mumbai (Maharashtra), 580 km east-northeast of Salalah (Oman) and 440 km south-southeast of Masirah (Oman). It is very likely to move southwestwards across westcentral Arabian Sea during next 24 hours. It is very likely to weaken further into a Depression during next 12 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
01.11.19/0230	16.7/59.5	55-65 gusting to 75	Deep Depression
01.11.19/0530	16.4/59.2	50-60 gusting to 70	Deep Depression
01.11.19/1130	16.0/58.9	45-55 gusting to 65	Depression
01.11.19/1730	15.6/58.6	40-50 gusting to 60	Depression
01.11.19/2330	15.0/58.3	40-50 gusting to 60	Depression
02.11.19/1130	14.4/58.0	30-40 gusting to 50	Depression

Warnings:**(i) Wind warning**

- Gale wind speed reaching 55-65 kmph gusting to 75 kmph is prevailing around the system centre over westcentral Arabian Sea. It is very likely to reduce gradually becoming 50-60 kmph gusting to 70 kmph in the morning of 01st November over westcentral Arabian Sea and 40-50 kmph gusting to 60 kmph by the evening of 1st November over westcentral Arabian Sea and decrease thereafter.

(ii) Sea condition

- Sea condition is high over westcentral Arabian Sea around the system centre. It will become very rough on 01st November and rough during subsequent 12 hours and improve gradually thereafter.

(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea during next 24 hours.

The next bulletin will be issued at 0830 hrs IST of 01st November, 2019.

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

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

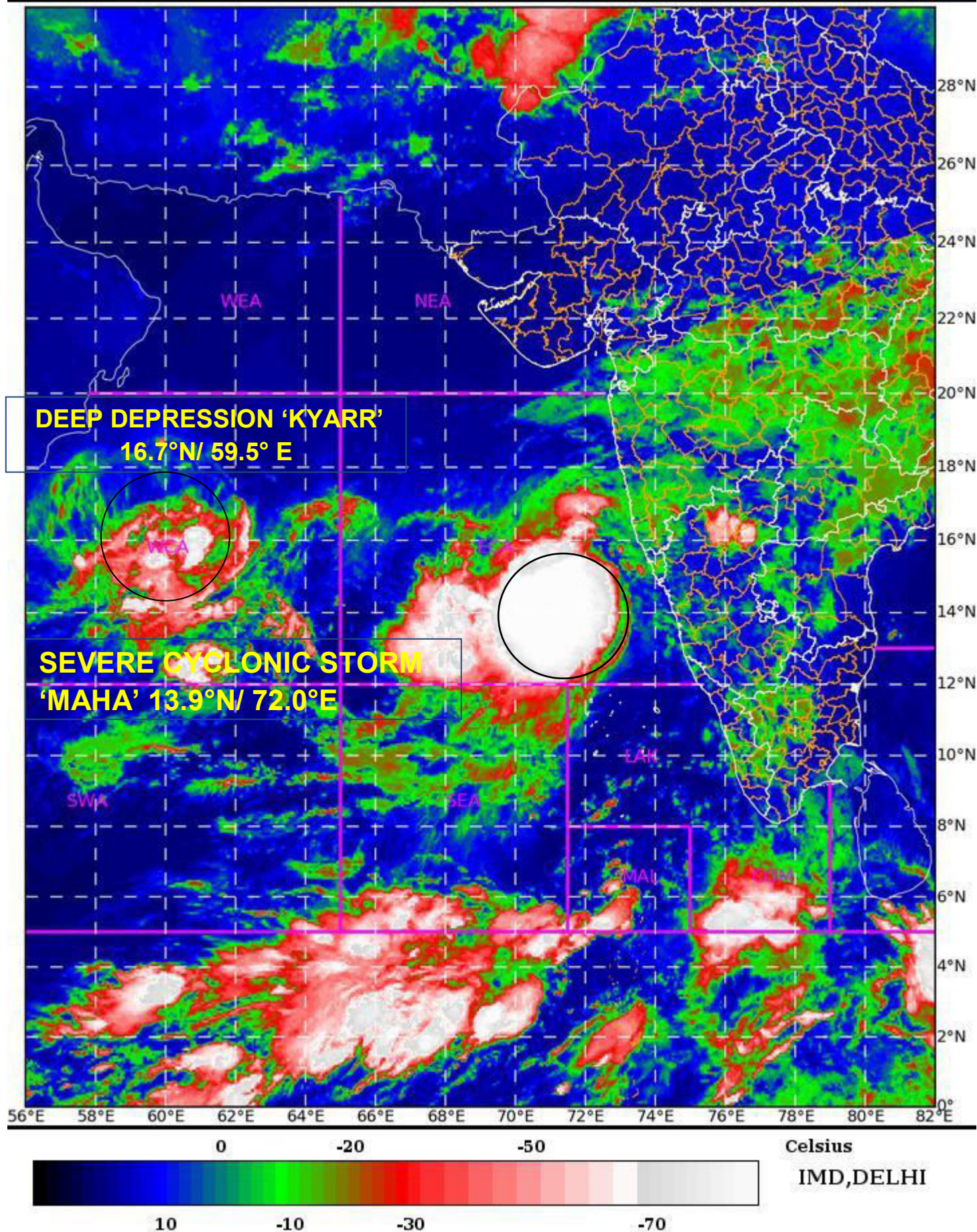
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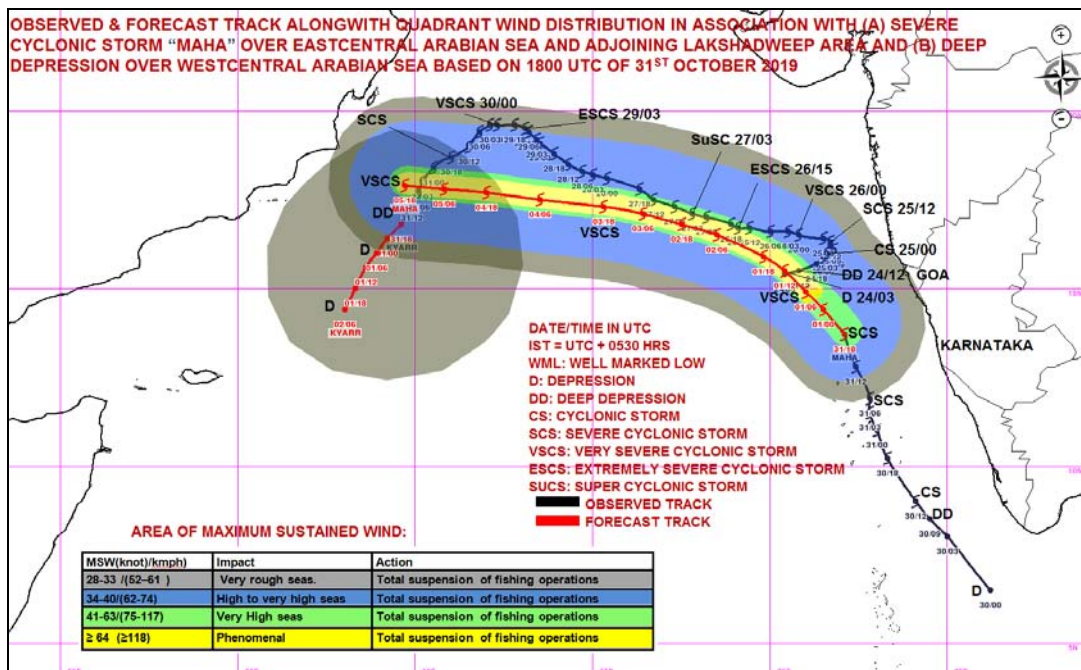
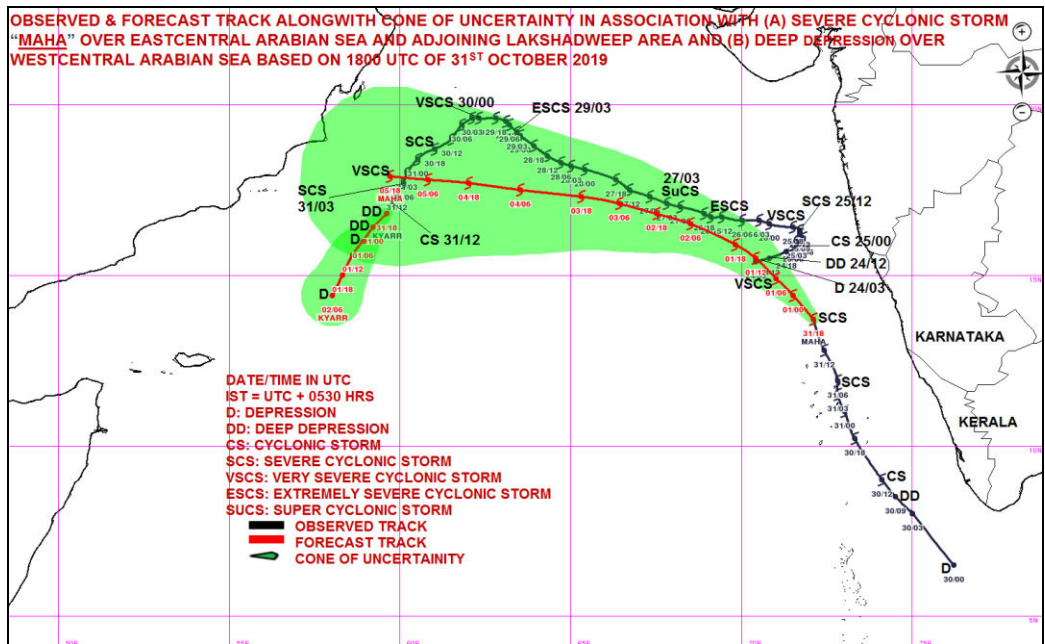
31-10-2019/(2200 to 2226) GMT

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01-11-2019/(0330 to 0356) IST

ARABIAN_SEA





Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 16 (ARB/04/2019) and BULLETIN NO. : 61 (ARB/03/2019)

TIME OF ISSUE: 0900 HOURS IST

DATED: 01.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea

(B) Depression over westcentral Arabian Sea.

BULLETIN NO. : 16 (ARB/04/2019)

(A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea

The Severe cyclonic storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea and adjoining Lakshadweep area moved north-northwestwards with a speed of 17 kmph during past 06 hours, and lay centered at 0530 hrs IST of 01st November, 2019 near latitude 14.6°N and longitude 71.7°E over eastcentral Arabian Sea about 300 km north of Cheriapani Reef (Lakshadweep), 400 km north-northwest of Aminidivi (Lakshadweep) and 390 km west-northwest of Mangaluru (Karnataka). It is very likely to move north-northwestwards during next 06 hours. Then, it is very likely to move northwestwards during subsequent 06 hours and thereafter move west-northwestwards. It is very likely to intensify into a very severe cyclonic storm over eastcentral Arabian Sea during next 12 hours.

No adverse weather likely over Lakshadweep Islands as the cyclonic storm 'MAHA' has moved further away from the Islands.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
01.11.19/0530	14.6/71.7	100-110 gusting to 120	Severe Cyclonic Storm
01.11.19/1130	15.2/71.2	110-120 gusting to 130	Severe Cyclonic Storm
01.11.19/1730	15.8/70.4	120-130 gusting to 145	Very Severe Cyclonic Storm
01.11.19/2330	16.3/69.8	125-135 gusting to 150	Very Severe Cyclonic Storm
02.11.19/0530	16.8/69.3	130-140 gusting to 155	Very Severe Cyclonic Storm
02.11.19/1730	17.3/68.3	135-145 gusting to 160	Very Severe Cyclonic Storm
03.11.19/0530	17.7/67.5	140-150 gusting to 165	Very Severe Cyclonic Storm
03.11.19/1730	18.0/66.7	145-155 gusting to 170	Very Severe Cyclonic Storm
04.11.19/0530	18.2/65.8	145-155 gusting to 170	Very Severe Cyclonic Storm
04.11.19/1730	18.4/65.1	150-160 gusting to 175	Very Severe Cyclonic Storm
05.11.19/0530	18.6/64.6	145-155 gusting to 170	Very Severe Cyclonic Storm
05.11.19/1730	18.8/64.0	140-150 gusting to 165	Very Severe Cyclonic Storm
06.11.19/0530	19.0/63.5	135-145 gusting to 160	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at a few places very likely over Konkan & Goa, Madhya Maharashtra and south Gujarat during next 24 hours.

(ii) Wind warning

- Gale wind speed reaching 100-110 kmph gusting to 120 kmph is prevailing over eastcentral Arabian Sea around the system centre.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 120-130 kmph gusting to 145 kmph by 1st November Evening and 150-160 kmph gusting to 175 kmph over eastcentral adjoining westcentral Arabian Sea by 04th November evening.
- Wind speed reaching 40-50 kmph gusting to 60 kmph is likely to prevail over Lakshadweep area during next 06 hours and decrease gradually thereafter.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Karnataka, Goa- Maharashtra coasts during next 24 hours.

(iii) Sea condition

- Sea conditions is high to very high over eastcentral Arabian Sea during next 12 hours and will become phenomenal from today evening for subsequent 04 days and over eastcentral and adjoining west central Arabian Sea on 5th November.
- Sea conditions over Lakshadweep area and adjoining southeast Arabian Sea will be rough to very rough for next 12 hours.

(v) Fishermen Warning

- Total suspension of fishing operations over Lakshadweep area and adjoining southeast Arabian Sea during next 06 hours and along & off Karnataka-Goa- Maharashtra coasts during next 24 hours.
- The fishermen are advised not to venture over eastcentral Arabian Sea till 6th November, 2019 and over west eastcentral Arabian Sea from 04th November onwards.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

BULLETIN NO. : 61 (ARB/03/2019)**(B) Depression over westcentral Arabian Sea**

The Deep Depression over westcentral Arabian Sea moved southwestwards with a speed of 06 Kmph during past 06 hrs, weakened into a Depression and lay centred at 0530 hrs IST of 01st November, 2019 over westcentral Arabian Sea near latitude 16.4°N and longitude 59.5°E, about 1440 km west-southwest of Mumbai (Maharashtra), 580 km east-northeast of Salalah (Oman) and 470 km south-southeast of Masirah (Oman). It is very likely to move southwestwards across westcentral Arabian Sea during next 12 hours. It is very likely to weaken further into a Well Marked Low Pressure Area during next 12 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
01.11.19/0530	16.4/59.5	45-55 gusting to 65	Depression
01.11.19/1130	16.1/59.4	40-50 gusting to 60	Depression
01.11.19/1730	15.8/59.3	15-25 gusting to 35	Well Marked Low Pressure Area

Warnings:**(i) Wind warning**

- Gale wind speed reaching 45-55 kmph gusting to 65 kmph is prevailing around the system centre over westcentral Arabian Sea. It is very likely to reduce becoming 40-50 kmph gusting to 60 kmph by forenoon of 01st November over westcentral Arabian Sea and decrease thereafter.

(ii) Sea condition

- Sea condition is rough to very rough over westcentral Arabian Sea around the system centre. It will become rough by the forenoon of 01st November and improve gradually thereafter.

(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea during next 12 hours.

The next bulletin will be issued at 1130 hrs IST of 01st November, 2019.

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

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

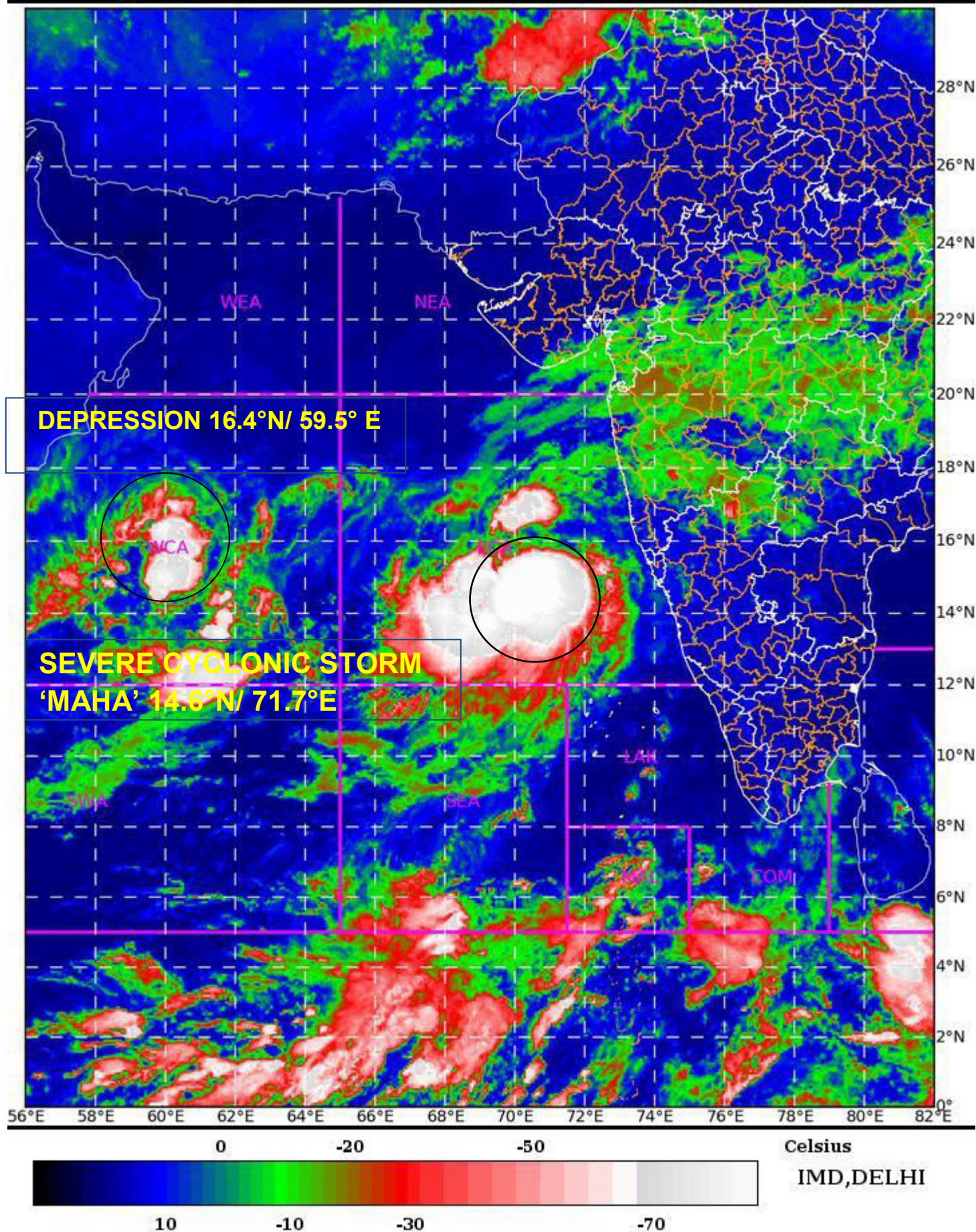
SAT : INSAT-3D IMG

01-11-2019/(0200 to 0226) GMT

IMG_TIR1_TEMP 10.8 um

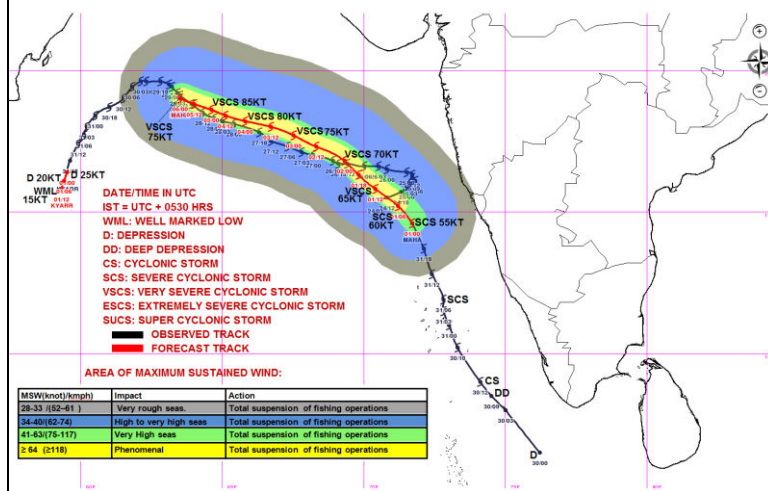
01-11-2019/(0730 to 0756) IST

ARABIAN_SEA

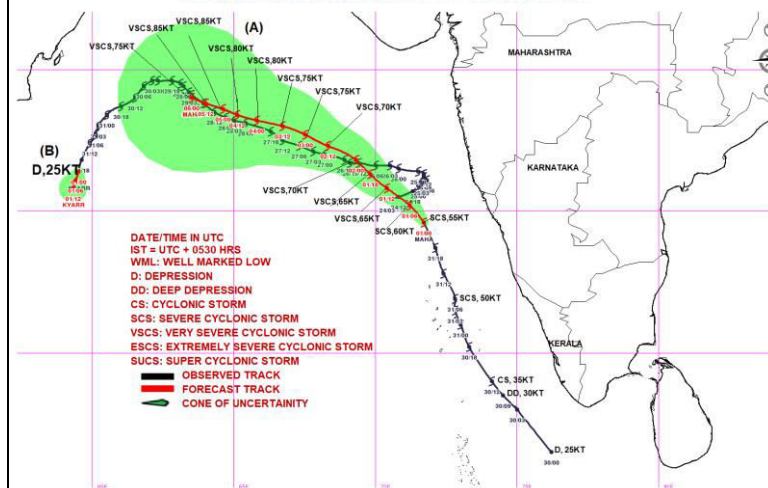


Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH (A) SEVERE CYCLONIC STORM "MAHA" OVER EASTCENTRAL ARABIAN SEA AND (B) DEPRESSION OVER WESTCENTRAL ARABIAN SEA BASED ON 0000 UTC OF 1ST NOVEMBER 2019



OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH (A) SEVERE CYCLONIC STORM "MAHA" OVER EASTCENTRAL ARABIAN SEA AND (B) DEPRESSION OVER WESTCENTRAL ARABIAN SEA BASED ON 0000 UTC OF 01ST NOVEMBER 2019



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 17 (ARB/04/2019) and BULLETIN NO. : 62 (ARB/03/2019)

TIME OF ISSUE: 1130 HOURS IST

DATED: 01.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea

(B) Depression over westcentral Arabian Sea.

BULLETIN NO. : 17 (ARB/04/2019)

(A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea

The Severe cyclonic storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea and adjoining Lakshadweep area moved northwestwards with a speed of 24 kmph during past 06 hours, and lay centered at 0830 hrs IST of 01st November, 2019 near latitude 14.8°N and longitude 71.0°E over eastcentral Arabian Sea about 450 km north-northwest of Aminidivi (Lakshadweep), 460 km north-northwest of Mangaluru (Karnataka) and 310 km south-southwest of Goa. It is very likely to move northwestwards during next 06 hours and thereafter move west-northwestwards till 5th November morning and recurve northeastwards subsequently. It is very likely to intensify into a very severe cyclonic storm over eastcentral Arabian Sea during next 12 hours.

(continued on next page)

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
01.11.19/0830	14.8/71.0	100-110 gusting to 125	Severe Cyclonic Storm
01.11.19/1130	15.2/70.5	105-115 gusting to 130	Severe Cyclonic Storm
01.11.19/1730	15.7/70.1	115-125 gusting to 140	Very Severe Cyclonic Storm
01.11.19/2330	16.1/69.6	115-125 gusting to 140	Very Severe Cyclonic Storm
02.11.19/0530	16.5/69.1	125-135 gusting to 150	Very Severe Cyclonic Storm
02.11.19/1730	17.1/68.3	125-135 gusting to 150	Very Severe Cyclonic Storm
03.11.19/0530	17.5/67.5	135-145 gusting to 160	Very Severe Cyclonic Storm
03.11.19/1730	17.8/66.7	135-145 gusting to 160	Very Severe Cyclonic Storm
04.11.19/0530	18.0/65.4	145-155 gusting to 170	Very Severe Cyclonic Storm
04.11.19/1730	18.4/64.3	145-155 gusting to 170	Very Severe Cyclonic Storm
05.11.19/0530	18.8/64.0	155-165 gusting to 180	Very Severe Cyclonic Storm
05.11.19/1730	19.3/64.5	145-155 gusting to 170	Very Severe Cyclonic Storm
06.11.19/0530	19.8/65.5	135-145 gusting to 160	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at a few places very likely over Konkan & Goa, Madhya Maharashtra and south Gujarat during next 24 hours.

(ii) Wind warning

- Gale wind speed reaching 100-110 kmph gusting to 125 kmph is prevailing over eastcentral Arabian Sea around the system centre.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 115-125 kmph gusting to 140 kmph by the evening of 1st November and 155-166 kmph gusting to 180 kmph over eastcentral adjoining westcentral Arabian Sea by 05th November morning.
- Gale wind speed reaching 115-125 kmph gusting to 140 kmph likely to commence over west-central Arabian Sea from the morning of 4th November, becoming 155-165 kmph gusting to 180 kmph by the morning of 5th November.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Karnataka, Goa- Maharashtra coasts during next 24 hours.

(iii) Sea condition

- Sea condition will be very high over eastcentral Arabian Sea for the next 12 hours and will become phenomenal from today evening for subsequent 04 days and over eastcentral and adjoining west central Arabian Sea from 5th November.
- Sea condition over Lakshadweep area and adjoining southeast Arabian Sea will be rough to very rough for next 12 hours.

(v) Fishermen Warning

- The fishermen are advised not to venture sea along & off Karnataka-Goa- Maharashtra coasts during next 24 hours and into eastcentral Arabian Sea till 6th November, 2019 and over west eastcentral Arabian Sea from 04th November onwards.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

BULLETIN NO. : 62 (ARB/03/2019)

(B) Depression over westcentral Arabian Sea

The Depression over westcentral Arabian Sea moved southwestwards with a speed of 11 kmph during past 6 hours and lay centred at 0830 hrs IST of today, the 01st November, 2019 over westcentral Arabian Sea near latitude 16.3°N and longitude 59.0°E, about 1490 km west-southwest of Mumbai (Maharashtra), 540 km east-northeast of Salalah (Oman) and 480 km south-southeast of Masirah (Oman). It is very likely to move southwestwards across westcentral Arabian Sea and weaken into a Well Marked Low Pressure Area during next 12 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
01.11.19/0830	16.3/59.0	45-55 gusting to 65	Depression
01.11.19/1130	16.1/58.7	40-50 gusting to 60	Depression
01.11.19/1730	15.7/58.1	15-25 gusting to 35	Well Marked Low Pressure Area

Warnings:

(i) Wind warning

- Gale wind speed reaching 45-55 kmph gusting to 65 kmph is prevailing around the system centre over westcentral Arabian Sea. It is very likely to reduce becoming 40-50 kmph gusting to 60 kmph during next 6 hours and decrease thereafter.

(ii) Sea condition

- Sea condition is rough to very rough over westcentral Arabian Sea around the system centre. It will become rough during next 6 hours and improve gradually thereafter.

(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea during next 12 hours.

The next bulletin will be issued at 1430 hrs IST of 01st November, 2019.

(Sunitha Devi S)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

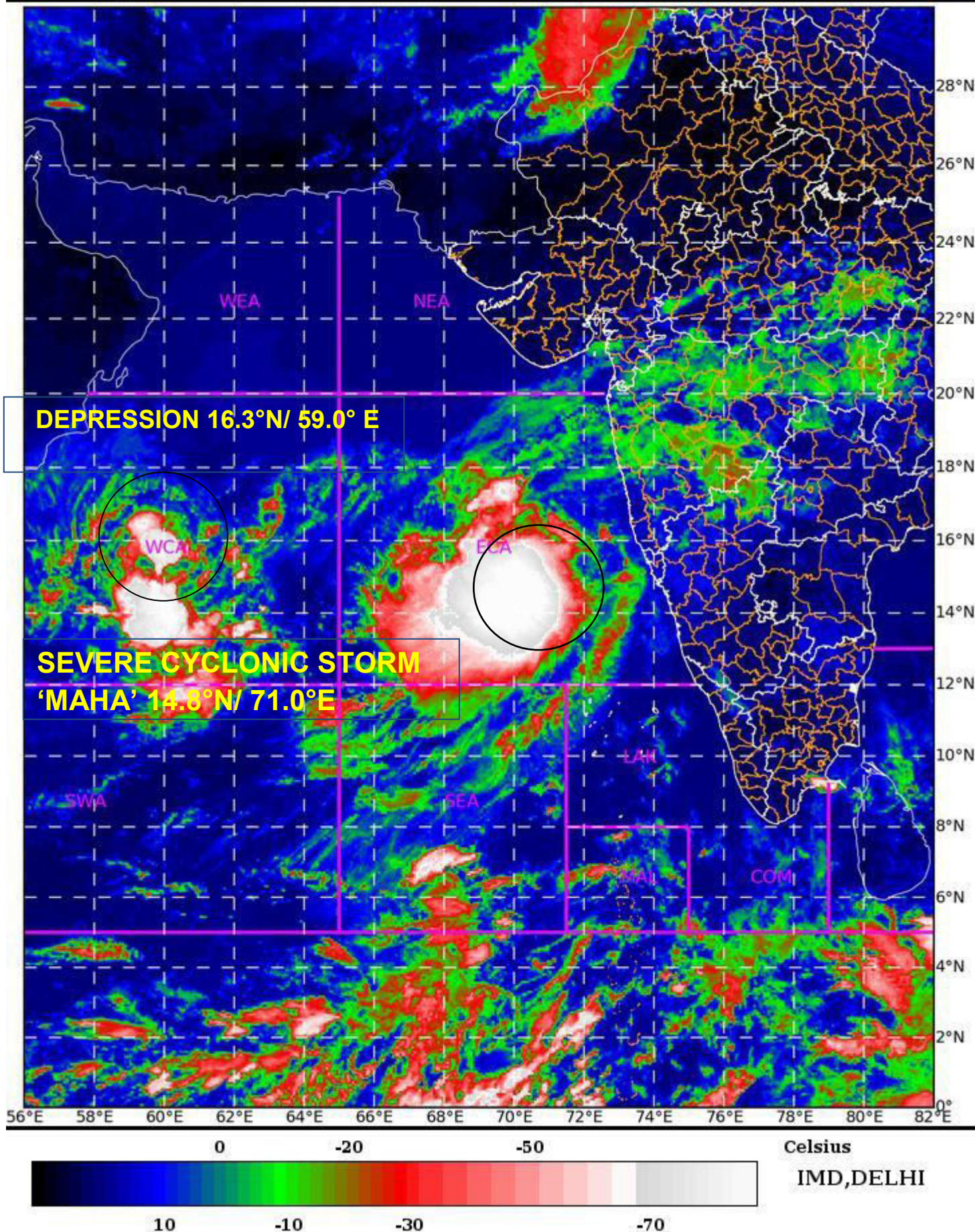
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01-11-2019/(0500 to 0526) GMT

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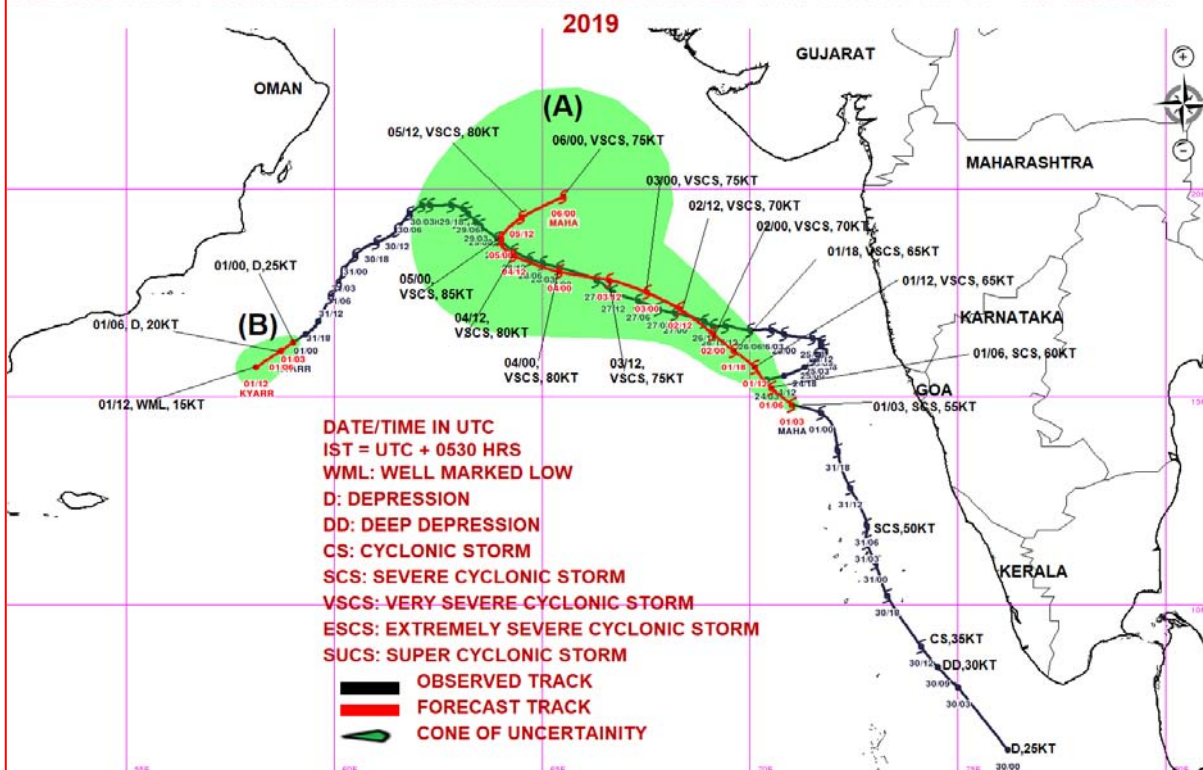
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ARABIAN_SEA

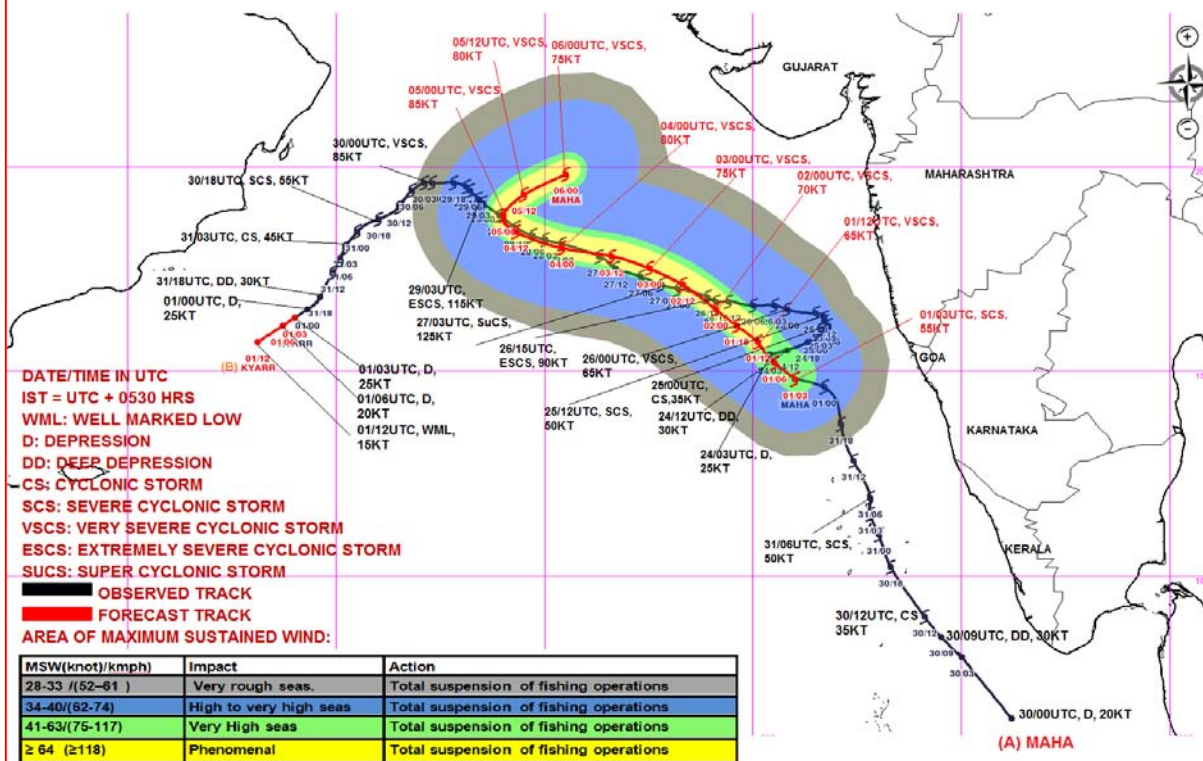


Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH (A) SEVERE CYCLONIC STORM “MAHA” OVER EASTCENTRAL ARABIAN SEA AND (B) DEPRESSION OVER WESTCENTRAL ARABIAN SEA BASED ON 0300 UTC OF 01ST NOVEMBER 2019



OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH (A) SEVERE CYCLONIC STORM “MAHA” OVER EASTCENTRAL ARABIAN SEA AND (B) DEPRESSION OVER WESTCENTRAL ARABIAN SEA BASED ON 0300 UTC OF 1ST NOVEMBER 2019



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 18 (ARB/04/2019) and BULLETIN NO. : 63 (ARB/03/2019)

TIME OF ISSUE: 1450 HOURS IST

DATED: 01.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea

(B) Depression over westcentral Arabian Sea.

BULLETIN NO. : 18 (ARB/04/2019)

(A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea

The Severe cyclonic storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea continued to move northwestwards with a speed of 24 kmph during past 06 hours, and lay centered at 1130 hrs IST of today, the 01st November, 2019 over eastcentral Arabian Sea near latitude 15.2°N and longitude 70.5°E, about 640 km south of Veraval (Gujarat), 530 km north-northwest of Mangaluru (Karnataka) and 350 km west-southwest of Goa. It is very likely to move northwestwards during next 24 hours, west-northwestwards during 02nd to 04th November and recurve east-northeastwards towards south Gujarat coast thereafter. It is very likely to intensify into a very severe cyclonic storm over eastcentral Arabian Sea during next 24 hours.

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Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
01.11.19/1130	15.2/70.5	100-110 gusting to 125	Severe Cyclonic Storm
01.11.19/1730	15.7/70.1	110-120 gusting to 135	Severe Cyclonic Storm
01.11.19/2330	16.1/69.6	110-120 gusting to 135	Severe Cyclonic Storm
02.11.19/0530	16.5/69.1	120-130 gusting to 145	Very Severe Cyclonic Storm
02.11.19/1130	17.0/68.7	120-130 gusting to 145	Very Severe Cyclonic Storm
02.11.19/2330	17.7/67.9	130-140 gusting to 155	Very Severe Cyclonic Storm
03.11.19/1130	18.0/67.1	140-150 gusting to 165	Very Severe Cyclonic Storm
03.11.19/2330	18.2/66.3	150-160 gusting to 175	Very Severe Cyclonic Storm
04.11.19/1130	18.5/65.6	160-170 gusting to 185	Very Severe Cyclonic Storm
04.11.19/2330	19.0/65.0	160-170 gusting to 185	Very Severe Cyclonic Storm
05.11.19/1130	19.4/65.1	150-160 gusting to 175	Very Severe Cyclonic Storm
05.11.19/2330	19.7/66.0	150-160 gusting to 175	Very Severe Cyclonic Storm
06.11.19/1130	20.0/67.4	140-150 gusting to 165	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at a few places very likely over Konkan & Goa, Madhya Maharashtra and south Gujarat during next 24 hours.

(ii) Wind warning

- Gale wind speed reaching 100-110 kmph gusting to 125 kmph is prevailing over eastcentral Arabian Sea around the system centre.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 115-125 kmph gusting to 140 kmph by the evening of 1st November and 155-165 kmph gusting to 180 kmph over eastcentral, adjoining westcentral and northeast Arabian Sea by 05th November morning.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Goa-Maharashtra coasts during next 24 hours.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off South Gujarat coast and adjoining from 6th November morning.

(iii) Sea condition

- Sea condition will be very high over eastcentral Arabian Sea for the next 18 hours and will become phenomenal from 02nd November morning for subsequent 04 days.
- Sea condition will be high to phenomenal over westcentral and adjoining northeast Arabian Sea during 4th to 6th November.

(v) Fishermen Warning

- The fishermen are advised not to venture sea along & off Goa- Maharashtra coasts during next 24 hours and into eastcentral Arabian Sea till 6th November, 2019 and over westcentral and northeast Arabian Sea from 03rd November onwards.

BULLETIN NO. : 63 (ARB/03/2019)

(B) Depression over westcentral Arabian Sea

The Depression over westcentral Arabian Sea moved southwestwards with a speed of 16 kmph during past 6 hours and lay centred at 1130 hrs IST of today, the 01st November, 2019 over westcentral Arabian Sea near latitude 16.0°N and longitude 58.7°E, about 1530 km west-southwest

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

of Mumbai (Maharashtra), 510 km east-northeast of Salalah (Oman) and 510 km south-southeast of Masirah (Oman). It is very likely to move southwestwards across westcentral Arabian Sea and weaken into a Well Marked Low Pressure Area during next 12 hours.

Warnings:

(i) Wind warning

- Gale wind speed reaching 45-55 kmph gusting to 65 kmph is prevailing around the system centre over westcentral Arabian Sea. It is very likely to reduce becoming 40-50 kmph gusting to 60 kmph during next 6 hours and decrease thereafter.

(ii) Sea condition

- Sea condition is rough to very rough over westcentral Arabian Sea around the system centre. It will become rough during next 6 hours and improve gradually thereafter.

(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea during next 12 hours.

The next bulletin will be issued at 1730 hrs IST of 01st November, 2019.

(Sunitha Devi S)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

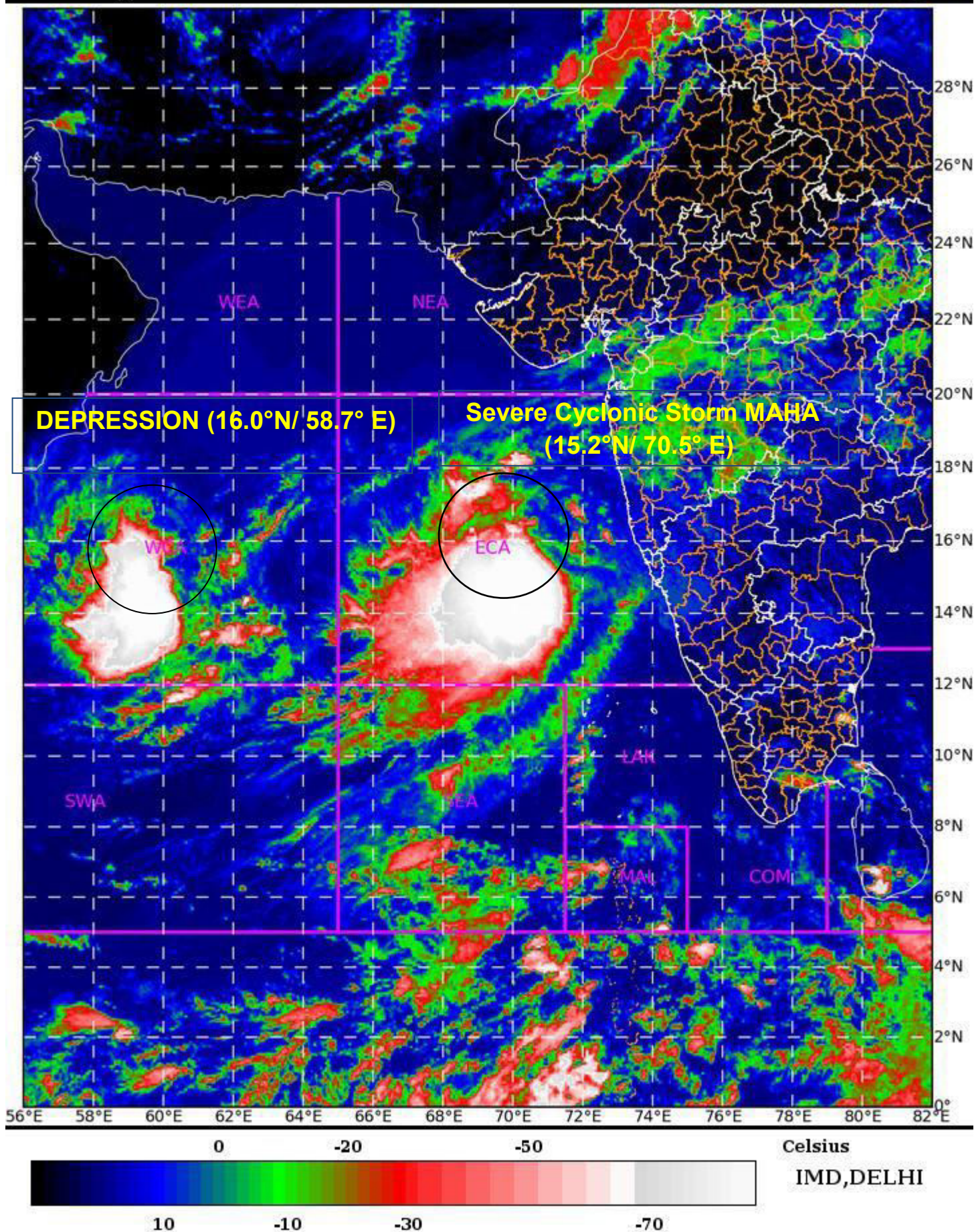
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01-11-2019/(0800 to 0827) GMT

IMG_TIR1_TEMP 10.8 um

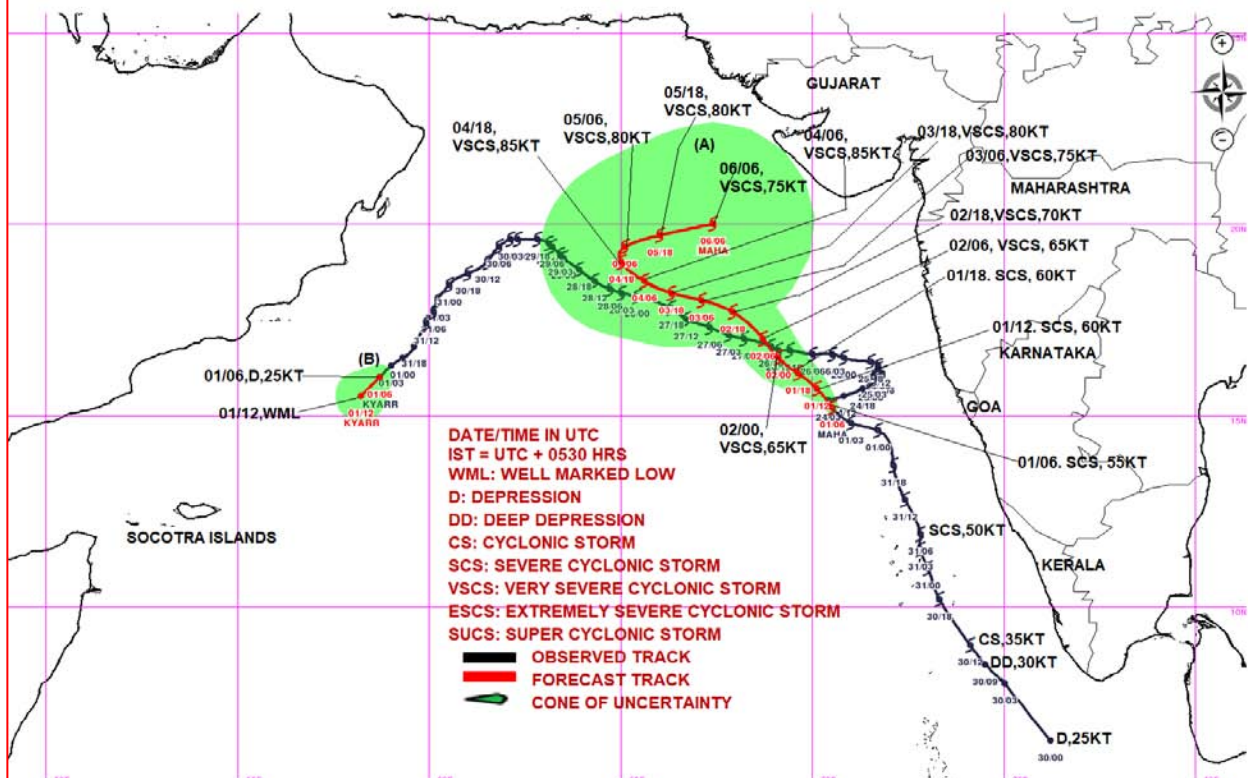
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ARABIAN_SEA

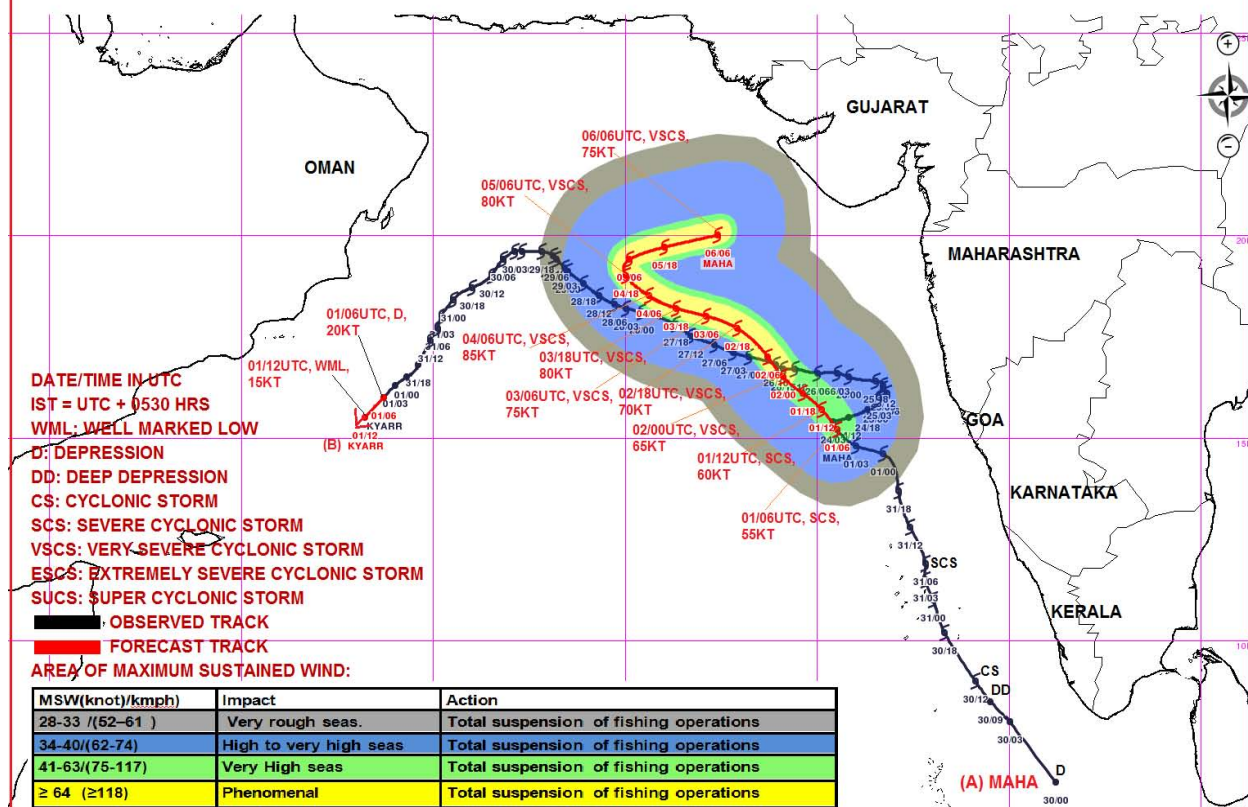


Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH (A) SEVERE CYCLONIC STORM "MAHA" OVER EASTCENTRAL ARABIAN SEA AND (B) DEPRESSION OVER WESTCENTRAL ARABIAN SEA BASED ON 0600 UTC OF 01ST NOVEMBER 2019



OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH (A) SEVERE CYCLONIC STORM "MAHA" OVER EASTCENTRAL ARABIAN SEA AND (B) DEPRESSION OVER WESTCENTRAL ARABIAN SEA BASED ON 0600 UTC OF 01ST NOVEMBER 2019



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 19 (ARB/04/2019) and BULLETIN NO. : 64 (ARB/03/2019)

TIME OF ISSUE: 1650 HOURS IST

DATED: 01.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea

(B) Depression over westcentral Arabian Sea.

BULLETIN NO. : 19 (ARB/04/2019)

(A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea

The Severe cyclonic storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea moved west-northwestwards with a speed of 21 kmph during past 06 hours, and lay centered at 1430 hrs IST of today, the 01st November, 2019 over eastcentral Arabian Sea near latitude 15.4°N and longitude 70.0°E, about 610 km south of Veraval (Gujarat), 590 km north-northwest of Mangaluru (Karnataka) and 410 km west of Goa. It is very likely to move northwestwards during next 24 hours, west-northwestwards during 02nd to 04th November and recurve east-northeastwards towards south Gujarat coast thereafter. It is very likely to intensify into a very severe cyclonic storm over eastcentral Arabian Sea during next 24 hours.

(Continued on next page)

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
01.11.19/1430	15.4/70.0	100-110 gusting to 125	Severe Cyclonic Storm
01.11.19/1730	15.7/69.7	110-120 gusting to 135	Severe Cyclonic Storm
01.11.19/2330	16.1/69.3	110-120 gusting to 135	Severe Cyclonic Storm
02.11.19/0530	16.5/68.9	120-130 gusting to 145	Very Severe Cyclonic Storm
02.11.19/1130	17.0/68.6	120-130 gusting to 145	Very Severe Cyclonic Storm
02.11.19/2330	17.7/67.9	130-140 gusting to 155	Very Severe Cyclonic Storm
03.11.19/1130	18.0/67.1	140-150 gusting to 165	Very Severe Cyclonic Storm
03.11.19/2330	18.2/66.3	150-160 gusting to 175	Very Severe Cyclonic Storm
04.11.19/1130	18.5/65.6	160-170 gusting to 185	Very Severe Cyclonic Storm
04.11.19/2330	19.0/65.0	160-170 gusting to 185	Very Severe Cyclonic Storm
05.11.19/1130	19.4/65.1	150-160 gusting to 175	Very Severe Cyclonic Storm
05.11.19/2330	19.7/66.0	150-160 gusting to 175	Very Severe Cyclonic Storm
06.11.19/1130	20.0/67.4	140-150 gusting to 165	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at a few places very likely over Konkan & Goa, Madhya Maharashtra and south Gujarat during next 24 hours.

(ii) Wind warning

- Gale wind speed reaching 100-110 kmph gusting to 125 kmph is prevailing over eastcentral Arabian Sea around the system centre.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 115-125 kmph gusting to 140 kmph by the evening of 1st November and 155-165 kmph gusting to 180 kmph over eastcentral, adjoining westcentral and northeast Arabian Sea by 05th November morning.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Goa-Maharashtra coasts during next 24 hours.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off South Gujarat coast and adjoining from 6th November morning.

(iii) Sea condition

- Sea condition will be very high over eastcentral Arabian Sea for the next 18 hours and will become phenomenal from 02nd November morning for subsequent 04 days.
- Sea condition will be high to phenomenal over westcentral and adjoining northeast Arabian Sea during 4th to 6th November.

(v) Fishermen Warning

- The fishermen are advised not to venture sea along & off Goa- Maharashtra coasts during next 24 hours and into eastcentral Arabian Sea till 6th November, 2019 and over westcentral and northeast Arabian Sea from 03rd November onwards.

BULLETIN NO. : 64 (ARB/03/2019)

(B) Depression over westcentral Arabian Sea

The Depression over westcentral Arabian Sea moved southwestwards with a speed of 14 kmph during past 6 hours and lay centred at 1430 hrs IST of today, the 01st November, 2019 over westcentral Arabian Sea near latitude 15.8°N and longitude 58.4°E, about 1570 km west-southwest

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

of Mumbai (Maharashtra), 490 km east-northeast of Salalah (Oman) and 540 km south-southeast of Masirah (Oman). It is very likely to move southwestwards across westcentral Arabian Sea and weaken into a Well Marked Low Pressure Area during next 06 hours.

Warnings:

(i) Wind warning

- Gale wind speed reaching 45-55 kmph gusting to 65 kmph is prevailing around the system centre over westcentral Arabian Sea. It is very likely to reduce becoming 40-50 kmph gusting to 60 kmph during next 6 hours and decrease thereafter.

(ii) Sea condition

- Sea condition is rough to very rough over westcentral Arabian Sea around the system centre. It will become rough during next 6 hours and improve gradually thereafter.

(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea during next 12 hours.

The next bulletin will be issued at 2030 hrs IST of 01st November, 2019.

(Sunitha Devi S)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

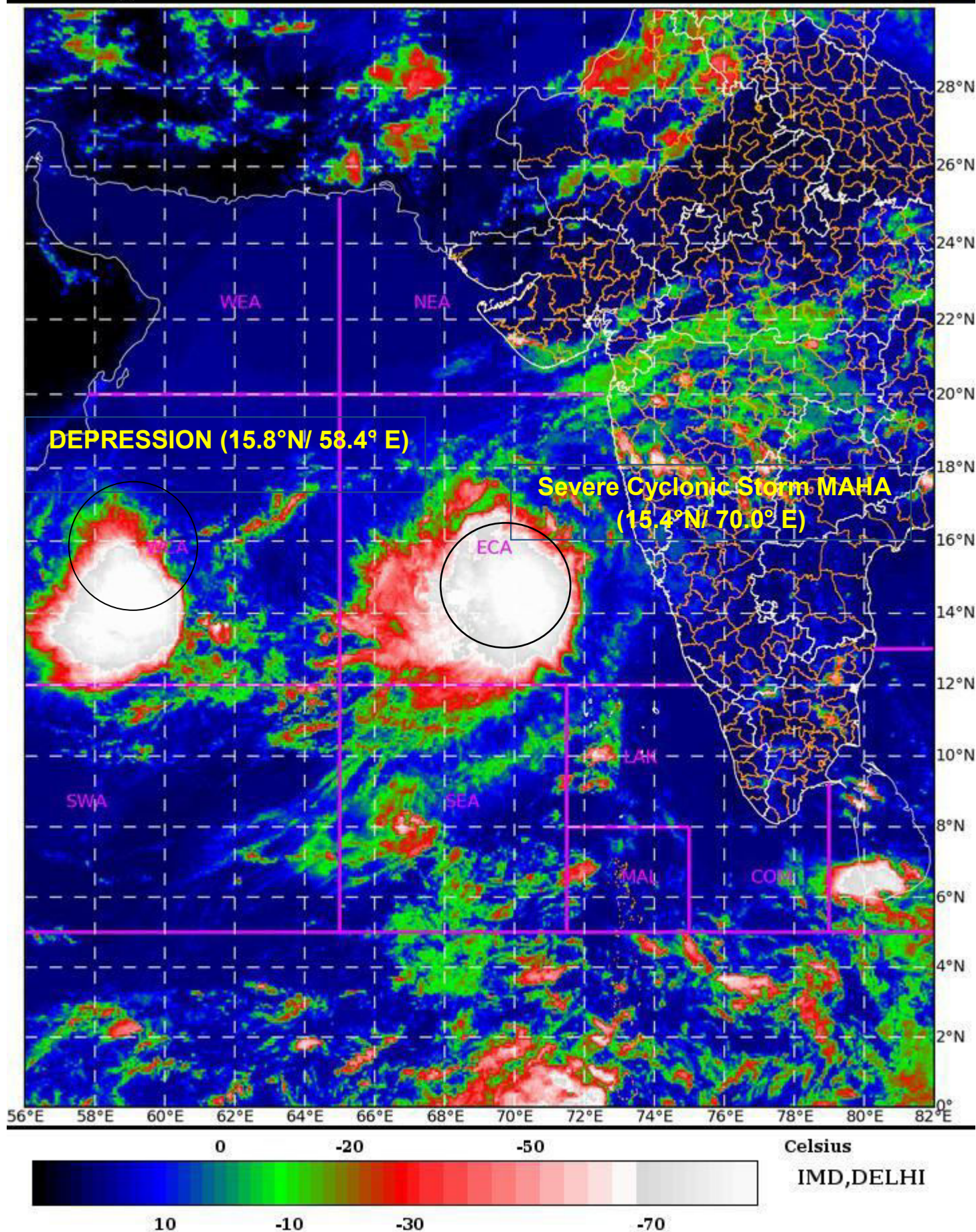
SAT : INSAT-3D IMG

01-11-2019/(1030 to 1056) GMT

IMG_TIR1_TEMP 10.8 um

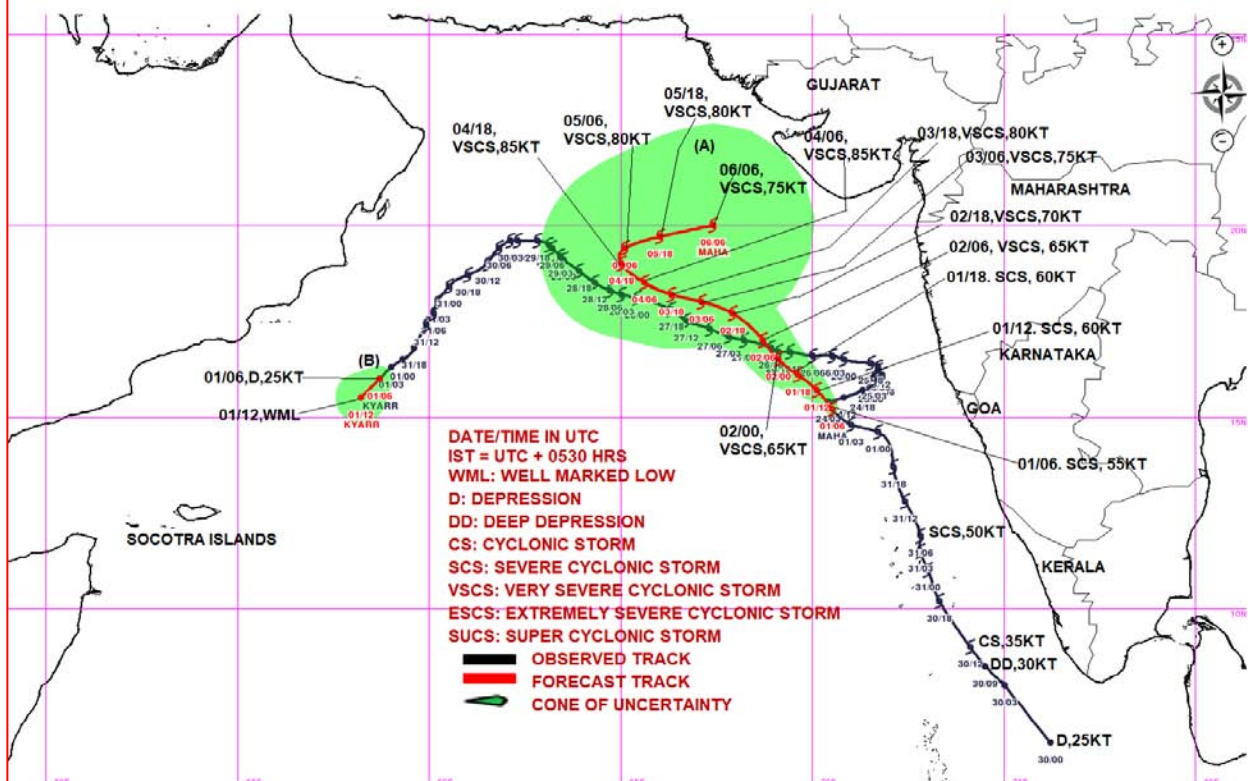
01-11-2019/(1600 to 1626) IST

ARABIAN_SEA

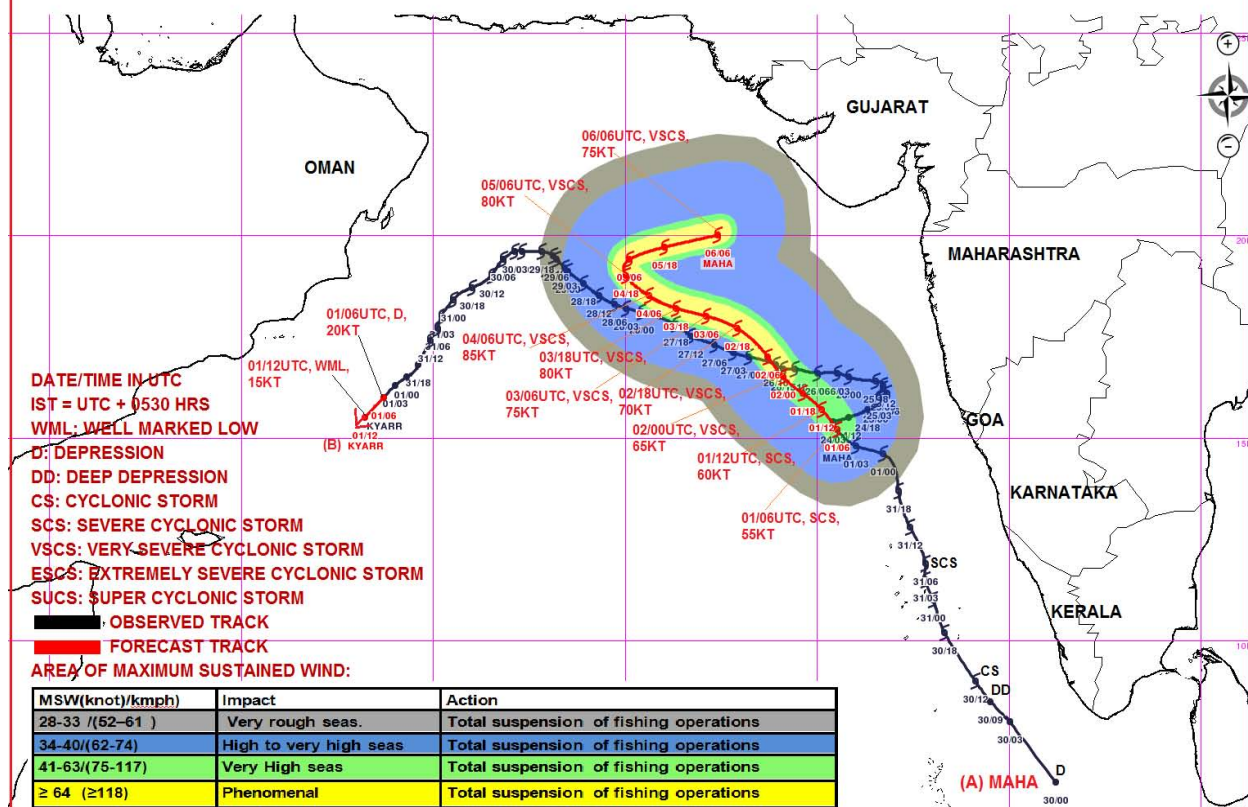


Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH (A) SEVERE CYCLONIC STORM "MAHA" OVER EASTCENTRAL ARABIAN SEA AND (B) DEPRESSION OVER WESTCENTRAL ARABIAN SEA BASED ON 0600 UTC OF 01ST NOVEMBER 2019



OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH (A) SEVERE CYCLONIC STORM "MAHA" OVER EASTCENTRAL ARABIAN SEA AND (B) DEPRESSION OVER WESTCENTRAL ARABIAN SEA BASED ON 0600 UTC OF 1ST NOVEMBER 2019



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 20 (ARB/04/2019) and BULLETIN NO. : 65 (ARB/03/2019)

TIME OF ISSUE: 2000 HOURS IST

DATED: 01.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

**Sub: (A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea
(B) Depression over westcentral Arabian Sea.**

BULLETIN NO. : 20 (ARB/04/2019)

(A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea

The Severe cyclonic storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea moved further west-northwestwards with a speed of 19 kmph during past 06 hours, and lay centered at 1730 hrs IST of today, the 01st November, 2019 over eastcentral Arabian Sea near latitude 15.6°N and longitude 69.5°E, about 590 km south-southwest of Veraval (Gujarat) and 460 km west of Goa. It is very likely to move northwestwards during next 24 hours, west-northwestwards during 02nd to 04th November and recurve east-northeastwards towards south Gujarat coast thereafter. It is very likely to intensify into a very severe cyclonic storm over eastcentral Arabian Sea during next 24 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
01.11.19/1730	15.6/69.5	90-100 gusting to 115	Severe Cyclonic Storm
01.11.19/2330	16.1/69.0	95-105 gusting to 120	Severe Cyclonic Storm
02.11.19/0530	16.6/68.6	100-110 gusting to 125	Severe Cyclonic Storm
02.11.19/1130	17.0/68.2	110-120 gusting to 135	Severe Cyclonic Storm
02.11.19/1730	17.4/67.9	120-130 gusting to 145	Very Severe Cyclonic Storm
03.11.19/0530	17.8/67.5	130-140 gusting to 155	Very Severe Cyclonic Storm
03.11.19/1730	18.1/66.7	140-150 gusting to 165	Very Severe Cyclonic Storm
04.11.19/0530	18.3/66.0	145-155 gusting to 170	Very Severe Cyclonic Storm
04.11.19/1730	18.7/65.2	150-160 gusting to 175	Very Severe Cyclonic Storm
05.11.19/0530	19.1/65.0	150-160 gusting to 175	Very Severe Cyclonic Storm
05.11.19/1730	19.6/65.5	140-150 gusting to 165	Very Severe Cyclonic Storm
06.11.19/0530	19.8/66.7	130-140 gusting to 155	Very Severe Cyclonic Storm
06.11.19/1730	20.2/67.9	120-130 gusting to 145	Very Severe Cyclonic Storm

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at a few places very likely over Konkan & Goa, Madhya Maharashtra and south Gujarat during next 24 hours.
- Light to moderate rainfall at many places with isolated heavy falls over Saurashtra and Gujarat region on 6th & 7th November, 2019.

(ii) Wind warning

- Gale wind speed reaching 90-100 kmph gusting to 115 kmph is prevailing over eastcentral Arabian Sea around the system centre.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 120-130 kmph gusting to 145 kmph by the evening of 2nd November and 150-160 kmph gusting to 175 kmph over eastcentral & adjoining westcentral and northeast Arabian Sea by 04th November morning.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Goa-Maharashtra coasts during next 24 hours.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off South Gujarat coast from 6th November morning.

(iii) Sea condition

- Sea condition will be very high over eastcentral Arabian Sea for the next 24 hours and will become phenomenal from 02nd November evening for subsequent 04 days.
- Sea condition will be high to phenomenal over westcentral and adjoining northeast Arabian Sea during 4th to 6th November.

(v) Fishermen Warning

- The fishermen are advised not to venture into the sea along & off Goa- Maharashtra coasts during next 24 hours and into eastcentral Arabian Sea till 6th November, 2019 and over westcentral and northeast Arabian Sea from 03rd November onwards.

BULLETIN NO. : 65 (ARB/03/2019)

(B) Depression over westcentral Arabian Sea

The Depression over westcentral Arabian Sea moved west-southwestwards with a speed of 24 kmph during past 06 hours and lay centred at 1730 hrs IST of today, the 01st November, 2019 over westcentral Arabian Sea near latitude 15.4°N and longitude 57.5°E, about 1670 km west-southwest of Mumbai (Maharashtra), 420 km east-southeast of Salalah (Oman) and 600 km south-southeast of Masirah (Oman). It is very likely to move southwestwards across westcentral Arabian Sea, maintaining the intensity of a depression during next 12 hours and weaken into a Well Marked Low Pressure Area thereafter.

Warnings:

(i) Wind warning

- Gale wind speed reaching 45-55 kmph gusting to 65 kmph is prevailing around the system centre over westcentral Arabian Sea. It is very likely to reduce becoming 40-50 kmph gusting to 60 kmph during next 12 hours and decrease thereafter.

(ii) Sea condition

- Sea condition is rough to very rough over westcentral Arabian Sea around the system centre. It will become rough during next 12 hours and improve gradually thereafter.

(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea during next 12 hours.

The next bulletin will be issued at 2330 hrs IST of 01st November, 2019.

(Sunitha Devi S)

Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

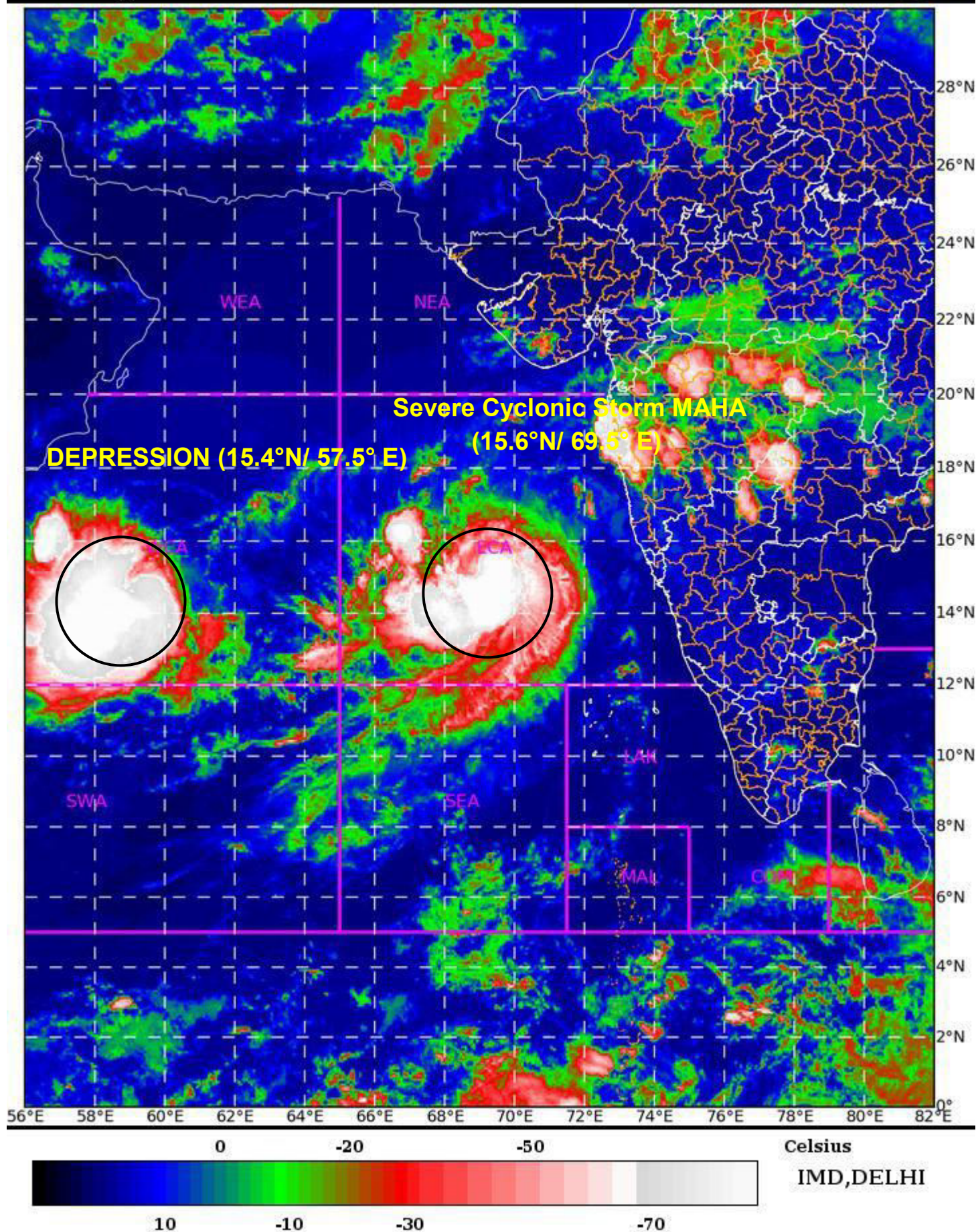
SAT : INSAT-3D IMG

01-11-2019/(1330 to 1356) GMT

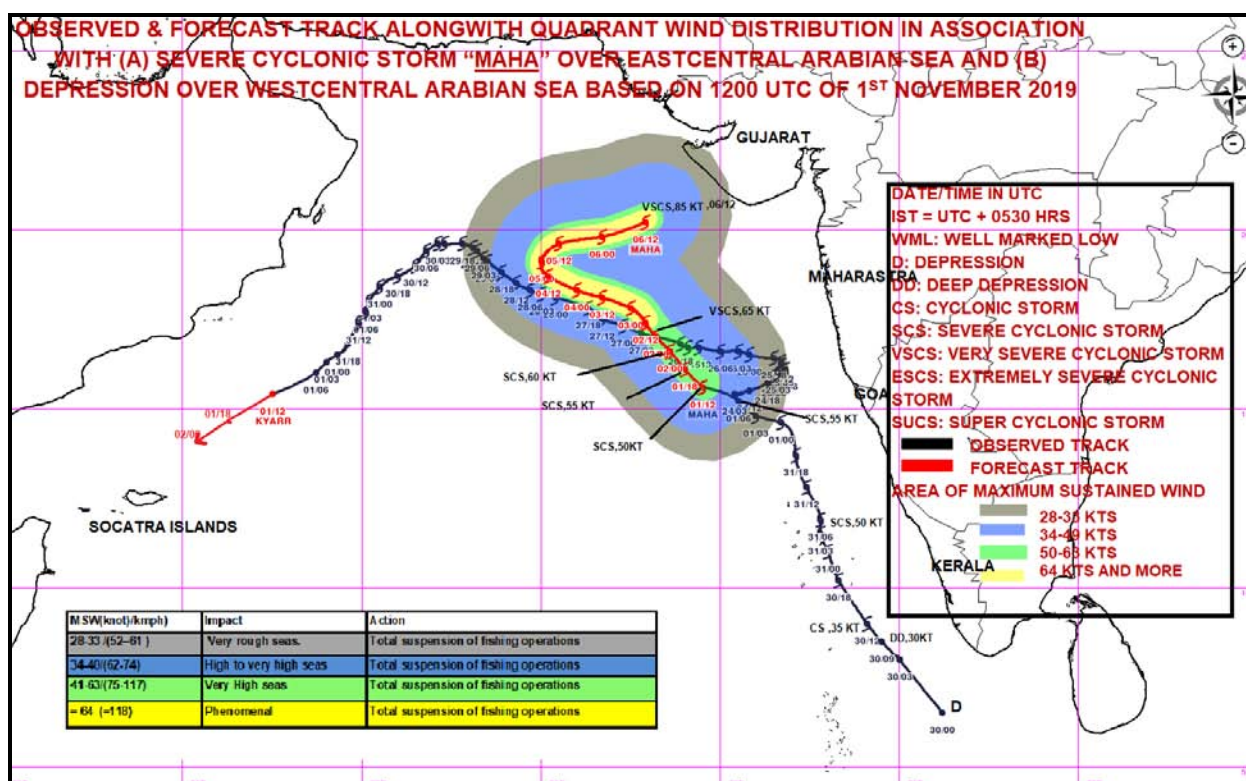
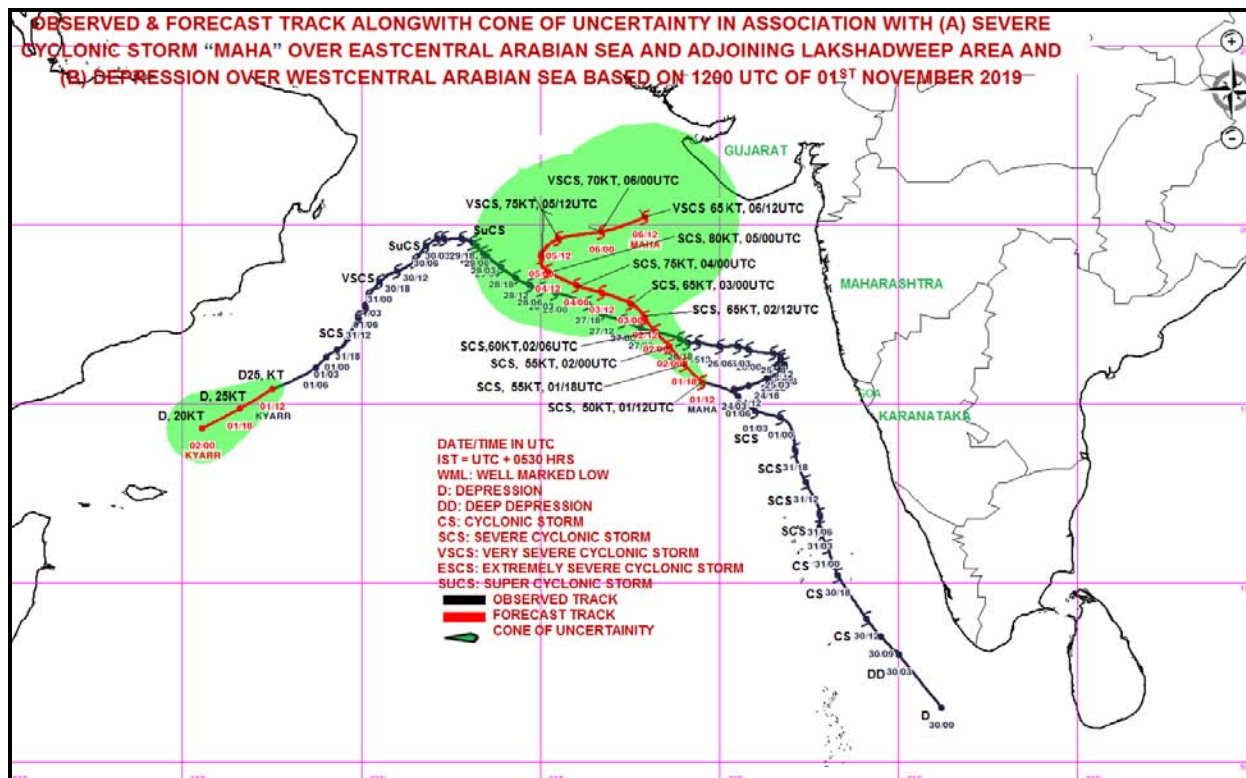
IMG_TIR1_TEMP 10.8 um

01-11-2019/(1900 to 1926) IST

ARABIAN_SEA



Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 21 (ARB/04/2019) and BULLETIN NO. : 66 (ARB/03/2019)

TIME OF ISSUE: 2215 HOURS IST

DATED: 01.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

**Sub: (A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea
(B) Depression over westcentral Arabian Sea.**

BULLETIN NO. : 21 (ARB/04/2019)

(A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea

The Severe Cyclonic storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea moved further west-northwestwards with a speed of 15 kmph during past 06 hours, and lay centered at 2030 hrs IST of today, the 01st November, 2019 over eastcentral Arabian Sea near latitude 15.7°N and longitude 69.2°E, about 590 km south-southwest of Veraval (Gujarat) and 490 km west of Goa. It is very likely to move northwestwards during next 24 hours, west-northwestwards during 02nd to 04th November and recurve east-northeastwards towards south Gujarat coast thereafter. It is very likely to intensify into a Very Severe Cyclonic Storm over eastcentral Arabian Sea during next 24 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
01.11.19/2030	15.7/69.2	90-100 gusting to 115	Severe Cyclonic Storm
01.11.19/2330	16.1/69.0	95-105 gusting to 120	Severe Cyclonic Storm
02.11.19/0530	16.6/68.6	100-110 gusting to 125	Severe Cyclonic Storm
02.11.19/1130	17.0/68.2	110-120 gusting to 135	Severe Cyclonic Storm
02.11.19/1730	17.4/67.9	120-130 gusting to 145	Very Severe Cyclonic Storm
03.11.19/0530	17.8/67.5	130-140 gusting to 155	Very Severe Cyclonic Storm
03.11.19/1730	18.1/66.7	140-150 gusting to 165	Very Severe Cyclonic Storm
04.11.19/0530	18.3/66.0	145-155 gusting to 170	Very Severe Cyclonic Storm
04.11.19/1730	18.7/65.2	150-160 gusting to 175	Very Severe Cyclonic Storm
05.11.19/0530	19.1/65.0	150-160 gusting to 175	Very Severe Cyclonic Storm
05.11.19/1730	19.6/65.5	140-150 gusting to 165	Very Severe Cyclonic Storm
06.11.19/0530	19.8/66.7	130-140 gusting to 155	Very Severe Cyclonic Storm
06.11.19/1730	20.2/67.9	120-130 gusting to 145	Very Severe Cyclonic Storm

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at a few places very likely over Konkan & Goa, Madhya Maharashtra and south Gujarat during next 24 hours.
- Light to moderate rainfall at many places with isolated heavy falls over Saurashtra and Gujarat region on 6th & 7th November, 2019.

(ii) Wind warning

- Gale wind speed reaching 90-100 kmph gusting to 115 kmph is prevailing over eastcentral Arabian Sea around the system centre.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 120-130 kmph gusting to 145 kmph by the evening of 2nd November and 150-160 kmph gusting to 175 kmph over eastcentral & adjoining westcentral and northeast Arabian Sea by 04th November morning.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Goa-Maharashtra coasts during next 24 hours.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off South Gujarat coast from 6th November morning.

(iii) Sea condition

- Sea condition will be very high over eastcentral Arabian Sea for the next 24 hours and will become phenomenal from 02nd November evening for subsequent 04 days.
- Sea condition will be high to phenomenal over westcentral and adjoining northeast Arabian Sea during 4th to 6th November.

(iv) Fishermen Warning

- The fishermen are advised not to venture into the sea along & off Goa- Maharashtra coasts during next 24 hours and into eastcentral Arabian Sea till 6th November, 2019 and over westcentral and northeast Arabian Sea from 03rd November onwards.

BULLETIN NO. : 66 (ARB/03/2019)

(B) Depression over westcentral Arabian Sea

The Depression over westcentral Arabian Sea moved west-southwestwards with a speed of 23 kmph during past 06 hours and lay centred at 2030 hrs IST of today, the 01st November, 2019 over westcentral Arabian Sea near latitude 15.0°N and longitude 57.4°E, about 1700 km west-southwest of Mumbai (Maharashtra), 420 km east-southeast of Salalah (Oman) and 650 km south-southwest of Masirah (Oman). It is very likely to move southwestwards across westcentral Arabian Sea, maintaining the intensity of a depression during next 12 hours and weaken into a Well Marked Low Pressure Area thereafter.

Warnings:

(i) Wind warning

- Gale wind speed reaching 45-55 kmph gusting to 65 kmph is prevailing around the system centre over westcentral Arabian Sea. It is very likely to reduce becoming 40-50 kmph gusting to 60 kmph during next 12 hours and decrease thereafter.

(ii) Sea condition

- Sea condition is rough to very rough over westcentral Arabian Sea around the system centre. It will become rough during next 12 hours and improve gradually thereafter.

(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea during next 12 hours.

The next bulletin will be issued at 0230 hrs IST of 02nd November, 2019.

(V R Durai)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

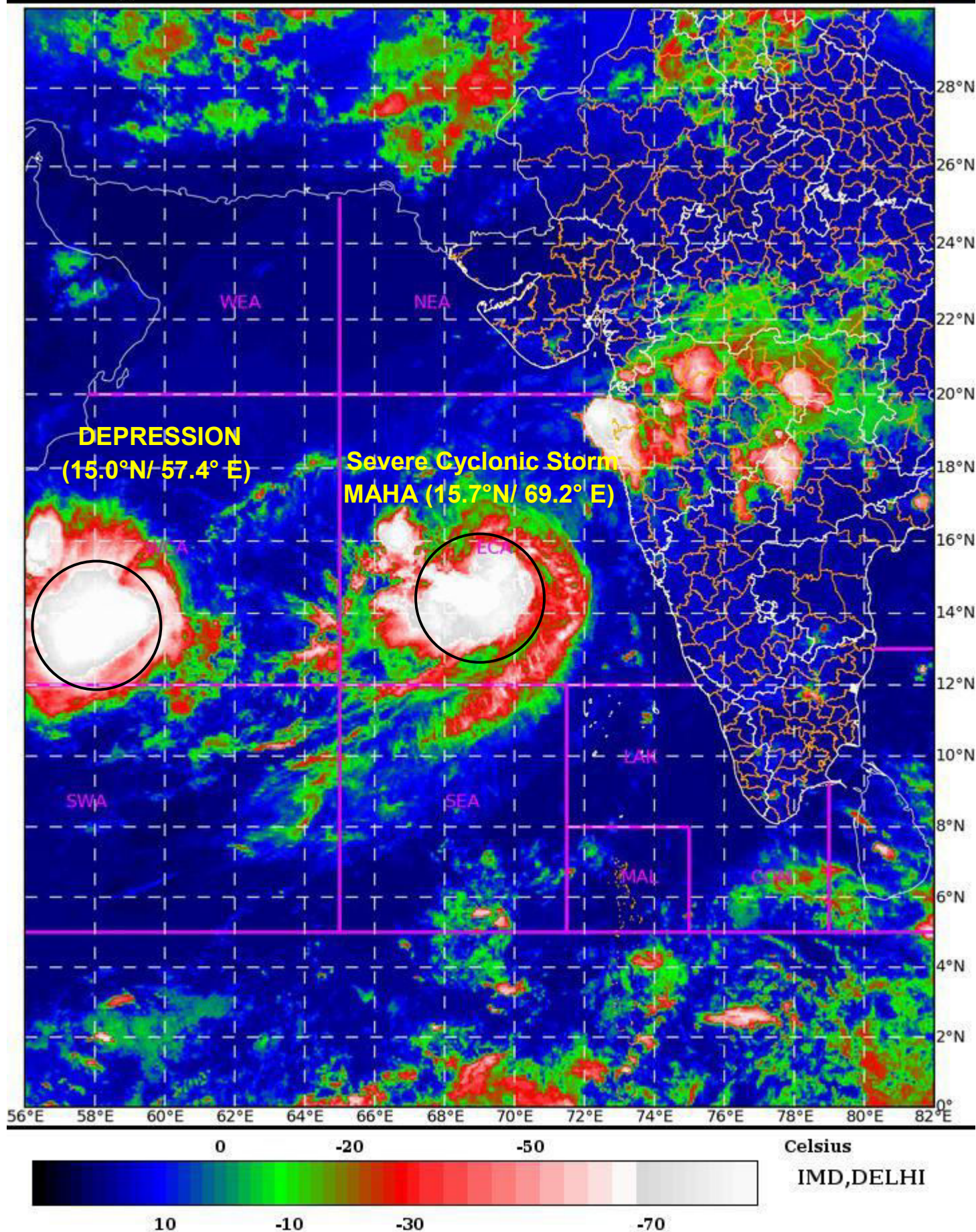
SAT : INSAT-3D IMG

01-11-2019/(1430 to 1456) GMT

IMG_TIR1_TEMP 10.8 um

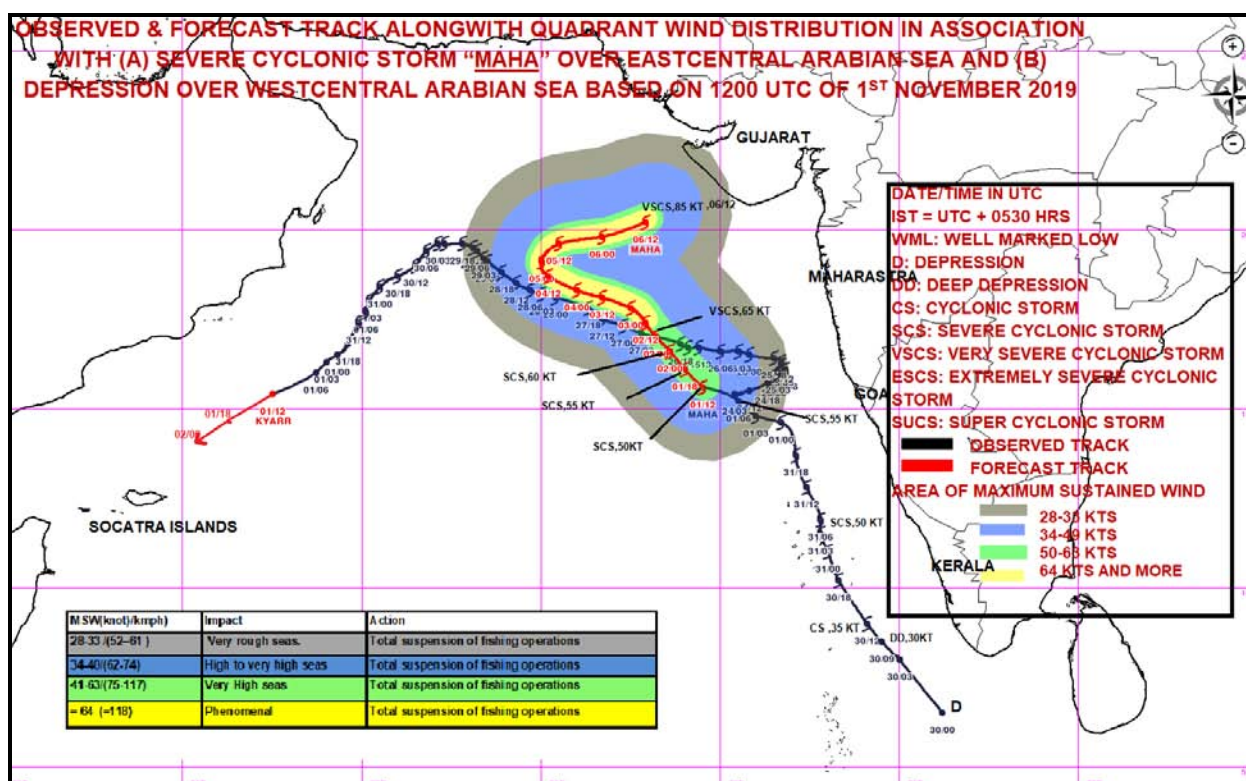
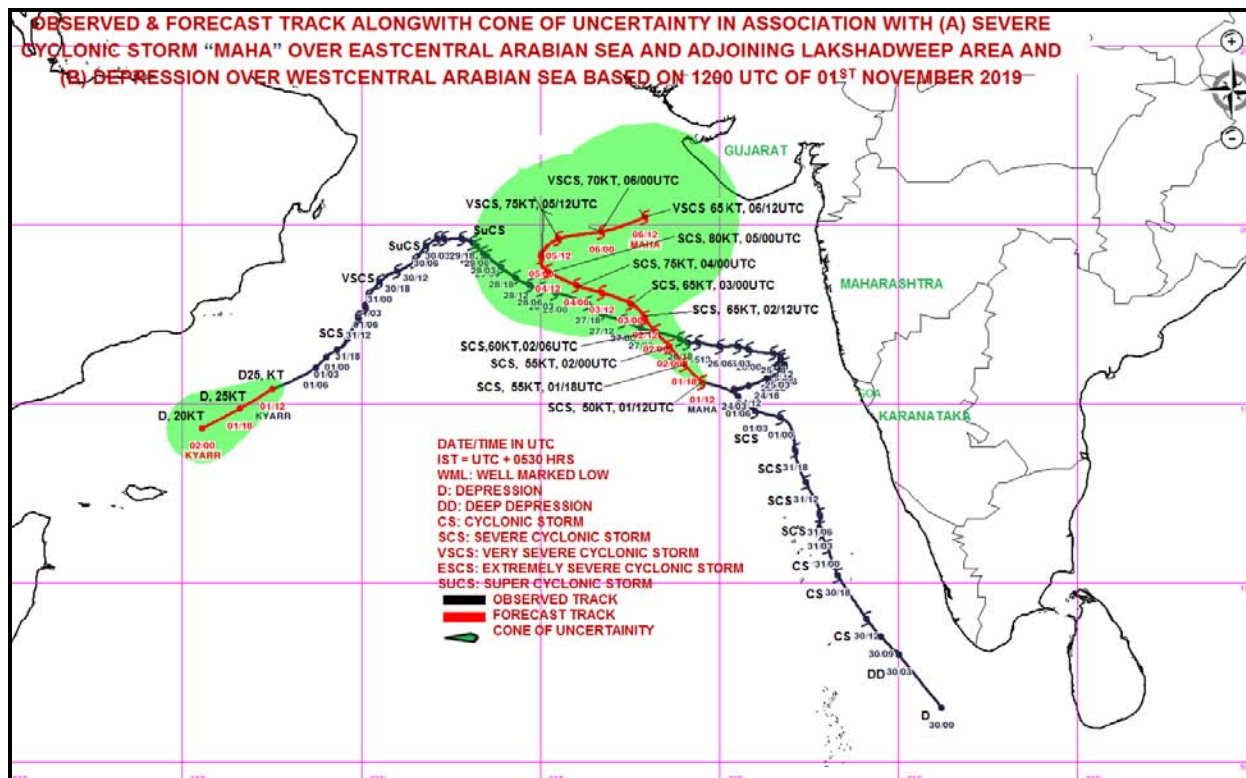
01-11-2019/(2000 to 2026) IST

ARABIAN_SEA



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 22 (ARB/04/2019) and BULLETIN NO. : 67 (ARB/03/2019)

TIME OF ISSUE: 0230 HOURS IST

DATED: 02.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

**Sub: (A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea
(B) Depression over westcentral Arabian Sea.**

BULLETIN NO. : 22 (ARB/04/2019)

(A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea

The Severe Cyclonic storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea moved further west-northwestwards with a speed of 09 kmph during past 06 hours, and lay centered at 2330 hrs IST of yesterday, the 01st November, 2019 over eastcentral Arabian Sea near latitude 15.9°N and longitude 69.1°E, about 570 km south-southwest of Veraval (Gujarat) and 500 km west-northwest of Goa. It is very likely to move northwestwards during next 24 hours, west-northwestwards till 04th November and recurve east-northeastwards towards south Gujarat coast thereafter. It is very likely to intensify into a Very Severe Cyclonic Storm over eastcentral Arabian Sea during next 24 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
01.11.19/2330	15.9/69.1	90-100 gusting to 110	Severe Cyclonic Storm
02.11.19/0530	16.6/68.6	95-105 gusting to 115	Severe Cyclonic Storm
02.11.19/1130	16.9/68.2	110-120 gusting to 135	Severe Cyclonic Storm
02.11.19/1730	17.3/67.8	120-130 gusting to 145	Very Severe Cyclonic Storm
02.11.19/2330	17.5/67.4	130-140 gusting to 155	Very Severe Cyclonic Storm
03.11.19/1130	17.8/66.5	140-150 gusting to 165	Very Severe Cyclonic Storm
03.11.19/2330	18.0/65.7	145-155 gusting to 170	Very Severe Cyclonic Storm
04.11.19/1130	18.3/64.5	150-160 gusting to 175	Very Severe Cyclonic Storm
04.11.19/2330	18.7/64.0	150-160 gusting to 175	Very Severe Cyclonic Storm
05.11.19/1130	19.1/64.3	140-150 gusting to 165	Very Severe Cyclonic Storm
05.11.19/2330	19.4/65.1	130-140 gusting to 155	Very Severe Cyclonic Storm
06.11.19/1130	19.6/66.5	120-130 gusting to 145	Very Severe Cyclonic Storm
06.11.19/2330	19.9/67.9	120-130 gusting to 145	Very Severe Cyclonic Storm

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at a few places very likely over Konkan & Goa, Madhya Maharashtra and south Gujarat during next 24 hours.
- Light to moderate rainfall at many places with isolated heavy falls over Saurashtra and Gujarat region on 6th & 7th November, 2019.

(ii) Wind warning

- Gale wind speed reaching 90-100 kmph gusting to 110 kmph is prevailing over eastcentral Arabian Sea around the system centre.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 120-130 kmph gusting to 145 kmph by the evening of 2nd November and 150-160 kmph gusting to 175 kmph over eastcentral & adjoining westcentral and northeast Arabian Sea by 04th November morning.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Goa-Maharashtra coasts during next 24 hours.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off South Gujarat coast from 6th November morning.

(iii) Sea condition

- Sea condition will be very high over eastcentral Arabian Sea for the next 24 hours and will become phenomenal from 02nd November evening for subsequent 04 days.
- Sea condition will be high to phenomenal over westcentral and adjoining northeast Arabian Sea during 4th to 6th November.

(iv) Fishermen Warning

- The fishermen are advised not to venture into the sea along & off Goa- Maharashtra coasts during next 24 hours and into eastcentral Arabian Sea till 6th November, 2019 and over westcentral and northeast Arabian Sea from 03rd November onwards.

BULLETIN NO. : 67 (ARB/03/2019)

(B) Depression over westcentral Arabian Sea

The Depression over westcentral Arabian Sea moved west-southwestwards with a speed of 19 kmph during past 06 hours and lay centred at 2330 hrs IST of yesterday, the 01st November, 2019 over westcentral Arabian Sea near latitude 14.5°N and longitude 57.0°E, about 1760 km west-southwest of Mumbai (Maharashtra), 420 km east-southeast of Salalah (Oman) and 710 km south-southwest of Masirah (Oman). It is very likely to move southwestwards across westcentral Arabian Sea, maintaining the intensity of a depression during next 06 hours and weaken into a Well Marked Low Pressure Area thereafter.

Warnings:

(i) Wind warning

- Gale wind speed reaching 45-55 kmph gusting to 65 kmph is prevailing around the system centre over westcentral Arabian Sea. It is very likely to reduce becoming 40-50 kmph gusting to 60 kmph during next 12 hours and decrease thereafter.

(ii) Sea condition

- Sea condition is rough to very rough over westcentral Arabian Sea around the system centre. It will become rough during next 12 hours and improve gradually thereafter.

(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea during next 12 hours.

The next bulletin will be issued at 0530 hrs IST of 02nd November, 2019.

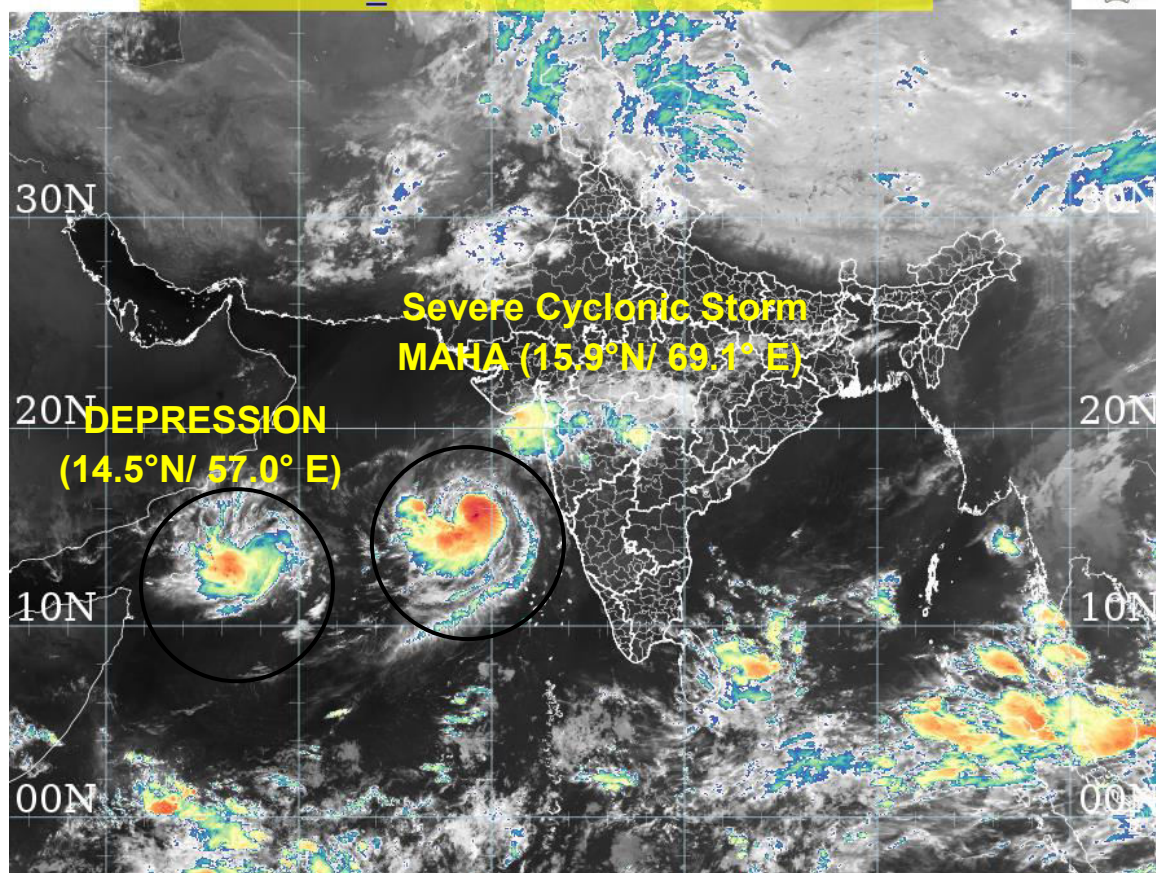
(V R Durai)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



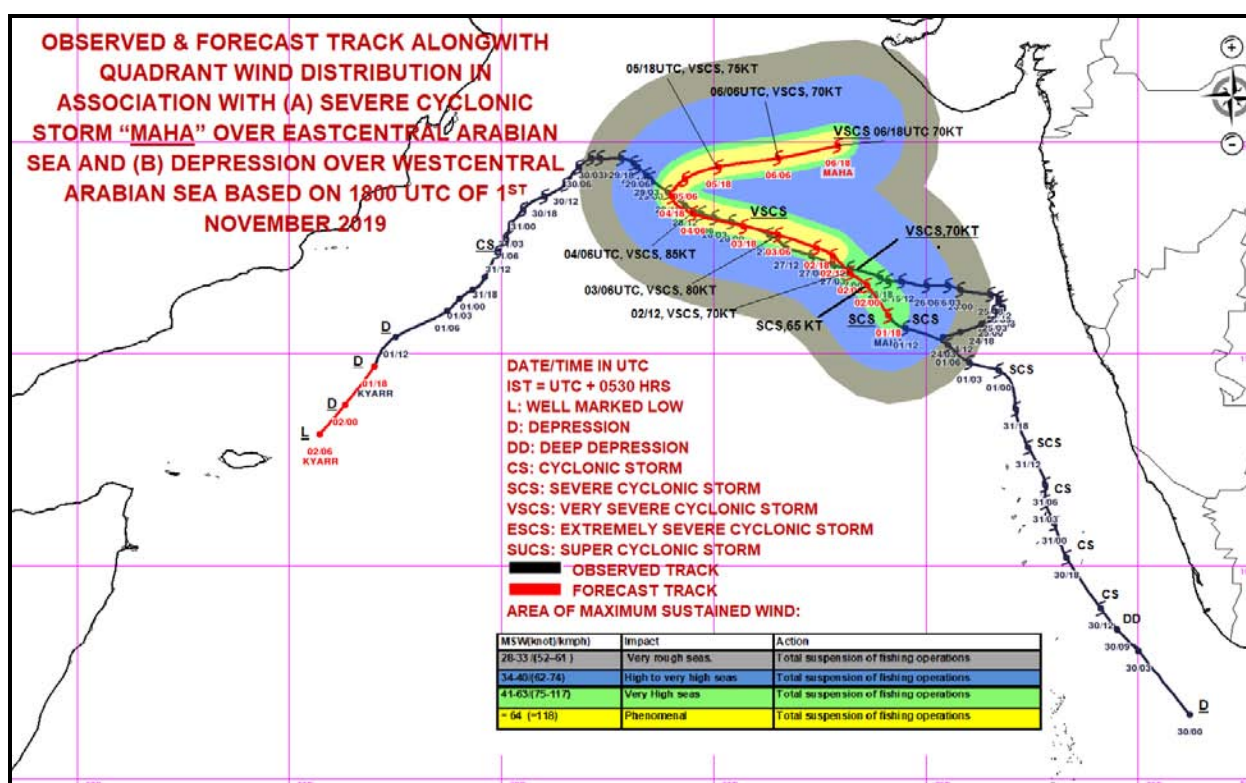
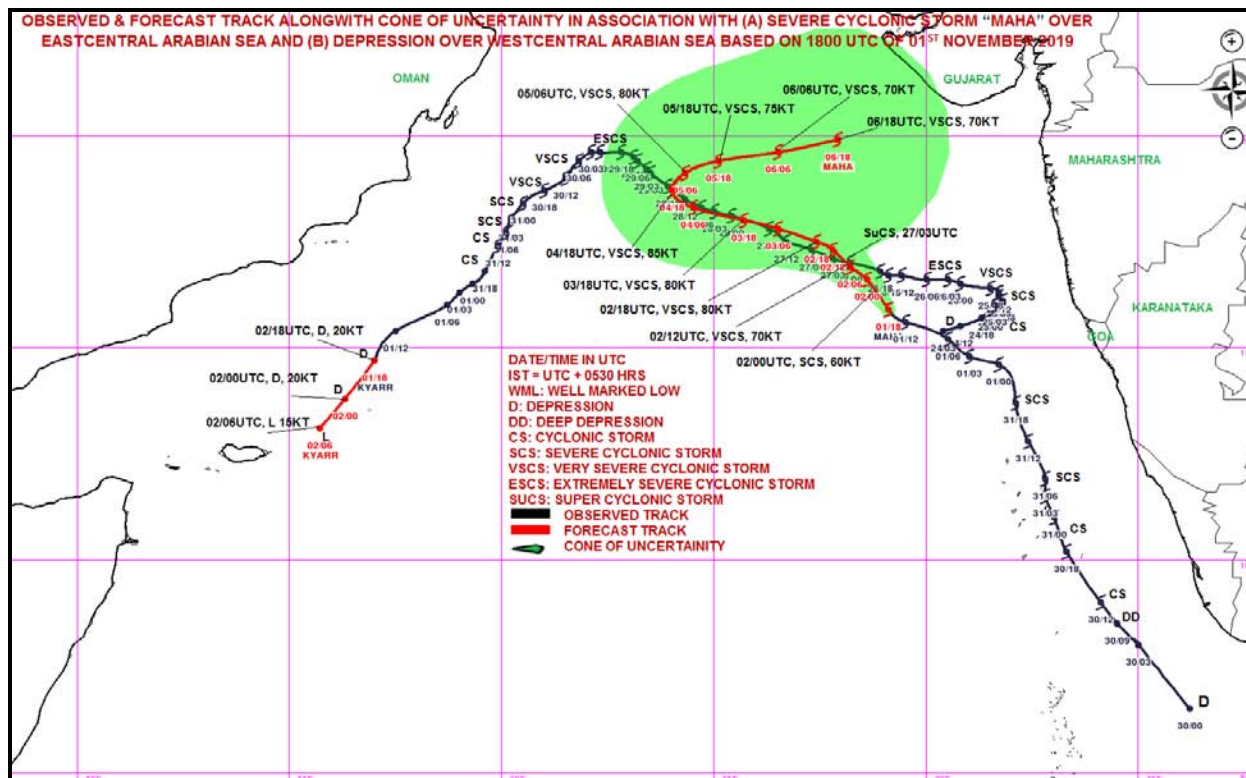
MSG-1: SEVIRI [colorized_ir_clouds]
20191101_1915UTC



 **EUMETSAT**

 **PyTROLL**

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 23 (ARB/04/2019) and BULLETIN NO. : 68 (ARB/03/2019)

TIME OF ISSUE: 0530 HOURS IST

DATED: 02.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

**Sub: (A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea
(B) Depression over westcentral Arabian Sea.**

BULLETIN NO. : 23 (ARB/04/2019)

(A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea

The Severe Cyclonic storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea moved further west-northwestwards with a speed of 12 kmph during past 06 hours, and lay centered at 0230 hrs IST of today, the 02nd November, 2019 over eastcentral Arabian Sea near latitude 16.2°N and longitude 68.8°E, about 550 km south-southwest of Veraval (Gujarat) and 540 km west-northwest of Goa. It is very likely to move northwestwards during next 24 hours, west-northwestwards till 04th November and recurve east-northeastwards towards south Gujarat coast thereafter. It is very likely to intensify into a Very Severe Cyclonic Storm over eastcentral Arabian Sea during next 24 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
02.11.19/0230	16.2/68.8	90-100 gusting to 110	Severe Cyclonic Storm
02.11.19/0530	16.6/68.6	95-105 gusting to 115	Severe Cyclonic Storm
02.11.19/1130	16.9/68.2	110-120 gusting to 135	Severe Cyclonic Storm
02.11.19/1730	17.3/67.8	120-130 gusting to 145	Very Severe Cyclonic Storm
02.11.19/2330	17.5/67.4	130-140 gusting to 155	Very Severe Cyclonic Storm
03.11.19/1130	17.8/66.5	140-150 gusting to 165	Very Severe Cyclonic Storm
03.11.19/2330	18.0/65.7	145-155 gusting to 170	Very Severe Cyclonic Storm
04.11.19/1130	18.3/64.5	150-160 gusting to 175	Very Severe Cyclonic Storm
04.11.19/2330	18.7/64.0	150-160 gusting to 175	Very Severe Cyclonic Storm
05.11.19/1130	19.1/64.3	140-150 gusting to 165	Very Severe Cyclonic Storm
05.11.19/2330	19.4/65.1	130-140 gusting to 155	Very Severe Cyclonic Storm
06.11.19/1130	19.6/66.5	120-130 gusting to 145	Very Severe Cyclonic Storm
06.11.19/2330	19.9/67.9	120-130 gusting to 145	Very Severe Cyclonic Storm

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at a few places very likely over Konkan & Goa, Madhya Maharashtra and south Gujarat during next 24 hours.
- Light to moderate rainfall at many places with isolated heavy falls over Saurashtra and Gujarat region on 6th & 7th November, 2019.

(ii) Wind warning

- Gale wind speed reaching 90-100 kmph gusting to 110 kmph is prevailing over eastcentral Arabian Sea around the system centre.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 120-130 kmph gusting to 145 kmph by the evening of 2nd November and 150-160 kmph gusting to 175 kmph over eastcentral & adjoining westcentral and northeast Arabian Sea by 04th November morning.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Goa-Maharashtra coasts during next 24 hours.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off South Gujarat coast from 6th November morning.

(iii) Sea condition

- Sea condition will be very high over eastcentral Arabian Sea for the next 24 hours and will become phenomenal from 02nd November evening for subsequent 04 days.
- Sea condition will be high to phenomenal over westcentral and adjoining northeast Arabian Sea during 4th to 6th November.

(iv) Fishermen Warning

- The fishermen are advised not to venture into the sea along & off Goa- Maharashtra coasts during next 24 hours and into eastcentral Arabian Sea till 6th November, 2019 and over westcentral and northeast Arabian Sea from 03rd November onwards.

BULLETIN NO. : 68 (ARB/03/2019)

(B) Depression over westcentral Arabian Sea

The Depression over westcentral Arabian Sea moved west-southwestwards with a speed of 25 kmph during past 06 hours and lay centred at 0230 hrs IST of today, the 02nd November, 2019 over westcentral Arabian Sea near latitude 14.0°N and longitude 56.4°E, about 1840 km west-southwest of Mumbai (Maharashtra), 420 km east-southeast of Salalah (Oman) and 790 km south-southwest of Masirah (Oman). It is very likely to move southwestwards across westcentral Arabian Sea, maintaining the intensity of a depression during next 03 hours and weaken into a Well Marked Low Pressure Area thereafter.

Warnings:

(i) Wind warning

- Gale wind speed reaching 45-55 kmph gusting to 65 kmph is prevailing around the system centre over westcentral Arabian Sea. It is very likely to reduce becoming 40-50 kmph gusting to 60 kmph during next 12 hours and decrease thereafter.

(ii) Sea condition

- Sea condition is rough to very rough over westcentral Arabian Sea around the system centre. It will become rough during next 12 hours and improve gradually thereafter.

(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea during next 12 hours.

The next bulletin will be issued at 0830 hrs IST of 02nd November, 2019.

(V R Durai)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

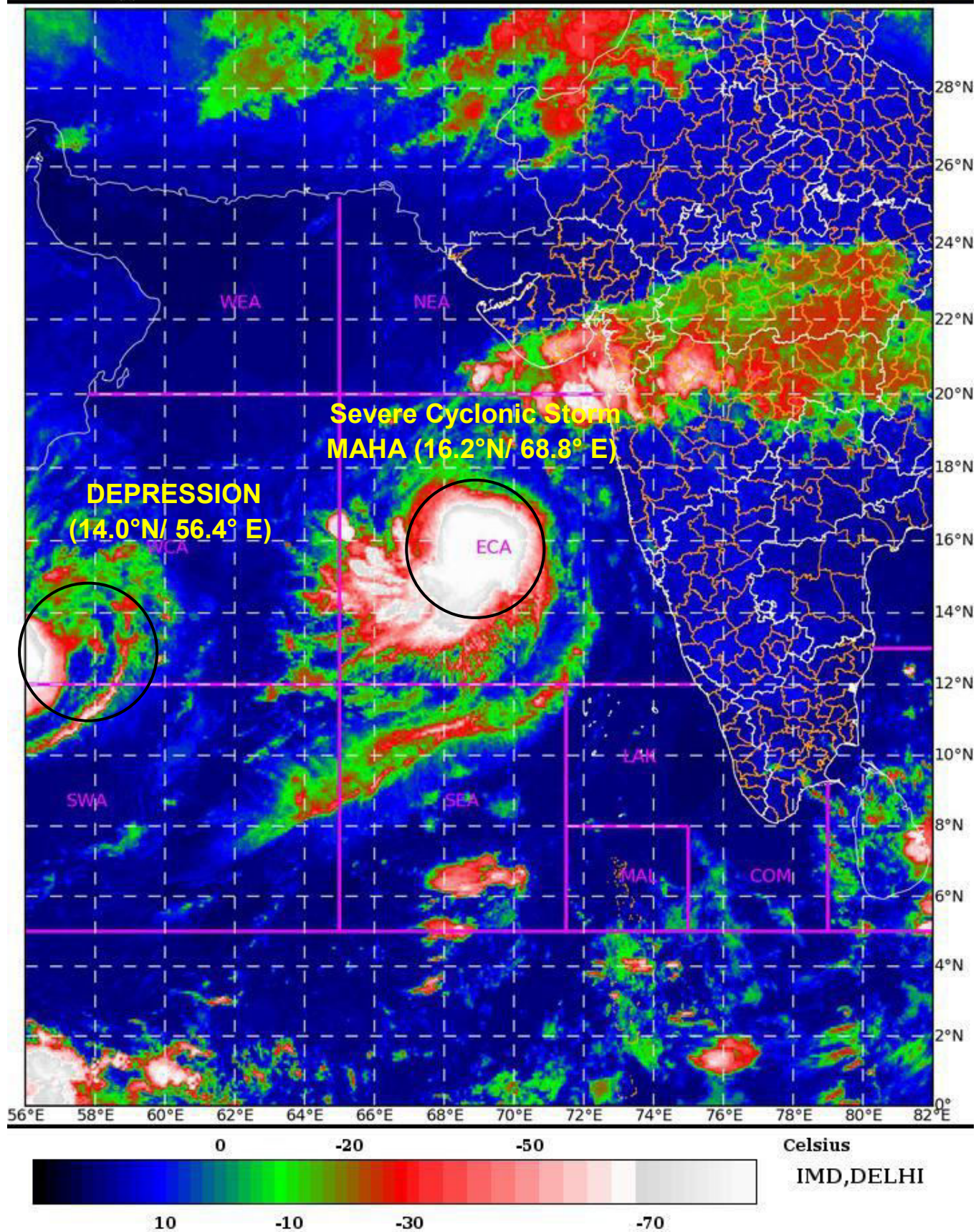
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01-11-2019/(2230 to 2256) GMT

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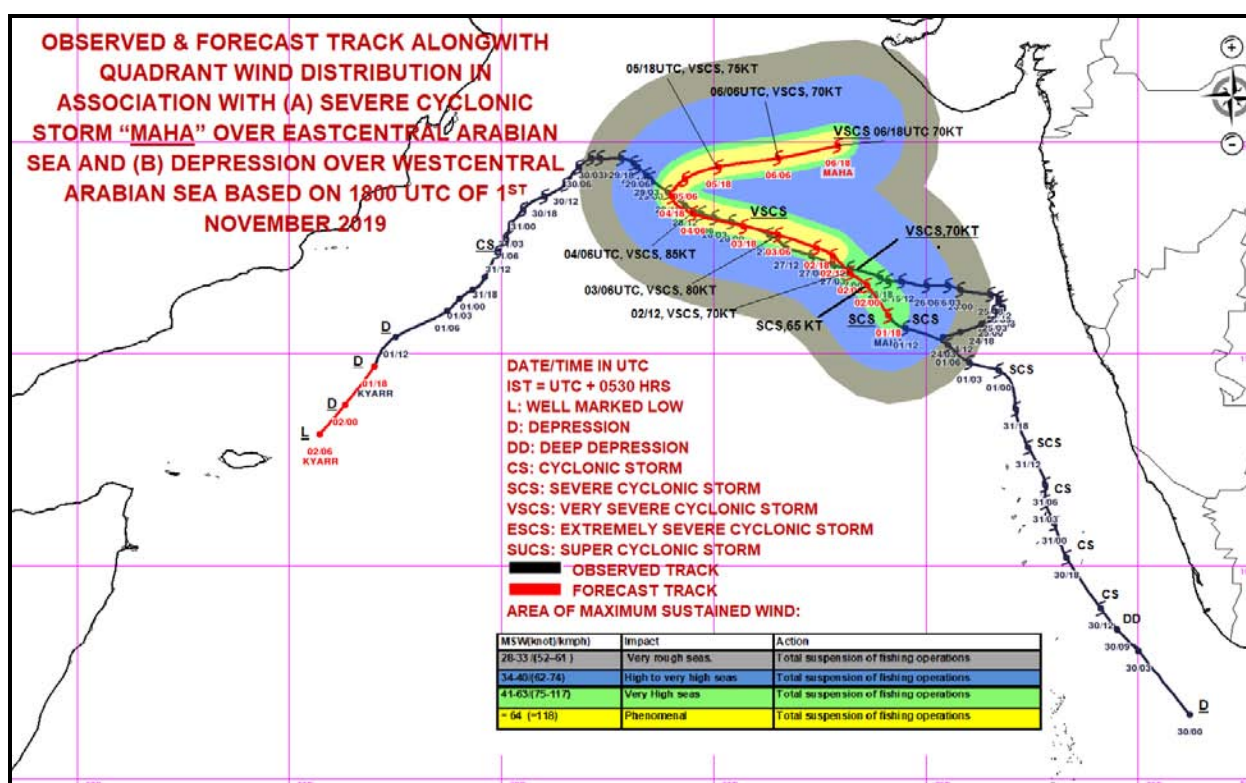
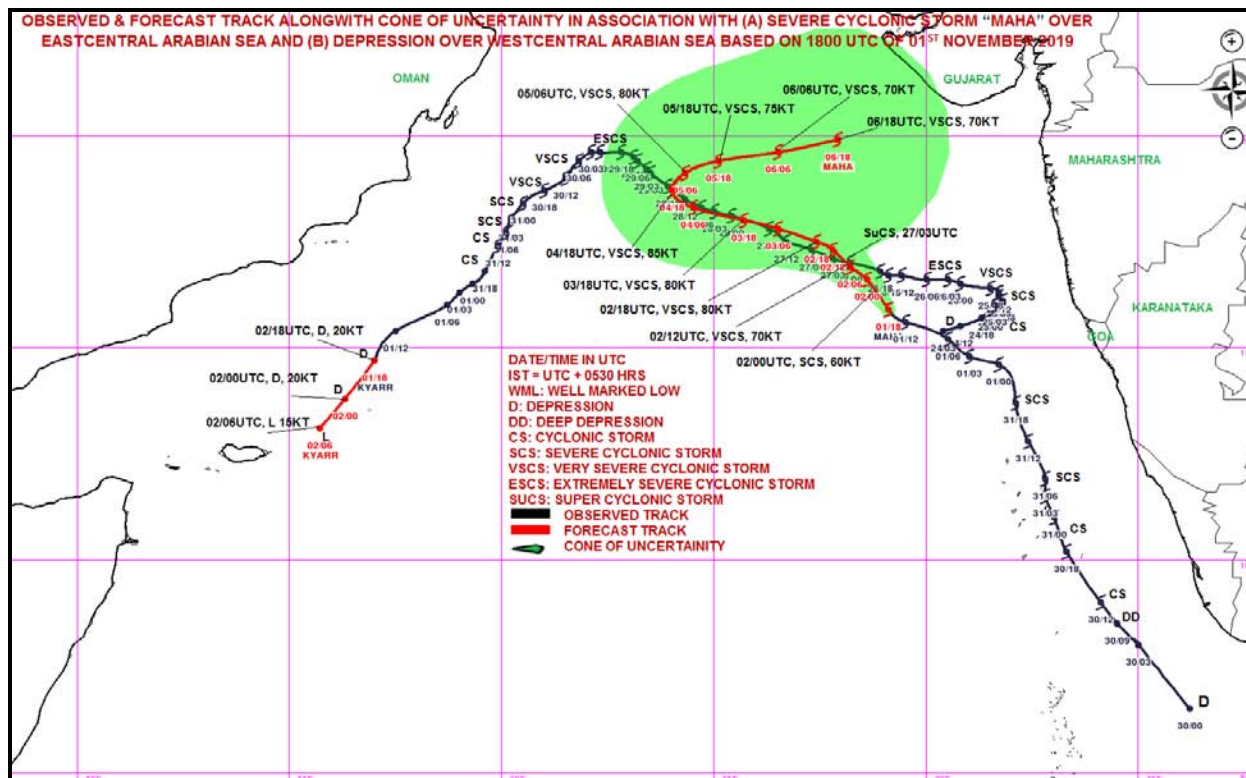
02-11-2019/(0400 to 0426) IST

ARABIAN_SEA



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 24 (ARB/04/2019) and BULLETIN NO. : 69 (ARB/03/2019)

TIME OF ISSUE: 0900 HOURS IST

DATED: 02.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

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ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

**Sub: (A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea
(B) Depression over westcentral Arabian Sea.**

BULLETIN NO. : 24 (ARB/04/2019)

(A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea

The Severe Cyclonic storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea moved further west-northwestwards with a speed of 13 kmph during past 06 hours, and lay centered at 0530 hrs IST of today, the 02nd November, 2019 over eastcentral Arabian Sea near latitude 16.3°N and longitude 68.5°E, about 550 km south-southwest of Veraval (Gujarat) and 570 km west-northwest of Goa. It is very likely to move west-northwestwards till 04th November and recurve east-northeastwards towards south Gujarat coast thereafter. It is very likely to intensify into a Very Severe Cyclonic Storm over eastcentral Arabian Sea during next 48 hours. However, after the recurvature, it is very likely to weaken gradually while moving east-northeastwards towards south Gujarat coast.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
02.11.19/0530	16.3/68.5	90-100 gusting to 110	Severe Cyclonic Storm
02.11.19/1130	16.6/68.2	90-100 gusting to 110	Severe Cyclonic Storm
02.11.19/1730	17.0/67.8	100-110 gusting to 120	Severe Cyclonic Storm
02.11.19/2330	17.2/67.4	100-110 gusting to 120	Severe Cyclonic Storm
03.11.19/0530	17.5/66.6	110-120 gusting to 135	Severe Cyclonic Storm
03.11.19/1730	17.8/65.5	110-120 gusting to 135	Severe Cyclonic Storm
04.11.19/0530	18.0/64.2	125-135 gusting to 150	Very Severe Cyclonic Storm
04.11.19/1730	18.2/63.1	135-145 gusting to 160	Very Severe Cyclonic Storm
05.11.19/0530	18.7/62.9	155-165 gusting to 180	Very Severe Cyclonic Storm
05.11.19/1730	19.2/63.1	155-165 gusting to 180	Very Severe Cyclonic Storm
06.11.19/0530	19.4/64.5	125-135 gusting to 145	Very Severe Cyclonic Storm
06.11.19/1730	19.7/66.5	120-130 gusting to 145	Very Severe Cyclonic Storm
07.11.19/0530	20.0/69.0	110-120 gusting to 135	Severe Cyclonic Storm

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with isolated heavy to very heavy falls over Saurashtra and Gujarat region from 6th November evening to 8th November morning.

(ii) Wind warning

- Gale wind speed reaching 90-100 kmph gusting to 110 kmph is prevailing over eastcentral Arabian Sea around the system centre.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 125-135 kmph gusting to 150 kmph by the morning of 4th November and 155-165 kmph gusting to 180 kmph over eastcentral & adjoining westcentral and northeast Arabian Sea by 05th November morning.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast during next 24 hours.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off South Gujarat coast from 6th November morning for subsequent 48 hours.

(iii) Sea condition

- Sea condition will be very high over eastcentral Arabian Sea for the next 24 hours and will become phenomenal from 04th November morning for subsequent 02 days.
- Sea condition will be high to phenomenal over westcentral and adjoining northeast Arabian Sea during 3rd -6th November.

(iv) Fishermen Warning

- The fishermen are advised not to venture into the sea along & off Maharashtra coast during next 24 hours and into eastcentral Arabian Sea till 7th November and over westcentral and northeast Arabian Sea from 03rd to 07th November.

BULLETIN NO. : 69 (ARB/03/2019)

(B) Depression over westcentral Arabian Sea

The Depression over westcentral Arabian Sea moved west-southwestwards with a speed of 26 kmph during past 06 hours and lay centred at 0530 hrs IST of today, the 02nd November, 2019 over westcentral Arabian Sea near latitude 13.7°N and longitude 55.8°E, about 240 km east-northeast of Socotra Island and 550 km east-northeast of Bereeda (Somalia). It is very likely to move west-southwestwards towards Somalia coast across Socotra Island during next 24 hours and weaken into a Well Marked Low Pressure Area thereafter.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
02.11.19/0530	13.7/55.8	40-50 gusting to 60	Depression
02.11.19/1130	12.9/54.4	40-50 gusting to 60	Depression
02.11.19/1730	12.2/53.0	35-45 gusting to 55	Depression
02.11.19/2330	11.4/51.5	35-45 gusting to 55	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Wind warning

- Squally wind speed reaching 40-50 kmph gusting to 60 kmph is very likely to prevail around the system centre over westcentral Arabian Sea, along and off north Somalia coast and adjoining areas of Gulf of Aden and southwest Arabian Sea during next 24 hours.

(ii) Sea condition

- Sea condition is rough to very rough over westcentral Arabian Sea, along and off north Somalia coast and adjoining areas of Gulf of Aden and southwest Arabian Sea during next 24 hours.

(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea around system center, along and off north Somalia coast and adjoining areas of Gulf of Aden and southwest Arabian Sea during next 24 hours.

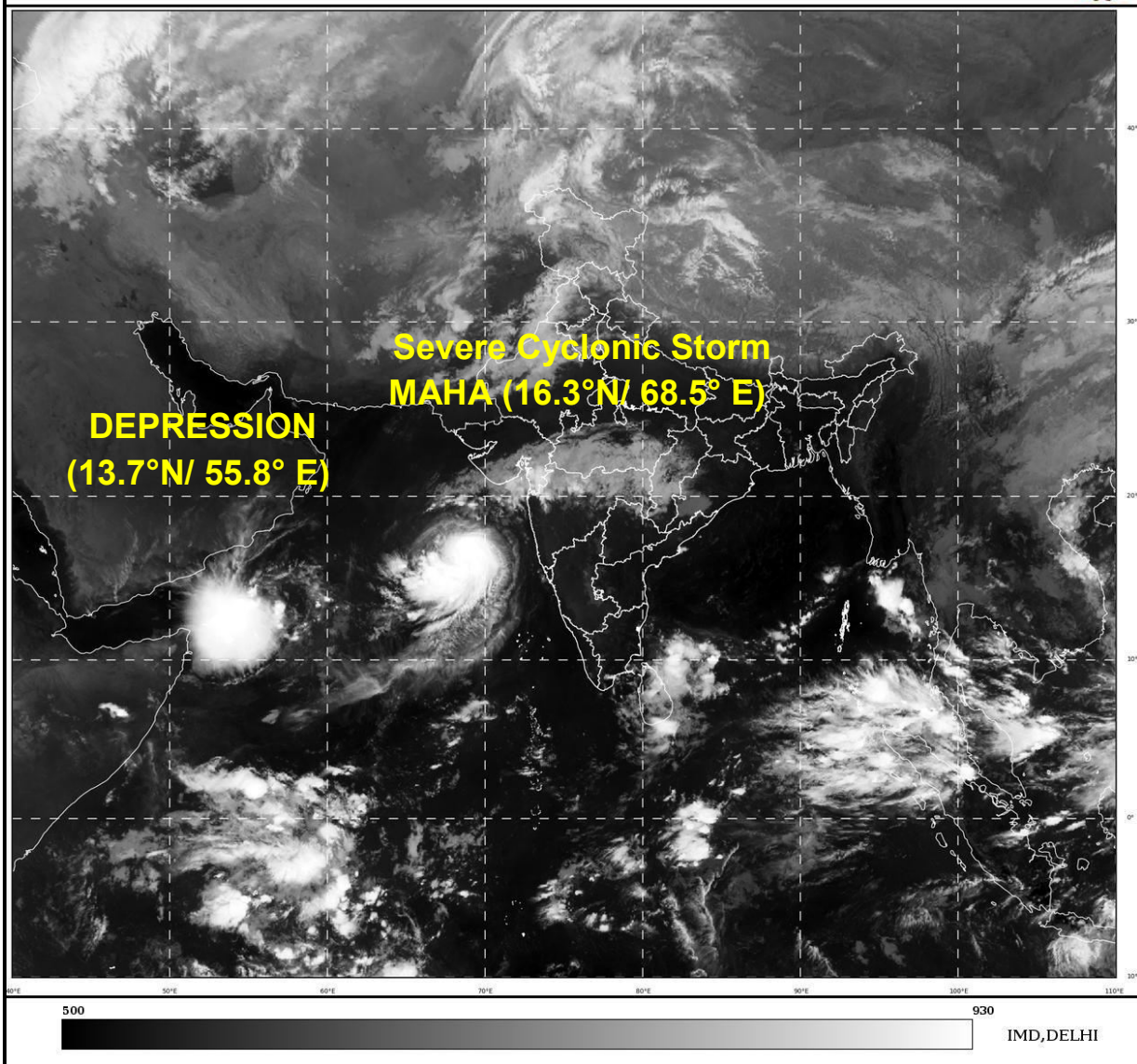
The next bulletin will be issued at 1130 hrs IST of 02nd November, 2019.

(V R Durai)
Scientist-E, RSMC, New Delhi

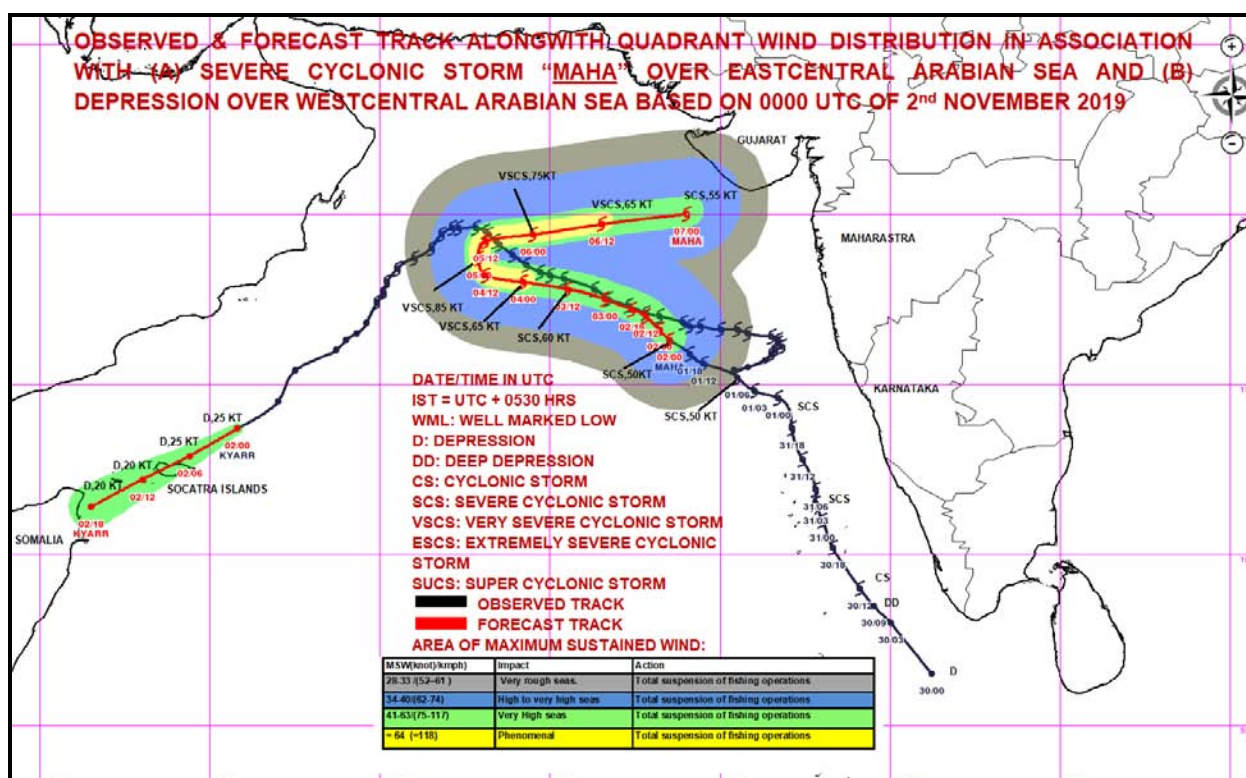
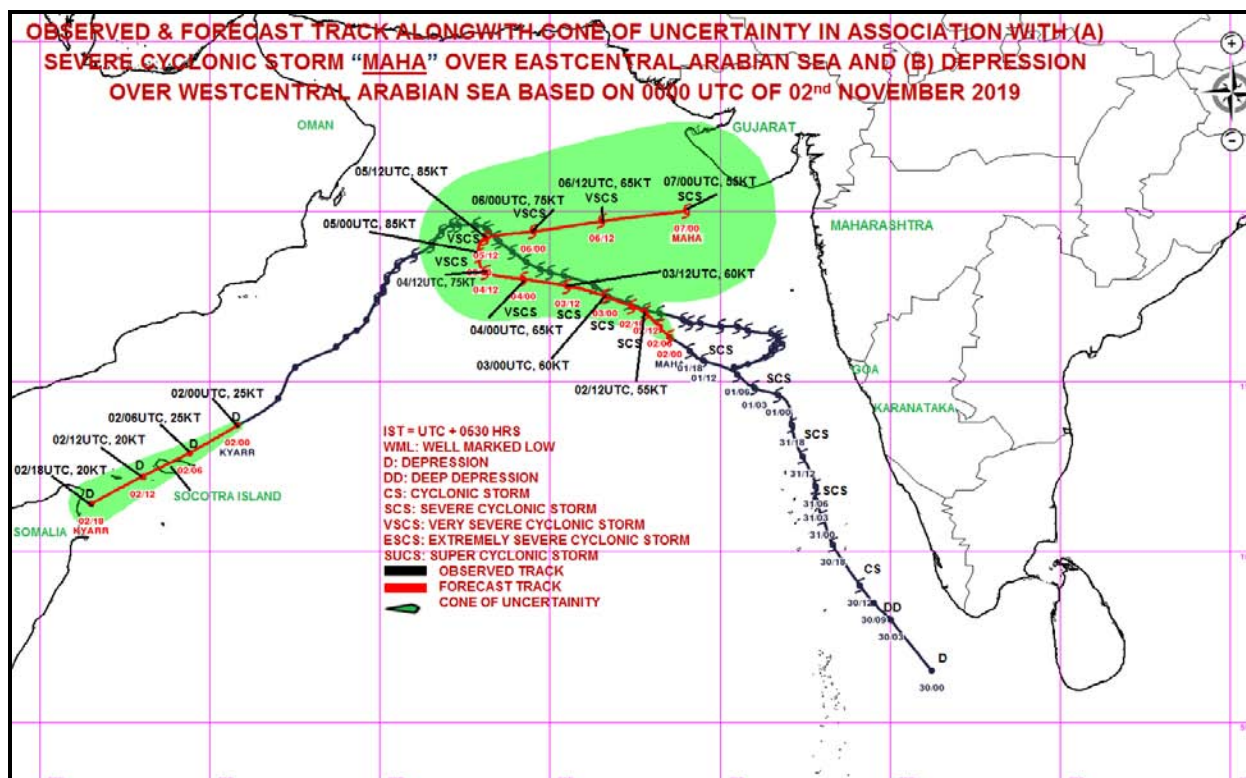
Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

SAT : INSAT-3D IMG
IMG_TIR1 10.8 um
L1C Mercator

02-11-2019/(0230 to 0256) GMT
02-11-2019/(0800 to 0826) IST



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 25 (ARB/04/2019) and BULLETIN NO. : 70 (ARB/03/2019)

TIME OF ISSUE: 1130 HOURS IST

DATED: 02.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

**Sub: (A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea
(B) Depression over westcentral Arabian Sea.**

BULLETIN NO. : 25 (ARB/04/2019)

(A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea

The Severe Cyclonic storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea moved further west-northwestwards with a speed of 10 kmph during past 06 hours, and lay centered at 0830 hrs IST of today, the 02nd November, 2019 over eastcentral Arabian Sea near latitude 16.4°N and longitude 68.3°E, about 540 km south-southwest of Veraval (Gujarat) and 550 km south-southwest of Diu. It is very likely to move west-northwestwards till 04th November and recurve east-northeastwards towards south Gujarat coast thereafter. It is very likely to intensify into a Very Severe Cyclonic Storm over eastcentral Arabian Sea during next 48 hours. However, after the re-curvature, it is very likely to weaken gradually while moving east-northeastwards towards south Gujarat coast.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
02.11.19/0830	16.4/68.3	90-100 gusting to 110	Severe Cyclonic Storm
02.11.19/1130	16.6/68.0	90-100 gusting to 110	Severe Cyclonic Storm
02.11.19/1730	16.9/67.7	100-110 gusting to 120	Severe Cyclonic Storm
02.11.19/2330	17.1/67.4	100-110 gusting to 120	Severe Cyclonic Storm
03.11.19/0530	17.5/66.6	110-120 gusting to 135	Severe Cyclonic Storm
03.11.19/1730	17.8/65.5	110-120 gusting to 135	Severe Cyclonic Storm
04.11.19/0530	18.0/64.2	125-135 gusting to 150	Very Severe Cyclonic Storm
04.11.19/1730	18.2/63.1	135-145 gusting to 160	Very Severe Cyclonic Storm
05.11.19/0530	18.7/62.9	155-165 gusting to 180	Very Severe Cyclonic Storm
05.11.19/1730	19.2/63.1	155-165 gusting to 180	Very Severe Cyclonic Storm
06.11.19/0530	19.4/64.5	125-135 gusting to 145	Very Severe Cyclonic Storm
06.11.19/1730	19.7/66.5	120-130 gusting to 145	Very Severe Cyclonic Storm
07.11.19/0530	20.0/69.0	110-120 gusting to 135	Severe Cyclonic Storm

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with isolated heavy falls over Saurashtra, Gujarat region and north Madhya Maharashtra and north Konkan from 6th November evening to 8th November morning.

(ii) Wind warning

- Gale wind speed reaching 90-100 kmph gusting to 110 kmph is prevailing over eastcentral Arabian Sea around the system centre.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 125-135 kmph gusting to 150 kmph by the morning of 4th November and 155-165 kmph gusting to 180 kmph over eastcentral & adjoining westcentral and northeast Arabian Sea by 05th November morning.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast during next 24 hours.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off South Gujarat coast from 6th November morning for subsequent 48 hours.

(iii) Sea condition

- Sea condition will be very high over eastcentral Arabian Sea for the next 48 hours and will become phenomenal from 04th November morning for subsequent 02 days.
- Sea condition will be high to phenomenal over westcentral and adjoining northeast Arabian Sea during 3rd -6th November.

(iv) Fishermen Warning

- The fishermen are advised not to venture into the sea along & off Maharashtra coast during next 24 hours and into eastcentral Arabian Sea till 7th November and over westcentral and northeast Arabian Sea from 03rd to 07th November and along & off Gujarat coast adjoining north Maharashtra coast from 5th – 7th November.

BULLETIN NO. : 70 (ARB/03/2019)

(B) Depression over westcentral Arabian Sea

The Depression over westcentral Arabian Sea moved west-southwestwards with a speed of 26 kmph during past 06 hours and lay centred at 0830 hrs IST of today, the 02nd November, 2019 over westcentral Arabian Sea near latitude 13.5°N and longitude 55.0°E, about 150 km east-northeast of Socotra Island and 460 km east-northeast of Bereeda (Somalia). It is very likely to move west-southwestwards towards Somalia coast across Socotra Island during next 24 hours and weaken into a Well Marked Low Pressure Area thereafter.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
02.11.19/0830	13.5/55.0	40-50 gusting to 60	Depression
02.11.19/1130	13.0/54.2	40-50 gusting to 60	Depression
02.11.19/1730	12.2/53.0	35-45 gusting to 55	Depression
02.11.19/2330	11.4/51.5	35-45 gusting to 55	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Wind warning

- Squally wind speed reaching 40-50 kmph gusting to 60 kmph is very likely to prevail around the system centre over westcentral Arabian Sea, along and off north Somalia coast and adjoining areas of Gulf of Aden and southwest Arabian Sea during next 24 hours.

(ii) Sea condition

- Sea condition is rough to very rough over westcentral Arabian Sea, along and off north Somalia coast and adjoining areas of Gulf of Aden and southwest Arabian Sea during next 24 hours.

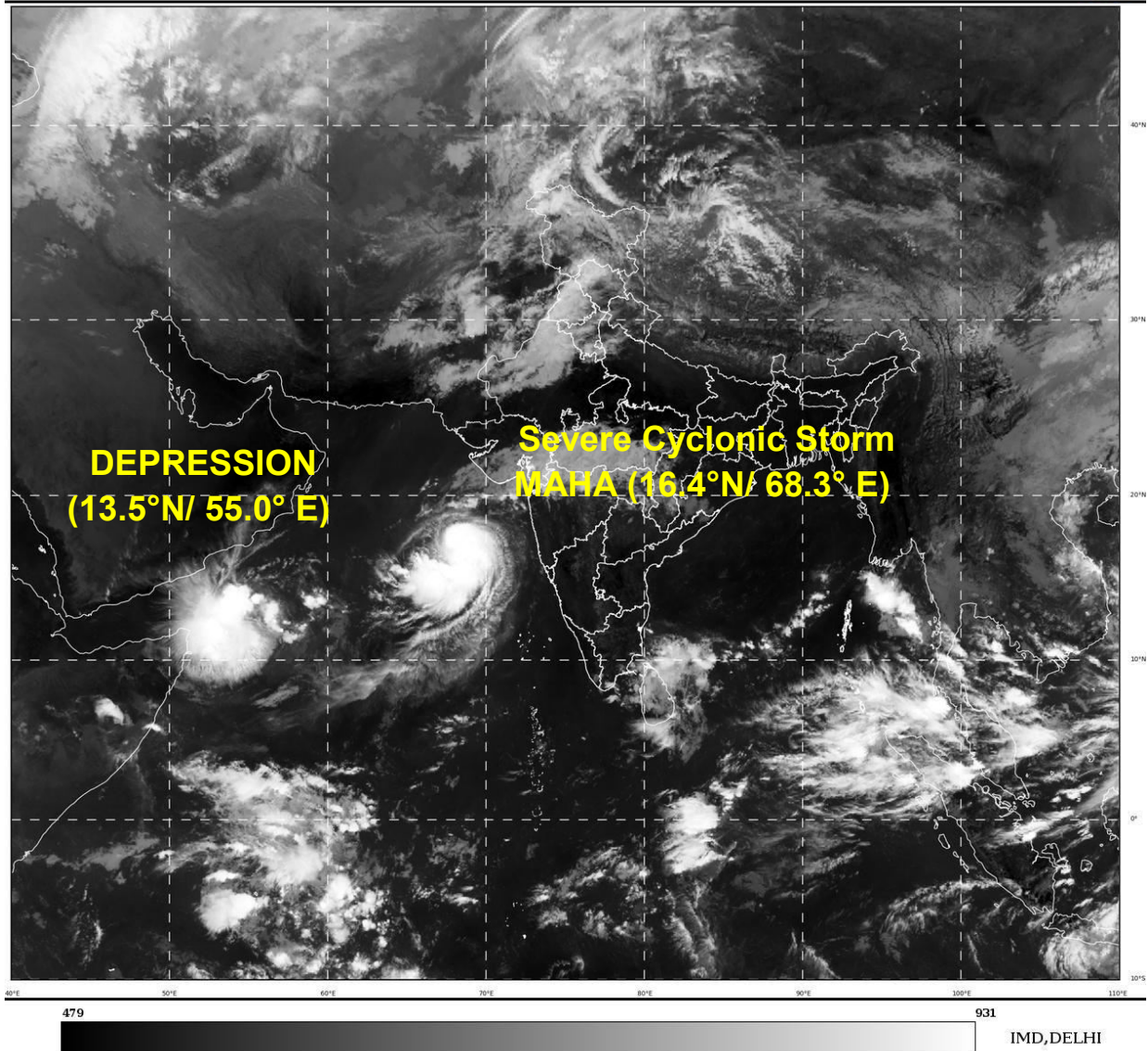
(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea around system centre, along and off north Somalia coast and adjoining areas of Gulf of Aden and southwest Arabian Sea during next 24 hours.

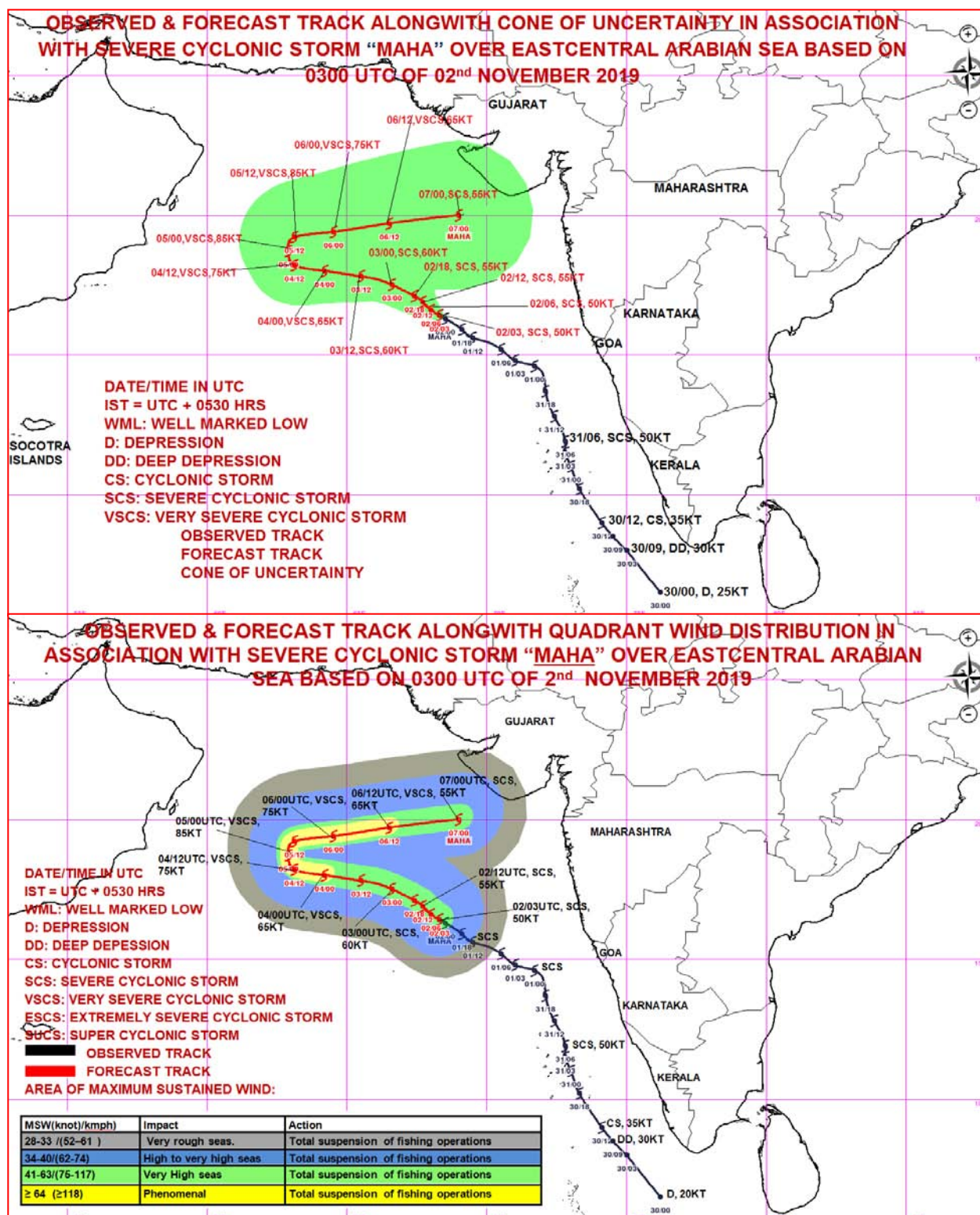
The next bulletin will be issued at 1430 hrs IST of 02nd November, 2019.

(Sunitha devi.S)
Scientist-E, RSMC, New Delhi

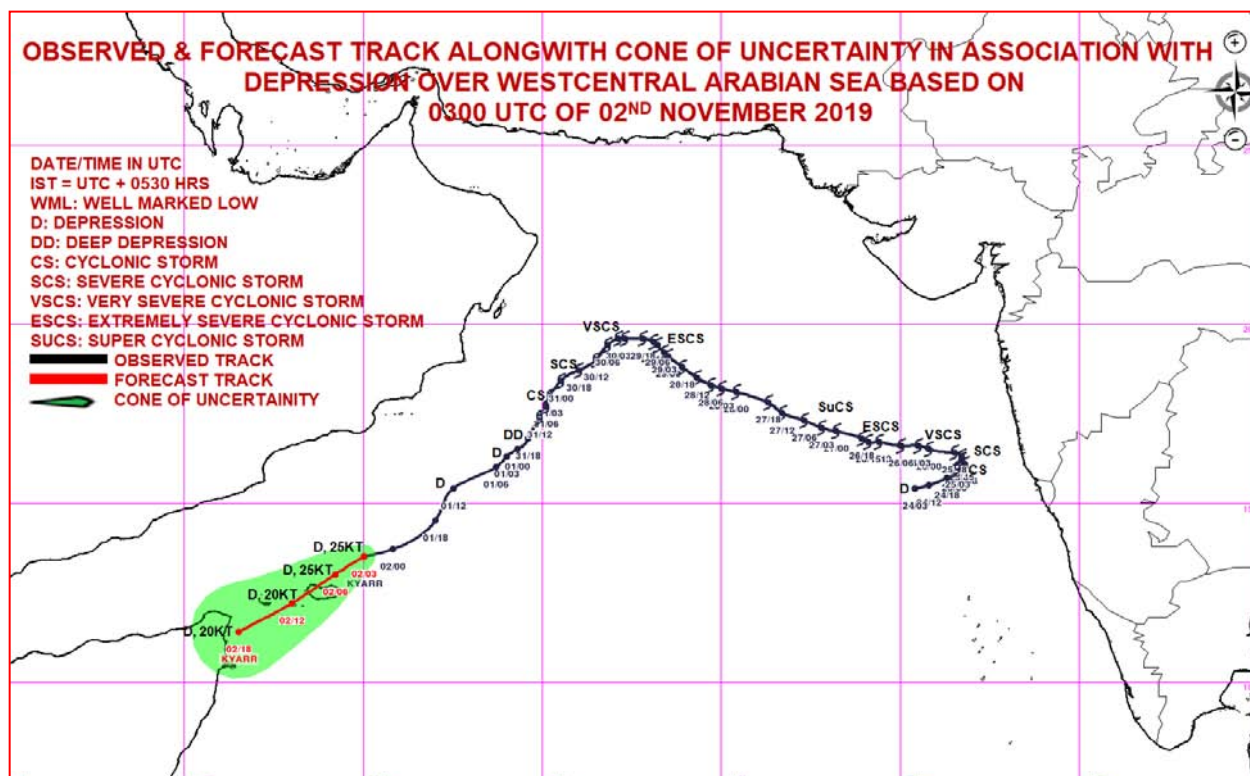
Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 26 (ARB/04/2019) and BULLETIN NO. : 71 (ARB/03/2019)

TIME OF ISSUE: 1430 HOURS IST

DATED: 02.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

**Sub: (A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea
(B) Depression over westcentral Arabian Sea.**

BULLETIN NO. : 26 (ARB/04/2019)

(A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea

The Severe Cyclonic storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea moved further west-northwestwards with a speed of 06 kmph during past 06 hours, and lay centered at 1130 hrs IST of today, the 02nd November, 2019 over eastcentral Arabian Sea near latitude 16.5°N and longitude 68.2°E, about 540 km south-southwest of Veraval (Gujarat) and 550 km south-southwest of Diu. It is very likely to move west-northwestwards till 04th November and recurve east-northeastwards towards south Gujarat and adjoining north Maharashtra coasts thereafter. It is very likely to intensify into a Very Severe Cyclonic Storm over eastcentral Arabian Sea during next 24 hours. However, after the re-curvature, it is very likely to weaken gradually while moving east-northeastwards. Forecast track and intensity are given in the following table:

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
02.11.19/1130	16.5/68.2	90-100 gusting to 110	Severe Cyclonic Storm
02.11.19/1730	16.9/67.7	90-100 gusting to 110	Severe Cyclonic Storm
02.11.19/2330	17.0/67.1	100-110 gusting to 120	Severe Cyclonic Storm
03.11.19/0530	17.0/66.6	110-120 gusting to 135	Severe Cyclonic Storm
03.11.19/1130	17.6/66.0	120-130 gusting to 145	Very Severe Cyclonic Storm
03.11.19/2330	17.9/64.9	130-140 gusting to 155	Very Severe Cyclonic Storm
04.11.19/1130	18.1/63.6	140-150 gusting to 165	Very Severe Cyclonic Storm
04.11.19/2330	18.5/63.0	150-160 gusting to 175	Very Severe Cyclonic Storm
05.11.19/1130	18.9/63.0	150-160 gusting to 175	Very Severe Cyclonic Storm
05.11.19/2330	19.4/64.0	130-140 gusting to 155	Very Severe Cyclonic Storm
06.11.19/1130	19.6/66.0	100-110 gusting to 120	Severe Cyclonic Storm
06.11.19/2330	19.9/68.2	90-100 gusting to 110	Severe Cyclonic Storm
07.11.19/1130	20.1/70.2	70-80 gusting to 90	Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with isolated heavy falls likely over Saurashtra, Gujarat region and north Madhya Maharashtra and north Konkan from 6th November evening to 8th November morning.

(ii) Wind warning

- Gale wind speed reaching 90-100 kmph gusting to 110 kmph is prevailing over eastcentral Arabian Sea around the system centre.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 140-150 kmph gusting to 165 kmph by the morning of 4th November and 150-160 kmph gusting to 175 kmph over eastcentral & adjoining westcentral and northeast Arabian Sea by early hours of 05th November.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast during next 24 hours.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off South Gujarat and adjoining north Maharashtra coasts from 6th November morning for subsequent 48 hours.

(iii) Sea condition

- Sea condition will be very high over eastcentral Arabian Sea for the next 48 hours and will become phenomenal from 04th November morning for subsequent 02 days.
- Sea condition will be high to phenomenal over westcentral Arabian Sea during 3rd-6th November and over northeast Arabian Sea during 3rd-7th November.

(iv) Fishermen Warning

- The fishermen are advised not to venture into the sea along & off Maharashtra coast during next 24 hours and into eastcentral Arabian Sea till 7th November and over westcentral and northeast Arabian Sea from 03rd to 07th November and along & off Gujarat coast and adjoining north Maharashtra coast from 5th – 7th November.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

BULLETIN NO. : 71 (ARB/03/2019)**(B) Depression over westcentral Arabian Sea**

The Depression over westcentral Arabian Sea moved west-southwestwards with a speed of 32 kmph during past 06 hours and lay centred at 1130 hrs IST of today, the 02nd November, 2019 over westcentral Arabian Sea near latitude 13.1°N and longitude 54.1°E, about 50 km east-northeast of Socotra Island and 350 km east-northeast of Bereeda (Somalia). It is very likely to move west-southwestwards towards Somalia coast across Socotra Island during next 12 hours and weaken into a Well Marked Low Pressure Area thereafter.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
02.11.19/1130	13.1/54.1	40-50 gusting to 60	Depression
02.11.19/1730	12.5/53.0	30-40 gusting to 50	Depression
02.11.19/2330	11.9/51.5	30-40 gusting to 50	Depression

Warnings:**(i) Wind warning**

- Squally wind speed reaching 40-50 kmph gusting to 60 kmph is very likely to prevail around the system centre over westcentral Arabian Sea, along and off north Somalia coast and adjoining areas of Gulf of Aden and southwest Arabian Sea during next 12 hours.

(ii) Sea condition

- Sea condition is rough to very rough over westcentral Arabian Sea, along and off north Somalia coast and adjoining areas of Gulf of Aden and southwest Arabian Sea during next 12 hours.

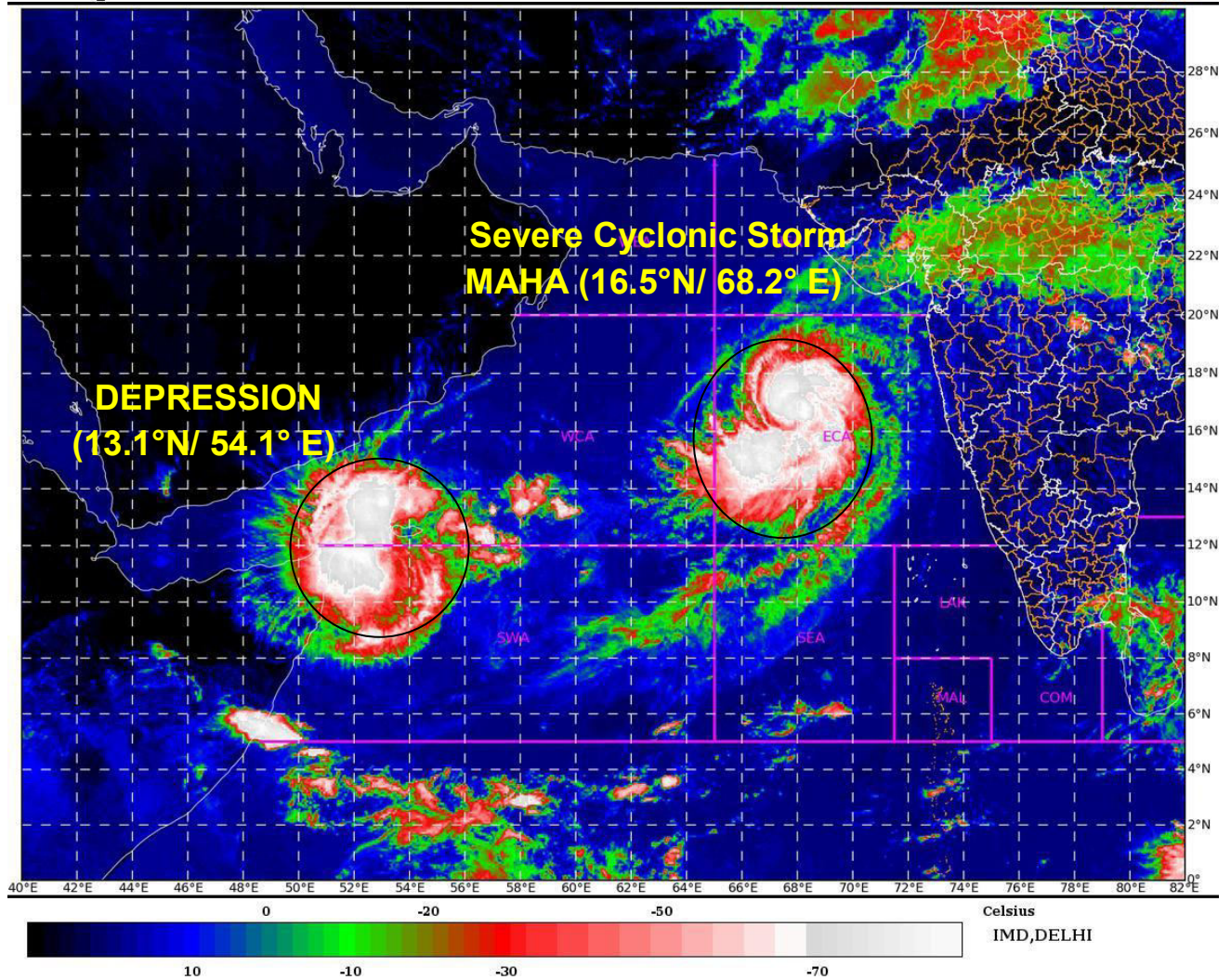
(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea around system centre, along and off north Somalia coast and adjoining areas of Gulf of Aden and southwest Arabian Sea during next 12 hours.

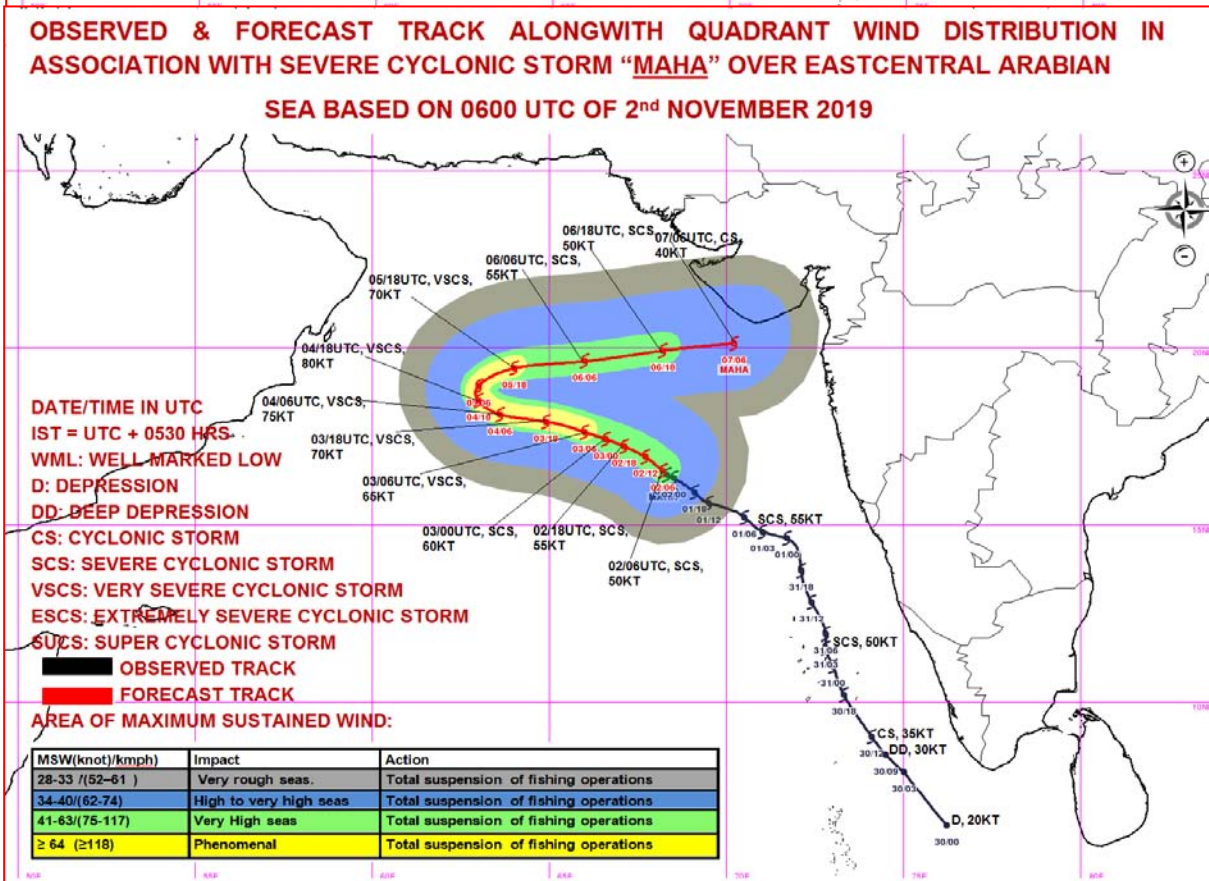
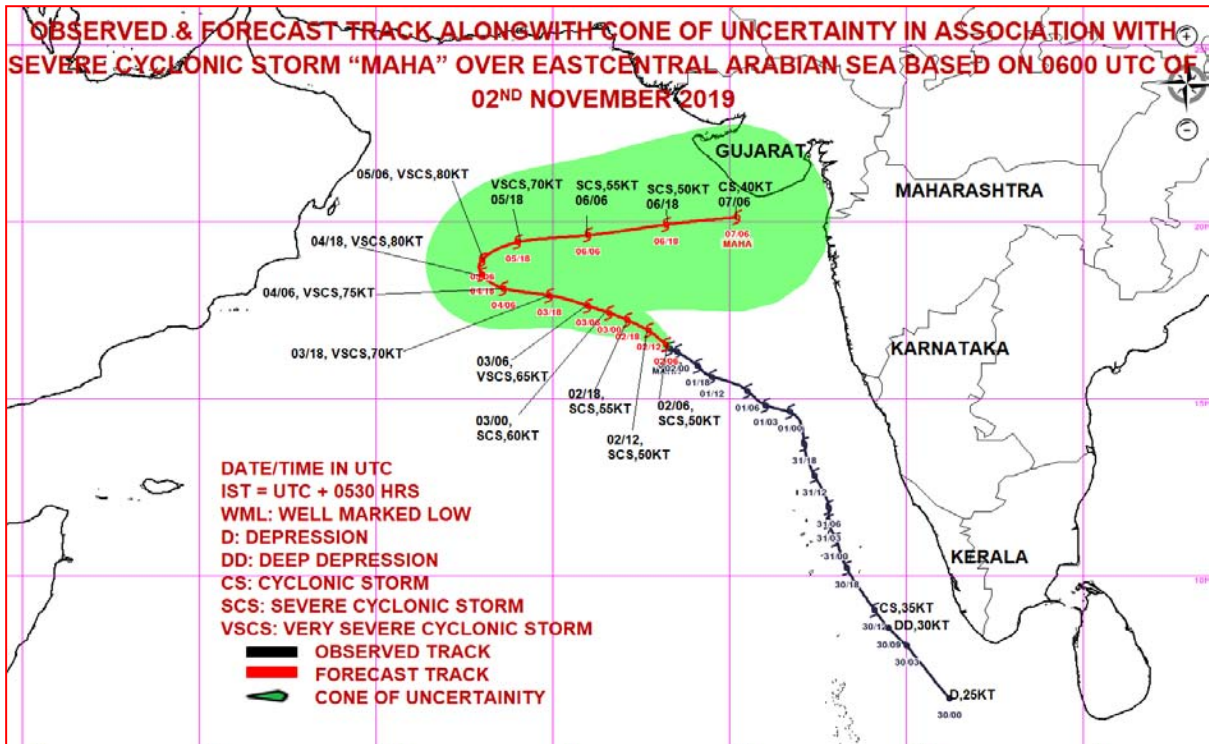
The next bulletin will be issued at 1730 hrs IST of 02nd November, 2019.

(RK JENAMANI)
Scientist-F, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 27 (ARB/04/2019) and BULLETIN NO. : 72 (ARB/03/2019)

TIME OF ISSUE: 1650 HOURS IST

DATED: 02.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

**Sub: (A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea
(B) Depression over westcentral Arabian Sea.**

BULLETIN NO. : 27 (ARB/04/2019)

(A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea

The Severe Cyclonic storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea moved northwestwards with a speed of 10 kmph during past 06 hours, and lay centered at 1430 hrs IST of today, the 02nd November, 2019 over eastcentral Arabian Sea near latitude 16.8°N and longitude 67.9°E, about 520 km south-southwest of Veraval (Gujarat) and 540 km south-southwest of Diu. It is very likely to move west-northwestwards till 04th November and recurve east-northeastwards towards south Gujarat and adjoining north Maharashtra coasts thereafter. It is very likely to intensify into a Very Severe Cyclonic Storm over eastcentral Arabian Sea during next 24 hours. However, after the re-curvature, it is very likely to weaken gradually while moving east-northeastwards.

Forecast track and intensity are given in the following table:

(Continued on next page)

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
02.11.19/1430	16.8/67.9	90-100 gusting to 110	Severe Cyclonic Storm
02.11.19/1730	17.0/67.7	90-100 gusting to 110	Severe Cyclonic Storm
02.11.19/2330	17.1/67.1	100-110 gusting to 120	Severe Cyclonic Storm
03.11.19/0530	17.1/66.6	110-120 gusting to 135	Severe Cyclonic Storm
03.11.19/1130	17.6/66.0	120-130 gusting to 145	Very Severe Cyclonic Storm
03.11.19/2330	17.9/64.9	130-140 gusting to 155	Very Severe Cyclonic Storm
04.11.19/1130	18.1/63.6	140-150 gusting to 165	Very Severe Cyclonic Storm
04.11.19/2330	18.5/63.0	150-160 gusting to 175	Very Severe Cyclonic Storm
05.11.19/1130	18.9/63.0	150-160 gusting to 175	Very Severe Cyclonic Storm
05.11.19/2330	19.4/64.0	130-140 gusting to 155	Very Severe Cyclonic Storm
06.11.19/1130	19.6/66.0	100-110 gusting to 120	Severe Cyclonic Storm
06.11.19/2330	19.9/68.2	90-100 gusting to 110	Severe Cyclonic Storm
07.11.19/1130	20.1/70.2	70-80 gusting to 90	Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with isolated heavy falls likely over Saurashtra, Gujarat region and north Madhya Maharashtra and north Konkan from 6th November evening to 8th November morning.

(ii) Wind warning

- Gale wind speed reaching 90-100 kmph gusting to 110 kmph is prevailing over eastcentral Arabian Sea around the system centre.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 140-150 kmph gusting to 165 kmph by the morning of 4th November and 150-160 kmph gusting to 175 kmph over eastcentral & adjoining westcentral and northeast Arabian Sea by early hours of 05th November.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast during next 24 hours.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off South Gujarat and adjoining north Maharashtra coasts from 6th November morning for subsequent 48 hours.

(iii) Sea condition

- Sea condition will be very high over eastcentral Arabian Sea for the next 48 hours and will become phenomenal from 04th November morning for subsequent 02 days.
- Sea condition will be high to phenomenal over westcentral Arabian Sea during 3rd- 6th November and over northeast Arabian Sea during 3rd -7th November.

(iv) Fishermen Warning

- The fishermen are advised not to venture into the Sea along & off Maharashtra coast during next 24 hours and into eastcentral Arabian Sea till 7th November and over westcentral and northeast Arabian Sea from 03rd to 07th November and along & off Gujarat coast and adjoining north Maharashtra coast from 5th – 7th November.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

BULLETIN NO. : 72 (ARB/03/2019)

(B) Depression over westcentral Arabian Sea

The Depression over westcentral Arabian Sea moved west-southwestwards with a speed of 27 kmph during past 06 hours and lay centred at 1430 hrs IST of today, the 02nd November, 2019 over westcentral Arabian Sea near latitude 12.5°N and longitude 53.8°E, close to Socotra Island and 300 km east-northeast of Bereeda (Somalia). It is very likely to move west-southwestwards towards Somalia coast across Socotra Island during next 12 hours and weaken into a Well Marked Low Pressure Area thereafter.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
02.11.19/1430	12.5/53.8	40-50 gusting to 60	Depression
02.11.19/1730	11.9/51.5	30-40 gusting to 50	Depression
02.11.19/2330	11.3/51.3	30-40 gusting to 50	Depression

Warnings:

(i) Wind warning

- Squally wind speed reaching 40-50 kmph gusting to 60 kmph is very likely to prevail around the system centre over westcentral Arabian Sea, along and off north Somalia coast and adjoining areas of Gulf of Aden and southwest Arabian Sea during next 12 hours.

(ii) Sea condition

- Sea condition is rough to very rough over westcentral Arabian Sea, along and off north Somalia coast and adjoining areas of Gulf of Aden and southwest Arabian Sea during next 12 hours.

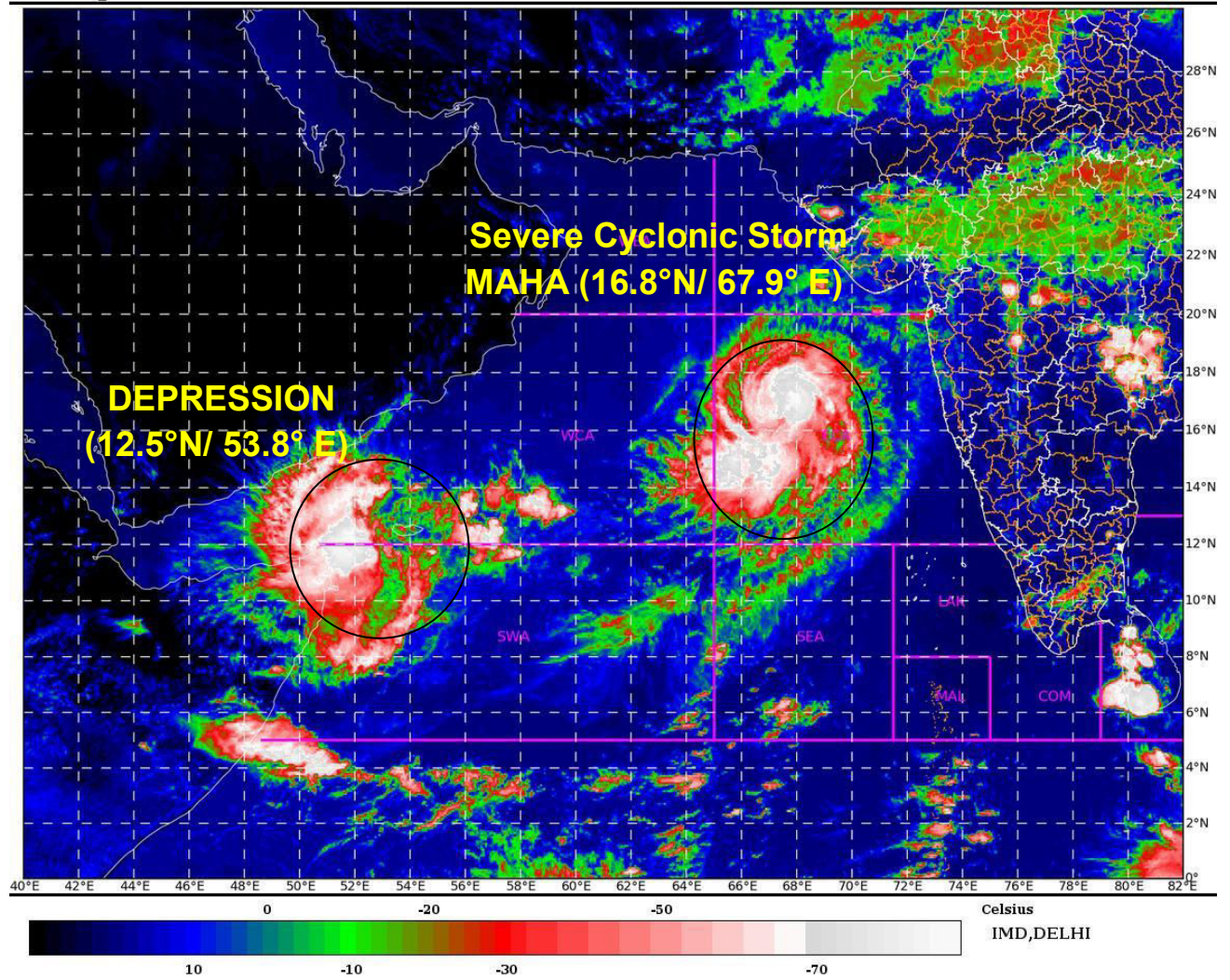
(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea around system centre, along and off north Somalia coast and adjoining areas of Gulf of Aden and southwest Arabian Sea during next 12 hours.

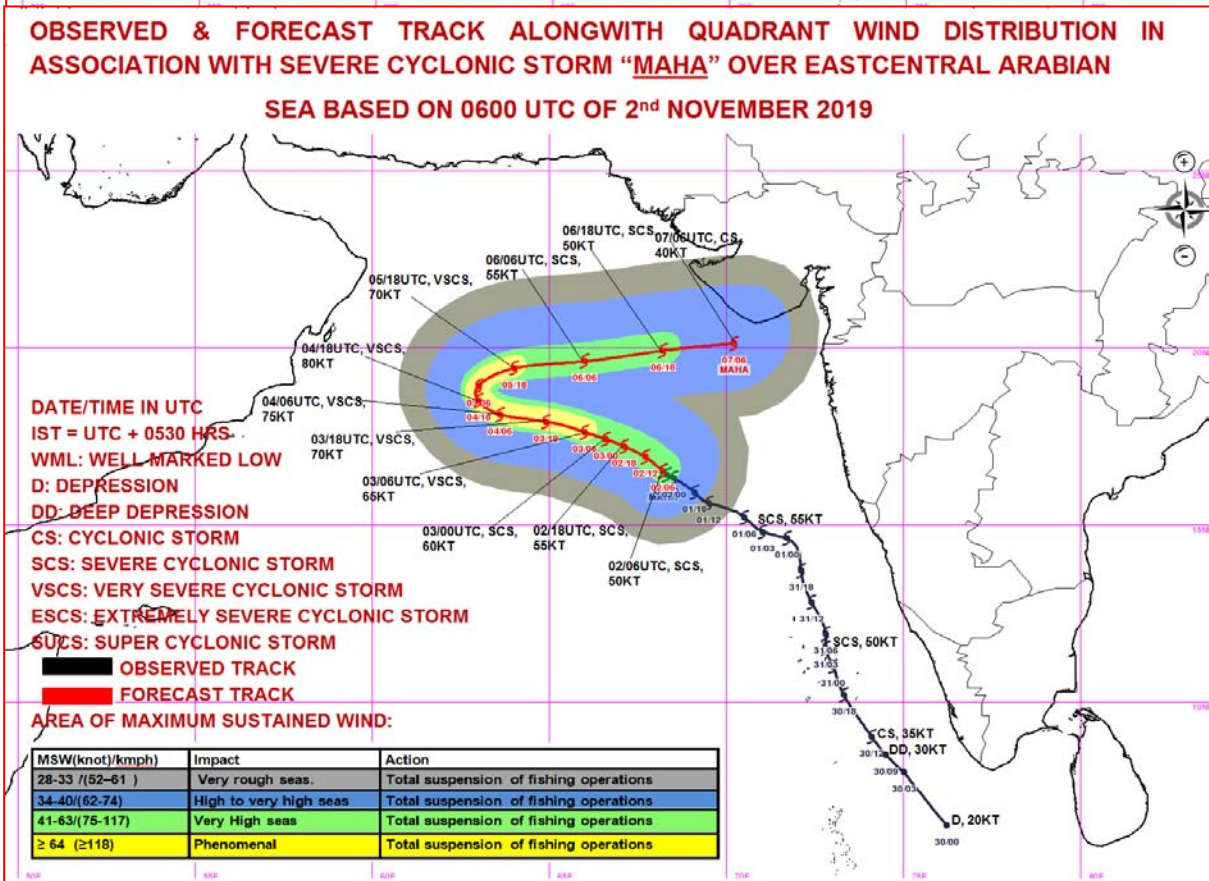
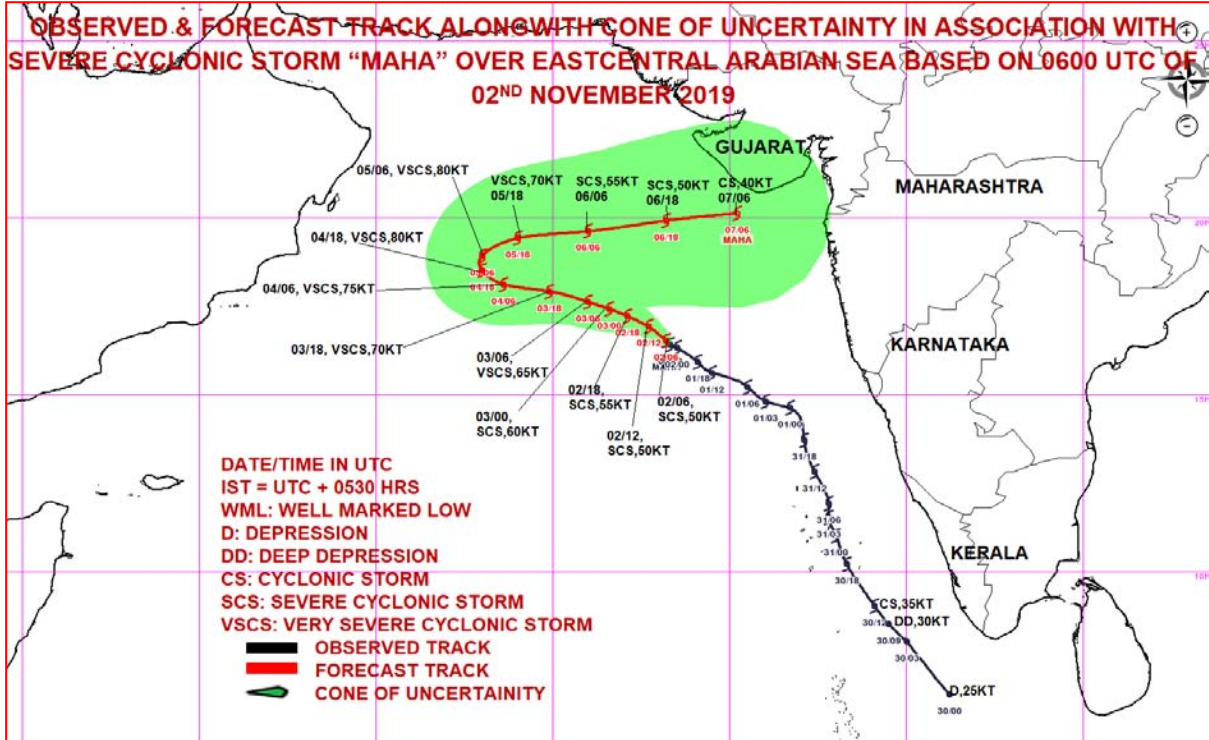
The next bulletin will be issued at 2030 hrs IST of 02nd November, 2019.

(RK JENAMANI)
Scientist-F, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 28 (ARB/04/2019) and BULLETIN NO. : 73 (ARB/03/2019)

TIME OF ISSUE: 2015 HOURS IST

DATED: 02.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

**Sub: (A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea
(B) Depression over westcentral and adjoining southwest Arabian Sea.**

BULLETIN NO. : 28 (ARB/04/2019)

(A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea

The **Severe Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral Arabian Sea moved northwestwards with a speed of 14 kmph during past 06 hours, and lay centered at 1730 hrs IST of today, the 02nd November, 2019 over eastcentral Arabian Sea near latitude 17.0°N and longitude 67.6°E, about 520 km south-southwest of Veraval (Gujarat) and 540 km south-southwest of Diu. It is very likely to move west-northwestwards till 04th November and recurve east-northeastwards towards south Gujarat and adjoining north Maharashtra coasts thereafter. It is very likely to intensify into a Very Severe Cyclonic Storm over eastcentral Arabian Sea during next 12 hours. However, after the re-curvature, it is very likely to weaken gradually while moving east-northeastwards.

Forecast track and intensity are given in the following table:

(Continued on next page)

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
02.11.19/1730	17.0/67.6	95-105 gusting to 115	Severe Cyclonic Storm
02.11.19/2330	17.2/67.1	105-115 gusting to 125	Severe Cyclonic Storm
03.11.19/0530	17.4/66.6	115-125 gusting to 140	Very Severe Cyclonic Storm
03.11.19/1130	17.6/66.0	130-140 gusting to 155	Very Severe Cyclonic Storm
03.11.19/1730	17.8/65.5	140-150 gusting to 165	Very Severe Cyclonic Storm
04.11.19/0530	18.0/64.2	150-160 gusting to 175	Very Severe Cyclonic Storm
04.11.19/1730	18.3/63.3	160-170 gusting to 185	Very Severe Cyclonic Storm
05.11.19/0530	18.7/62.7	160-170 gusting to 185	Very Severe Cyclonic Storm
05.11.19/1730	19.2/63.5	150-160 gusting to 175	Very Severe Cyclonic Storm
06.11.19/0530	19.5/64.9	130-140 gusting to 155	Severe Cyclonic Storm
06.11.19/1730	19.8/66.5	110-120 gusting to 135	Severe Cyclonic Storm
07.11.19/0530	20.0/68.3	95-105 gusting to 115	Severe Cyclonic Storm
07.11.19/1730	20.2/70.2	70-80 gusting to 90	Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with isolated heavy falls likely over Saurashtra, Gujarat region and north Madhya Maharashtra and north Konkan from 6th November evening to 8th November morning.

(ii) Wind warning

- Gale wind speed reaching 95-105 kmph gusting to 115 kmph is prevailing over eastcentral Arabian Sea around the system centre.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 150-160 kmph gusting to 175 kmph by the morning of 4th November and 160-170 kmph gusting to 185 kmph over eastcentral & adjoining westcentral and northeast Arabian Sea by evening of 04th November.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast during next 12 hours.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off South Gujarat and adjoining north Maharashtra coasts from 6th November morning for subsequent 48 hours.

(iii) Sea condition

- Sea condition will be very high over eastcentral Arabian Sea for the next 12 hours and will become phenomenal from 03rd November morning for subsequent 03 days.
- Sea condition will be high to phenomenal over westcentral Arabian Sea during 3rd- 6th November and over northeast Arabian Sea during 3rd -7th November.

(iv) Fishermen Warning

- The fishermen are advised not to venture into the Sea along & off Maharashtra coast during next 24 hours and into eastcentral Arabian Sea till 7th November and over westcentral and northeast Arabian Sea from 03rd to 07th November and along & off Gujarat coast and adjoining north Maharashtra coast from 5th – 7th November.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

BULLETIN NO. : 73 (ARB/03/2019)

(B) Depression over westcentral and adjoining southwest Arabian Sea

The Depression over westcentral Arabian Sea moved west-southwestwards with a speed of 23 kmph during past 06 hours and lay centred at 1730 hrs IST of today, the 02nd November, 2019 over westcentral and adjoining southwest Arabian Sea near latitude 12.5°N and longitude 53.0°E, around 100 km west of Socotra Island and 220 km east-northeast of Bereeda (Somalia). It is very likely to move west-southwestwards towards Somalia coast and weaken into a Well Marked Low Pressure Area during next 06 hours.

Warnings:

(i) Wind warning

- Squally wind speed reaching 35-45 kmph gusting to 55 kmph is prevailing around the system centre over westcentral Arabian Sea, along and off north Somalia coast and adjoining areas of Gulf of Aden and southwest Arabian Sea during next 12 hours.

(ii) Sea condition

- Sea condition is rough to very rough over westcentral Arabian Sea, along and off north Somalia coast and adjoining areas of Gulf of Aden and southwest Arabian Sea during next 12 hours.

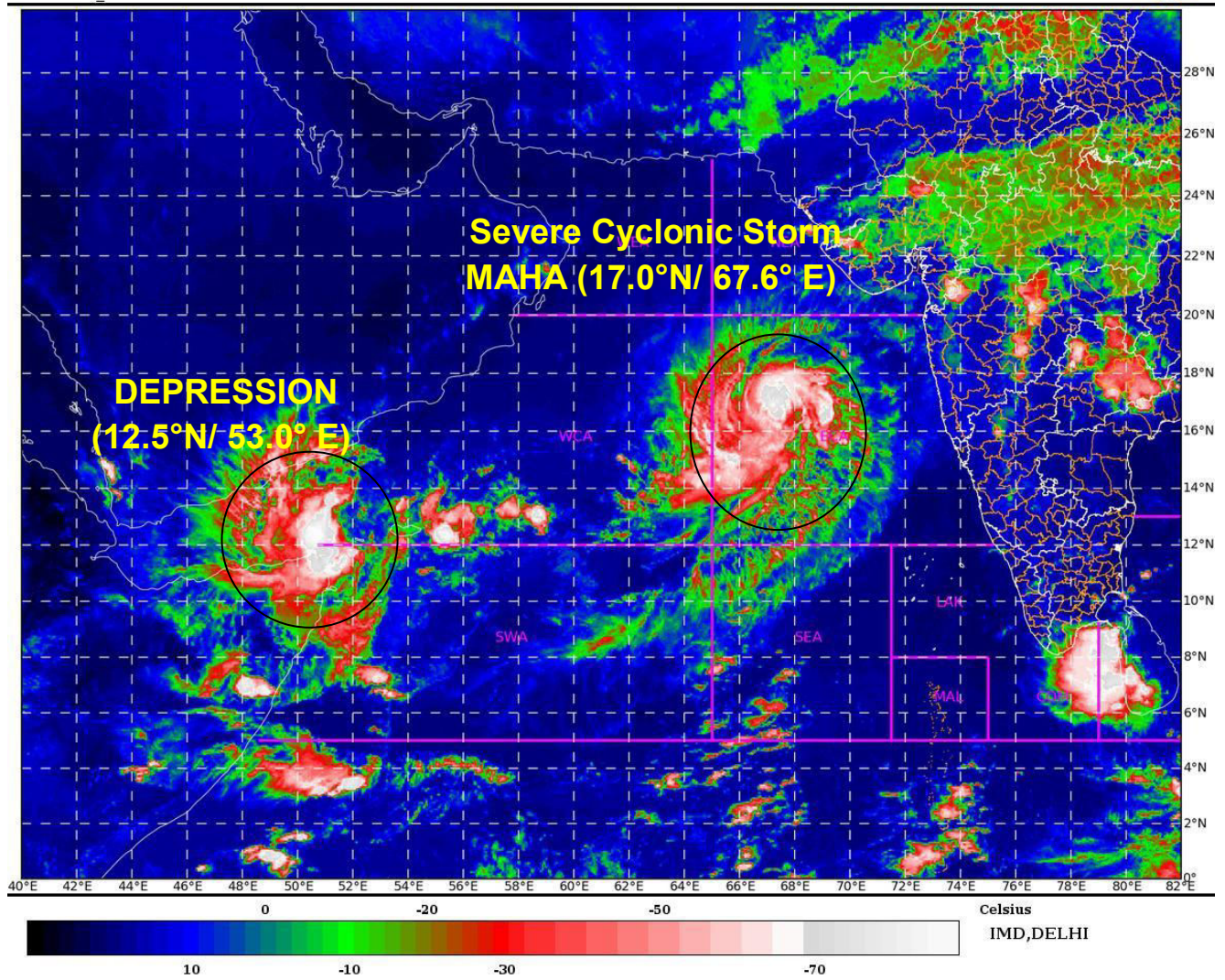
(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea around system centre, along and off north Somalia coast and adjoining areas of Gulf of Aden and southwest Arabian Sea during next 12 hours.

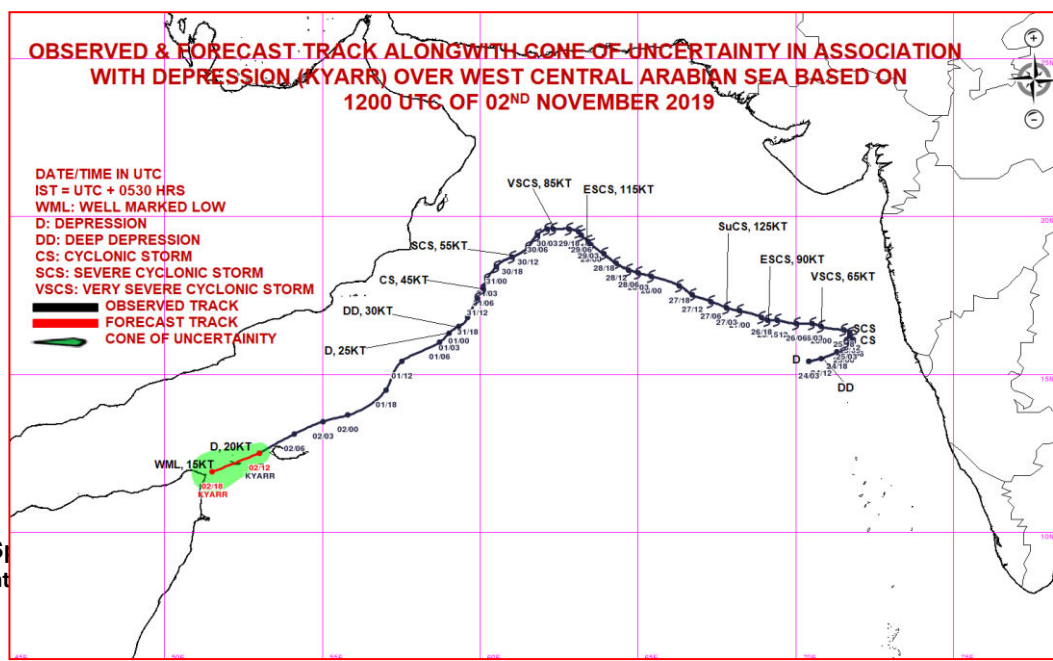
The next bulletin will be issued at 2330 hrs IST of 02nd November, 2019.

(RK JENAMANI)
Scientist-F, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



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 Rainfall amount

r more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 29 (ARB/04/2019) and BULLETIN NO. : 74 (ARB/03/2019)

TIME OF ISSUE: 2215 HOURS IST

DATED: 02.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

**Sub: (A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea
(B) Depression over westcentral and adjoining southwest Arabian Sea.**

BULLETIN NO. : 29 (ARB/04/2019)

(A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea

The **Severe Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral Arabian Sea moved west-northwestwards with a speed of 12 kmph during past 06 hours, and lay centered at 2030 hrs IST of today, the 02nd November, 2019 over eastcentral Arabian Sea near latitude 17.1°N and longitude 67.3°E, about 530 km south-southwest of Veraval (Gujarat) and 550 km southwest of Diu. It is very likely to move west-northwestwards till 04th November and recurve east-northeastwards towards south Gujarat and adjoining north Maharashtra coasts thereafter. It is very likely to intensify into a Very Severe Cyclonic Storm over eastcentral Arabian Sea during next 12 hours. However, after the re-curvature, it is very likely to weaken gradually while moving east-northeastwards.

Forecast track and intensity are given in the following table:

(Continued on next page)

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
02.11.19/2030	17.1/67.3	95-105 gusting to 115	Severe Cyclonic Storm
02.11.19/2330	17.2/67.1	105-115 gusting to 125	Severe Cyclonic Storm
03.11.19/0530	17.4/66.6	115-125 gusting to 140	Very Severe Cyclonic Storm
03.11.19/1130	17.6/66.0	130-140 gusting to 155	Very Severe Cyclonic Storm
03.11.19/1730	17.8/65.5	140-150 gusting to 165	Very Severe Cyclonic Storm
04.11.19/0530	18.0/64.2	150-160 gusting to 175	Very Severe Cyclonic Storm
04.11.19/1730	18.3/63.3	160-170 gusting to 185	Very Severe Cyclonic Storm
05.11.19/0530	18.7/62.7	160-170 gusting to 185	Very Severe Cyclonic Storm
05.11.19/1730	19.2/63.5	150-160 gusting to 175	Very Severe Cyclonic Storm
06.11.19/0530	19.5/64.9	130-140 gusting to 155	Severe Cyclonic Storm
06.11.19/1730	19.8/66.5	110-120 gusting to 135	Severe Cyclonic Storm
07.11.19/0530	20.0/68.3	95-105 gusting to 115	Severe Cyclonic Storm
07.11.19/1730	20.2/70.2	70-80 gusting to 90	Cyclonic Storm

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with isolated heavy falls likely over Saurashtra, Gujarat region and north Madhya Maharashtra and north Konkan from 6th November evening to 8th November morning.

(ii) Wind warning

- Gale wind speed reaching 95-105 kmph gusting to 115 kmph is prevailing over eastcentral Arabian Sea around the system centre.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 150-160 kmph gusting to 175 kmph by the morning of 4th November and 160-170 kmph gusting to 185 kmph over eastcentral & adjoining westcentral and northeast Arabian Sea by evening of 04th November.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast during next 12 hours.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off South Gujarat and adjoining north Maharashtra coasts from 6th November morning for subsequent 48 hours.

(iii) Sea condition

- Sea condition will be very high over eastcentral Arabian Sea for the next 12 hours and will become phenomenal from 03rd November morning for subsequent 03 days.
- Sea condition will be high to phenomenal over westcentral Arabian Sea during 3rd- 6th November and over northeast Arabian Sea during 3rd -7th November.

(iv) Fishermen Warning

- The fishermen are advised not to venture into the Sea along & off Maharashtra coast during next 24 hours and into eastcentral Arabian Sea till 7th November and over westcentral and northeast Arabian Sea from 03rd to 07th November and along & off Gujarat coast and adjoining north Maharashtra coast from 5th – 7th November.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

BULLETIN NO. : 74 (ARB/03/2019)

(B) Depression over westcentral and adjoining southwest Arabian Sea

The Depression over westcentral Arabian Sea moved west-southwestwards with a speed of 25 kmph during past 06 hours and lay centred at 2030 hrs IST of today, the 02nd November, 2019 over westcentral and adjoining southwest Arabian Sea near latitude 12.0°N and longitude 52.5°E, around 170 km west-southwest of Socotra Island and 160 km east-northeast of Bereeda (Somalia). It is very likely to move west-southwestwards towards Somalia coast and weaken into a Well Marked Low Pressure Area during next 03 hours.

Warnings:

(i) Wind warning

- Squally wind speed reaching 30-40 kmph gusting to 50 kmph is prevailing around the system centre over westcentral Arabian Sea, along and off north Somalia coast and adjoining areas of Gulf of Aden and southwest Arabian Sea during next 12 hours.

(ii) Sea condition

- Sea condition is very likely to be rough over westcentral Arabian Sea, along and off north Somalia coast and adjoining areas of Gulf of Aden and southwest Arabian Sea during next 12 hours.

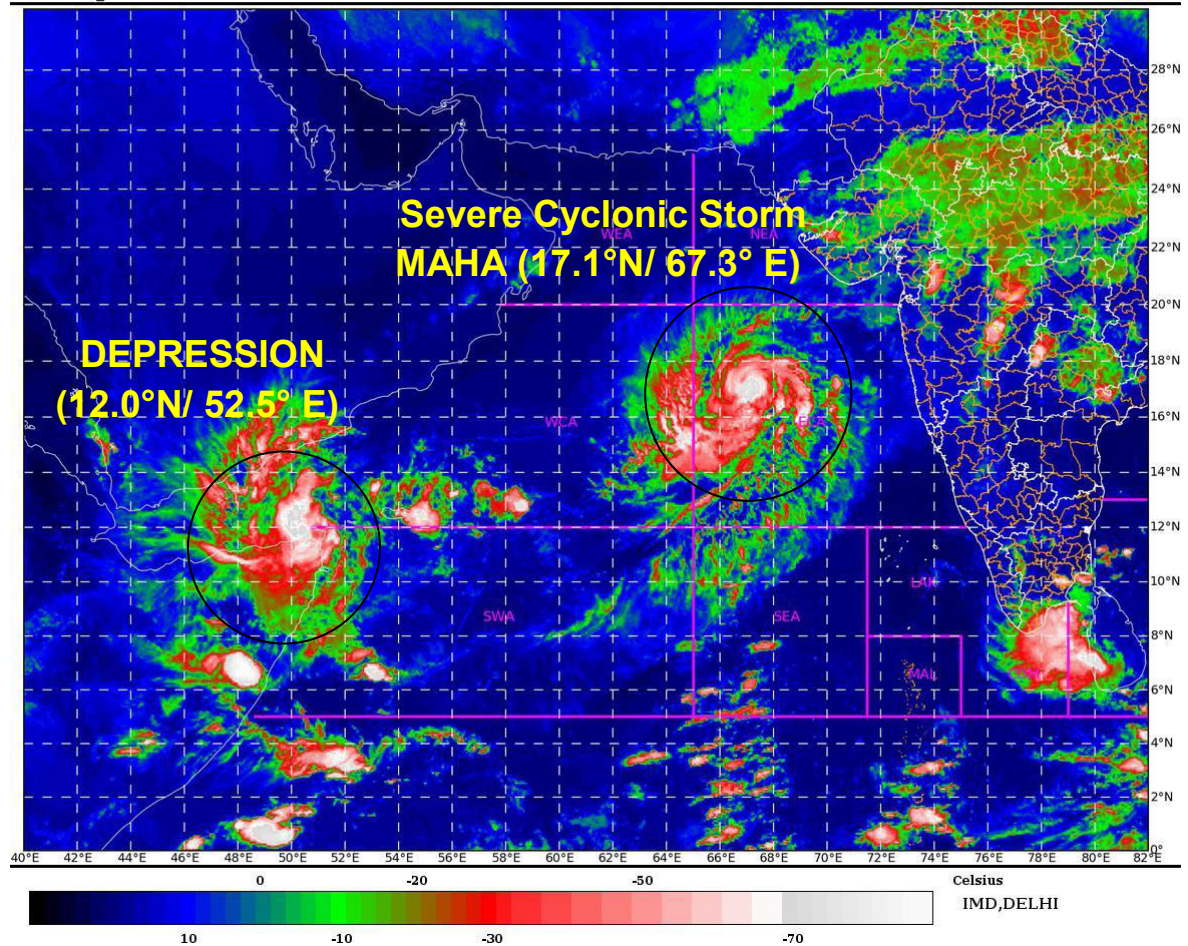
(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea around system centre, along and off north Somalia coast and adjoining areas of Gulf of Aden and southwest Arabian Sea during next 12 hours.

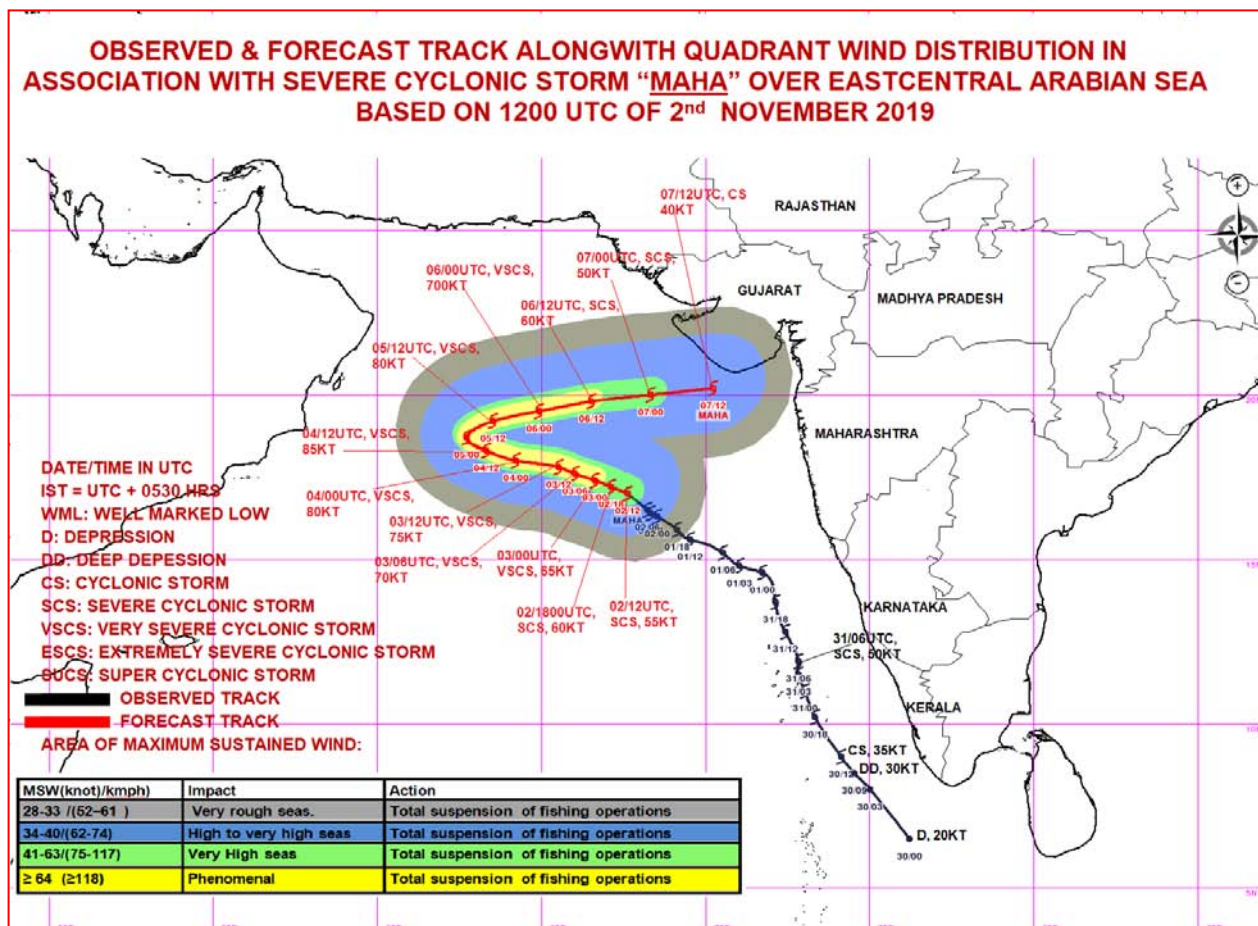
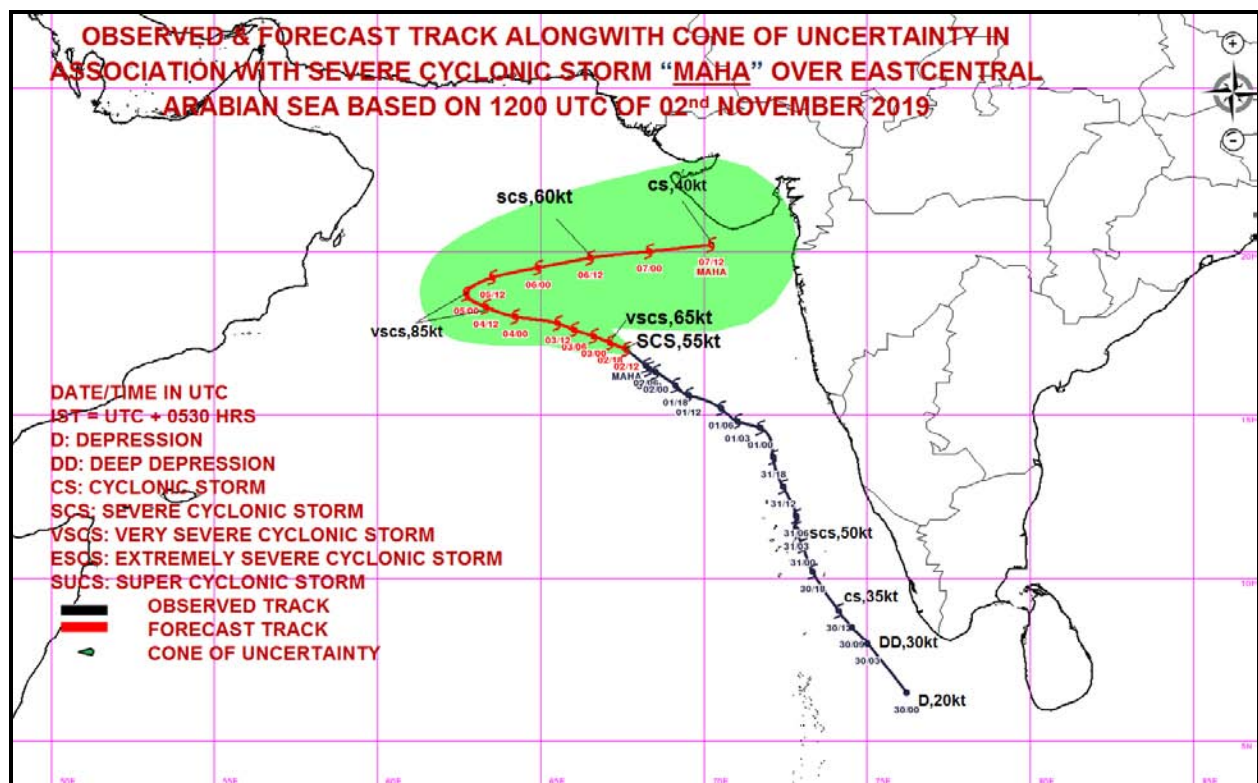
The next bulletin will be issued at 0230 hrs IST of 03rd November, 2019.

(Ananda Kumar Das)
Scientist-E, RSMC, New Delhi

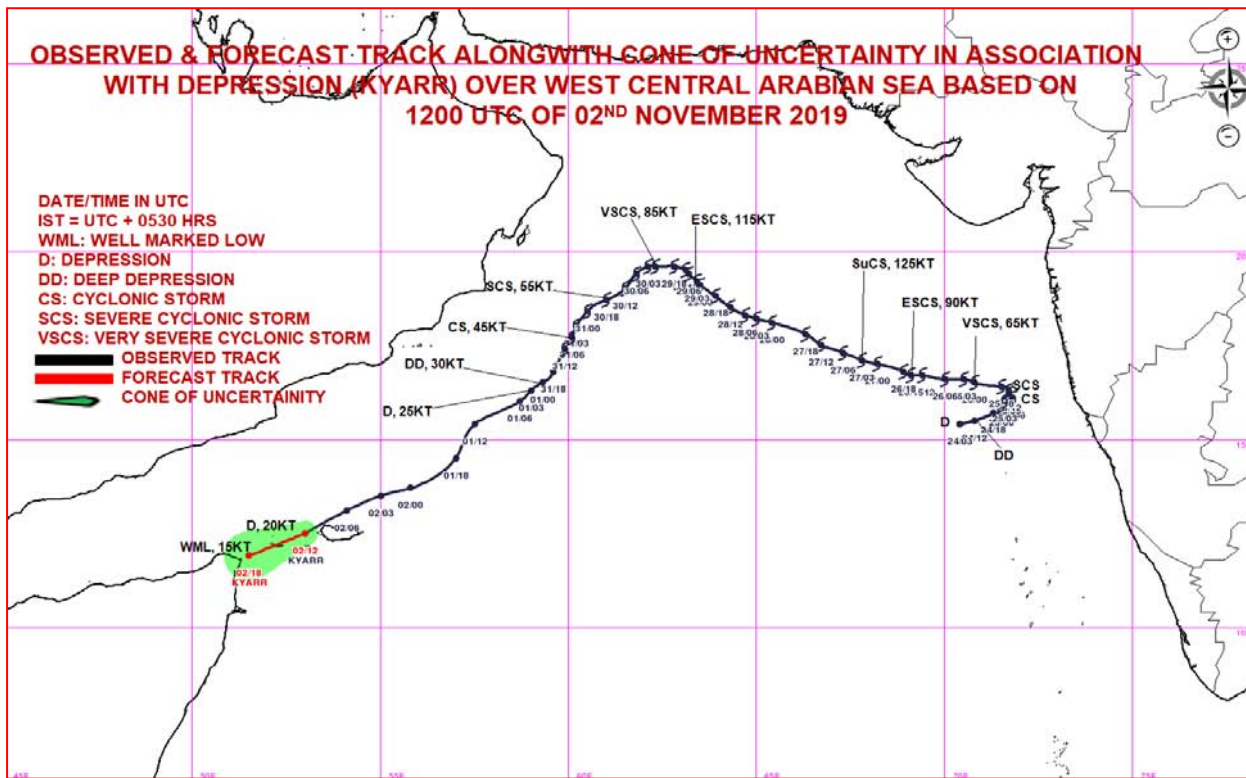
Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 30 (ARB/04/2019) and BULLETIN NO. : 75 (ARB/03/2019)

TIME OF ISSUE: 0200 HOURS IST

DATED: 03.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea
(B) Depression weakened into a Well Marked Low Pressure Area over westcentral and adjoining southwest Arabian Sea.

BULLETIN NO. : 30 (ARB/04/2019)

(A) Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea

The **Severe Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral Arabian Sea moved west-northwestwards with a speed of 11 kmph during past 06 hours, and lay centered at 2330 hrs IST of 02nd November, 2019 over eastcentral Arabian Sea near latitude 17.2°N and longitude 67.0°E, about 540 km south-southwest of Veraval (Gujarat) and 570 km south-southwest of Diu. It is very likely to move west-northwestwards till 04th November and recurve east-northeastwards towards south Gujarat and adjoining north Maharashtra coasts thereafter. It is very likely to intensify into a Very Severe Cyclonic Storm over eastcentral Arabian Sea during next 06 hours. However, after the re-curvature, it is very likely to weaken gradually while moving east-northeastwards.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
02.11.19/2330	17.2/67.0	105-115 gusting to 125	Severe Cyclonic Storm
03.11.19/0530	17.4/66.6	120-130 gusting to 145	Very Severe Cyclonic Storm
03.11.19/1130	17.6/66.0	130-140 gusting to 155	Very Severe Cyclonic Storm
03.11.19/1730	17.8/65.5	140-150 gusting to 165	Very Severe Cyclonic Storm
03.11.19/2330	17.9/64.9	150-160 gusting to 175	Very Severe Cyclonic Storm
04.11.19/1130	18.2/63.9	160-170 gusting to 185	Very Severe Cyclonic Storm
04.11.19/2330	18.6/63.0	160-170 gusting to 185	Very Severe Cyclonic Storm
05.11.19/1130	19.1/63.1	150-160 gusting to 175	Very Severe Cyclonic Storm
05.11.19/2330	19.5/64.3	130-140 gusting to 155	Very Severe Cyclonic Storm
06.11.19/1130	19.7/65.7	120-130 gusting to 145	Very Severe Cyclonic Storm
06.11.19/2330	19.9/67.1	110-120 gusting to 135	Severe Cyclonic Storm
07.11.19/1130	20.1/68.7	90-100 gusting to 110	Severe Cyclonic Storm
07.11.19/2330	20.3/70.2	60-70 gusting to 80	Cyclonic Storm

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with isolated heavy falls likely over Saurashtra, Gujarat region and north Madhya Maharashtra and north Konkan from 6th November evening to 8th November morning.

(ii) Wind warning

- Gale wind speed reaching 105-115 kmph gusting to 125 kmph is prevailing over eastcentral Arabian Sea around the system centre.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 160-170 kmph gusting to 185 kmph over eastcentral & adjoining westcentral and northeast Arabian Sea by 4th November.
- Squally wind speed reaching 30-40 kmph gusting to 50 kmph likely along & off Maharashtra coast during next 12 hours.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off South Gujarat and adjoining north Maharashtra coasts from 6th November morning for subsequent 48 hours.

(iii) Sea condition

- Sea condition will be very high over eastcentral Arabian Sea for the next 06 hours and will become phenomenal from 03rd November for subsequent 03 days.
- Sea condition will be high to phenomenal over westcentral Arabian Sea during 3rd- 6th November and over northeast Arabian Sea during 3rd -7th November.

(iv) Fishermen Warning

- The fishermen are advised not to venture into the Sea along & off Maharashtra coast during next 24 hours and into eastcentral Arabian Sea till 7th November and over westcentral and northeast Arabian Sea from 04th to 07th November and along & off Gujarat coast and adjoining north Maharashtra coast from 5th – 7th November.

BULLETIN NO. : 75 (ARB/03/2019)

(B) Depression weakened into a Well Marked Low Pressure Area over westcentral and adjoining southwest Arabian Sea.

The Depression over westcentral Arabian Sea moved west-southwestwards during past 06 hours, weakened into a Well Marked Low Pressure area and lay centred at 2330 hrs IST 02nd November, 2019 over westcentral and adjoining southwest Arabian Sea off north Somalia coast. It is very likely to move further west-southwestwards along and off Somalia coast.

Warnings:

(i) Wind warning

- Squally wind speed reaching 25-35 kmph gusting to 45 kmph around the system centre over westcentral Arabian Sea, along and off north Somalia coast, adjoining areas of Gulf of Aden and southwest Arabian Sea is very likely to prevail during next 12 hours.

(ii) Sea condition

- Sea condition is very likely to be rough over westcentral Arabian Sea, along and off north Somalia coast and adjoining areas of Gulf of Aden and southwest Arabian Sea during next 12 hours.

(iii) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea around system centre, along and off north Somalia coast and adjoining areas of Gulf of Aden and southwest Arabian Sea during next 12 hours.

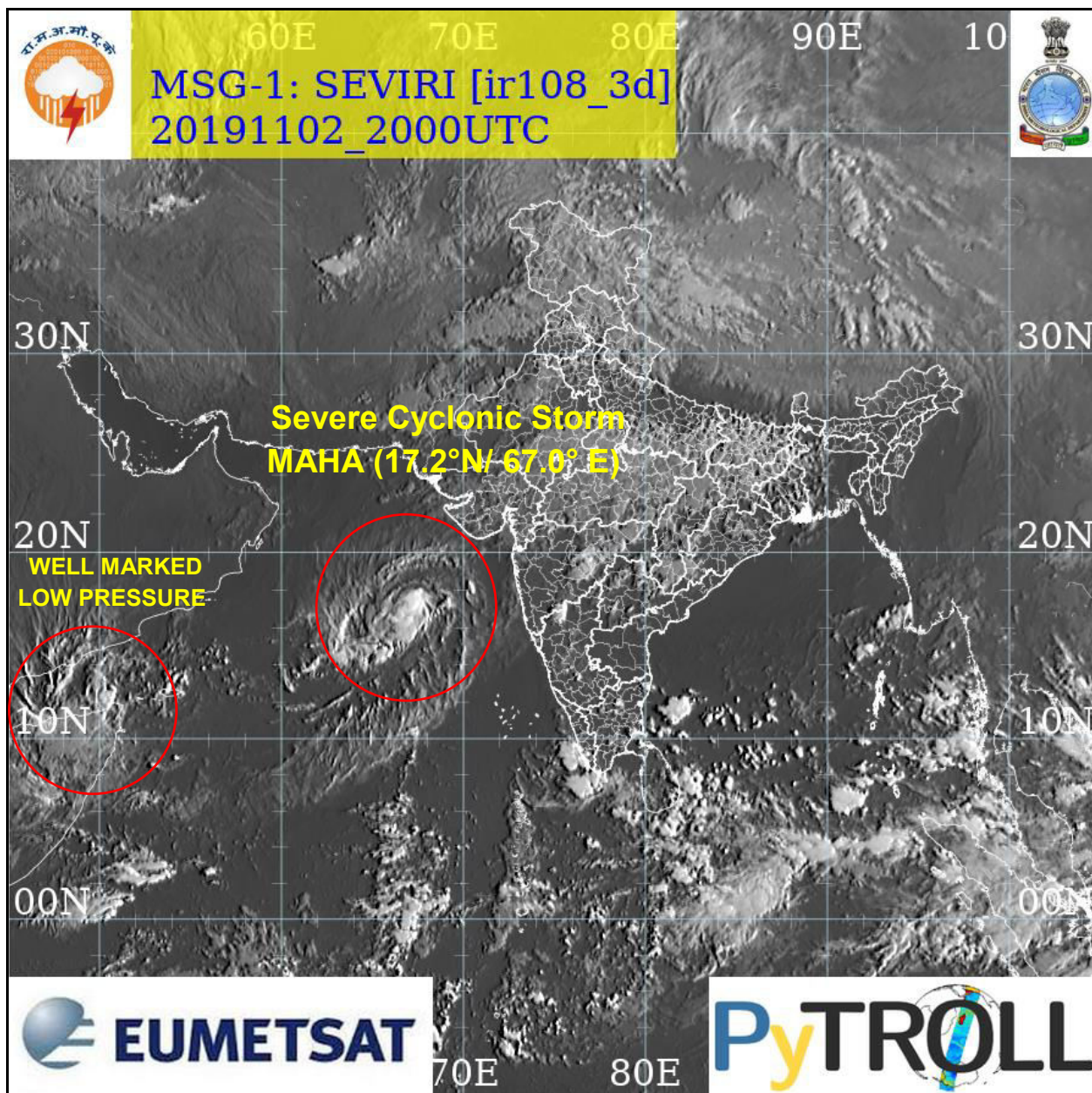
This is the last Bulletin pertaining to this system.

The next bulletin will be issued at 0530 hrs IST of 03rd November, 2019.

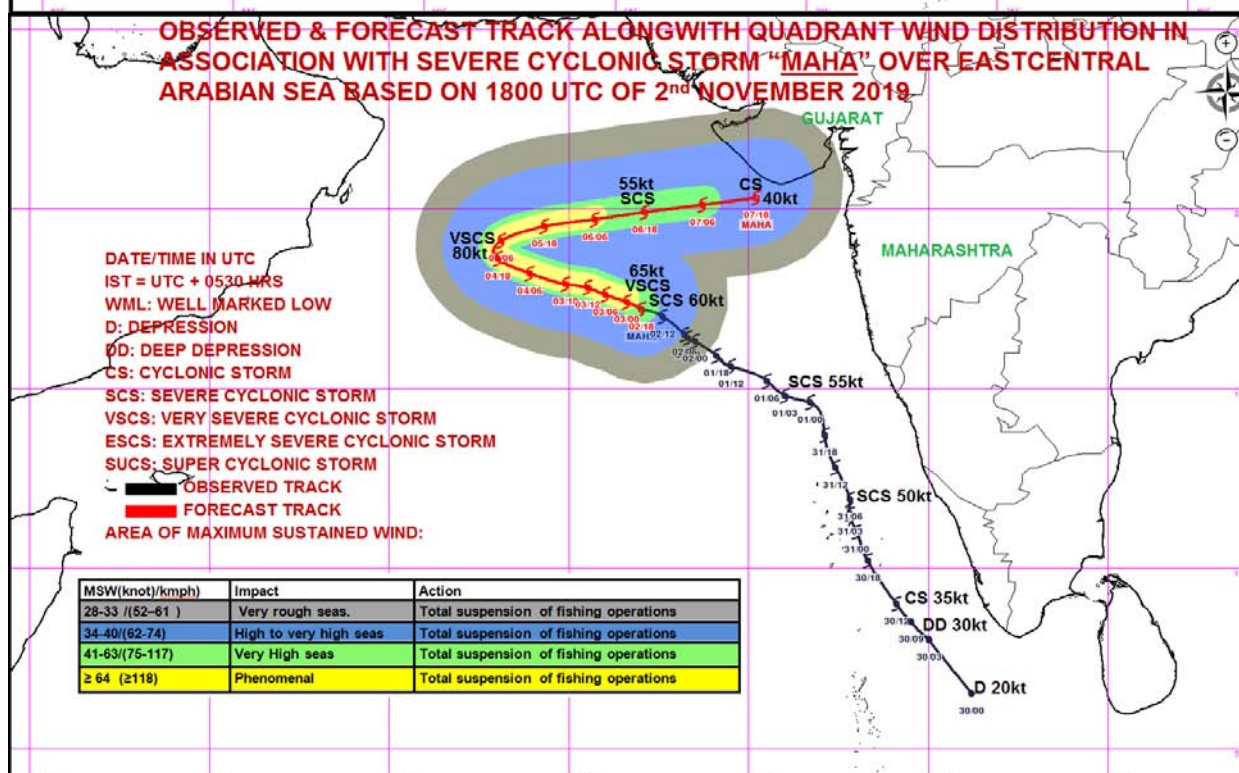
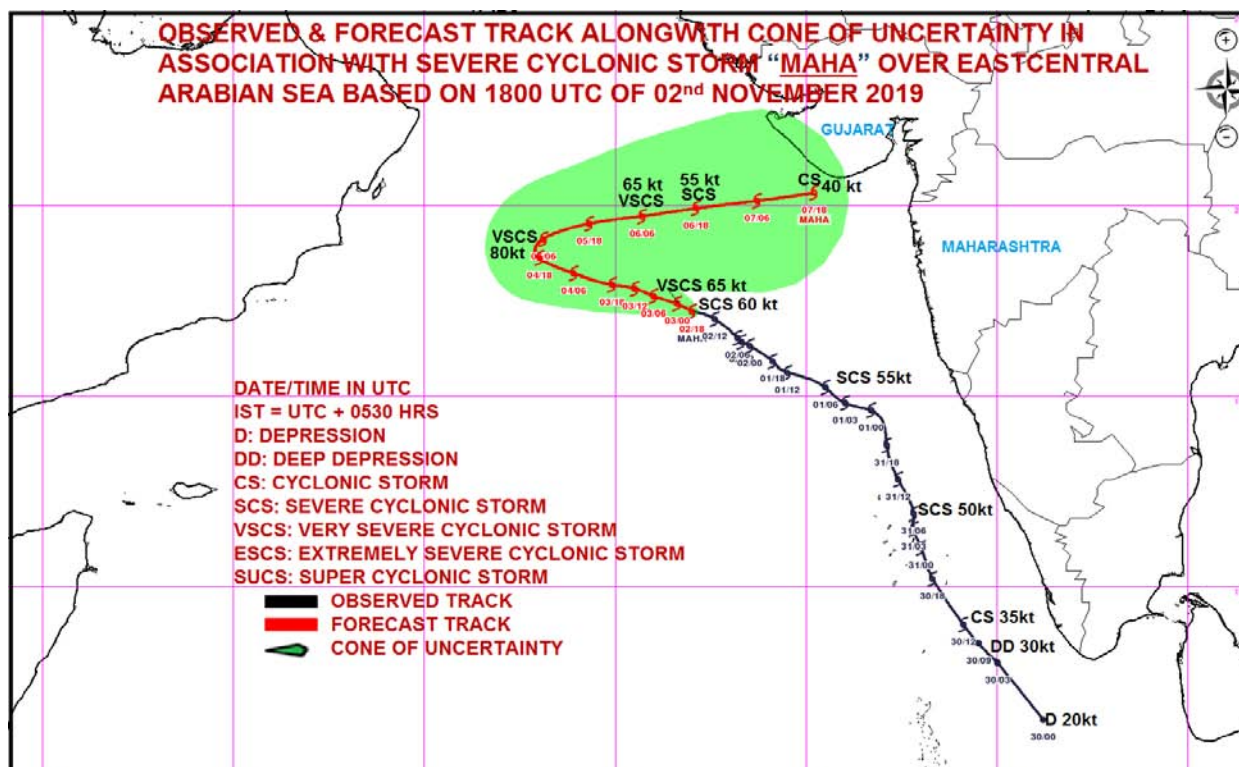
(Ananda Kumar Das)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

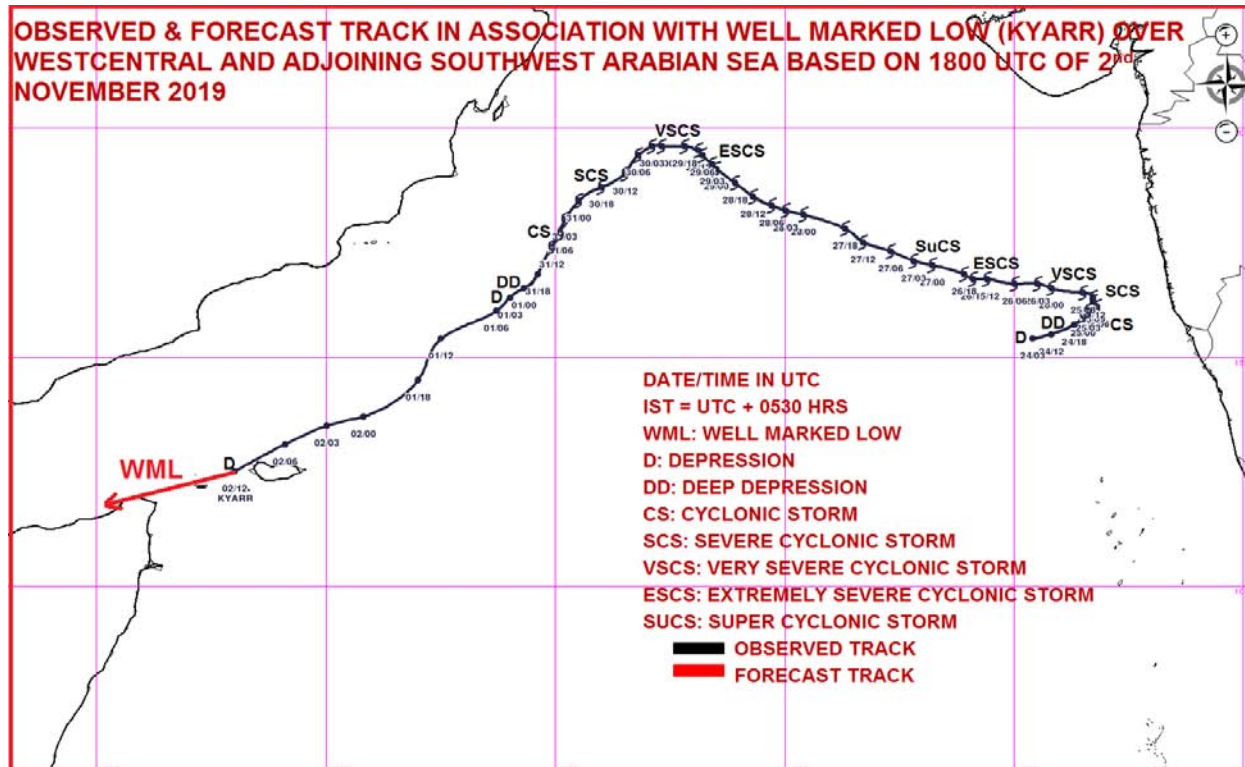
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 31 (ARB/04/2019)

TIME OF ISSUE: 0530 HOURS IST

DATED: 03.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: Severe Cyclonic Storm MAHA (Pronounced as M'maha) over eastcentral Arabian Sea

The **Severe Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral Arabian Sea moved west-northwestwards with a speed of 11 kmph during past 06 hours, and lay centered at 0230 hrs IST of 03rd November, 2019 over eastcentral Arabian Sea near latitude 17.5°N and longitude 66.8°E, about 530 km southwest of Veraval (Gujarat) and 560 km west-southwest of Diu. It is very likely to move west-northwestwards till 04th November and recurve east-northeastwards towards south Gujarat and adjoining north Maharashtra coasts thereafter. It is very likely to intensify into a Very Severe Cyclonic Storm over eastcentral Arabian Sea during next 06 hours. However, after the re-curvature, it is very likely to weaken gradually while moving east-northeastwards.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
03.11.19/0230	17.5/66.8	105-115 gusting to 125	Severe Cyclonic Storm
03.11.19/0530	17.6/66.6	120-130 gusting to 145	Very Severe Cyclonic Storm
03.11.19/1130	17.7/66.0	130-140 gusting to 155	Very Severe Cyclonic Storm
03.11.19/1730	17.8/65.5	140-150 gusting to 165	Very Severe Cyclonic Storm
03.11.19/2330	17.9/64.9	150-160 gusting to 175	Very Severe Cyclonic Storm
04.11.19/1130	18.2/63.9	160-170 gusting to 185	Very Severe Cyclonic Storm
04.11.19/2330	18.6/63.0	160-170 gusting to 185	Very Severe Cyclonic Storm
05.11.19/1130	19.1/63.1	150-160 gusting to 175	Very Severe Cyclonic Storm
05.11.19/2330	19.5/64.3	130-140 gusting to 155	Very Severe Cyclonic Storm
06.11.19/1130	19.7/65.7	120-130 gusting to 145	Very Severe Cyclonic Storm
06.11.19/2330	19.9/67.1	110-120 gusting to 135	Severe Cyclonic Storm
07.11.19/1130	20.1/68.7	90-100 gusting to 110	Severe Cyclonic Storm
07.11.19/2330	20.3/70.2	60-70 gusting to 80	Cyclonic Storm

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with isolated heavy falls likely over Saurashtra, Gujarat region and north Madhya Maharashtra and north Konkan from 6th November evening to 8th November morning.

(ii) Wind warning

- Gale wind speed reaching 105-115 kmph gusting to 125 kmph is prevailing over eastcentral Arabian Sea around the system centre.
- Gale wind speed is very likely to increase gradually over east-central Arabian Sea becoming 160-170 kmph gusting to 185 kmph over eastcentral & adjoining westcentral and northeast Arabian Sea by 4th November.
- Squally wind speed reaching 30-40 kmph gusting to 50 kmph likely along & off Maharashtra coast during next 12 hours.
- Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off South Gujarat and adjoining north Maharashtra coasts from 6th November morning for subsequent 48 hours.

(iii) Sea condition

- Sea condition will be very high over eastcentral Arabian Sea for the next 06 hours and will become phenomenal from 03rd November for subsequent 03 days.
- Sea condition will be high to phenomenal over westcentral Arabian Sea during 3rd- 6th November and over northeast Arabian Sea during 3rd -7th November.

(iv) Fishermen Warning

- The fishermen are advised not to venture into the Sea along & off Maharashtra coast during next 24 hours and into eastcentral Arabian Sea till 7th November and over westcentral and northeast Arabian Sea from 04th to 07th November and along & off Gujarat coast and adjoining north Maharashtra coast from 5th – 7th November.

The next bulletin will be issued at 0830 hrs IST of 03rd November, 2019.

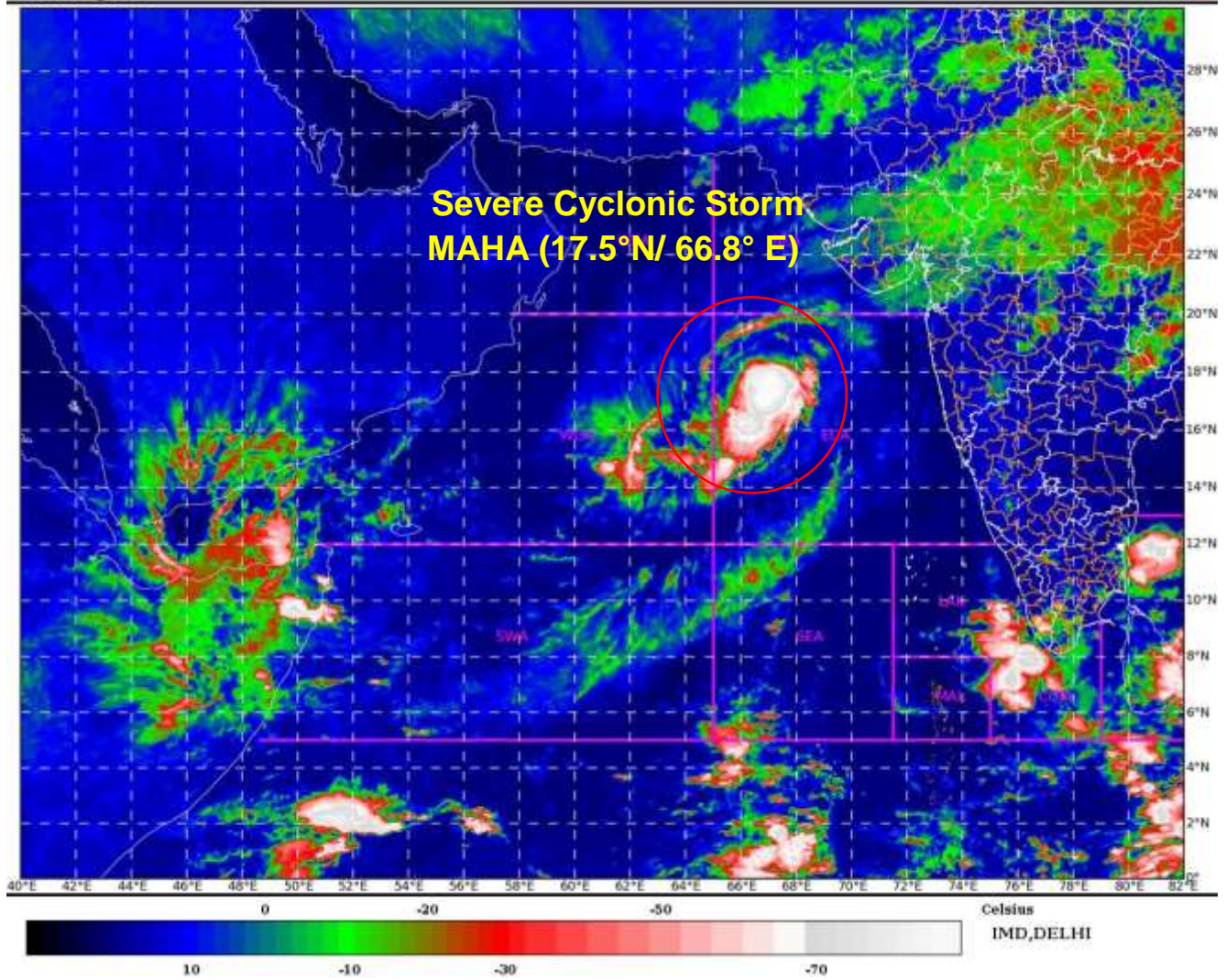
**(Ananda Kumar Das)
Scientist-E, RSMC, New Delhi**

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

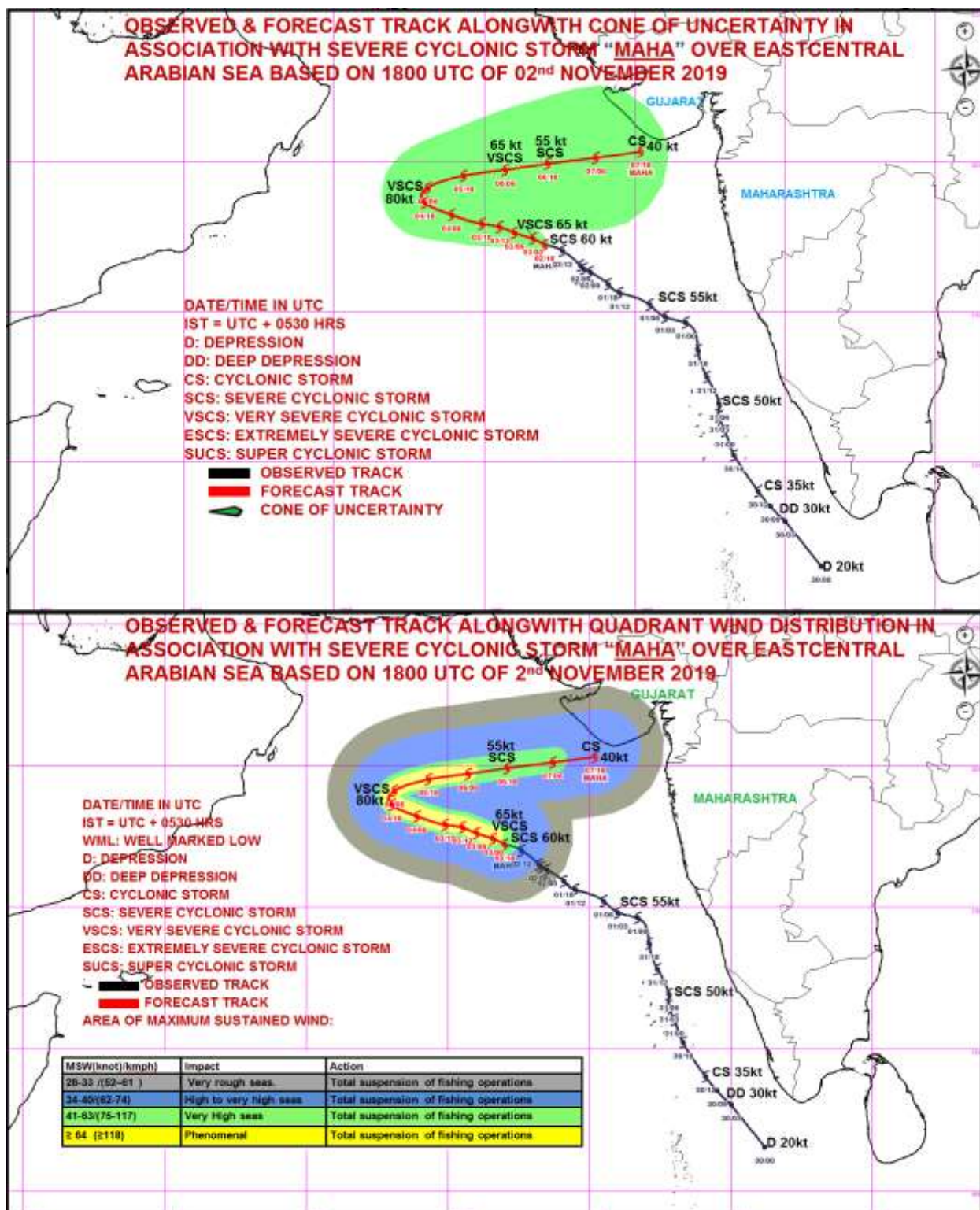
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

SAT : INSAT-3D IMG
IMG_TIR1_TEMP 10.8 um
ARABIAN_SEA

02-11-2019/(2230 to 2256) GMT
03-11-2019/(0400 to 0426) IST



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 32 (ARB/04/2019)

TIME OF ISSUE: 0900 HOURS IST

DATED: 03.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

**Sub: Severe Cyclonic Storm 'MAHA' (Pronounced as M'maha) over eastcentral Arabian Sea:
CYCLONE WATCH FOR GUJARAT COAST**

The **Severe Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral Arabian Sea moved west-northwestwards with a speed of 04 kmph during past 06 hours, and lay centered at 0530 hrs IST of 03rd November, 2019 over eastcentral Arabian Sea near latitude 17.6°N and longitude 66.5°E, about 550 km west-southwest of Veraval (Gujarat) and 580 km west-southwest of Diu. It is very likely to intensify into a **Very Severe Cyclonic Storm** over eastcentral Arabian Sea during next 06 hours. It is very likely to move west-northwestwards till 04th November, re-curve east-northeastwards thereafter and weaken gradually from 5th November onwards. It is very likely to cross Gujarat coast between Diu and Dwarka as a Severe Cyclonic Storm with a maximum sustained wind speed of 100-110 Kmph gusting to 120 Kmph around mid-night of 6th November/early hours of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
03.11.19/0530	17.6/66.5	110-120 gusting to 130	Severe Cyclonic Storm
03.11.19/1130	17.8/66.0	120-130 gusting to 145	Very Severe Cyclonic Storm
03.11.19/1730	18.0/65.5	130-140 gusting to 155	Very Severe Cyclonic Storm
03.11.19/2330	18.2/65.0	140-150 gusting to 165	Very Severe Cyclonic Storm
04.11.19/0530	18.4/64.5	150-160 gusting to 175	Very Severe Cyclonic Storm
04.11.19/1730	18.9/63.5	160-170 gusting to 185	Very Severe Cyclonic Storm
05.11.19/0530	19.3/63.5	150-160 gusting to 175	Very Severe Cyclonic Storm
05.11.19/1730	19.8/64.2	130-140 gusting to 155	Very Severe Cyclonic Storm
06.11.19/0530	20.3/66.4	110-120 gusting to 135	Severe Cyclonic Storm
06.11.19/1730	20.9/68.5	100-110 gusting to 125	Severe Cyclonic Storm
07.11.19/0530	21.7/71.0	80-90 gusting to 100	Cyclonic Storm
07.11.19/1730	22.3/74.0	50-60 gusting to 70	Deep Depression
08.11.19/0530	22.8/76.5	30-40 gusting to 50	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region during 6th & 7th November.
- Light to moderate rainfall at most places with isolated heavy falls very likely over north Madhya Maharashtra and north Konkan during 6th & 7th November.

(ii) Wind warning

- **Gujarat Coast:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 100-110 Kmph gusting to 120 Kmph from 6th November evening for next 12 hours.
- **Maharashtra Coast:** Squally wind speed reaching 30-40 kmph gusting to 50 kmph likely along & off Maharashtra coast from 6th morning, it is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening for next 12 hours.
- Gale wind speed reaching 110-120 kmph gusting to 130 kmph is prevailing over eastcentral Arabian Sea around the system centre. It is very likely to increase gradually over east-central Arabian Sea becoming 160-170 kmph gusting to 185 kmph over eastcentral & adjoining westcentral and northeast Arabian Sea by 4th November.

(iii) Sea condition

- Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high to very high from 6th evening.
- Sea condition will be rough to very rough along & off north Maharashtra coast during 06th November.
- Sea condition will be very high over eastcentral Arabian Sea for the next 06 hours and will become phenomenal thereafter for subsequent 03 days.
- Sea condition will be high to phenomenal over westcentral Arabian Sea during 3rd- 6th November and over northeast Arabian Sea during 4th to 6th November.

(iv) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November and over eastcentral & adjoining northeast Arabian Sea till 06th November and
- The fishermen are advised not to venture into sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th – 6th November.
- The fishermen out at sea are advised to return to the coast.

The next bulletin will be issued at 1130 hrs IST of 03rd November, 2019.

(Ananda Kumar Das)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

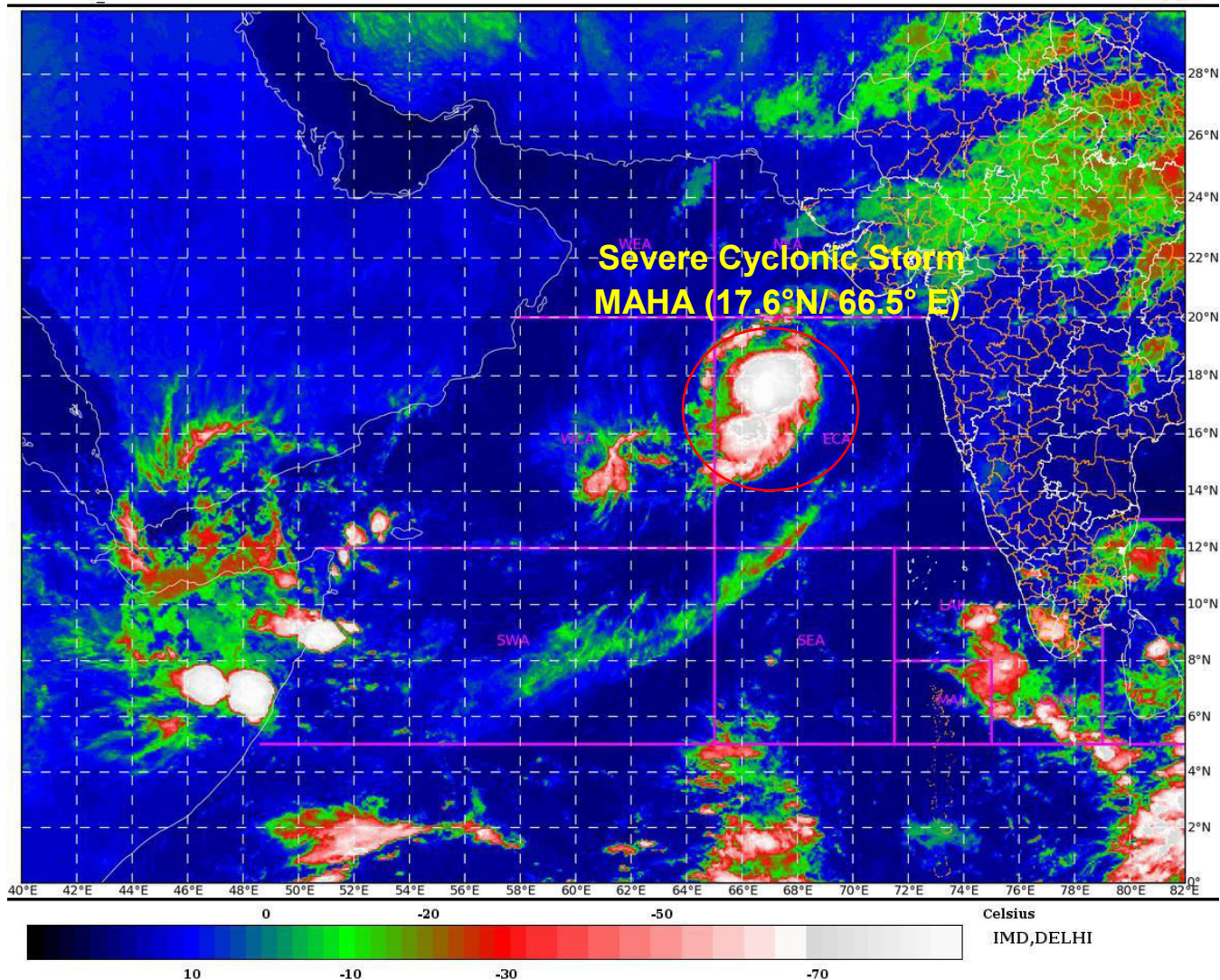
SAT : INSAT-3D IMG

03-11-2019/(0130 to 0156) GMT

IMG_TIR1_TEMP 10.8 um

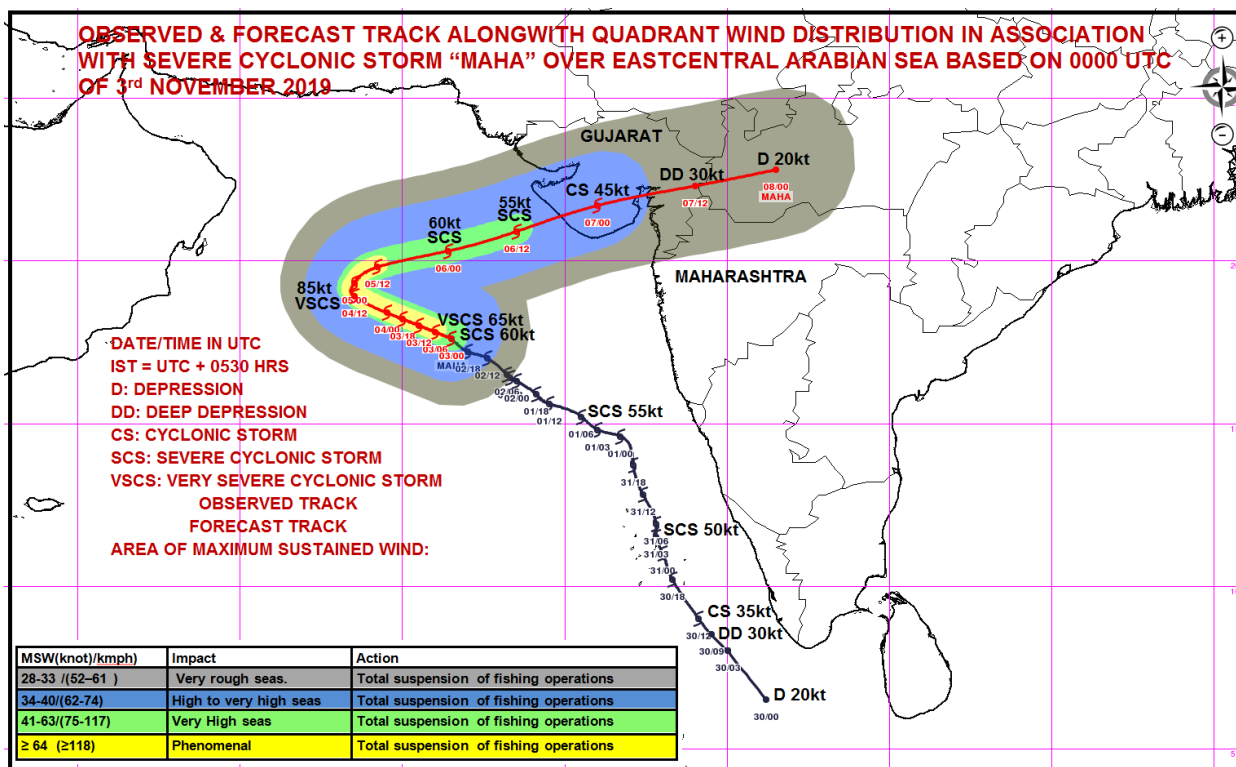
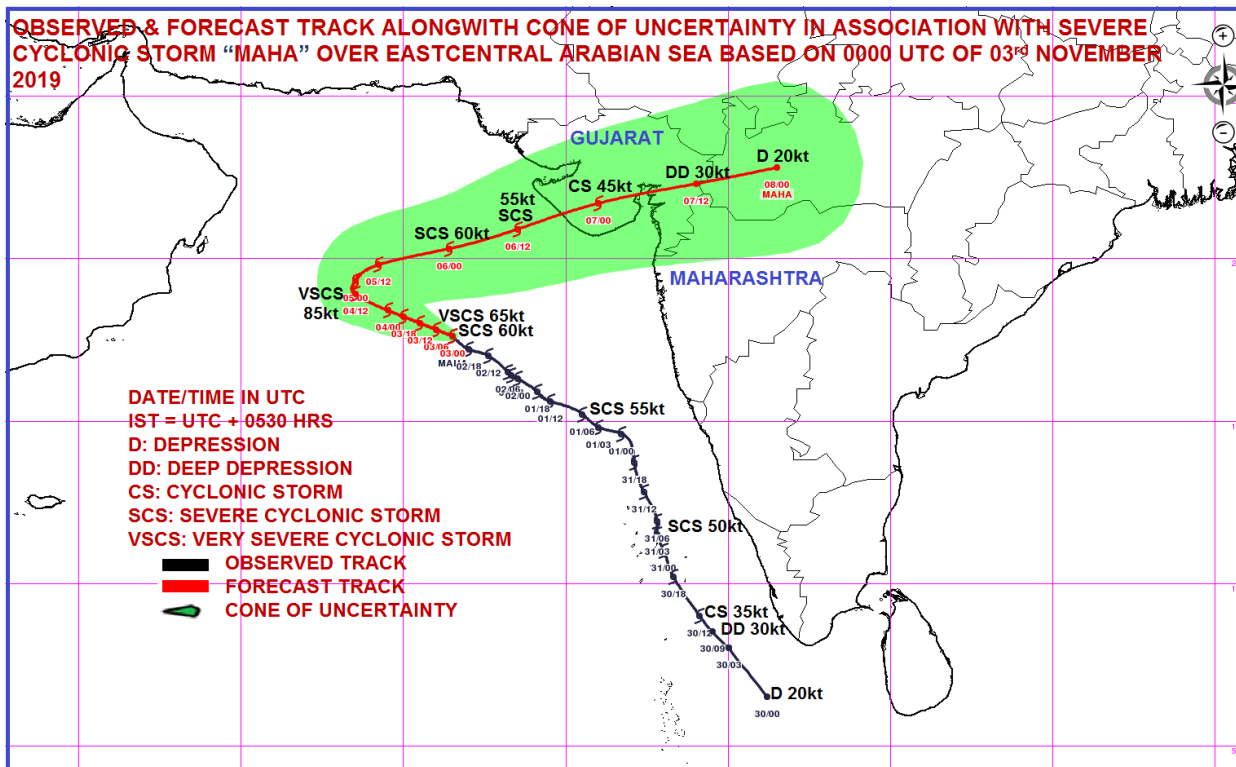
03-11-2019/(0700 to 0726) IST

ARABIAN_SEA



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 33 (ARB/04/2019)

TIME OF ISSUE: 1100 HOURS IST

DATED: 03.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

**Sub: Severe Cyclonic Storm 'MAHA' (Pronounced as M'maha) over eastcentral Arabian Sea:
CYCLONE WATCH FOR GUJARAT COAST**

The **Severe Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral Arabian Sea moved west-northwestwards with a speed of 07 kmph during past 06 hours, and lay centered at 0830 hrs IST of 03rd November, 2019 over eastcentral Arabian Sea near latitude 17.6°N and longitude 66.4°E, about 550 km west-southwest of Veraval (Gujarat) and 580 km west-southwest of Diu. It is very likely to intensify into a **Very Severe Cyclonic Storm** over eastcentral Arabian Sea during next 06 hours. It is very likely to move west-northwestwards till 04th November, re-curve east-northeastwards thereafter and weaken gradually from 5th November onwards. It is very likely to cross Gujarat coast between Diu and Dwarka as a Severe Cyclonic Storm with a maximum sustained wind speed of 100-110 Kmph gusting to 120 Kmph around mid-night of 6th November/ early hours of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
03.11.19/0830	17.6/66.4	110-120 gusting to 130	Severe Cyclonic Storm
03.11.19/1130	17.7/66.0	120-130 gusting to 145	Very Severe Cyclonic Storm
03.11.19/1730	17.9/65.5	130-140 gusting to 155	Very Severe Cyclonic Storm
03.11.19/2330	18.2/65.0	140-150 gusting to 165	Very Severe Cyclonic Storm
04.11.19/0530	18.4/64.5	150-160 gusting to 175	Very Severe Cyclonic Storm
04.11.19/1730	18.9/63.5	160-170 gusting to 185	Very Severe Cyclonic Storm
05.11.19/0530	19.3/63.5	150-160 gusting to 175	Very Severe Cyclonic Storm
05.11.19/1730	19.8/64.2	130-140 gusting to 155	Very Severe Cyclonic Storm
06.11.19/0530	20.3/66.4	110-120 gusting to 135	Severe Cyclonic Storm
06.11.19/1730	20.9/68.5	100-110 gusting to 125	Severe Cyclonic Storm
07.11.19/0530	21.7/71.0	80-90 gusting to 100	Cyclonic Storm
07.11.19/1730	22.3/74.0	50-60 gusting to 70	Deep Depression
08.11.19/0530	22.8/76.5	30-40 gusting to 50	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region during 6th & 7th November.
- Light to moderate rainfall at most places with isolated heavy falls very likely over north Madhya Maharashtra and north Konkan during 6th & 7th November.

(ii) Wind warning

- **Gujarat Coast:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 100-110 Kmph gusting to 120 Kmph from 6th November evening for next 12 hours.
- **Maharashtra Coast:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning, it is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening for next 12 hours.
- Gale wind speed reaching 110-120 kmph gusting to 130 kmph is prevailing over eastcentral Arabian Sea around the system centre. It is very likely to increase gradually over east-central Arabian Sea becoming 160-170 kmph gusting to 185 kmph over eastcentral & adjoining westcentral and northeast Arabian Sea by 4th November.

(iii) Sea condition

- Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high to very high from 6th evening.
- Sea condition will be rough to very rough along & off north Maharashtra coast during 06th November.
- Sea condition will be very high over eastcentral Arabian Sea for the next 06 hours and will become phenomenal thereafter for subsequent 03 days.
- Sea condition will be high to phenomenal over westcentral Arabian Sea during 3rd- 6th November and over northeast Arabian Sea during 4th to 6th November.

(iv) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November and over eastcentral & adjoining northeast Arabian Sea till 06th November.
- The fishermen are advised not to venture into sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th – 6th November.
- The fishermen out at sea are advised to return to the coast.

The next bulletin will be issued at 1430 hrs IST of 03rd November, 2019.

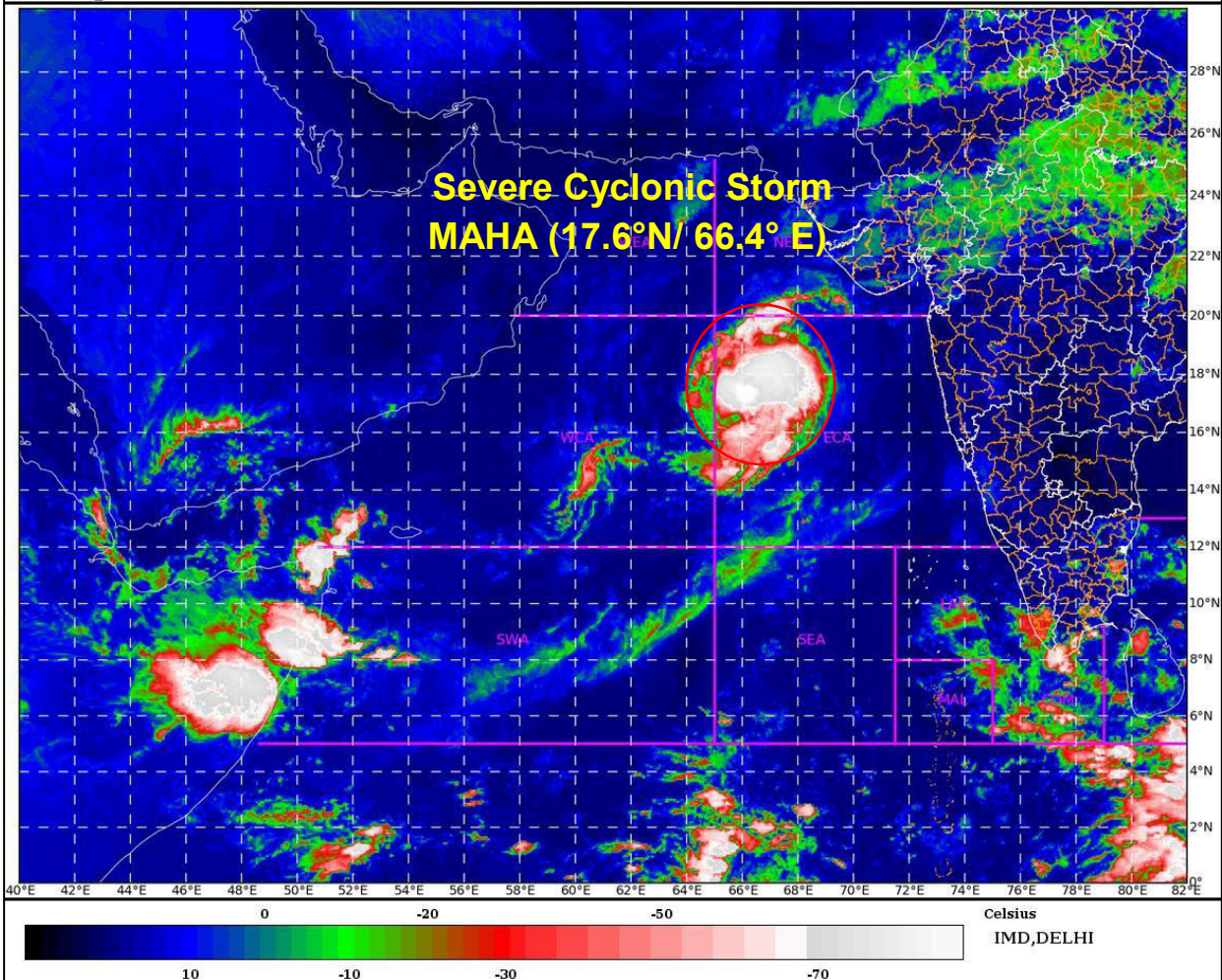
(Neetha K Gopal)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

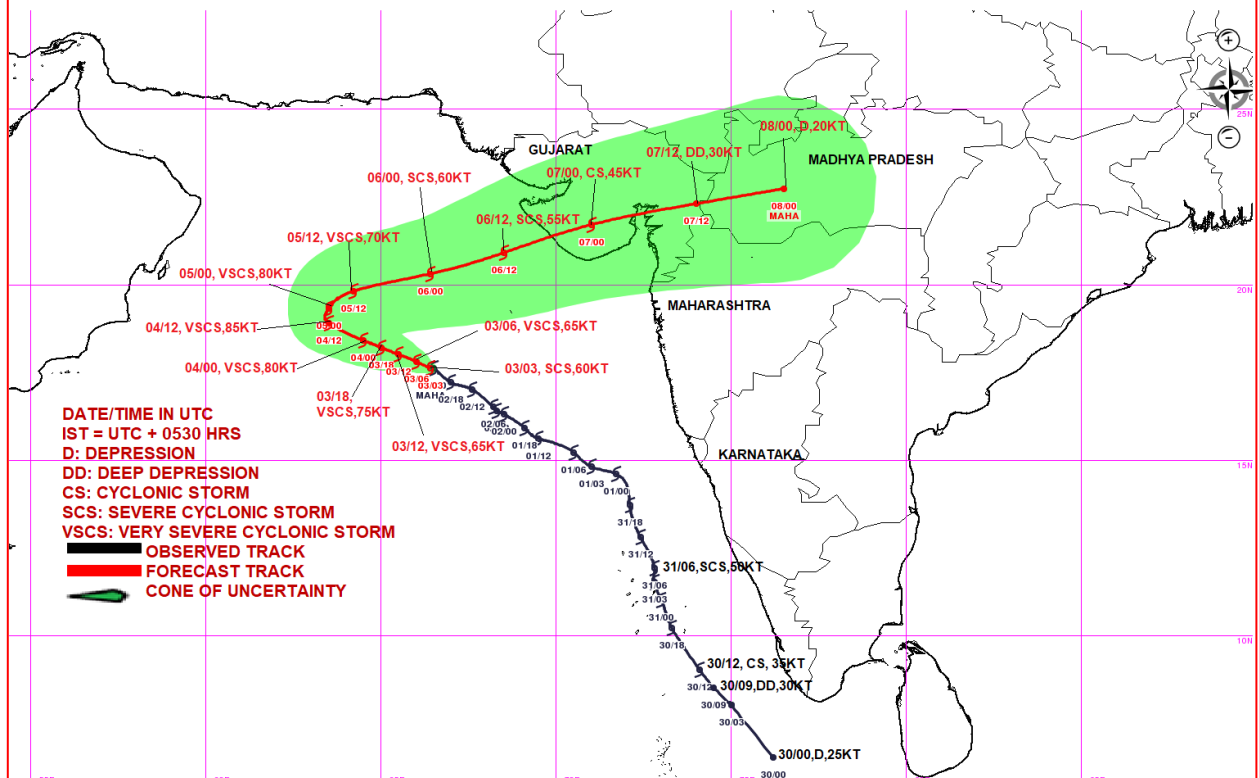
SAT : INSAT-3D IMG
IMG_TIR1_TEMP 10.8 um
ARABIAN_SEA

03-11-2019/(0400 to 0427) GMT
03-11-2019/(0930 to 0957) IST

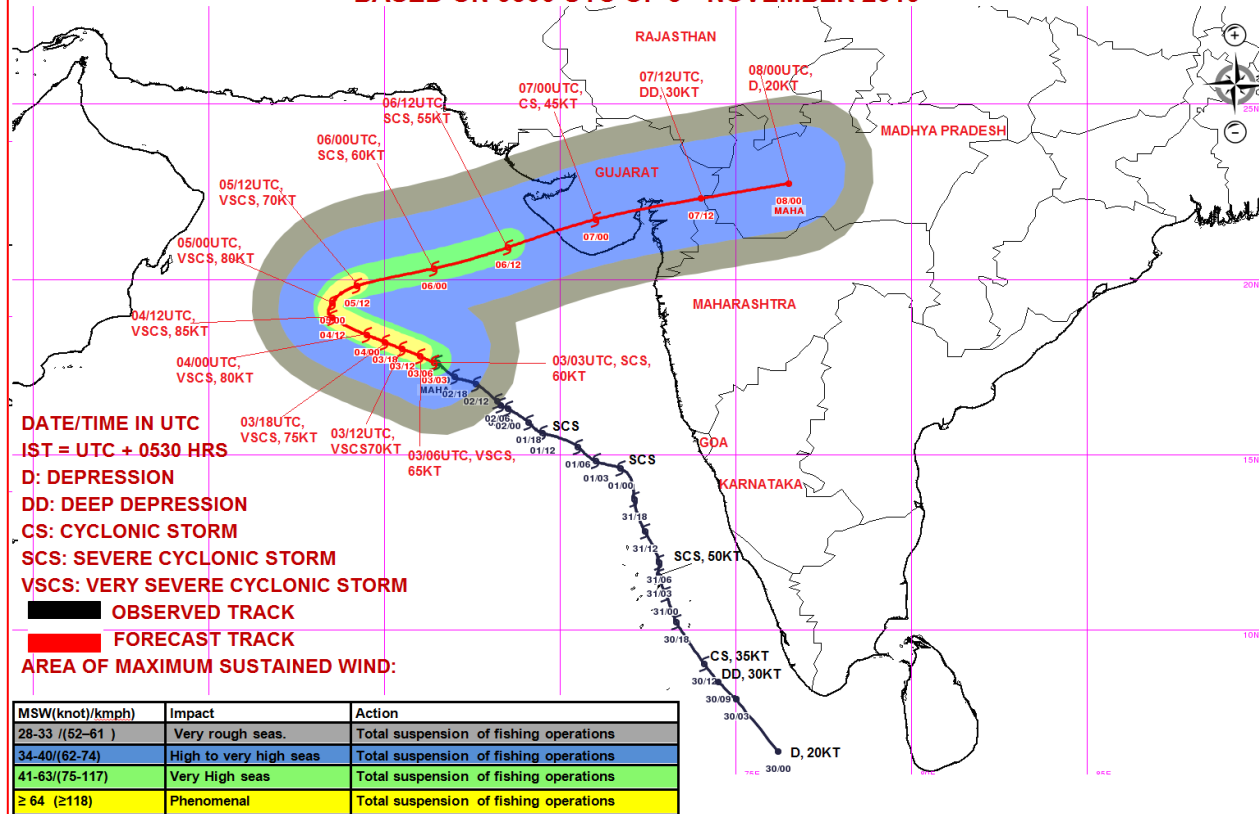


Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH SEVERE CYCLONIC STORM “MAHA” OVER EASTCENTRAL ARABIAN SEA BASED ON 0300 UTC OF 03RD NOVEMBER 2019



OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH SEVERE CYCLONIC STORM “MAHA” OVER EASTCENTRAL ARABIAN SEA BASED ON 0300 UTC OF 3RD NOVEMBER 2019



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 34 (ARB/04/2019)

TIME OF ISSUE: 1400 HOURS IST

DATED: 03.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

**Sub: Severe Cyclonic Storm 'MAHA' (Pronounced as M'maha) over eastcentral Arabian Sea:
CYCLONE WATCH FOR GUJARAT COAST**

The **Severe Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral Arabian Sea moved westwards slowly with a speed of 05 kmph during past 06 hours, and lay centered at 1130 hrs IST of today, the 03rd November, 2019 over eastcentral Arabian Sea near latitude 17.6°N and longitude 66.2°E, about 570 km west-southwest of Veraval (Gujarat), 600 km west-southwest of Diu and 580 km south-southwest of Porbandar. It is very likely to intensify into a **Very Severe Cyclonic Storm** over eastcentral Arabian Sea during next 06 hours. It is very likely to move west-northwestwards slowly till 04th November, re-curve east-northeastwards and move rapidly thereafter and weaken gradually from 05th November onwards. It is very likely to cross Gujarat coast between Diu and Dwarka as a Severe Cyclonic Storm with a maximum sustained wind speed of 100-110 Kmph gusting to 120 Kmph around mid-night of 6th November/ early hours of 7th November, 2019. Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
03.11.19/1130	17.6/66.2	110-120 gusting to 130	Severe Cyclonic Storm
03.11.19/1730	17.7/65.6	120-130 gusting to 145	Very Severe Cyclonic Storm
03.11.19/2330	17.9/65.1	130-140 gusting to 155	Very Severe Cyclonic Storm
04.11.19/0530	18.0/64.6	140-150 gusting to 165	Very Severe Cyclonic Storm
04.11.19/1130	18.3/64.0	150-160 gusting to 175	Very Severe Cyclonic Storm
04.11.19/2330	18.9/63.5	160-170 gusting to 185	Very Severe Cyclonic Storm
05.11.19/1130	19.4/63.8	150-160 gusting to 175	Very Severe Cyclonic Storm
05.11.19/2330	19.9/65.3	130-140 gusting to 155	Very Severe Cyclonic Storm
06.11.19/1130	20.6/67.5	110-120 gusting to 130	Severe Cyclonic Storm
06.11.19/2330	21.3/69.7	100-110 gusting to 100	Severe Cyclonic Storm
07.11.19/1130	22.0/72.0	80-90 gusting to 100	Cyclonic Storm
07.11.19/2330	22.6/74.3	50-60 gusting to 70	Deep Depression
08.11.19/1130	23.1/76.5	30-40 gusting to 50	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region during 6th & 7th November.
- Light to moderate rainfall at most places with isolated heavy falls very likely over north Madhya Maharashtra and north Konkan during 6th & 7th November.

(ii) Wind warning

- **Gujarat Coast:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 100-110 Kmph gusting to 120 Kmph from 6th November evening for next 12 hours.
- **Maharashtra Coast:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning, it is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening for next 12 hours.
- Gale wind speed reaching 110-120 kmph gusting to 130 kmph is prevailing over eastcentral Arabian Sea around the system centre. It is very likely to increase gradually over east-central Arabian Sea becoming 160-170 kmph gusting to 185 kmph over eastcentral & adjoining westcentral and northeast Arabian Sea by 4th November.

(iii) Sea condition

- Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high to very high from 6th evening.
- Sea condition will be rough to very rough along & off north Maharashtra coast during 06th November.
- Sea condition will be very high over eastcentral Arabian Sea for the next 06 hours and will become phenomenal thereafter for subsequent 03 days.
- Sea condition will be high to phenomenal over westcentral Arabian Sea during 3rd- 6th November and over northeast Arabian Sea during 4th to 6th November.

(iv) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November and over eastcentral & adjoining northeast Arabian Sea till 06th November.
- The fishermen are advised not to venture into sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th – 6th November.
- The fishermen out at sea are advised to return to the coast.

The next bulletin will be issued at 1730 hrs IST of 03rd November, 2019.

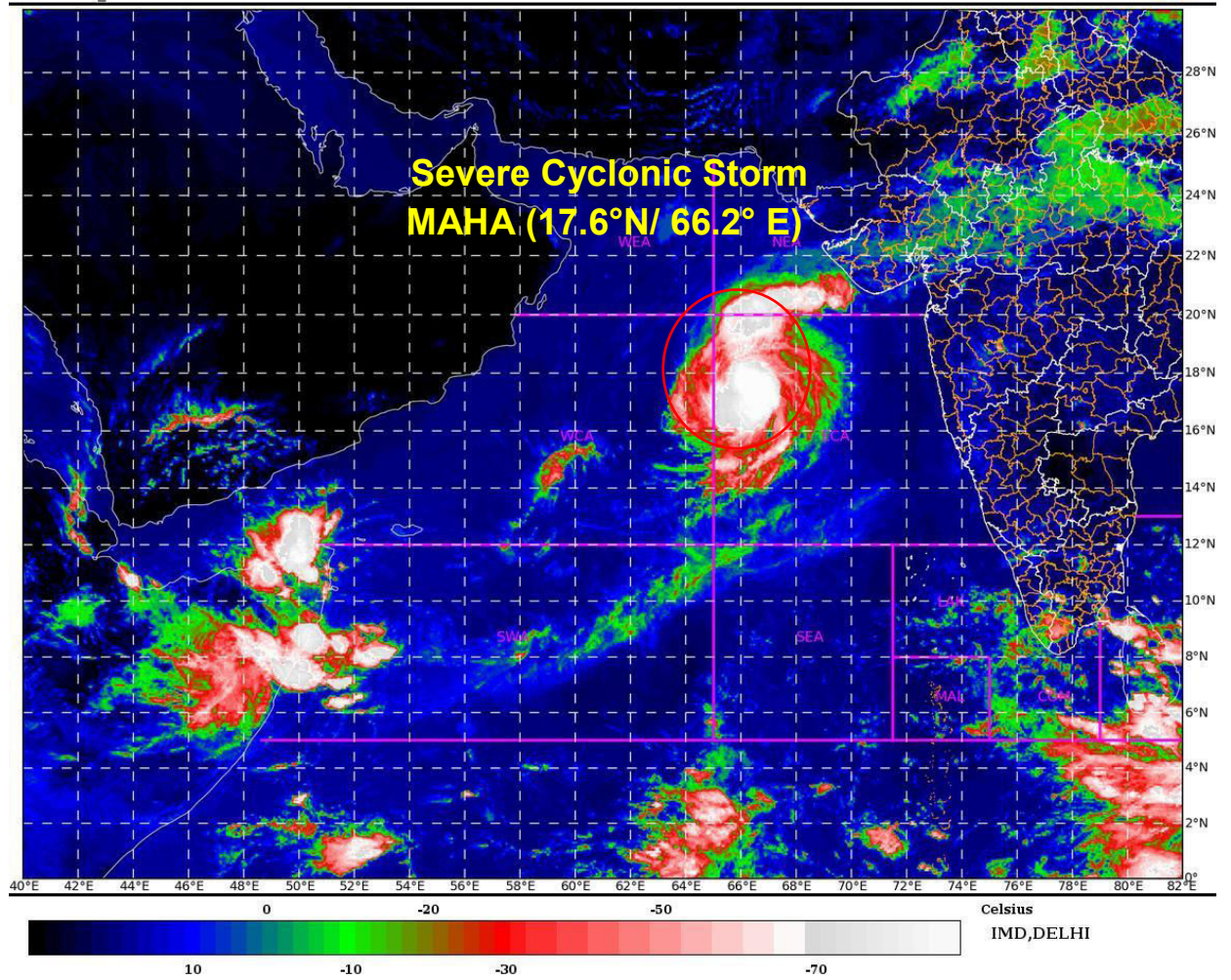
(Neetha K Gopal)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

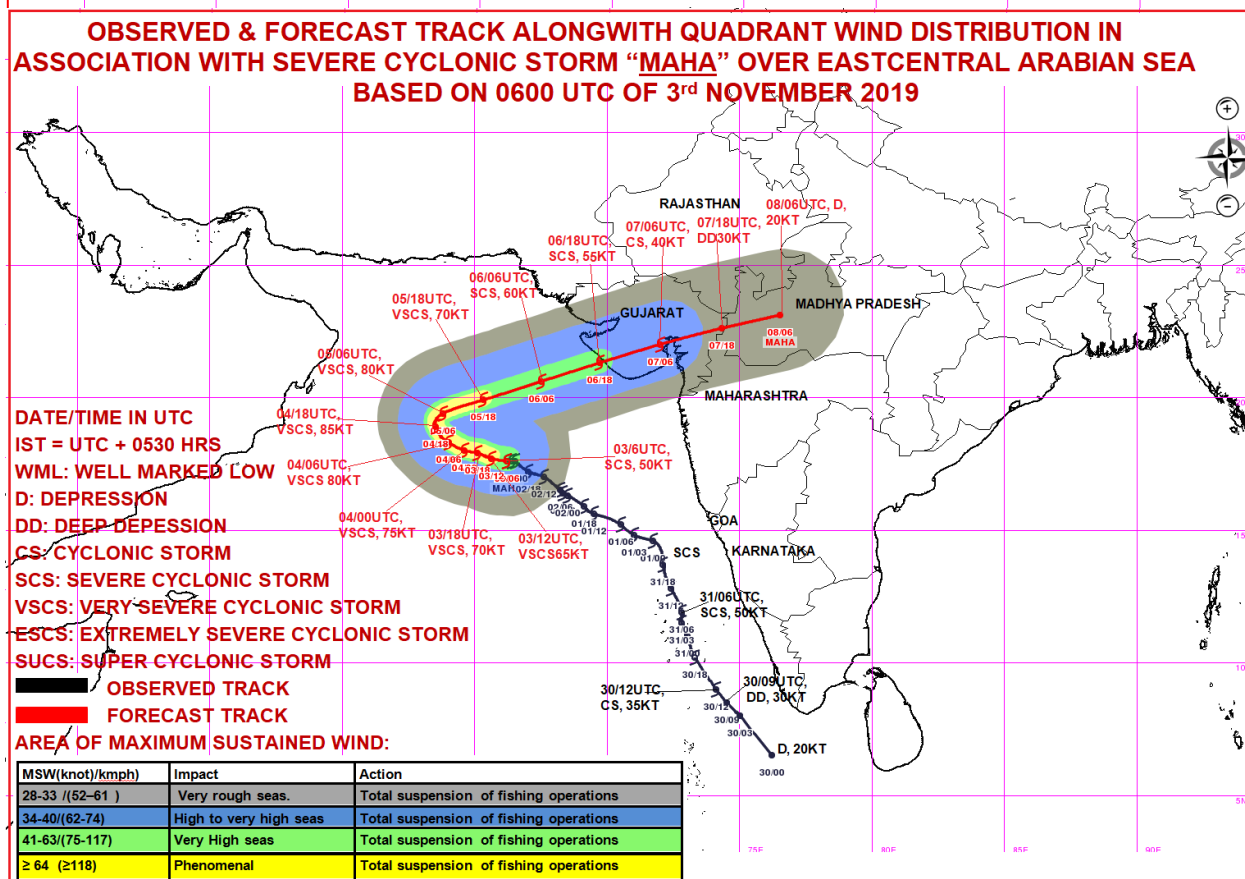
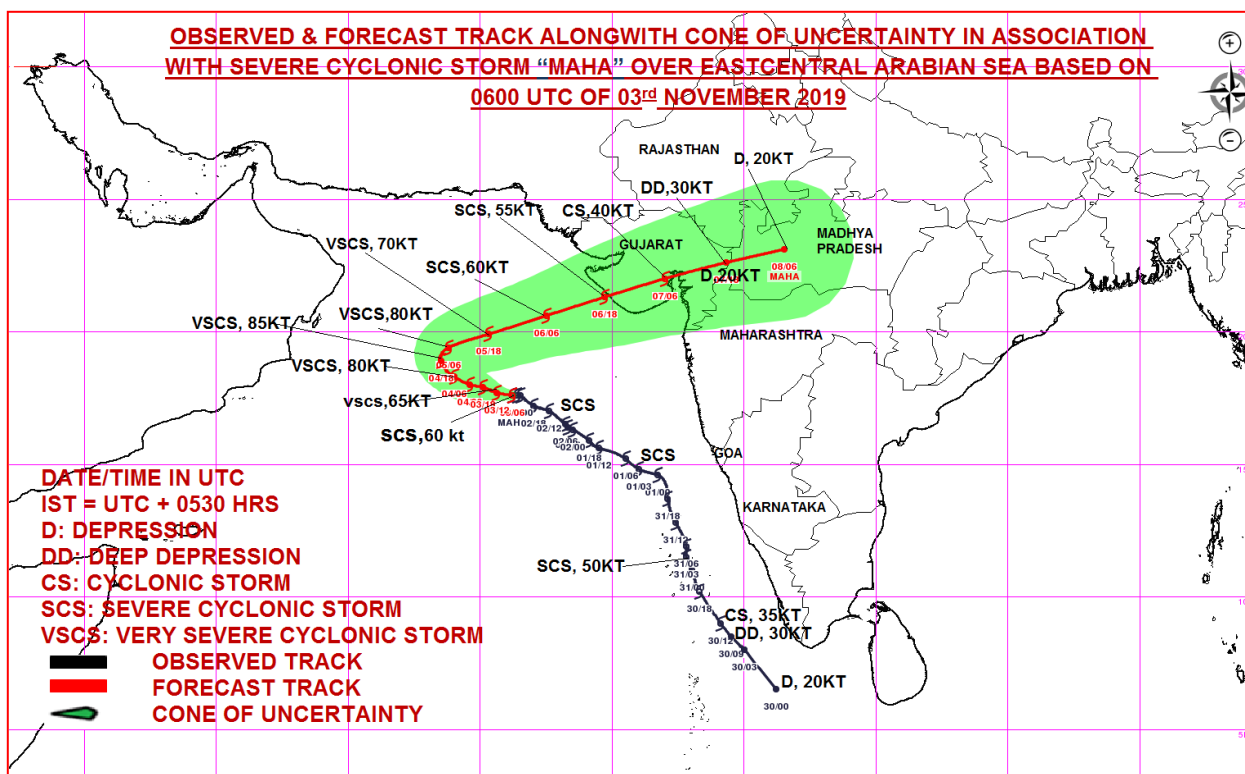
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

SAT : INSAT-3D IMG
IMG_TIR1_TEMP 10.8 um
ARABIAN_SEA

03-11-2019/(0730 to 0757) GMT
03-11-2019/(1300 to 1327) IST



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 35 (ARB/04/2019)

TIME OF ISSUE: 1630 HOURS IST

DATED: 03.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: Severe Cyclonic Storm 'MAHA' (Pronounced as M'maha) over eastcentral Arabian Sea intensified into a Very Severe Cyclonic storm: CYCLONE WATCH FOR GUJARAT COAST

The **Severe Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral Arabian Sea moved further westwards with a speed of 09 kmph during past 06 hours, intensified into a **Very Severe Cyclonic storm** and lay centered at 1430 hrs IST of today, the 03rd November, 2019 over eastcentral Arabian Sea near latitude 17.6°N and longitude 65.9°E, about 590 km west-southwest of Veraval (Gujarat), 630 km west-southwest of Diu and 590 km southwest of Porbandar. It is very likely to move west-northwestwards slowly till 04th November, re-curve east-northeastwards and move rapidly thereafter and weaken gradually from 05th November onwards. It is very likely to cross Gujarat coast between Diu and Dwarka as a Severe Cyclonic Storm with a maximum sustained wind speed of 100-110 Kmph gusting to 120 Kmph around mid-night of 6th November/ early hours of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
03.11.19/1430	17.6/65.9	120-130 gusting to 145	Very Severe Cyclonic Storm
03.11.19/1730	17.7/65.6	125-135 gusting to 150	Very Severe Cyclonic Storm
03.11.19/2330	17.9/65.1	130-140 gusting to 155	Very Severe Cyclonic Storm
04.11.19/0530	18.0/64.6	140-150 gusting to 165	Very Severe Cyclonic Storm
04.11.19/1130	18.3/64.0	150-160 gusting to 175	Very Severe Cyclonic Storm
04.11.19/2330	18.9/63.5	160-170 gusting to 185	Very Severe Cyclonic Storm
05.11.19/1130	19.4/63.8	150-160 gusting to 175	Very Severe Cyclonic Storm
05.11.19/2330	19.9/65.3	130-140 gusting to 155	Very Severe Cyclonic Storm
06.11.19/1130	20.6/67.5	110-120 gusting to 130	Severe Cyclonic Storm
06.11.19/2330	21.3/69.7	100-110 gusting to 100	Severe Cyclonic Storm
07.11.19/1130	22.0/72.0	80-90 gusting to 100	Cyclonic Storm
07.11.19/2330	22.6/74.3	50-60 gusting to 70	Deep Depression
08.11.19/1130	23.1/76.5	30-40 gusting to 50	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region during 6th & 7th November.
- Light to moderate rainfall at most places with isolated heavy falls very likely over north Madhya Maharashtra and north Konkan during 6th & 7th November.

(ii) Wind warning

- **Gujarat Coast:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 100-110 Kmph gusting to 120 Kmph from 6th November evening for next 12 hours.
- **Maharashtra Coast:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning, it is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening for next 12 hours.
- **Arabian Sea:** Gale wind speed reaching 120-130 kmph gusting to 145 kmph is prevailing over eastcentral Arabian Sea around the system centre. It is very likely to increase gradually over east-central Arabian Sea becoming 160-170 kmph gusting to 185 kmph over eastcentral & adjoining westcentral and northeast Arabian Sea by 4th November.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high to very high from 6th evening.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast during 06th November.
- **Arabian Sea:** Sea condition will be phenomenal over eastcentral Arabian Sea till 05th November and will be very high on 6th November. Sea condition will be high to phenomenal over westcentral Arabian Sea during 3rd- 5th November and very high to high over northeast Arabian Sea during 4th to 6th November.

(iv) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November and over eastcentral & adjoining northeast Arabian Sea till 06th November.
- The fishermen are advised not to venture into sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th – 6th November.
- The fishermen out at sea are advised to return to the coast.

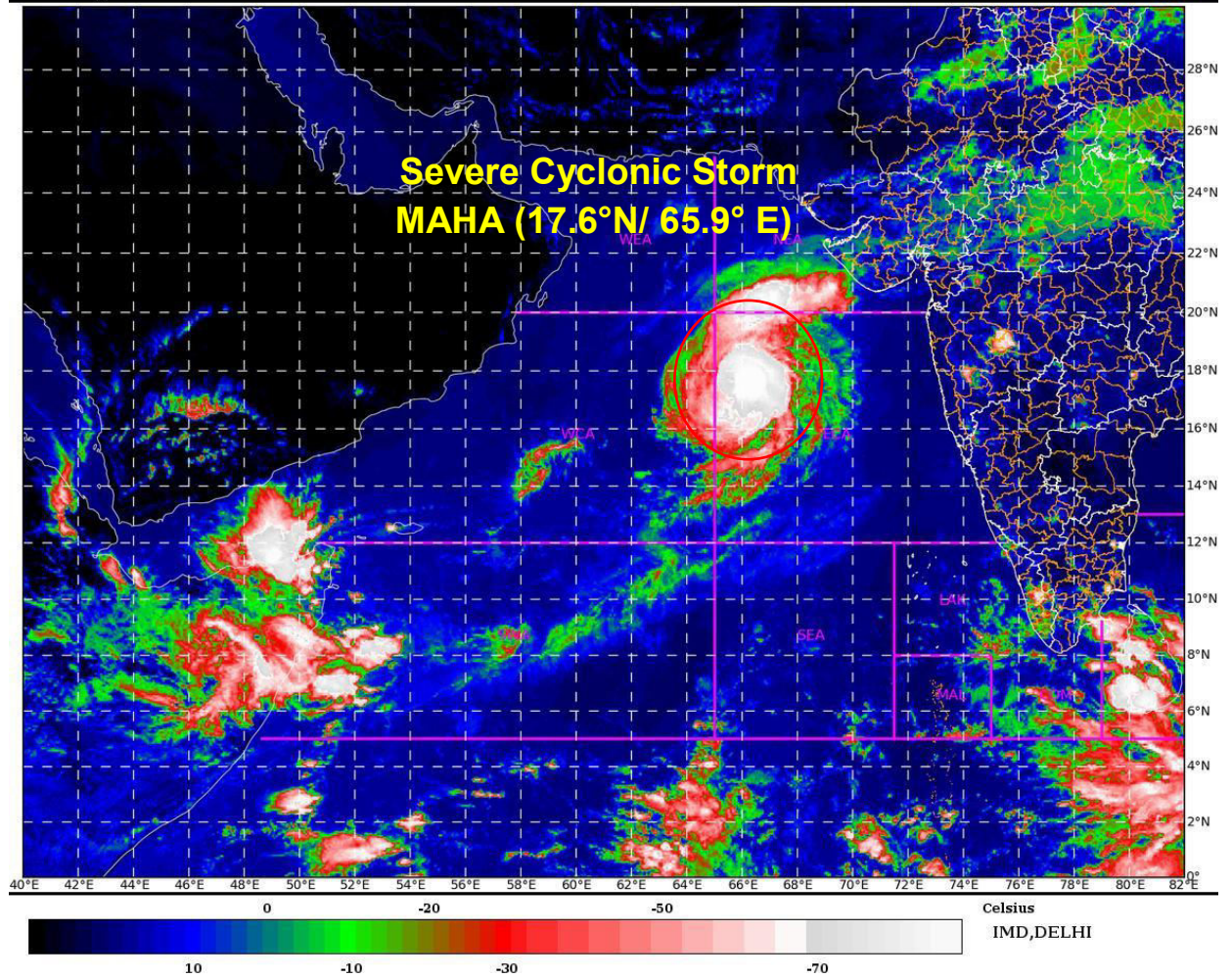
The next bulletin will be issued at 2030 hrs IST of 03rd November, 2019.

(Neetha K Gopal)
Scientist-E, RSMC, New Delhi

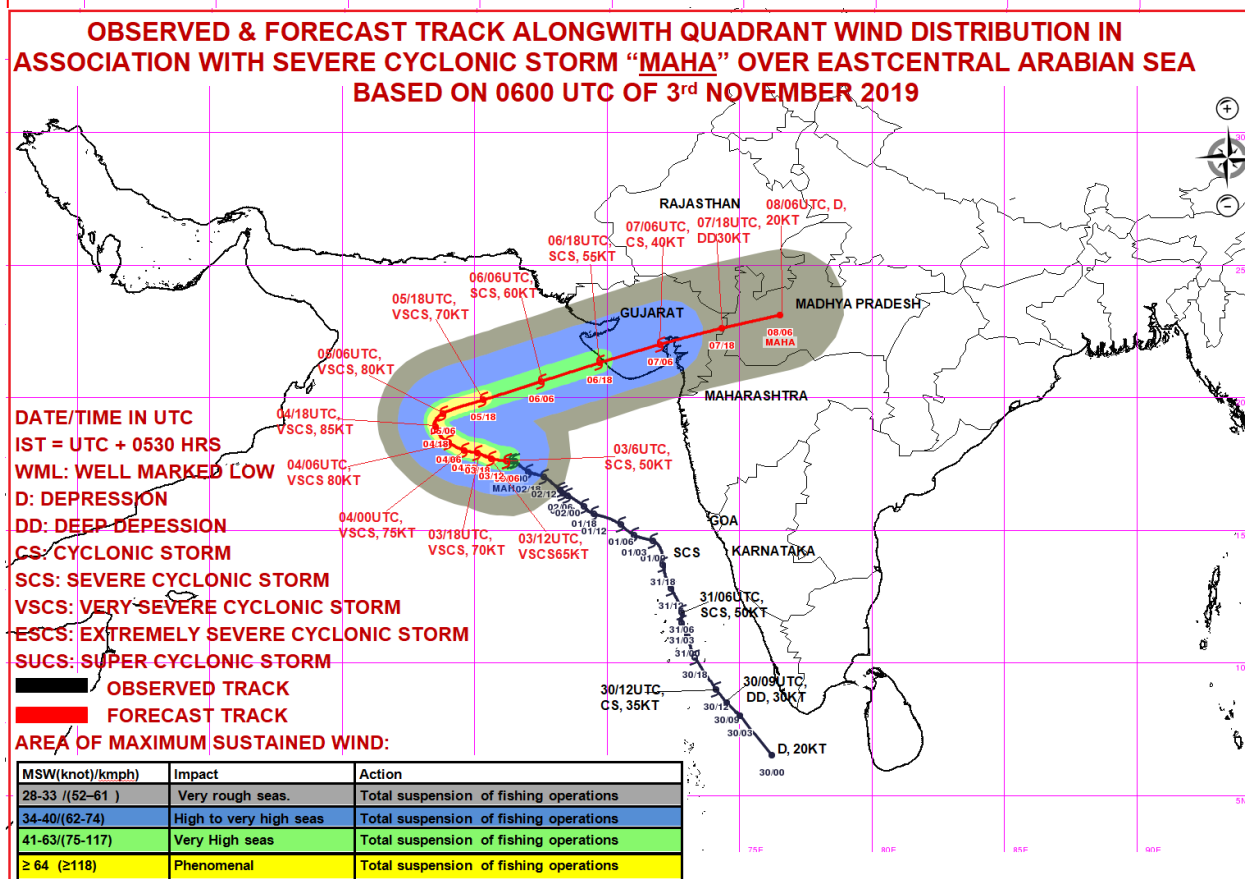
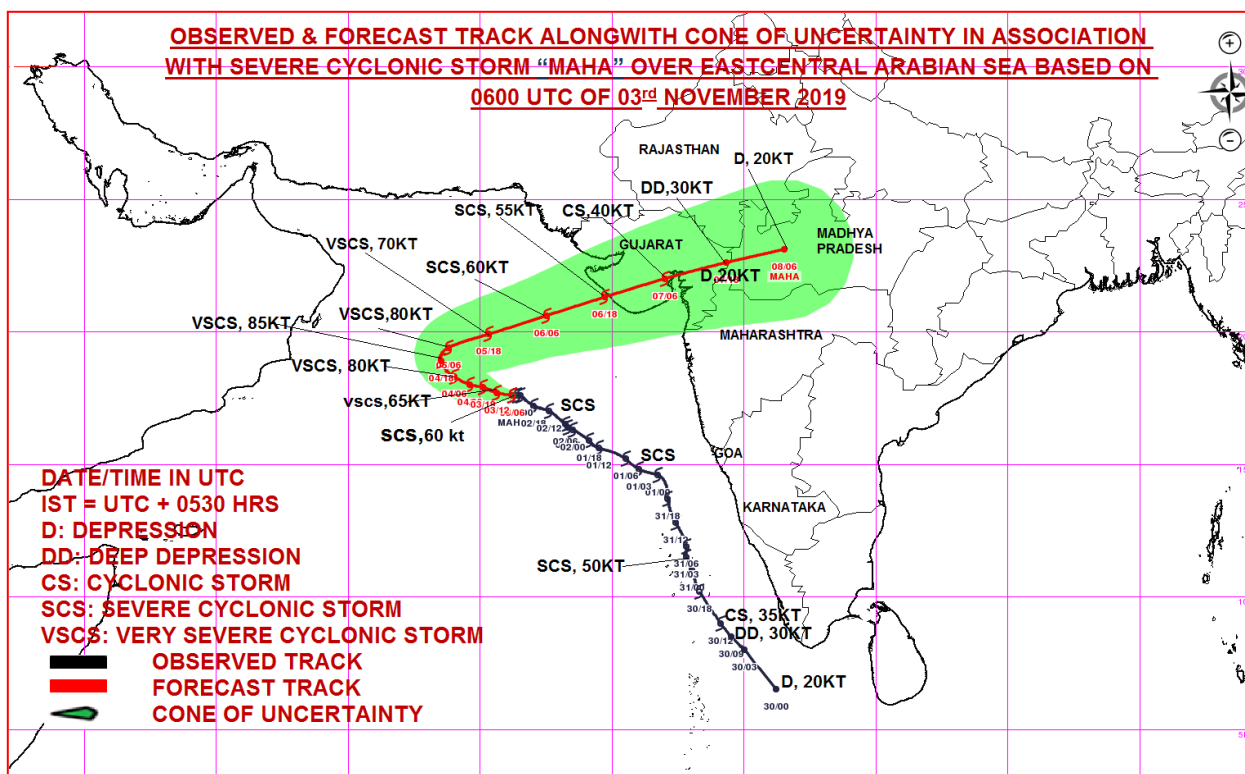
Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

SAT : INSAT-3D IMG
IMG_TIR1_TEMP 10.8 um
ARABIAN_SEA

03-11-2019/(0930 to 0956) GMT
03-11-2019/(1500 to 1526) IST



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 36 (ARB/04/2019)

TIME OF ISSUE: 1940 HOURS IST

DATED: 03.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: Very Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over eastcentral Arabian Sea: CYCLONE WATCH FOR GUJARAT COAST

The **Very Severe Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral Arabian Sea moved further westwards with a speed of 09 kmph during past 06 hours and lay centered at 1730 hrs IST of today, the 03rd November, 2019 over eastcentral Arabian Sea near latitude 17.7°N and longitude 65.7°E, about 600 km west-southwest of Veraval (Gujarat), 640 km west-southwest of Diu and 600 km southwest of Porbandar. It is very likely to move west-northwestwards slowly till 04th November, re-curve east-northeastwards and move rapidly thereafter. It is very likely to weaken gradually from 05th November onwards. It is very likely to cross Gujarat coast between Diu and Dwarka as a Severe Cyclonic Storm with a maximum sustained wind speed of 100-110 Kmph gusting to 120 Kmph around mid-night of 6th November/ early hours of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
03.11.19/1730	17.7/65.7	125-135 gusting to 150	Very Severe Cyclonic Storm
03.11.19/2330	17.9/65.1	130-140 gusting to 155	Very Severe Cyclonic Storm
04.11.19/0530	18.0/64.6	135-145 gusting to 160	Very Severe Cyclonic Storm
04.11.19/1130	18.3/64.0	140-150 gusting to 165	Very Severe Cyclonic Storm
04.11.19/1730	18.6/63.6	145-155 gusting to 170	Very Severe Cyclonic Storm
05.11.19/0530	19.2/63.7	155-165 gusting to 180	Very Severe Cyclonic Storm
05.11.19/1730	19.6/64.5	145-155 gusting to 170	Very Severe Cyclonic Storm
06.11.19/0530	20.3/66.4	130-140 gusting to 155	Severe Cyclonic Storm
06.11.19/1730	20.9/68.6	100-110 gusting to 100	Severe Cyclonic Storm
07.11.19/0530	21.6/70.8	80-90 gusting to 100	Cyclonic Storm
07.11.19/1730	22.2/73.0	55-65 gusting to 75	Deep Depression
08.11.19/0530	22.8/75.1	40-50 gusting to 60	Depression
08.11.19/1730	23.3/77.3	25-35 gusting to 45	Well Marked Low Pressure Area

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region during 6th & 7th November, 2019.
- Light to moderate rainfall at most places with isolated heavy falls very likely over north Madhya Maharashtra and north Konkan during 6th & 7th November, 2019.

(ii) Wind warning

- **Gujarat Coast:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 100-110 Kmph gusting to 120 Kmph from 6th November evening for next 12 hours.
- **Maharashtra Coast:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning, it is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening for next 12 hours.
- **Arabian Sea:** Gale wind speed reaching 125-135 kmph gusting to 150 kmph is prevailing over eastcentral Arabian Sea around the system centre. It is very likely to increase gradually over east-central Arabian Sea becoming 155-165 kmph gusting to 180 kmph over westcentral and adjoining eastcentral & northwest Arabian Sea by 5th November morning.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high to very high from 6th evening.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast during 06th November.
- **Arabian Sea:** Sea condition will be phenomenal over eastcentral Arabian Sea till 05th November and will be very high on 6th November. Sea condition will be high to phenomenal over westcentral Arabian Sea during 3rd- 5th November and very high to high over northeast Arabian Sea during 4th to 6th November.

(iv) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November and over eastcentral & adjoining northeast Arabian Sea till 06th November.
- The fishermen are advised not to venture into sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th – 6th November.
- The fishermen out at sea are advised to return to the coast.

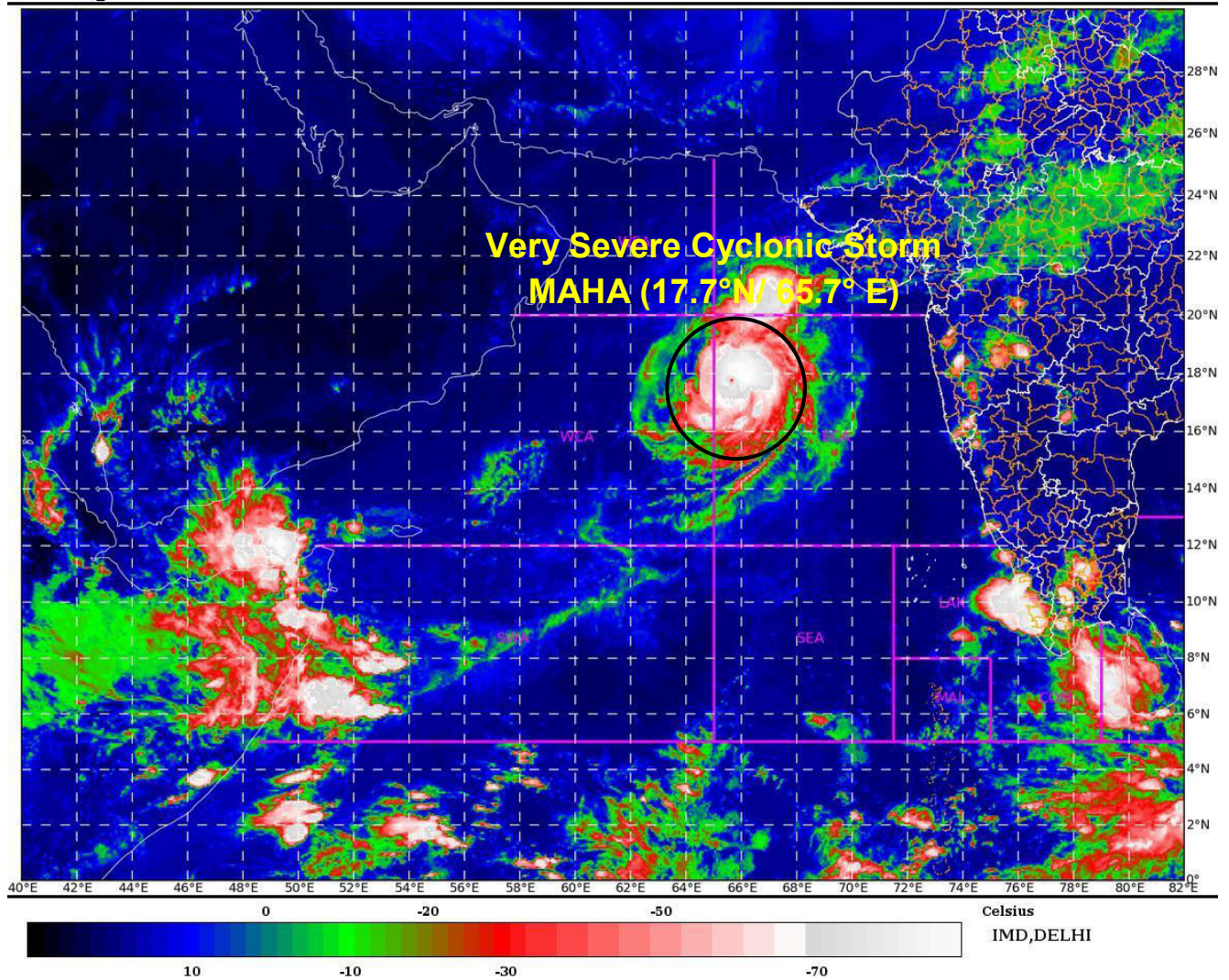
The next bulletin will be issued at 2330 hrs IST of 03rd November, 2019.

(Naresh Kumar)
Scientist-E, RSMC, New Delhi

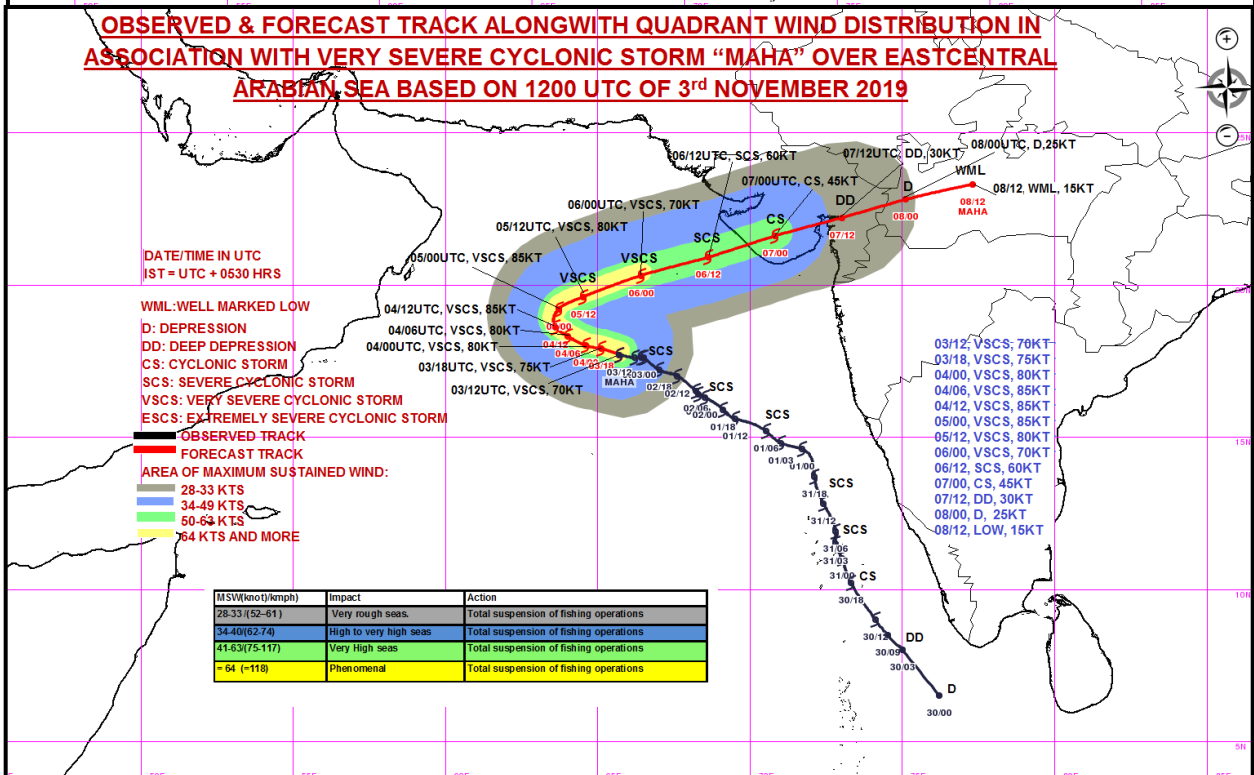
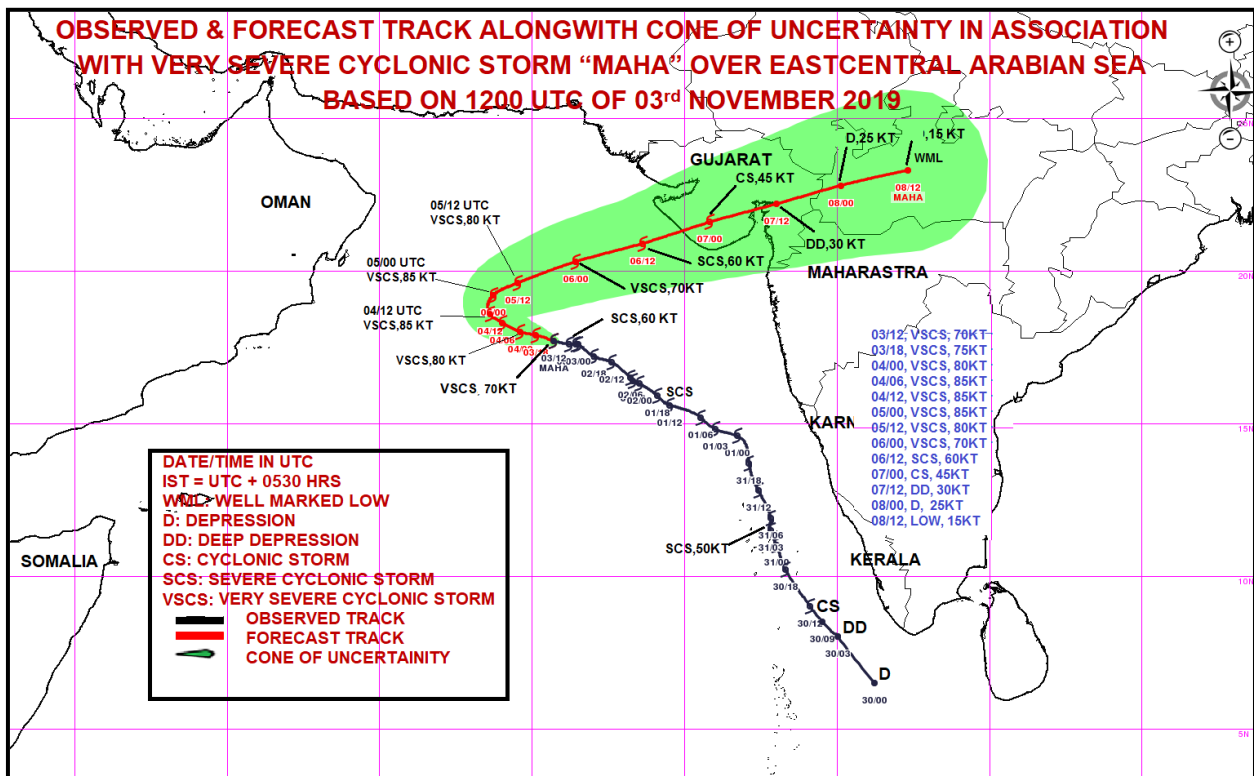
Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

SAT : INSAT-3D IMG
IMG_TIR1_TEMP 10.8 um
ARABIAN_SEA

03-11-2019/(1300 to 1326) GMT
03-11-2019/(1830 to 1856) IST



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 37 (ARB/04/2019)

TIME OF ISSUE: 2230 HOURS IST

DATED: 03.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: Very Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over eastcentral Arabian Sea: CYCLONE WATCH FOR GUJARAT COAST

The **Very Severe Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral Arabian Sea moved west-northwestwards with a speed of 06 kmph during past 06 hours and lay centered at 2030 hrs IST of today, the 03rd November, 2019 over eastcentral Arabian Sea near latitude 17.8°N and longitude 65.6°E, about 610 km west-southwest of Veraval (Gujarat), 640 km west-southwest of Diu and 600 km southwest of Porbandar. It is very likely to move west-northwestwards slowly till 04th November, re-curve east-northeastwards and move rapidly thereafter. It is very likely to weaken gradually from 05th November onwards. It is very likely to cross Gujarat coast between Diu and Dwarka as a Severe Cyclonic Storm with a maximum sustained wind speed of 100-110 Kmph gusting to 120 Kmph around mid-night of 6th November/ early hours of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
03.11.19/2030	17.8/65.6	130-140 gusting to 155	Very Severe Cyclonic Storm
03.11.19/2330	17.9/65.3	135-145 gusting to 160	Very Severe Cyclonic Storm
04.11.19/0530	18.0/64.6	140-150 gusting to 165	Very Severe Cyclonic Storm
04.11.19/1130	18.3/64.0	145-155 gusting to 170	Very Severe Cyclonic Storm
04.11.19/1730	18.6/63.6	155-165 gusting to 180	Very Severe Cyclonic Storm
05.11.19/0530	19.2/63.7	165-175 gusting to 190	Extremely Severe Cyclonic Storm
05.11.19/1730	19.6/64.5	145-155 gusting to 170	Very Severe Cyclonic Storm
06.11.19/0530	20.3/66.4	130-140 gusting to 155	Severe Cyclonic Storm
06.11.19/1730	20.9/68.6	100-110 gusting to 100	Severe Cyclonic Storm
07.11.19/0530	21.6/70.8	80-90 gusting to 100	Cyclonic Storm
07.11.19/1730	22.2/73.0	55-65 gusting to 75	Deep Depression
08.11.19/0530	22.8/75.1	40-50 gusting to 60	Depression
08.11.19/1730	23.3/77.3	25-35 gusting to 45	Well Marked Low Pressure Area

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region during 6th & 7th November, 2019.
- Light to moderate rainfall at most places with isolated heavy falls very likely over north Madhya Maharashtra and north Konkan during 6th & 7th November, 2019.

(ii) Wind warning

- **Gujarat Coast:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 100-110 Kmph gusting to 120 Kmph from 6th November evening for next 12 hours.
- **Maharashtra Coast:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning, it is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening for next 12 hours.
- **Arabian Sea:** Gale wind speed reaching 130-140 kmph gusting to 155 kmph is prevailing over eastcentral Arabian Sea around the system centre. It is very likely to increase gradually over east-central Arabian Sea becoming 165-175 kmph gusting to 190 kmph over westcentral and adjoining eastcentral & northwest Arabian Sea by the morning of 5th November.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high to very high from 6th evening.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast during 06th November.
- **Arabian Sea:** Sea condition will be phenomenal over eastcentral Arabian Sea till 05th November and will be very high on 6th November. Sea condition will be high to phenomenal over westcentral Arabian Sea during 3rd- 5th November and very high to high over northeast Arabian Sea during 4th to 6th November.

(iv) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November and over eastcentral & adjoining northeast Arabian Sea till 06th November.
- The fishermen are advised not to venture into sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th – 6th November.
- The fishermen out at sea are advised to return to the coast.

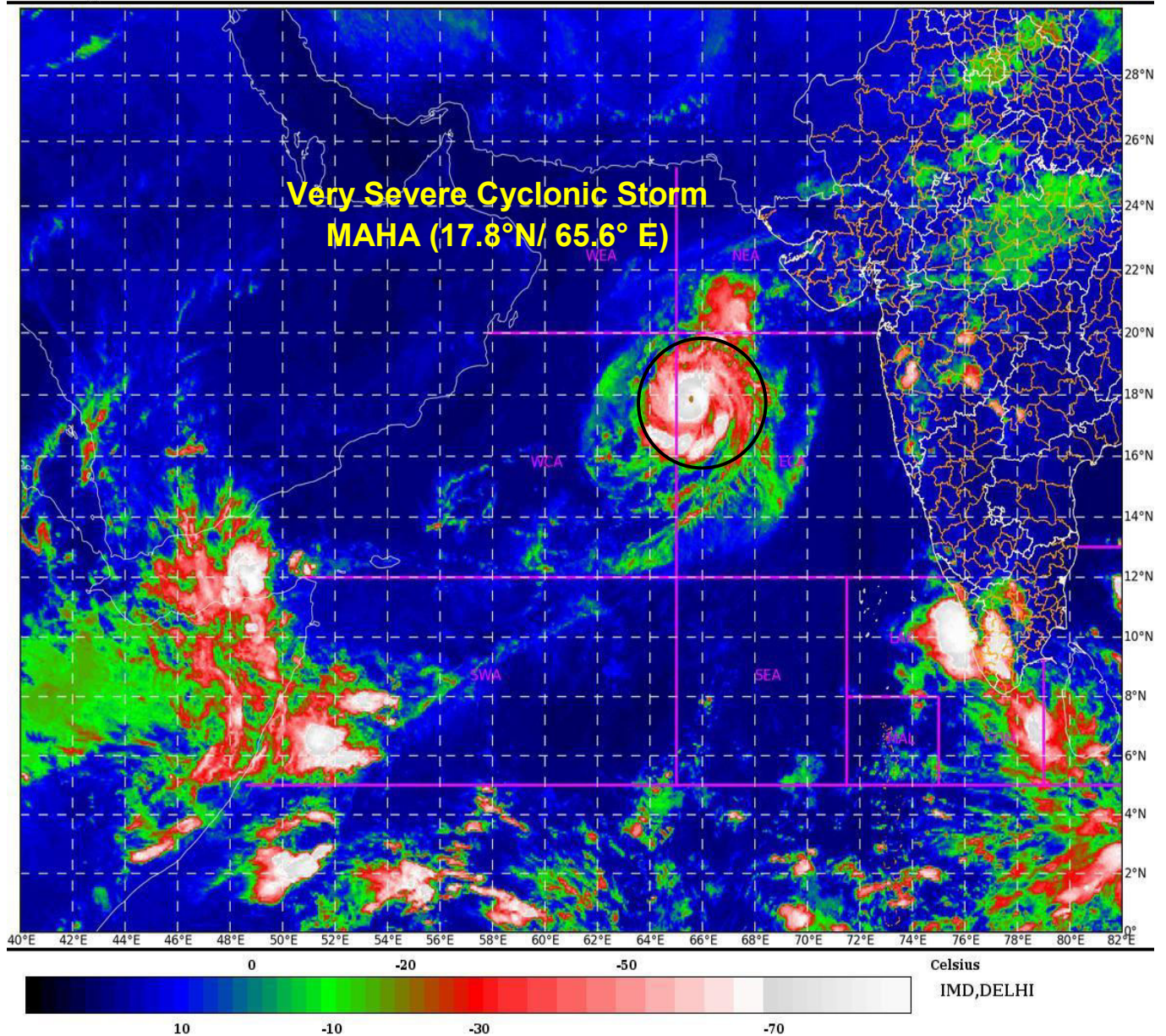
The next bulletin will be issued at 0230 hrs IST of 04th November, 2019.

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

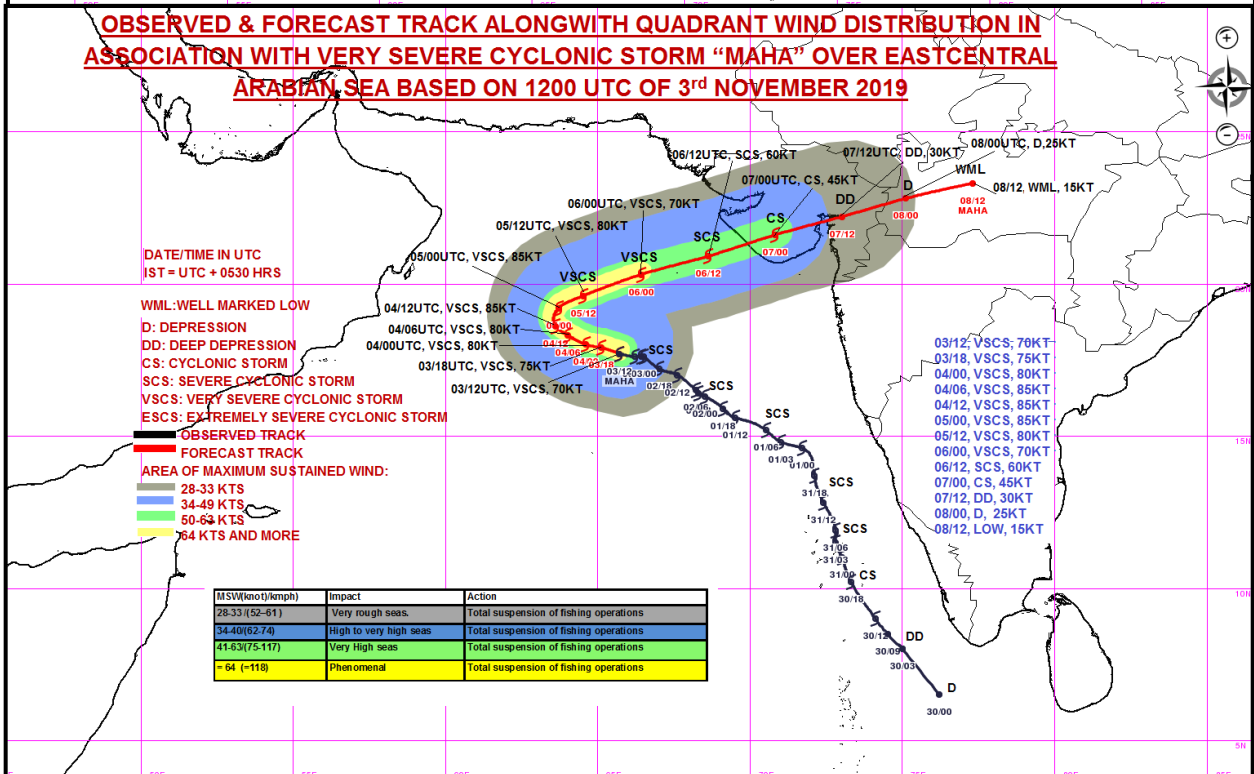
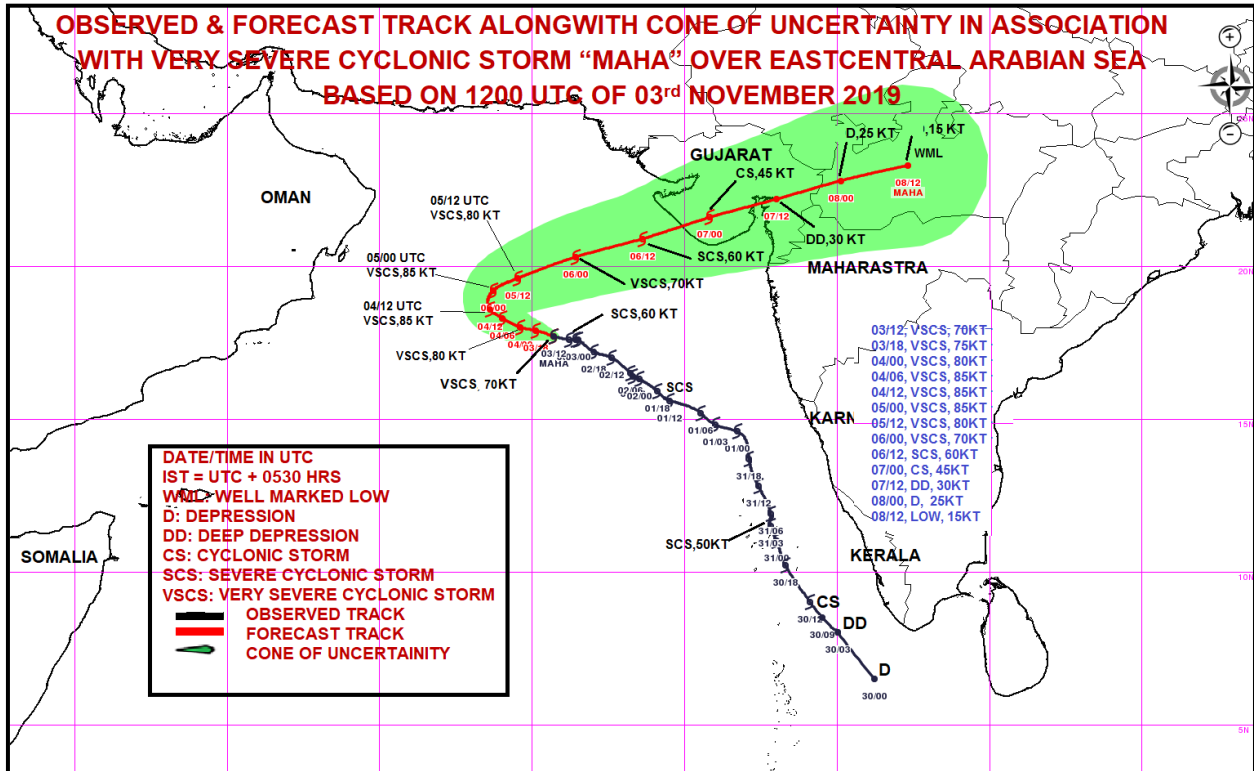
Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

SAT : INSAT-3D IMG
IMG_TIR1_TEMP 10.8 um
ARABIAN_SEA

03-11-2019/(1500 to 1526) GMT
03-11-2019/(2030 to 2056) IST



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 38 (ARB/04/2019)

TIME OF ISSUE: 0200 HOURS IST

DATED: 04.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: Very Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over eastcentral Arabian Sea: CYCLONE WATCH FOR GUJARAT COAST

The **Very Severe Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral Arabian Sea moved north-northwestwards with a speed of 06 kmph during past 06 hours and lay centered at 2330 hrs IST of yesterday, the 03rd November, 2019 over eastcentral Arabian Sea near latitude 17.9°N and longitude 65.4°E, about 610 km west-southwest of Veraval (Gujarat), 640 km west-southwest of Diu and 600 km southwest of Porbandar. It is very likely to intensify into an Extremely Severe Cyclonic Storm during next 06 hours. It is very likely to move west-northwestwards slowly during next 24 hours, re-curve east-northeastwards and move rapidly thereafter. It is very likely to weaken gradually from 05th November onwards. It is very likely to cross Gujarat coast between Diu and Dwarka as a Severe Cyclonic Storm with a maximum sustained wind speed of 100-110 Kmph gusting to 120 Kmph around mid-night of 6th November/ early hours of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
03.11.19/2330	17.9/65.4	140-150 gusting to 165	Very Severe Cyclonic Storm
04.11.19/0530	18.0/64.6	160-170 gusting to 190	Extremely Severe Cyclonic Storm
04.11.19/1130	18.3/64.0	170-180 gusting to 200	Extremely Severe Cyclonic Storm
04.11.19/1730	18.6/63.6	180-190 gusting to 210	Extremely Severe Cyclonic Storm
04.11.19/2330	18.9/63.6	170-180 gusting to 200	Extremely Severe Cyclonic Storm
05.11.19/1130	19.4/64.1	155-165 gusting to 180	Very Severe Cyclonic Storm
05.11.19/2330	20.0/65.5	140-150 gusting to 165	Very Severe Cyclonic Storm
06.11.19/1130	20.5/67.5	125-135 gusting to 145	Very Severe Cyclonic Storm
06.11.19/2330	21.0/69.7	100-110 gusting to 120	Severe Cyclonic Storm
07.11.19/1130	21.5/71.7	70-80 gusting to 90	Cyclonic Storm
07.11.19/2330	22.1/74.0	45-55 gusting to 65	Deep Depression
08.11.19/1130	22.7/76.5	30-40 gusting to 50	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region during 6th & 7th November, 2019.
- Light to moderate rainfall at most places with isolated heavy falls very likely over north Madhya Maharashtra and north Konkan during 6th & 7th November, 2019.

(ii) Wind warning

- **Gujarat Coast:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 100-110 Kmph gusting to 120 Kmph from 6th November evening for next 12 hours.
- **Maharashtra Coast:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning, it is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening for next 12 hours.
- **Arabian Sea:** Gale wind speed reaching 140-150 kmph gusting to 165 kmph is prevailing over eastcentral Arabian Sea around the system centre. It is very likely to increase gradually over east-central Arabian Sea becoming 180-190 kmph gusting to 210 kmph over westcentral and adjoining eastcentral & northwest Arabian Sea by the evening of 4th November.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high to very high from 6th evening.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast during 06th November.
- **Arabian Sea:** Sea condition will be phenomenal over eastcentral Arabian Sea till 05th November and will be very high on 6th November. Sea condition will be high to phenomenal over westcentral Arabian Sea till 5th November and very high to high over northeast Arabian Sea during 4th to 6th November.

(iv) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November and over eastcentral & adjoining northeast Arabian Sea till 06th November.
- The fishermen are advised not to venture into sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th – 6th November.
- The fishermen out at sea are advised to return to the coast.

The next bulletin will be issued at 0530 hrs IST of 04th November, 2019.

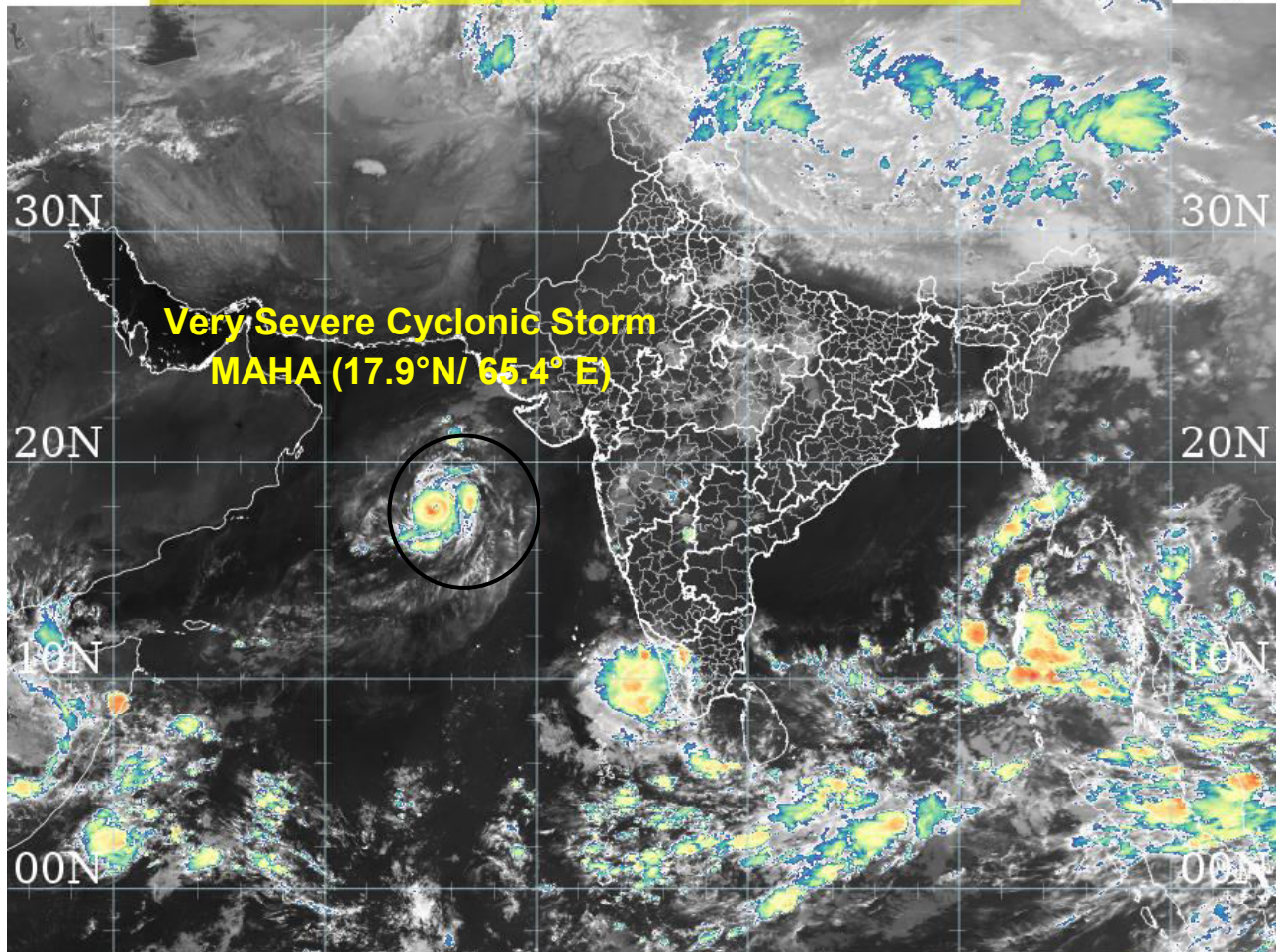
(D R Pattanaik)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



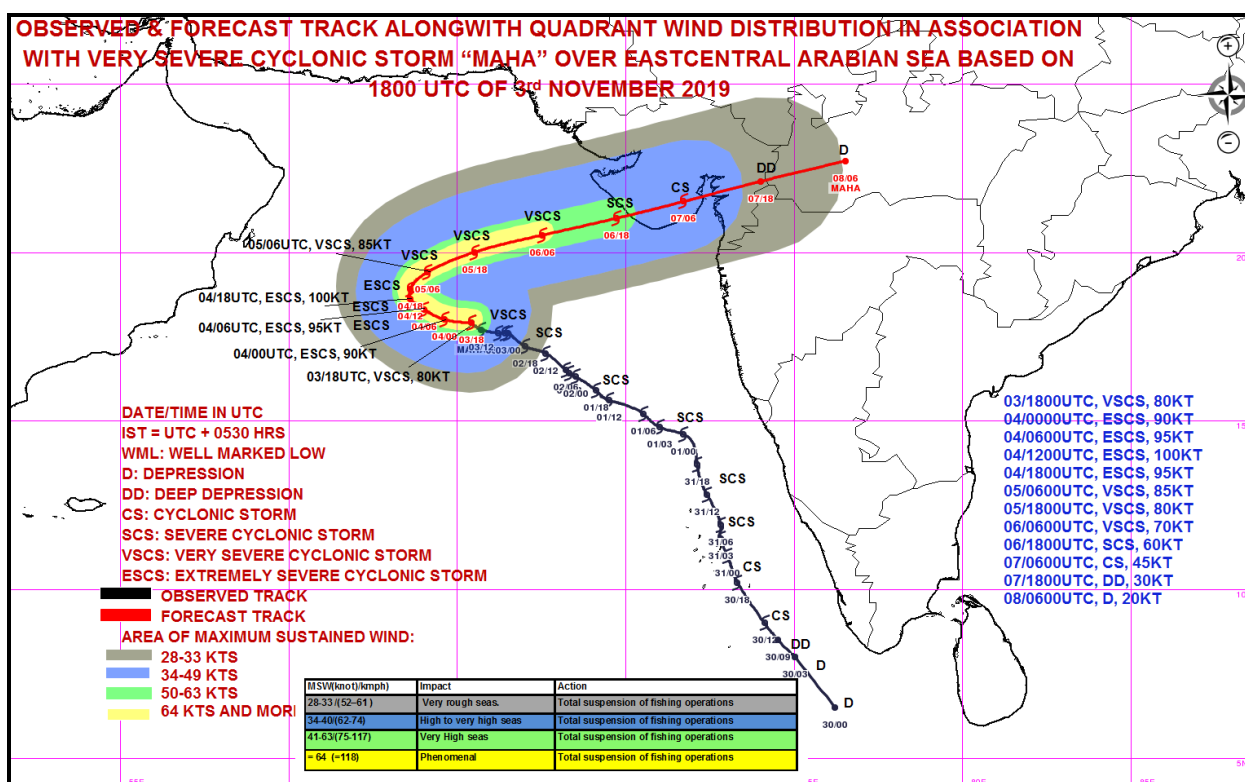
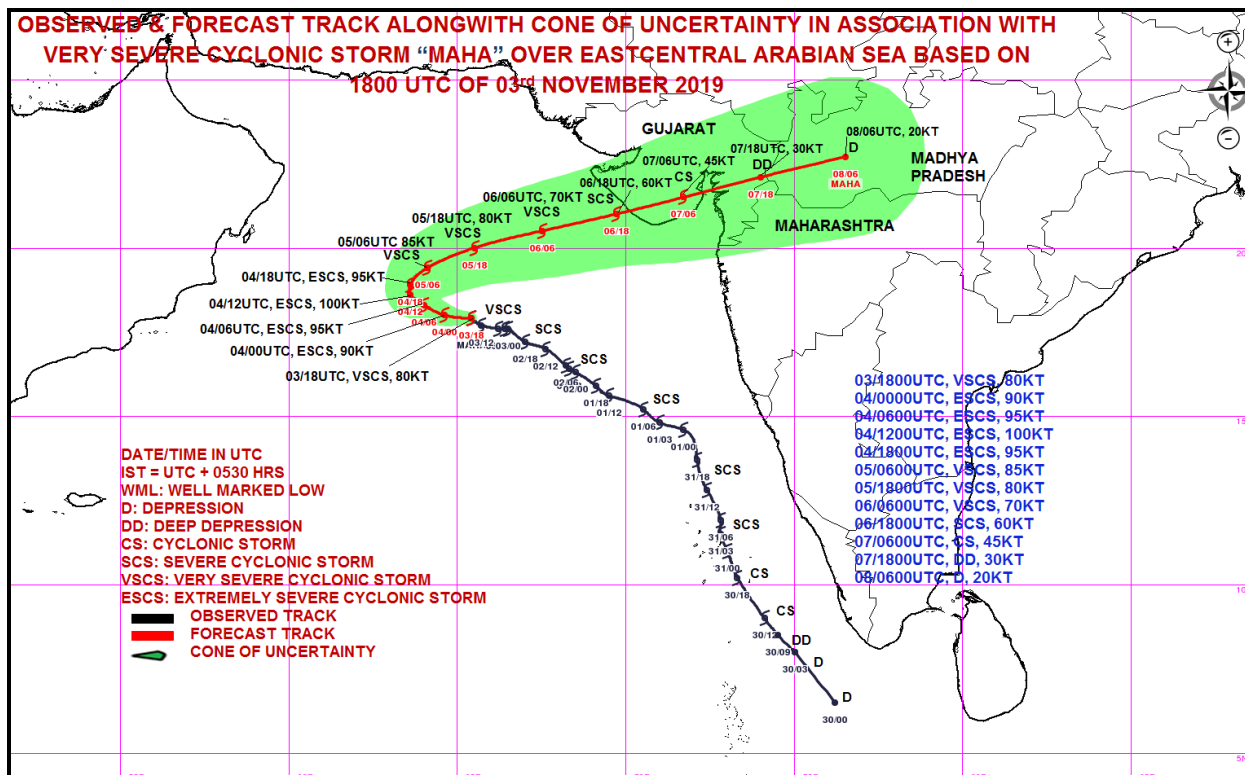
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20191103_2000UTC



 **EUMETSAT**

70E 80E  **PyTROLL**

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 39 (ARB/04/2019)

TIME OF ISSUE: 0530 HOURS IST

DATED: 04.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
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D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
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CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: Very Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over eastcentral Arabian and adjoining westcentral Sea: CYCLONE WATCH FOR GUJARAT COAST

The **Very Severe Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral Arabian Sea moved west-northwestwards with a speed of 11 kmph during past 06 hours and lay centered at 0230 hrs IST of today, the 04th November, 2019 over eastcentral and adjoining westcentral Arabian Sea near latitude 18.0°N and longitude 65.0°E, about 650 km west-southwest of Veraval (Gujarat), 690 km west-southwest of Diu and 640 km west-southwest of Porbandar. It is very likely to intensify into an Extremely Severe Cyclonic Storm during next 06 hours. It is very likely to move west-northwestwards slowly during next 24 hours, re-curve east-northeastwards and move rapidly thereafter. It is very likely to weaken gradually from 05th November onwards. It is very likely to cross Gujarat coast between Diu and Dwarka as a Severe Cyclonic Storm with a maximum sustained wind speed of 100-110 Kmph gusting to 120 Kmph around mid-night of 6th November/ early hours of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
04.11.19/0230	18.0/65.0	150-160 gusting to 180	Very Severe Cyclonic Storm
04.11.19/0530	18.0/64.6	160-170 gusting to 190	Extremely Severe Cyclonic Storm
04.11.19/1130	18.3/64.0	170-180 gusting to 200	Extremely Severe Cyclonic Storm
04.11.19/1730	18.6/63.6	180-190 gusting to 210	Extremely Severe Cyclonic Storm
04.11.19/2330	18.9/63.6	170-180 gusting to 200	Extremely Severe Cyclonic Storm
05.11.19/1130	19.4/64.1	155-165 gusting to 180	Very Severe Cyclonic Storm
05.11.19/2330	20.0/65.5	140-150 gusting to 165	Very Severe Cyclonic Storm
06.11.19/1130	20.5/67.5	125-135 gusting to 145	Very Severe Cyclonic Storm
06.11.19/2330	21.0/69.7	100-110 gusting to 120	Severe Cyclonic Storm
07.11.19/1130	21.5/71.7	70-80 gusting to 90	Cyclonic Storm
07.11.19/2330	22.1/74.0	45-55 gusting to 65	Deep Depression
08.11.19/1130	22.7/76.5	30-40 gusting to 50	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region during 6th & 7th November, 2019.
- Light to moderate rainfall at most places with isolated heavy falls very likely over north Madhya Maharashtra and north Konkan during 6th & 7th November, 2019.

(ii) Wind warning

- **Gujarat Coast:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 100-110 Kmph gusting to 120 Kmph from 6th November evening for next 12 hours.
- **Maharashtra Coast:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning, it is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening for next 12 hours.
- **Arabian Sea:** Gale wind speed reaching 150-160 kmph gusting to 180 kmph is prevailing over eastcentral Arabian Sea around the system centre. It is very likely to increase gradually over east-central Arabian Sea becoming 180-190 kmph gusting to 210 kmph over westcentral and adjoining eastcentral & northwest Arabian Sea by the evening of today, the 4th November.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high to very high from 6th evening.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast during 06th November.
- **Arabian Sea:** Sea condition will be phenomenal over eastcentral Arabian Sea till 05th November and will be very high on 6th November. Sea condition will be high to phenomenal over westcentral Arabian Sea till 5th November and very high to high over northeast Arabian Sea during next 48 hours.

(iv) Fishermen Warning

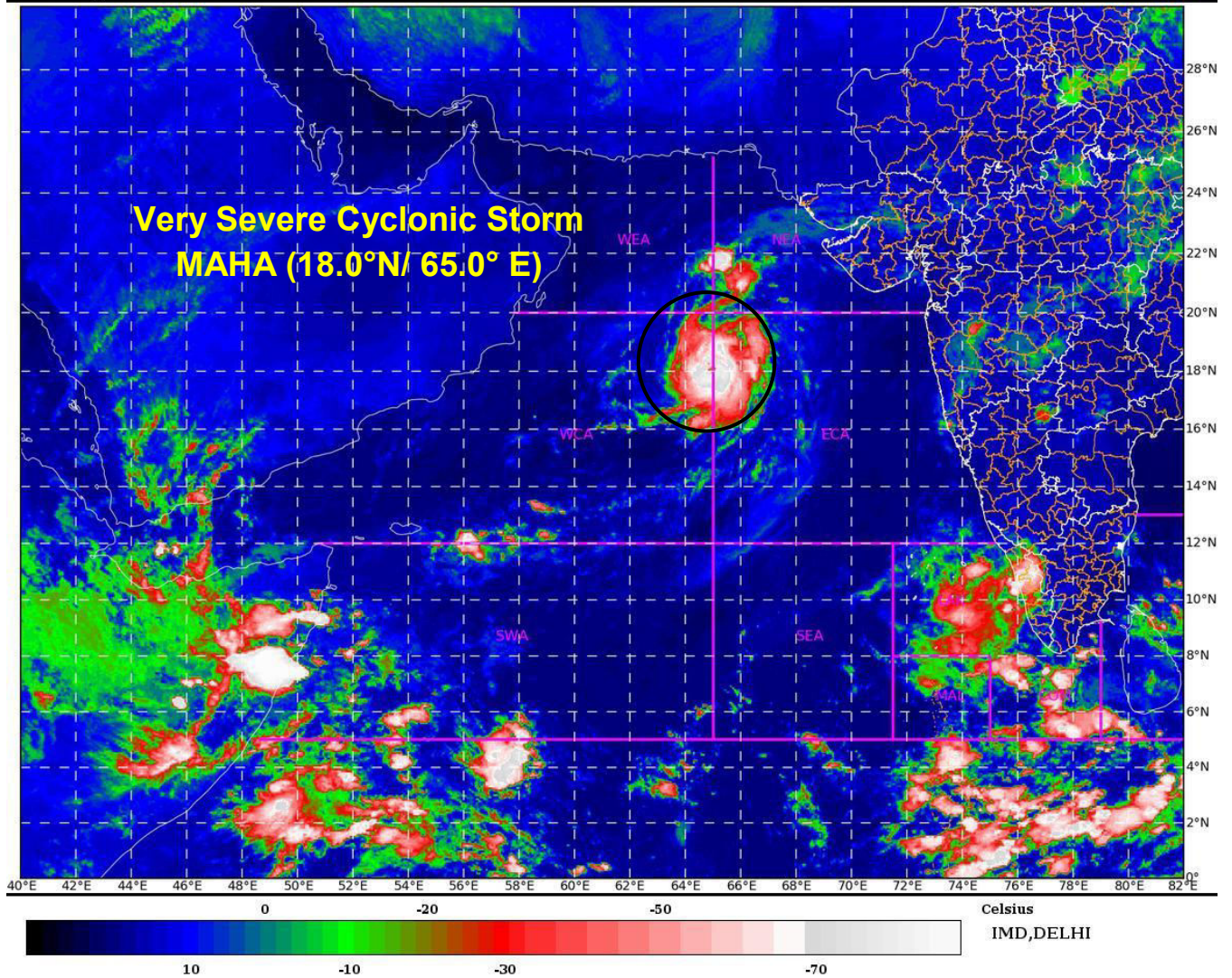
- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November and over eastcentral & adjoining northeast Arabian Sea till 06th November.
- The fishermen are advised not to venture into sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th – 6th November.
- The fishermen out at sea are advised to return to the coast.

The next bulletin will be issued at 0830 hrs IST of 04th November, 2019.

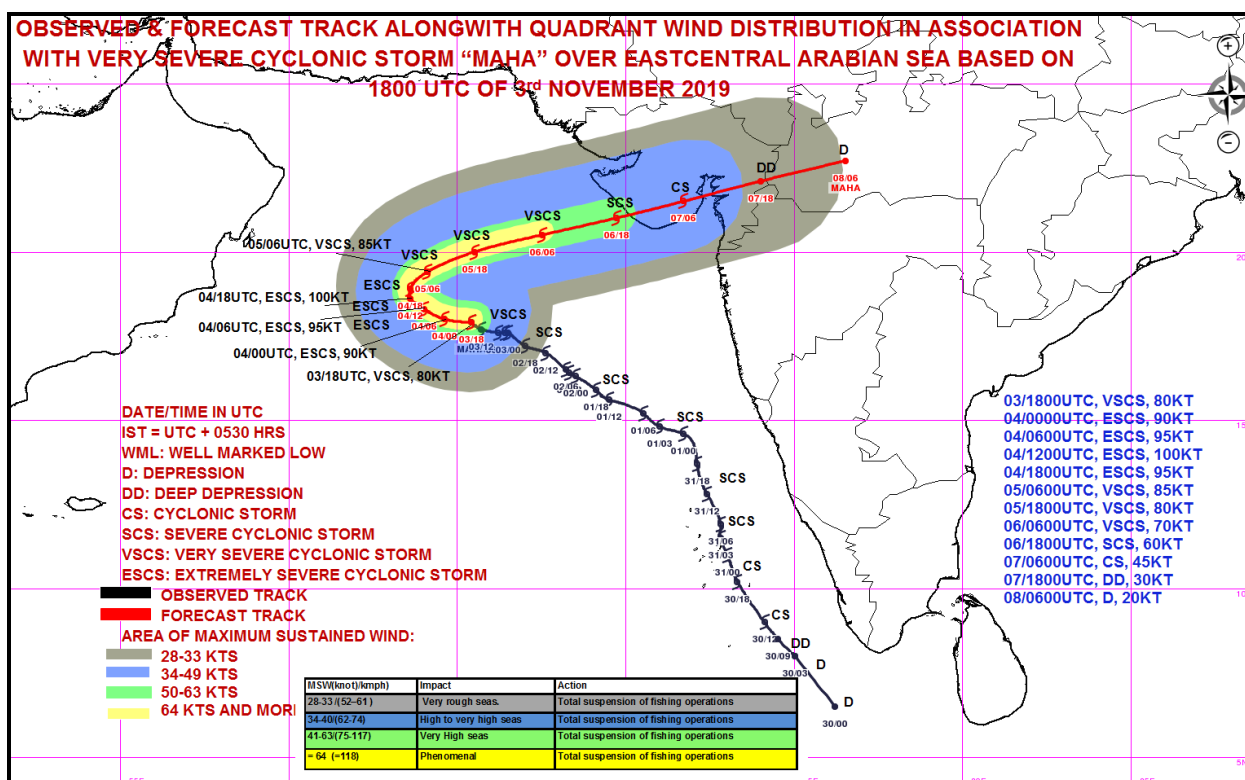
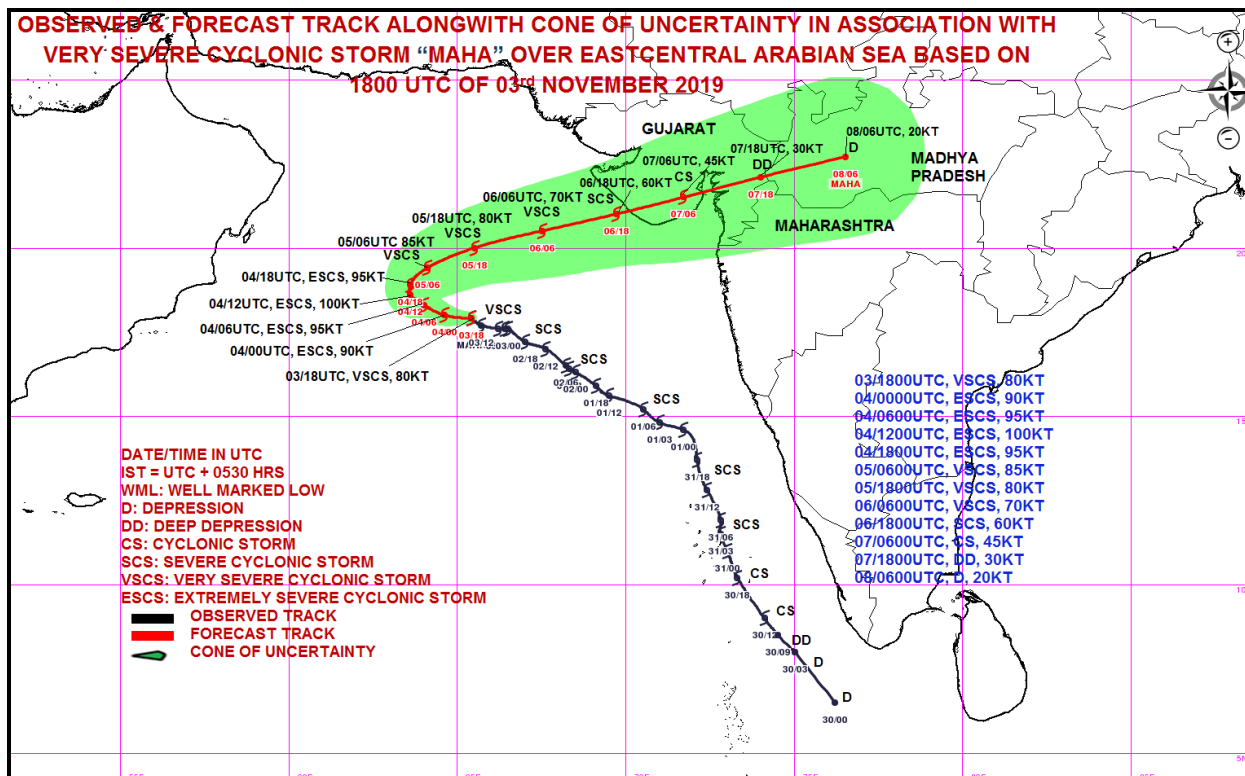
(D R Pattanaik)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 40 (ARB/04/2019)

TIME OF ISSUE: 0800 HOURS IST

DATED: 04.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: Extremely Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over eastcentral Arabian and adjoining westcentral Arabian Sea: CYCLONE WATCH FOR GUJARAT COAST

The Very Severe Cyclonic storm **MAHA (Pronounced as M'maha)** over eastcentral Arabian Sea moved west-northwestwards with a speed of 11 kmph during past 06 hours, intensified into an **Extremely severe cyclonic storm** and lay centered at 0530 hrs IST of today, the 04th November, 2019 over eastcentral and adjoining westcentral Arabian Sea near latitude 18.1°N and longitude 64.8°E, about 660 km west-southwest of Veraval (Gujarat), 700 km west-southwest of Diu and 640 km west-southwest of Porbandar. It is very likely to intensify further till 5th November morning and weaken gradually thereafter. It is very likely to move west-northwestwards slowly during next 24 hours, re-curve east-northeastwards and move rapidly thereafter. It is very likely to cross Gujarat coast between Diu and Porbandar as a Severe Cyclonic Storm with a maximum sustained wind speed of 100-110 Kmph gusting to 120 Kmph around mid-night of 6th November/ early hours of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
04.11.19/0530	18.1/64.8	160-170 gusting to 190	Extremely Severe Cyclonic Storm
04.11.19/1130	18.3/64.3	165-175 gusting to 195	Extremely Severe Cyclonic Storm
04.11.19/1730	18.6/63.9	170-180 gusting to 200	Extremely Severe Cyclonic Storm
04.11.19/2330	18.9/63.8	180-190 gusting to 210	Extremely Severe Cyclonic Storm
05.11.19/0530	19.4/64.0	180-190 gusting to 210	Extremely Severe Cyclonic Storm
05.11.19/1730	19.9/65.2	160-170 gusting to 190	Extremely Severe Cyclonic Storm
06.11.19/0530	20.3/67.1	135-145 gusting to 155	Very Severe Cyclonic Storm
06.11.19/1730	20.7/69.2	110-120 gusting to 135	Severe Cyclonic Storm
07.11.19/0530	21.2/71.1	80-90 gusting to 100	Cyclonic Storm
07.11.19/1730	21.8/73.2	50-60 gusting to 70	Deep Depression
08.11.19/0530	22.4/75.2	30-40 gusting to 50	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region during 6th & 7th November, 2019.
- Light to moderate rainfall at most places with isolated heavy falls very likely over north Madhya Maharashtra and north Konkan during 6th & 7th November, 2019.

(ii) Wind warning

- **Gujarat Coast:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 100-110 Kmph gusting to 120 Kmph from 6th November evening for next 12 hours.
- **Maharashtra Coast:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning, it is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening for next 12 hours.
- **Arabian Sea:** Gale wind speed reaching 160-170 kmph gusting to 190 kmph is prevailing over eastcentral Arabian Sea around the system centre. It is very likely to increase gradually over east-central Arabian Sea becoming 180-190 kmph gusting to 210 kmph over westcentral and adjoining eastcentral & northwest Arabian Sea by mid-night of today, the 4th November and decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high to very high from 6th evening.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast on 06th November.
- **Arabian Sea:** Sea condition will be phenomenal over eastcentral Arabian Sea till 05th November and will be very high on 6th November. Sea condition will be high to phenomenal over westcentral Arabian Sea till 5th November morning and improve thereafter. It will be very high to high over northeast Arabian Sea during 4th – 6th November.

(iv) Fishermen Warning

- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November and over eastcentral & adjoining northeast Arabian Sea till 06th November.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th – 6th November.
- The fishermen out at Sea are advised to return to the coast.

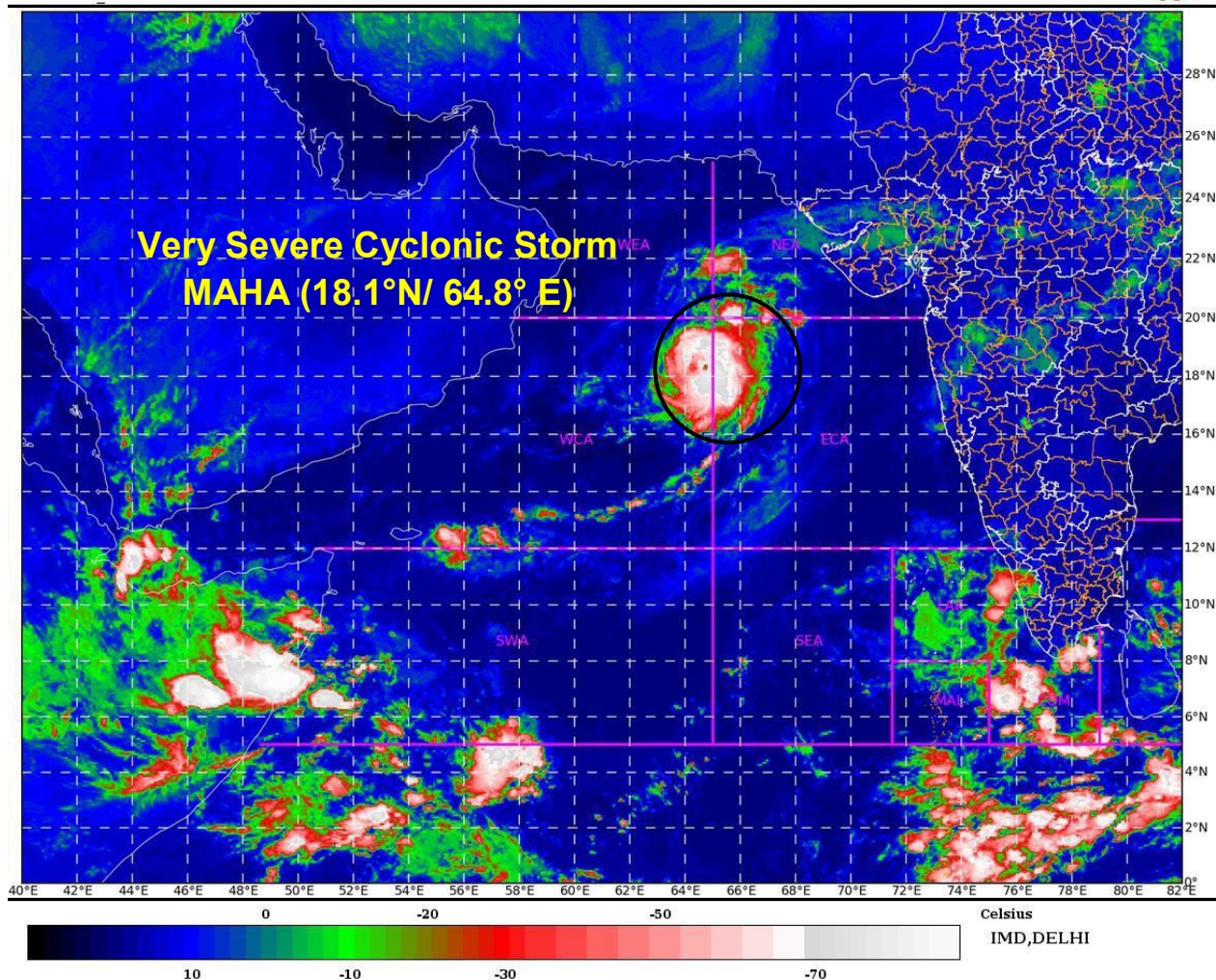
The next bulletin will be issued at 1130 hrs IST of 04th November, 2019.

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

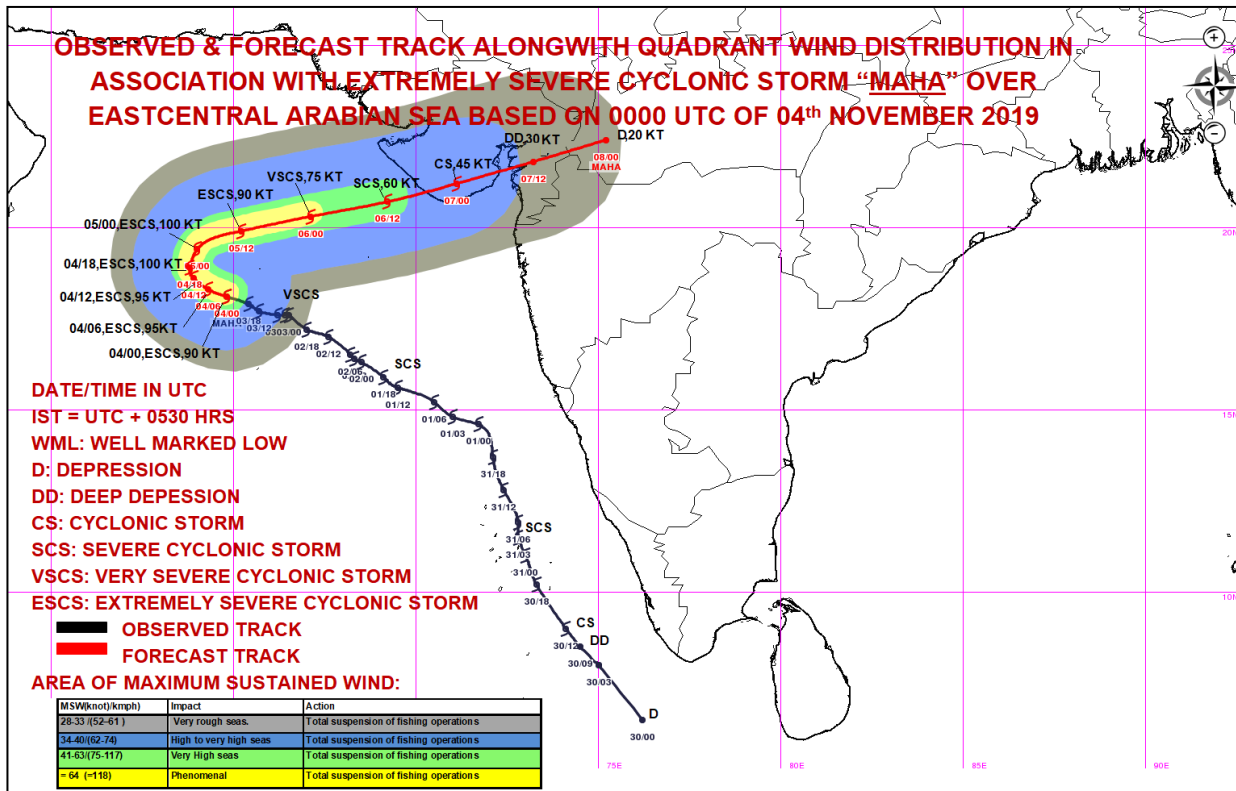
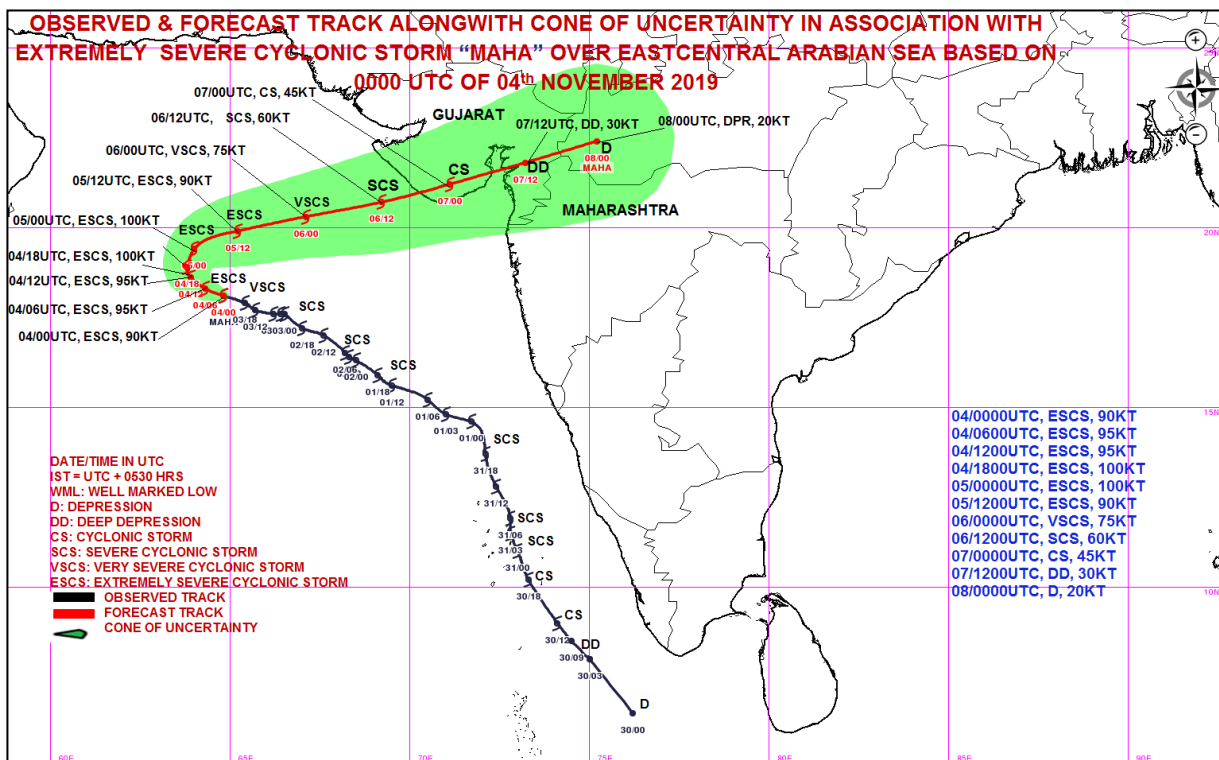
Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

SAT : INSAT-3D IMG
IMG_TIR1_TEMP 10.8 um
ARABIAN_SEA

04-11-2019/(0100 to 0127) GMT
04-11-2019/(0630 to 0657) IST



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 41 (ARB/04/2019)

TIME OF ISSUE: 1040 HOURS IST

DATED: 04.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
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PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: Extremely Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over eastcentral Arabian and adjoining westcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE

The **Extremely severe cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral & adjoining westcentral Arabian Sea moved west-northwestwards with a speed of 09 kmph during past 06 hours, and lay centered at 0830 hrs IST of today, the 04th November, 2019 over eastcentral and adjoining westcentral Arabian Sea near latitude 18.3°N and longitude 64.6°E, about 670 km west-southwest of Veraval (Gujarat), 710 km west-southwest of Diu and 650 km west-southwest of Porbandar. It is very likely to intensify further till 5th November morning and weaken gradually thereafter. It is very likely to move west-northwestwards slowly during next 24 hours, re-curve east-northeastwards and move rapidly thereafter. It is very likely to cross Gujarat coast between Diu and Porbandar as a Severe Cyclonic Storm with a maximum sustained wind speed of 100-110 Kmph gusting to 120 Kmph around mid-night of 6th November/ early hours of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
04.11.19/0830	18.3/64.6	160-170 gusting to 190	Extremely Severe Cyclonic Storm
04.11.19/1130	18.5/64.3	165-175 gusting to 195	Extremely Severe Cyclonic Storm
04.11.19/1730	18.7/63.9	170-180 gusting to 200	Extremely Severe Cyclonic Storm
04.11.19/2330	18.9/63.8	180-190 gusting to 210	Extremely Severe Cyclonic Storm
05.11.19/0530	19.4/64.0	180-190 gusting to 210	Extremely Severe Cyclonic Storm
05.11.19/1730	19.9/65.2	160-170 gusting to 190	Extremely Severe Cyclonic Storm
06.11.19/0530	20.3/67.1	135-145 gusting to 155	Very Severe Cyclonic Storm
06.11.19/1730	20.7/69.2	110-120 gusting to 135	Severe Cyclonic Storm
07.11.19/0530	21.2/71.1	80-90 gusting to 100	Cyclonic Storm
07.11.19/1730	21.8/73.2	50-60 gusting to 70	Deep Depression
08.11.19/0530	22.4/75.2	30-40 gusting to 50	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot**) during 6th & isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Vadodara** on 7th November, 2019.
- **Maharashtra:** Light to moderate rainfall at most places with isolated heavy falls very likely over north Madhya Maharashtra and north Konkan (Palghar & Thane districts) on 6th & northern most districts of Madhya Maharashtra on 7th November, 2019.

(ii) Wind warning

- **Gujarat, Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 100-110 Kmph gusting to 120 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli** districts and 80-100 kmph gusting to 110 kmph over **Bhavnagar, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot** districts, 65-80kmph gusting to 90 kmph over Surat and 55-65 kmph gusting to 75 kmph over Navsari, Valsad, Daman and Dadra & Nagar Haveli from 6th November evening for next 12 hours. It will decrease thereafter.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning, it is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening along & off Palghar & Thane districts for next 12 hours.
- **Arabian Sea:** Gale wind speed reaching 160-170 kmph gusting to 190 kmph is prevailing over eastcentral and adjoining westcentral Arabian Sea around the system centre. It is very likely to increase gradually over east-central Arabian Sea becoming 180-190 kmph gusting to 210 kmph over westcentral and adjoining eastcentral & northwest Arabian Sea by mid-night of today, the 4th November and decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high to very high from 6th evening.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast on 06th November.
- **Arabian Sea:** Sea condition will be phenomenal over eastcentral and adjoining westcentral and northwest Arabian Sea till 05th November and will be very high on 6th November. Sea condition will be high over westcentral Arabian Sea from 5th November evening and improve thereafter. It will be very high to high over northeast Arabian Sea during 4th – 6th November.

(iv) Storm surge

- Storm surge of 1-1.5 meters above Astronomical tide is likely to inundate low lying areas of **Bhavnagar** District and 0.5 – 1.0 meter above Astronomical tide is likely to inundate low lying areas **Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand, Ahmedabad, Porbandar** Districts.

(v) Fishermen Warning

- Total suspension of fishing operations till 6th November.
- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November and over eastcentral & adjoining northeast Arabian Sea till 06th November.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th – 6th November.
- The fishermen out at Sea are advised to return to the coast.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(vi) Damage Expected over coastal districts of Gujarat (Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot) and Daman, Diu, Dadra & Nagar Haveli:

- Major damage to thatched houses/ huts. Thatched Roof tops may blow off. Unattached metal sheets may fly.
- Damage to embankments/ salt pans.
- Damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of large avenue trees. Damage to banana and papaya trees. Large dead limbs blown from trees.
- Major damage to coastal crops.

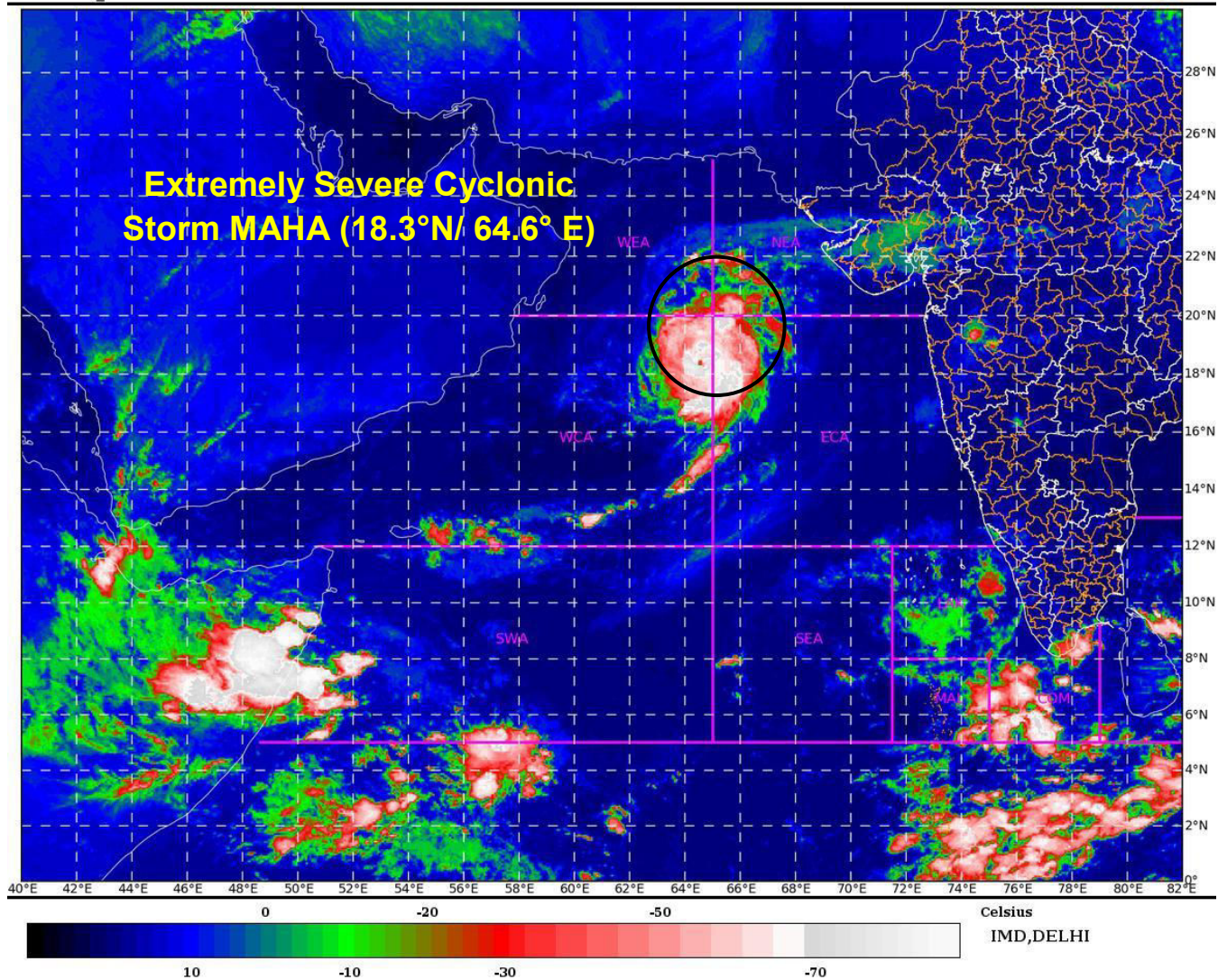
(vii) Action Suggested for Gujarat coast (Junagadh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot) and Daman, Diu, Dadra & Nagar Haveli:

- Total suspension of fishing operations till 6th November.
- Coastal hutment dwellers to be moved to safer places. People in affected areas to remain indoors.
- Movement in motor boats unsafe.

The next bulletin will be issued at 1430 hrs IST of 04th November, 2019.

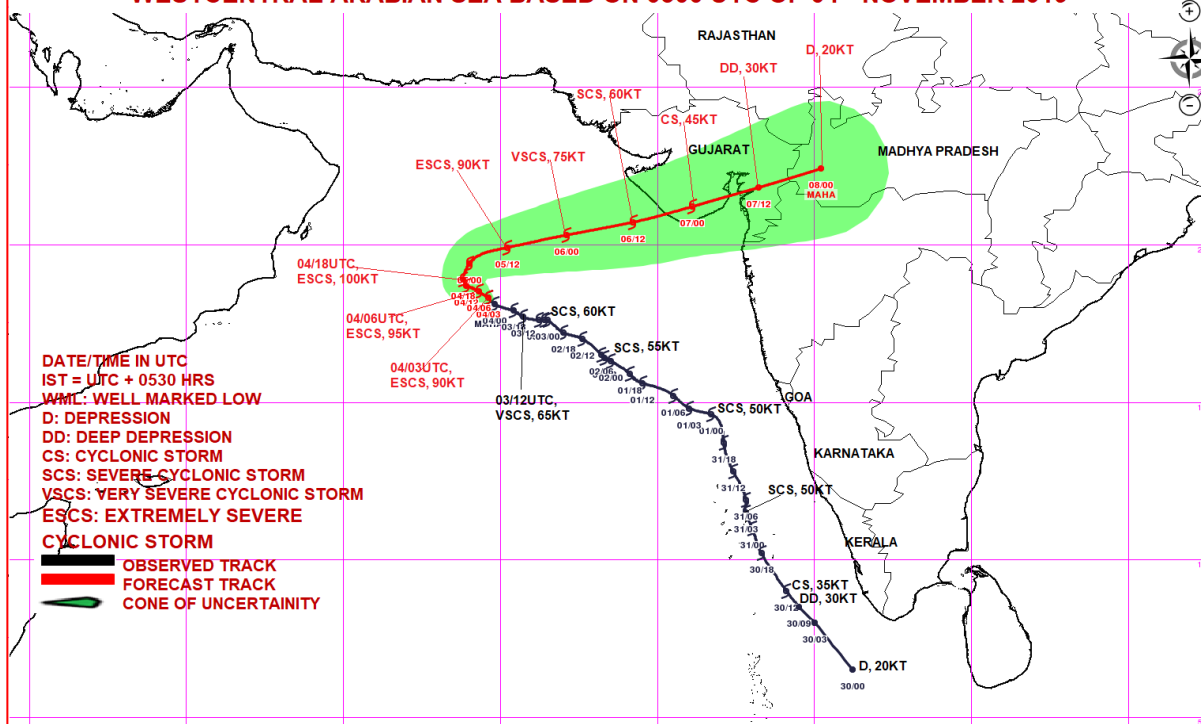
(Sunitha Devi.S)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

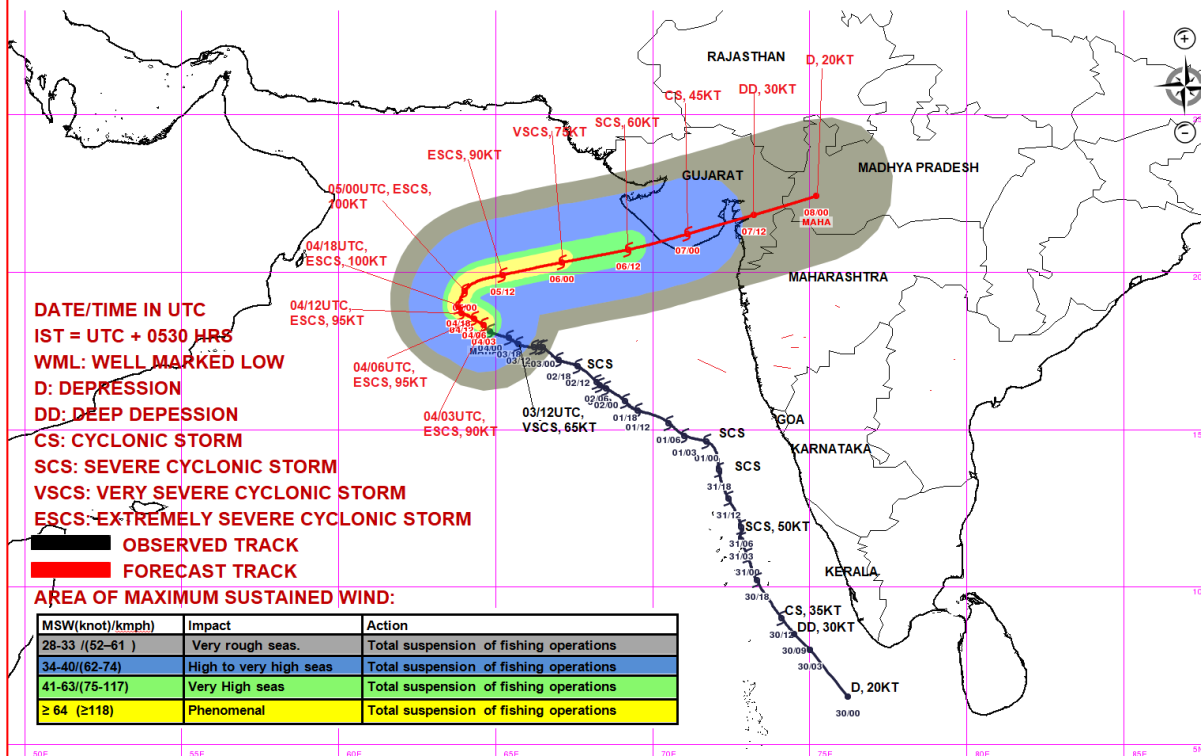


Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

**OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH
EXTREMELY SEVERE CYCLONIC STORM “MAHA” OVER EASTCENTRAL AND ADJOINING
WESTCENTRAL ARABIAN SEA BASED ON 0300 UTC OF 04th NOVEMBER 2019**



**OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN
ASSOCIATION WITH EXTREMELY SEVERE CYCLONIC STORM “MAHA” OVER EASTCENTRAL AND
ADJOINING WESTCENTRAL ARABIAN SEA BASED ON 0300 UTC OF 04th NOVEMBER 2019**



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 42 (ARB/04/2019)

TIME OF ISSUE: 1430 HOURS IST

DATED: 04.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

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ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: Extremely Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over eastcentral Arabian and adjoining westcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE

The **Extremely severe cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral & adjoining westcentral Arabian Sea moved northwestwards with a speed of 12 kmph during past 06 hours, and lay centered at 1130 hrs IST of today, the 04th November, 2019 over eastcentral and adjoining westcentral Arabian Sea near latitude 18.6°N and longitude 64.3°E, about 680 km west-southwest of Veraval (Gujarat), 730 km west-southwest of Diu and 650 km west-southwest of Porbandar. It is very likely to intensify further till 5th November morning and weaken thereafter. It is very likely to move west-northwestwards slowly during next 18 hours, re-curve east-northeastwards and move rapidly thereafter. It is very likely to cross Gujarat coast between Diu and Porbandar as a Cyclonic Storm with a maximum sustained wind speed of 80-90 Kmph gusting to 100 Kmph by early hours of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
04.11.19/1130	18.6/64.3	160-170 gusting to 190	Extremely Severe Cyclonic Storm
04.11.19/1730	18.8/64.0	165-175 gusting to 195	Extremely Severe Cyclonic Storm
04.11.19/2330	19.1/63.8	170-180 gusting to 200	Extremely Severe Cyclonic Storm
05.11.19/0530	19.4/64.0	170-180 gusting to 200	Extremely Severe Cyclonic Storm
05.11.19/1130	19.7/64.6	155-165 gusting to 185	Very Severe Cyclonic Storm
05.11.19/2330	20.0/65.5	140-150 gusting to 165	Very Severe Cyclonic Storm
06.11.19/1130	20.3/67.5	110-120 gusting to 135	Severe Cyclonic Storm
06.11.19/2330	20.8/69.6	80-90 gusting to 100	Cyclonic Storm
07.11.19/1130	21.5/71.6	55-65 gusting to 75	Deep Depression
07.11.19/2230	22.1/73.6	40-50 gusting to 60	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot**) during 6th & isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Vadodara** on 7th November, 2019.
- **Maharashtra:** Light to moderate rainfall at most places with isolated heavy falls very likely over north Madhya Maharashtra and north Konkan (Palghar & Thane districts) on 6th & northern most districts of Madhya Maharashtra on 7th November, 2019.

(ii) Wind warning

- **Gujarat, Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 80-90 Kmph gusting to 100 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli** districts and 60-80 kmph gusting to 100 kmph over **Bhavnagar, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot** districts, 50-60 kmph gusting to 70 kmph over Surat, Navsari, Valsad, Daman and Dadra & Nagar Haveli from 6th November evening for next 12 hours. It will decrease thereafter.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning, it is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening along & off Palghar & Thane districts for next 12 hours.
- **Arabian Sea:** Gale wind speed reaching 160-170 kmph gusting to 190 kmph is prevailing over eastcentral and adjoining westcentral Arabian Sea around the system centre. It is very likely to increase gradually over east-central Arabian Sea becoming 170-180 kmph gusting to 200 kmph over westcentral and adjoining eastcentral & northwest Arabian Sea by mid-night of today, the 4th November and decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high from 6th evening.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast on 06th November.
- **Arabian Sea:** Sea condition will be phenomenal over eastcentral and adjoining westcentral and northwest Arabian Sea till 05th November and will be very high on 6th November. Sea condition will be high over westcentral Arabian Sea from 5th November evening and improve thereafter. It will be very high to high over northeast Arabian Sea during 4th – 6th November.

(iv) Storm surge

- Storm surge of 1 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar** District and 0.5 – 1.0 meter above Astronomical tide is likely to inundate low lying areas of **Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand, Ahmedabad, Porbandar** Districts around the time of landfall.

(v) Fishermen Warning

- Total suspension of fishing operations till 6th November.
- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November and over eastcentral & adjoining northeast Arabian Sea till 06th November.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th – 7th November evening.
- The fishermen out at Sea are advised to return to the coast.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(vi) Damage Expected over coastal districts of Gujarat (Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot) and Daman, Diu, Dadra & Nagar Haveli:

- Damage to thatched houses/ huts. Thatched Roof tops may blow off. Unattached metal sheets may fly.
- Damage to embankments/ salt pans.
- Partial damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Dead limbs blown from trees.
- Major damage to coastal crops.

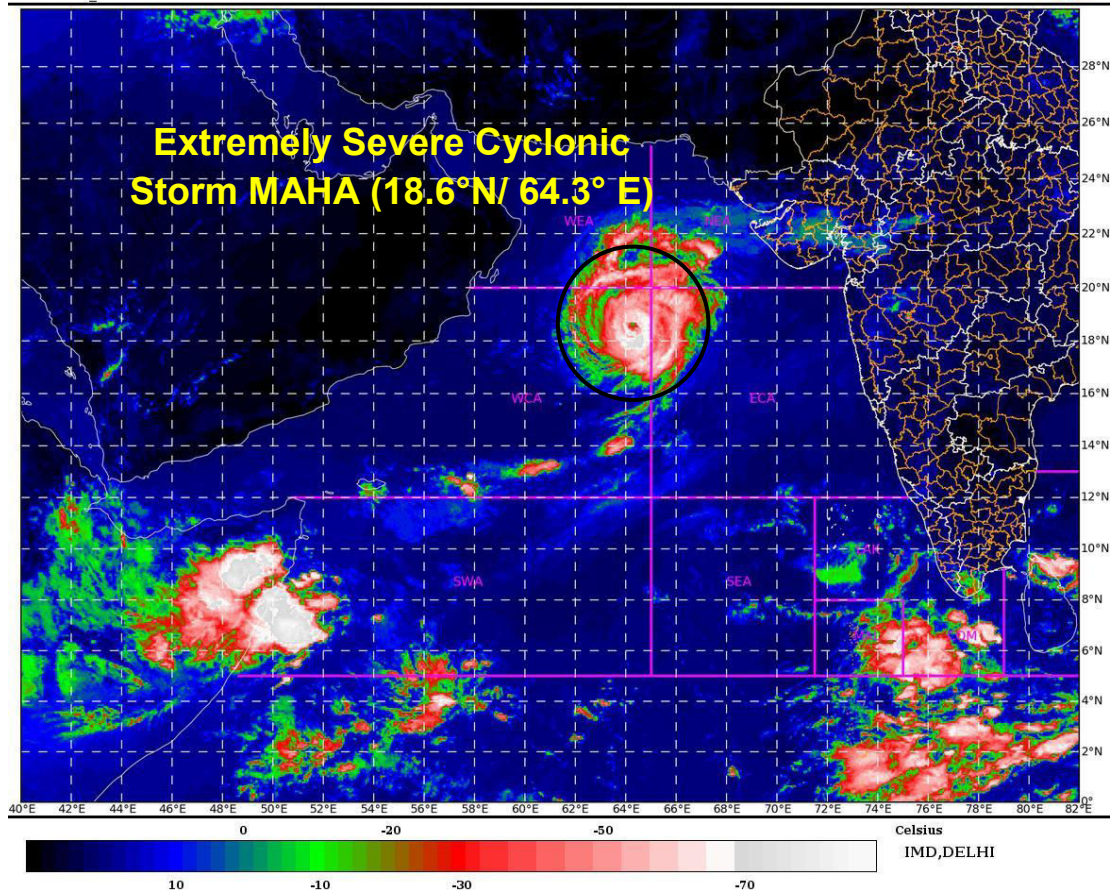
(vii) Action Suggested for Gujarat coast (Junagadh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot) and Daman, Diu, Dadra & Nagar Haveli:

- Total suspension of fishing operations till 6th November.
- Coastal hutment dwellers to be moved to safer places. People in affected areas to remain indoors.
- Movement in motor boats unsafe.

The next bulletin will be issued at 1730 hrs IST of 04th November, 2019.

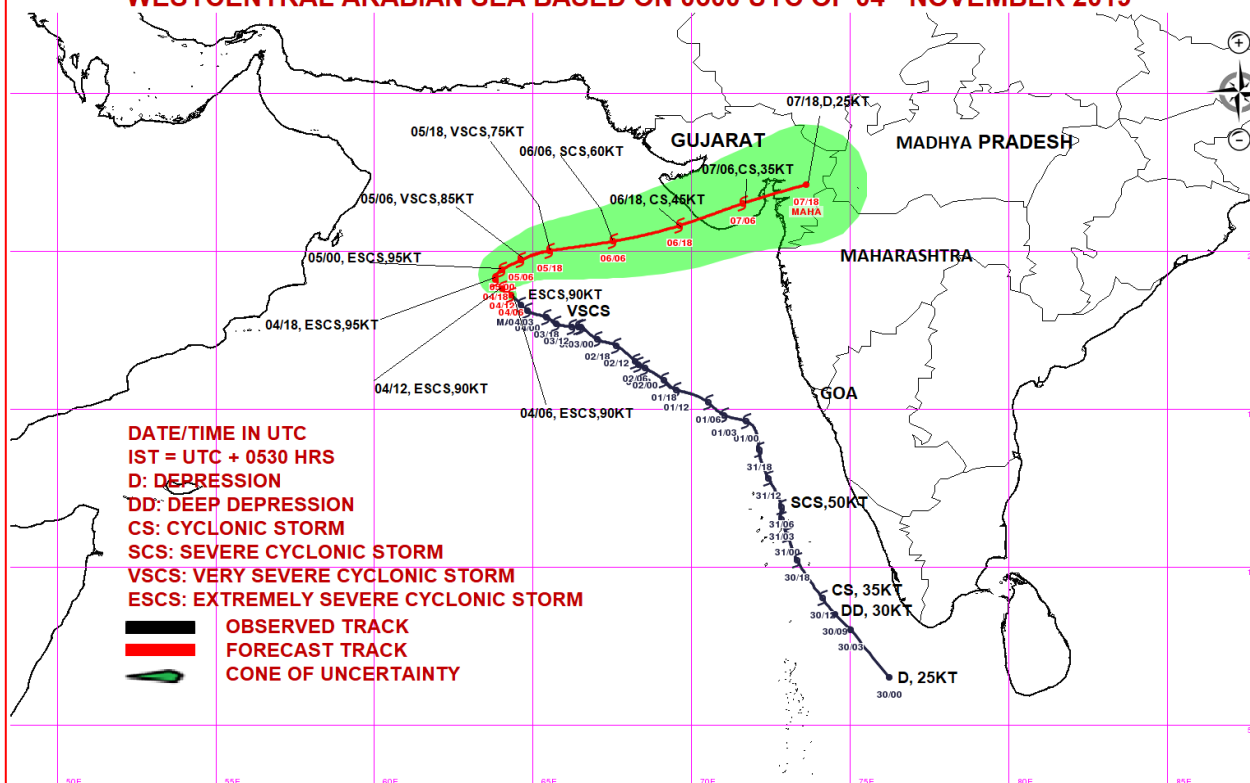
(Sunitha Devi.S)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

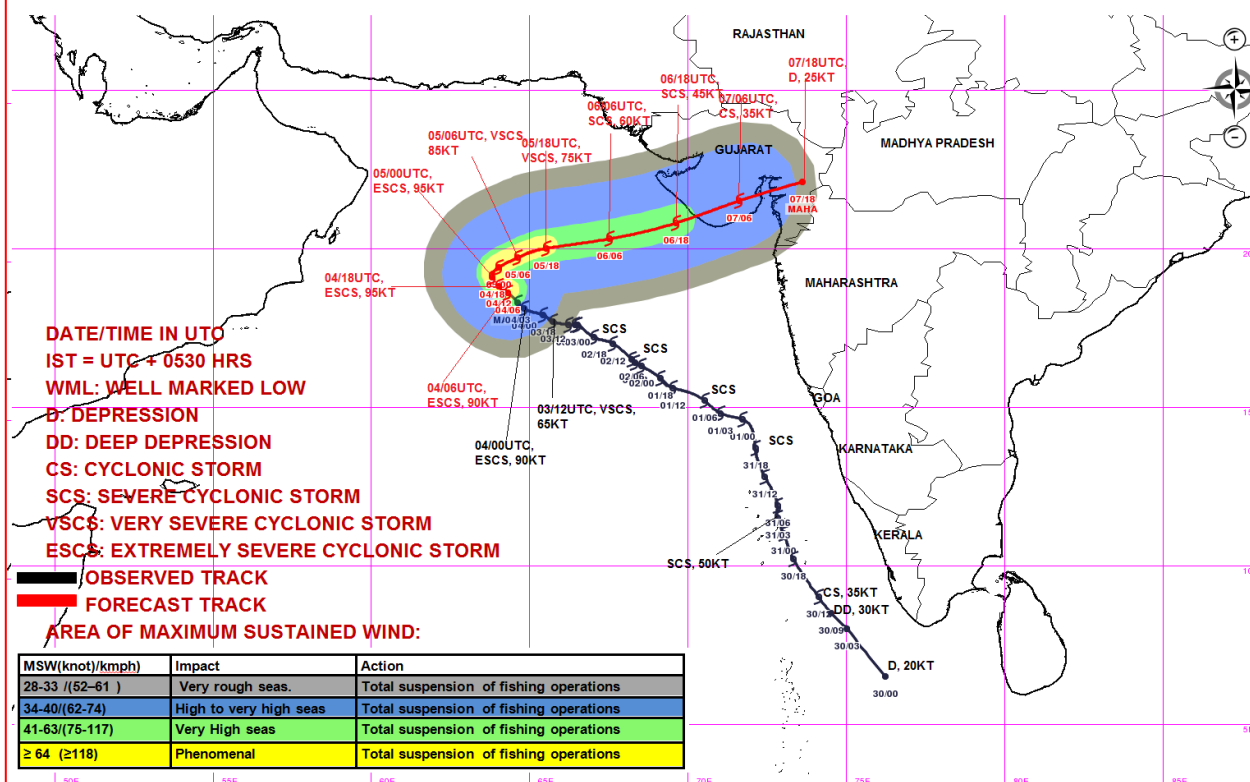


Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH EXTREMELY SEVERE CYCLONIC STORM “MAHA” OVER EASTCENTRAL & ADJOINING WESTCENTRAL ARABIAN SEA BASED ON 0600 UTC OF 04th NOVEMBER 2019



OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH VERY SEVERE CYCLONIC STORM “MAHA” OVER EASTCENTRAL & ADJOINING WESTCENTRAL ARABIAN SEA BASED ON 0600 UTC OF 4th NOVEMBER 2019



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 43 (ARB/04/2019)

TIME OF ISSUE: 1630 HOURS IST

DATED: 04.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: Extremely Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over eastcentral Arabian and adjoining westcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE

The **Extremely severe cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral & adjoining westcentral Arabian Sea continued to move northwestwards with a speed of 10 kmph during past 06 hours, and lay centered at 1430 hrs IST of today, the 04th November, 2019 over eastcentral and adjoining westcentral Arabian Sea near latitude 18.7°N and longitude 64.2°E, about 690 km west-southwest of Veraval (Gujarat), 740 km west-southwest of Diu and 660 km west-southwest of Porbandar. It is very likely to intensify further till 5th November morning and weaken thereafter. It is very likely to move west-northwestwards slowly during next 18 hours, re-curve east-northeastwards and move rapidly thereafter. It is very likely to cross Gujarat coast between Diu and Porbandar as a Cyclonic Storm with a maximum sustained wind speed of 80-90 Kmph gusting to 100 Kmph by early hours of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
04.11.19/1430	18.7/64.2	160-170 gusting to 190	Extremely Severe Cyclonic Storm
04.11.19/1730	18.8/64.0	165-175 gusting to 195	Extremely Severe Cyclonic Storm
04.11.19/2330	19.1/63.8	170-180 gusting to 200	Extremely Severe Cyclonic Storm
05.11.19/0530	19.4/64.0	170-180 gusting to 200	Extremely Severe Cyclonic Storm
05.11.19/1130	19.7/64.6	155-165 gusting to 185	Very Severe Cyclonic Storm
05.11.19/2330	20.0/65.5	140-150 gusting to 165	Very Severe Cyclonic Storm
06.11.19/1130	20.3/67.5	110-120 gusting to 135	Severe Cyclonic Storm
06.11.19/2330	20.8/69.6	80-90 gusting to 100	Cyclonic Storm
07.11.19/1130	21.5/71.6	55-65 gusting to 75	Deep Depression
07.11.19/2230	22.1/73.6	40-50 gusting to 60	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot**) during 6th & isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Vadodara** on 7th November, 2019.
- **Maharashtra:** Light to moderate rainfall at most places with isolated heavy falls very likely over north Madhya Maharashtra and north Konkan (Palghar & Thane districts) on 6th & northern most districts of Madhya Maharashtra on 7th November, 2019.

(ii) Wind warning

- **Gujarat, Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 80-90 Kmph gusting to 100 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli** districts and 60-80 kmph gusting to 100 kmph over **Bhavnagar, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot** districts, 50-60 kmph gusting to 70 kmph over Surat, Navsari, Valsad, Daman and Dadra & Nagar Haveli from 6th November evening for next 12 hours. It will decrease thereafter.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning, it is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening along & off Palghar & Thane districts for next 12 hours.
- **Arabian Sea:** Gale wind speed reaching 160-170 kmph gusting to 190 kmph is prevailing over eastcentral and adjoining westcentral Arabian Sea around the system centre. It is very likely to increase gradually over east-central Arabian Sea becoming 170-180 kmph gusting to 200 kmph over westcentral and adjoining eastcentral & northwest Arabian Sea by mid-night of today, the 4th November and decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high from 6th evening.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast on 06th November.
- **Arabian Sea:** Sea condition will be phenomenal over eastcentral and adjoining westcentral and northwest Arabian Sea till 05th November and will be very high on 6th November. Sea condition will be high over westcentral Arabian Sea from 5th November evening and improve thereafter. It will be very high to high over northeast Arabian Sea during 4th – 6th November.

(iv) Storm surge

- Storm surge of 1 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar** District and 0.5 – 1.0 meter above Astronomical tide is likely to inundate low lying areas of **Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand, Ahmedabad, Porbandar** Districts around the time of landfall.

(v) Fishermen Warning

- Total suspension of fishing operations till 6th November.
- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November and over eastcentral & adjoining northeast Arabian Sea till 06th November.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th – 7th November evening.
- The fishermen out at Sea are advised to return to the coast.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(vi) Damage Expected over coastal districts of Gujarat (Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot) and Daman, Diu, Dadra & Nagar Haveli:

- Damage to thatched houses/ huts. Thatched roof tops may blow off. Unattached metal sheets may fly.
- Damage to embankments/ salt pans.
- Partial damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Dead limbs blown from trees.
- Major damage to coastal crops.

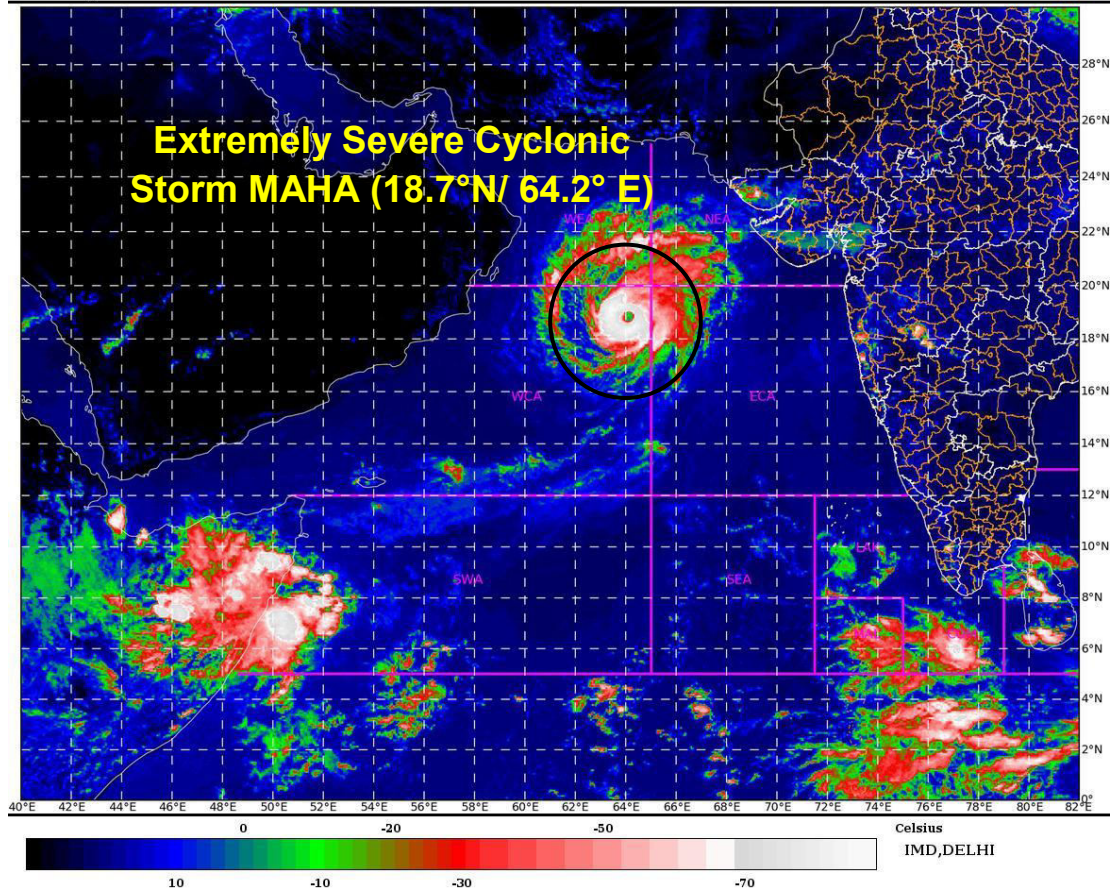
(vii) Action Suggested for Gujarat coast (Junagadh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot) and Daman, Diu, Dadra & Nagar Haveli:

- Total suspension of fishing operations till 6th November.
- Coastal hutment dwellers to be moved to safer places. People in affected areas to remain indoors.
- Movement in motor boats unsafe.

The next bulletin will be issued at 2030 hrs IST of 04th November, 2019.

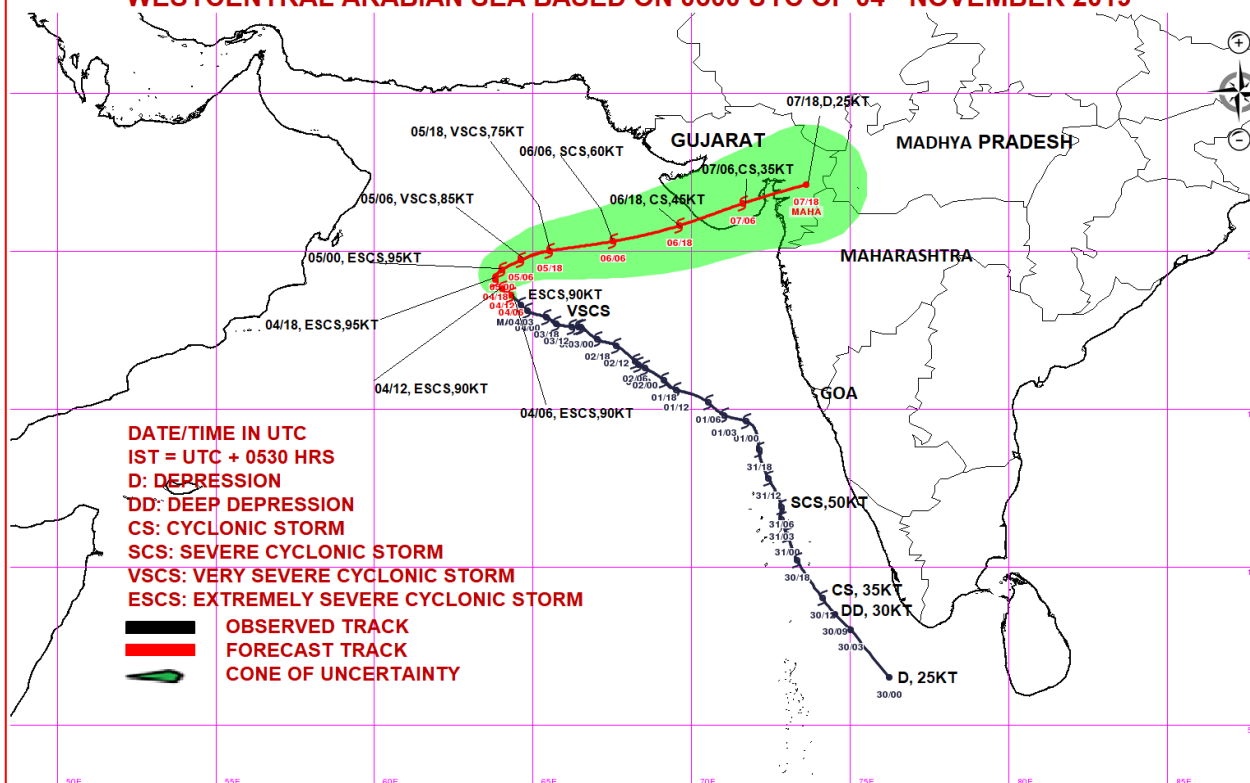
(Sunitha Devi.S)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

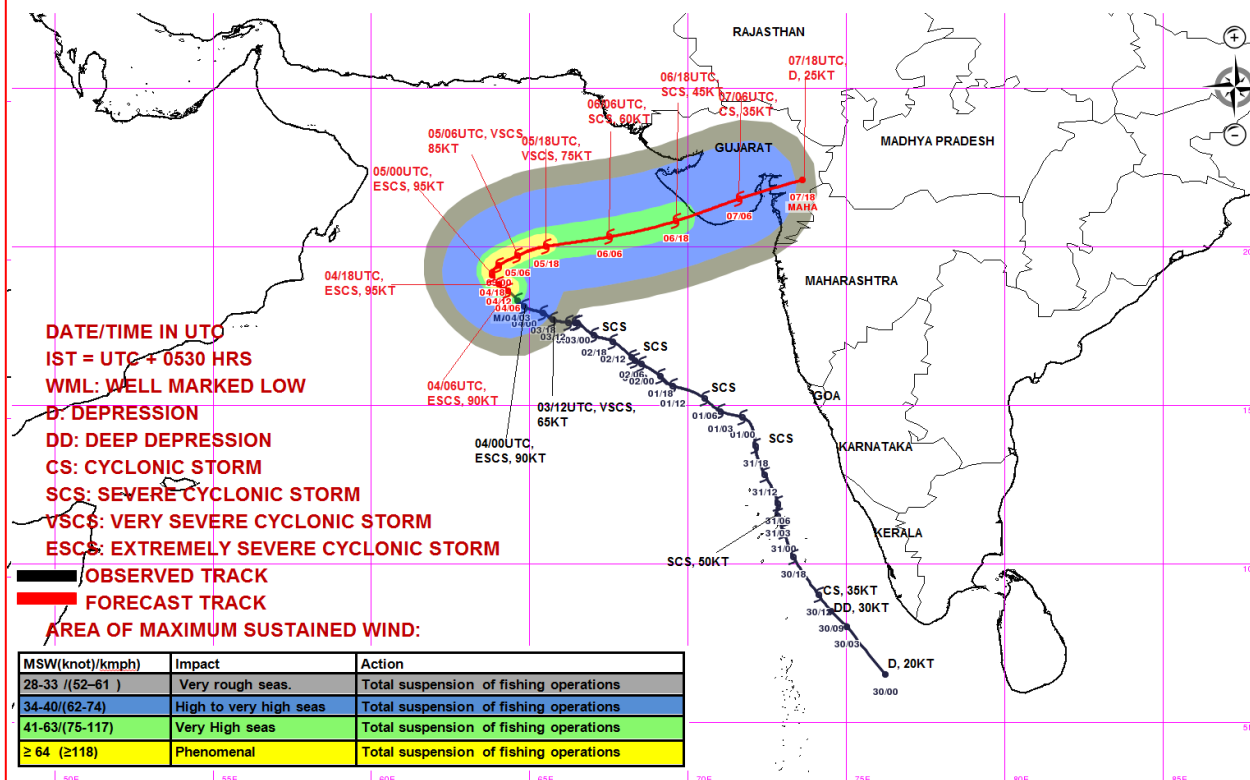


Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH EXTREMELY SEVERE CYCLONIC STORM “MAHA” OVER EASTCENTRAL & ADJOINING WESTCENTRAL ARABIAN SEA BASED ON 0600 UTC OF 04th NOVEMBER 2019



OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH VERY SEVERE CYCLONIC STORM “MAHA” OVER EASTCENTRAL & ADJOINING WESTCENTRAL ARABIAN SEA BASED ON 0600 UTC OF 4th NOVEMBER 2019



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 44 (ARB/04/2019)

TIME OF ISSUE: 2030 HOURS IST

DATED: 04.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)
TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (A) Extremely Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over eastcentral Arabian and adjoining westcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE

(B) Well Marked Low Pressure Area over North Andaman Sea: Informatory Message

(A) Extremely Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over eastcentral Arabian and adjoining westcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE

The **Extremely severe cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral & adjoining westcentral Arabian Sea moved north-northwestwards with a speed of 07 kmph during past 06 hours, and lay centered at 1730 hrs IST of today, the 04th November, 2019 over eastcentral and adjoining westcentral Arabian Sea near latitude 18.9°N and longitude 64.1°E, about 690 km west-southwest of Veraval (Gujarat), 740 km west-southwest of Diu and 650 km west-southwest of Porbandar. It is very likely to maintain intensity during next 12 hours and weaken thereafter. It is very likely to move nearly northwards slowly during next 12 hours and then move rapidly east-northeastwards. It is very likely to cross Gujarat coast between Diu and Porbandar as a Cyclonic Storm with a maximum sustained wind speed of 80-90 Kmph gusting to 100 Kmph by early hours of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
04.11.19/1730	18.9/64.1	175-185 gusting to 205	Extremely Severe Cyclonic Storm
04.11.19/2330	19.1/64.0	180-190 gusting to 210	Extremely Severe Cyclonic Storm
05.11.19/0530	19.4/64.1	170-180 gusting to 200	Extremely Severe Cyclonic Storm
05.11.19/1130	19.7/64.6	155-165 gusting to 185	Very Severe Cyclonic Storm
05.11.19/1730	19.9/65.3	145-155 gusting to 170	Very Severe Cyclonic Storm
06.11.19/0530	20.2/66.6	125-135 gusting to 150	Very Severe Cyclonic Storm
06.11.19/1730	20.5/68.5	95-105 gusting to 115	Severe Cyclonic Storm
07.11.19/0530	21.1/70.6	70-80 gusting to 90	Cyclonic Storm
07.11.19/1730	21.8/72.6	50-60 gusting to 70	Deep Depression
08.11.19/0530	22.4/74.7	20-30 gusting to 40	Well marked Low Pressure Area

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot**) during 6th & isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Vadodara** on 7th November, 2019.
- **Maharashtra:** Light to moderate rainfall at most places with isolated heavy falls very likely over north Madhya Maharashtra and north Konkan (Palghar & Thane districts) on 6th & northern most districts of Madhya Maharashtra on 7th November, 2019.

(ii) Wind warning

- **Gujarat, Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 80-90 Kmph gusting to 100 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli** districts and 60-80 kmph gusting to 100 kmph over **Bhavnagar, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot** districts, 50-60 kmph gusting to 70 kmph over Surat, Navsari, Valsad, Daman and Dadra & Nagar Haveli from 6th November evening for next 12 hours. It will decrease thereafter.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning, it is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening along & off Palghar & Thane districts for next 12 hours.
- **Arabian Sea:** Gale wind speed reaching 175-185 kmph gusting to 205 kmph is prevailing over eastcentral & adjoining westcentral Arabian Sea around the system centre. It is very likely to increase gradually over eastcentral Arabian Sea becoming 180-190 kmph gusting to 210 kmph by mid-night of today, the 4th November and decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high from 6th evening.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast on 06th November.
- **Arabian Sea:** Sea condition will be phenomenal over eastcentral and adjoining westcentral and northwest Arabian Sea till 05th November and will be very high on 6th November. Sea condition will be high over westcentral Arabian Sea from 5th November evening and improve thereafter. It will be very high to high over northeast Arabian Sea during 4th – 6th November.

(iv) Storm surge

- Storm surge of 1 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar** District and 0.5 – 1.0 meter above Astronomical tide is likely to inundate low lying areas of **Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand, Ahmedabad, Porbandar** Districts around the time of landfall.

(v) Fishermen Warning

- Total suspension of fishing operations till 6th November.
- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November and over eastcentral & adjoining northeast Arabian Sea till 06th November.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th – 7th November evening.
- The fishermen out at Sea are advised to return to the coast.

(vi) Damage Expected over coastal districts of Gujarat (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot**) and Daman, Diu, Dadra & Nagar Haveli:

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- Damage to thatched houses/ huts. Thatched roof tops may blow off. Unattached metal sheets may fly.
- Damage to embankments/ salt pans.
- Partial damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Dead limbs blown from trees.
- Major damage to coastal crops.

(vii) Action Suggested for Gujarat coast (Junagadh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot) and Daman, Diu, Dadra & Nagar Haveli:

- Total suspension of fishing operations till 6th November.
- Coastal hutment dwellers to be moved to safer places. People in affected areas to remain indoors.
- Movement in motor boats unsafe.

(B) Well Marked Low Pressure Area over North Andaman Sea: Informatory Message

A low pressure area formed over north Andaman Sea in the morning today. It became Well Marked Low Pressure Area over the same region in the afternoon and persisted in the evening. It is very likely to move northwestwards, concentrate into a Depression over eastcentral Bay of Bengal during next 12 hours. It is also very likely to intensify further into a cyclonic storm and move northwestwards during subsequent 48 hours.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over **Andaman and Nicobar Islands** during 4th to 6 Nov, 2019.

(ii) Wind warning

- Squally wind speed reaching 40-50 kmph gusting to 60 kmph very likely to over Andaman Islands, north Andaman Sea and Adjoining areas southeast & eastcentral Bay of Bengal during next 36-hours.

(iii) Sea condition

- Sea condition will be rough to very rough over north Andaman Sea and Adjoining areas southeast and eastcentral Bay of Bengal during next 36-hours.

(v) Fishermen Warning

- Total suspension of fishing operations over north Andaman Sea during next 36 hours and over Adjoining areas southeast and eastcentral Bay of Bengal till 6th November.
- The fishermen are advised not to venture into north Andaman Sea and Adjoining areas southeast and eastcentral Bay of Bengal during next 36-hours
- The fishermen out at Sea are advised to return to the coast from these areas.

The next bulletin will be issued at 2330 hrs IST of 04th November, 2019.

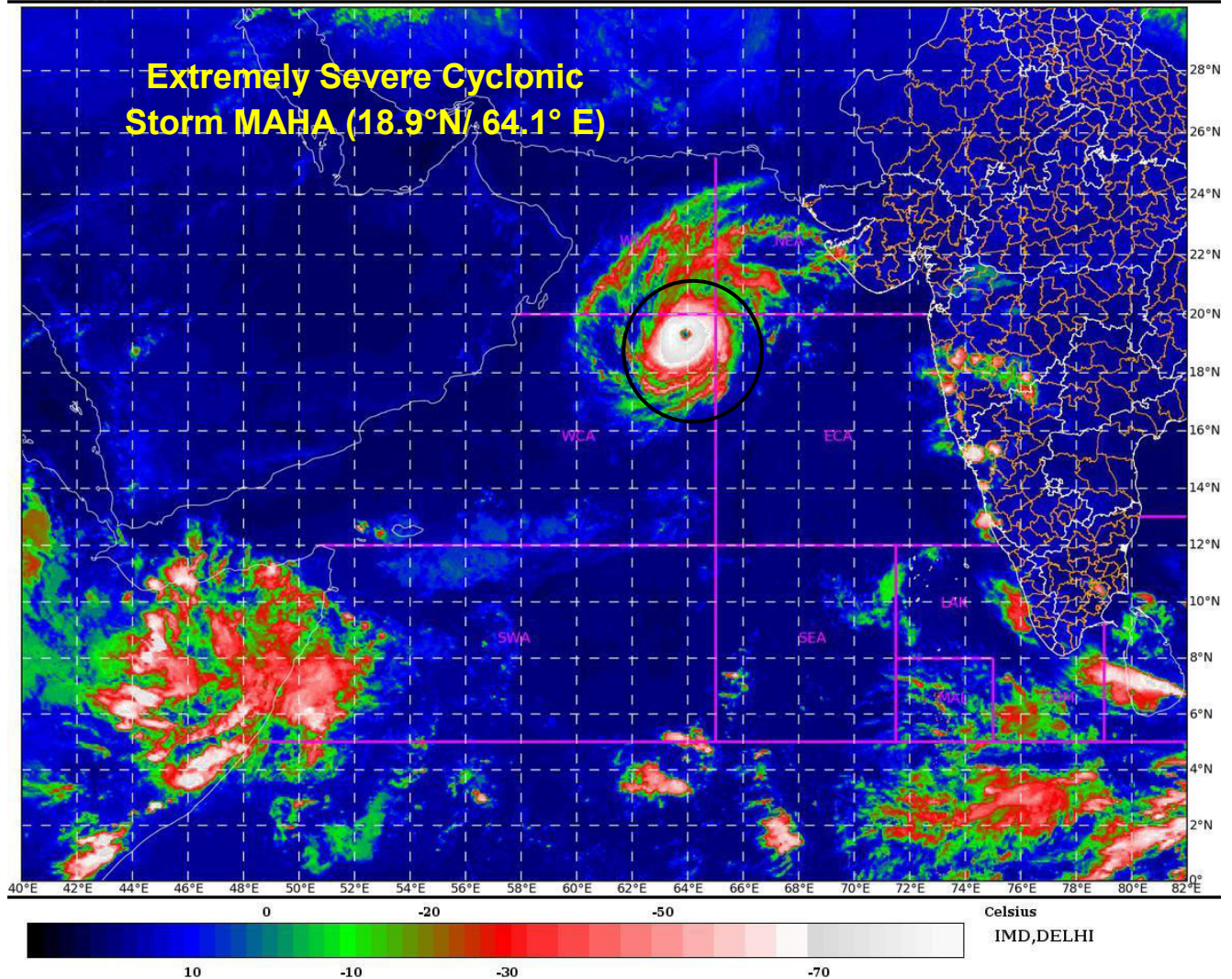
(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

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ARABIAN_SEA

04-11-2019/(1430 to 1456) GMT
04-11-2019/(2000 to 2026) IST



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

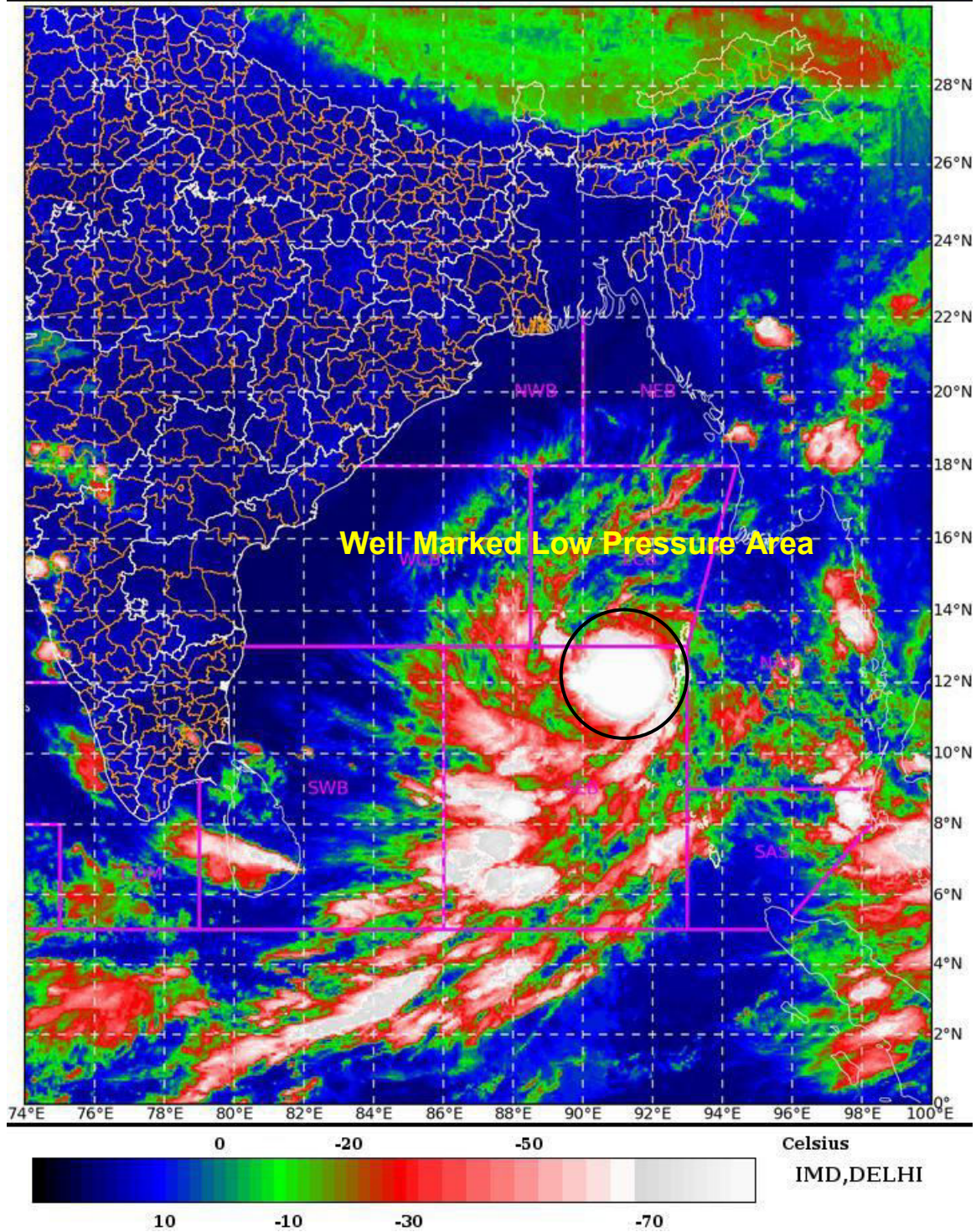
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04-11-2019/(1430 to 1456) GMT

IMG_TIR1_TEMP 10.8 um

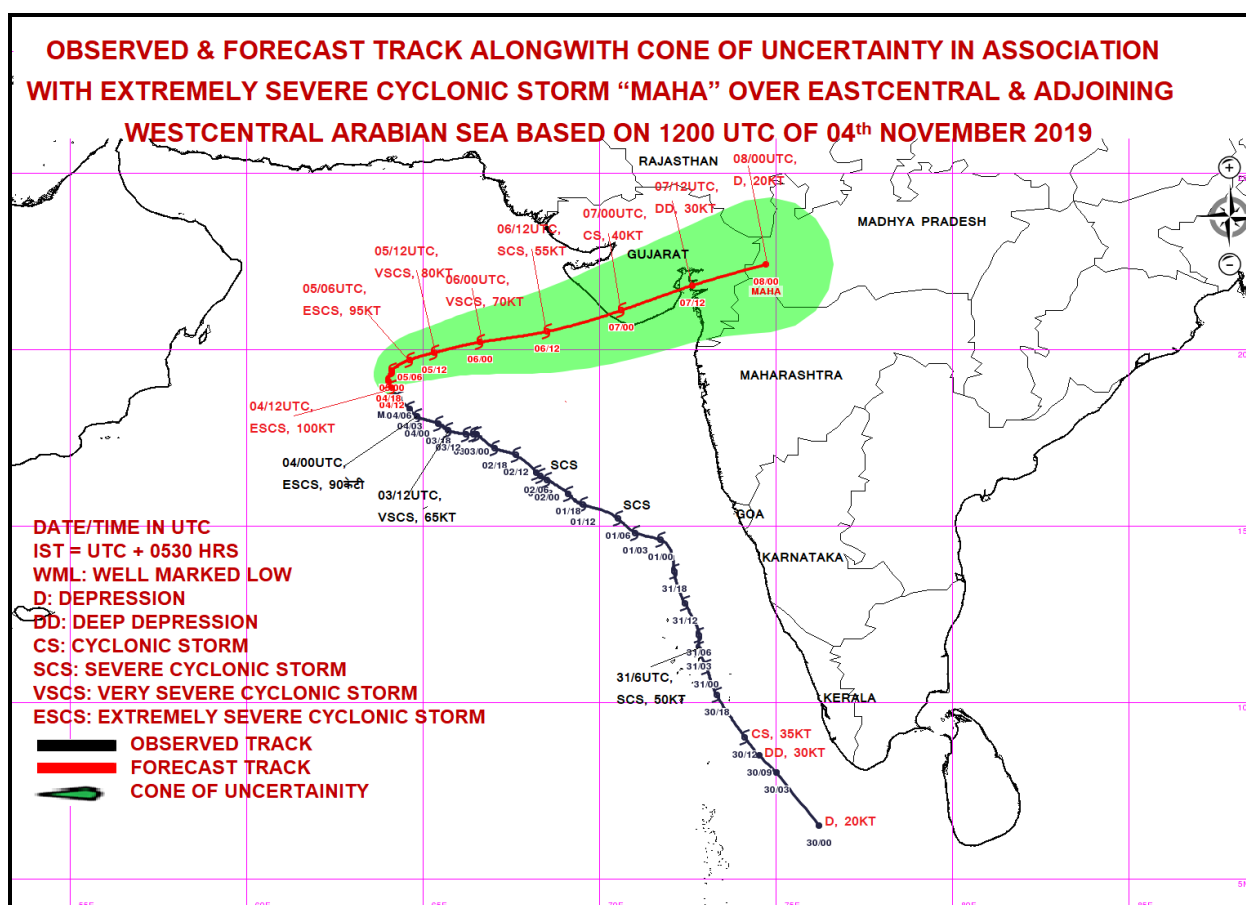
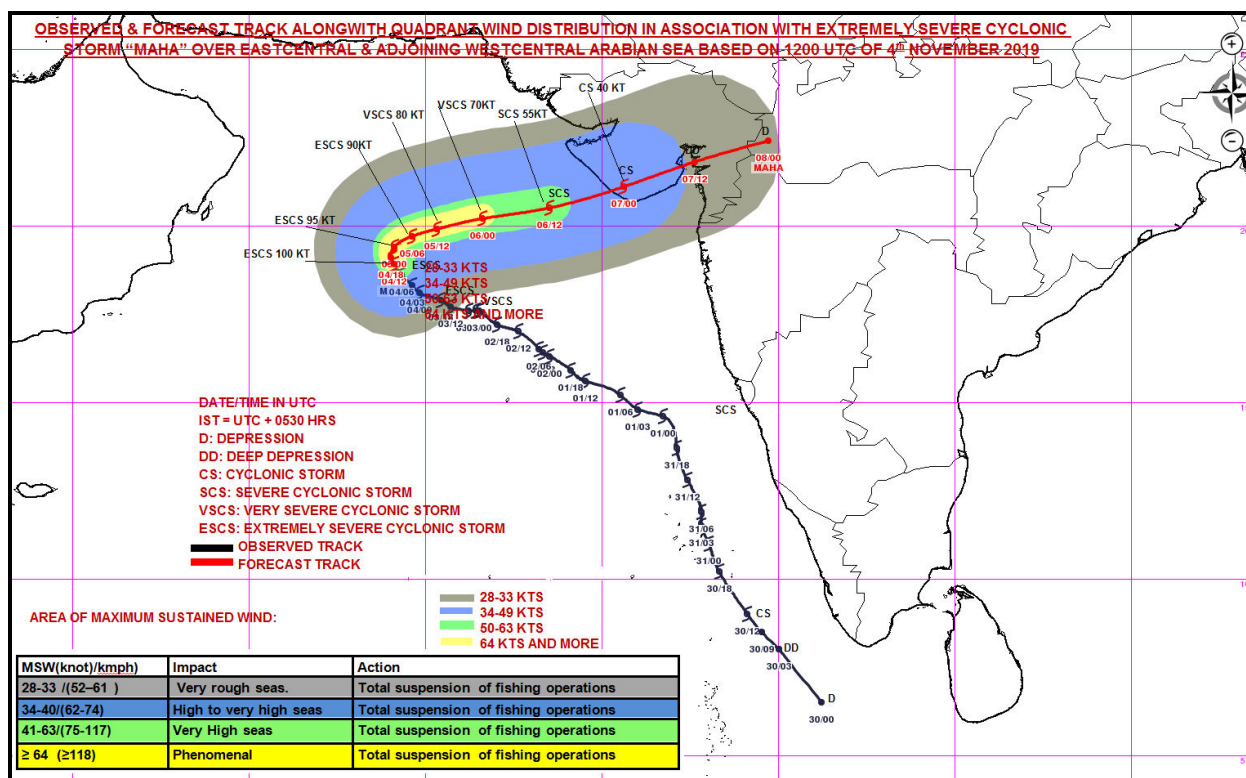
04-11-2019/(2000 to 2026) IST

L1C Mercator



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 45 (ARB/04/2019)

TIME OF ISSUE: 2200 HOURS IST

DATED: 04.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)
TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, KERALA (FAX NO.0471-2327176)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)
CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)

Sub: (A) Extremely Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over westcentral and adjoining eastcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE
(B) Well Marked Low Pressure Area over North Andaman Sea: Informatory Message

(A) Extremely Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over westcentral and adjoining eastcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE

The **Extremely severe cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral & adjoining westcentral Arabian Sea moved north-northwestwards with a speed of 10 kmph during past 06 hours, and lay centered at 2030 hrs IST of today, the 04th November, 2019 over westcentral and adjoining eastcentral Arabian Sea near latitude 19.2°N and longitude 63.9°E, about 700 km west-southwest of Veraval (Gujarat), 750 km west-southwest of Diu and 660 km west-southwest of Porbandar. It is very likely to maintain intensity during next 12 hours and weaken thereafter. It is very likely to move nearly northwards slowly during next 12 hours and then move rapidly east-northeastwards. It is very likely to cross Gujarat coast between Diu and Porbandar as a Cyclonic Storm with a maximum sustained wind speed of 80-90 Kmph gusting to 100 Kmph by early hours of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
04.11.19/2030	19.2/63.9	175-185 gusting to 205	Extremely Severe Cyclonic Storm
04.11.19/2330	19.3/63.8	180-190 gusting to 210	Extremely Severe Cyclonic Storm
05.11.19/0530	19.5/64.0	170-180 gusting to 200	Extremely Severe Cyclonic Storm
05.11.19/1130	19.7/64.6	155-165 gusting to 185	Very Severe Cyclonic Storm
05.11.19/1730	19.9/65.3	145-155 gusting to 170	Very Severe Cyclonic Storm
06.11.19/0530	20.2/66.6	125-135 gusting to 150	Very Severe Cyclonic Storm
06.11.19/1730	20.5/68.5	95-105 gusting to 115	Severe Cyclonic Storm
07.11.19/0530	21.1/70.6	70-80 gusting to 90	Cyclonic Storm
07.11.19/1730	21.8/72.6	50-60 gusting to 70	Deep Depression
08.11.19/0530	22.4/74.7	20-30 gusting to 40	Well marked Low Pressure Area

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot**) during 6th & isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Vadodara** on 7th November, 2019.
- **Maharashtra:** Light to moderate rainfall at most places with isolated heavy falls very likely over north Madhya Maharashtra and north Konkan (Palghar & Thane districts) on 6th & northern most districts of Madhya Maharashtra on 7th November, 2019.

(ii) Wind warning

- **Gujarat , Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 80-90 Kmph gusting to 100 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli** districts and 60-80 kmph gusting to 100 kmph over **Bhavnagar, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot** districts, 50-60 kmph gusting to 70 kmph over Surat, Navsari, Valsad, Daman and Dadra & Nagar Haveli from 6th November evening for next 12 hours. It will decrease thereafter.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning, it is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening along & off Palghar & Thane districts for next 12 hours.
- **Arabian Sea:** Gale wind speed reaching 175-185 kmph gusting to 205 kmph is prevailing over eastcentral & adjoining westcentral Arabian Sea around the system centre. It is very likely to increase gradually over eastcentral Arabian Sea becoming 180-190 kmph gusting to 210 kmph by mid-night of today, the 4th November and decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high from 6th evening.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast on 06th November.
- **Arabian Sea:** Sea condition will be phenomenal over eastcentral and adjoining westcentral and northwest Arabian Sea till 05th November and will be very high on 6th November. Sea condition will be high over westcentral Arabian Sea from 5th November evening and improve thereafter. It will be very high to high over northeast Arabian Sea during 4th – 6th November.

(iv) Storm surge

- Storm surge of 1 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar** District and 0.5 – 1.0 meter above Astronomical tide is likely to inundate low lying areas of **Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand, Ahmedabad, Porbandar** Districts around the time of landfall.

(v) Fishermen Warning

- Total suspension of fishing operations till 6th November.
- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November and over eastcentral & adjoining northeast Arabian Sea till 06th November.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th – 7th November evening.
- The fishermen out at Sea are advised to return to the coast.

(vi) Damage Expected over coastal districts of Gujarat (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot**) and Daman, Diu, Dadra & Nagar Haveli:

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- Damage to thatched houses/ huts. Thatched roof tops may blow off. Unattached metal sheets may fly.
- Damage to embankments/ salt pans.
- Partial damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Dead limbs blown from trees.
- Major damage to coastal crops.

(vii) Action Suggested for Gujarat coast (Junagadh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot) and Daman, Diu, Dadra & Nagar Haveli:

- Total suspension of fishing operations till 6th November.
- Coastal hutment dwellers to be moved to safer places. People in affected areas to remain indoors.
- Movement in motor boats unsafe.

(B) Well Marked Low Pressure Area over North Andaman Sea: Informatory Message

A low pressure area formed over north Andaman Sea in the morning today. It became Well Marked Low Pressure Area over the same region in the afternoon and persisted in the evening. It is very likely to move northwestwards, concentrate into a Depression over eastcentral Bay of Bengal during next 12 hours. It is also very likely to intensify further into a cyclonic storm and move northwestwards during subsequent 48 hours.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over **Andaman and Nicobar Islands** during 4th to 6 Nov, 2019.

(ii) Wind warning

- Squally wind speed reaching 40-50 kmph gusting to 60 kmph very likely to over Andaman Islands, north Andaman Sea and Adjoining areas southeast & eastcentral Bay of Bengal during next 36-hours.

(iii) Sea condition

- Sea condition will be rough to very rough over north Andaman Sea and Adjoining areas southeast and eastcentral Bay of Bengal during next 36-hours.

(v) Fishermen Warning

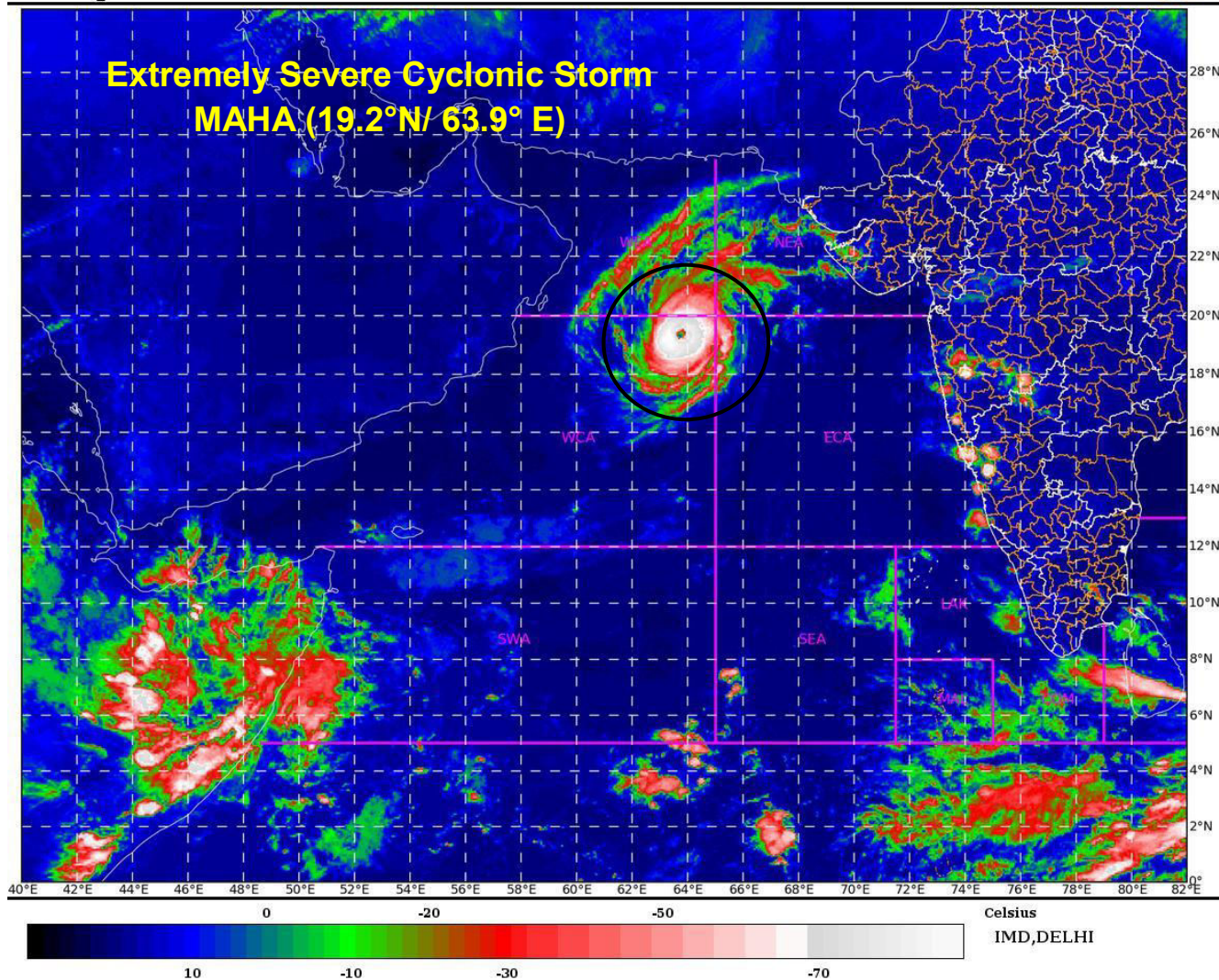
- Total suspension of fishing operations over north Andaman Sea during next 36 hours and over Adjoining areas southeast and eastcentral Bay of Bengal till 6th November.
- The fishermen are advised not to venture into north Andaman Sea and Adjoining areas southeast and eastcentral Bay of Bengal during next 36-hours
- The fishermen out at Sea are advised to return to the coast from these areas.

The next bulletin will be issued at 0230 hrs IST of 05th November, 2019.

(Ananda Kumar Das)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

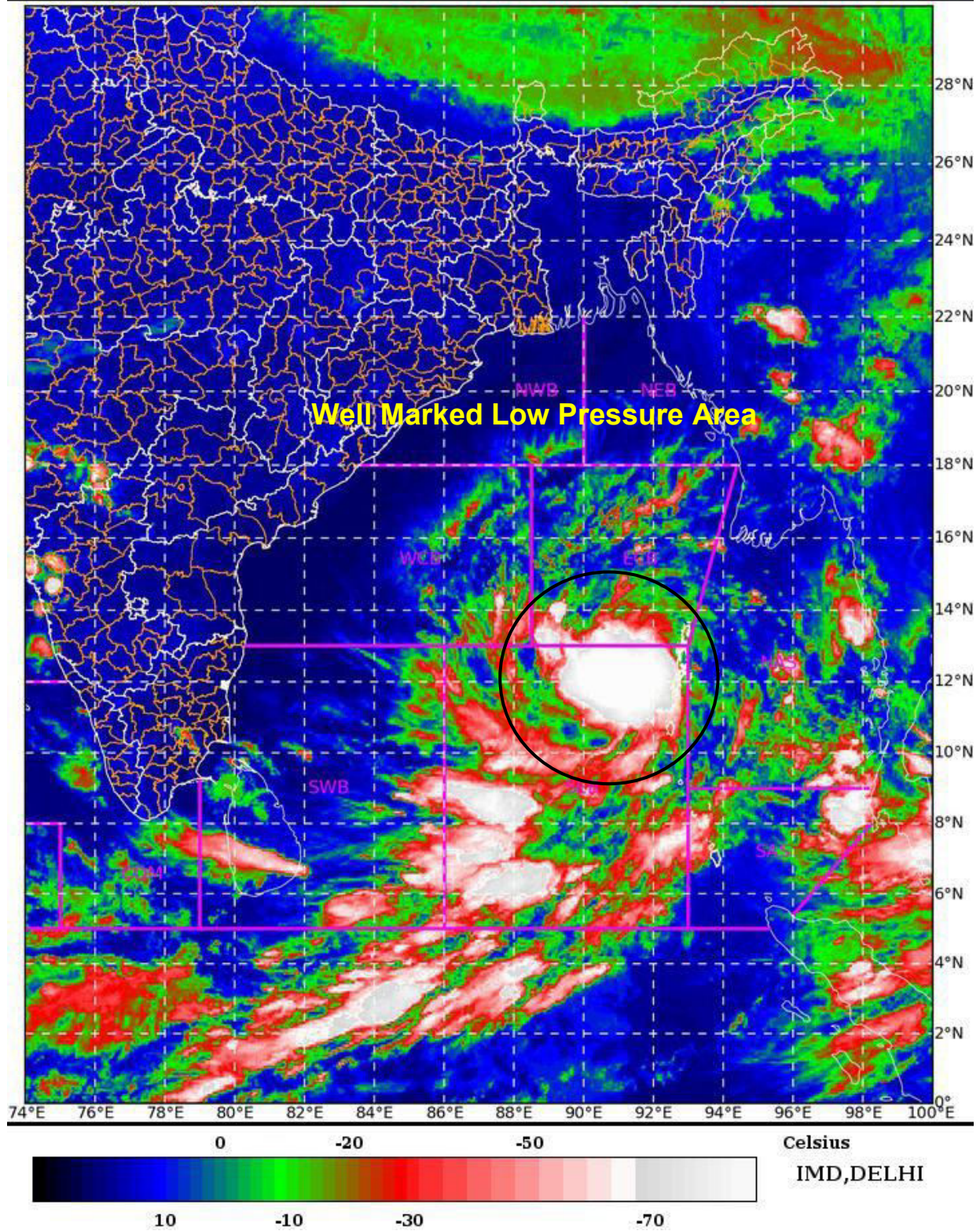
SAT : INSAT-3D IMG

04-11-2019/(1530 to 1556) GMT

IMG_TIR1_TEMP 10.8 um

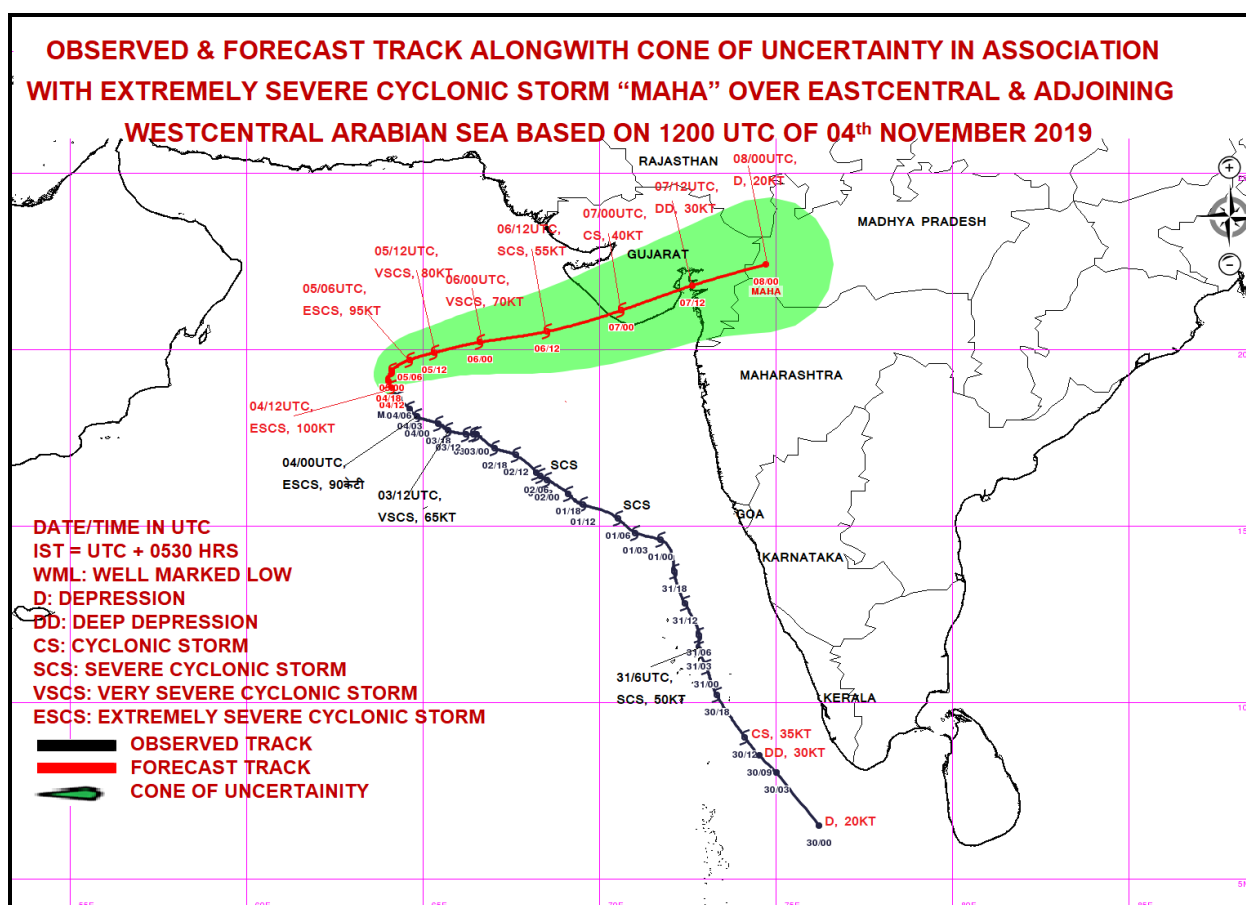
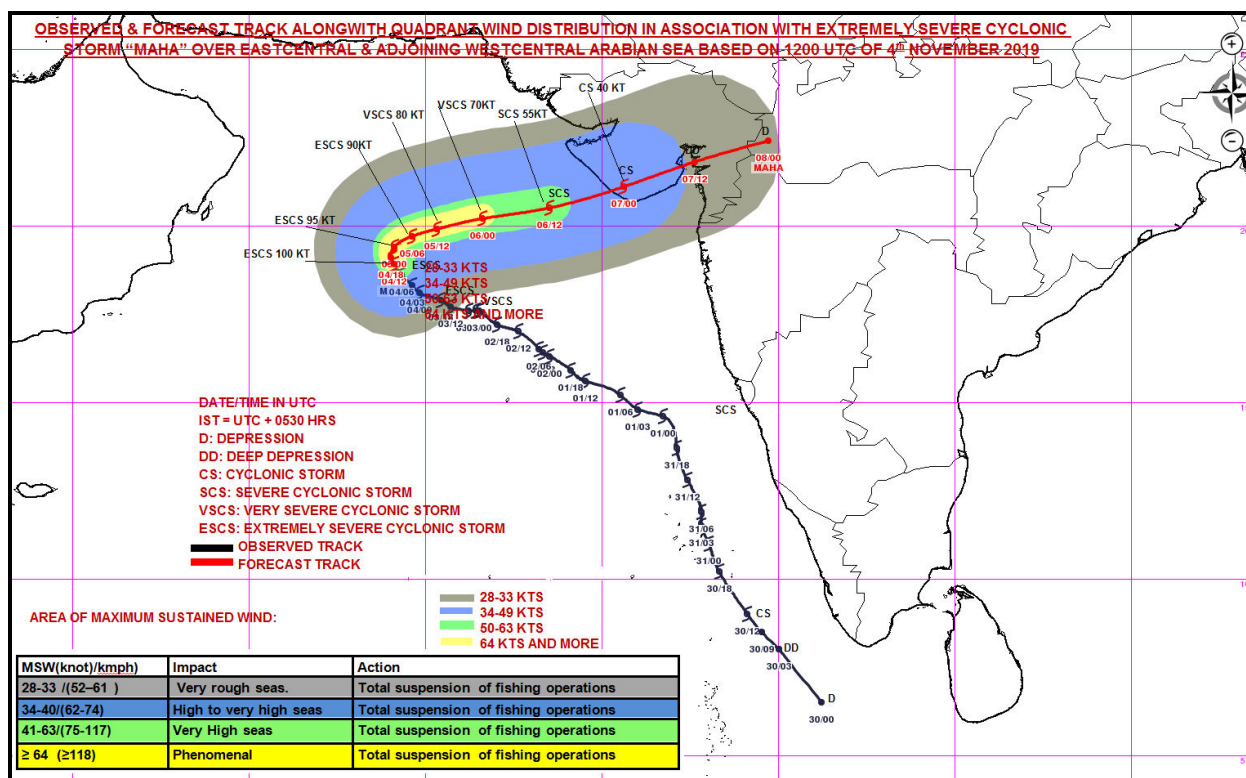
04-11-2019/(2100 to 2126) IST

L1C Mercator



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 46 (ARB/04/2019)

TIME OF ISSUE: 0230 HOURS IST

DATED: 05.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)
TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)
CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)
CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub: (A) Extremely Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over westcentral and adjoining eastcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE
(B) Well Marked Low Pressure Area over North Andaman Sea: Informatory Message

(A) Extremely Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over westcentral and adjoining eastcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE

The **Extremely severe cyclonic storm MAHA (Pronounced as M'maha)** over westcentral & adjoining eastcentral Arabian Sea moved northwestwards with a speed of 10 kmph during past 06 hours, and lay centered at 2330 hrs IST of 04th November, 2019 over westcentral and adjoining eastcentral Arabian Sea near latitude 19.3°N and longitude 63.7°E, about 720 km west-southwest of Veraval (Gujarat), 770 km west-southwest of Diu and 670 km west-southwest of Porbandar (Gujarat). It is very likely to maintain intensity and move slowly northwards during next 06 hours. Thereafter, it is very likely to move rapidly east-northeastwards with gradual weakening. It is very likely to cross Gujarat coast between Diu and Porbandar as a Cyclonic Storm with a maximum sustained wind speed of 70-80 Kmph gusting to 90 Kmph by early hours of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
04.11.19/2330	19.3/63.7	175-185 gusting to 205	Extremely Severe Cyclonic Storm
05.11.19/0530	19.6/63.8	170-180 gusting to 200	Extremely Severe Cyclonic Storm
05.11.19/1130	19.8/64.1	155-165 gusting to 185	Very Severe Cyclonic Storm
05.11.19/1730	20.0/64.7	130-140 gusting to 155	Very Severe Cyclonic Storm
05.11.19/2330	20.1/65.6	120-130 gusting to 145	Very Severe Cyclonic Storm
06.11.19/1130	20.4/67.4	110-120 gusting to 130	Severe Cyclonic Storm
06.11.19/2330	20.8/69.6	85-95 gusting to 105	Cyclonic Storm
07.11.19/1130	21.5/71.6	55-65 gusting to 75	Deep Depression
07.11.19/2330	22.0/73.5	40-50 gusting to 60	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot**) during 6th & isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Vadodara** on 7th November, 2019.
- **Maharashtra:** Light to moderate rainfall at most places with isolated heavy falls very likely over north Madhya Maharashtra and north Konkan (Palghar & Thane districts) on 6th & northern most districts of Madhya Maharashtra on 7th November, 2019.

(ii) Wind warning

- **Gujarat, Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 70-80 Kmph gusting to 90 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli** districts and 60-70 kmph gusting to 80 kmph over **Bhavnagar, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot** districts, 50-60 kmph gusting to 70 kmph over Surat, Navsari, Valsad, Daman and Dadra & Nagar Haveli from 6th November evening for next 12 hours. It will decrease thereafter.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning, it is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening along & off Palghar & Thane districts for next 12 hours.
- **Arabian Sea:** Gale wind speed reaching 175-185 kmph gusting to 205 kmph is prevailing over westcentral & adjoining eastcentral Arabian Sea around the system centre. It is very likely to persist for next 06 hours and decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high from 6th evening.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast on 06th November.
- **Arabian Sea:** Sea condition will be phenomenal over westcentral and adjoining eastcentral and northwest Arabian Sea till 05th November and will be very high on 6th November. Sea condition will be high over westcentral Arabian Sea from 5th November evening and improve thereafter. It will be very high to high over north Arabian Sea during 5th and 6th November.

(iv) Storm surge

- Storm surge of 1 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar** District and 0.5 – 1.0 meter above Astronomical tide is likely to inundate low lying areas of **Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand, Ahmedabad, Porbandar** Districts around the time of landfall.

(v) Fishermen Warning

- Total suspension of fishing operations till 6th November.
- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November and over eastcentral & adjoining northeast Arabian Sea till 06th November.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th to 7th November evening.
- The fishermen out at Sea are advised to return to the coast.

(vi) Damage Expected over coastal districts of Gujarat (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot**) and Daman, Diu, Dadra & Nagar Haveli:

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- Damage to thatched houses/ huts. Thatched roof tops may blow off. Unattached metal sheets may fly.
- Damage to embankments/ salt pans.
- Partial damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Dead limbs blown from trees.
- Major damage to coastal crops.

(vii) Action Suggested for Gujarat coast (Junagadh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot) and Daman, Diu, Dadra & Nagar Haveli:

- Total suspension of fishing operations till 6th November.
- Coastal hutment dwellers to be moved to safer places. People in affected areas to remain indoors.
- Movement in motor boats unsafe.

(B) Well Marked Low Pressure Area over North Andaman Sea: Informatory Message

The Well Marked Low Pressure Area over north Andaman Sea persists over the same region. It is very likely to move northwestwards, concentrate into a Depression over eastcentral Bay of Bengal during next 06 hours. It is also very likely to intensify further into a cyclonic storm and move northwestwards during subsequent 48 hours.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over **Andaman and Nicobar Islands** during 5th and 6th Nov, 2019.

(ii) Wind warning

- Squally wind speed reaching 40-50 kmph gusting to 60 kmph very likely to over Andaman Islands, north Andaman Sea and Adjoining areas southeast & eastcentral Bay of Bengal during next 36-hours.

(iii) Sea condition

- Sea condition will be rough to very rough over north Andaman Sea and Adjoining areas southeast and eastcentral Bay of Bengal during next 36-hours.

(v) Fishermen Warning

- Total suspension of fishing operations over north Andaman Sea during next 36 hours and over Adjoining areas southeast and eastcentral Bay of Bengal till 6th November.
- The fishermen are advised not to venture into north Andaman Sea and Adjoining areas southeast and eastcentral Bay of Bengal during next 36-hours
- The fishermen out at Sea are advised to return to the coast from these areas.

The next bulletin will be issued at 0530 hrs IST of 05th November, 2019.

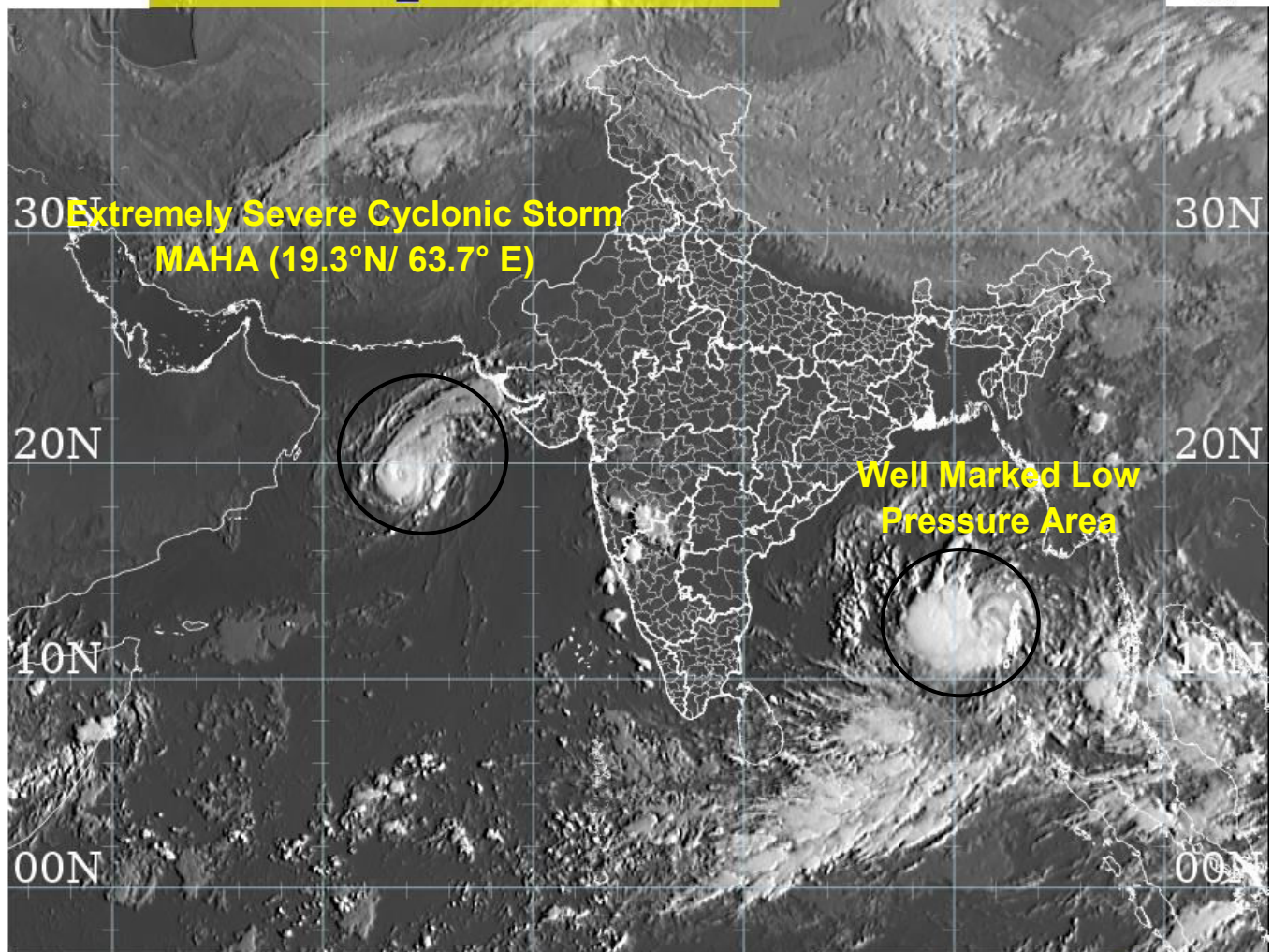
(Ananda Kumar Das)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



60E 70E 80E 90E 10
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20191104_2045UTC**



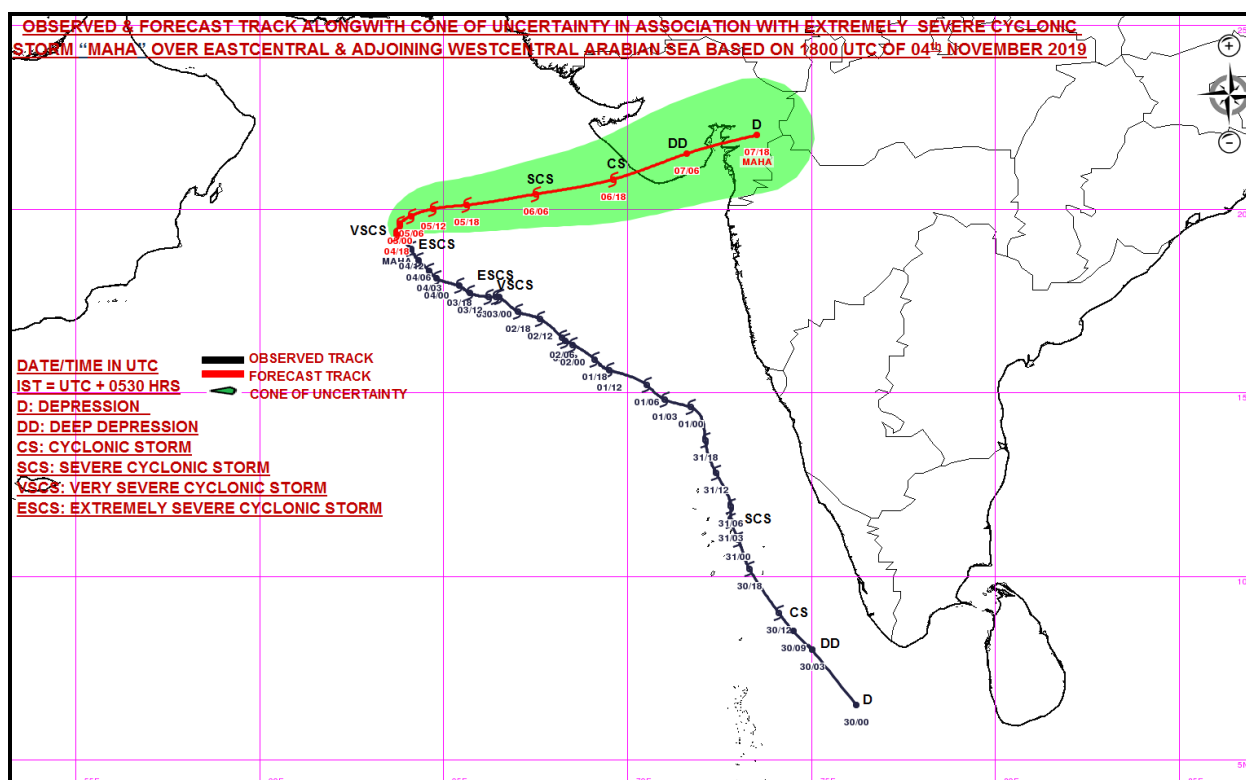
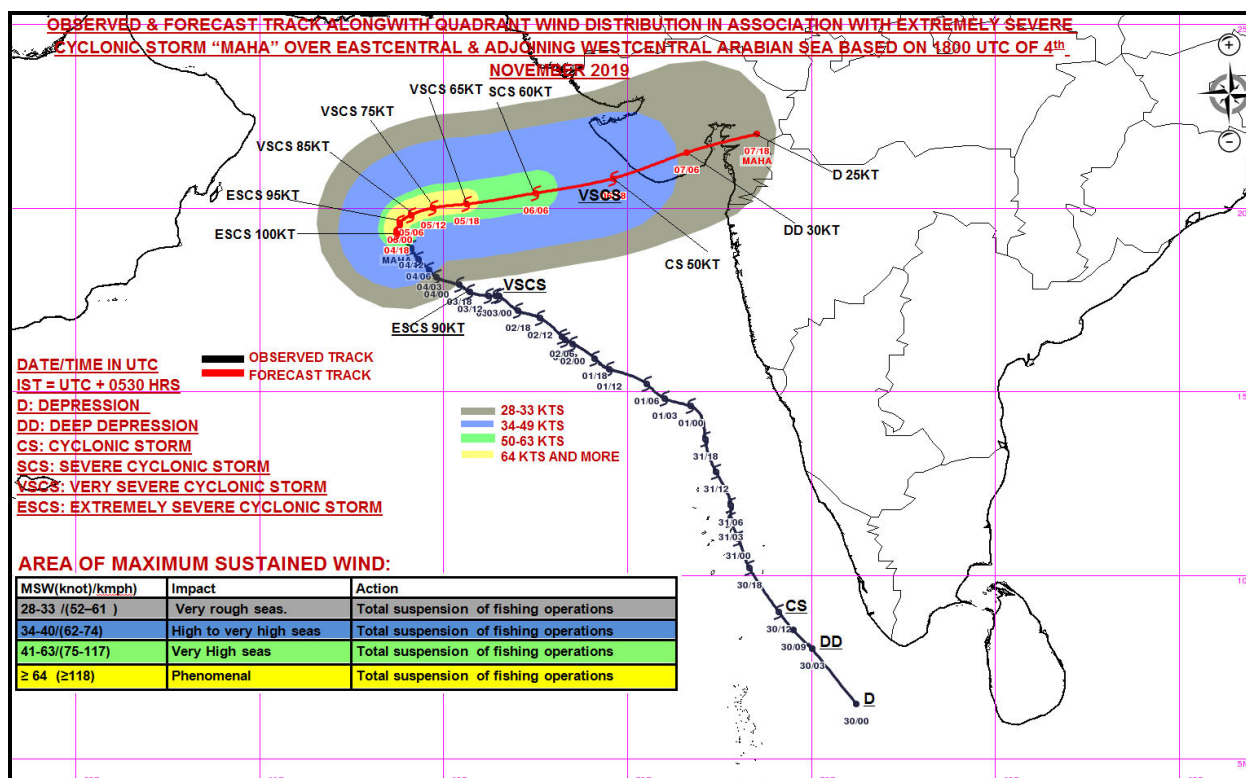
 **EUMETSAT**

70E

80E

PyTROLL 

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 47 (ARB/04/2019)

TIME OF ISSUE: 0530 HOURS IST

DATED: 05.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)
TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
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D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)
CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)
CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub: (A) Extremely Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over westcentral and adjoining eastcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE
(B) Well Marked Low Pressure Area over North Andaman Sea and adjoining southeast Bay of Bengal: Informatory Message

(A) Extremely Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over westcentral and adjoining eastcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE

The **Extremely severe cyclonic storm MAHA (Pronounced as M'maha)** over westcentral & adjoining eastcentral Arabian Sea moved northwestwards with a speed of 07 kmph during past 06 hours, and lay centered at 0230 hrs IST of 05th November, 2019 over westcentral and adjoining eastcentral Arabian Sea near latitude 19.5°N and longitude 63.6°E, about 670 km west-southwest of Porbandar (Gujarat), 720 km west-southwest of Veraval (Gujarat) and 780 km west-southwest of Diu. It is very likely to maintain intensity and move slowly northwards during next 03 hours. Thereafter, it is very likely to move rapidly east-northeastwards with gradual weakening. It is very likely to cross Gujarat coast between Diu and Porbandar as a Cyclonic Storm with a maximum sustained wind speed of 70-80 Kmph gusting to 90 Kmph by early hours of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
05.11.19/0230	19.5/63.6	170-180 gusting to 200	Extremely Severe Cyclonic Storm
05.11.19/0530	19.6/63.8	170-180 gusting to 200	Extremely Severe Cyclonic Storm
05.11.19/1130	19.8/64.1	155-165 gusting to 185	Very Severe Cyclonic Storm
05.11.19/1730	20.0/64.7	130-140 gusting to 155	Very Severe Cyclonic Storm
05.11.19/2330	20.1/65.6	120-130 gusting to 145	Very Severe Cyclonic Storm
06.11.19/1130	20.4/67.4	110-120 gusting to 130	Severe Cyclonic Storm
06.11.19/2330	20.8/69.6	85-95 gusting to 105	Cyclonic Storm
07.11.19/1130	21.5/71.6	55-65 gusting to 75	Deep Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

07.11.19/2330	22.0/73.5	40-50 gusting to 60	Depression
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Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot**) during 6th & isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Vadodara** on 7th November, 2019.
- **Maharashtra:** Light to moderate rainfall at most places with isolated heavy falls very likely over north Madhya Maharashtra and north Konkan (Palghar & Thane districts) on 6th & northern most districts of Madhya Maharashtra on 7th November, 2019.

(ii) Wind warning

- **Gujarat, Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 70-80 Kmph gusting to 90 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli** districts and 60-70 kmph gusting to 80 kmph over **Bhavnagar, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot** districts, 50-60 kmph gusting to 70 kmph over Surat, Navsari, Valsad, Daman and Dadra & Nagar Haveli from 6th November evening for next 12 hours. It will decrease thereafter.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning, it is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening along & off Palghar & Thane districts for next 12 hours.
- **Arabian Sea:** Gale wind speed reaching 175-185 kmph gusting to 205 kmph is prevailing over westcentral & adjoining eastcentral Arabian Sea around the system centre. It is very likely to persist for next 06 hours and decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high from 6th evening.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast on 06th November.
- **Arabian Sea:** Sea condition will be phenomenal over westcentral and adjoining eastcentral and northwest Arabian Sea till 05th November and will be very high on 6th November. Sea condition will be high over westcentral Arabian Sea from 5th November evening and improve thereafter. It will be very high to high over north Arabian Sea during 5th and 6th November.

(iv) Storm surge

- Storm surge of 1 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar** District and 0.5 – 1.0 meter above Astronomical tide is likely to inundate low lying areas of **Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand, Ahmedabad, Porbandar** Districts around the time of landfall.

(v) Fishermen Warning

- Total suspension of fishing operations till 6th November.
- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November and over eastcentral & adjoining northeast Arabian Sea till 06th November.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th to 7th November evening.
- The fishermen out at Sea are advised to return to the coast.

(vi) Damage Expected over coastal districts of Gujarat (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot**) and Daman, Diu, Dadra & Nagar Haveli:

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- Damage to thatched houses/ huts. Thatched roof tops may blow off. Unattached metal sheets may fly.
- Damage to embankments/ salt pans.
- Partial damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Dead limbs blown from trees.
- Major damage to coastal crops.

(vii) Action Suggested for Gujarat coast (Junagadh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot) and Daman, Diu, Dadra & Nagar Haveli:

- Total suspension of fishing operations till 6th November.
- Coastal hutment dwellers to be moved to safer places. People in affected areas to remain indoors.
- Movement in motor boats unsafe.

(B) Well Marked Low Pressure Area over North Andaman Sea and adjoining southeast Bay of Bengal: Informatory Message

The Well Marked Low Pressure Area over north Andaman Sea moved west-northwestwards during past 06 hours and now lies over north Andaman Sea and adjoining southeast Bay of Bengal. It is very likely to move northwestwards, concentrate into a Depression over eastcentral Bay of Bengal during next 06 hours. It is also very likely to intensify further into a cyclonic storm and move northwestwards during subsequent 48 hours.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over **Andaman and Nicobar Islands** during 5th and 6th Nov, 2019.

(ii) Wind warning

- Squally wind speed reaching 40-50 kmph gusting to 60 kmph very likely to over Andaman Islands, north Andaman Sea and Adjoining areas southeast & eastcentral Bay of Bengal during next 36-hours.

(iii) Sea condition

- Sea condition will be rough to very rough over north Andaman Sea and Adjoining areas southeast and eastcentral Bay of Bengal during next 36-hours.

(v) Fishermen Warning

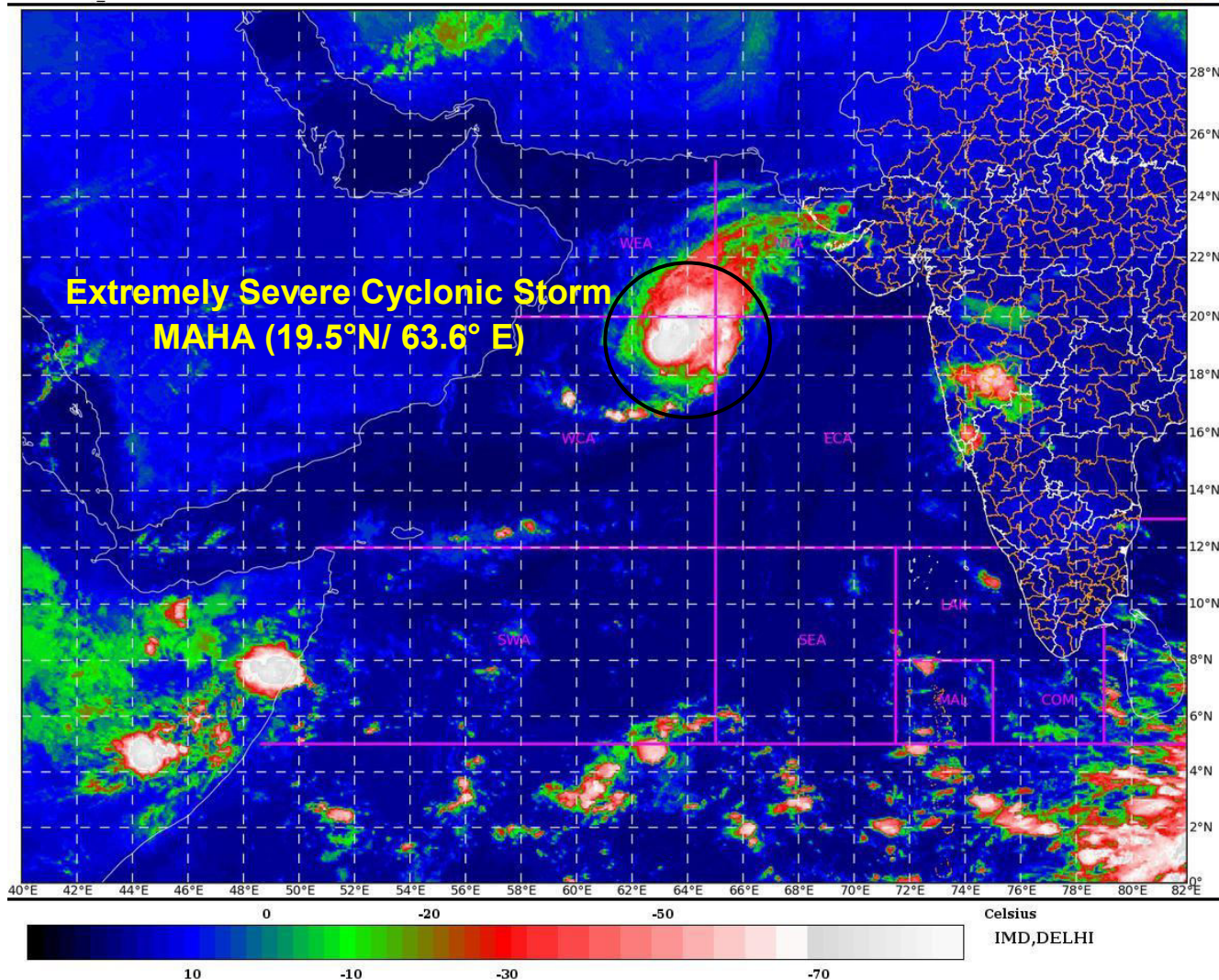
- Total suspension of fishing operations over north Andaman Sea during next 36 hours and over Adjoining areas southeast and eastcentral Bay of Bengal till 6th November.
- The fishermen are advised not to venture into north Andaman Sea and Adjoining areas southeast and eastcentral Bay of Bengal during next 36-hours
- The fishermen out at Sea are advised to return to the coast from these areas.

The next bulletin will be issued at 0830 hrs IST of 05th November, 2019.

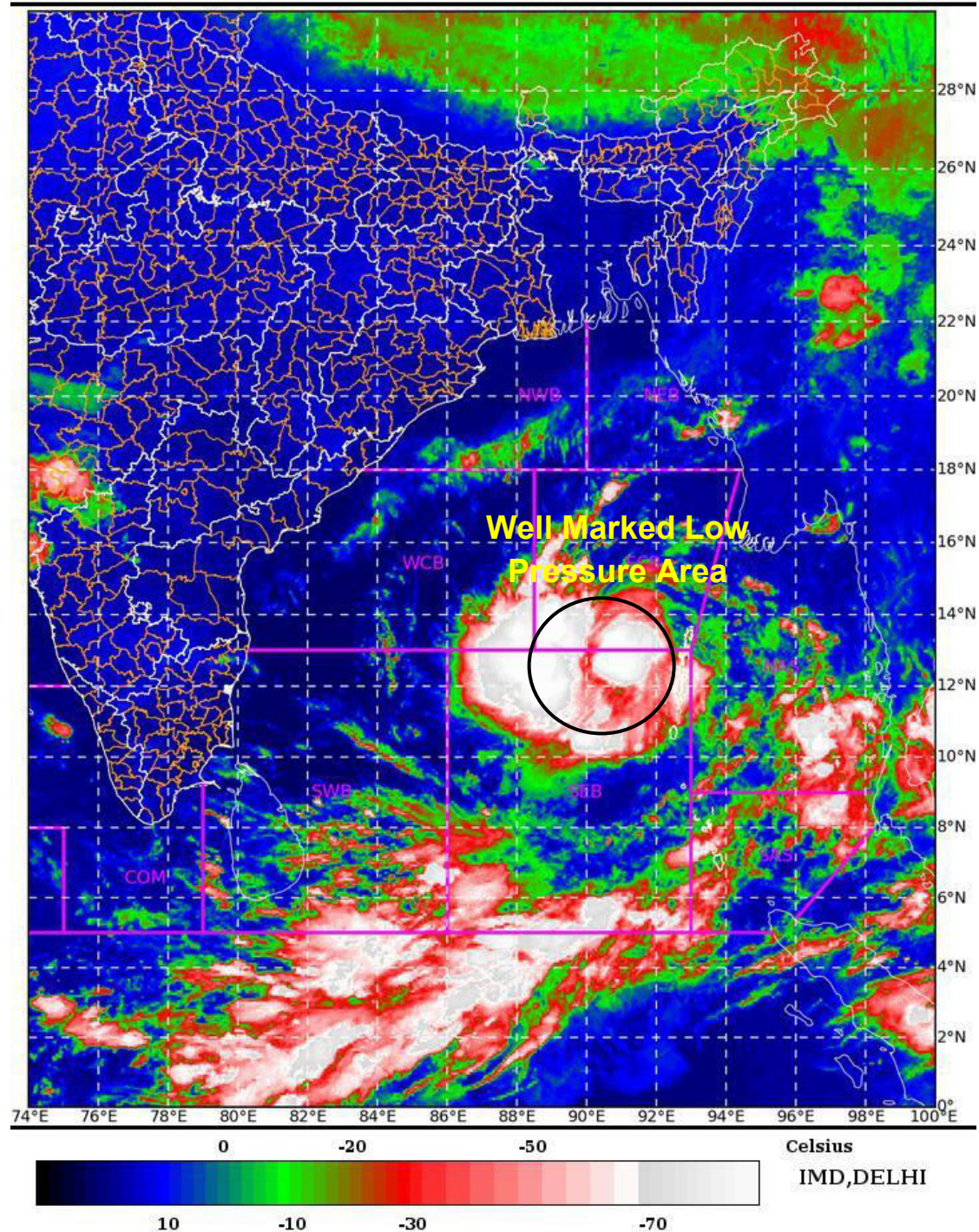
(Ananda Kumar Das)
Scientist-E, RSMC, New Delhi

SAT : INSAT-3D IMG
 IMG_TIR1_TEMP 10.8 um
 ARABIAN_SEA

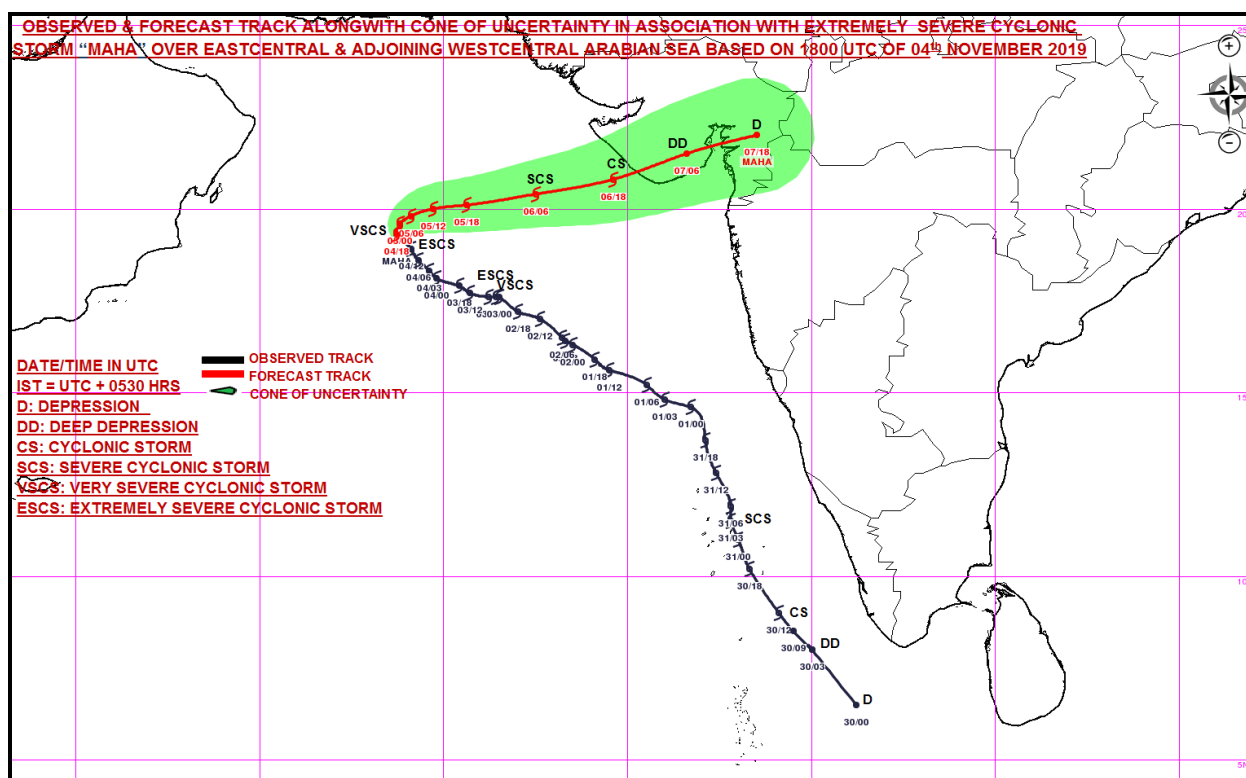
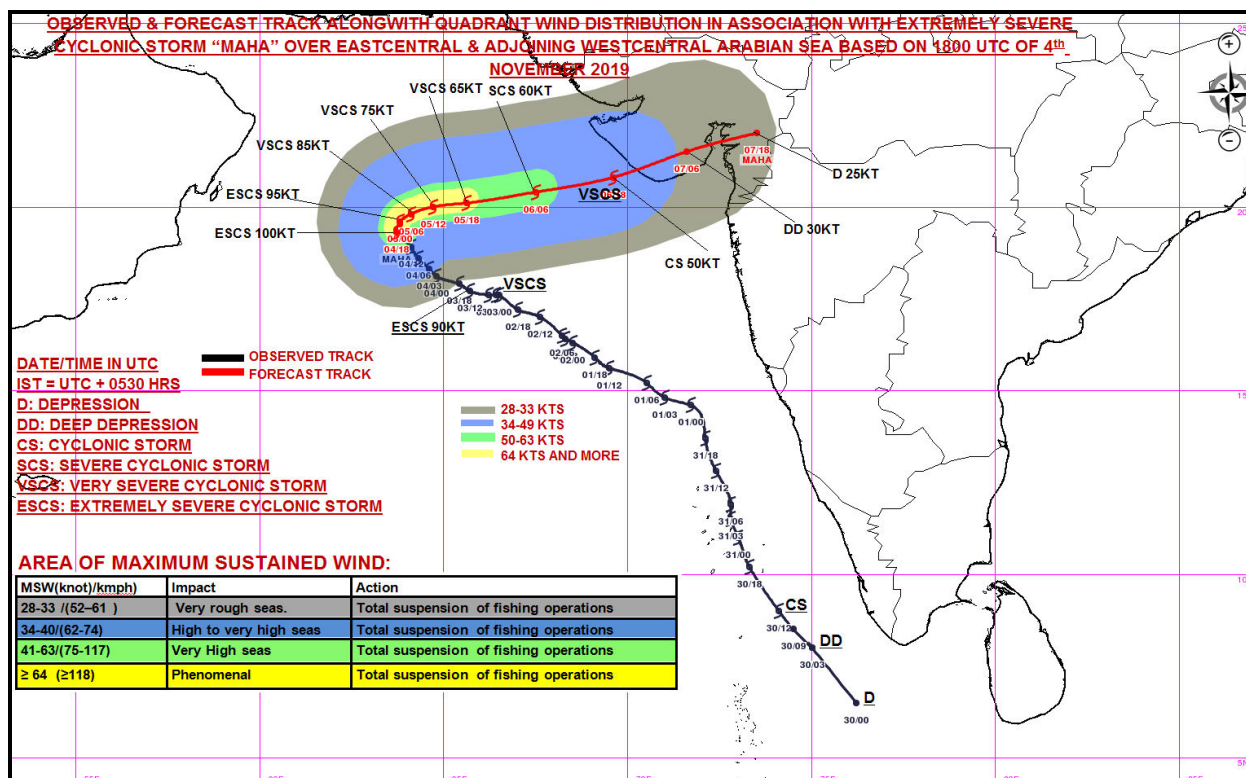
04-11-2019/(2330 to 2356) GMT
 05-11-2019/(0500 to 0526) IST



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 48 (ARB/04/2019) & BULLETIN NO. : 01 (BOB/04/2019)

TIME OF ISSUE: 0930 HOURS IST

DATED: 05.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)
TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
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CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)
CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub: (A) Extremely Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over westcentral and adjoining eastcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE
(B) Depression over Southeast & adjoining eastcentral Bay of Bengal and North Andaman Sea.

(A) Extremely Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over westcentral and adjoining eastcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE

The **Extremely severe cyclonic storm MAHA (Pronounced as M'maha)** over westcentral & adjoining eastcentral Arabian Sea moved north-northwestwards with a speed of 06 kmph during past 06 hours, and lay centered at 0530 hrs IST of 05th November, 2019 over westcentral and adjoining eastcentral Arabian Sea near latitude 19.6°N and longitude 63.6°E, about 670 km west-southwest of Porbandar (Gujarat), 720 km west-southwest of Veraval (Gujarat) and 770 km west-southwest of Diu. It is very likely to maintain intensity and move slowly northwards during next 03 hours. Thereafter, it is very likely to move rapidly east-northeastwards with gradual weakening. It is very likely to cross Gujarat coast between Diu and Porbandar as a Cyclonic Storm with a maximum sustained wind speed of 70-80 Kmph gusting to 90 Kmph by early hours of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
05.11.19/0530	19.6/63.6	165-175 gusting to 195	Extremely Severe Cyclonic Storm
05.11.19/1130	19.9/64.0	145-155 gusting to 170	Very Severe Cyclonic Storm
05.11.19/1730	20.0/64.7	125-135 gusting to 150	Very Severe Cyclonic Storm
05.11.19/2330	20.1/65.6	105-115 gusting to 125	Severe Cyclonic Storm
06.11.19/0530	20.2/66.5	95-105 gusting to 115	Severe Cyclonic Storm
06.11.19/1730	20.5/68.5	80-90 gusting to 100	Cyclonic Storm
07.11.19/0530	21.0/70.6	60-70 gusting to 80	Cyclonic Storm
07.11.19/1730	21.6/72.6	40-50 gusting to 60	Depression
08.11.19/0530	22.0/74.1	30-40 gusting to 50	Well Marked Low Pressure Area

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot**) during 6th & isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Vadodara** on 7th November, 2019.
- **Maharashtra:** Light to moderate rainfall at most places with isolated heavy falls very likely over Madhya Maharashtra and north Konkan (Palghar & Thane districts) on 6th & northern most districts of Madhya Maharashtra on 7th November, 2019.

(ii) Wind warning

- **Gujarat, Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 70-80 Kmph gusting to 90 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli** districts and 60-70 kmph gusting to 80 kmph over **Bhavnagar, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot** districts, 50-60 kmph gusting to 70 kmph over Surat, Navsari, Valsad, Daman and Dadra & Nagar Haveli from 6th November evening for next 12 hours. It will decrease thereafter.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning, it is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening along & off Palghar & Thane districts for next 12 hours.
- **Arabian Sea:** Gale wind speed reaching 175-185 kmph gusting to 205 kmph is prevailing over westcentral & adjoining eastcentral Arabian Sea around the system centre. It is very likely to persist for next 06 hours and decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high from 6th evening.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast on 06th November.
- **Arabian Sea:** Sea condition will be phenomenal over westcentral and adjoining eastcentral and northwest Arabian Sea till 05th November and will be very high on 6th November. Sea condition will be high over westcentral Arabian Sea from 5th November evening and improve thereafter. It will be very high to high over north Arabian Sea during 5th and 6th November.

(iv) Storm surge

- Storm surge of 1 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar** District and 0.5 – 1.0 meter above Astronomical tide is likely to inundate low lying areas of **Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand, Ahmedabad, Porbandar** Districts around the time of landfall.

(v) Fishermen Warning

- Total suspension of fishing operations till 6th November.
- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November and over eastcentral & adjoining northeast Arabian Sea till 06th November.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th to 7th November evening.
- The fishermen out at Sea are advised to return to the coast.

(vi) Damage Expected over coastal districts of Gujarat (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot**) and Daman, Diu, Dadra & Nagar Haveli:

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- Damage to thatched houses/ huts. Thatched roof tops may blow off. Unattached metal sheets may fly.
- Damage to embankments/ salt pans.
- Partial damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Dead limbs blown from trees.
- Major damage to coastal crops.

(vii) Action Suggested for Gujarat coast (Junagadh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot) and Daman, Diu, Dadra & Nagar Haveli:

- Total suspension of fishing operations till 6th November.
- Coastal hutment dwellers to be moved to safer places. People in affected areas to remain indoors.
- Movement in motor boats unsafe.

(B) Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea.

The Well Marked Low Pressure Area over north Andaman Sea moved west-northwestwards , concentrated into a Depression and lay centred at 0530 hrs IST of today, the 5th November 2019, over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea, near Lat.13.1°N and Long. 91.5°E, about 150 km west-northwest of Maya Bandar (Andaman Islands), about 950 km south-southeast of Paradip (Odisha), 1020 km south-southeast of Sagar islands (West Bengal) and 1000 km south-southwest of Khepupara (Bangla Desh) . it is very likely to intensify into a Deep Depression during next 12 hours and into a Cyclonic Storm during the subsequent 24 hours. It is very likely to move west-northwestwards initially and then north-northwestwards, towards Odisha – west Bengal coasts.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
05.11.19/0530	13.1/91.5	40-50 gusting to 60	Depression
05.11.19/1730	13.2/91.2	50-60 gusting to 70	Deep Depression
06.11.19/0530	13.5/91.0	60-70 gusting to 80	Cyclonic Storm
06.11.19/1730	13.6/90.8	70-80 gusting to 90	Cyclonic Storm
07.11.19/0530	14.3/90.6	80-90 gusting to 100	Cyclonic Storm
07.11.19/1730	15.4/90.1	90-100 gusting to 110	Severe Cyclonic Storm
08.11.19/0530	16.1/89.3	105-115 gusting to 125	Severe Cyclonic Storm
08.11.19/1730	16.8/88.6	115-125 gusting to 135	Severe Cyclonic Storm
09.11.19/0530	17.4/88.1	120-130 gusting to 145	Very Severe Cyclonic Storm
09.11.19/1730	18.1/87.7	120-130 gusting to 145	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- **Andaman and Nicobar Islands:** Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over **Andaman and Nicobar Islands** during 5th and 6th Nov, 2019.
- **Odisha:** Light to moderate rainfall at most places very likely to commence over **coastal districts of Odisha** from 9th Nov. 2019.
- **West Bengal:** Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely to commence over **coastal districts of West Bengal** from 9th Nov. 2019.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(ii) Wind warning

- **Andaman and Nicobar Islands:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph is prevailing over Andaman Islands, north Andaman Sea and Adjoining areas southeast & eastcentral Bay of Bengal. It is likely to increase becoming 60 – 70 km ph gusting to 80 kmph by 6th November morning and decrease gradually thereafter.
- **Bay of Bengal:** Squally wind speed reaching 50-60 kmph gusting to 70 kmph very likely to over east central Bay of Bengal around the system centre for next 12 hours and will become gale wind speed reaching 80-90 kmph gusting to 100 kmph by 7th November morning. It will gradually increase further over central parts of Bay of Bengal, becoming 120-130 kmph gusting to 145 kmph by 8th November evening.
- **Odisha & west Bengal coasts:** Squally wind speed reaching 40 – 50 kmph gusting to 60 kmph likely to commence over northwest Bay of Bengal off Odisha – West Bengal coasts from 8th November evening and gradually increase thereafter.

(iii) Sea condition

- Sea condition will be rough to very rough over north Andaman Sea and Adjoining areas southeast and eastcentral Bay of Bengal during next 36-hours.
- Sea condition will be very rough to High over eastcentral Bay of Bengal till 7th November morning and become very high to phenomenal during 7th November evening to 8th November evening.
- Sea condition will be very High to Phenomenal over eastcentral & adjoining westcentral Bay of Bengal on 8th November and over westcentral and adjoining northwest bay of Bengal and along and off Odisha – west Bengal coasts from 8th November evening. Then rough to very rough over north Bay of Bengal during 8th to 9th November morning and very High to Phenomenal on 10th November morning.

(v) Fishermen Warning

- Total suspension of fishing operations over north Andaman Sea during next 36 hours and over Adjoining areas southeast and eastcentral Bay of Bengal till 6th November.
- The fishermen are advised not to venture into eastcentral Bay of Bengal during 6th – 7th November, over east central and adjoining westcentral bay of Bengal on 7th & 9th November and over north Bay of Bengal along & off Odisha – west Bengal coasts from 8th November onwards.
- The fishermen out at Sea are advised to return to the coast from these areas.

The next bulletin will be issued at 1130 hrs IST of 05th November, 2019.

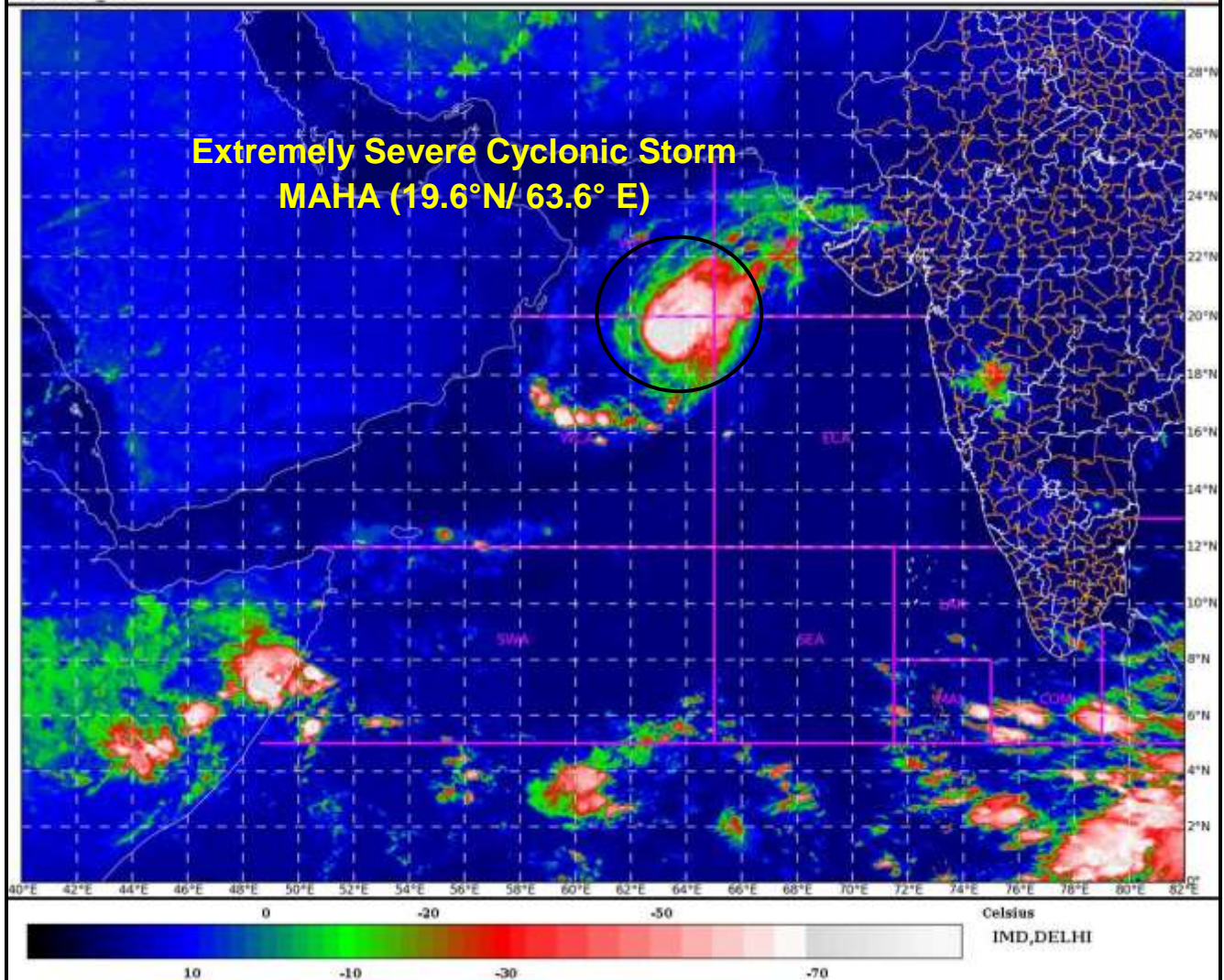
(Ananda Kumar Das)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

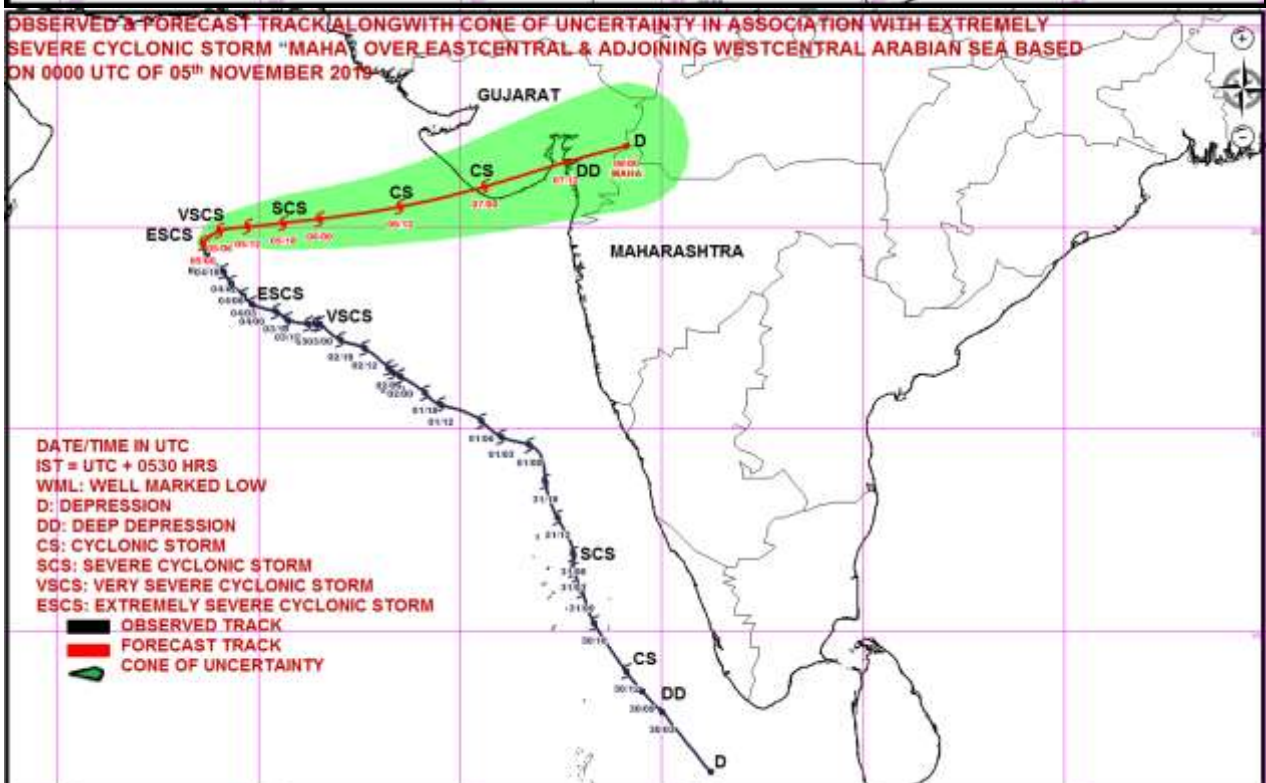
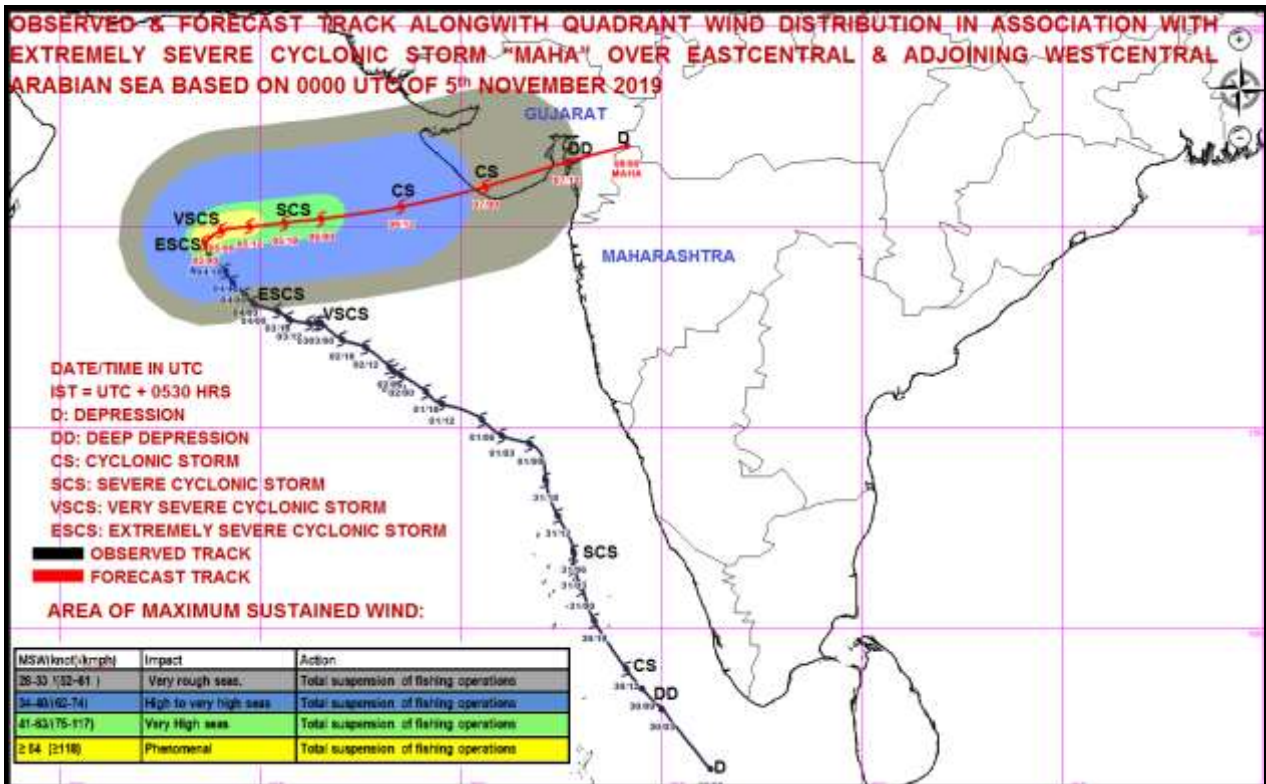
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

SAT : INSAT-3D IMG
IMG_TIR1_TEMP 10.8 um
ARABIAN_SEA

05-11-2019(0300 to 0327) GMT
05-11-2019(0830 to 0857) IST



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

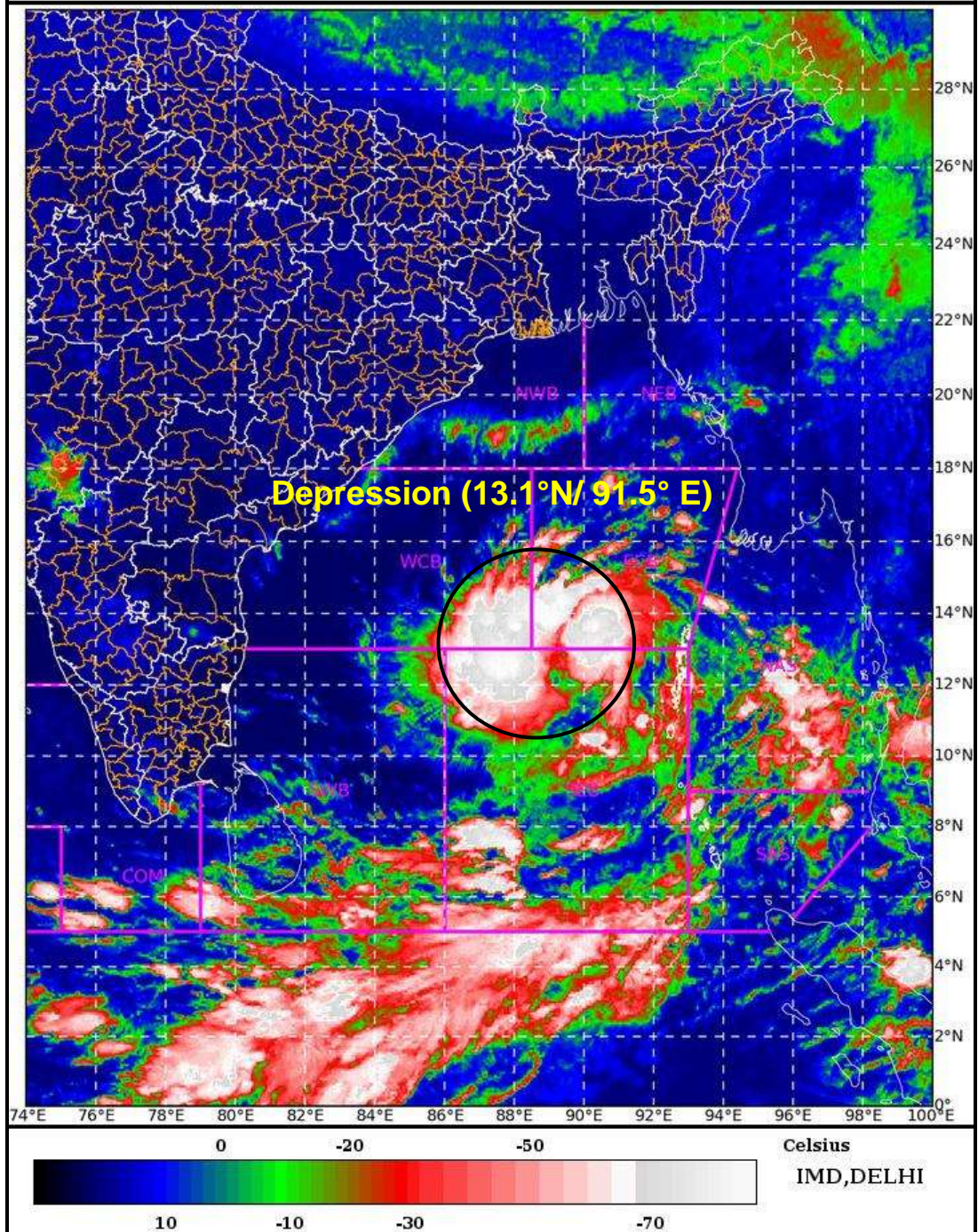
SAT : INSAT-3D IMG

05-11-2019/(0300 to 0327) GMT

IMG_TIR1_TEMP 10.8 um

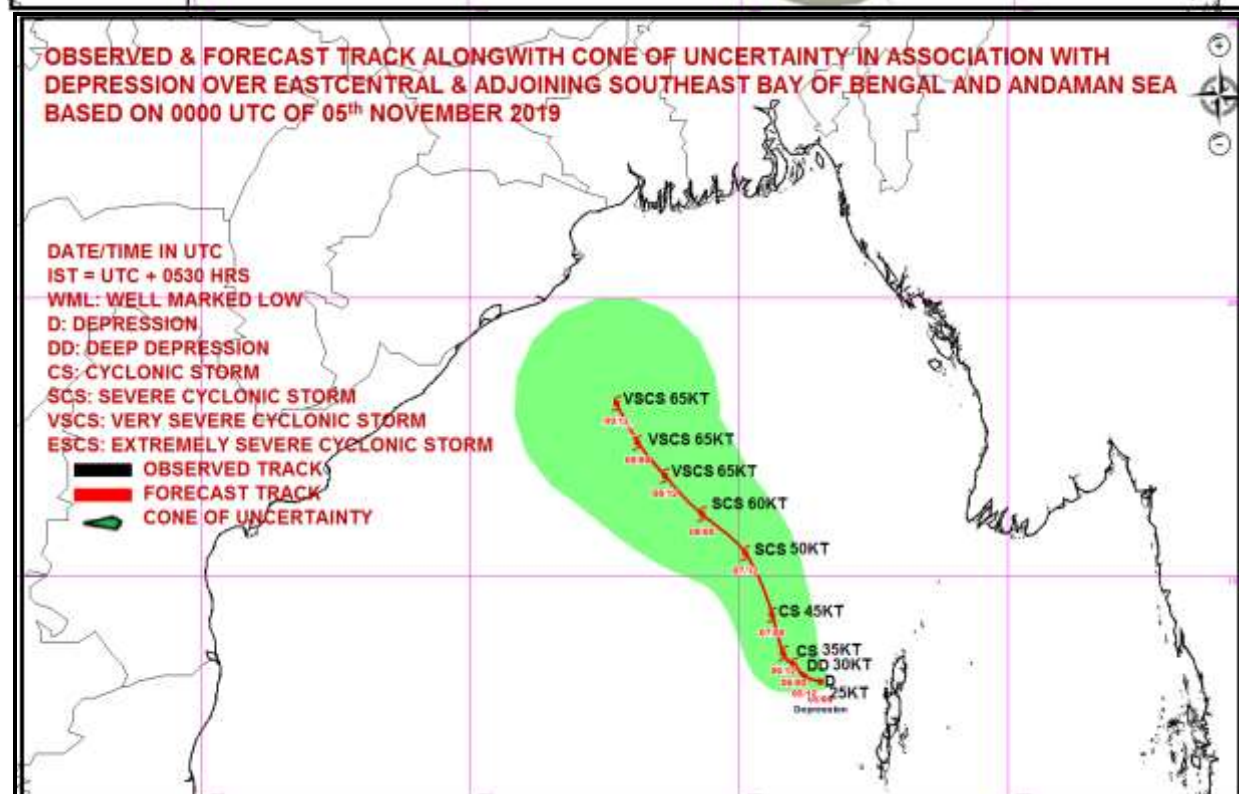
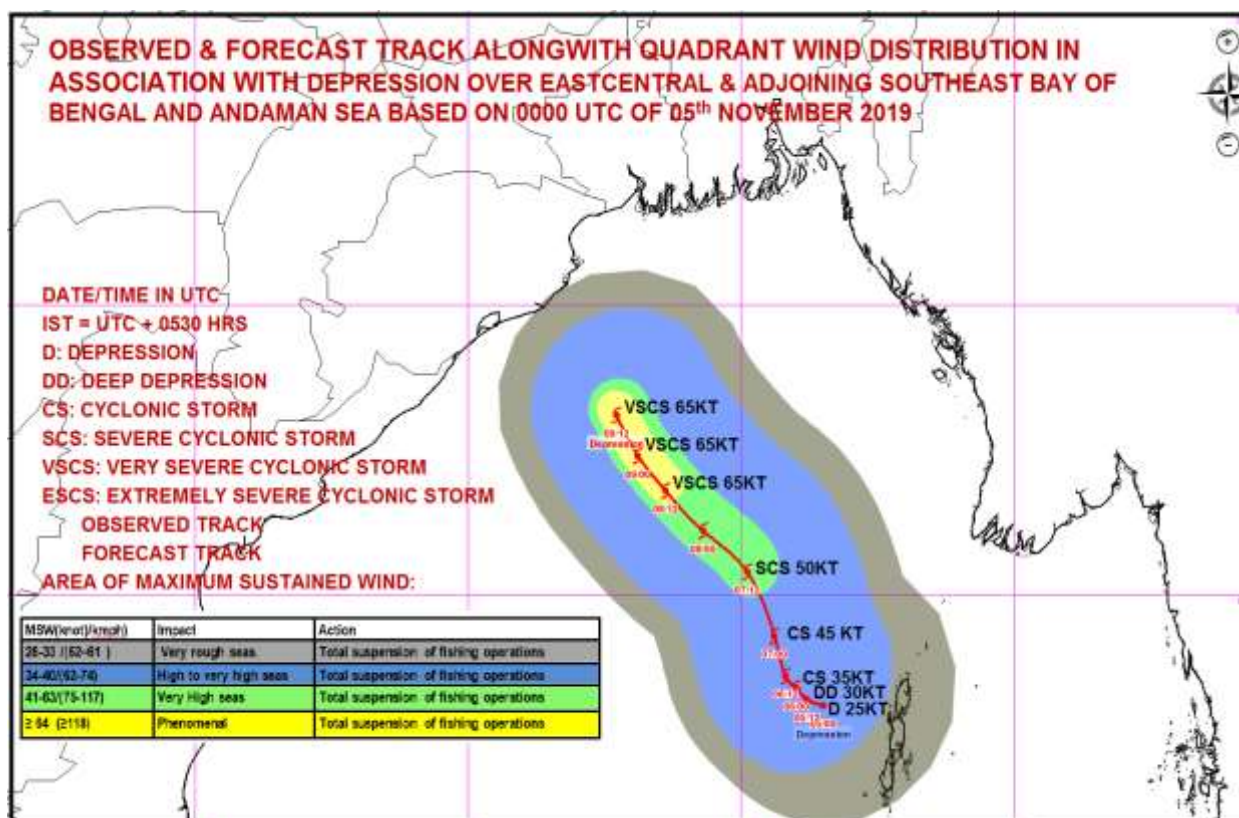
05-11-2019/(0830 to 0857) IST

L1C Mercator



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 49 (ARB/04/2019) & BULLETIN NO. : 02 (BOB/04/2019)

TIME OF ISSUE: 1500 HOURS IST

DATED: 05.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)
TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)
CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)
CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub: (A) Very Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over westcentral and adjoining eastcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE
(B) Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea.

(A) Very Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over westcentral and adjoining eastcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE

The **Extremely severe cyclonic storm MAHA (Pronounced as M'maha)** over westcentral & adjoining eastcentral Arabian Sea moved northwards with a speed of 04 kmph during past 06 hours, weakened into a **Very Severe Cyclonic Storm** and lay centered at 0830 hrs IST of 05th November, 2019 over westcentral and adjoining eastcentral Arabian Sea near latitude 19.7°N and longitude 63.6°E, about 660 km west-southwest of Porbandar (Gujarat), 720 km west-southwest of Veraval (Gujarat) and 770 km west-southwest of Diu. It is very likely to move rapidly east-northeastwards with gradual weakening. It is very likely to cross Gujarat coast between Diu and Porbandar as a Cyclonic Storm with a maximum sustained wind speed of 70-80 Kmph gusting to 90 Kmph by early hours of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
05.11.19/0830	19.7/63.6	155-165 gusting to 180	Very Severe Cyclonic Storm
05.11.19/1130	19.9/64.0	145-155 gusting to 170	Very Severe Cyclonic Storm
05.11.19/1730	20.0/64.7	125-135 gusting to 150	Very Severe Cyclonic Storm
05.11.19/2330	20.1/65.6	105-115 gusting to 125	Severe Cyclonic Storm
06.11.19/0530	20.2/66.5	95-105 gusting to 115	Severe Cyclonic Storm
06.11.19/1730	20.5/68.5	80-90 gusting to 100	Cyclonic Storm
07.11.19/0530	21.0/70.6	60-70 gusting to 80	Cyclonic Storm
07.11.19/1730	21.6/72.6	40-50 gusting to 60	Depression
08.11.19/0530	22.0/74.1	30-40 gusting to 50	Well Marked Low Pressure Area

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot**) on 6th & isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Vadodara** on 7th November, 2019.
- **Maharashtra:** Light to moderate rainfall at most places with isolated heavy falls very likely over Madhya Maharashtra and north Konkan (Palghar & Thane districts) on 6th & northern most districts of Madhya Maharashtra on 7th November, 2019.

(ii) Wind warning

- **Gujarat, Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 70-80 Kmph gusting to 90 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli** districts and 60-70 kmph gusting to 80 kmph over **Bhavnagar, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot** districts, 50-60 kmph gusting to 70 kmph over Surat, Navsari, Valsad, Daman and Dadra & Nagar Haveli from 6th November evening for next 12 hours. It will decrease thereafter.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning, it is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening along & off Palghar & Thane districts for subsequent 12 hours.
- **Arabian Sea:** Gale wind speed reaching 155-165 kmph gusting to 180 kmph is prevailing over westcentral & adjoining eastcentral Arabian Sea around the system centre. It is very likely to decrease gradually and become 60-70 kmph gusting 80 kmph on 6th November morning and further decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high from 6th evening.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast on 06th November.
- **Arabian Sea:** Sea condition will be phenomenal over westcentral and adjoining eastcentral and northwest Arabian Sea till 05th November and will be very high on 6th November. Sea condition will be high over westcentral Arabian Sea from 5th November evening and improve thereafter. It will be very high to high over north Arabian Sea during 5th and 6th November.

(iv) Storm surge

- Storm surge of 1 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar** District and 0.5 – 1.0 meter above Astronomical tide is likely to inundate low lying areas of **Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand, Ahmedabad, Porbandar** Districts around the time of landfall.

(v) Fishermen Warning

- Total suspension of fishing operations till 6th November.
- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November and over eastcentral & adjoining northeast Arabian Sea till 06th November.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th to 7th November evening.
- The fishermen out at Sea are advised to return to the coast.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(vi) Damage Expected over coastal districts of Gujarat (Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot) and Daman, Diu, Dadra & Nagar Haveli:

- Damage to thatched houses/ huts. Thatched roof tops may blow off. Unattached metal sheets may fly.
- Damage to embankments/ salt pans.
- Partial damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Dead limbs blown from trees.
- Major damage to coastal crops.

(vii) Action Suggested for Gujarat coast (Junagadh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot) and Daman, Diu, Dadra & Nagar Haveli:

- Total suspension of fishing operations till 6th November.
- Coastal hutment dwellers to be moved to safer places. People in affected areas to remain indoors.
- Movement in motor boats unsafe.

BULLETIN NO. : 02 (BOB/04/2019)

(B) Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea.

The Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea moved westwards with a speed of 14kmph and lay centred at 1130 hrs IST of today, the 5th November 2019, over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea, near Lat.13.1°N and Long. 90.7°E, about 200 km west-northwest of Maya Bandar (Andaman Islands), about 920 km south-southeast of Paradip (Odisha), 1000 km south-southeast of Sagar islands (West Bengal) and 990 km south-southwest of Khepupara (Bangla Desh) . It is very likely to intensify into a Deep Depression during next 12 hours and into a Cyclonic Storm during the subsequent 24 hours. It is very likely to move west-northwestwards initially and then north-northwestwards, towards West Bengal& adjoining north Odisha and Bangladesh coasts.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
05.11.19/0830	13.1/91.0	40-50 gusting to 60	Depression
05.11.19/1730	13.2/90.7	50-60 gusting to 70	Deep Depression
06.11.19/0530	13.4/90.5	60-70 gusting to 80	Cyclonic Storm
06.11.19/1730	13.6/90.4	70-80 gusting to 90	Cyclonic Storm
07.11.19/0530	14.3/90.2	80-90 gusting to 100	Cyclonic Storm
07.11.19/1730	15.4/90.0	90-100 gusting to 110	Severe Cyclonic Storm
08.11.19/0530	16.1/89.3	105-115 gusting to 125	Severe Cyclonic Storm
08.11.19/1730	16.8/88.6	120-130 gusting to 145	Very Severe Cyclonic Storm
09.11.19/0530	17.4/88.1	120-130 gusting to 145	Very Severe Cyclonic Storm
09.11.19/1730	18.1/87.9	120-130 gusting to 145	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- **Andaman and Nicobar Islands:** Light to moderate rainfall at most places with heavy falls at isolated places very likely over **Andaman and Nicobar Islands** during 5th and 6th Nov, 2019.
- **Odisha:** Light to moderate rainfall at most places very likely to commence over **coastal districts of Odisha** from 9th Nov. 2019.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- **West Bengal:** Light to moderate rainfall at most places with heavy falls at isolated places very likely to commence over **coastal districts of West Bengal** from 9th Nov. 2019.

(ii) Wind warning

- **Andaman and Nicobar Islands:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph is prevailing over Andaman Islands, north Andaman Sea and Adjoining areas southeast & eastcentral Bay of Bengal. It is likely to increase becoming 60–70 kmph gusting to 80 kmph by 6th November morning and decrease gradually thereafter.
- **Bay of Bengal:** Squally wind speed reaching 50-60 kmph gusting to 70 kmph very likely to over east central Bay of Bengal around the system centre for next 12 hours and will become gale wind speed reaching 80-90 kmph gusting to 100 kmph by 7th November morning. It will gradually increase further over central parts of Bay of Bengal, becoming 120-130 kmph gusting to 145 kmph by 8th November evening.
- **Odisha & west Bengal coasts:** Squally wind speed reaching 40 – 50 kmph gusting to 60 kmph likely to commence over northwest Bay of Bengal off Odisha – West Bengal coasts from 8th November evening and gradually increase thereafter.

(iii) Sea condition

- Sea condition will be rough to very rough over north Andaman Sea and Adjoining areas southeast and eastcentral Bay of Bengal during next 36-hours.
- Sea condition will be very rough to High over eastcentral Bay of Bengal till 7th November morning and become very high to phenomenal during 7th November evening to 8th November evening.
- Sea condition will be very High to Phenomenal over eastcentral & adjoining westcentral Bay of Bengal on 8th November and over westcentral and adjoining northwest Bay of Bengal and along and off Odisha – west Bengal coasts from 8th November evening. Then rough to very rough over north Bay of Bengal during 8th to 9th November morning and very High to Phenomenal on 10th November morning.

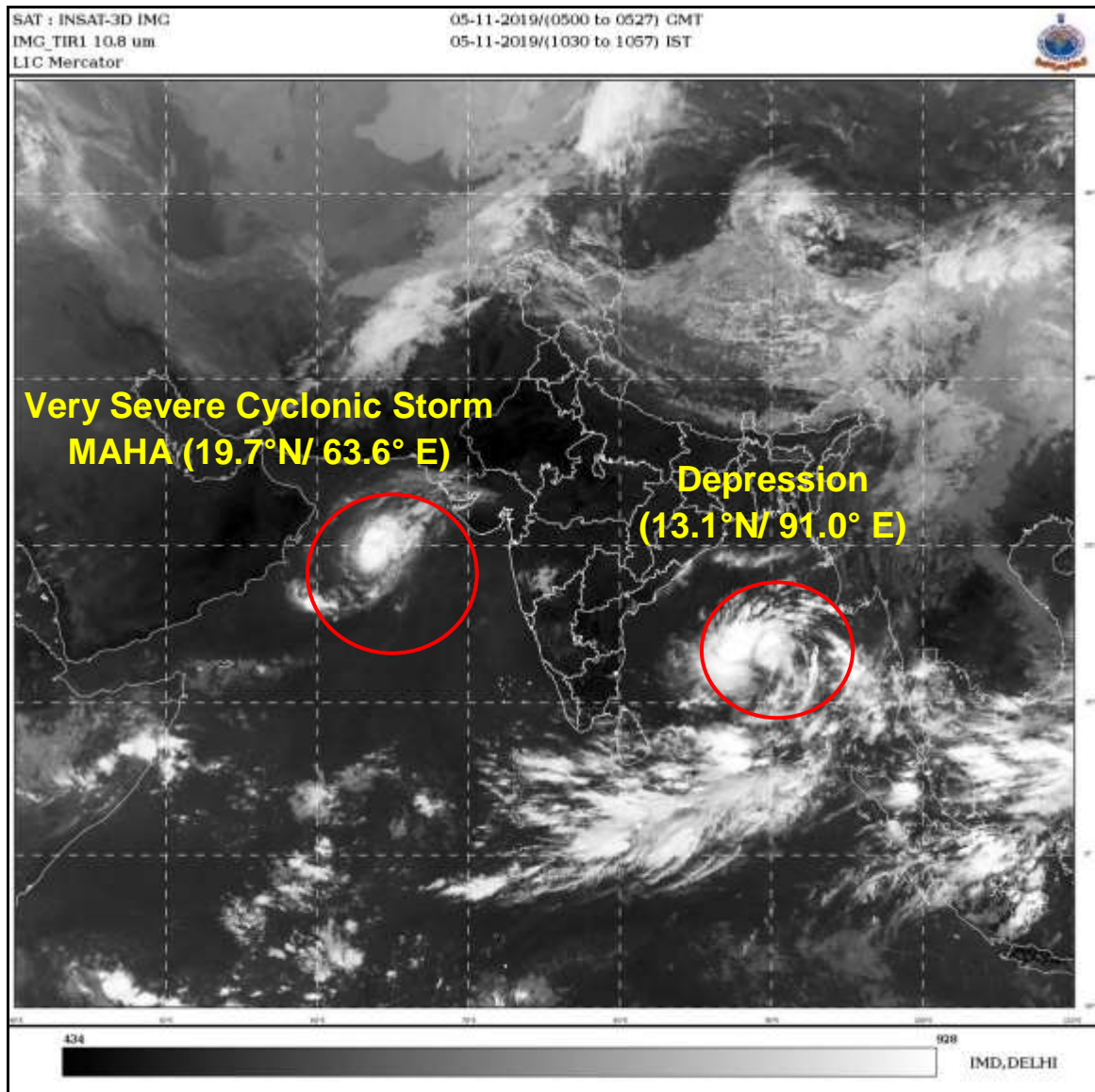
(v) Fishermen Warning

- Total suspension of fishing operations over north Andaman Sea during next 36 hours and over Adjoining areas southeast and eastcentral Bay of Bengal till 6th November.
- The fishermen are advised not to venture into eastcentral Bay of Bengal during 6th – 7th November, over east central and adjoining westcentral bay of Bengal on 7th & 9th November and over north Bay of Bengal along & off Odisha – west Bengal coasts from 8th November onwards.
- The fishermen out at Sea are advised to return to the coast from these areas.

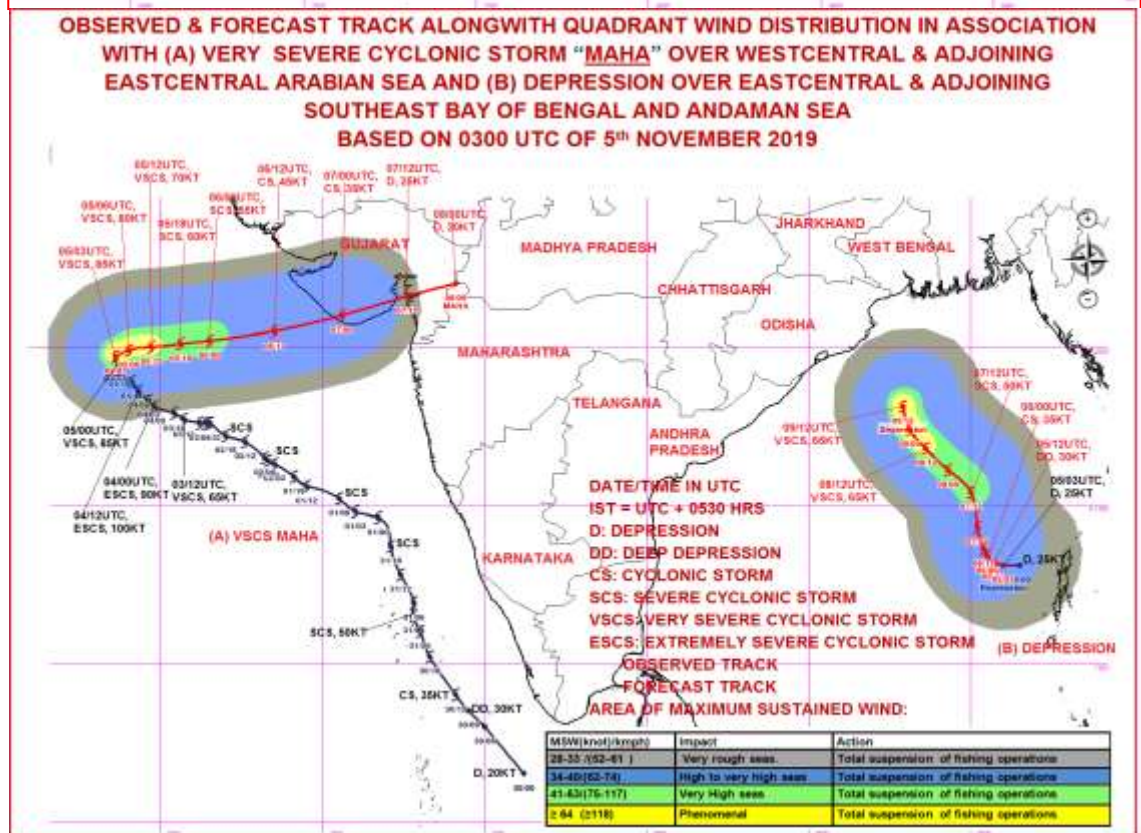
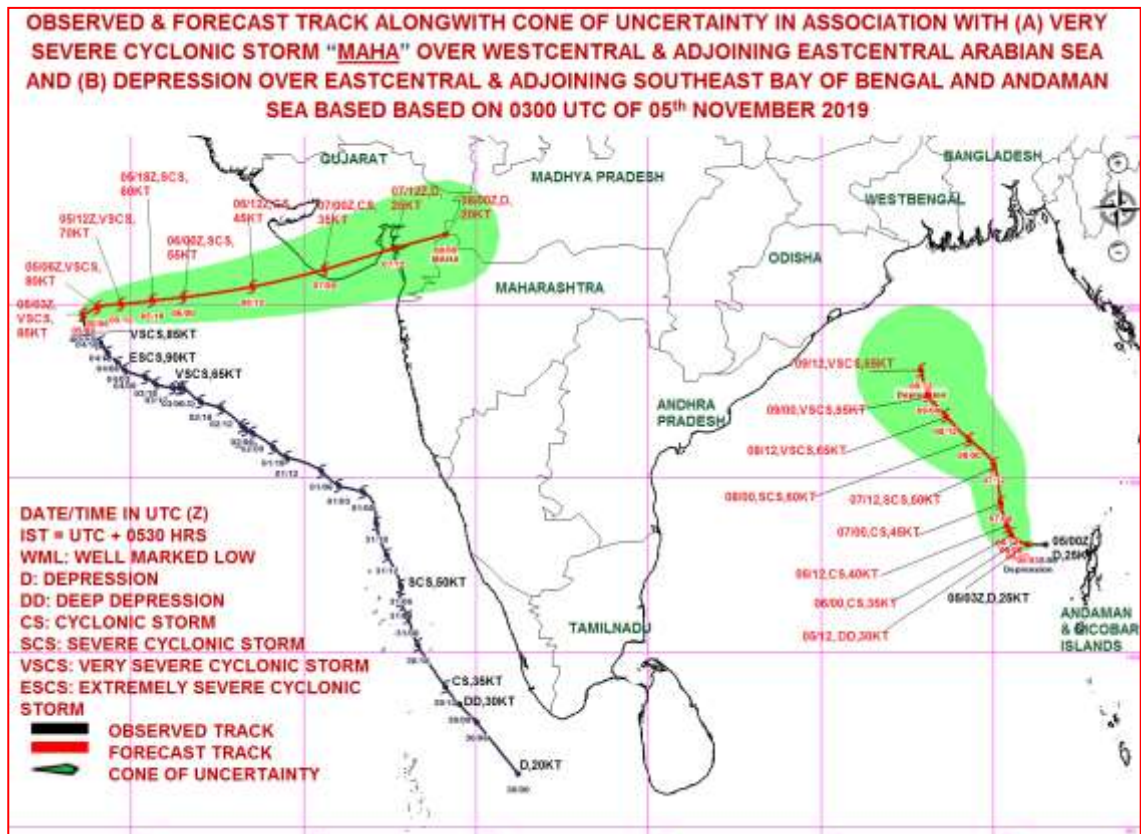
The next bulletin will be issued at 1430 hrs IST of 05th November, 2019.

(Sunitha Devi S)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ ACWC Kolkata/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram/ CWC Visakhapatnam/ CWC Bhubaneswar/ M.O. Port Blair.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 50 (ARB/04/2019) & BULLETIN NO. : 03 (BOB/04/2019)

TIME OF ISSUE: 1500 HOURS IST

DATED: 05.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)
TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)
CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)
CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub: (A) Very Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over westcentral and adjoining eastcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE
(B) Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea.

BULLETIN NO. : 50 (ARB/04/2019)

(A) Very Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over westcentral and adjoining eastcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE

The **Very severe cyclonic storm MAHA (Pronounced as M'maha)** over westcentral & adjoining eastcentral Arabian Sea moved north-northeastwards with a speed of 04 kmph during past 06 hours and lay centered at 1130 hrs IST of 05th November, 2019 over westcentral and adjoining eastcentral Arabian Sea near latitude 19.8°N and longitude 63.7°E, about 650 km west-southwest of Porbandar (Gujarat), 700 km west-southwest of Veraval (Gujarat) and 760 km west-southwest of Diu. It is very likely to move east-northeastwards with rapid weakening. It is very likely to cross Gujarat coast around Diu as a Cyclonic Storm with a maximum sustained wind speed of 70-80 Kmph gusting to 90 Kmph around morning hours of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
05.11.19/1130	19.8/63.7	145-155 gusting to 170	Very Severe Cyclonic Storm
05.11.19/1730	19.9/64.3	125-135 gusting to 150	Very Severe Cyclonic Storm
05.11.19/2330	19.9/65.2	105-115 gusting to 125	Severe Cyclonic Storm
06.11.19/0530	19.9/66.1	95-105 gusting to 115	Severe Cyclonic Storm
06.11.19/1130	19.9/67.25	80-90 gusting to 100	Cyclonic Storm
06.11.19/2330	20.2/69.3	70-80 gusting to 90	Cyclonic Storm
07.11.19/1130	20.9/71.06	60-70 gusting to 80	Cyclonic Storm
07.11.19/2330	21.4/72.1	50-60 gusting to 70	Deep Depression
08.11.19/1130	21.9/73.2	35-45 gusting to 55	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot**) on 6th & isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Vadodara** on 7th November, 2019.
- **Maharashtra:** Light to moderate rainfall at most places with isolated heavy falls very likely over Madhya Maharashtra and north Konkan (Palghar & Thane districts) on 6th & northern most districts of Madhya Maharashtra on 7th November, 2019.

(ii) Wind warning

- **Gujarat, Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 70-80 Kmph gusting to 90 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli** districts and 60-70 kmph gusting to 80 kmph over **Bhavnagar, Bharuch, Anand, Ahmedabad, Botad, Porbandar**, districts, 50-60 kmph gusting to 70 kmph over Rajkot, Surat, Navsari, Valsad, Daman and Dadra & Nagar Haveli from 6th November evening to 7th forenoon and decrease thereafter.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning. It is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening to 7th November forenoon along & off Palghar & Thane districts.
- **Arabian Sea:** Gale wind speed reaching 145-155 kmph gusting to 170 kmph is prevailing over westcentral & adjoining eastcentral and northeast Arabian Sea around the system centre. It is very likely to decrease gradually and become 70-80 kmph gusting 90 kmph on 7th November morning over northeast and eastcentral Arabian Sea and further decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high from 6th evening till 7th forenoon.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast from 06th November morning to 7th forenoon.
- **Arabian Sea:** Sea condition will be phenomenal over westcentral and adjoining eastcentral and northwest Arabian Sea till 05th November and will be very high on 6th November over eastcentral and adjoining northeast Arabian Sea. It will be very high to high over northeast adjoining eastcentral Arabian Sea from 5th to 7th November morning.

(iv) Storm surge

- Storm surge of about 0.5 – 1.0 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar, Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand and Ahmedabad** Districts around the time of landfall.

(v) Fishermen Warning

- Total suspension of fishing operations till 7th November forenoon.
- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November night and over eastcentral & adjoining northeast Arabian Sea till 07th November forenoon.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th to 7th November evening.
- The fishermen out at Sea are advised to return to the coast.

(vi) Damage Expected over coastal districts of Gujarat (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar**) and Daman, Diu:

- Damage to thatched houses/ huts.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- Sea Water inundation over low laying areas after erosion of broken embankments
- Partial damage to power and communication lines due to breaking of tree branches.
- Major damage to Kutcha and some damage to Pucca roads.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees.
- Damage to coastal crops.

(vii) Action Suggested for Gujarat coast (Junagadh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar) and Daman, Diu:

- Total suspension of fishing operations till 6th November.
- Movement in motor boats unsafe.

BULLETIN NO. : 03 (BOB/04/2019)

(B) Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea.

The Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea moved westwards with a speed of 14kmph and lay centred at 1130 hrs IST of today, the 5th November 2019, over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea, near Lat.13.1°N and Long. 90.7°E, about 240 km west-northwest of Maya Bandar (Andaman Islands), about 900 km south-southeast of Paradip (Odisha), 990 km south-southeast of Sagar islands (West Bengal) and 980 km south-southwest of Khepupara (Bangla Desh) . It is very likely to intensify into a Deep Depression during next 12 hours and into a Cyclonic Storm during the subsequent 24 hours. It is very likely to move west-northwestwards initially and then north-northwestwards, towards West Bengal & adjoining north Odisha and Bangladesh coasts.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
05.11.19/1130	13.1/90.7	50-60 gusting to 70	Depression
05.11.19/2330	13.2/90.4	60-70 gusting to 80	Deep Depression
06.11.19/1130	13.3/90.1	65-75 gusting to 85	Cyclonic Storm
06.11.19/2330	13.8/90.1	75-85 gusting to 95	Cyclonic Storm
07.11.19/1130	14.8/89.9	90-100 gusting to 110	Severe Cyclonic Storm
07.11.19/2330	15.9/89.2	110-120 gusting to 135	Severe Cyclonic Storm
08.11.19/1130	17.2/88.8	120-130 gusting to 145	Very Severe Cyclonic Storm
08.11.19/2330	18.3/88.5	130-140 gusting to 155	Very Severe Cyclonic Storm
09.11.19/1130	19.0/88.4	140-150 gusting to 165	Very Severe Cyclonic Storm
09.11.19/2330	19.6/88.5	130-140 gusting to 155	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- **Andaman and Nicobar Islands:** Light to moderate rainfall at most places with heavy falls at isolated places very likely over **Andaman and Nicobar Islands** during 5th and 6th Nov, 2019.
- **Odisha:** Light to moderate rainfall at most places very likely to commence over **coastal districts of Odisha** from 9th Nov. 2019.
- **West Bengal:** Light to moderate rainfall at most places with heavy falls at isolated places very likely to commence over **coastal districts of West Bengal** from 9th Nov. 2019.

(ii) Wind warning

- **Andaman and Nicobar Islands:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph is prevailing over Andaman Islands, north Andaman Sea and Adjoining areas southeast & eastcentral Bay of Bengal. It is likely to increase becoming 60–70 kmph gusting to 80 kmph by 6th November morning and decrease gradually thereafter.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- **Bay of Bengal:** Squally wind speed reaching 50-60 kmph gusting to 70 kmph very likely to over east central Bay of Bengal around the system centre for next 12 hours and will become gale wind speed reaching 80-90 kmph gusting to 100 kmph by 7th November morning. It will gradually increase further over central parts of Bay of Bengal, becoming 120-130 kmph gusting to 145 kmph by 8th November evening.
- **Odisha & west Bengal coasts:** Squally wind speed reaching 40 – 50 kmph gusting to 60 kmph likely to commence over northwest Bay of Bengal off Odisha – West Bengal coasts from 8th November evening and gradually increase thereafter.

(iii) Sea condition

- Sea condition will be rough to very rough over north Andaman Sea and Adjoining areas southeast and eastcentral Bay of Bengal during next 36-hours.
- Sea condition will be very rough to High over eastcentral Bay of Bengal till 7th November morning and become very high to phenomenal during 7th November evening to 8th November evening.
- Sea condition will be very High to Phenomenal over eastcentral & adjoining westcentral Bay of Bengal on 8th November and over westcentral and adjoining northwest Bay of Bengal and along and off Odisha – west Bengal coasts from 8th November evening. Then rough to very rough over north Bay of Bengal during 8th to 9th November morning and very High to Phenomenal on 10th November morning.

(v) Fishermen Warning

- Total suspension of fishing operations over north Andaman Sea during next 36 hours and over Adjoining areas southeast and eastcentral Bay of Bengal till 6th November.
- The fishermen are advised not to venture into eastcentral Bay of Bengal during 6th – 7th November, over east central and adjoining westcentral Bay of Bengal on 7th & 9th November and over north Bay of Bengal along & off Odisha – west Bengal coasts from 8th November onwards.
- The fishermen out at Sea are advised to return to the coast from these areas.

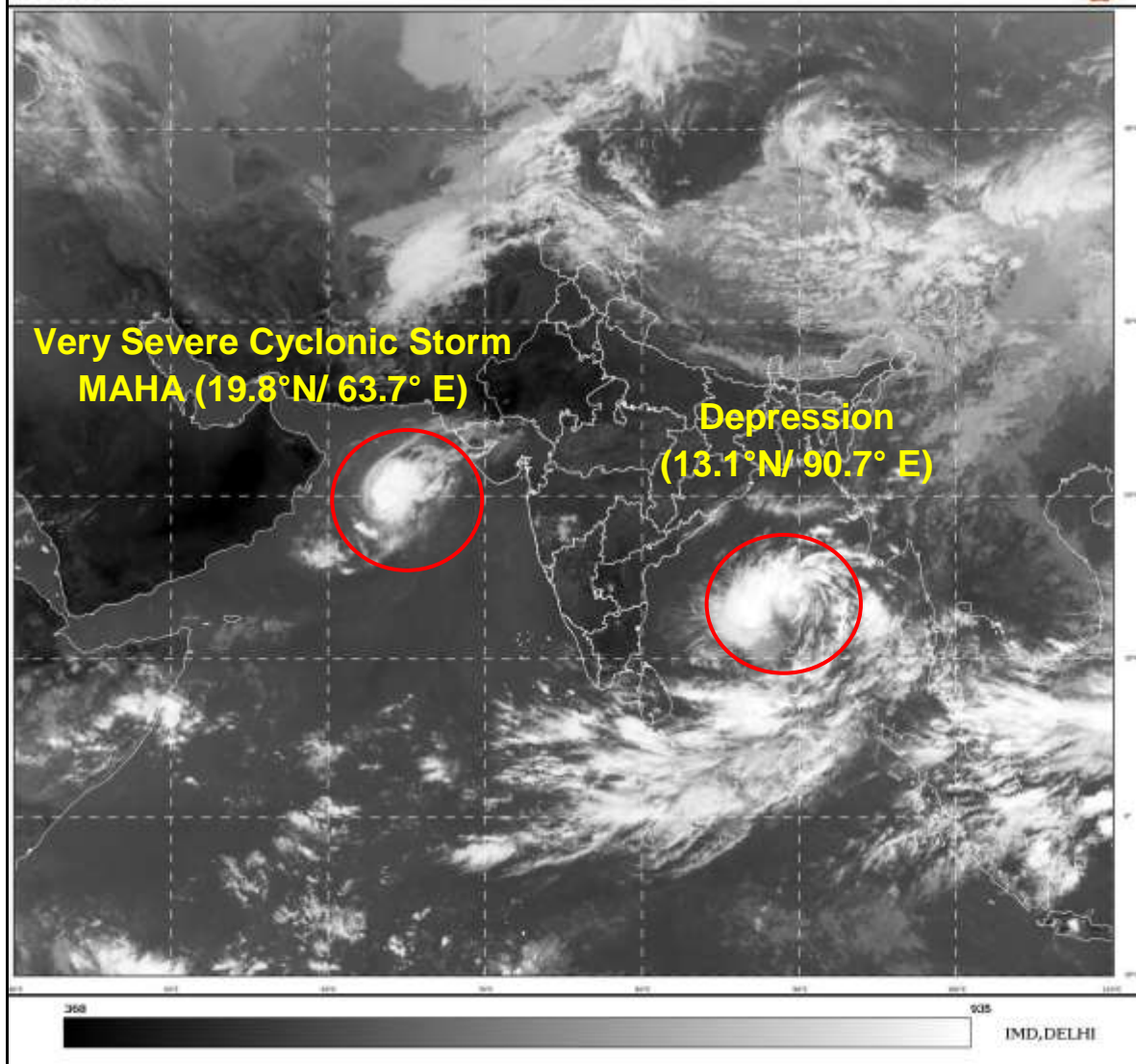
The next bulletin will be issued at 1730 hrs IST of 05th November, 2019.

(RK JENAMANI)
Scientist-F, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ ACWC Kolkata/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram/ CWC Visakhapatnam/ CWC Bhubaneswar/ M.O. Port Blair.

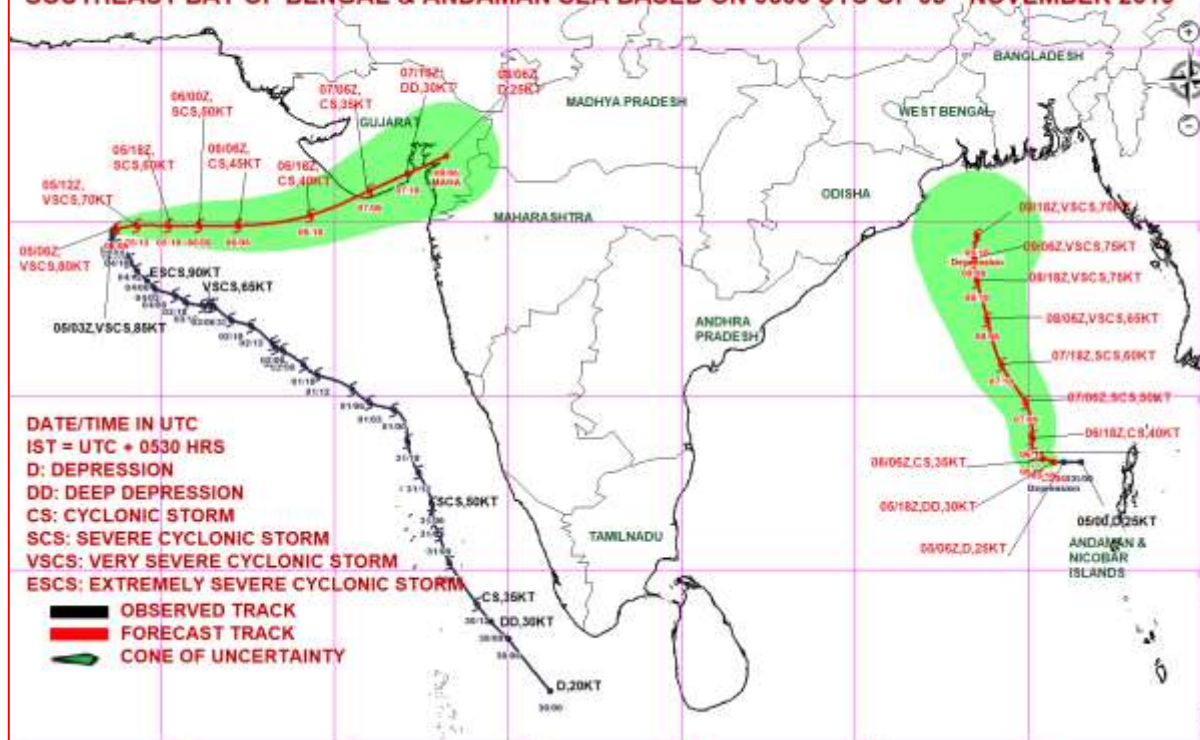
SAT : INSAT-3D IMG
IMG_TIR1 10.8 um
LIC Mercator

05-11-2019/(0730 to 0757) GMT
05-11-2019/(1300 to 1327) IST

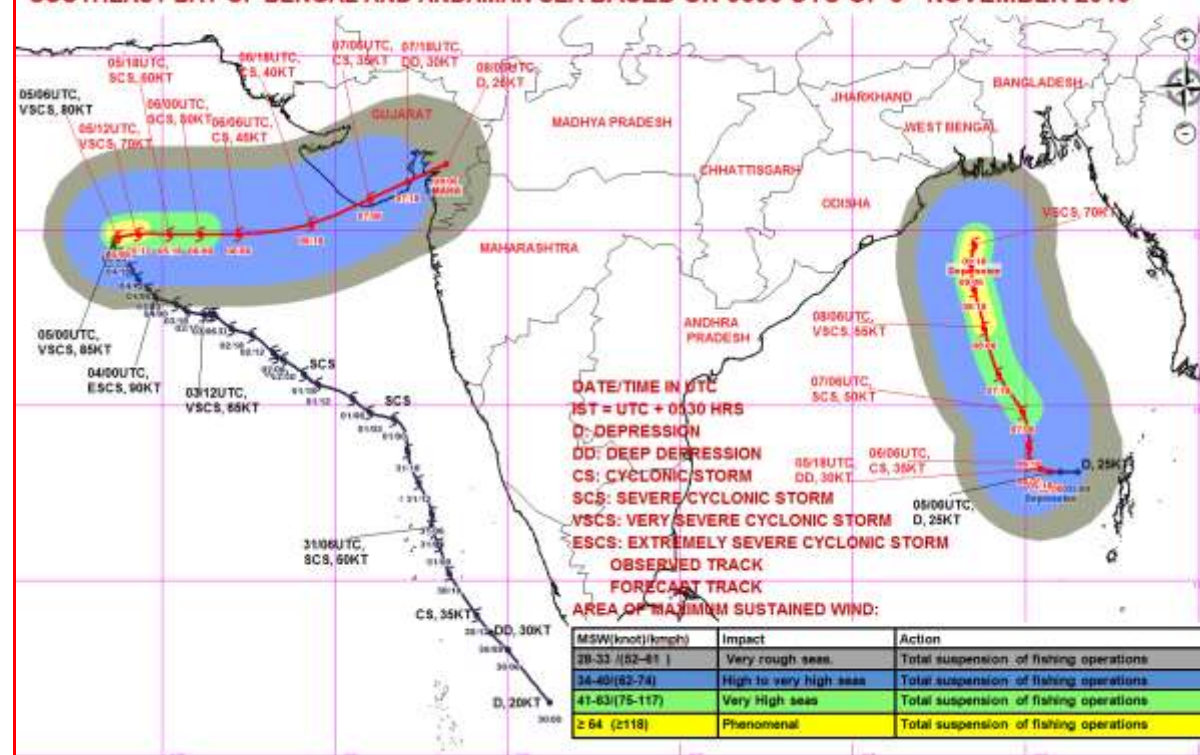


Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH (A) VERY SEVERE CYCLONIC STORM "MAHA" OVER WESTCENTRAL & ADJOINING EASTCENTRAL ARABIAN SEA AND (B) DEPRESSION OVER EASTCENTRAL & ADJOINING SOUTHEAST BAY OF BENGAL & ANDAMAN SEA BASED ON 0600 UTC OF 05th NOVEMBER 2019



OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH (A) VERY SEVERE CYCLONIC STORM "MAHA" OVER EASTCENTRAL & ADJOINING WESTCENTRAL ARABIAN SEA AND (B) DEPRESSION OVER EASTCENTRAL & ADJOINING SOUTHEAST BAY OF BENGAL AND ANDAMAN SEA BASED ON 0600 UTC OF 5th NOVEMBER 2019



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 51 (ARB/04/2019) & BULLETIN NO. : 04 (BOB/04/2019)

TIME OF ISSUE: 1700 HOURS IST

DATED: 05.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)
TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)
CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)
CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub: (A) Very Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over westcentral and adjoining eastcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE
(B) Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea.

BULLETIN NO. : 51 (ARB/04/2019)

(A) Very Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over westcentral and adjoining eastcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE

The **Very severe cyclonic storm MAHA (Pronounced as M'maha)** over westcentral & adjoining eastcentral Arabian Sea moved east-northeastwards with a speed of 04 kmph during past 06 hours and lay centered at 1430 hrs IST of 05th November, 2019 over westcentral and adjoining eastcentral Arabian Sea near latitude 19.8°N and longitude 63.8°E, about 640 km west-southwest of Porbandar (Gujarat), 690 km west-southwest of Veraval (Gujarat) and 750 km west-southwest of Diu. It is very likely to move east-northeastwards with rapid weakening. It is very likely to cross Gujarat coast around Diu as a Cyclonic Storm with a maximum sustained wind speed of 70-80 Kmph gusting to 90 Kmph around morning hours of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
05.11.19/1430	19.8/63.8	145-155 gusting to 170	Very Severe Cyclonic Storm
05.11.19/1730	19.9/64.3	125-135 gusting to 150	Very Severe Cyclonic Storm
05.11.19/2330	19.9/65.2	105-115 gusting to 125	Severe Cyclonic Storm
06.11.19/0530	19.9/66.1	95-105 gusting to 115	Severe Cyclonic Storm
06.11.19/1130	19.9/67.25	80-90 gusting to 100	Cyclonic Storm
06.11.19/2330	20.2/69.3	70-80 gusting to 90	Cyclonic Storm
07.11.19/1130	20.9/71.06	60-70 gusting to 80	Cyclonic Storm
07.11.19/2330	21.4/72.1	50-60 gusting to 70	Deep Depression
08.11.19/1130	21.9/73.2	35-45 gusting to 55	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot**) on 6th & isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Vadodara** on 7th November, 2019.
- **Maharashtra:** Light to moderate rainfall at most places with isolated heavy falls very likely over Madhya Maharashtra and north Konkan (Palghar & Thane districts) on 6th & northern most districts of Madhya Maharashtra on 7th November, 2019.

(ii) Wind warning

- **Gujarat, Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 70-80 Kmph gusting to 90 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli** districts and 60-70 kmph gusting to 80 kmph over **Bhavnagar, Bharuch, Anand, Ahmedabad, Botad, Porbandar**, districts, 50-60 kmph gusting to 70 kmph over Rajkot, Surat, Navsari, Valsad, Daman and Dadra & Nagar Haveli from 6th November evening to 7th forenoon and decrease thereafter.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning. It is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening to 7th November forenoon along & off Palghar & Thane districts.
- **Arabian Sea:** Gale wind speed reaching 145-155 kmph gusting to 170 kmph is prevailing over westcentral & adjoining eastcentral and northeast Arabian Sea around the system centre. It is very likely to decrease gradually and become 70-80 kmph gusting 90 kmph on 7th November morning over northeast and eastcentral Arabian Sea and further decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high from 6th evening till 7th forenoon.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast from 06th November morning to 7th forenoon.
- **Arabian Sea:** Sea condition will be phenomenal over westcentral and adjoining eastcentral and northwest Arabian Sea till the night of 05th November and will be very high on 6th November over eastcentral and adjoining northeast Arabian Sea. It will be very high to high over northeast adjoining eastcentral Arabian Sea from 5th to 7th November morning.

(iv) Storm surge

- Storm surge of about 0.5 – 1.0 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar, Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand and Ahmedabad** Districts around the time of landfall.

(v) Fishermen Warning

- Total suspension of fishing operations till 7th November forenoon.
- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November night and over eastcentral & adjoining northeast Arabian Sea till 07th November forenoon.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th to 7th November evening.
- The fishermen out at Sea are advised to return to the coast.

(vi) Damage Expected over coastal districts of Gujarat (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar**) and Daman, Diu:

- Damage to thatched houses/ huts.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- Sea Water inundation over low laying areas after erosion of broken embankments
- Partial damage to power and communication lines due to breaking of tree branches.
- Major damage to Kutcha and some damage to Pucca roads.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees.
- Damage to coastal crops.

(vii) Action Suggested for Gujarat coast (Junagadh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar) and Daman, Diu:

- Total suspension of fishing operations till 6th November.
- Movement in motor boats unsafe.

BULLETIN NO. : 04 (BOB/04/2019)

(B) Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea.

The Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea moved westwards with a speed of 11kmph and lay centred at 1430 hrs IST of today, the 5th November 2019, over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea, near Lat.13.1°N and Long. 90.4°E, about 270 km west-northwest of Maya Bandar (Andaman Islands), about 890 km south-southeast of Paradip (Odisha), 980 km south-southeast of Sagar islands (West Bengal) and 990 km south-southwest of Khepupara (Bangla Desh) . It is very likely to intensify into a Deep Depression during next 12 hours and into a Cyclonic Storm during the subsequent 24 hours. It is very likely to move west-northwestwards initially and then north-northwestwards, towards West Bengal & adjoining north Odisha and Bangladesh coasts.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
05.11.19/1430	13.1/90.4	50-60 gusting to 70	Depression
05.11.19/2330	13.2/90.2	60-70 gusting to 80	Deep Depression
06.11.19/1130	13.3/90.1	65-75 gusting to 85	Cyclonic Storm
06.11.19/2330	13.8/90.1	75-85 gusting to 95	Cyclonic Storm
07.11.19/1130	14.8/89.9	90-100 gusting to 110	Severe Cyclonic Storm
07.11.19/2330	15.9/89.2	110-120 gusting to 135	Severe Cyclonic Storm
08.11.19/1130	17.2/88.8	120-130 gusting to 145	Very Severe Cyclonic Storm
08.11.19/2330	18.3/88.5	130-140 gusting to 155	Very Severe Cyclonic Storm
09.11.19/1130	19.0/88.4	140-150 gusting to 165	Very Severe Cyclonic Storm
09.11.19/2330	19.6/88.5	130-140 gusting to 155	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- **Andaman and Nicobar Islands:** Light to moderate rainfall at most places with heavy falls at isolated places very likely over **Andaman and Nicobar Islands** during 5th and 6th Nov, 2019.
- **Odisha:** Light to moderate rainfall at most places very likely to commence over **coastal districts of Odisha** from 9th Nov. 2019.
- **West Bengal:** Light to moderate rainfall at most places with heavy falls at isolated places very likely to commence over **coastal districts of West Bengal** from 9th Nov. 2019.

(ii) Wind warning

- **Andaman and Nicobar Islands:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph is prevailing over Andaman Islands, north Andaman Sea and Adjoining areas southeast & eastcentral Bay of Bengal. It is likely to increase becoming 60–70 kmph gusting to 80 kmph by 6th November morning and decrease gradually thereafter.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- **Bay of Bengal:** Squally wind speed reaching 50-60 kmph gusting to 70 kmph very likely to over east central Bay of Bengal around the system centre for next 12 hours and will become gale wind speed reaching 80-90 kmph gusting to 100 kmph by 7th November morning. It will gradually increase further over central parts of Bay of Bengal, becoming 120-130 kmph gusting to 145 kmph by 8th November evening.
- **Odisha & west Bengal coasts:** Squally wind speed reaching 40 – 50 kmph gusting to 60 kmph likely to commence over northwest Bay of Bengal off Odisha – West Bengal coasts from 8th November evening and gradually increase thereafter.

(iii) Sea condition

- Sea condition will be rough to very rough over north Andaman Sea and Adjoining areas southeast and eastcentral Bay of Bengal during next 36-hours.
- Sea condition will be very rough to High over eastcentral Bay of Bengal till 7th November morning and become very high to phenomenal during 7th November evening to 8th November evening.
- Sea condition will be very High to Phenomenal over eastcentral & adjoining westcentral Bay of Bengal on 8th November and over westcentral and adjoining northwest Bay of Bengal and along and off Odisha – west Bengal coasts from 8th November evening. Then rough to very rough over north Bay of Bengal during 8th to 9th November morning and very High to Phenomenal on 10th November morning.

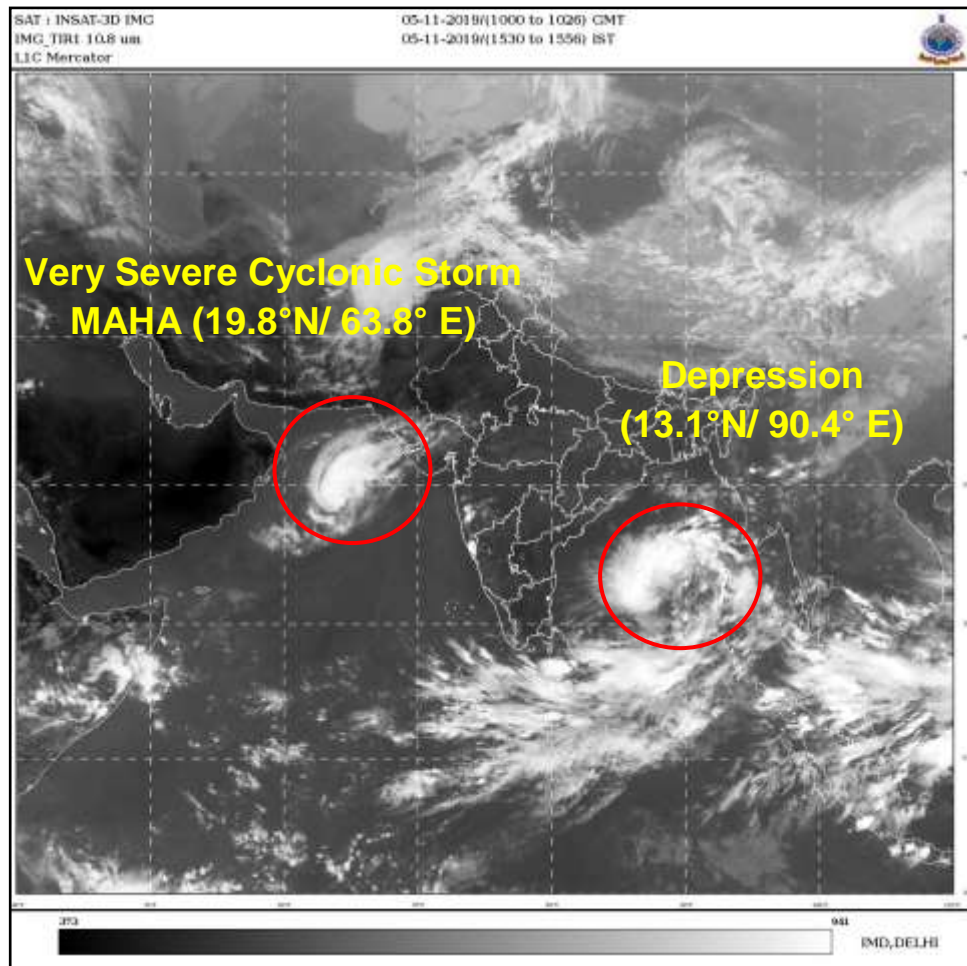
(v) Fishermen Warning

- Total suspension of fishing operations over north Andaman Sea during next 36 hours and over Adjoining areas southeast and eastcentral Bay of Bengal till 6th November.
- The fishermen are advised not to venture into eastcentral Bay of Bengal during 6th – 7th November, over east central and adjoining westcentral Bay of Bengal on 7th & 9th November and over north Bay of Bengal along & off Odisha – west Bengal coasts from 8th November onwards.
- The fishermen out at Sea are advised to return to the coast from these areas.

The next bulletin will be issued at 2030 hrs IST of 05th November, 2019.

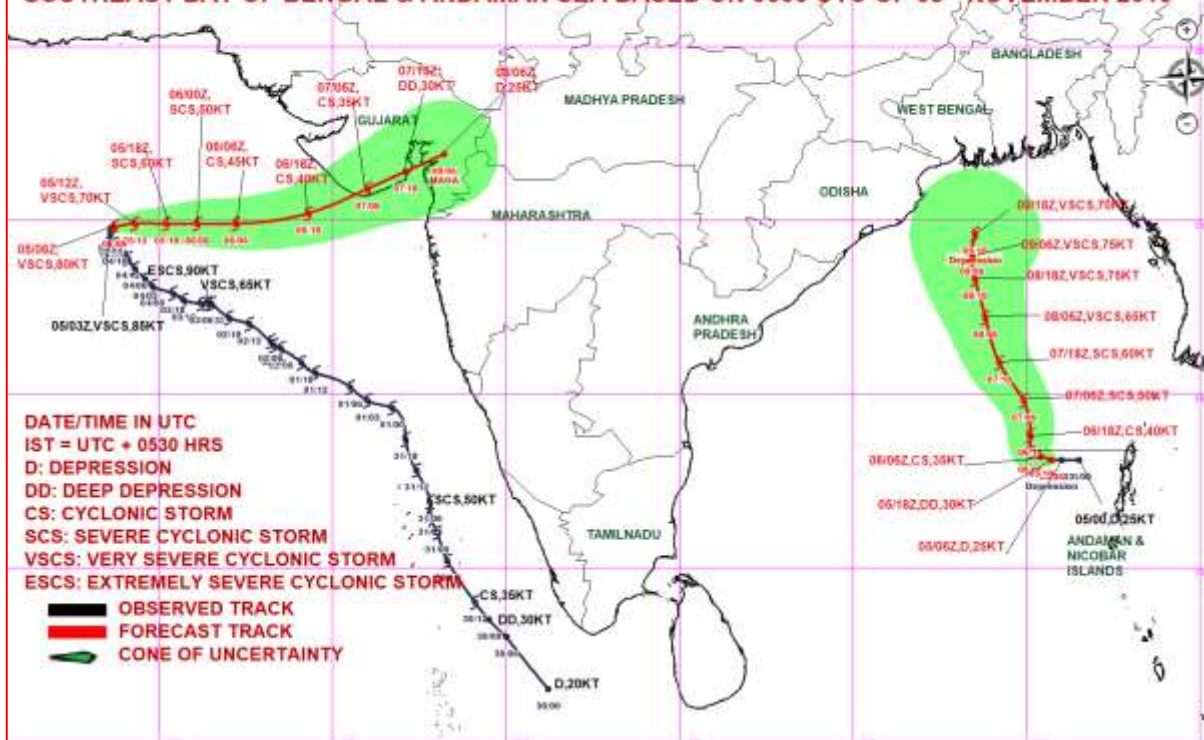
(RK JENAMANI)
Scientist-F, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ ACWC Kolkata/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram/ CWC Visakhapatnam/ CWC Bhubaneswar/ M.O. Port Blair.

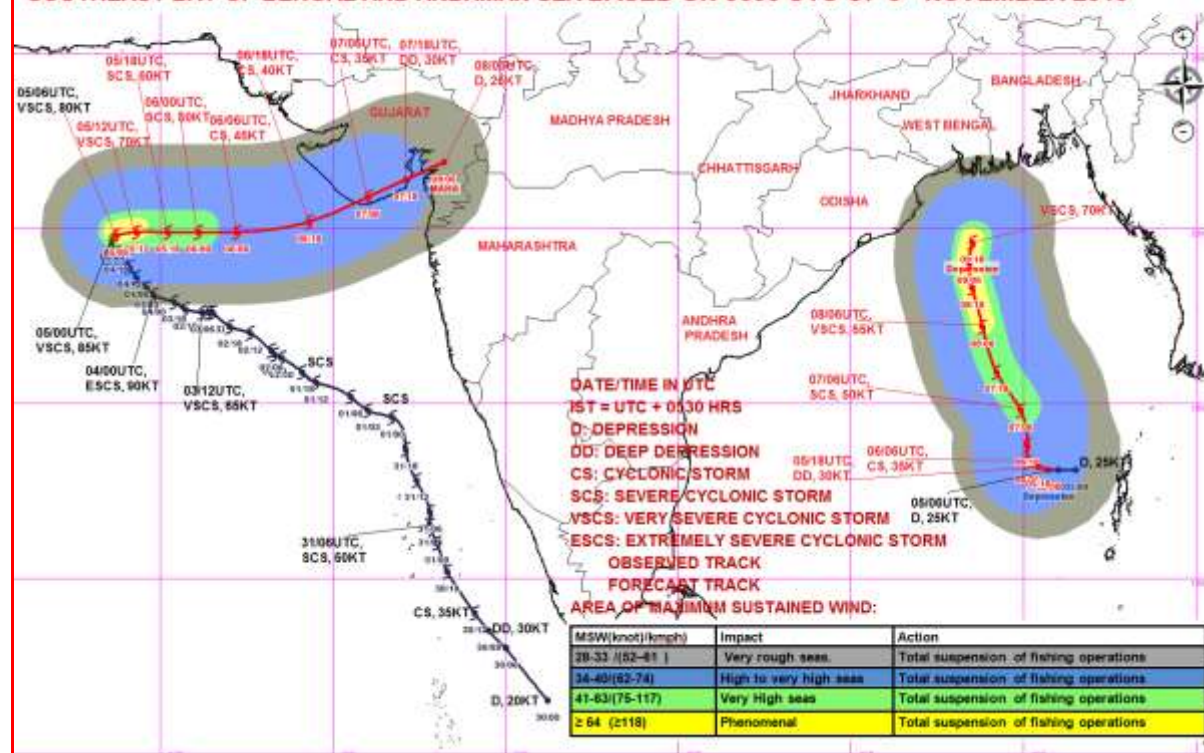


Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH (A) VERY SEVERE CYCLONIC STORM "MAHA" OVER WESTCENTRAL & ADJOINING EASTCENTRAL ARABIAN SEA AND (B) DEPRESSION OVER EASTCENTRAL & ADJOINING SOUTHEAST BAY OF BENGAL & ANDAMAN SEA BASED ON 0600 UTC OF 05th NOVEMBER 2019



OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH (A) VERY SEVERE CYCLONIC STORM "MAHA" OVER EASTCENTRAL & ADJOINING WESTCENTRAL ARABIAN SEA AND (B) DEPRESSION OVER EASTCENTRAL & ADJOINING SOUTHEAST BAY OF BENGAL AND ANDAMAN SEA BASED ON 0600 UTC OF 5th NOVEMBER 2019



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 52 (ARB/04/2019) & BULLETIN NO. : 05 (BOB/04/2019)

TIME OF ISSUE: 2030 HOURS IST

DATED: 05.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)
TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)
CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)
CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub: (A) Very Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining westcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE
(B) Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea.

BULLETIN NO. : 52 (ARB/04/2019)

(A) Very Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining westcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE

The **Very severe cyclonic storm MAHA (Pronounced as M'maha)** over westcentral & adjoining eastcentral Arabian Sea moved eastwards with a speed of 07 kmph during past 06 hours and lay centered at 1730 hrs IST of 05th November, 2019 over eastcentral & adjoining westcentral Arabian Sea near latitude 19.8°N and longitude 64.1°E, about 610 km west-southwest of Porbandar (Gujarat), 660 km west-southwest of Veraval (Gujarat) and 710 km west-southwest of Diu. It is very likely to move east-northeastwards with rapid weakening. It is very likely to cross Gujarat coast around Diu as a Cyclonic Storm with a maximum sustained wind speed of 70-80 Kmph gusting to 90 Kmph around morning hours of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
05.11.19/1730	19.8/64.1	125-135 gusting to 150	Very Severe Cyclonic Storm
05.11.19/2330	19.8/65.2	120-130 gusting to 140	Very Severe Cyclonic Storm
06.11.19/0530	19.9/66.1	100-120 gusting to 130	Severe Cyclonic Storm
06.11.19/1130	20.0/67.2	90-100 gusting to 110	Severe Cyclonic Storm
06.11.19/1730	20.2/68.5	80-90 gusting to 100	Cyclonic Storm
07.11.19/0530	20.6/70.3	70-80 gusting to 90	Cyclonic Storm
07.11.19/1730	21.1/71.6	50-60 gusting to 70	Deep Depression
08.11.19/0530	21.6/72.6	40-50 gusting to 60	Depression
08.11.19/1730	22.1/73.6	20-30 gusting to 40	Well Marked Low Pressure Area

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot**) on 6th & isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Vadodara** on 7th November, 2019.
- **Maharashtra:** Light to moderate rainfall at most places with isolated heavy falls very likely over Madhya Maharashtra and north Konkan (Palghar & Thane districts) on 6th & northern most districts of Madhya Maharashtra on 7th November, 2019.

(ii) Wind warning

- **Gujarat, Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 70-80 Kmph gusting to 90 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli** districts and 60-70 kmph gusting to 80 kmph over **Bhavnagar, Bharuch, Anand, Ahmedabad, Botad, Porbandar**, districts, 50-60 kmph gusting to 70 kmph over Rajkot, Surat, Navsari, Valsad, Daman and Dadra & Nagar Haveli from 6th November evening to 7th forenoon and decrease thereafter.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning. It is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening to 7th November forenoon along & off Palghar & Thane districts.
- **Arabian Sea:** Gale wind speed reaching 145-155 kmph gusting to 170 kmph is prevailing over westcentral & adjoining eastcentral and northeast Arabian Sea around the system centre. It is very likely to decrease gradually and become 70-80 kmph gusting 90 kmph on 7th November morning over northeast and eastcentral Arabian Sea and further decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high from 6th evening till 7th forenoon.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast from 06th November morning to 7th forenoon.
- **Arabian Sea:** Sea condition will be phenomenal over westcentral and adjoining eastcentral and northwest Arabian Sea till the night of 05th November and will be very high on 6th November over eastcentral and adjoining northeast Arabian Sea. It will be very high to high over northeast adjoining eastcentral Arabian Sea from 5th to 7th November morning.

(iv) Storm Surge

- Storm surge of about 0.5 – 1.0 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar, Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand and Ahmedabad** Districts around the time of landfall.

(v) Fishermen Warning

- Total suspension of fishing operations till 7th November forenoon.
- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November night and over eastcentral & adjoining northeast Arabian Sea till 07th November forenoon.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th to 7th November evening.
- The fishermen out at Sea are advised to return to the coast.

(vi) Damage Expected over coastal districts of Gujarat (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar**) and Daman, Diu:

- Damage to thatched houses/ huts.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- Sea Water inundation over low laying areas after erosion of broken embankments
- Partial damage to power and communication lines due to breaking of tree branches.
- Major damage to Kutcha and some damage to Pucca roads.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees.
- Damage to coastal crops.

(vii) Action Suggested for Gujarat coast (Junagadh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar) and Daman, Diu:

- Total suspension of fishing operations till 6th November.
- Movement in motor boats unsafe.

BULLETIN NO. : 05 (BOB/04/2019)

(B) Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea.

The Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea moved west-northwestwards with a speed of 11kmph and lay centred at 1730 hrs IST of today, the 5th November 2019, over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea, near Lat.13.2°N and Long. 90.1°E, about 300 km west-northwest of Maya Bandar (Andaman Islands), about 870 km south-southeast of Paradip (Odisha), 960 km south-southeast of Sagar Islands (West Bengal) and 970 km nearly south of Khepupara (Bangladesh) . It is very likely to intensify into a Deep Depression during next 12 hours and into a Cyclonic Storm during the subsequent 24 hours. It is very likely to move west-northwestwards initially and then north-northwestwards, towards West Bengal & adjoining north Odisha and Bangladesh coasts.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
05.11.19/1730	13.2/90.1	45-55 gusting to 65	Depression
06.11.19/0530	13.3/90.0	55-65 gusting to 75	Deep Depression
06.11.19/1730	13.5/90.0	60-70 gusting to 80	Cyclonic Storm
07.11.19/0530	14.3/89.9	70-80 gusting to 90	Severe Cyclonic Storm
07.11.19/1730	15.4/89.5	90-100 gusting to 110	Severe Cyclonic Storm
08.11.19/0530	16.6/89.0	110-120 gusting to 130	Severe Cyclonic Storm
08.11.19/1730	17.8/88.6	120-130 gusting to 145	Very Severe Cyclonic Storm
09.11.19/0530	18.6/88.3	125-135 gusting to 150	Very Severe Cyclonic Storm
09.11.19/1730	19.3/88.2	130-140 gusting to 155	Very Severe Cyclonic Storm
10.11.19/0530	19.8/88.3	130-140 gusting to 155	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- **Andaman and Nicobar Islands:** Light to moderate rainfall at most places with heavy falls at isolated places very likely over **Andaman and Nicobar Islands** during 5th and 6th Nov, 2019.
- **Odisha:** Light to moderate rainfall at most places very likely to commence over **coastal districts of Odisha** from 9th Nov. 2019.
- **West Bengal:** Light to moderate rainfall at most places with heavy falls at isolated places very likely to commence over **coastal districts of West Bengal** from 9th Nov. 2019.

(ii) Wind warning

- **Andaman and Nicobar Islands:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph is prevailing over Andaman Islands, north Andaman Sea and Adjoining areas southeast & eastcentral Bay of Bengal. It is likely to increase becoming 60–70 kmph gusting to 80 kmph by 6th November morning and decrease gradually thereafter.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- **Bay of Bengal:** Squally wind speed reaching 50-60 kmph gusting to 70 kmph very likely to over east central Bay of Bengal around the system centre for next 12 hours and will become gale wind speed reaching 80-90 kmph gusting to 100 kmph by 7th November morning. It will gradually increase further over central parts of Bay of Bengal, becoming 120-130 kmph gusting to 145 kmph by 8th November evening.
- **Odisha & West Bengal coasts:** Squally wind speed reaching 40 – 50 kmph gusting to 60 kmph likely to commence over northwest Bay of Bengal off Odisha – West Bengal coasts from 8th November evening and gradually increase thereafter.

(iii) Sea condition

- Sea condition will be rough to very rough over north Andaman Sea and Adjoining areas southeast and eastcentral Bay of Bengal during next 36-hours.
- Sea condition will be very rough to High over eastcentral Bay of Bengal till 7th November morning and become very high to phenomenal during 7th November evening to 8th November evening.
- Sea condition will be very High to Phenomenal over eastcentral & adjoining westcentral Bay of Bengal on 8th November and over westcentral and adjoining northwest Bay of Bengal and along and off Odisha – west Bengal coasts from 8th November evening. Then rough to very rough over north Bay of Bengal during 8th to 9th November morning and very High to Phenomenal on 10th November morning.

(v) Fishermen Warning

- Total suspension of fishing operations over north Andaman Sea during next 36 hours and over Adjoining areas southeast and eastcentral Bay of Bengal till 6th November.
- The fishermen are advised not to venture into eastcentral Bay of Bengal during 6th – 7th November, over east central and adjoining westcentral Bay of Bengal on 7th & 9th November and over north Bay of Bengal along & off Odisha – west Bengal coasts from 8th November onwards.
- The fishermen out at Sea are advised to return to the coast from these areas.

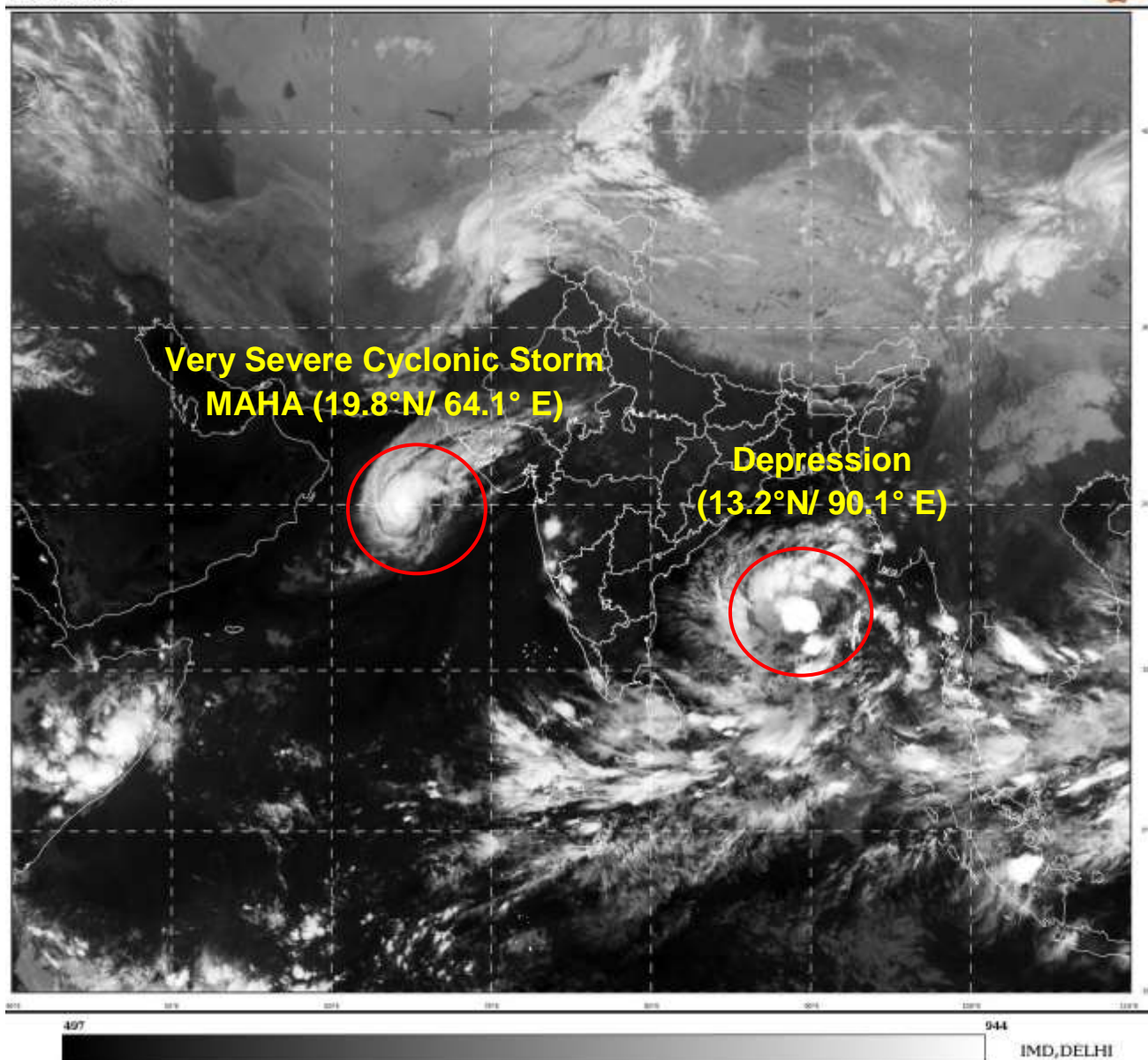
The next bulletin will be issued at 2330 hrs IST of 05th November, 2019.

(Naresh Kumar)
Scientist-E, RSMC, New Delhi

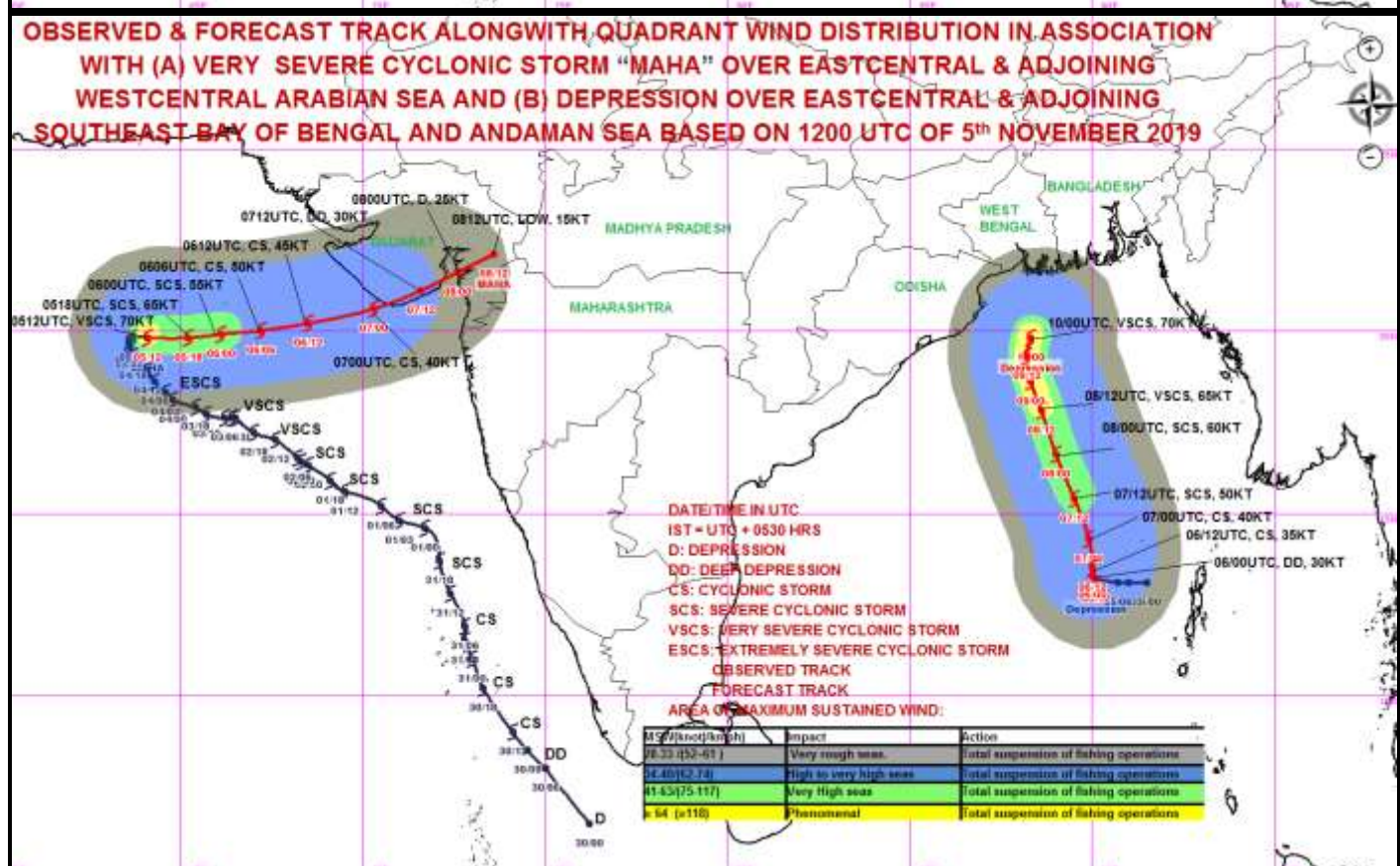
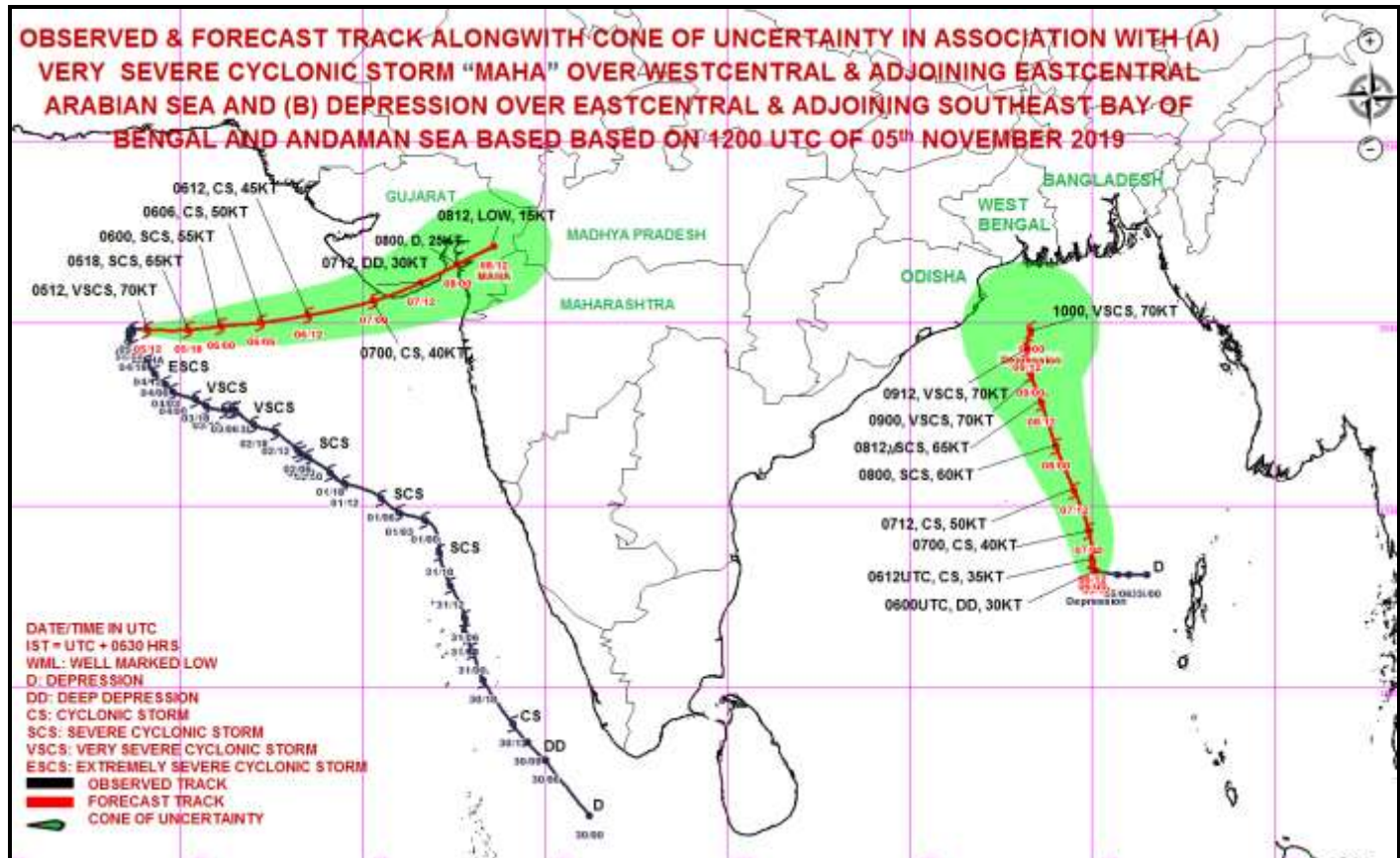
Copy to: ACWC Chennai/ ACWC Mumbai/ ACWC Kolkata/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram/ CWC Visakhapatnam/ CWC Bhubaneswar/ M.O. Port Blair.

SAT : INSAT-3D IMG
IMG_TIR1 10.8 um
LIC Mercator

05-11-2019/(1430 to 1456) GMT
05-11-2019/(2000 to 2026) IST



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 53 (ARB/04/2019) & BULLETIN NO. : 06 (BOB/04/2019)

TIME OF ISSUE: 2300 HOURS IST

DATED: 05.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)
TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)
CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)
CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub: (A) Very Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining westcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE
(B) Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea.

BULLETIN NO. : 53 (ARB/04/2019)

(A) Very Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining westcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE

The **Very severe cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral & adjoining westcentral Arabian Sea moved eastwards with a speed of 08 kmph during past 06 hours and lay centered at 2030 hrs IST of 05th November, 2019 over eastcentral & adjoining westcentral Arabian Sea near latitude 19.8°N and longitude 64.3°E, about 590 km west-southwest of Porbandar (Gujarat), 640 km west-southwest of Veraval (Gujarat) and 710 km west-southwest of Diu. It is very likely to move east-northeastwards with rapid weakening. It is very likely to cross Gujarat coast around Diu as a Cyclonic Storm with a maximum sustained wind speed of 70-80 Kmph gusting to 90 Kmph around morning hours of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
05.11.19/2030	19.8/64.3	120-130 gusting to 140	Very Severe Cyclonic Storm
05.11.19/2330	19.8/64.7	120-130 gusting to 140	Very Severe Cyclonic Storm
06.11.19/0530	19.9/65.8	100-120 gusting to 130	Severe Cyclonic Storm
06.11.19/1130	20.0/66.9	90-100 gusting to 110	Severe Cyclonic Storm
06.11.19/1730	20.2/68.5	80-90 gusting to 100	Cyclonic Storm
07.11.19/0530	20.6/70.3	70-80 gusting to 90	Cyclonic Storm
07.11.19/1730	21.1/71.6	50-60 gusting to 70	Deep Depression
08.11.19/0530	21.6/72.6	40-50 gusting to 60	Depression
08.11.19/1730	22.1/73.6	20-30 gusting to 40	Well Marked Low Pressure Area

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot**) on 6th & isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Vadodara** on 7th November, 2019.
- **Maharashtra:** Light to moderate rainfall at most places with isolated heavy falls very likely over Madhya Maharashtra and north Konkan (Palghar & Thane districts) on 6th & northern most districts of Madhya Maharashtra on 7th November, 2019.

(ii) Wind warning

- **Gujarat, Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 70-80 Kmph gusting to 90 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli** districts and 60-70 kmph gusting to 80 kmph over **Bhavnagar, Bharuch, Anand, Ahmedabad, Botad, Porbandar**, districts, 50-60 kmph gusting to 70 kmph over Rajkot, Surat, Navsari, Valsad, Daman and Dadra & Nagar Haveli from 6th November evening to 7th forenoon and decrease thereafter.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning. It is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening to 7th November forenoon along & off Palghar & Thane districts.
- **Arabian Sea:** Gale wind speed reaching 120-130 kmph gusting to 140 kmph is prevailing over westcentral & adjoining eastcentral and northeast Arabian Sea around the system centre. It is very likely to decrease gradually and become 70-80 kmph gusting 90 kmph on 7th November morning over northeast and eastcentral Arabian Sea and further decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high from 6th evening till 7th forenoon.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast from 06th November morning to 7th forenoon.
- **Arabian Sea:** Sea condition will be phenomenal over westcentral and adjoining eastcentral and northwest Arabian Sea till the night of 05th November and will be very high on 6th November over eastcentral and adjoining northeast Arabian Sea. It will be very high to high over northeast adjoining eastcentral Arabian Sea from 5th to 7th November morning.

(iv) Storm Surge

- Storm surge of about 0.5 – 1.0 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar, Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand and Ahmedabad** Districts around the time of landfall.

(v) Fishermen Warning

- Total suspension of fishing operations till 7th November forenoon.
- The fishermen are advised not to venture into westcentral Arabian Sea till 5th November night and over eastcentral & adjoining northeast Arabian Sea till 07th November forenoon.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast from 5th to 7th November evening.
- The fishermen out at Sea are advised to return to the coast.

(vi) Damage Expected over coastal districts of Gujarat (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar**) and Daman, Diu:

- Damage to thatched houses/ huts.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- Sea Water inundation over low laying areas after erosion of broken embankments
- Partial damage to power and communication lines due to breaking of tree branches.
- Major damage to Kutcha and some damage to Pucca roads.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees.
- Damage to coastal crops.

(vii) Action Suggested for Gujarat coast (Junagadh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar) and Daman, Diu:

- Total suspension of fishing operations till 6th November.
- Movement in motor boats unsafe.

BULLETIN NO. : 06 (BOB/04/2019)

(B) Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea.

The Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea moved west-northwestwards with a speed of 11kmph and lay centred at 2030 hrs IST of today, the 5th November 2019, over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea, near Lat.13.3°N and Long. 89.8°E, about 340 km west-northwest of Maya Bandar (Andaman Islands), about 840 km south-southeast of Paradip (Odisha), 950 km south-southeast of Sagar Islands (West Bengal) and 960 km nearly south of Khepupara (Bangladesh) . It is very likely to intensify into a Deep Depression during next 12 hours and into a Cyclonic Storm during the subsequent 24 hours. It is very likely to move west-northwestwards initially and then north-northwestwards, towards West Bengal & adjoining north Odisha and Bangladesh coasts.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
05.11.19/2030	13.3/89.8	45-55 gusting to 65	Depression
06.11.19/0530	13.3/89.8	55-65 gusting to 75	Deep Depression
06.11.19/1730	13.5/89.8	60-70 gusting to 80	Cyclonic Storm
07.11.19/0530	14.3/89.7	70-80 gusting to 90	Severe Cyclonic Storm
07.11.19/1730	15.4/89.3	90-100 gusting to 110	Severe Cyclonic Storm
08.11.19/0530	16.6/88.8	110-120 gusting to 130	Severe Cyclonic Storm
08.11.19/1730	17.8/88.4	120-130 gusting to 145	Very Severe Cyclonic Storm
09.11.19/0530	18.6/88.1	125-135 gusting to 150	Very Severe Cyclonic Storm
09.11.19/1730	19.3/88.0	130-140 gusting to 155	Very Severe Cyclonic Storm
10.11.19/0530	19.8/88.3	130-140 gusting to 155	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- **Andaman and Nicobar Islands:** Light to moderate rainfall at most places with heavy falls at isolated places very likely over **Andaman and Nicobar Islands** during 5th and 6th Nov, 2019.
- **Odisha:** Light to moderate rainfall at most places very likely to commence over **coastal districts of Odisha** from 9th Nov. 2019.
- **West Bengal:** Light to moderate rainfall at most places with heavy falls at isolated places very likely to commence over **coastal districts of West Bengal** from 9th Nov. 2019.

(ii) Wind warning

- **Andaman and Nicobar Islands:** Squally wind speed reaching 45-55 kmph gusting to 65 kmph is prevailing over Andaman Islands, north Andaman Sea and Adjoining areas southeast & eastcentral Bay of Bengal. It is likely to increase becoming 60–70 kmph gusting to 80 kmph by 6th November morning and decrease gradually thereafter.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- **Bay of Bengal:** Squally wind speed reaching 50-60 kmph gusting to 70 kmph very likely to over east central Bay of Bengal around the system centre for next 12 hours and will become gale wind speed reaching 80-90 kmph gusting to 100 kmph by 7th November morning. It will gradually increase further over central parts of Bay of Bengal, becoming 120-130 kmph gusting to 145 kmph by 8th November evening.
- **Odisha & West Bengal coasts:** Squally wind speed reaching 40 – 50 kmph gusting to 60 kmph likely to commence over northwest Bay of Bengal off Odisha – West Bengal coasts from 8th November evening and gradually increase thereafter.

(iii) Sea condition

- Sea condition will be rough to very rough over north Andaman Sea and Adjoining areas southeast and eastcentral Bay of Bengal during next 36-hours.
- Sea condition will be very rough to High over eastcentral Bay of Bengal till 7th November morning and become very high to phenomenal during 7th November evening to 8th November evening.
- Sea condition will be very High to Phenomenal over eastcentral & adjoining westcentral Bay of Bengal on 8th November and over westcentral and adjoining northwest Bay of Bengal and along and off Odisha – west Bengal coasts from 8th November evening. Then rough to very rough over north Bay of Bengal during 8th to 9th November morning and very High to Phenomenal on 10th November morning.

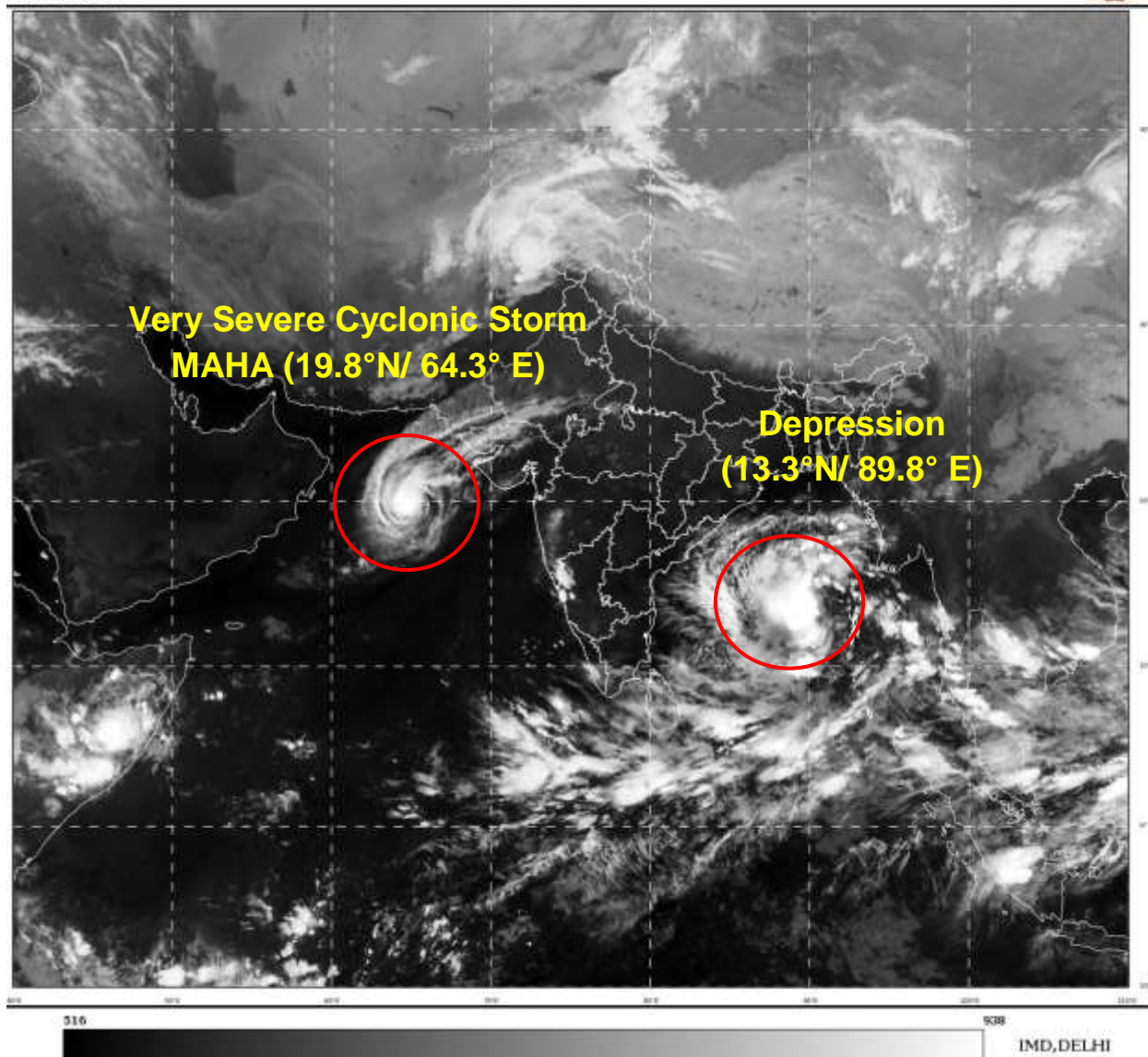
(v) Fishermen Warning

- Total suspension of fishing operations over north Andaman Sea during next 36 hours and over Adjoining areas southeast and eastcentral Bay of Bengal till 6th November.
- The fishermen are advised not to venture into eastcentral Bay of Bengal during 6th – 7th November, over east central and adjoining westcentral Bay of Bengal on 7th & 9th November and over north Bay of Bengal along & off Odisha – west Bengal coasts from 8th November onwards.
- The fishermen out at Sea are advised to return to the coast from these areas.

The next bulletin will be issued at 0230 hrs IST of 06th November, 2019.

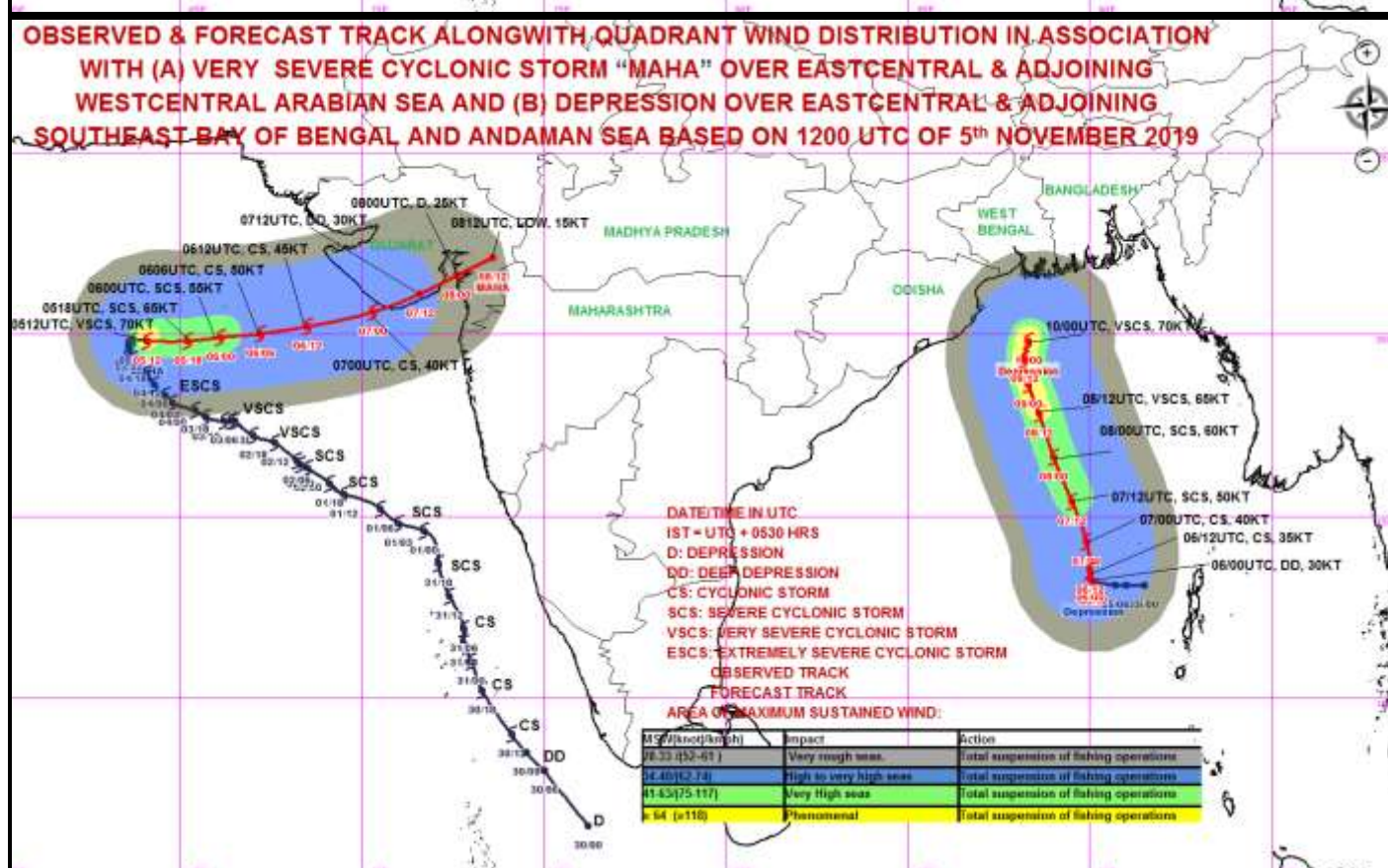
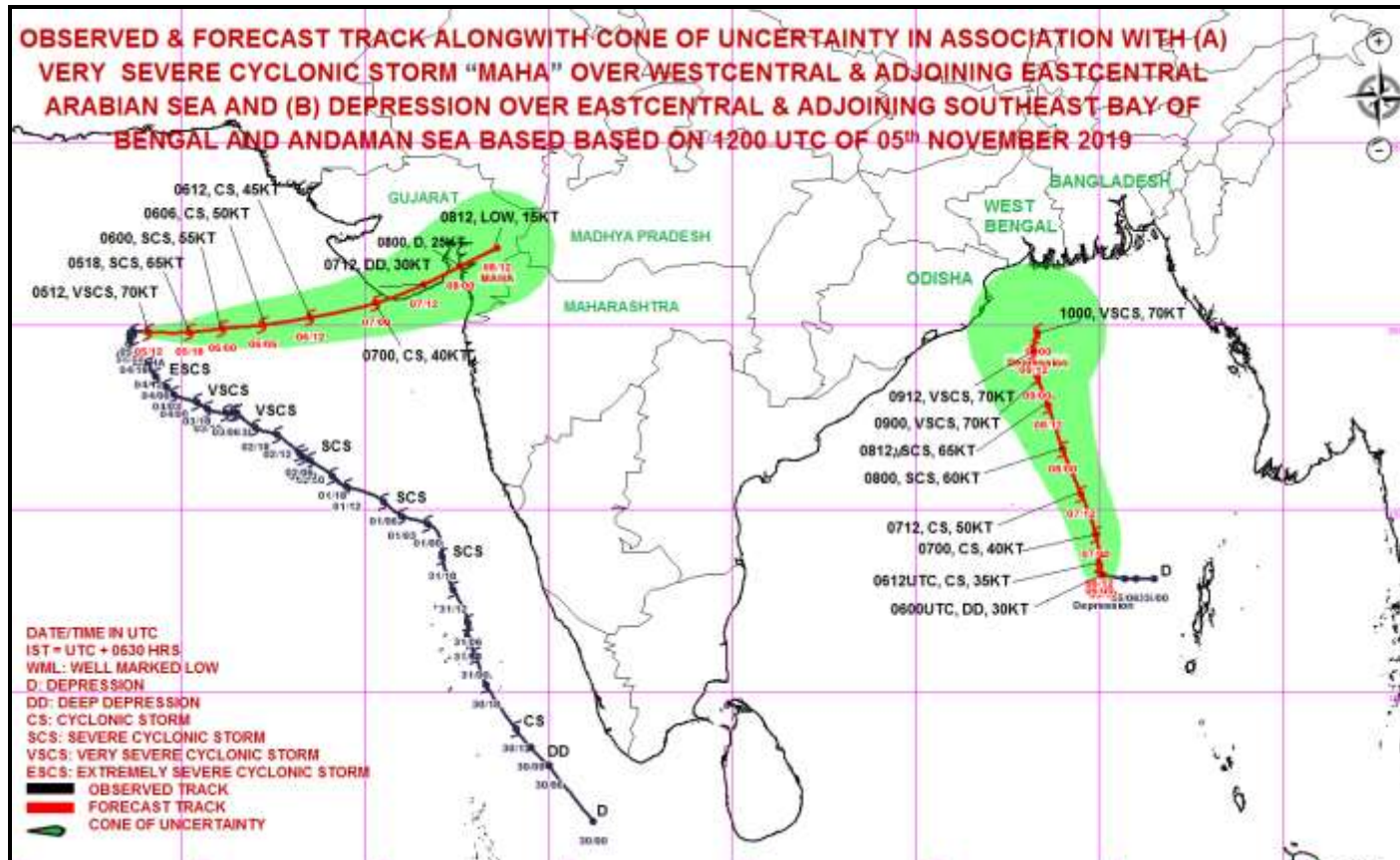
(R K Jenamani)
Scientist-F, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ ACWC Kolkata/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram/ CWC Visakhapatnam/ CWC Bhubaneswar/ M.O. Port Blair.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 54 (ARB/04/2019) & BULLETIN NO. : 07 (BOB/04/2019)

TIME OF ISSUE: 0230 HOURS IST

DATED: 06.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)
TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)
CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)
CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub: (A) Very Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining westcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE
(B) Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea.

BULLETIN NO. : 54 (ARB/04/2019)

(A) Very Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining westcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE

The **Very Severe Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral & adjoining westcentral Arabian Sea moved eastwards with a speed of 14 kmph during past 06 hours and lay centered at 2330 hrs IST of yesterday, the 05th November, 2019 over eastcentral & adjoining westcentral Arabian Sea near latitude 19.8°N and longitude 64.9°E, about 540 km west-southwest of Porbandar (Gujarat), 580 km west-southwest of Veraval (Gujarat) and 630 km west-southwest of Diu. It is very likely to move east-northeastwards with rapid weakening. It is very likely to cross Gujarat coast around Diu as a Cyclonic Storm with a maximum sustained wind speed of 70-80 Kmph gusting to 90 Kmph around noon of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
05.11.19/2330	19.8/64.9	120-130 gusting to 140	Very Severe Cyclonic Storm
06.11.19/0530	19.8/65.8	100-120 gusting to 130	Severe Cyclonic Storm
06.11.19/1130	19.8/65.8	90-100 gusting to 110	Severe Cyclonic Storm
06.11.19/1730	19.9/68.0	80-90 gusting to 100	Cyclonic Storm
06.11.19/2330	20.2/69.1	80-90 gusting to 100	Cyclonic Storm
07.11.19/1130	20.6/70.6	70-80 gusting to 90	Cyclonic Storm
07.11.19/2330	21.0/71.7	50-60 gusting to 70	Deep Depression
08.11.19/1130	21.0/71.7	40-50 gusting to 60	Deep Depression
08.11.19/2330	22.1/73.6	20-30 gusting to 40	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot**) on 6th & isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Vadodara** on 7th November, 2019.
- **Maharashtra:** Light to moderate rainfall at most places with isolated heavy falls very likely over Madhya Maharashtra and north Konkan (Palghar & Thane districts) on 6th & northern most districts of Madhya Maharashtra on 7th November, 2019.

(ii) Wind warning

- **Gujarat, Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 70-80 Kmph gusting to 90 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli** districts and 60-70 kmph gusting to 80 kmph over **Bhavnagar, Bharuch, Anand, Ahmedabad, Botad, Porbandar**, districts, 50-60 kmph gusting to 70 kmph over Rajkot, Surat, Navsari, Valsad, Daman and Dadra & Nagar Haveli from 6th November evening to 7th forenoon and decrease thereafter.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning. It is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening to 7th November forenoon along & off Palghar & Thane districts.
- **Arabian Sea:** Gale wind speed reaching 120-130 kmph gusting to 140 kmph is prevailing over westcentral & adjoining eastcentral and northeast Arabian Sea around the system centre. It is very likely to decrease gradually and become 70-80 kmph gusting 90 kmph on 7th November morning over northeast and eastcentral Arabian Sea and further decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high from 6th evening till 7th forenoon.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast from 06th November morning to 7th forenoon.
- **Arabian Sea:** Sea condition will be phenomenal over westcentral and adjoining eastcentral and northwest Arabian Sea till next 06 hours and will be very high on 6th November over eastcentral and adjoining northeast Arabian Sea. It will be very high to high over northeast adjoining eastcentral Arabian Sea from 5th to 7th November morning.

(iv) Storm Surge

- Storm surge of about 0.5 – 1.0 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar, Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand and Ahmedabad** Districts around the time of landfall.

(v) Fishermen Warning

- Total suspension of fishing operations till 7th November forenoon.
- The fishermen are advised not to venture into westcentral Arabian Sea till next 06 hours and over eastcentral & adjoining northeast Arabian Sea till 07th November forenoon.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast till 7th November evening.
- The fishermen out at Sea are advised to return to the coast.

(vi) Damage Expected over coastal districts of Gujarat (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar**) and Daman, Diu:

- Damage to thatched houses/ huts.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- Sea Water inundation over low laying areas after erosion of broken embankments
- Partial damage to power and communication lines due to breaking of tree branches.
- Major damage to Kutcha and some damage to Pucca roads.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees.
- Damage to coastal crops.

(vii) Action Suggested for Gujarat coast (Junagadh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar) and Daman, Diu:

- Total suspension of fishing operations till 6th November.
- Movement in motor boats unsafe.

BULLETIN NO. : 07 (BOB/04/2019)

(B) Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea.

The Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea moved west-northwestwards with a speed of 06 kmph and lay centred at 2330 hrs IST of yesterday, the 5th November 2019, over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea, near Lat.13.3°N and Long. 89.8°E, about 340 km west-northwest of Maya Bandar (Andaman Islands), about 840 km south-southeast of Paradip (Odisha), 950 km south-southeast of Sagar Islands (West Bengal) and 960 km nearly south of Khepupara (Bangladesh) . It is very likely to intensify into a Deep Depression during next 12 hours and into a Cyclonic Storm during the subsequent 24 hours. It is very likely to move west-northwestwards initially and then north-northwestwards, towards West Bengal & adjoining north Odisha and Bangladesh coasts.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
05.11.19/2330	13.3/89.8	45-55 gusting to 65	Depression
06.11.19/1130	13.8/89.3	55-65 gusting to 75	Deep Depression
06.11.19/2330	14.9/88.9	60-70 gusting to 80	Cyclonic Storm
07.11.19/1130	16.0/88.6	70-80 gusting to 90	Severe Cyclonic Storm
07.11.19/2330	17.3/88.4	90-100 gusting to 110	Severe Cyclonic Storm
08.11.19/1130	17.9/88.2	110-120 gusting to 130	Severe Cyclonic Storm
08.11.19/2330	18.9/88.1	120-130 gusting to 145	Very Severe Cyclonic Storm
09.11.19/1130	19.3/88.0	125-135 gusting to 150	Very Severe Cyclonic Storm
09.11.19/2330	19.8/88.0	130-140 gusting to 155	Very Severe Cyclonic Storm
10.11.19/1130	19.8/88.3	130-140 gusting to 155	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- **Andaman and Nicobar Islands:** Light to moderate rainfall at most places with heavy falls at isolated places very likely over **Andaman and Nicobar Islands** during next 36 hours.
- **Odisha:** Light to moderate rainfall at most places very likely to commence over **coastal districts of Odisha** from 9th Nov. 2019.
- **West Bengal:** Light to moderate rainfall at most places with heavy falls at isolated places very likely to commence over **coastal districts of West Bengal** from 9th Nov. 2019.

(ii) Wind warning

- **Andaman and Nicobar Islands:** Squally wind speed reaching 45-55 kmph gusting to 65 kmph is prevailing over Andaman Islands, north Andaman Sea and Adjoining areas southeast & eastcentral Bay of Bengal. It is likely to increase becoming 60–70 kmph gusting to 80 kmph by 6th November morning and decrease gradually thereafter.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- **Bay of Bengal:** Squally wind speed reaching 50-60 kmph gusting to 70 kmph very likely over east central Bay of Bengal around the system centre for next 12 hours and will become gale wind speed reaching 80-90 kmph gusting to 100 kmph by 7th November morning. It will gradually increase further over central parts of Bay of Bengal, becoming 120-130 kmph gusting to 145 kmph by 8th November evening.
- **Odisha & West Bengal coasts:** Squally wind speed reaching 40 – 50 kmph gusting to 60 kmph likely to commence over northwest Bay of Bengal off Odisha – West Bengal coasts from 8th November evening and gradually increase thereafter.

(iii) Sea condition

- Sea condition will be rough to very rough over north Andaman Sea and Adjoining areas southeast and eastcentral Bay of Bengal during next 36-hours.
- Sea condition will be very rough to High over eastcentral Bay of Bengal till 7th November morning and become very high to phenomenal during 7th November evening to 8th November evening.
- Sea condition will be very High to Phenomenal over eastcentral & adjoining westcentral Bay of Bengal on 8th November and over westcentral and adjoining northwest Bay of Bengal and along and off Odisha – west Bengal coasts from 8th November evening. Then rough to very rough over north Bay of Bengal during 8th to 9th November morning and very High to Phenomenal on 10th November morning.

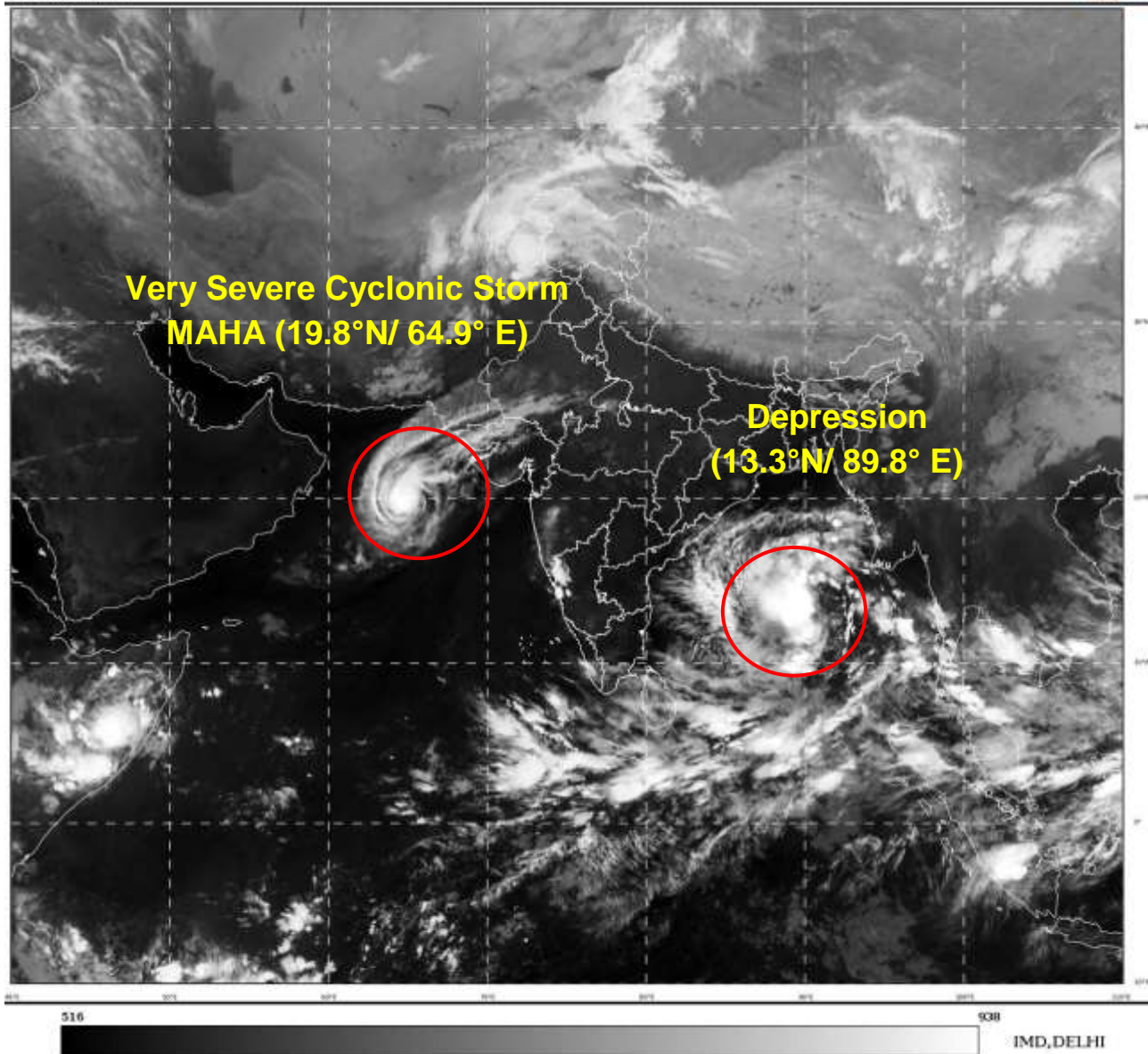
(iv) Fishermen Warning

- Total suspension of fishing operations over north Andaman Sea during next 36 hours and over Adjoining areas southeast and eastcentral Bay of Bengal till 6th November.
- The fishermen are advised not to venture into eastcentral Bay of Bengal during 6th – 7th November, over east central and adjoining westcentral Bay of Bengal on 7th & 9th November and over north Bay of Bengal along & off Odisha – west Bengal coasts from 8th November onwards.
- The fishermen out at Sea are advised to return to the coast from these areas.

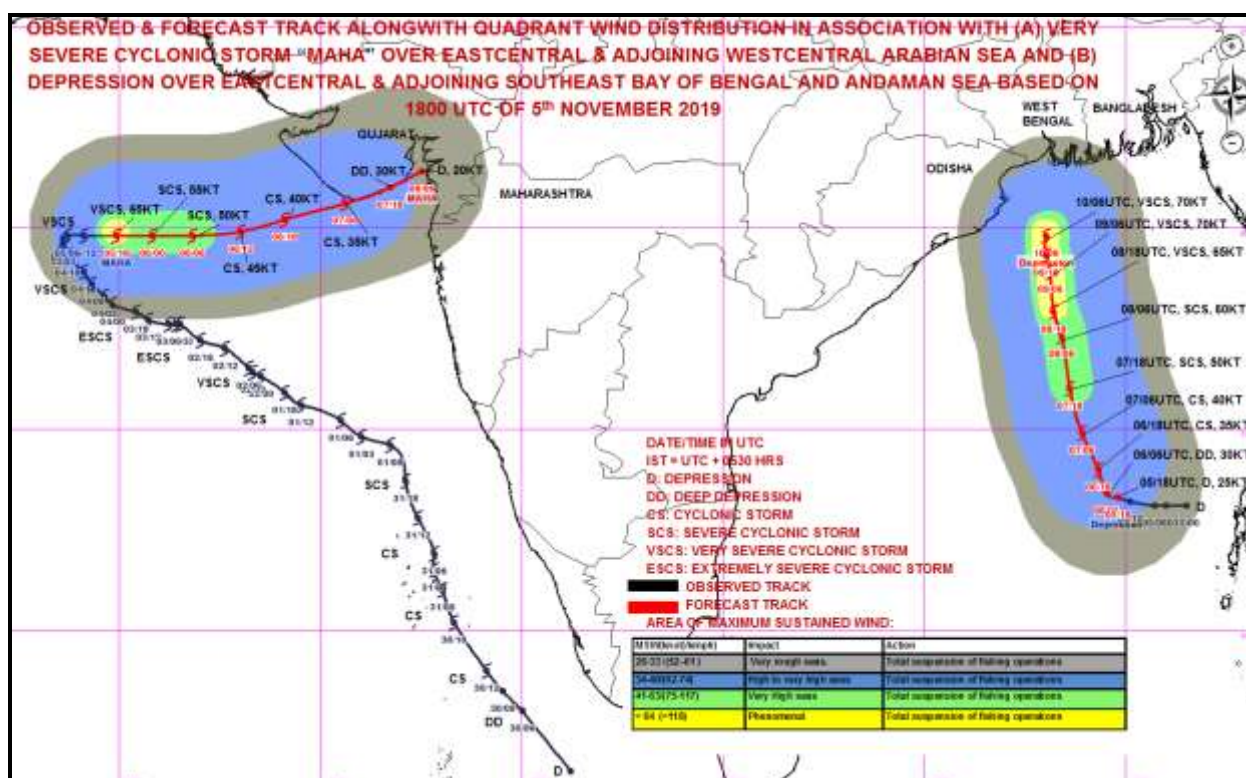
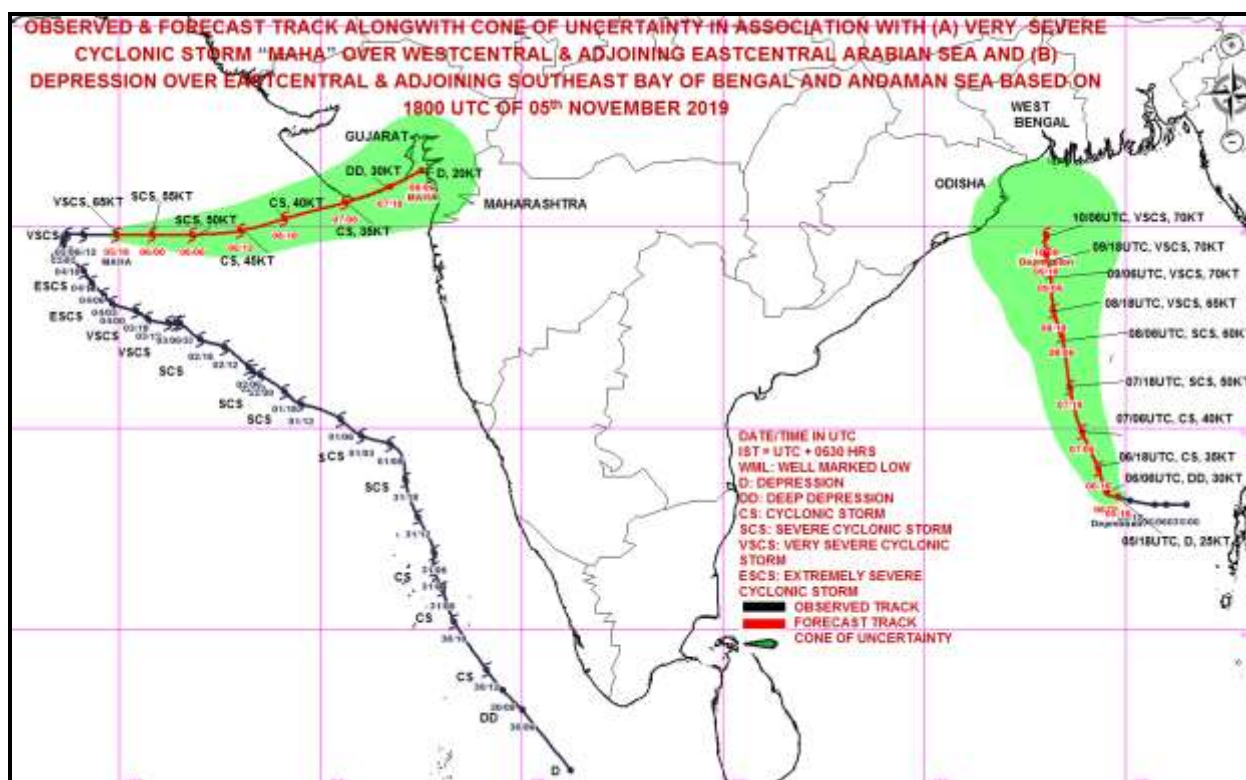
The next bulletin will be issued at 0530 hrs IST of 06th November, 2019.

(R K Jenamani)
Scientist-F, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ ACWC Kolkata/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram/ CWC Visakhapatnam/ CWC Bhubaneswar/ M.O. Port Blair.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 55 (ARB/04/2019) & BULLETIN NO. : 08 (BOB/04/2019)

TIME OF ISSUE: 0530 HOURS IST

DATED: 06.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)
TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)
CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)
CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub: (A) Very Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining westcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE
(B) Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea.

BULLETIN NO. : 55 (ARB/04/2019)

(A) Very Severe Cyclonic storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining westcentral Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE

The **Very Severe Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral & adjoining westcentral Arabian Sea moved eastwards with a speed of 21 kmph during past 06 hours and lay centered at 0230 hrs IST of today, the 06th November, 2019 over eastcentral & adjoining westcentral Arabian Sea near latitude 19.8°N and longitude 65.5°E, about 480 km west-southwest of Porbandar (Gujarat), 520 km west-southwest of Veraval (Gujarat) and 570 km west-southwest of Diu. It is very likely to move east-northeastwards with rapid weakening. It is very likely to cross Gujarat coast around Diu as a Cyclonic Storm with a maximum sustained wind speed of 70-80 Kmph gusting to 90 Kmph around noon of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
06.11.19/0230	19.8/65.5	120-130 gusting to 140	Very Severe Cyclonic Storm
06.11.19/0530	19.8/65.8	100-120 gusting to 130	Severe Cyclonic Storm
06.11.19/1130	19.8/65.8	90-100 gusting to 110	Severe Cyclonic Storm
06.11.19/1730	19.9/68.0	80-90 gusting to 100	Cyclonic Storm
06.11.19/2330	20.2/69.1	80-90 gusting to 100	Cyclonic Storm
07.11.19/1130	20.6/70.6	70-80 gusting to 90	Cyclonic Storm
07.11.19/2330	21.0/71.7	50-60 gusting to 70	Deep Depression
08.11.19/1130	21.0/71.7	40-50 gusting to 60	Deep Depression
08.11.19/2330	22.1/73.6	20-30 gusting to 40	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places very likely over Saurashtra and Gujarat region (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot**) on 6th & isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Vadodara** on 7th November, 2019.
- **Maharashtra:** Light to moderate rainfall at most places with isolated heavy falls very likely over Madhya Maharashtra and north Konkan (Palghar & Thane districts) on 6th & northern most districts of Madhya Maharashtra on 7th November, 2019.

(ii) Wind warning

- **Gujarat, Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November morning. It is very likely to increase gradually becoming 70-80 Kmph gusting to 90 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli** districts and 60-70 kmph gusting to 80 kmph over **Bhavnagar, Bharuch, Anand, Ahmedabad, Botad, Porbandar**, districts, 50-60 kmph gusting to 70 kmph over Rajkot, Surat, Navsari, Valsad, Daman and Dadra & Nagar Haveli from 6th November evening to 7th forenoon and decrease thereafter.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th morning. It is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 6th November evening to 7th November forenoon along & off Palghar & Thane districts.
- **Arabian Sea:** Gale wind speed reaching 120-130 kmph gusting to 140 kmph is prevailing over westcentral & adjoining eastcentral and northeast Arabian Sea around the system centre. It is very likely to decrease gradually and become 70-80 kmph gusting 90 kmph on 7th November morning over northeast and eastcentral Arabian Sea and further decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November morning and becoming high from 6th evening till 7th forenoon.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast from 06th November morning to 7th forenoon.
- **Arabian Sea:** Sea condition will be phenomenal over westcentral and adjoining eastcentral and northwest Arabian Sea till next 06 hours and will be very high on 6th November over eastcentral and adjoining northeast Arabian Sea. It will be very high to high over northeast adjoining eastcentral Arabian Sea from 5th to 7th November morning.

(iv) Storm Surge

- Storm surge of about 0.5 – 1.0 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar, Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand and Ahmedabad** Districts around the time of landfall.

(v) Fishermen Warning

- Total suspension of fishing operations till 7th November forenoon.
- The fishermen are advised not to venture into westcentral Arabian Sea till next 06 hours and over eastcentral & adjoining northeast Arabian Sea till 07th November forenoon.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast till 7th November evening.
- The fishermen out at Sea are advised to return to the coast.

(vi) Damage Expected over coastal districts of Gujarat (Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar) and Daman, Diu:

- Damage to thatched houses/ huts.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- Sea Water inundation over low laying areas after erosion of broken embankments
- Partial damage to power and communication lines due to breaking of tree branches.
- Major damage to Kutcha and some damage to Pucca roads.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees.
- Damage to coastal crops.

(vii) Action Suggested for Gujarat coast (Junagadh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar) and Daman, Diu:

- Total suspension of fishing operations till 6th November.
- Movement in motor boats unsafe.

BULLETIN NO. : 08 (BOB/04/2019)

(B) Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea.

The Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea moved west-northwestwards with a speed of 06 kmph and lay centred at 0230 hrs IST of today, the 6th November 2019, over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea, near Lat.13.4°N and Long. 89.5°E, about 370 km west-northwest of Maya Bandar (Andaman Islands), about 820 km south-southeast of Paradip (Odisha), 930 km south-southeast of Sagar Islands (West Bengal) and 960 km nearly south of Khepupara (Bangladesh) . It is very likely to intensify into a Deep Depression during next 12 hours and into a Cyclonic Storm during the subsequent 24 hours. It is very likely to move west-northwestwards initially and then north-northwestwards, towards West Bengal & adjoining north Odisha and Bangladesh coasts.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
06.11.19/0230	13.4/89.5	45-55 gusting to 65	Depression
06.11.19/1130	13.8/89.3	55-65 gusting to 75	Deep Depression
06.11.19/2330	14.9/88.9	60-70 gusting to 80	Cyclonic Storm
07.11.19/1130	16.0/88.6	70-80 gusting to 90	Severe Cyclonic Storm
07.11.19/2330	17.3/88.4	90-100 gusting to 110	Severe Cyclonic Storm
08.11.19/1130	17.9/88.2	110-120 gusting to 130	Severe Cyclonic Storm
08.11.19/2330	18.9/88.1	120-130 gusting to 145	Very Severe Cyclonic Storm
09.11.19/1130	19.3/88.0	125-135 gusting to 150	Very Severe Cyclonic Storm
09.11.19/2330	19.8/88.0	130-140 gusting to 155	Very Severe Cyclonic Storm
10.11.19/1130	19.8/88.3	130-140 gusting to 155	Very Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- **Andaman and Nicobar Islands:** Light to moderate rainfall at most places with heavy falls at isolated places very likely over **Andaman and Nicobar Islands** during next 36 hours.
- **Odisha:** Light to moderate rainfall at most places very likely to commence over **coastal districts of Odisha** from 9th Nov. 2019.
- **West Bengal:** Light to moderate rainfall at most places with heavy falls at isolated places very likely to commence over **coastal districts of West Bengal** from 9th Nov. 2019.

(ii) Wind warning

- **Andaman and Nicobar Islands:** Squally wind speed reaching 45-55 kmph gusting to 65 kmph is prevailing over Andaman Islands, north Andaman Sea and Adjoining areas southeast & eastcentral Bay of Bengal. It is likely to increase becoming 60–70 kmph gusting to 80 kmph by 6th November morning and decrease gradually thereafter.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- **Bay of Bengal:** Squally wind speed reaching 50-60 kmph gusting to 70 kmph very likely over east central Bay of Bengal around the system centre for next 12 hours and will become gale wind speed reaching 80-90 kmph gusting to 100 kmph by 7th November morning. It will gradually increase further over central parts of Bay of Bengal, becoming 120-130 kmph gusting to 145 kmph by 8th November evening.
- **Odisha & West Bengal coasts:** Squally wind speed reaching 40 – 50 kmph gusting to 60 kmph likely to commence over northwest Bay of Bengal off Odisha – West Bengal coasts from 8th November evening and gradually increase thereafter.

(iii) Sea condition

- Sea condition will be rough to very rough over north Andaman Sea and Adjoining areas southeast and eastcentral Bay of Bengal during next 36-hours.
- Sea condition will be very rough to High over eastcentral Bay of Bengal till 7th November morning and become very high to phenomenal during 7th November evening to 8th November evening.
- Sea condition will be very High to Phenomenal over eastcentral & adjoining westcentral Bay of Bengal on 8th November and over westcentral and adjoining northwest Bay of Bengal and along and off Odisha – west Bengal coasts from 8th November evening. Then rough to very rough over north Bay of Bengal during 8th to 9th November morning and very High to Phenomenal on 10th November morning.

(iv) Fishermen Warning

- Total suspension of fishing operations over north Andaman Sea during next 36 hours and over Adjoining areas southeast and eastcentral Bay of Bengal till 6th November.
- The fishermen are advised not to venture into eastcentral Bay of Bengal during 6th – 7th November, over east central and adjoining westcentral Bay of Bengal on 7th & 9th November and over north Bay of Bengal along & off Odisha – west Bengal coasts from 8th November onwards.
- The fishermen out at Sea are advised to return to the coast from these areas.

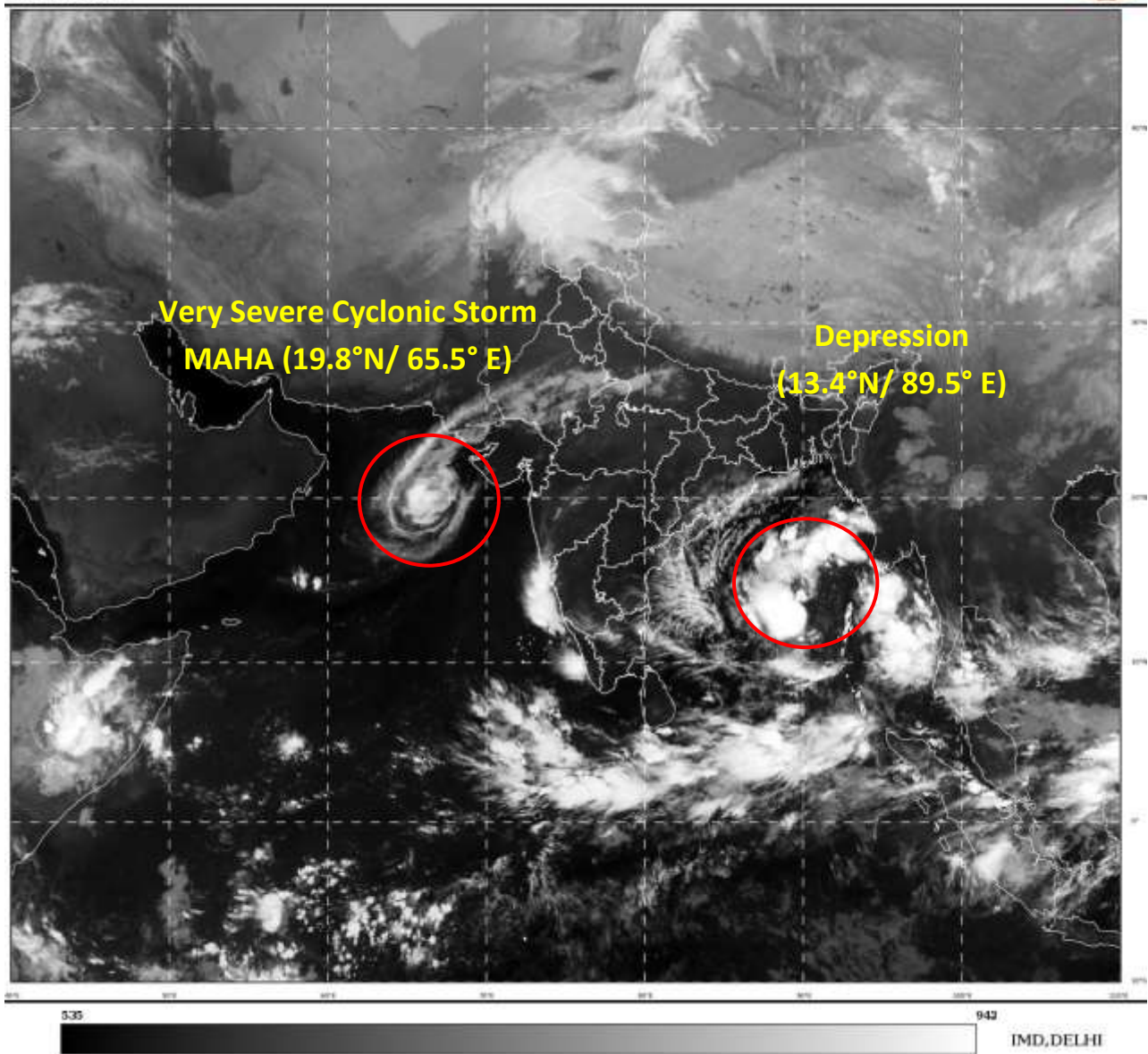
The next bulletin will be issued at 0830 hrs IST of 06th November, 2019.

(R K Jenamani)
Scientist-F, RSMC, New Delhi

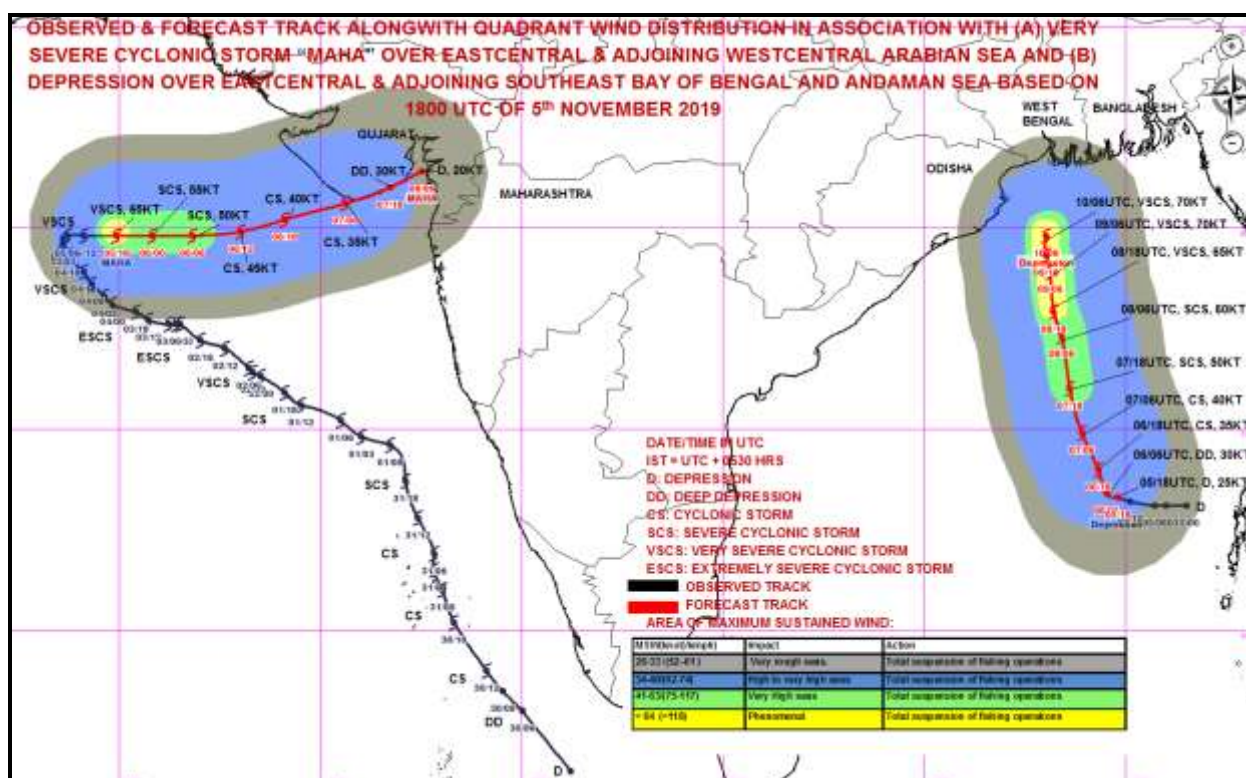
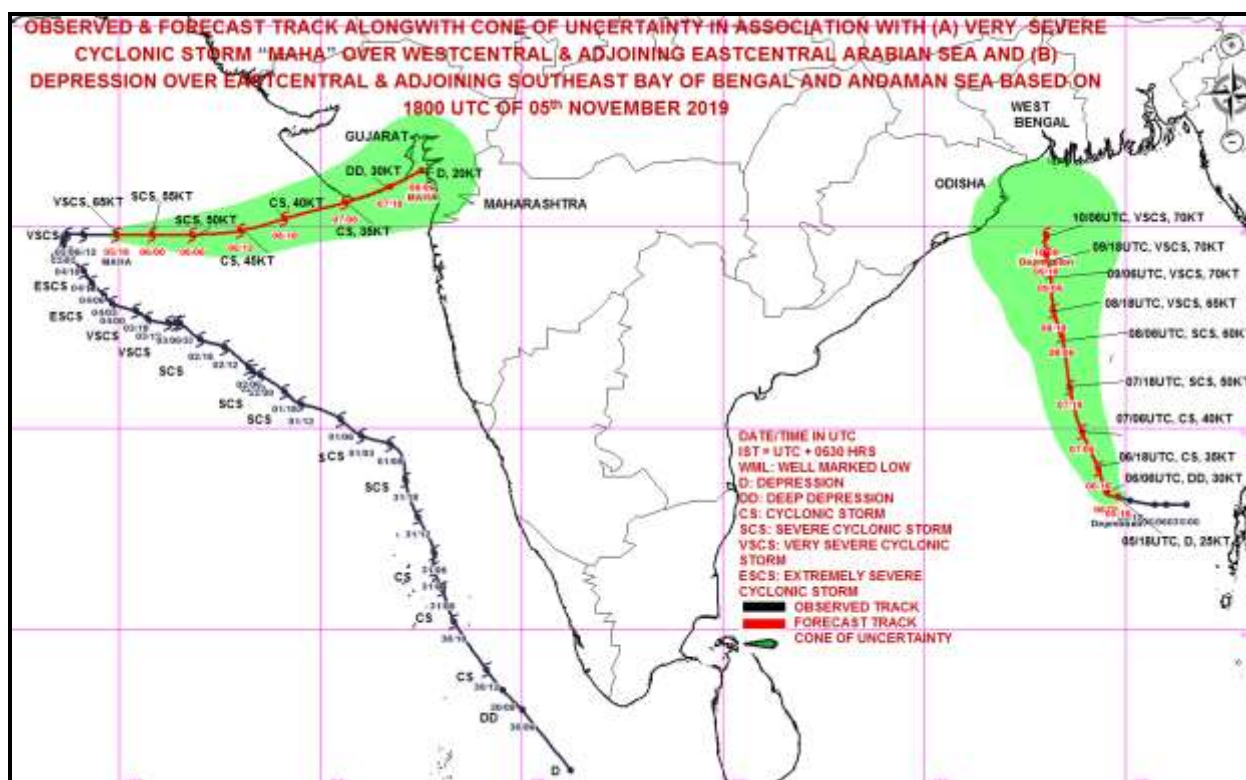
Copy to: ACWC Chennai/ ACWC Mumbai/ ACWC Kolkata/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram/ CWC Visakhapatnam/ CWC Bhubaneswar/ M.O. Port Blair.

SAT : INSAT-3D IMG
IMG_TIR1 10.8 um
LIC Mercator

05-11-2019/(2230 to 2256) GMT
06-11-2019/(0400 to 0426) IST



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 56 (ARB/04/2019) & BULLETIN NO. : 09 (BOB/04/2019)

TIME OF ISSUE: 0830 HOURS IST

DATED: 06.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub: (A) Severe Cyclonic Storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining northeast Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE

(B) Deep Depression over eastcentral & adjoining southeast Bay of Bengal.

BULLETIN NO. : 56 (ARB/04/2019)

(A) Severe Cyclonic Storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining northeast Arabian Sea: CYCLONE ALERT FOR GUJARAT COAST: YELLOW MESSAGE

The **Very Severe Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral & adjoining westcentral Arabian Sea moved eastwards with a speed of 15 kmph during past 06 hours, weakened into a **Severe Cyclonic Storm** and lay centered at 0530 hrs IST of today, the 06th November, 2019 over eastcentral & adjoining northeast Arabian Sea near latitude 19.8°N and longitude 65.8°E, about 450 km west-southwest of Porbandar (Gujarat), 490 km west-southwest of Veraval (Gujarat) and 540 km west-southwest of Diu. It is very likely to move east-northeastwards with further weakening. It is very likely to cross Gujarat coast around Diu as a Cyclonic Storm with a maximum sustained wind speed of 70-80 Kmph gusting to 90 Kmph around noon of 7th November, 2019.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
06.11.19/0530	19.8/65.8	110-120 gusting to 130	Severe Cyclonic Storm
06.11.19/1130	19.8/67.0	100-110 gusting to 120	Severe Cyclonic Storm
06.11.19/1730	19.9/68.2	90-100 gusting to 110	Severe Cyclonic Storm
06.11.19/2330	20.1/69.3	80-90 gusting to 100	Cyclonic Storm
07.11.19/0530	20.5/70.4	80-90 gusting to 100	Cyclonic Storm
07.11.19/1730	20.9/71.6	60-70 gusting to 80	Cyclonic Storm
08.11.19/0530	21.2/72.7	50-60 gusting to 70	Deep Depression
08.11.19/1730	21.5/73.8	40-50 gusting to 60	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over Saurashtra and Gujarat region (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, Rajkot**) on 6th & isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Vadodara** on 7th November, 2019.
- **Maharashtra:** Light to moderate rainfall at most places with isolated heavy falls very likely over Madhya Maharashtra and north Konkan (Palghar & Thane districts) on 6th & northern most districts of Madhya Maharashtra on 7th November, 2019.

(ii) Wind warning

- **Gujarat, Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from 6th November afternoon. It is very likely to increase gradually becoming 70-80 Kmph gusting to 90 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli** districts and 60-70 kmph gusting to 80 kmph over **Bhavnagar, Bharuch, Anand, Ahmedabad, Botad, Porbandar**, districts, 50-60 kmph gusting to 70 kmph over Rajkot, Surat, Navsari, Valsad, Daman and Dadra & Nagar Haveli from 7th November morning for the subsequent 12 hours.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from 6th evening. It is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 7th November morning for the next 12 hours along & off Palghar & Thane districts.
- **Arabian Sea:** Gale wind speed reaching 110-120 kmph gusting to 135 kmph is prevailing over eastcentral and adjoining northeast Arabian Sea around the system centre. It is very likely to decrease gradually and become 70-80 kmph gusting 90 kmph on 7th November morning over northeast and adjoining eastcentral Arabian Sea and further decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November afternoon and becoming high from 7th November morning for the subsequent 12 hours.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast from 06th November evening for the subsequent 24 hours.
- **Arabian Sea:** Sea condition will be phenomenal over eastcentral and adjoining northeast Arabian Sea during next 12 hours and will be high thereafter for subsequent 24 hours. It will be very rough to very rough over westcentral and adjoining northwest Arabian Sea during next 12 hours.

(iv) Storm Surge

- Storm surge of about 0.5 – 1.0 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar, Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand and Ahmedabad** Districts around the time of landfall.

(v) Fishermen Warning

- Total suspension of fishing operations till 7th November.
- The fishermen are advised not to venture into westcentral and adjoining northwest Arabian Sea during next 12 hours and over eastcentral & adjoining northeast Arabian Sea till 07th November.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast till 7th November.

(vi) Damage Expected over coastal districts of Gujarat (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar**) and Daman, Diu:

- Damage to thatched houses/ huts.
- Sea Water inundation over low laying areas after erosion of broken embankments

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- Partial damage to power and communication lines due to breaking of tree branches.
- Major damage to Kutcha and some damage to Pucca roads.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees.
- Damage to coastal crops.

(vii) Action Suggested for Gujarat coast (Junagadh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar) and Daman, Diu:

- Total suspension of fishing operations till 6th November.
- Movement in motor boats unsafe.

BULLETIN NO. : 09 (BOB/04/2019)

(B) Deep Depression over eastcentral & adjoining southeast Bay of Bengal.

The Depression over eastcentral & adjoining southeast Bay of Bengal and North Andaman Sea moved west-northwestwards with a speed of 09 kmph, intensified into a **Deep Depression** and lay centred at 0530 hrs IST of today, the 6th November 2019, over eastcentral & adjoining southeast Bay of Bengal, near Lat.13.4°N and Long. 89.3°E, about 390 km west-northwest of Maya Bandar (Andaman Islands), about 810 km south-southeast of Paradip (Odisha), 920 km south-southeast of Sagar Islands (West Bengal) and 960 km south-southwest of Khepupara (Bangladesh) . It is very likely to intensify into a Cyclonic Storm during next 24 hours. It is very likely to move west-northwestwards for some more time and then north-northwestwards, towards West Bengal & adjoining north Odisha and Bangladesh coasts.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
06.11.19/0530	13.4/89.3	50-60 gusting to 70	Deep Depression
06.11.19/1130	13.6/88.9	50-60 gusting to 70	Deep Depression
06.11.19/1730	14.0/88.6	60-70 gusting to 80	Cyclonic Storm
06.11.19/2330	14.6/88.4	60-70 gusting to 80	Cyclonic Storm
07.11.19/0530	15.3/88.2	70-80 gusting to 90	Cyclonic Storm
07.11.19/1730	16.6/88.0	90-100 gusting to 110	Severe Cyclonic Storm
08.11.19/0530	17.6/87.9	100-110 gusting to 120	Severe Cyclonic Storm
08.11.19/1730	18.4/87.9	110-120 gusting to 135	Severe Cyclonic Storm
09.11.19/0530	19.1/87.9	110-120 gusting to 135	Severe Cyclonic Storm
09.11.19/1730	19.6/88.0	120-130 gusting to 145	Very Severe Cyclonic Storm
10.11.19/0530	19.8/88.1	120-130 gusting to 145	Very Severe Cyclonic Storm
10.11.19/1730	20.0/88.2	110-120 gusting to 135	Severe Cyclonic Storm
11.11.19/0530	20.2/88.3	100-110 gusting to 120	Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- **Andaman and Nicobar Islands:** Light to moderate rainfall at most places very likely over **Andaman and Nicobar Islands** during next 24 hours.
- **Odisha:** Light to moderate rainfall at most places very likely over **north coastal districts of Odisha** from 9th & 10th Nov. 2019.
- **West Bengal:** Light to moderate rainfall at most places with heavy falls at isolated places very likely over **coastal districts of West Bengal** on 10th & 11th Nov. 2019.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(ii) Wind warning

- **Andaman and Nicobar Islands:** Strong wind speed reaching 35-45 kmph gusting to 55 kmph is likely to prevail over Andaman Islands, north Andaman Sea during next 24 hours.
- **Bay of Bengal:** Squally wind speed reaching 50-60 kmph gusting to 70 kmph is prevailing over east central and adjoining southeast Bay of Bengal around the system centre. It will become gale wind speed reaching 70-80 kmph gusting to 90 kmph by 7th November morning. It will gradually increase further becoming 120-130 kmph gusting to 145 kmph over northwest and adjoining central Bay of Bengal by 9th November evening.
- **Odisha & West Bengal coasts:** Squally wind speed reaching 40 – 50 kmph gusting to 60 kmph likely to commence over northwest Bay of Bengal off Odisha – West Bengal coasts from 8th November evening and gradually increase thereafter.

(iii) Sea condition

- Sea condition will be very rough to High over eastcentral Bay of Bengal till 7th November evening and become very high to phenomenal thereafter over central and adjoining northwest Bay of Bengal.
- Sea condition will be rough over north Andaman Sea during next 24 hours.

(iv) Fishermen Warning

- Fishermen are advised not to venture into north Andaman Sea and adjoining southeast Bay of Bengal during next 24 hours.
- Fishermen are advised not to venture into eastcentral Bay of Bengal during next 2 days and into westcentral and adjoining northwest Bay of Bengal during 8th – 10th November.
- Fishermen are advised not to venture into north Bay of Bengal along & off Odisha – west Bengal coasts from 8th November onwards.
- The fishermen out at Sea are advised to return to the coast from these areas.

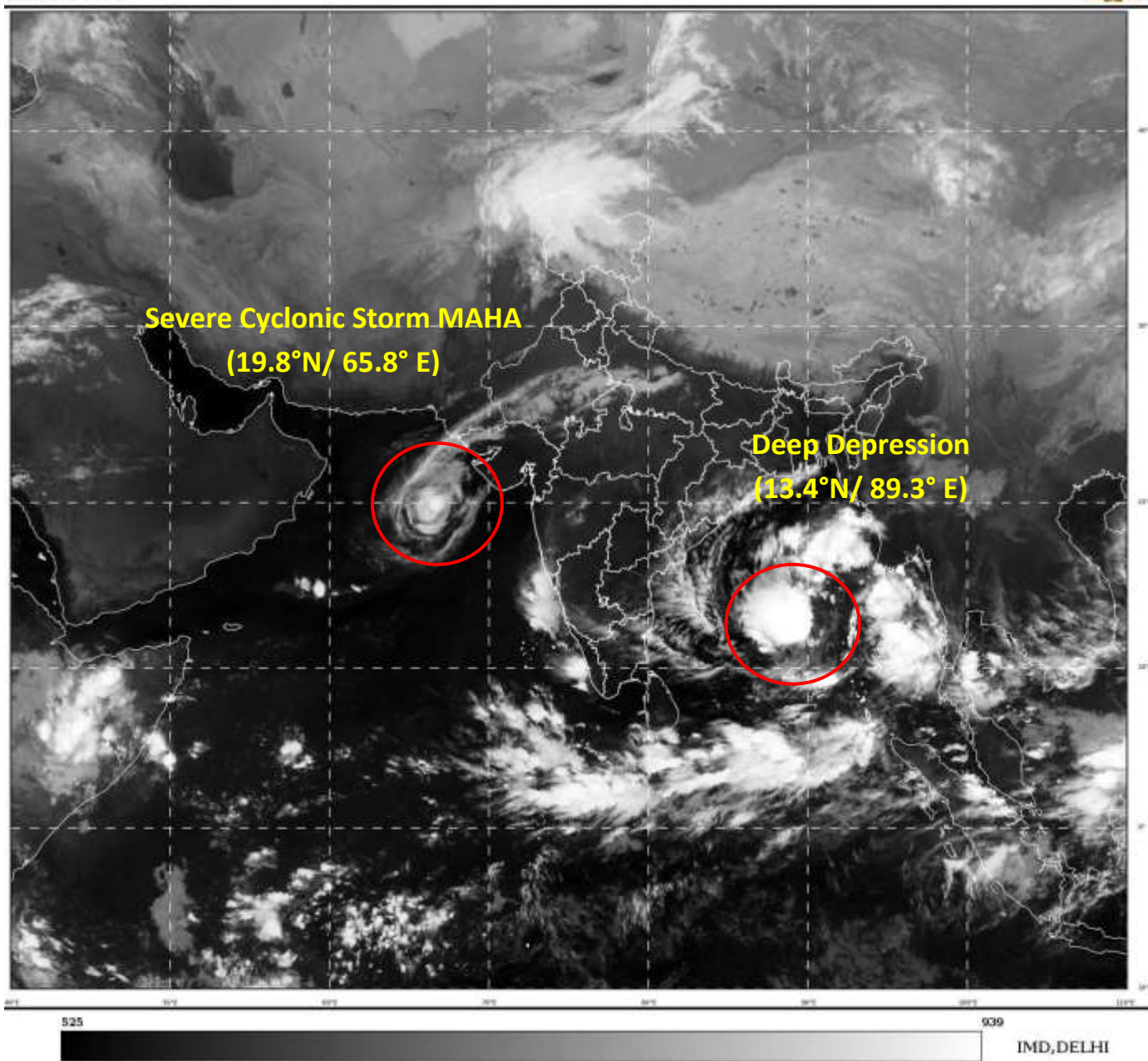
The next bulletin will be issued at 1130 hrs IST of 06th November, 2019.

**(Sunitha Devi.S)
Scientist-F, RSMC, New Delhi**

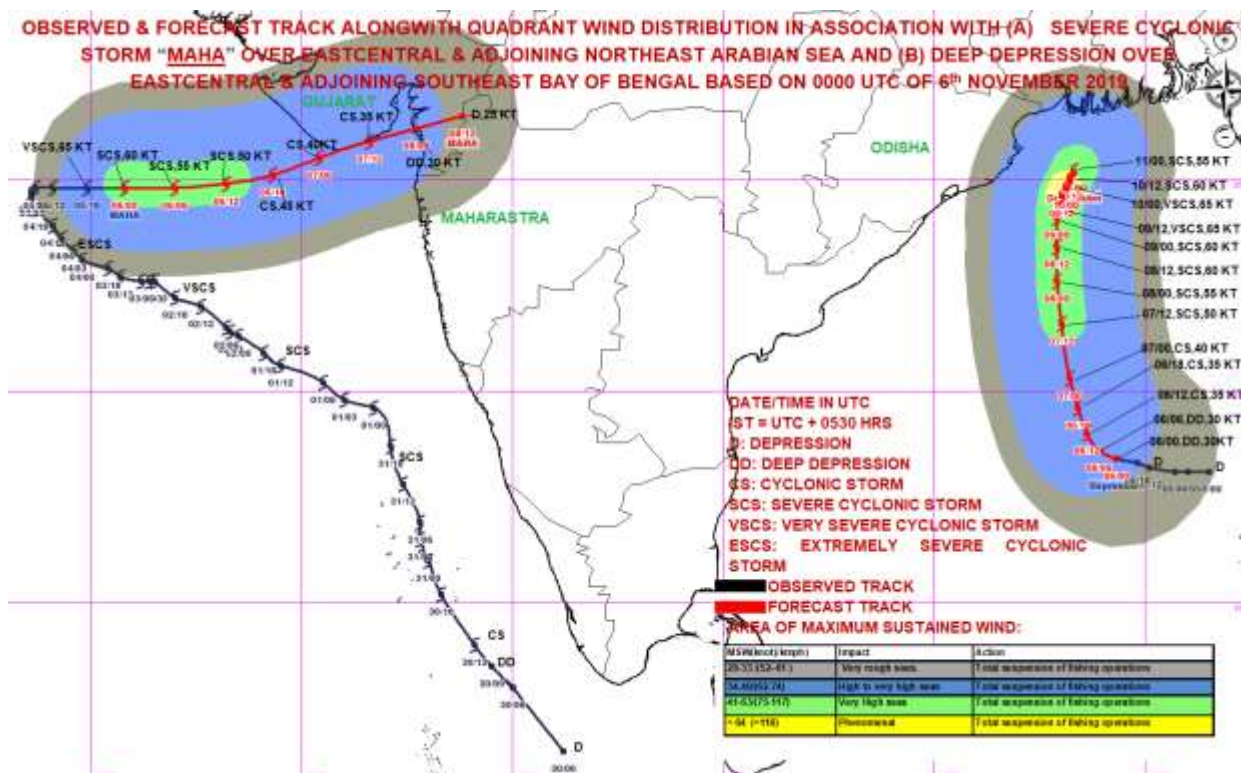
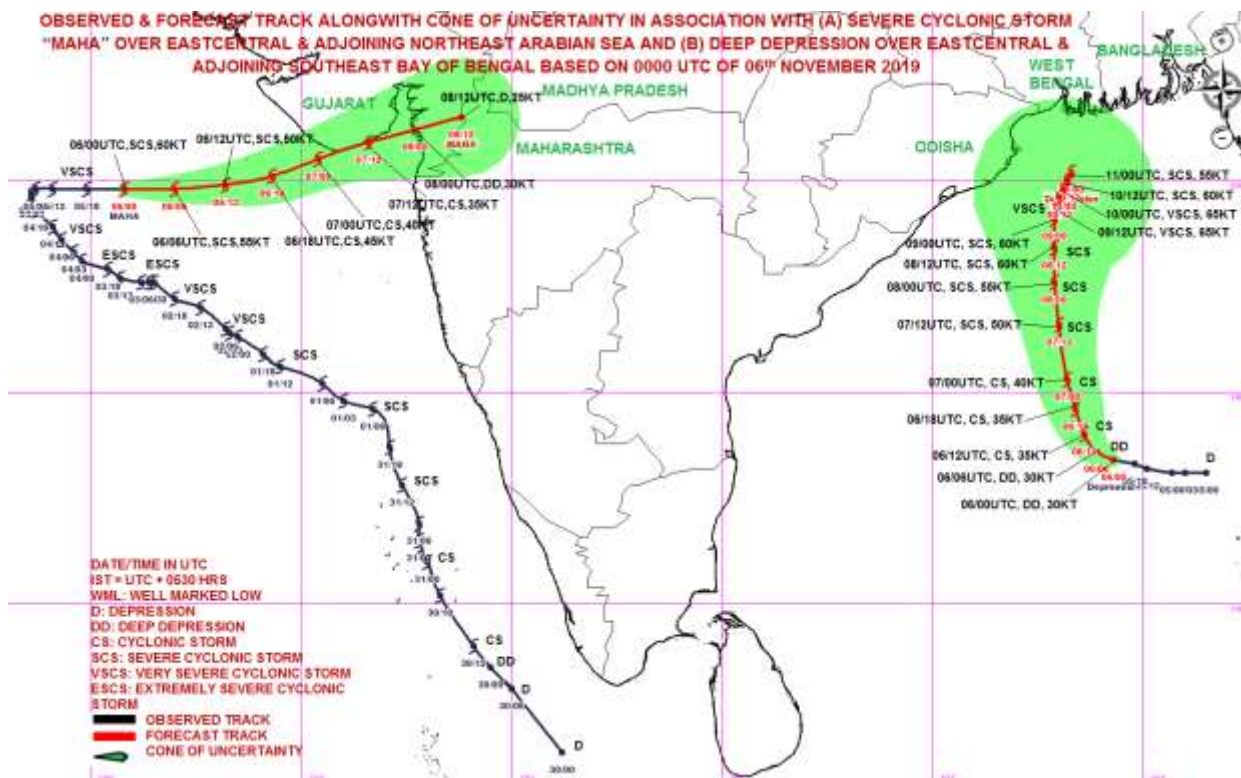
Copy to: ACWC Chennai/ ACWC Mumbai/ ACWC Kolkata/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram/ CWC Visakhapatnam/ CWC Bhubaneswar/ M.O. Port Blair.

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LIC Mercator

06-11-2019/(0000 to 0026) GMT
06-11-2019/(0530 to 0556) IST



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 57 (ARB/04/2019) & BULLETIN NO. : 10 (BOB/04/2019)

TIME OF ISSUE: 1210 HOURS IST

DATED: 06.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)
TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)
CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)
CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub: (A) Severe Cyclonic Storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining northeast Arabian Sea

(B) Deep Depression over eastcentral & adjoining southeast Bay of Bengal.

BULLETIN NO. : 57 (ARB/04/2019)

(A) Severe Cyclonic Storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining northeast Arabian Sea

The **Severe Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral & adjoining northeast Arabian Sea continued to move eastwards with a speed of 14 kmph during past 06 hours and lay centered at 0830 hrs IST of today, the 06th November, 2019 over eastcentral & adjoining northeast Arabian Sea near latitude 19.8°N and longitude 66.3°E, about 400 km west-southwest of Porbandar (Gujarat), 440 km west-southwest of Veraval (Gujarat) and 490 km west-southwest of Diu. It is very likely to move nearly eastwards, weaken into a Cyclonic Storm by today, the 6th November evening. Thereafter it is likely to move east-northeastwards, weaken further into a Deep Depression by early morning of tomorrow, the 7th November over northeast and adjoining eastcentral Arabian Sea. It is very likely to skirt Saurashtra coast and lie centered about 40 kilometers south of Diu around noon of 7th November as a deep depression. Continuing to move east-northeastwards, it would further weaken into a depression by tomorrow evening.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
06.11.19/0830	19.8/66.3	100-110 gusting to 125	Severe Cyclonic Storm
06.11.19/1130	19.7/67.0	90-100 gusting to 110	Severe Cyclonic Storm
06.11.19/1730	19.7/68.2	75-85 gusting to 95	Cyclonic Storm
06.11.19/2330	19.9/69.3	65-75 gusting to 85	Cyclonic Storm
07.11.19/0530	20.1/69.7	55-65 gusting to 75	Deep Depression
07.11.19/1730	20.3/71.6	40-50 gusting to 60	Depression
08.11.19/0530	20.6/72.6	25-35 gusting to 45	Well Marked Low

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at many places with heavy to very heavy falls at isolated places very likely over Saurashtra and Gujarat region (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar, and Rajkot**) on today, the 6th November & isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, and Vadodara** and heavy rainfall at isolated places over **Botad and Ahmedabad** on 7th November, 2019.
- **Maharashtra:** Light to moderate rainfall at most places with isolated heavy falls very likely over Madhya Maharashtra and north Konkan (Palghar & Thane districts) on today, the 6th November & northern most districts of Madhya Maharashtra on 7th November, 2019.

(ii) Wind warning

- **Gujarat : Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from today, the 6th November afternoon. It is very likely to increase gradually becoming 55-65 Kmph gusting to 75 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli Bhavnagar, Bharuch, Anand, Ahmedabad, and Botad** districts, 40-50 kmph gusting to 60 kmph over districts **Porbandar, Rajkot, Navsari, Valsad, Daman and Dadra & Nagar Haveli** from 7th November morning for the subsequent 12 hours.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from today, the 6th evening. It is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 7th November morning for the next 12 hours along & off Palghar & Thane districts.
- **Arabian Sea:** Gale wind speed reaching 100-110 kmph gusting to 125 kmph is prevailing over eastcentral and adjoining northeast Arabian Sea around the system centre. It is very likely to decrease gradually and become 55-65 kmph gusting 75 kmph on 7th November morning over northeast and adjoining eastcentral Arabian Sea and further decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November afternoon for subsequent 24 hours.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast from 06th November evening for the subsequent 24 hours.
- **Arabian Sea:** Sea condition will be phenomenal over eastcentral and adjoining northeast Arabian Sea during next 12 hours and will be high thereafter for subsequent 12 hours. It will be very rough to very rough over westcentral and adjoining northwest Arabian Sea during next 6 hours.

(iv) Storm Surge

- Storm surge of about 0.5 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar, Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand and Ahmedabad** Districts from morning to forenoon of 7th November.

(v) Fishermen Warning

- The fishermen are advised not to venture into westcentral and adjoining northwest Arabian Sea during next 12 hours and over eastcentral & adjoining northeast Arabian Sea till 08th November.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast till 8th November.

(vi) Damage Expected over coastal districts of Gujarat (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar**) and Daman, Diu:

- Minor damage to loose / unsecured structures.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- Some breaches in Kutcha road due to flooding.
- Minor damage to Banana trees and near coastal agriculture due to salt spray. Damage to ripe paddy crops.
- Minor damage to Kutcha embankments.

BULLETIN NO. : 10 (BOB/04/2019)

(B) Deep Depression over eastcentral & adjoining southeast Bay of Bengal.

The Deep Depression over eastcentral & adjoining southeast Bay of Bengal westwards with a speed of 04 kmph, and lay centred at 0830 hrs IST of today, the 6th November 2019, over eastcentral & adjoining southeast Bay of Bengal, near Lat.13.4°N and Long. 89.3°E, about 390 km west-northwest of Maya Bandar (Andaman Islands), about 810 km south-southeast of Paradip (Odisha), 920 km south-southeast of Sagar Islands (West Bengal) and 960 km south-southwest of Khepupara (Bangladesh) . It is very likely to intensify into a Cyclonic Storm during next 24 hours. It is very likely to move west-northwestwards for some more time and then north-northwestwards, towards West Bengal & adjoining north Odisha and Bangladesh coasts.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
06.11.19/0830	13.4/89.3	50-60 gusting to 70	Deep Depression
06.11.19/1130	13.5/88.9	50-60 gusting to 70	Deep Depression
06.11.19/1730	13.8/88.6	60-70 gusting to 80	Cyclonic Storm
06.11.19/2330	14.6/88.4	60-70 gusting to 80	Cyclonic Storm
07.11.19/0530	15.3/88.2	70-80 gusting to 90	Cyclonic Storm
07.11.19/1730	16.6/88.0	90-100 gusting to 110	Severe Cyclonic Storm
08.11.19/0530	17.6/87.9	100-110 gusting to 120	Severe Cyclonic Storm
08.11.19/1730	18.4/87.9	110-120 gusting to 135	Severe Cyclonic Storm
09.11.19/0530	19.1/87.9	110-120 gusting to 135	Severe Cyclonic Storm
09.11.19/1730	19.6/88.0	120-130 gusting to 145	Very Severe Cyclonic Storm
10.11.19/0530	19.8/88.1	120-130 gusting to 145	Very Severe Cyclonic Storm
10.11.19/1730	20.0/88.2	110-120 gusting to 135	Severe Cyclonic Storm
11.11.19/0530	20.2/88.3	100-110 gusting to 120	Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- **Andaman and Nicobar Islands:** Light to moderate rainfall at most places very likely over **Andaman and Nicobar Islands** during next 24 hours.
- **Odisha:** Light to moderate rainfall at most places very likely over **north coastal districts of Odisha** from 9th & 10th Nov. 2019.
- **West Bengal:** Light to moderate rainfall at most places with heavy falls at isolated places very likely over **coastal districts of West Bengal** on 10th & 11th Nov. 2019.

(ii) Wind warning

- **Andaman and Nicobar Islands:** Strong wind speed reaching 35-45 kmph gusting to 55 kmph is likely to prevail over Andaman Islands, north Andaman Sea during next 24 hours.
- **Bay of Bengal:** Squally wind speed reaching 50-60 kmph gusting to 70 kmph is prevailing over east central and adjoining southeast Bay of Bengal around the system centre. It will become gale wind speed reaching 70-80 kmph gusting to 90 kmph by 7th November morning. It will gradually increase further becoming 120-130 kmph gusting to 145 kmph over northwest and adjoining central Bay of Bengal by 9th November evening.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- **Odisha & West Bengal coasts:** Squally wind speed reaching 40 – 50 kmph gusting to 60 kmph likely to commence over northwest Bay of Bengal off Odisha – West Bengal coasts from 8th November evening and gradually increase thereafter.

(iii) Sea condition

- Sea condition will be very rough to High over eastcentral Bay of Bengal till 7th November evening and become very high to phenomenal thereafter over central and adjoining northwest Bay of Bengal.
- Sea condition will be rough over north Andaman Sea during next 24 hours.

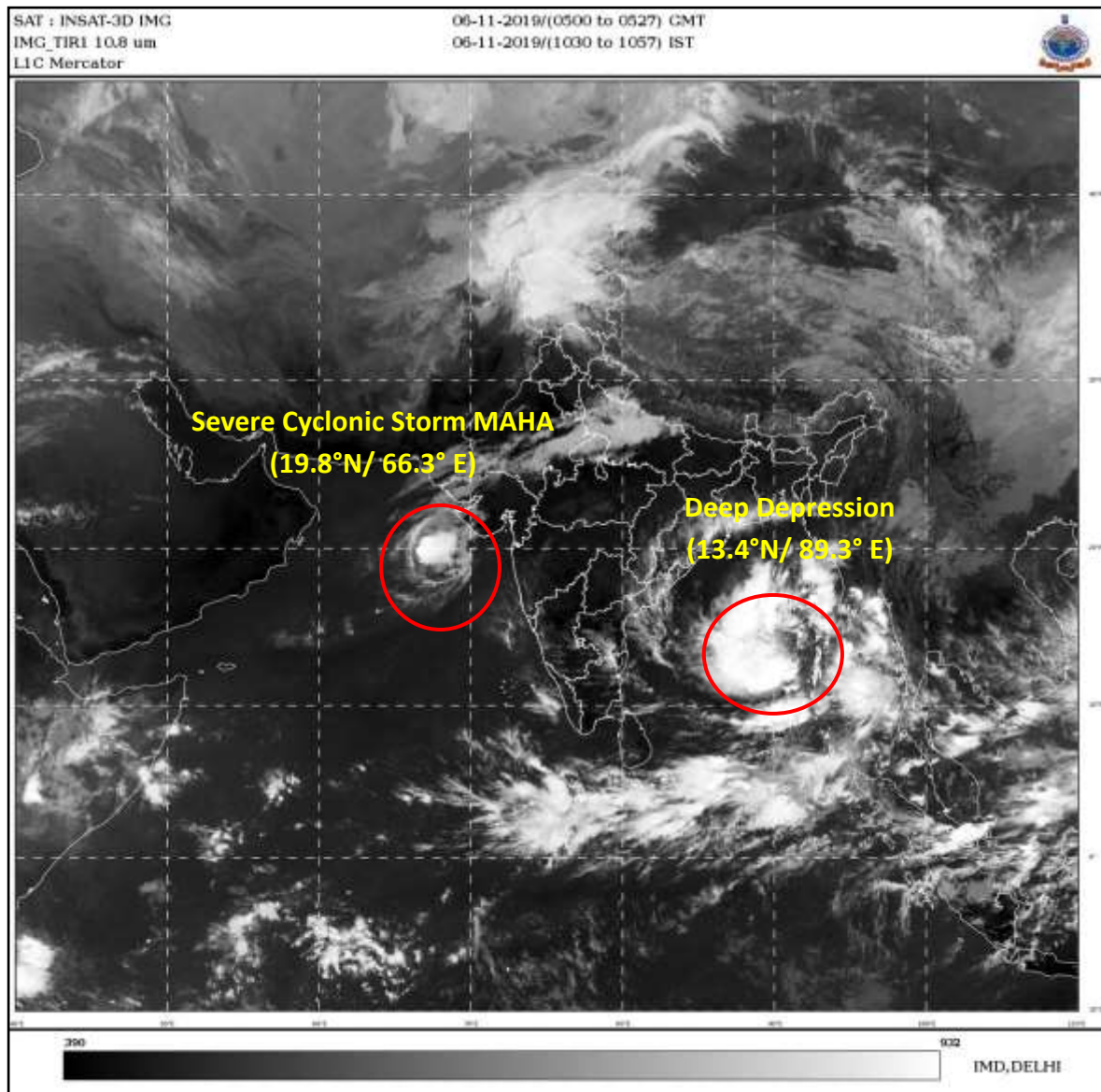
(iv) Fishermen Warning

- Fishermen are advised not to venture into north Andaman Sea and adjoining southeast Bay of Bengal during next 24 hours.
- Fishermen are advised not to venture into eastcentral Bay of Bengal during next 2 days and into westcentral and adjoining northwest Bay of Bengal during 8th – 10th November.
- Fishermen are advised not to venture into north Bay of Bengal along & off Odisha – west Bengal coasts from 8th November onwards.
- The fishermen out at Sea are advised to return to the coast from these areas.

The next bulletin will be issued at 1430 hrs IST of 06th November, 2019.

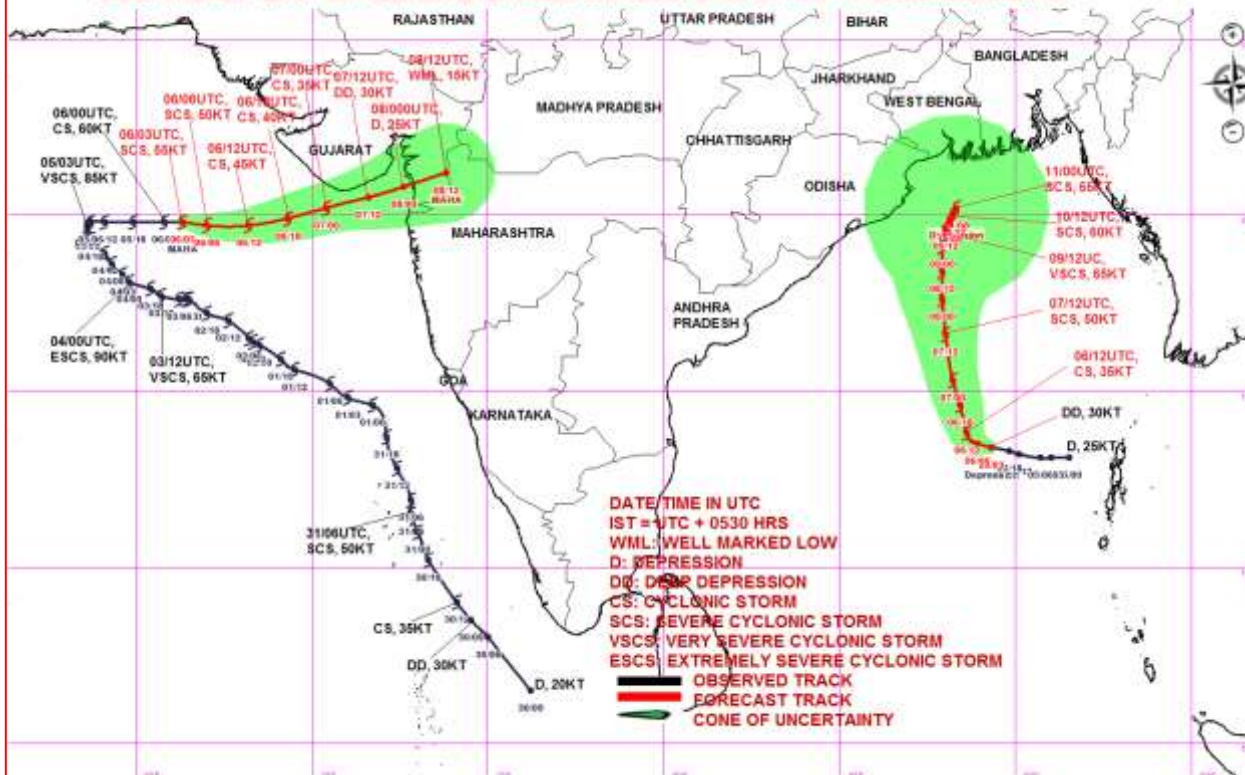
**(Sunitha Devi. S)
Scientist-E, RSMC, New Delhi**

Copy to: ACWC Chennai/ ACWC Mumbai/ ACWC Kolkata/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram/ CWC Visakhapatnam/ CWC Bhubaneswar/ M.O. Port Blair.

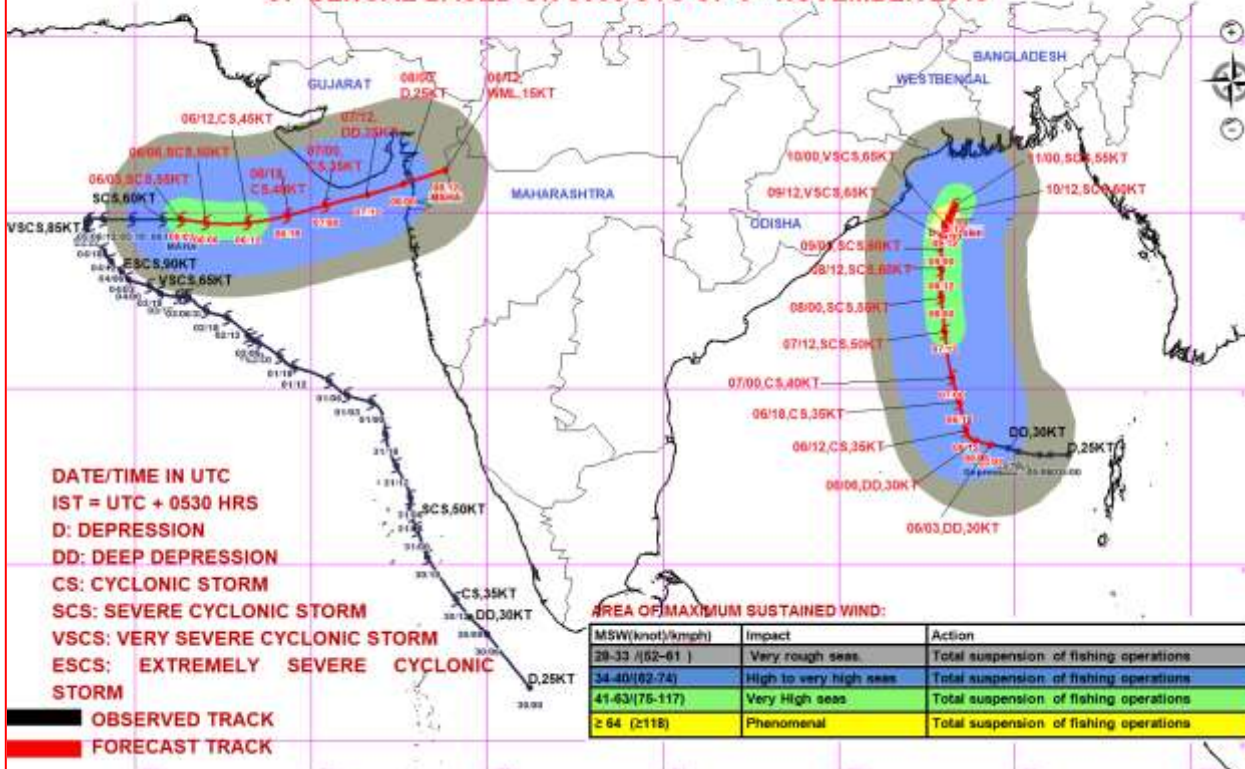


Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH (A) SEVERE CYCLONIC STORM "MAHA" OVER EASTCENTRAL & ADJOINING NORTHEAST ARABIAN SEA AND (B) DEEP DEPRESSION OVER EASTCENTRAL & ADJOINING SOUTHEAST BAY OF BENGAL BASED ON 0300 UTC OF 06th NOVEMBER 2019



OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH (A) SEVERE CYCLONIC STORM "MAHA" OVER EASTCENTRAL & ADJOINING NORTHEAST ARABIAN SEA AND (B) DEEP DEPRESSION OVER EASTCENTRAL & ADJOINING SOUTHEAST BAY OF BENGAL BASED ON 0300 UTC OF 6th NOVEMBER 2019



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO.: 58 (ARB/04/2019) & BULLETIN NO.: 11 (BOB/04/2019)

TIME OF ISSUE: 1500 HOURS IST

DATED: 06.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)
TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)
CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)
CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub: (A) Severe Cyclonic Storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining northeast Arabian Sea
(B) Deep Depression over eastcentral & adjoining southeast Bay of Bengal.

BULLETIN NO. : 58 (ARB/04/2019)

(A) Severe Cyclonic Storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining northeast Arabian Sea

The **Severe Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral & adjoining northeast Arabian Sea moved east-northeastwards with a speed of 12 kmph during past 06 hours and lay centered at 1130 hrs IST of today, the 06th November, 2019 over eastcentral & adjoining northeast Arabian Sea near latitude 19.7°N and longitude 66.5°E, about 390 km west-southwest of Porbandar (Gujarat), 420 km west-southwest of Veraval (Gujarat) and 470 km west-southwest of Diu. It is very likely to move nearly eastwards, weaken into a Cyclonic Storm by today, the 6th November evening. Thereafter it is likely to move east-northeastwards, weaken further into a Deep Depression by morning of tomorrow, the 7th November over northeast and adjoining eastcentral Arabian Sea. It is very likely to skirt Saurashtra coast and lie centered about 40 kilometers south of Diu around noon of 7th November as a deep depression. Continuing to move east-northeastwards, it would further weaken into a depression by tomorrow evening.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
06.11.19/1130	19.7/66.5	90-100 gusting to 110	Severe Cyclonic Storm
06.11.19/1730	19.7/68.0	80-90 gusting to 100	Cyclonic Storm
06.11.19/2330	19.9/69.3	70-80 gusting to 90	Cyclonic Storm
07.11.19/0530	20.2/70.4	60-70 gusting to 80	Cyclonic Storm
07.11.19/1130	20.4/71.2	55-65 gusting to 75	Deep Depression
07.11.19/2330	20.6/72.1	40-50 gusting to 60	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at many places with heavy to very heavy falls at isolated places very likely over Saurashtra and Gujarat region (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Porbandar, and Rajkot**) on today, the 6th November & isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, and Vadodara** and heavy rainfall at isolated places over **Botad and Ahmedabad** on 7th November, 2019.
- **Maharashtra:** Light to moderate rainfall at a few places very likely over Madhya Maharashtra and north Konkan (Palghar & Thane districts) on today, the 6th November and at many places over northern most districts of Madhya Maharashtra on 7th November, 2019.

(ii) Wind warning

- **Gujarat : Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from today, the 6th November afternoon. It is very likely to increase gradually becoming 55-65 Kmph gusting to 75 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli Bhavnagar, Bharuch, Anand, Ahmedabad, and Botad** districts, 40-50 kmph gusting to 60 kmph over districts **Porbandar, Rajkot, Navsari, Valsad, Daman and Dadra & Nagar Haveli** from 7th November morning for the subsequent 12 hours.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from today, the 6th evening. It is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 7th November morning for the next 12 hours along & off Palghar & Thane districts.
- **Arabian Sea:** Gale wind speed reaching 90-100 kmph gusting to 115 kmph is prevailing over eastcentral and adjoining northeast Arabian Sea around the system centre. It is very likely to decrease gradually and become 60-70 kmph gusting 80 kmph on 7th November morning over northeast and adjoining eastcentral Arabian Sea and further decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November afternoon for subsequent 24 hours.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast from 06th November evening for the subsequent 24 hours.
- **Arabian Sea:** Sea condition will be phenomenal over eastcentral and adjoining northeast Arabian Sea during next 12 hours and will be high thereafter for subsequent 12 hours. It will be very rough to very rough over westcentral and adjoining northwest Arabian Sea during next 6 hours.

(iv) Storm Surge

- Storm surge of about 0.5 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar, Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand and Ahmedabad** Districts from morning to forenoon of 7th November.

(v) Fishermen Warning

- The fishermen are advised not to venture into westcentral and adjoining northwest Arabian Sea during next 12 hours and over eastcentral & adjoining northeast Arabian Sea till 08th November.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast till 8th November.

(vi) Damage Expected over coastal districts of Gujarat (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar**) and Daman, Diu:

- Minor damage to loose / unsecured structures.
- Some breaches in Kutcha road due to flooding.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- Minor damage to Banana trees and near coastal agriculture due to salt spray. Damage to ripe paddy crops.
- Minor damage to Kutcha embankments.

BULLETIN NO. : 11 (BOB/04/2019)

(B) Deep Depression over eastcentral & adjoining southeast Bay of Bengal.

The Deep Depression over eastcentral & adjoining southeast Bay of Bengal remained practically stationary and lay centred at 1130 hrs IST of today, the 6th November 2019, over eastcentral & adjoining southeast Bay of Bengal, near Lat.13.4°N and Long. 89.3°E, about 390 km west-northwest of Maya Bandar (Andaman Islands), about 810 km south-southeast of Paradip (Odisha), 920 km south-southeast of Sagar Islands (West Bengal) and 960 km south-southwest of Khepupara (Bangladesh) . It is very likely to intensify into a Cyclonic Storm during next 24 hours and into a Severe Cyclonic Storm during the subsequent 24 hours. It is very likely to move northwestwards for some time and then north-northwestwards towards West Bengal and Bangladesh coasts.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
06.11.19/1130	13.4/89.3	50-60 gusting to 70	Deep Depression
06.11.19/1730	13.7/88.9	60-70 gusting to 80	Cyclonic Storm
06.11.19/2330	14.2/88.6	70-80 gusting to 90	Cyclonic Storm
07.11.19/0530	14.7/88.3	80-90 gusting to 100	Cyclonic Storm
07.11.19/1130	15.2/88.1	90-100 gusting to 110	Severe Cyclonic Storm
07.11.19/2330	16.7/88.0	120-130 gusting to 145	Very Severe Cyclonic Storm
08.11.19/1130	17.5/87.9	130-140 gusting to 155	Very Severe Cyclonic Storm
08.11.19/2330	18.6/87.9	130-140 gusting to 155	Very Severe Cyclonic Storm
09.11.19/1130	18.6/87.9	120-130 gusting to 145	Very Severe Cyclonic Storm
09.11.19/2330	20.4/88.0	120-130 gusting to 145	Very Severe Cyclonic Storm
10.11.19/1130	20.8/88.1	115-125 gusting to 140	Very Severe Cyclonic Storm
10.11.19/2330	21.1/88.3	105-115 gusting to 125	Severe Cyclonic Storm
11.11.19/1130	21.2/88.5	95-105 gusting to 115	Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- **Andaman and Nicobar Islands:** Light to moderate rainfall at most places very likely over **Andaman and Nicobar Islands** during next 24 hours.
- **Odisha:** Light to moderate rainfall at most places very likely over **north coastal districts of Odisha** from 9th & 10th Nov. 2019.
- **West Bengal:** Light to moderate rainfall at most places with heavy falls at isolated places very likely over **coastal districts of West Bengal** on 10th & 11th Nov. 2019.

(ii) Wind warning

- **Andaman and Nicobar Islands:** Strong wind speed reaching 35-45 kmph gusting to 55 kmph is likely to prevail over Andaman Islands, north Andaman Sea during next 24 hours.
- **Bay of Bengal:** Squally wind speed reaching 50-60 kmph gusting to 70 kmph is prevailing over east central and adjoining southeast Bay of Bengal around the system centre. It will become gale wind speed reaching 80-90 kmph gusting to 100 kmph by 7th November morning. It will gradually increase further becoming 130-140 kmph gusting to 145 kmph over northwest and adjoining central Bay of Bengal by 8th November forenoon.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- **Odisha & West Bengal coasts:** Squally wind speed reaching 40 – 50 kmph gusting to 60 kmph likely to commence over northwest Bay of Bengal off Odisha – West Bengal coasts from 8th November evening and gradually increase thereafter.

(iii) Sea condition

- Sea condition will be very rough to High over eastcentral Bay of Bengal till 7th November evening and become very high to phenomenal thereafter over central and adjoining northwest Bay of Bengal.
- Sea condition will be rough over north Andaman Sea during next 24 hours.

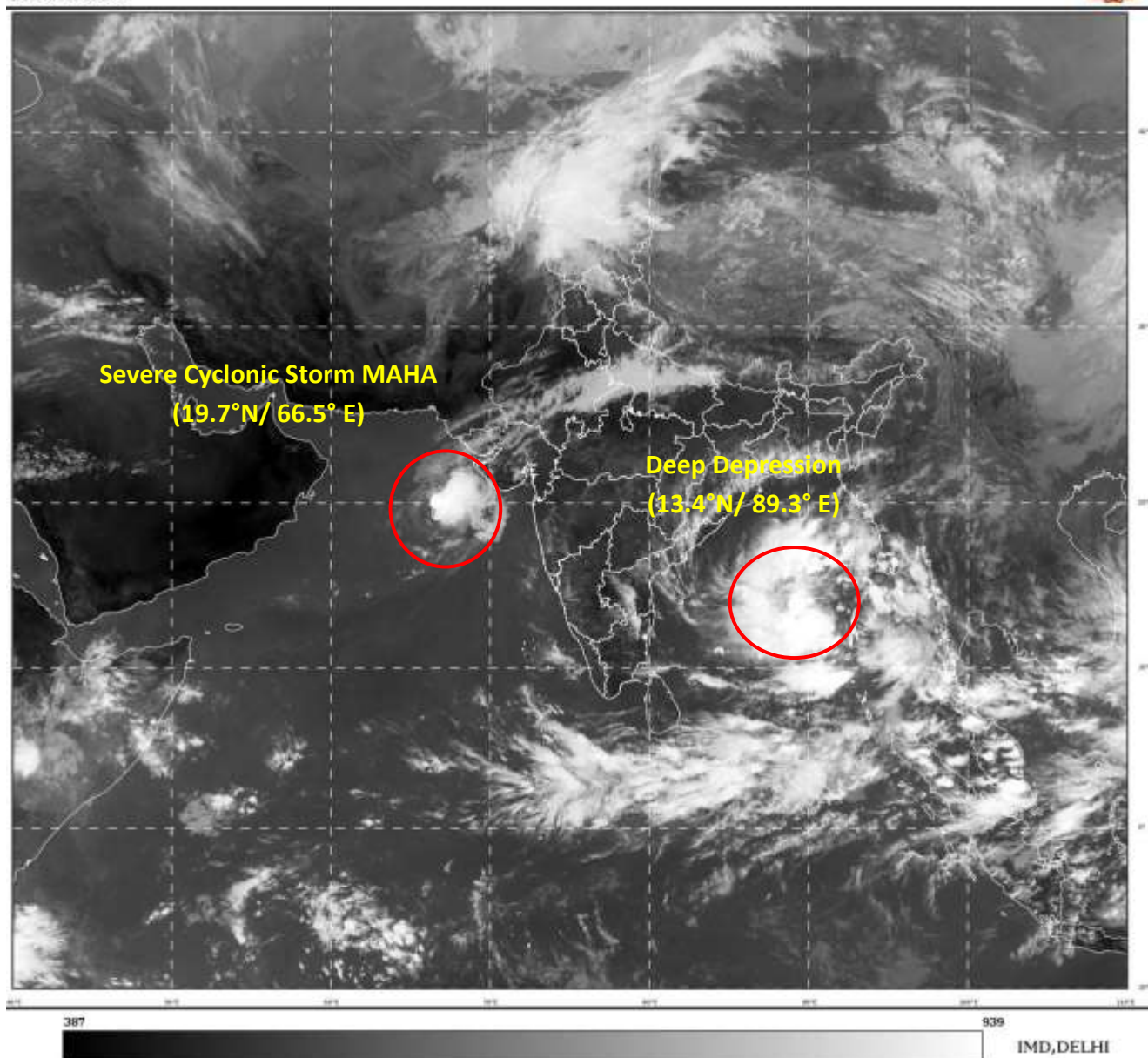
(iv) Fishermen Warning

- Fishermen are advised not to venture into north Andaman Sea and adjoining southeast Bay of Bengal during next 24 hours.
- Fishermen are advised not to venture into eastcentral Bay of Bengal during next 2 days and into westcentral and adjoining northwest Bay of Bengal during 8th – 10th November.
- Fishermen are advised not to venture into north Bay of Bengal along & off Odisha – west Bengal coasts from 8th November onwards.
- The fishermen out at Sea are advised to return to the coast from these areas.

The next bulletin will be issued at 1730 hrs IST of 06th November, 2019.

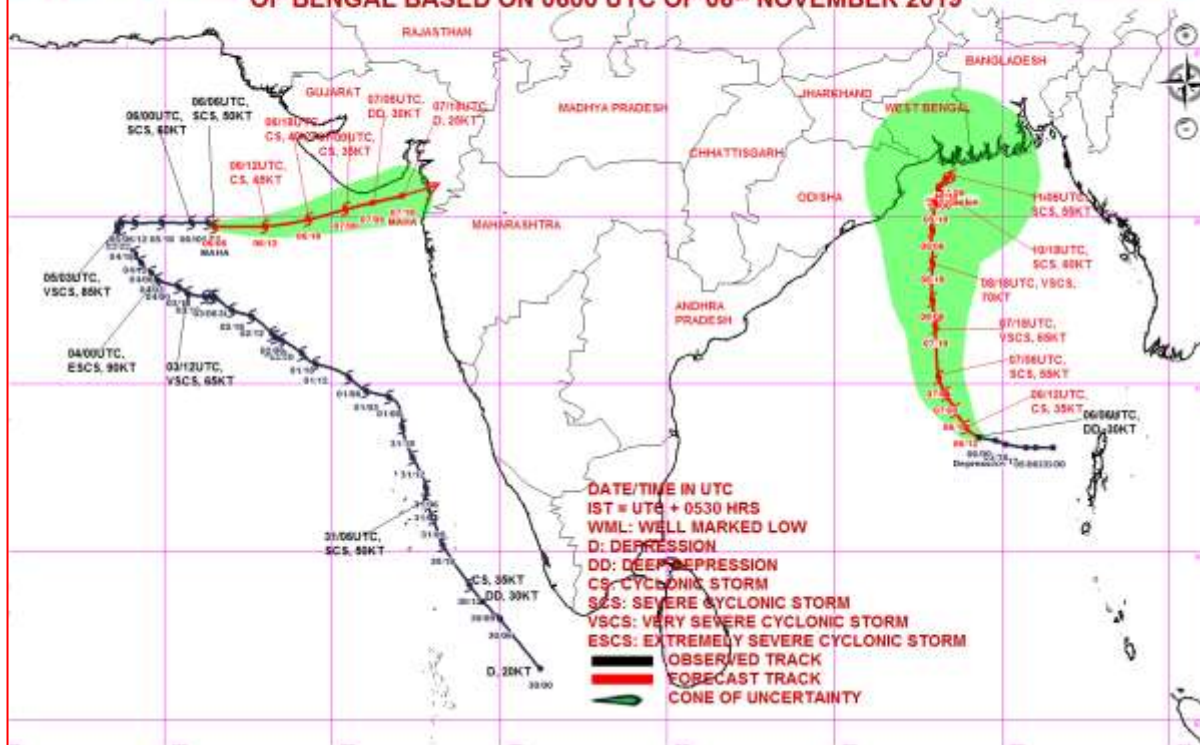
**(Sunitha Devi. S)
Scientist-E, RSMC, New Delhi**

Copy to: ACWC Chennai/ ACWC Mumbai/ ACWC Kolkata/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram/ CWC Visakhapatnam/ CWC Bhubaneswar/ M.O. Port Blair.

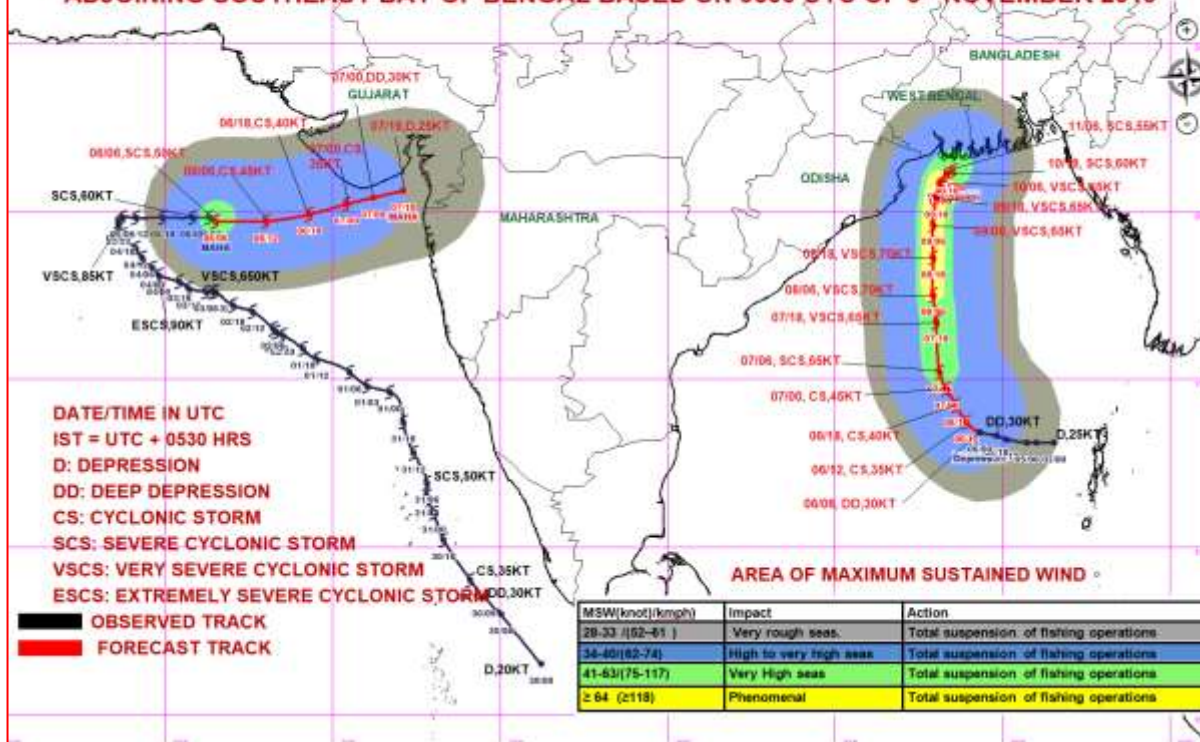


Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

**OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH
(A) SEVERE CYCLONIC STORM "MAHA" OVER EASTCENTRAL & ADJOINING NORTHEAST
ARABIAN SEA AND (B) DEEP DEPRESSION OVER EASTCENTRAL & ADJOINING SOUTHEAST BAY
OF BENGAL BASED ON 0600 UTC OF 06th NOVEMBER 2019**



**OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN
ASSOCIATION WITH (A) SEVERE CYCLONIC STORM "MAHA" OVER EASTCENTRAL &
ADJOINING NORTHEAST ARABIAN SEA AND (B) DEEP DEPRESSION OVER EASTCENTRAL &
ADJOINING SOUTHEAST BAY OF BENGAL BASED ON 06th NOVEMBER 2019**



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO.: 59 (ARB/04/2019) & BULLETIN NO.: 12 (BOB/04/2019)

TIME OF ISSUE: 1715 HOURS IST

DATED: 06.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)
TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)
CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)
CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub: (A) Severe Cyclonic Storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining northeast Arabian Sea
(B) Deep Depression over eastcentral & adjoining southeast Bay of Bengal.

BULLETIN NO. : 59 (ARB/04/2019)

(A) Severe Cyclonic Storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining northeast Arabian Sea

The **Severe Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral & adjoining northeast Arabian Sea moved nearly eastwards with a speed of 14 kmph during past 06 hours and lay centered at 1430 hrs IST of today, the 06th November, 2019 over eastcentral & adjoining northeast Arabian Sea near latitude 19.6°N and longitude 67.1°E, about 350 km west-southwest of Porbandar (Gujarat), 370 km west-southwest of Veraval (Gujarat) and 420 km west-southwest of Diu. It is very likely to move nearly eastwards, weaken into a Cyclonic Storm during next 12 hours. Thereafter it is likely to move east-northeastwards, weaken further into a Deep Depression by morning of tomorrow, the 7th November over northeast and adjoining eastcentral Arabian Sea. It is very likely to skirt Saurashtra coast and lie centered about 40 kilometers south of Diu around noon of 7th November as a deep depression. Continuing to move east-northeastwards, it would further weaken into a depression by tomorrow evening.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
06.11.19/1430	19.6/67.1	90-100 gusting to 110	Severe Cyclonic Storm
06.11.19/1730	19.7/68.0	85-95 gusting to 105	Cyclonic Storm
06.11.19/2330	19.9/69.3	70-80 gusting to 90	Cyclonic Storm
07.11.19/0530	20.2/70.4	60-70 gusting to 80	Cyclonic Storm
07.11.19/1130	20.4/71.2	55-65 gusting to 75	Deep Depression
07.11.19/2330	20.6/72.1	40-50 gusting to 60	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at many places with heavy to very heavy falls at isolated places very likely over Saurashtra and Gujarat region (**Diu, Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Porbandar, and Rajkot**) on today, the 6th November & isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, and Vadodara** and heavy rainfall at isolated places over **Botad and Ahmedabad** on 7th November, 2019.
- **Maharashtra:** Light to moderate rainfall at a few places very likely over Madhya Maharashtra and north Konkan (Palghar & Thane districts) on today, the 6th November and at many places over northern most districts of Madhya Maharashtra on 7th November, 2019.

(ii) Wind warning

- **Gujarat : Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to commence over northeast Arabian Sea along & off Gujarat coast from today, evening. It is very likely to increase gradually becoming 55-65 Kmph gusting to 75 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli Bhavnagar, Bharuch, Anand, Ahmedabad, and Botad** districts, 40-50 kmph gusting to 60 kmph over districts **Porbandar, Rajkot, Navsari, Valsad, Daman and Dadra & Nagar Haveli** from 7th November morning for the subsequent 12 hours.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast from today, the 6th evening. It is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 7th November morning for the next 12 hours along & off Palghar & Thane districts.
- **Arabian Sea:** Gale wind speed reaching 90-100 kmph gusting to 115 kmph is prevailing over eastcentral and adjoining northeast Arabian Sea around the system centre. It is very likely to decrease gradually and become 60-70 kmph gusting 80 kmph on 7th November morning over northeast and adjoining eastcentral Arabian Sea and further decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast from 6th November evening for subsequent 24 hours.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast from 06th November evening for the subsequent 24 hours.
- **Arabian Sea:** Sea condition will be phenomenal over eastcentral and adjoining northeast Arabian Sea during next 12 hours and will be high thereafter for subsequent 12 hours. It will be very rough to very rough over westcentral and adjoining northwest Arabian Sea during next 6 hours.

(iv) Storm Surge

- Storm surge of about 0.5 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar, Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand and Ahmedabad** Districts from morning to forenoon of 7th November.

(v) Fishermen Warning

- The fishermen are advised not to venture into westcentral and adjoining northwest Arabian Sea during next 06 hours and over eastcentral & adjoining northeast Arabian Sea till 08th November.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast till 8th November.

(vi) Damage Expected over coastal districts of Gujarat (**Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar**) and Daman, Diu:

- Minor damage to loose / unsecured structures.
- Some breaches in Kutcha road due to flooding.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- Minor damage to Banana trees and near coastal agriculture due to salt spray. Damage to ripe paddy crops.
- Minor damage to Kutcha embankments.

BULLETIN NO. : 12 (BOB/04/2019)

(B) Deep Depression over eastcentral & adjoining southeast Bay of Bengal.

The Deep Depression over eastcentral & adjoining southeast Bay of Bengal remained practically stationary and lay centred at 1430 hrs IST of today, the 6th November 2019, over eastcentral & adjoining southeast Bay of Bengal, near Lat.13.4°N and Long. 89.3°E, about 390 km west-northwest of Maya Bandar (Andaman Islands), about 810 km south-southeast of Paradip (Odisha), 920 km south-southeast of Sagar Islands (West Bengal) and 960 km south-southwest of Khepupara (Bangladesh) . It is very likely to intensify into a Cyclonic Storm during next 12 hours and into a Severe Cyclonic Storm during the subsequent 24 hours. It is very likely to move northwestwards for some time and then north-northwestwards towards West Bengal and Bangladesh coasts.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
06.11.19/1430	13.4/89.3	50-60 gusting to 70	Deep Depression
06.11.19/1730	13.7/88.9	60-70 gusting to 80	Cyclonic Storm
06.11.19/2330	14.2/88.6	70-80 gusting to 90	Cyclonic Storm
07.11.19/0530	14.7/88.3	80-90 gusting to 100	Cyclonic Storm
07.11.19/1130	15.2/88.1	90-100 gusting to 110	Severe Cyclonic Storm
07.11.19/2330	16.7/88.0	120-130 gusting to 145	Very Severe Cyclonic Storm
08.11.19/1130	17.5/87.9	130-140 gusting to 155	Very Severe Cyclonic Storm
08.11.19/2330	18.6/87.9	130-140 gusting to 155	Very Severe Cyclonic Storm
09.11.19/1130	18.6/87.9	120-130 gusting to 145	Very Severe Cyclonic Storm
09.11.19/2330	20.4/88.0	120-130 gusting to 145	Very Severe Cyclonic Storm
10.11.19/1130	20.8/88.1	115-125 gusting to 140	Very Severe Cyclonic Storm
10.11.19/2330	21.1/88.3	105-115 gusting to 125	Severe Cyclonic Storm
11.11.19/1130	21.2/88.5	95-105 gusting to 115	Severe Cyclonic Storm

Warnings:

(i) Rainfall:

- **Andaman and Nicobar Islands:** Light to moderate rainfall at most places very likely over **Andaman and Nicobar Islands** during next 24 hours.
- **Odisha:** Light to moderate rainfall at most places very likely over **north coastal districts of Odisha** from 9th & 10th Nov. 2019.
- **West Bengal:** Light to moderate rainfall at most places with heavy falls at isolated places very likely over **coastal districts of West Bengal** on 10th & 11th Nov. 2019.

(ii) Wind warning

- **Andaman and Nicobar Islands:** Strong wind speed reaching 35-45 kmph gusting to 55 kmph is likely to prevail over Andaman Islands, north Andaman Sea during next 24 hours.
- **Bay of Bengal:** Squally wind speed reaching 50-60 kmph gusting to 70 kmph is prevailing over east central and adjoining southeast Bay of Bengal around the system centre. It will become gale wind speed reaching 80-90 kmph gusting to 100 kmph by 7th November morning. It will gradually increase further becoming 130-140 kmph gusting to 145 kmph over northwest and adjoining central Bay of Bengal by 8th November forenoon.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- **Odisha & West Bengal coasts:** Squally wind speed reaching 40 – 50 kmph gusting to 60 kmph likely to commence over northwest Bay of Bengal off Odisha – West Bengal coasts from 8th November evening and gradually increase thereafter.

(iii) Sea condition

- Sea condition will be very rough to High over eastcentral Bay of Bengal till 7th November evening and become very high to phenomenal thereafter over central and adjoining northwest Bay of Bengal.
- Sea condition will be rough over north Andaman Sea during next 24 hours.

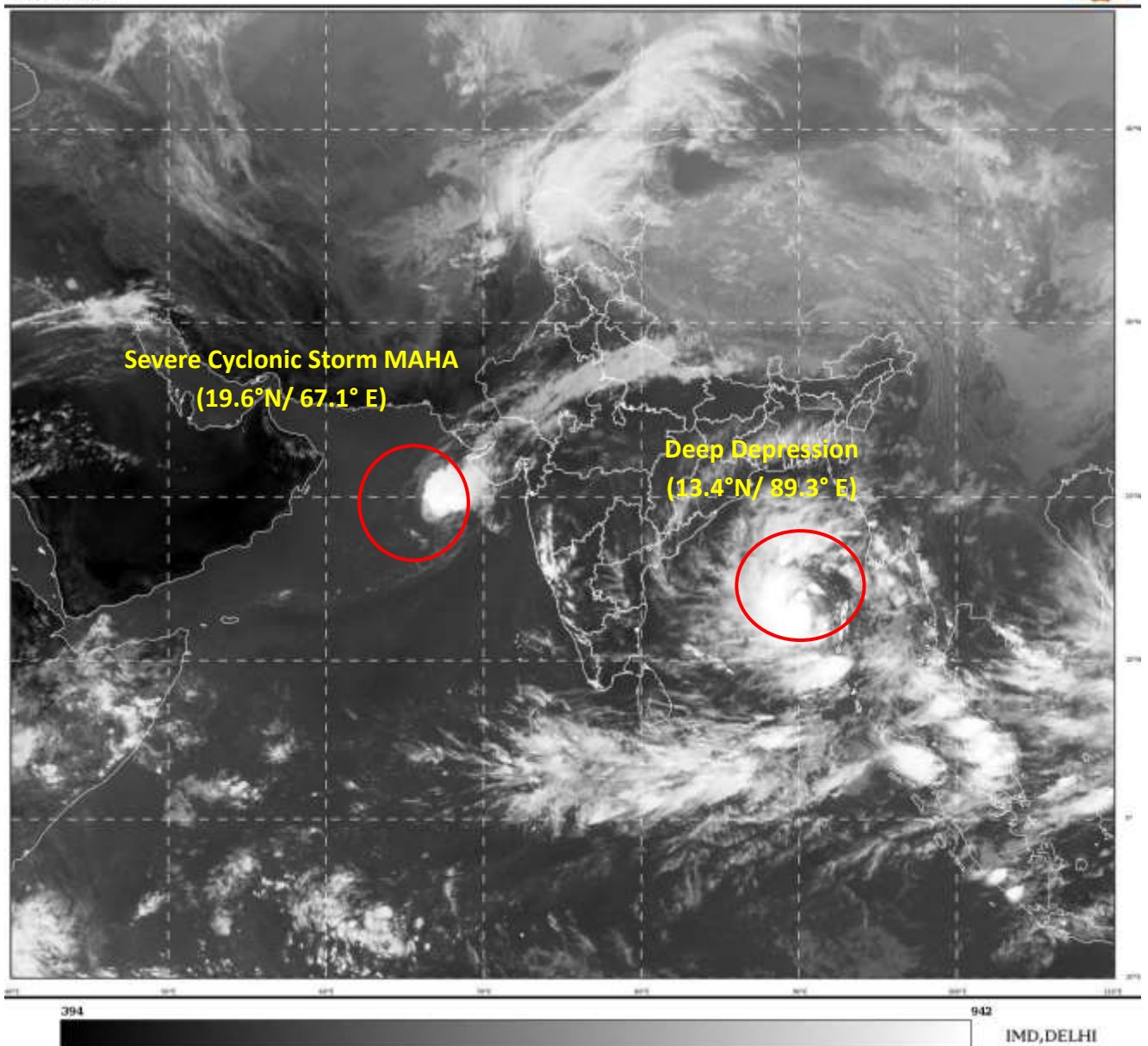
(iv) Fishermen Warning

- Fishermen are advised not to venture into north Andaman Sea and adjoining southeast Bay of Bengal during next 24 hours.
- Fishermen are advised not to venture into eastcentral Bay of Bengal during next 2 days and into westcentral and adjoining northwest Bay of Bengal during 8th – 10th November.
- Fishermen are advised not to venture into north Bay of Bengal along & off Odisha – west Bengal coasts from 8th November onwards.
- The fishermen out at Sea are advised to return to the coast from these areas.

The next bulletin will be issued at 2030 hrs IST of 06th November, 2019.

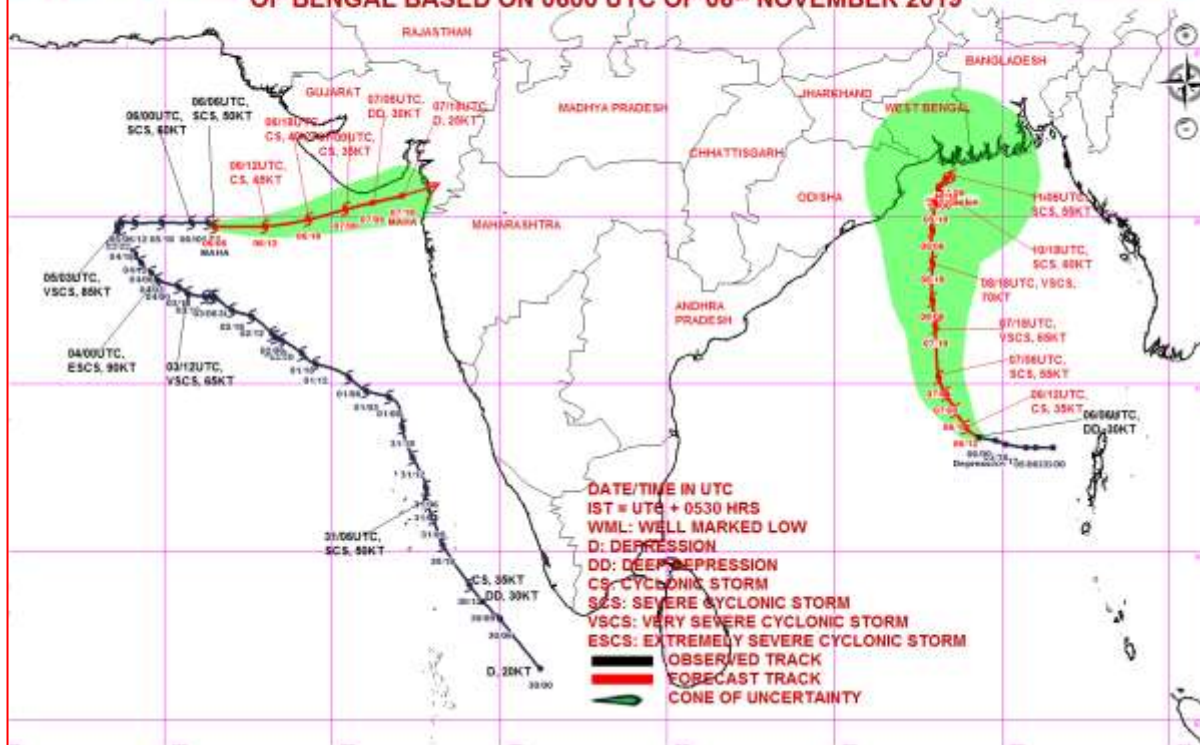
**(Sunitha Devi. S)
Scientist-E, RSMC, New Delhi**

Copy to: ACWC Chennai/ ACWC Mumbai/ ACWC Kolkata/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram/ CWC Visakhapatnam/ CWC Bhubaneswar/ M.O. Port Blair.

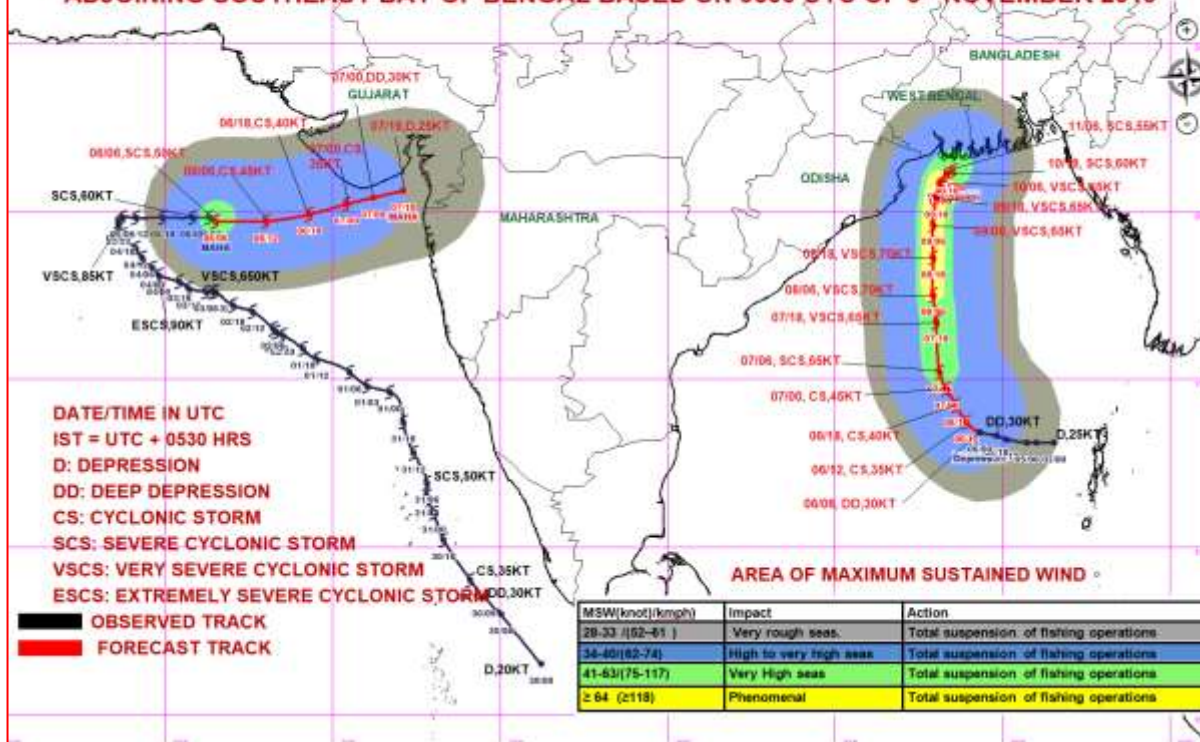


Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

**OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH
(A) SEVERE CYCLONIC STORM "MAHA" OVER EASTCENTRAL & ADJOINING NORTHEAST
ARABIAN SEA AND (B) DEEP DEPRESSION OVER EASTCENTRAL & ADJOINING SOUTHEAST BAY
OF BENGAL BASED ON 0600 UTC OF 06th NOVEMBER 2019**



**OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN
ASSOCIATION WITH (A) SEVERE CYCLONIC STORM "MAHA" OVER EASTCENTRAL &
ADJOINING NORTHEAST ARABIAN SEA AND (B) DEEP DEPRESSION OVER EASTCENTRAL &
ADJOINING SOUTHEAST BAY OF BENGAL BASED ON 06th NOVEMBER 2019**



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO.: 60 (ARB/04/2019) & BULLETIN NO.: 13 (BOB/04/2019)

TIME OF ISSUE: 2145 HOURS IST

DATED: 06.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

JS NDMA (FAX.NO. 26701864)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub: (A) Severe Cyclonic Storm 'MAHA' (Pronounced as M'maha) weakened into a Cyclonic Storm over eastcentral & adjoining northeast Arabian Sea

(B) Deep Depression over eastcentral & adjoining southeast Bay of Bengal.

BULLETIN NO. : 60 (ARB/04/2019)

(A) Severe Cyclonic Storm 'MAHA' (Pronounced as M'maha) weakened into a Cyclonic Storm over eastcentral & adjoining northeast Arabian Sea

The **Severe Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral & adjoining northeast Arabian Sea moved eastwards with a speed of 21 kmph during past 06 hours, weakened into a Cyclonic Storm and lay centered at 1730 hrs IST of today, the 06th November, 2019 over eastcentral & adjoining northeast Arabian Sea near latitude 19.7°N and longitude 67.7°E, about 300 km southwest of Porbandar (Gujarat), 310 km west-southwest of Veraval (Gujarat) and 350 km west-southwest of Diu. It is very likely to move east-northeastwards, weaken further into a Deep Depression by morning of tomorrow, the 7th November over northeast & adjoining eastcentral Arabian Sea. It is very likely to skirt Saurashtra coast and lie centered about 40 kilometers south of Diu around noon of 7th November as a deep depression. Continuing to move east-northeastwards, it is very likely to weaken further into a depression by tomorrow evening.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
06.11.19/1730	19.7/67.7	80-90 gusting to 100	Cyclonic Storm
06.11.19/2330	19.8/68.8	70-80 gusting to 90	Cyclonic Storm
07.11.19/0530	19.9/69.8	60-70 gusting to 80	Cyclonic Storm
07.11.19/1130	20.0/70.4	55-65 gusting to 75	Deep Depression
07.11.19/1730	20.2/71.2	45-55 gusting to 65	Depression
08.11.19/0530	20.4/72.2	35-45 gusting to 55	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at many places with heavy to very heavy falls at isolated places very likely over Saurashtra and Gujarat region (**Diu, Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Porbandar and Rajkot**) during next 24 hours and isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, Ahmedabad and Vadodara** and heavy rainfall at isolated places over **Botad and Ahmedabad** during subsequent 12 hours.
- **Maharashtra:** Light to moderate rainfall at many places over northern most districts of Madhya Maharashtra (Palghar & Thane districts) during next 36 hours.

(ii) Wind warning

- **Gujarat : Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to prevail over northeast Arabian Sea along & off Gujarat coast. It is very likely to increase gradually becoming 55-65 Kmph gusting to 75 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli Bhavnagar, Bharuch, Anand, Ahmedabad, and Botad** districts, 40-50 kmph gusting to 60 kmph over districts **Porbandar, Rajkot, Navsari, Valsad, Daman and Dadra & Nagar Haveli** from 7th November morning for the subsequent 12 hours.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast. It is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 7th November morning for the next 12 hours along & off Palghar & Thane districts.
- **Arabian Sea:** Gale wind speed reaching 80-90 kmph gusting to 100 kmph is prevailing over eastcentral & adjoining northeast Arabian Sea around the system centre. It is very likely to decrease gradually and become 60-70 kmph gusting 80 kmph on 7th November morning over northeast & adjoining eastcentral Arabian Sea and further decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast during next 36 hours.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast during next 36 hours.
- **Arabian Sea:** Sea condition will be high over eastcentral and adjoining northeast Arabian Sea during next 12 hours and will be very rough thereafter for subsequent 24 hours.

(iv) Storm Surge

- Storm surge of about 0.5 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar, Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand and Ahmedabad** Districts from morning to forenoon of 7th November.

(v) Fishermen Warning

- The fishermen are advised not to venture into eastcentral & adjoining northeast Arabian Sea till 08th November morning.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast till 8th November morning.

(vi) Damage Expected over coastal districts of Gujarat (Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar) and Daman, Diu:

- Minor damage to loose / unsecured structures.
- Some breaches in Kutcha road.
- Minor damage to Banana trees and near coastal agriculture due to salt spray. Damage to ripe paddy crops.
- Minor damage to Kutcha embankments.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(B) Deep Depression over eastcentral & adjoining southeast Bay of Bengal.

The Deep Depression over eastcentral & adjoining southeast Bay of Bengal moved slightly northwards with a speed of 02 kmph during past 06 hours and lay centred at 1730 hrs IST of today, the 6th November 2019, over eastcentral & adjoining southeast Bay of Bengal, near Lat.13.5°N and Long. 89.3°E, about 400 km west-northwest of Maya Bandar (Andaman Islands), about 810 km south-southeast of Paradip (Odisha), 920 km south-southeast of Sagar Islands (West Bengal) and 950 km south-southwest of Khepupara (Bangladesh) . It is very likely to intensify into a Cyclonic Storm during next 12 hours and into a Severe Cyclonic Storm during the subsequent 24 hours. It is very likely to move northwestwards for some time and then north-northwestwards towards West Bengal and Bangladesh coasts.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
06.11.19/1730	13.5/89.3	50-60 gusting to 80	Deep Depression
06.11.19/2330	13.8/88.8	60-70 gusting to 80	Cyclonic Storm
07.11.19/0530	14.3/88.4	70-80 gusting to 90	Cyclonic Storm
07.11.19/1130	15.2/88.1	80-90 gusting to 100	Cyclonic Storm
07.11.19/1730	16.0/88.0	90-100 gusting to 110	Severe Cyclonic Storm
08.11.19/0530	17.4/87.9	100-110 gusting to 120	Severe Cyclonic Storm
08.11.19/1730	18.8/87.9	120-130 gusting to 145	Very Severe Cyclonic Storm
09.11.19/0530	20.0/87.9	130-140 gusting to 145	Very Severe Cyclonic Storm
09.11.19/1730	20.6/88.0	120-130 gusting to 145	Very Severe Cyclonic Storm
10.11.19/0530	20.9/88.1	115-125 gusting to 140	Very Severe Cyclonic Storm
10.11.19/1730	21.1/88.2	110-120 gusting to 130	Severe Cyclonic Storm
11.11.19/0530	21.2/88.4	105-115 gusting to 125	Severe Cyclonic Storm
11.11.19/1730	21.2/88.6	100-110 gusting to 120	Severe Cyclonic Storm

Warnings:**(i) Rainfall:**

- **Andaman and Nicobar Islands:** Light to moderate rainfall at most places very likely over **Andaman and Nicobar Islands** during next 24 hours.
- **Odisha:** Light to moderate rainfall at most places very likely over **north coastal districts of Odisha** from 9th & 10th Nov. 2019.
- **West Bengal:** Light to moderate rainfall at most places with heavy falls at isolated places very likely over **coastal districts of West Bengal** on 10th & 11th Nov. 2019.

(ii) Wind warning

- **Andaman and Nicobar Islands:** Strong wind speed reaching 35-45 kmph gusting to 55 kmph is likely to prevail over Andaman Islands, north Andaman Sea during next 12 hours.
- **Bay of Bengal:** Squally wind speed reaching 50-60 kmph gusting to 70 kmph is prevailing over east central & adjoining southeast Bay of Bengal around the system centre. It will become gale wind speed reaching 70-80 kmph gusting to 90 kmph by 7th November morning. It will gradually increase further becoming 130-140 kmph gusting to 145 kmph over northwest & adjoining westcentral Bay of Bengal by 9th November morning.
- **Odisha & West Bengal coasts:** Squally wind speed reaching 40 – 50 kmph gusting to 60 kmph likely to commence over northwest Bay of Bengal off Odisha – West Bengal coasts from 8th November evening and gradually increase thereafter.

(iii) Sea condition

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

- Sea condition will be very rough to high over eastcentral Bay of Bengal till 7th November evening and become very high to phenomenal thereafter over central & adjoining northwest Bay of Bengal.
- Sea condition will be rough over north Andaman Sea during next 12 hours.

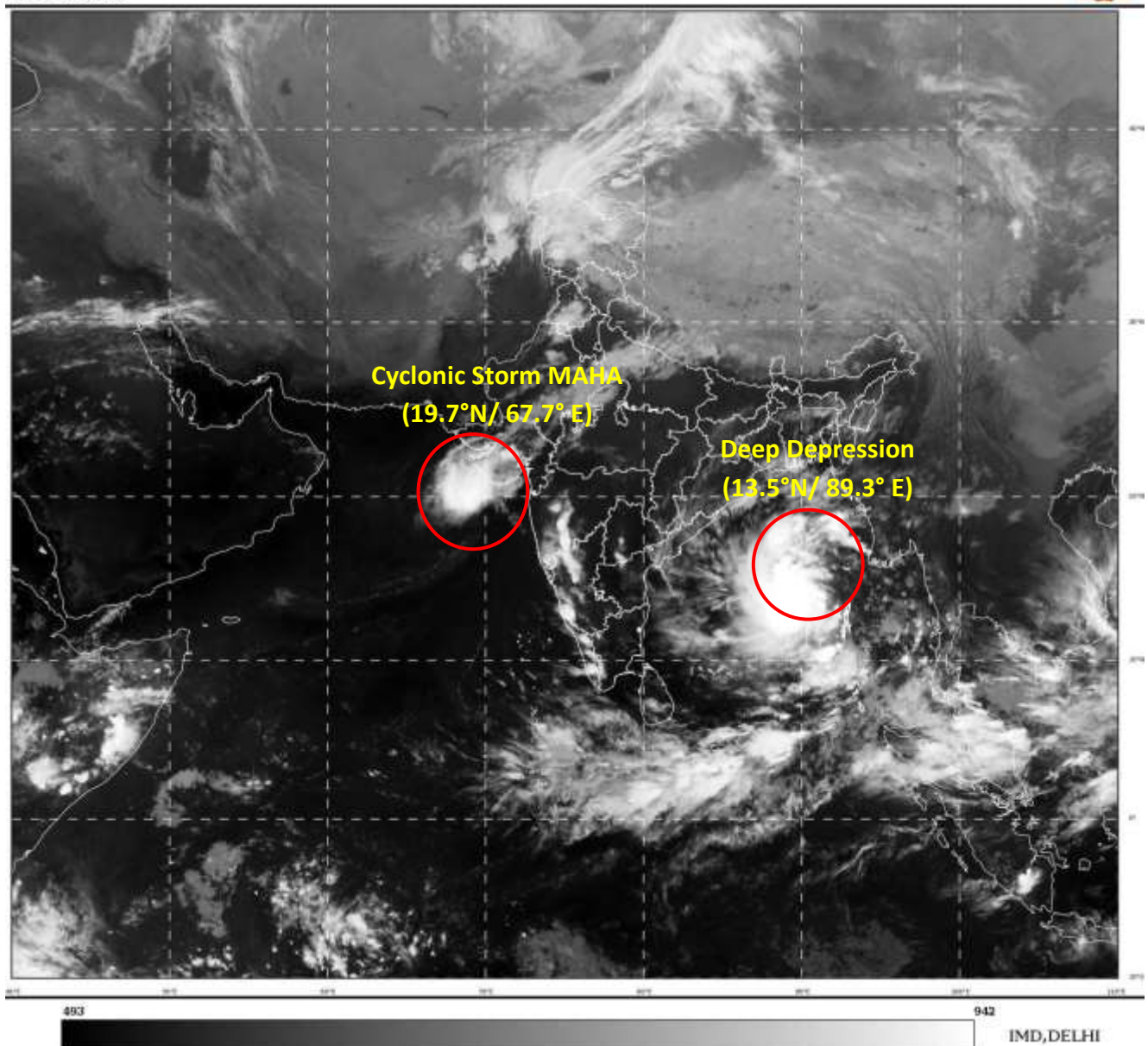
(iv) Fishermen Warning

- Fishermen are advised not to venture into north Andaman Sea & adjoining southeast Bay of Bengal during next 12 hours.
- Fishermen are advised not to venture into eastcentral Bay of Bengal during next 2 days and into westcentral & adjoining north Bay of Bengal during 8th – 11th November.
- Fishermen are advised not to venture into northwest Bay of Bengal along & off Odisha – west Bengal coasts from 8th November onwards.
- The fishermen out at Sea are advised to return to the coast from these areas.

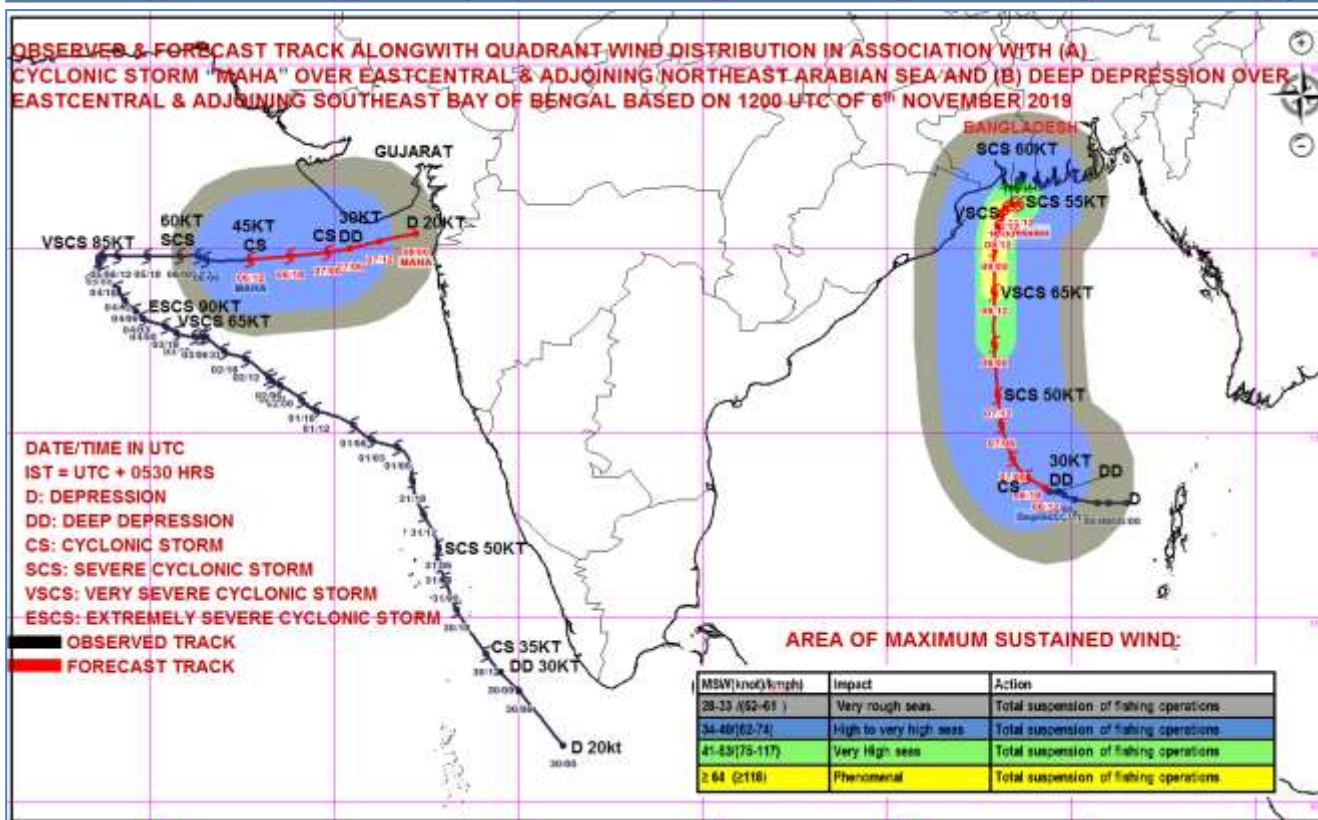
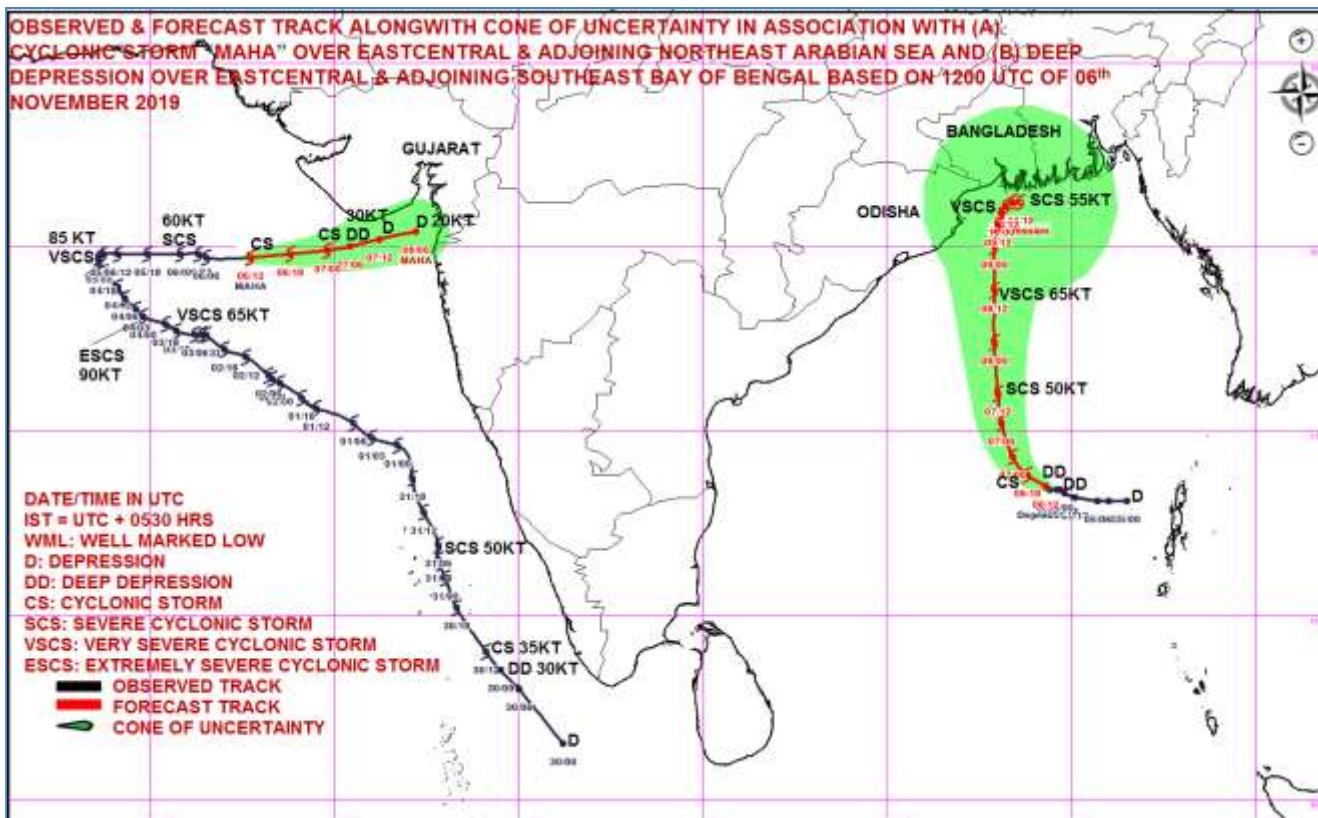
The next bulletin will be issued at 2330 hrs IST of 06th November, 2019.

(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ ACWC Kolkata/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram/ CWC Visakhapatnam/ CWC Bhubaneswar/ M.O. Port Blair.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO.: 61 (ARB/04/2019) & BULLETIN NO.: 14 (BOB/04/2019)

TIME OF ISSUE: 2245 HOURS IST

DATED: 06.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

JS NDMA (FAX.NO. 26701864)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub: (A) Cyclonic Storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining northeast Arabian Sea

(B) Deep Depression over eastcentral & adjoining southeast Bay of Bengal.

BULLETIN NO. : 61 (ARB/04/2019)

(A) Cyclonic Storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining northeast Arabian Sea

The **Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral & adjoining northeast Arabian Sea moved east-northeastwards with a speed of 21 kmph during past 06 hours, and lay centered at 2030 hrs IST of today, the 06th November, 2019 over eastcentral & adjoining northeast Arabian Sea near latitude 19.8°N and longitude 68.3°E, about 250 km southwest of Porbandar (Gujarat), 250 km west-southwest of Veraval (Gujarat) and 290 km west-southwest of Diu. It is very likely to move east-northeastwards, weaken further into a Deep Depression by morning of tomorrow, the 7th November over northeast & adjoining eastcentral Arabian Sea. It is very likely to skirt Saurashtra coast and lie centered about 40 kilometers south of Diu around noon of 7th November as a deep depression. Continuing to move east-northeastwards, it is very likely to weaken further into a depression by tomorrow evening.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
06.11.19/2030	19.8/68.3	70-80 gusting to 90	Cyclonic Storm
06.11.19/2330	19.8/68.8	60-70 gusting to 80	Cyclonic Storm
07.11.19/0530	19.9/69.8	55-65 gusting to 75	Deep Depression
07.11.19/1130	20.0/70.4	50-60 gusting to 70	Deep Depression
07.11.19/1730	20.2/71.2	45-55 gusting to 65	Depression
08.11.19/0530	20.4/72.2	35-45 gusting to 55	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at many places with heavy to very heavy falls at isolated places very likely over Saurashtra and Gujarat region (**Diu, Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Porbandar and Rajkot**) during next 24 hours and isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, Ahmedabad and Vadodara** and heavy rainfall at isolated places over **Botad and Ahmedabad** during subsequent 12 hours.
- **Maharashtra:** Light to moderate rainfall at many places over northern most districts of Madhya Maharashtra (Palghar & Thane districts) during next 36 hours.

(ii) Wind warning

- **Gujarat : Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to prevail over northeast Arabian Sea along & off Gujarat coast. It is very likely to increase gradually becoming 55-65 Kmph gusting to 75 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli Bhavnagar, Bharuch, Anand, Ahmedabad, and Botad** districts, 40-50 kmph gusting to 60 kmph over districts **Porbandar, Rajkot, Navsari, Valsad, Daman and Dadra & Nagar Haveli** from 7th November morning for the subsequent 12 hours.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast. It is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 7th November morning for the next 12 hours along & off Palghar & Thane districts.
- **Arabian Sea:** Gale wind speed reaching 80-90 kmph gusting to 100 kmph is prevailing over eastcentral & adjoining northeast Arabian Sea around the system centre. It is very likely to decrease gradually and become 60-70 kmph gusting 80 kmph on 7th November morning over northeast & adjoining eastcentral Arabian Sea and further decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast during next 36 hours.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast during next 36 hours.
- **Arabian Sea:** Sea condition will be high over eastcentral and adjoining northeast Arabian Sea during next 12 hours and will be very rough thereafter for subsequent 24 hours.

(iv) Storm Surge

- Storm surge of about 0.5 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar, Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand and Ahmedabad** Districts from morning to forenoon of 7th November.

(v) Fishermen Warning

- The fishermen are advised not to venture into eastcentral & adjoining northeast Arabian Sea till 08th November morning.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast till 8th November morning.

(vi) Damage Expected over coastal districts of Gujarat (Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar) and Daman, Diu:

- Minor damage to loose / unsecured structures.
- Some breaches in Kutcha road.
- Minor damage to Banana trees and near coastal agriculture due to salt spray. Damage to ripe paddy crops.
- Minor damage to Kutcha embankments.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

BULLETIN NO. : 14 (BOB/04/2019)**(B) Deep Depression over eastcentral & adjoining southeast Bay of Bengal.**

The Deep Depression over eastcentral & adjoining southeast Bay of Bengal moved slightly northwards with a speed of 05 kmph during past 06 hours and lay centred at 2030 hrs IST of today, the 6th November 2019, over eastcentral & adjoining southeast Bay of Bengal, near Lat.13.7°N and Long. 89.3°E, about 400 km west-northwest of Maya Bandar (Andaman Islands), about 780 km south-southeast of Paradip (Odisha), 940 km south-southeast of Sagar Islands (West Bengal) and 920 km south-southwest of Khepupara (Bangladesh) . It is very likely to intensify into a Cyclonic Storm during next 06 hours and into a Severe Cyclonic Storm during the subsequent 24 hours. It is very likely to move northwestwards for some time and then north-northwestwards towards West Bengal and Bangladesh coasts.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
06.11.19/2330	13.8/89.3	60-70 gusting to 80	Cyclonic Storm
07.11.19/0530	14.4/89.1	70-80 gusting to 90	Cyclonic Storm
07.11.19/1130	15.2/88.8	70-80 gusting to 90	Cyclonic Storm
07.11.19/1730	15.9/88.5	75-85 gusting to 95	Cyclonic Storm
07.11.19/2330	16.4/88.3	85-95 gusting to 105	Severe Cyclonic Storm
08.11.19/1130	17.8/88.0	95-105 gusting to 115	Severe Cyclonic Storm
08.11.19/2330	19.1/87.9	105-115 gusting to 125	Severe Cyclonic Storm
09.11.19/1130	20.0/88.0	115-125 gusting to 140	Very Severe Cyclonic Storm
09.11.19/2330	20.6/88.1	105-115 gusting to 125	Severe Cyclonic Storm
10.11.19/1130	21.9/88.3	95-105 gusting to 115	Severe Cyclonic Storm
10.11.19/2330	21.1/88.6	85-95 gusting to 105	Severe Cyclonic Storm
11.11.19/1130	21.2/88.8	75-85 gusting to 95	Cyclonic Storm
11.11.19/2330	21.3/89.2	70-80 gusting to 90	Cyclonic Storm

Warnings:**(i) Rainfall:**

- **Andaman and Nicobar Islands:** Light to moderate rainfall at most places very likely over **Andaman and Nicobar Islands** during next 24 hours.
- **Odisha:** Light to moderate rainfall at most places very likely over **north coastal districts of Odisha** from 9th & 10th Nov. 2019.
- **West Bengal:** Light to moderate rainfall at most places with heavy falls at isolated places very likely over **coastal districts of West Bengal** on 10th & 11th Nov. 2019.

(ii) Wind warning

- **Andaman and Nicobar Islands:** Strong wind speed reaching 35-45 kmph gusting to 55 kmph is likely to prevail over Andaman Islands, north Andaman Sea during next 12 hours.
- **Bay of Bengal:** Squally wind speed reaching 50-60 kmph gusting to 70 kmph is prevailing over east central & adjoining southeast Bay of Bengal around the system centre. It will become gale wind speed reaching 70-80 kmph gusting to 90 kmph by 7th November morning. It will gradually increase further becoming 130-140 kmph gusting to 145 kmph over northwest & adjoining westcentral Bay of Bengal by 9th November morning.
- **Odisha & West Bengal coasts:** Squally wind speed reaching 40 – 50 kmph gusting to 60 kmph likely to commence over northwest Bay of Bengal off Odisha – West Bengal coasts from 8th November evening and gradually increase thereafter.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(iii) Sea condition

- Sea condition will be very rough to high over eastcentral Bay of Bengal till 7th November evening and become very high to phenomenal thereafter over central & adjoining northwest Bay of Bengal.
- Sea condition will be rough over north Andaman Sea during next 12 hours.

(iv) Fishermen Warning

- Fishermen are advised not to venture into north Andaman Sea & adjoining southeast Bay of Bengal during next 12 hours.
- Fishermen are advised not to venture into eastcentral Bay of Bengal during next 2 days and into westcentral & adjoining north Bay of Bengal during 8th – 11th November.
- Fishermen are advised not to venture into northwest Bay of Bengal along & off Odisha – west Bengal coasts from 8th November onwards.
- The fishermen out at Sea are advised to return to the coast from these areas.

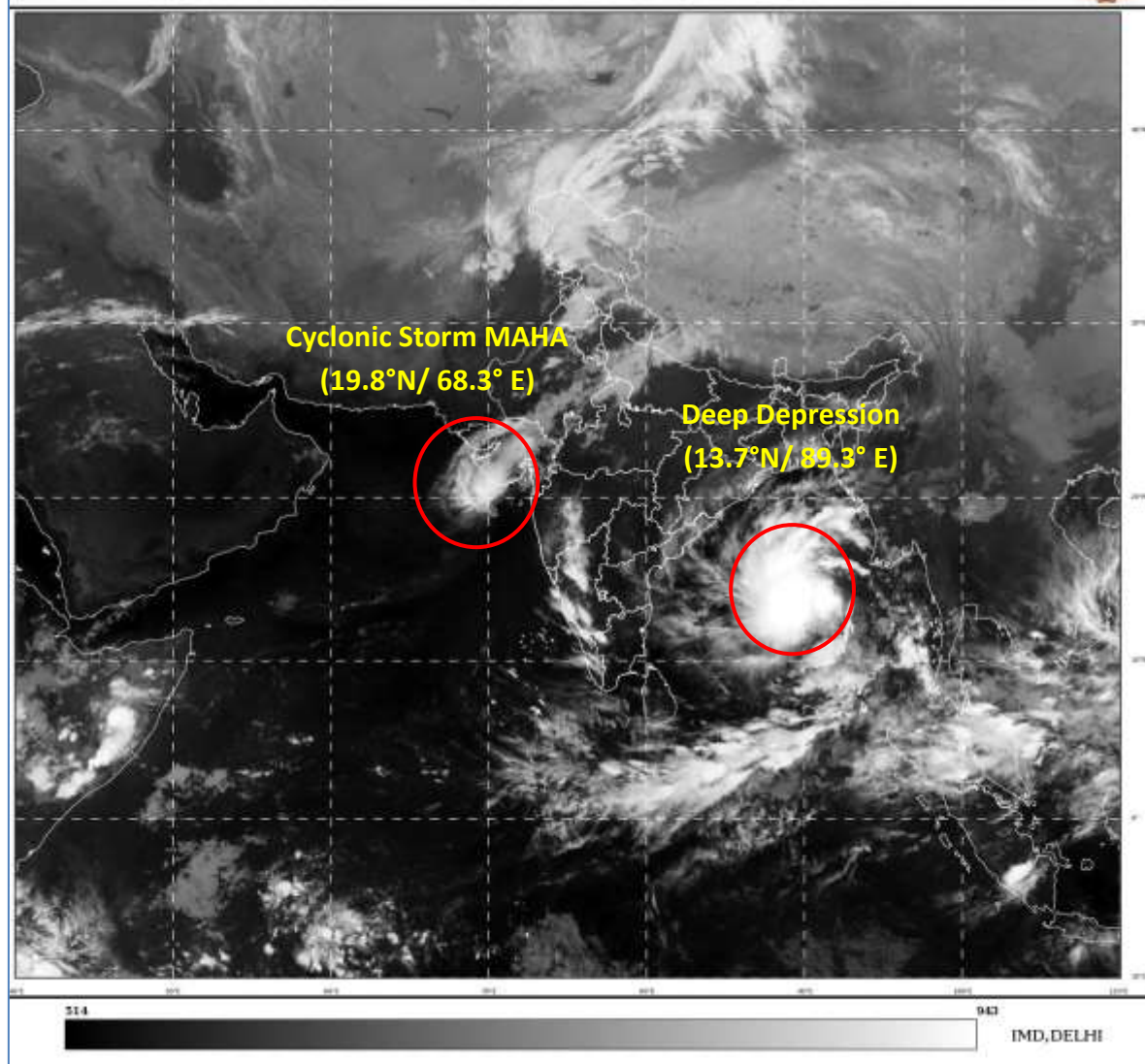
The next bulletin will be issued at 0230 hrs IST of 07th November, 2019.

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

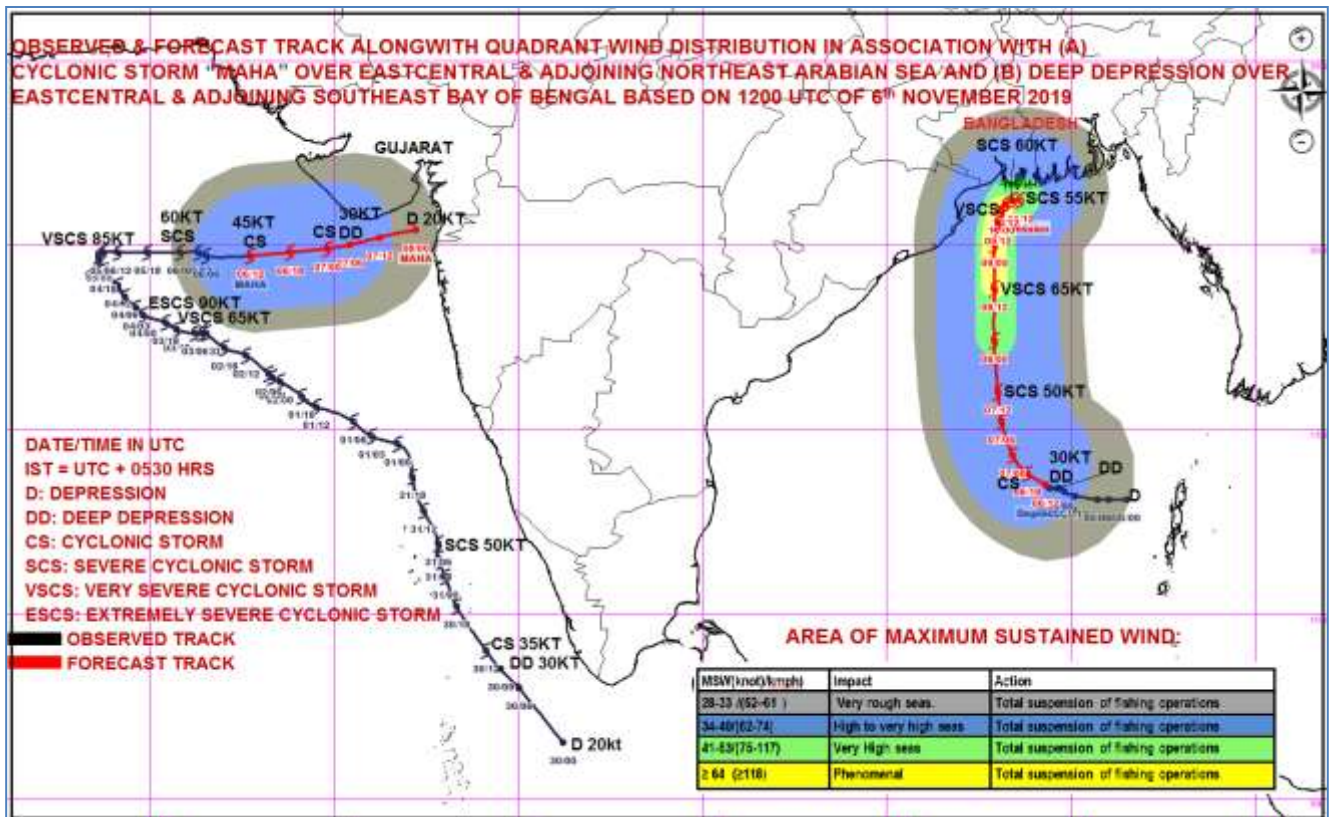
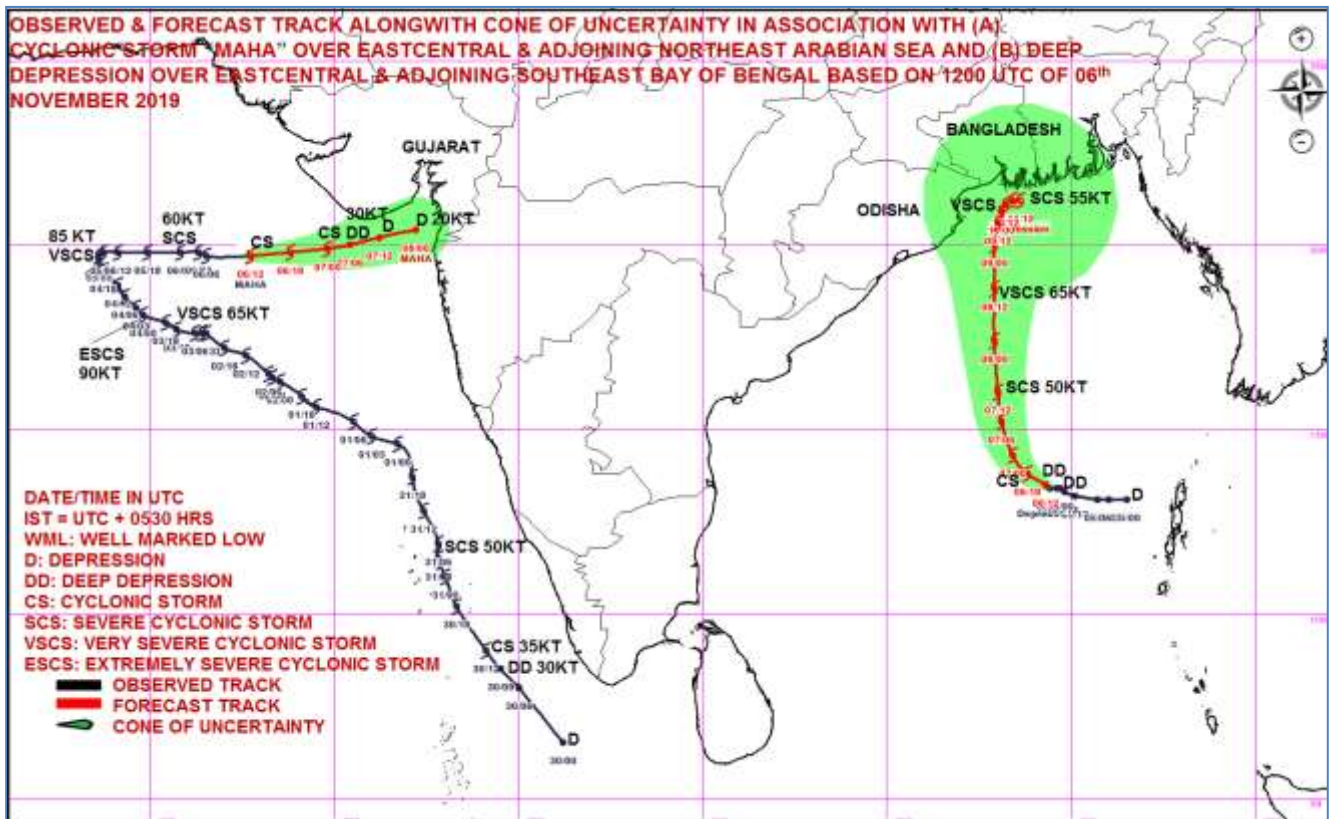
Copy to: ACWC Chennai/ ACWC Mumbai/ ACWC Kolkata/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram/ CWC Visakhapatnam/ CWC Bhubaneswar/ M.O. Port Blair.

SAT : INSAT-3D IMG
IMG_TIR1 10.8 um
LIC Mercator

06-11-2019/(1600 to 1626) GMT
06-11-2019/(2130 to 2156) IST



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO.: 62 (ARB/04/2019) & BULLETIN NO.: 15 (BOB/04/2019)

TIME OF ISSUE: 0300 HOURS IST

DATED: 07.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

JS NDMA (FAX.NO. 26701864)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub: (A) Cyclonic Storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining northeast Arabian Sea

(B) Cyclonic Storm 'Bulbul' (Pronounced as Bul bul) over eastcentral & adjoining southeast Bay of Bengal.

BULLETIN NO. : 62 (ARB/04/2019)

(A) Cyclonic Storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining northeast Arabian Sea

The Cyclonic storm MAHA (Pronounced as M'maha) over eastcentral & adjoining northeast Arabian Sea moved east-northeastwards with a speed of 17 kmph during past 06 hours, weakened into a Deep Depression and lay centered at 0530 hrs IST of today, the 07th November, 2019 over eastcentral & adjoining northeast Arabian Sea near latitude 19.8°N and longitude 69.4°E, about 240 km south-southwest of Porbandar (Gujarat), 230 km west-southwest of Veraval (Gujarat) and 280 km west-southwest of Diu. It is very likely to move east-northeastwards, weaken into a Deep Depression over northeast & adjoining eastcentral Arabian Sea during next 12 hours. It is very likely to skirt Saurashtra coast and lie centered about 40 kilometers south of Diu around noon of 7th November as a deep depression. Continuing to move east-northeastwards, it is very likely to weaken further into a depression by tomorrow evening.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
06.11.19/2330	19.8/68.4	65-75 gusting to 85	Cyclonic Storm
07.11.19/0530	19.9/69.8	60-70 gusting to 80	Cyclonic Storm
07.11.19/1130	20.0/70.4	50-60 gusting to 70	Deep Depression
07.11.19/1730	20.2/71.2	40-50 gusting to 60	Depression
07.11.19/2330	20.3/71.6	35-45 gusting to 55	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at many places with heavy to very heavy falls at isolated places very likely over Saurashtra and Gujarat region (**Diu, Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Porbandar and Rajkot**) during next 24 hours and isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, Ahmedabad and Vadodara** and heavy rainfall at isolated places over **Botad and Ahmedabad** during subsequent 12 hours.
- **Maharashtra:** Light to moderate rainfall at many places over northern most districts of Konkan (Palghar & Thane districts) during next 36 hours.

(ii) Wind warning

- **Gujarat: Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to prevail over northeast Arabian Sea along & off Gujarat coast. It is very likely to increase gradually becoming 55-65 Kmph gusting to 75 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli Bhavnagar, Bharuch, Anand, Ahmedabad, and Botad** districts, 40-50 kmph gusting to 60 kmph over districts **Porbandar, Rajkot, Navsari, Valsad, Daman and Dadra & Nagar Haveli** from 7th November morning for the subsequent 12 hours.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast. It is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 7th November morning for the next 12 hours along & off Palghar & Thane districts.
- **Arabian Sea:** Gale wind speed reaching 65-75 kmph gusting to 85 kmph is prevailing over eastcentral & adjoining northeast Arabian Sea around the system centre. It is very likely to decrease gradually and become 60-70 kmph gusting 80 kmph on 7th November morning over northeast & adjoining eastcentral Arabian Sea and further decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast during next 36 hours.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast during next 36 hours.
- **Arabian Sea:** Sea condition will be high over eastcentral and adjoining northeast Arabian Sea during next 12 hours and will be very rough thereafter for subsequent 24 hours.

(iv) Storm Surge

- Storm surge of about 0.5 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar, Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand and Ahmedabad** Districts from morning to forenoon of 7th November.

(v) Fishermen Warning

- The fishermen are advised not to venture into eastcentral & adjoining northeast Arabian Sea till 08th November morning.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast till 8th November morning.

(vi) Damage Expected over coastal districts of Gujarat (Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar) and Daman, Diu:

- Minor damage to loose / unsecured structures.
- Some breaches in Kutcha road.
- Minor damage to Banana trees and near coastal agriculture due to salt spray. Damage to ripe paddy crops.
- Minor damage to Kutcha embankments.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

BULLETIN NO. : 15 (BOB/04/2019)**(B) Cyclonic Storm 'Bulbul' (Pronounced as Bul bul) over eastcentral & adjoining southeast Bay of Bengal.**

The Deep Depression over eastcentral & adjoining southeast Bay of Bengal moved northwards with a speed of 05 kmph during past 06 hours, intensified into a **Cyclonic Storm 'Bulbul' (Pronounced as Bul bul)** and lay centred at 2330 hrs IST of today, the 7th November 2019, over eastcentral & adjoining southeast Bay of Bengal, near Lat.13.8°N and Long. 89.3°E, about 400 km west-northwest of Maya Bandar (Andaman Islands), about 770 km south-southeast of Paradip (Odisha), 850 km south-southeast of Sagar Islands (West Bengal) and 910 km south-southwest of Khepupara (Bangladesh) . It is very likely to intensify into a Severe Cyclonic Storm during next 24 hours and into a Very Severe Cyclonic Storm during the subsequent 36 hours. It is very likely to move north-northwestwards towards West Bengal and Bangladesh coasts.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
06.11.19/2330	13.8/89.3	60-70 gusting to 80	Cyclonic Storm
07.11.19/0530	14.4/89.1	70-80 gusting to 90	Cyclonic Storm
07.11.19/1130	15.2/88.8	70-80 gusting to 90	Cyclonic Storm
07.11.19/1730	15.9/88.5	75-85 gusting to 95	Cyclonic Storm
07.11.19/2330	16.4/88.3	85-95 gusting to 105	Severe Cyclonic Storm
08.11.19/1130	17.8/88.0	95-105 gusting to 115	Severe Cyclonic Storm
08.11.19/2330	19.1/87.9	105-115 gusting to 125	Severe Cyclonic Storm
09.11.19/1130	20.0/88.0	115-125 gusting to 140	Very Severe Cyclonic Storm
09.11.19/2330	20.6/88.1	105-115 gusting to 125	Severe Cyclonic Storm
10.11.19/1130	21.9/88.3	95-105 gusting to 115	Severe Cyclonic Storm
10.11.19/2330	21.1/88.6	85-95 gusting to 105	Severe Cyclonic Storm
11.11.19/1130	21.2/88.8	75-85 gusting to 95	Cyclonic Storm
11.11.19/2330	21.3/89.2	70-80 gusting to 90	Cyclonic Storm

Warnings:**(i) Rainfall:**

- **Andaman and Nicobar Islands:** Light to moderate rainfall at most places very likely over **Andaman and Nicobar Islands** during next 24 hours.
- **Odisha:** Light to moderate rainfall at most places very likely over **north coastal districts of Odisha** from 9th & 10th Nov. 2019.
- **West Bengal:** Light to moderate rainfall at most places with heavy falls at isolated places very likely over **coastal districts of West Bengal** on 10th & 11th Nov. 2019.

(ii) Wind warning

- **Andaman and Nicobar Islands:** Strong wind speed reaching 35-45 kmph gusting to 55 kmph is likely to prevail over Andaman Islands, north Andaman Sea during next 12 hours.
- **Bay of Bengal:** Gale wind speed reaching 60-70 kmph gusting to 80 kmph is prevailing over east central & adjoining southeast Bay of Bengal around the system centre. It is very likely to increase gradually and becoming 85-95 kmph gusting to 105 kmph by 7th November mid-night. It will increase further becoming 115-125 kmph gusting to 140 kmph over northwest & adjoining westcentral & northeast Bay of Bengal by 9th November mid-night for subsequent 12 hours.
- **Odisha & West Bengal coasts:** Squally wind speed reaching 40 – 50 kmph gusting to 60 kmph likely to commence over northwest Bay of Bengal off Odisha – West Bengal coasts from 8th November evening and gradually increase thereafter.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(iii) Sea condition

- Sea condition will be high over eastcentral & adjoining southeast Bay of Bengal during next 24 hours and become very high from 7th November mid-night for subsequent 24 hours over central & adjoining northwest Bay of Bengal and phenomenal over northwest & adjoining westcentral & northeast Bay of Bengal by 9th November mid-night for subsequent 12 hours.
- Sea condition will be rough over north Andaman Sea during next 12 hours.

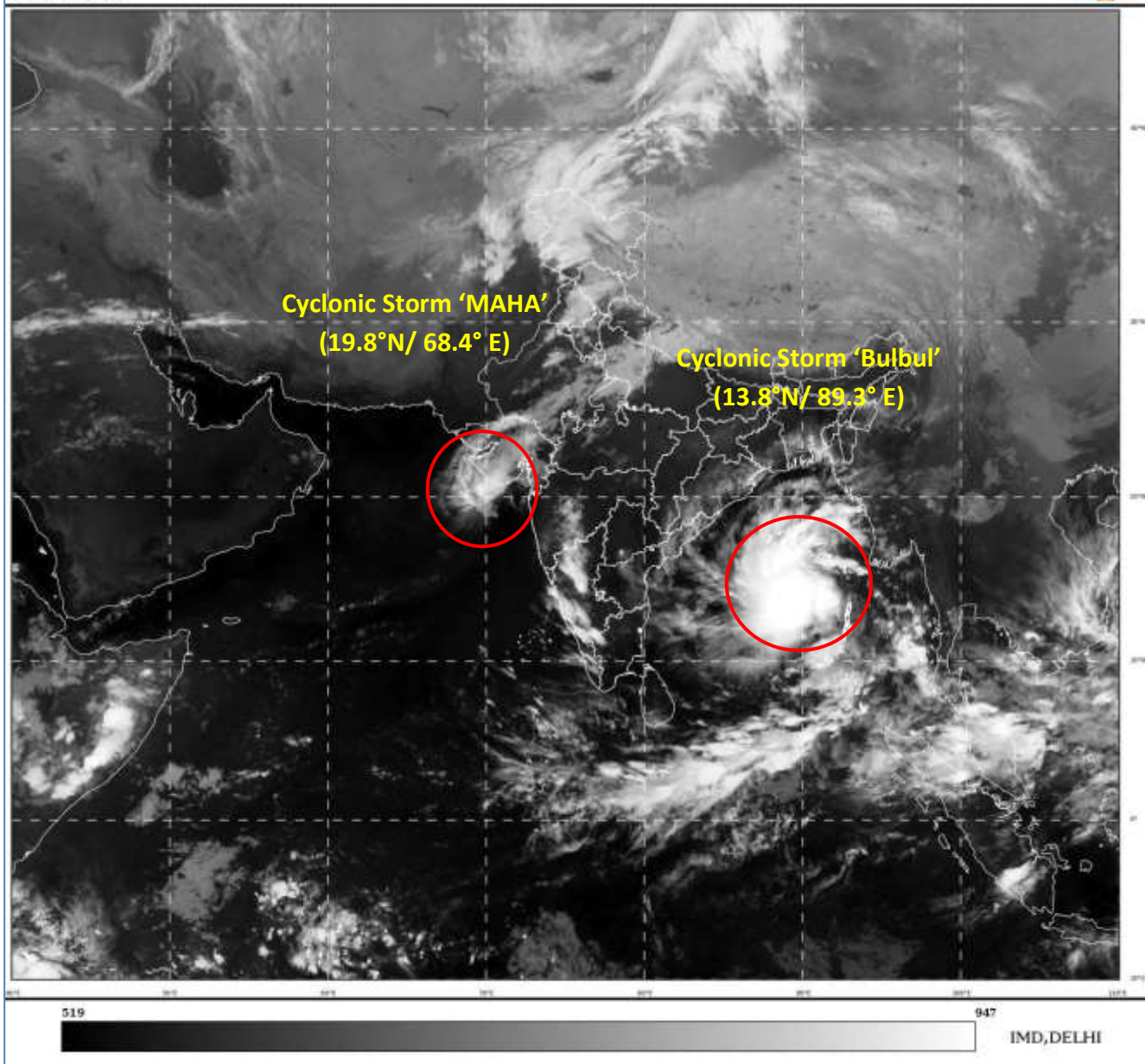
(iv) Fishermen Warning

- Fishermen are advised not to venture into north Andaman Sea & adjoining southeast Bay of Bengal during next 12 hours.
- Fishermen are advised not to venture into eastcentral Bay of Bengal during next 2 days and into westcentral & adjoining north Bay of Bengal during 8th – 11th November.
- Fishermen are advised not to venture into northwest Bay of Bengal along & off Odisha – west Bengal coasts from 8th November onwards.
- The fishermen out at Sea are advised to return to the coast from these areas.

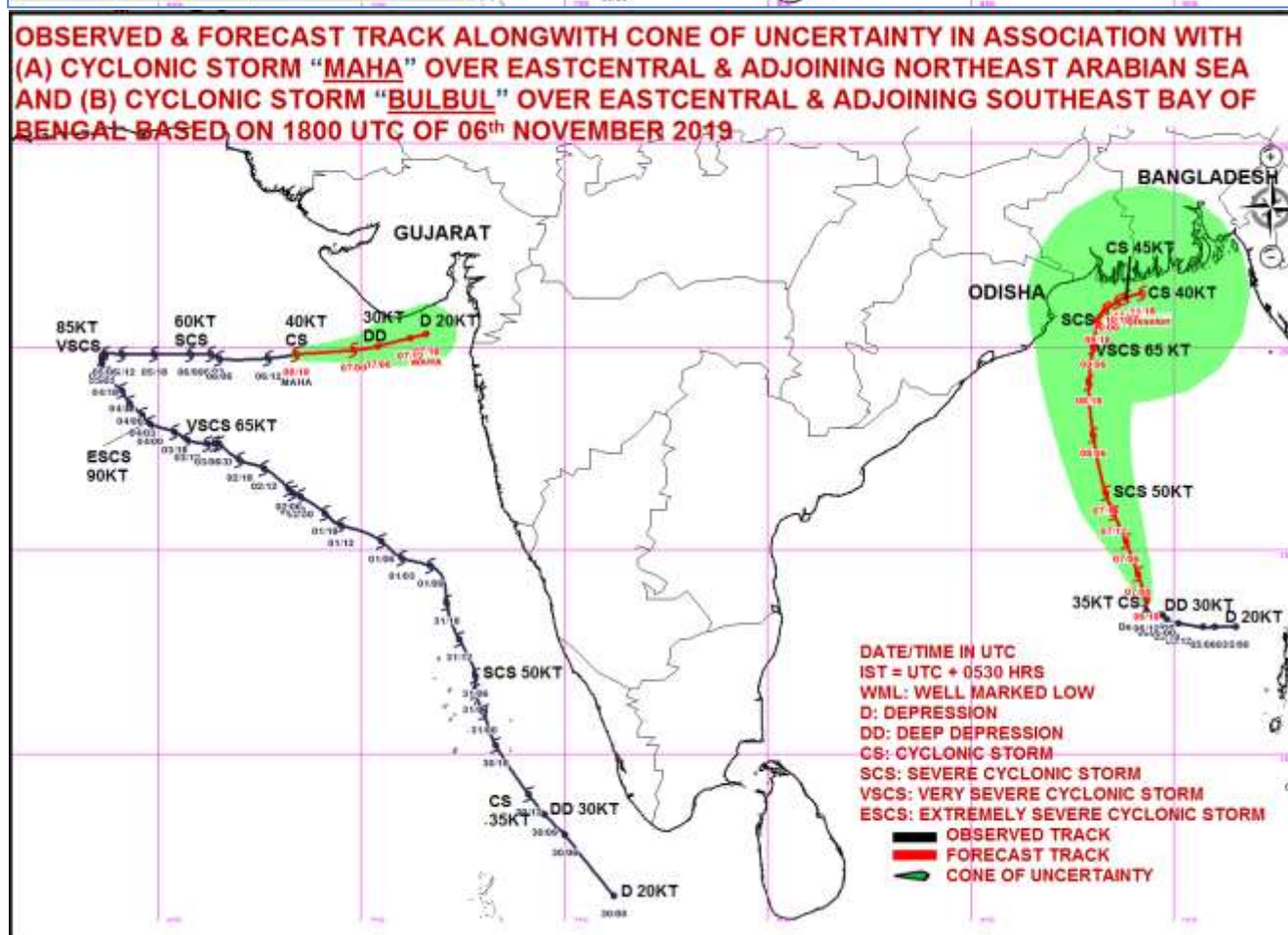
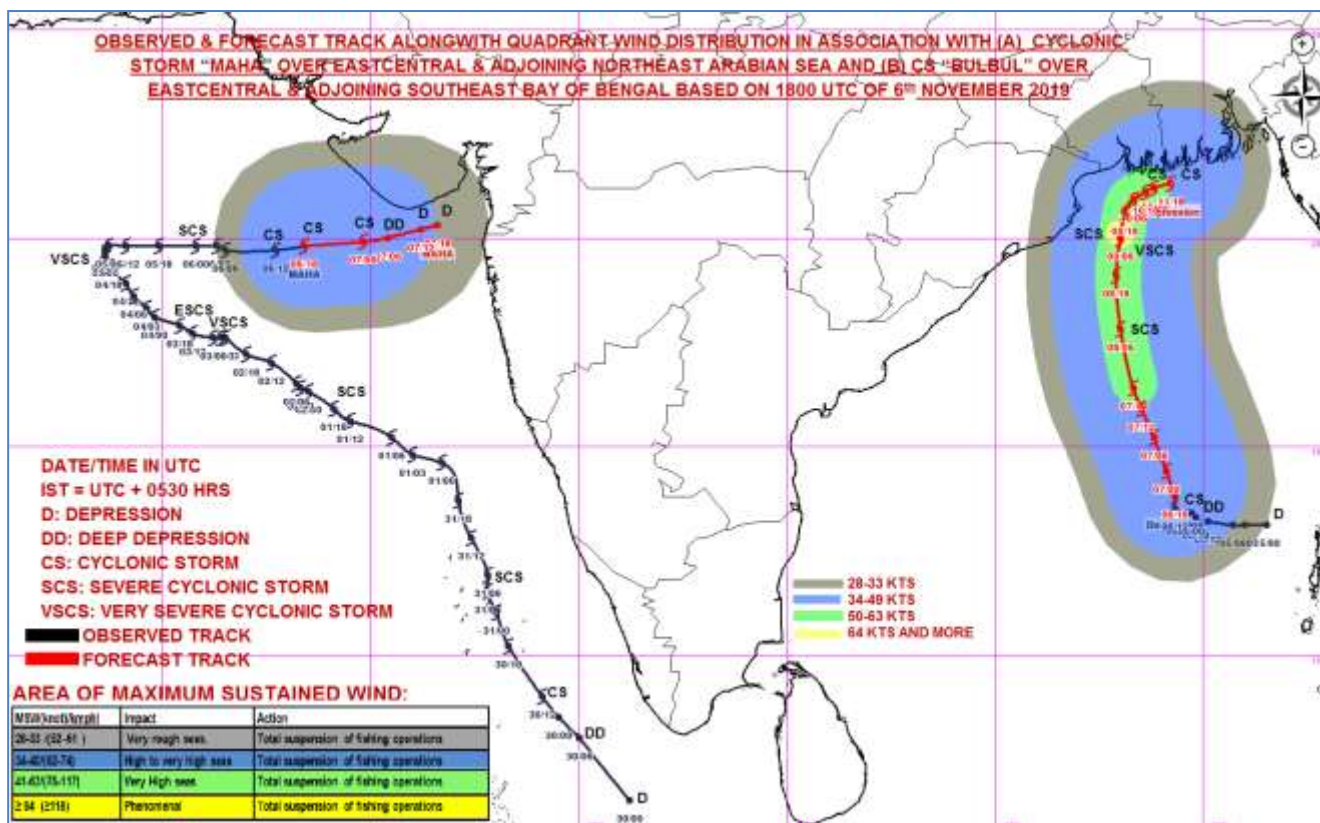
The next bulletin will be issued at 0530 hrs IST of 07th November, 2019.

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

Copy to: ACWC Chennai/ ACWC Mumbai/ ACWC Kolkata/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram/ CWC Visakhapatnam/ CWC Bhubaneswar/ M.O. Port Blair.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO.: 63 (ARB/04/2019) & BULLETIN NO.: 16 (BOB/04/2019)

TIME OF ISSUE: 0545 HOURS IST

DATED: 07.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

JS NDMA (FAX.NO. 26701864)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub: (A) Cyclonic Storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining northeast Arabian Sea

(B) Cyclonic Storm 'Bulbul' (Pronounced as Bul bul) over eastcentral & adjoining southeast Bay of Bengal.

BULLETIN NO. : 63 (ARB/04/2019)

(A) Cyclonic Storm 'MAHA' (Pronounced as M'maha) over eastcentral & adjoining northeast Arabian Sea

The **Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral & adjoining northeast Arabian Sea moved eastwards with a speed of 10 kmph during past 06 hours, and lay centered at 0230 hrs IST of today, the 07th November, 2019 over eastcentral & adjoining northeast Arabian Sea near latitude 19.8°N and longitude 68.9°E, about 220 km south-southwest of Porbandar (Gujarat), 190 km west-southwest of Veraval (Gujarat) and 230 km west-southwest of Diu. It is very likely to move east-northeastwards, weaken into a Deep Depression over northeast & adjoining eastcentral Arabian Sea during next 12 hours. It is very likely to skirt Saurashtra coast and lie centered about 40 kilometers south of Diu around noon of 7th November as a deep depression. Continuing to move east-northeastwards, it is very likely to weaken further into a depression by tomorrow evening.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
07.11.19/0230	19.8/68.9	65-75 gusting to 85	Cyclonic Storm
07.11.19/0530	19.9/69.8	60-70 gusting to 80	Cyclonic Storm
07.11.19/1130	20.0/70.4	50-60 gusting to 70	Deep Depression
07.11.19/1730	20.2/71.2	40-50 gusting to 60	Depression
07.11.19/2330	20.3/71.6	35-45 gusting to 55	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall at many places with heavy to very heavy falls at isolated places very likely over Saurashtra and Gujarat region (**Diu, Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Porbandar and Rajkot**) during next 24 hours and isolated heavy to very heavy falls over **Bhavnagar, Surat, Bharuch, Anand, Ahmedabad and Vadodara** and heavy rainfall at isolated places over **Botad and Ahmedabad** during subsequent 12 hours.
- **Maharashtra:** Light to moderate rainfall at many places over northern most districts of Konkan (Palghar & Thane districts) during next 36 hours.

(ii) Wind warning

- **Gujarat: Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to prevail over northeast Arabian Sea along & off Gujarat coast. It is very likely to increase gradually becoming 55-65 Kmph gusting to 75 Kmph along & off **Junagarh, Gir Somnath, Diu, Amreli Bhavnagar, Bharuch, Anand, Ahmedabad, and Botad** districts, 40-50 kmph gusting to 60 kmph over districts **Porbandar, Rajkot, Navsari, Valsad, Daman and Dadra & Nagar Haveli** from 7th November morning for the subsequent 12 hours.
- **Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off Maharashtra coast. It is very likely to increase becoming 50-60 Kmph gusting to 70 Kmph from 7th November morning for the next 12 hours along & off Palghar & Thane districts.
- **Arabian Sea:** Gale wind speed reaching 65-75 kmph gusting to 85 kmph is prevailing over eastcentral & adjoining northeast Arabian Sea around the system centre. It is very likely to decrease gradually and become 60-70 kmph gusting 80 kmph on 7th November morning over northeast & adjoining eastcentral Arabian Sea and further decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast during next 36 hours.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast during next 36 hours.
- **Arabian Sea:** Sea condition will be high over eastcentral and adjoining northeast Arabian Sea during next 12 hours and will be very rough thereafter for subsequent 24 hours.

(iv) Storm Surge

- Storm surge of about 0.5 meter above Astronomical tide is likely to inundate low lying areas of **Bhavnagar, Junagarh, Gir Somnath, Amreli, Surat, Bharuch, Anand and Ahmedabad** Districts from morning to forenoon of 7th November.

(v) Fishermen Warning

- The fishermen are advised not to venture into eastcentral & adjoining northeast Arabian Sea till 08th November morning.
- The fishermen are advised not to venture into Sea along & off Gujarat coast and adjoining north Maharashtra coast till 8th November morning.

(vi) Damage Expected over coastal districts of Gujarat (Junagarh, Gir Somnath, Amreli, Bhavnagar, Surat, Bharuch, Anand, Ahmedabad, Botad, Porbandar) and Daman, Diu:

- Minor damage to loose / unsecured structures.
- Some breaches in Kutcha road.
- Minor damage to Banana trees and near coastal agriculture due to salt spray. Damage to ripe paddy crops.
- Minor damage to Kutcha embankments.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

BULLETIN NO. : 16 (BOB/04/2019)

(B) Cyclonic Storm 'Bulbul' (Pronounced as Bul bul) over eastcentral & adjoining southeast Bay of Bengal.

The **Cyclonic Storm 'Bulbul' (Pronounced as Bul bul)** over eastcentral & adjoining southeast Bay of Bengal moved northwards with a speed of 06 kmph during past 06 hours and lay centred at 0230 hrs IST of today, the 7th November 2019, over eastcentral & adjoining southeast Bay of Bengal, near Lat.14.0°N and Long. 89.3°E, about 400 km west-northwest of Maya Bandar (Andaman Islands), about 750 km south-southeast of Paradip (Odisha), 860 km south-southeast of Sagar Islands (West Bengal) and 890 km south-southwest of Khepupara (Bangladesh) . It is very likely to intensify into a Severe Cyclonic Storm during next 24 hours and into a Very Severe Cyclonic Storm during the subsequent 36 hours. It is very likely to move north-northwestwards towards West Bengal and Bangladesh coasts.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
07.11.19/0230	14.0/89.3	65-75 gusting to 85	Cyclonic Storm
07.11.19/0530	14.4/89.1	70-80 gusting to 90	Cyclonic Storm
07.11.19/1130	15.2/88.8	70-80 gusting to 90	Cyclonic Storm
07.11.19/1730	15.9/88.5	75-85 gusting to 95	Cyclonic Storm
07.11.19/2330	16.4/88.3	85-95 gusting to 105	Severe Cyclonic Storm
08.11.19/1130	17.8/88.0	95-105 gusting to 115	Severe Cyclonic Storm
08.11.19/2330	19.1/87.9	105-115 gusting to 125	Severe Cyclonic Storm
09.11.19/1130	20.0/88.0	115-125 gusting to 140	Very Severe Cyclonic Storm
09.11.19/2330	20.6/88.1	105-115 gusting to 125	Severe Cyclonic Storm
10.11.19/1130	21.9/88.3	95-105 gusting to 115	Severe Cyclonic Storm
10.11.19/2330	21.1/88.6	85-95 gusting to 105	Severe Cyclonic Storm
11.11.19/1130	21.2/88.8	75-85 gusting to 95	Cyclonic Storm
11.11.19/2330	21.3/89.2	70-80 gusting to 90	Cyclonic Storm

Warnings:

(i) Rainfall:

- **Andaman and Nicobar Islands:** Light to moderate rainfall at most places very likely over **Andaman and Nicobar Islands** during next 24 hours.
- **Odisha:** Light to moderate rainfall at most places very likely over **north coastal districts of Odisha** from 9th & 10th Nov. 2019.
- **West Bengal:** Light to moderate rainfall at most places with heavy falls at isolated places very likely over **coastal districts of West Bengal** on 10th & 11th Nov. 2019.

(ii) Wind warning

- **Andaman and Nicobar Islands:** Strong wind speed reaching 35-45 kmph gusting to 55 kmph is likely to prevail over Andaman Islands, north Andaman Sea during next 12 hours.
- **Bay of Bengal:** Gale wind speed reaching 65-75 kmph gusting to 85 kmph is prevailing over east central & adjoining southeast Bay of Bengal around the system centre. It is very likely to increase gradually and becoming 85-95 kmph gusting to 105 kmph by 7th November mid-night. It will increase further becoming 115-125 kmph gusting to 140 kmph over northwest & adjoining westcentral & northeast Bay of Bengal by 9th November mid-night for subsequent 12 hours.
- **Odisha & West Bengal coasts:** Squally wind speed reaching 40 – 50 kmph gusting to 60 kmph likely to commence over northwest Bay of Bengal off Odisha – West Bengal coasts from 8th November evening and gradually increase thereafter.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(iii) Sea condition

- Sea condition will be high over eastcentral & adjoining southeast Bay of Bengal during next 24 hours and become very high from 7th November mid-night for subsequent 24 hours over central & adjoining northwest Bay of Bengal and phenomenal over northwest & adjoining westcentral & northeast Bay of Bengal by 9th November mid-night for subsequent 12 hours.
- Sea condition will be rough over north Andaman Sea during next 12 hours.

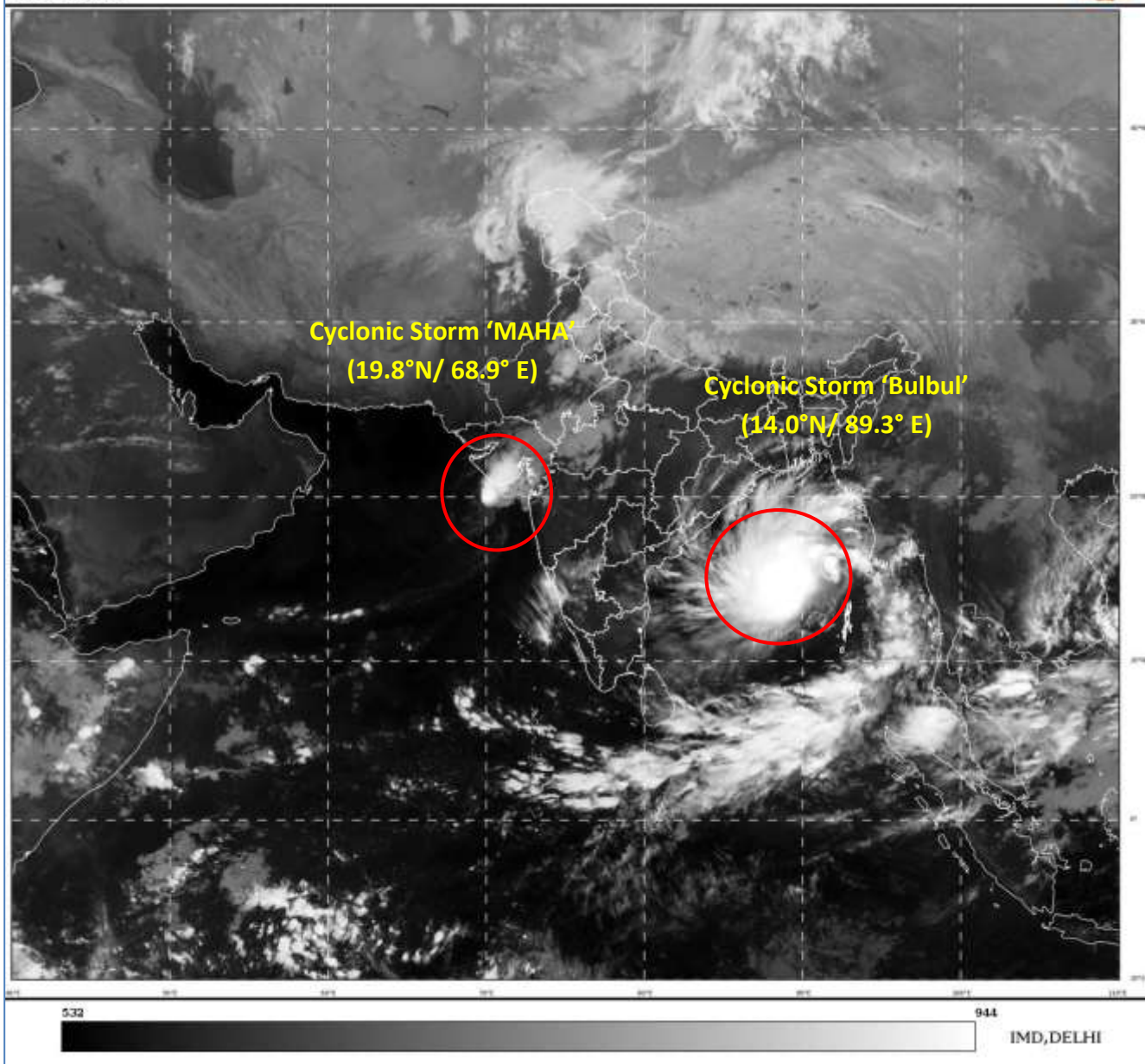
(iv) Fishermen Warning

- Fishermen are advised not to venture into north Andaman Sea & adjoining southeast Bay of Bengal during next 12 hours.
- Fishermen are advised not to venture into eastcentral Bay of Bengal during next 2 days and into westcentral & adjoining north Bay of Bengal during 8th – 11th November.
- Fishermen are advised not to venture into northwest Bay of Bengal along & off Odisha – west Bengal coasts from 8th November onwards.
- The fishermen out at Sea are advised to return to the coast from these areas.

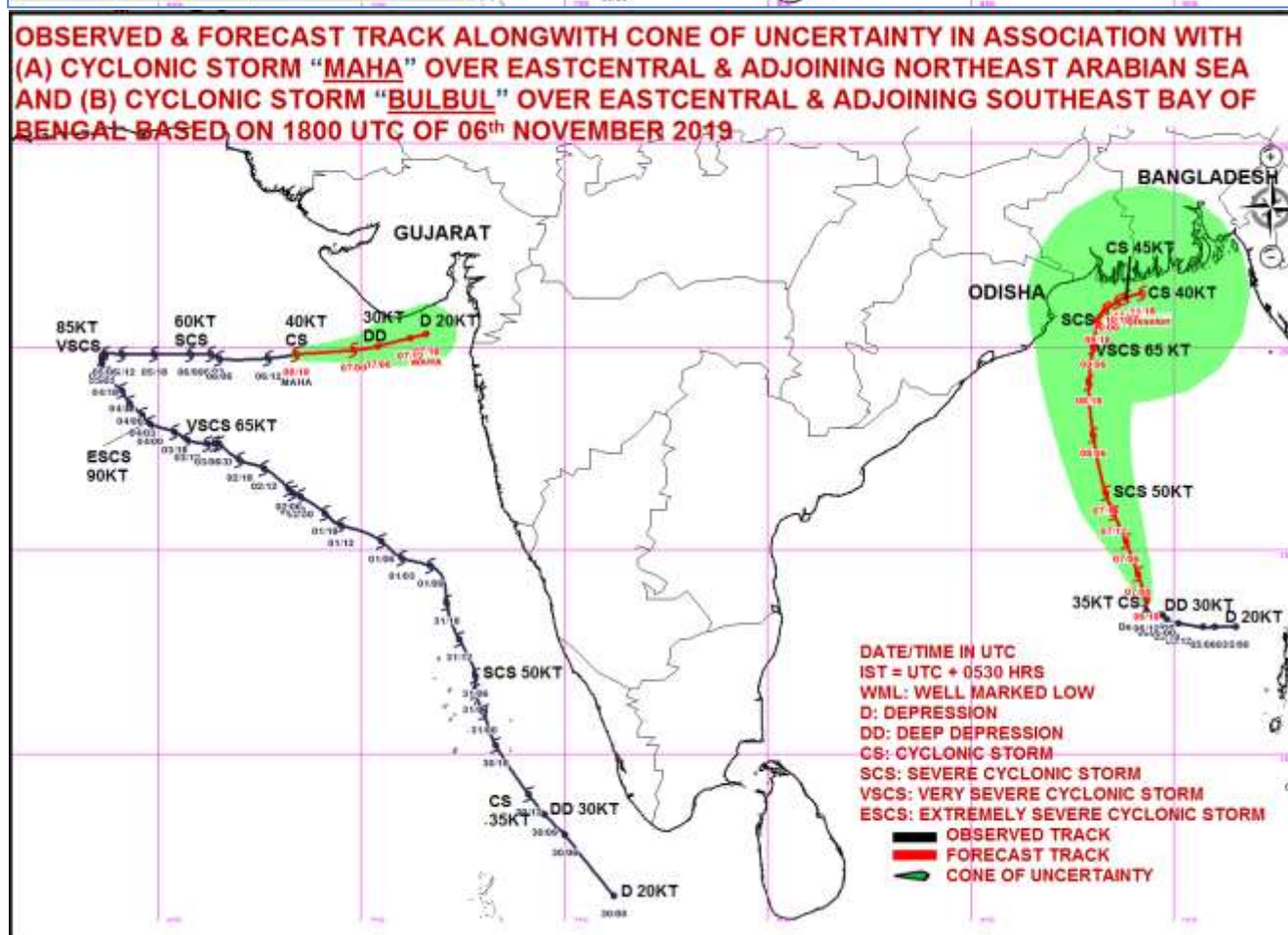
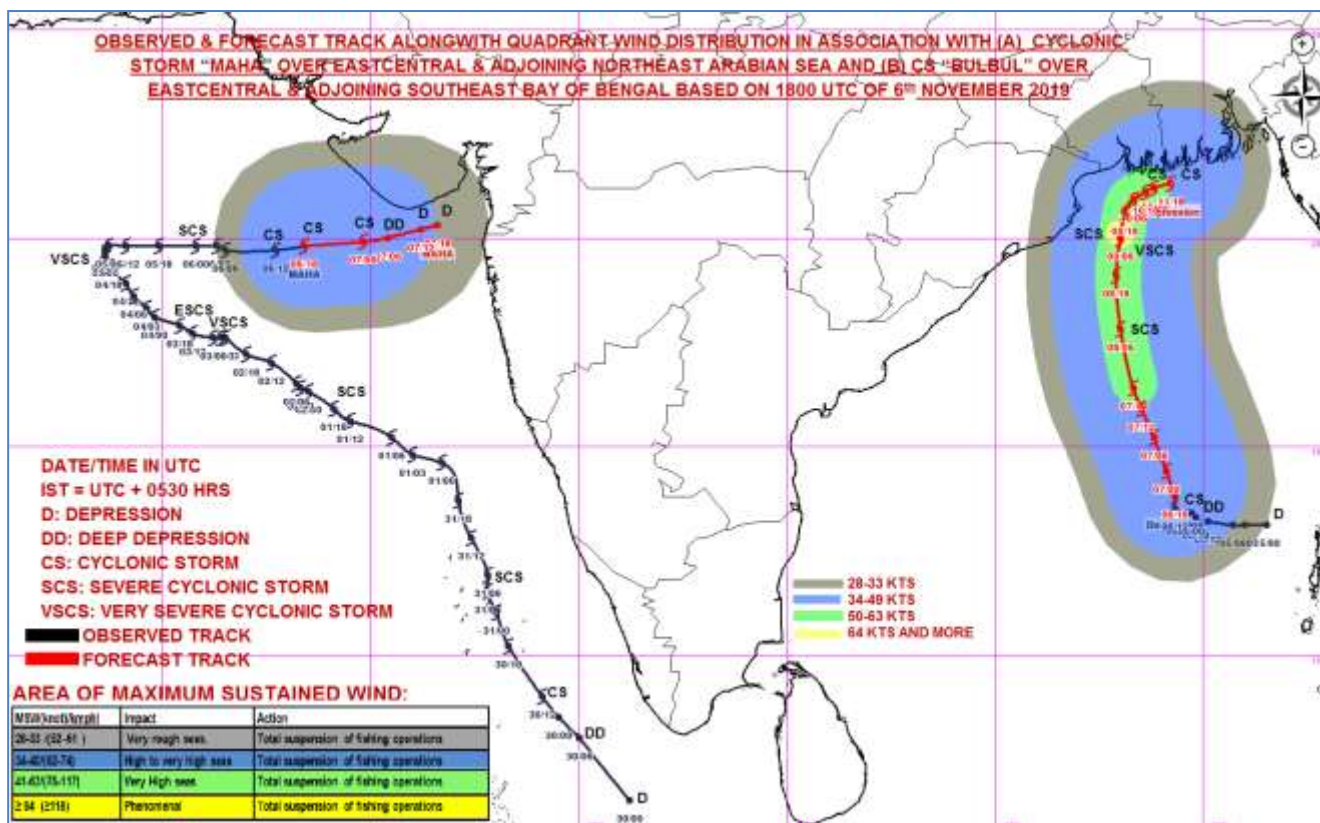
The next bulletin will be issued at 0830 hrs IST of 07th November, 2019.

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

Copy to: ACWC Chennai/ ACWC Mumbai/ ACWC Kolkata/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram/ CWC Visakhapatnam/ CWC Bhubaneswar/ M.O. Port Blair.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO.: 64 (ARB/04/2019) & BULLETIN NO.: 17 (BOB/04/2019)

TIME OF ISSUE: 0900 HOURS IST

DATED: 07.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

JS NDMA (FAX.NO. 26701864)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub: (A) Cyclonic Storm 'MAHA' (Pronounced as M'maha) weakened into a Deep Depression over eastcentral & adjoining northeast Arabian Sea

(B) Cyclonic Storm 'Bulbul' (Pronounced as Bul bul) over eastcentral Bay of Bengal.

BULLETIN NO. : 64 (ARB/04/2019)

A) Cyclonic Storm 'MAHA' (Pronounced as M'maha) weakened into a Deep Depression over eastcentral & adjoining northeast Arabian Sea

The **Cyclonic storm MAHA (Pronounced as M'maha)** over eastcentral & adjoining northeast Arabian Sea moved eastwards with a speed of 17 kmph during past 06 hours, weakened into a Deep Depression and lay centered at 0530 hrs IST of today, the 07th November, 2019 over eastcentral & adjoining northeast Arabian Sea near latitude 19.8°N and longitude 69.4°E, about 200 km south-southwest of Porbandar (Gujarat), 150 km west-southwest of Veraval (Gujarat) and 180 km west-southwest of Diu. It is very likely to move east-northeastwards, weaken into a Depression over northeast & adjoining eastcentral Arabian Sea off south Gujarat coast during next 12 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
07.11.19/0530	19.8/69.4	55-65 gusting to 75	Deep Depression
07.11.19/1130	19.9/70.2	50-60 gusting to 70	Deep Depression
07.11.19/1730	20.1/71.0	45-55 gusting to 65	Depression
07.11.19/2330	20.2/71.5	40-50 gusting to 60	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall very likely at many places over south Gujarat state with heavy falls at isolated places over **Diu, Junagarh, Gir Somnath, Amreli, Bhavnagar** during next 24 hours.
- **Maharashtra:** Light to moderate rainfall at many places over northern most districts of Konkan (Palghar & Thane districts) during next 24 hours.

(ii) Wind warning

- **Gujarat: Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 55-65 kmph gusting to 75 kmph likely to prevail over northeast Arabian Sea along & off **Junagarh, Gir Somnath, Diu, Amreli, Bhavnagar, Bharuch, Surat, Navsari, Valsad, Daman and Dadra & Nagar Haveli** districts. It is very likely to become 45-55 Kmph gusting to 65 Kmph over these areas from 7th November evening for the subsequent 12 hours.
- **Maharashtra:** Squally wind speed reaching 45-55 kmph gusting to 60 kmph likely along & off north Maharashtra coast (along & off Palghar & Thane districts) from 7th November evening for subsequent 24 hours.
- **Arabian Sea:** Gale wind speed reaching 55-65 kmph gusting to 75 kmph is prevailing over eastcentral & adjoining northeast Arabian Sea around the system centre. It is very likely to decrease gradually and become 45-55 kmph gusting 65 kmph from 7th November evening over northeast & adjoining eastcentral Arabian Sea and further decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast during next 24 hours.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast during next 24 hours.
- **Arabian Sea:** Sea condition will be rough to very rough over eastcentral and adjoining northeast Arabian Sea during next 24 hours.

(v) Fishermen Warning

- The fishermen are advised not to venture into eastcentral & adjoining northeast Arabian Sea along & off south Gujarat coast and adjoining north Maharashtra coast during next 24 hours.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

BULLETIN NO. : 17 (BOB/04/2019)

(B) Cyclonic Storm 'Bulbul' (Pronounced as Bul bul) over eastcentral & adjoining southeast Bay of Bengal.

The **Cyclonic Storm 'Bulbul' (Pronounced as Bul bul)** over eastcentral & adjoining southeast Bay of Bengal moved northwards with a speed of 07 kmph during past 06 hours and lay centred at 0530 hrs IST of today, the 7th November 2019, over eastcentral Bay of Bengal, near Lat.14.2°N and Long. 89.3°E about 730 km south-southeast of Paradip (Odisha), 830 km south-southeast of Sagar Islands (West Bengal) and 830 km south-southwest of Khepupara (Bangladesh) . It is very likely to intensify into a Severe Cyclonic Storm during next 24 hours. It is very likely to move north-northwestwards towards West Bengal and Bangladesh coasts.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ Long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
07.11.19/0530	14.2/89.3	65-75 gusting to 85	Cyclonic Storm
07.11.19/1130	15.0/89.0	70-80 gusting to 90	Cyclonic Storm
07.11.19/1730	15.7/88.6	80-90 gusting to 100	Cyclonic Storm
07.11.19/2330	16.2/88.4	80-90 gusting to 100	Cyclonic Storm
08.11.19/0530	16.9/88.2	85-95 gusting to 105	Severe Cyclonic Storm
08.11.19/1730	18.3/88.0	95-105 gusting to 115	Severe Cyclonic Storm
09.11.19/0530	19.4/87.9	120-130 gusting to 145	Very Severe Cyclonic Storm
09.11.19/1730	20.1/88.0	120-130 gusting to 145	Very Severe Cyclonic Storm
10.11.19/0530	21.8/88.4	110-120 gusting to 135	Severe Cyclonic Storm
10.11.19/1730	21.0/88.7	100-110 gusting to 120	Severe Cyclonic Storm
11.11.19/0530	21.1/89.2	90-100 gusting to 110	Severe Cyclonic Storm
11.11.19/1730	21.1/89.5	75-85 gusting to 95	Cyclonic Storm
12.11.19/0530	21.1/89.8	60-70 gusting to 80	Cyclonic Storm

Warnings:

(i) Rainfall:

- **Andaman and Nicobar Islands:** Light to moderate rainfall at most places very likely over **Andaman and Nicobar Islands** during next 24 hours.
- **Odisha:** Light to moderate rainfall at most places very likely over **north coastal districts of Odisha** on 9th & 10th Nov. 2019.
- **West Bengal:** Light to moderate rainfall at most places with heavy falls at isolated places very likely over **coastal districts of West Bengal** on 10th & 11th Nov. 2019.

(ii) Wind warning

- **Bay of Bengal:** Gale wind speed reaching 65-75 kmph gusting to 85 kmph is prevailing over east central & adjoining southeast Bay of Bengal around the system centre. It is very likely to increase gradually and becoming 85-95 kmph gusting to 105 kmph by 8th November morning. It will increase further becoming 120-130 kmph gusting to 145 kmph over north Bay of Bengal by 9th November morning for subsequent 12 hours.
- **Odisha & West Bengal coasts:** Squally wind speed reaching 40 – 50 kmph gusting to 60 kmph likely to commence over northwest Bay of Bengal off Odisha – West Bengal coasts from 8th November evening and gradually increase and becoming 55-65 kmph gusting to 65 kmph from 9th Nov. morning.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(iii) Sea condition

- Sea condition will be high over eastcentral Bay of Bengal during next 24 hours and become very high from 8th November morning for subsequent 24 hours over central & adjoining northwest Bay of Bengal and very high to phenomenal over North Bay of Bengal by 9th November morning for subsequent 12 hours.
- Sea condition will be rough over north Andaman Sea during next 12 hours.

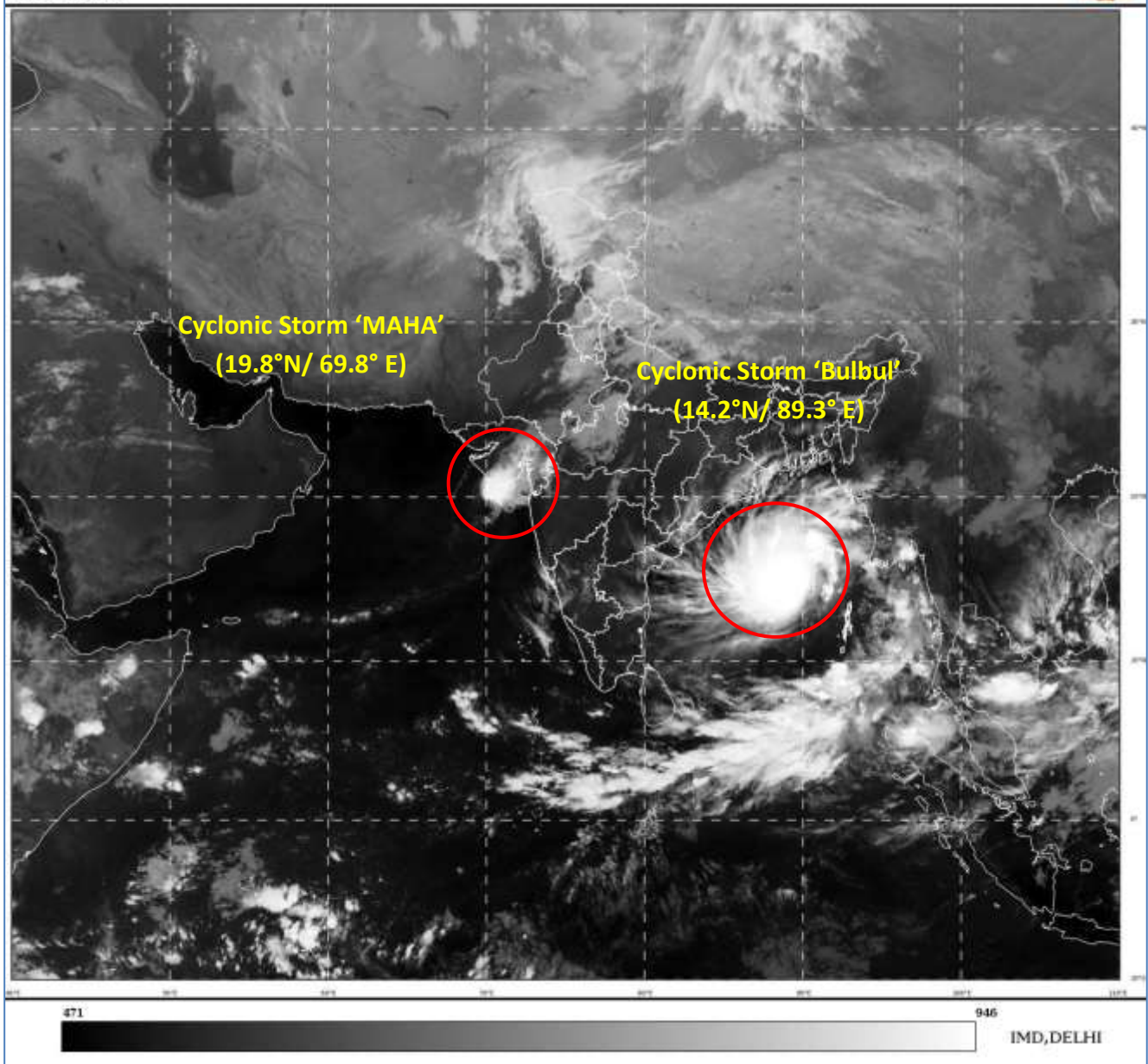
(iv) Fishermen Warning

- Fishermen are advised not to venture into eastcentral Bay of Bengal during next 2 days and into westcentral & adjoining northwest Bay of Bengal during 8th & 9th Nov. 2019 and over north Bay of Bengal during 9th – 12th November.
- Fishermen are advised not to venture into northwest Bay of Bengal along & off Odisha – west Bengal coasts from 8th November onwards.
- The fishermen out at Sea are advised to return to the coast from these areas.

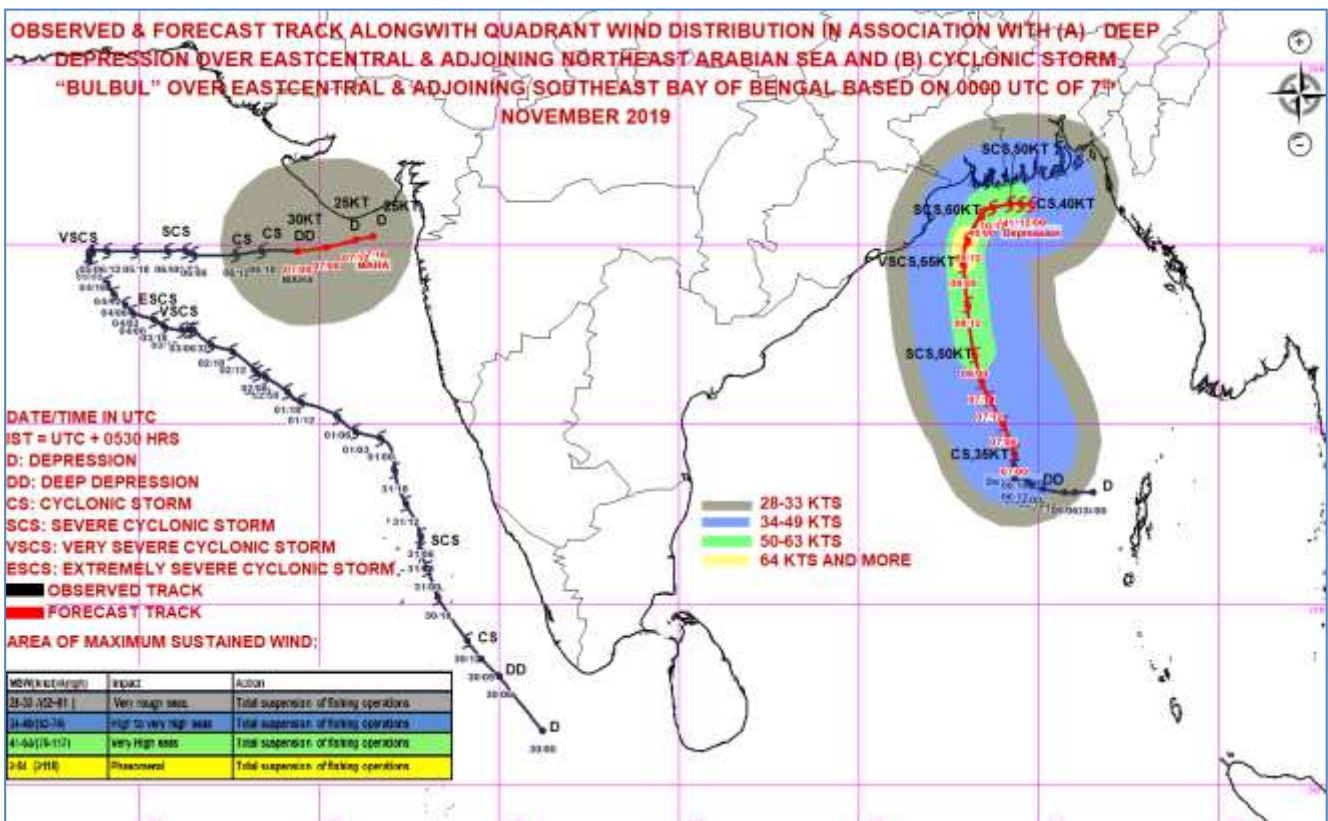
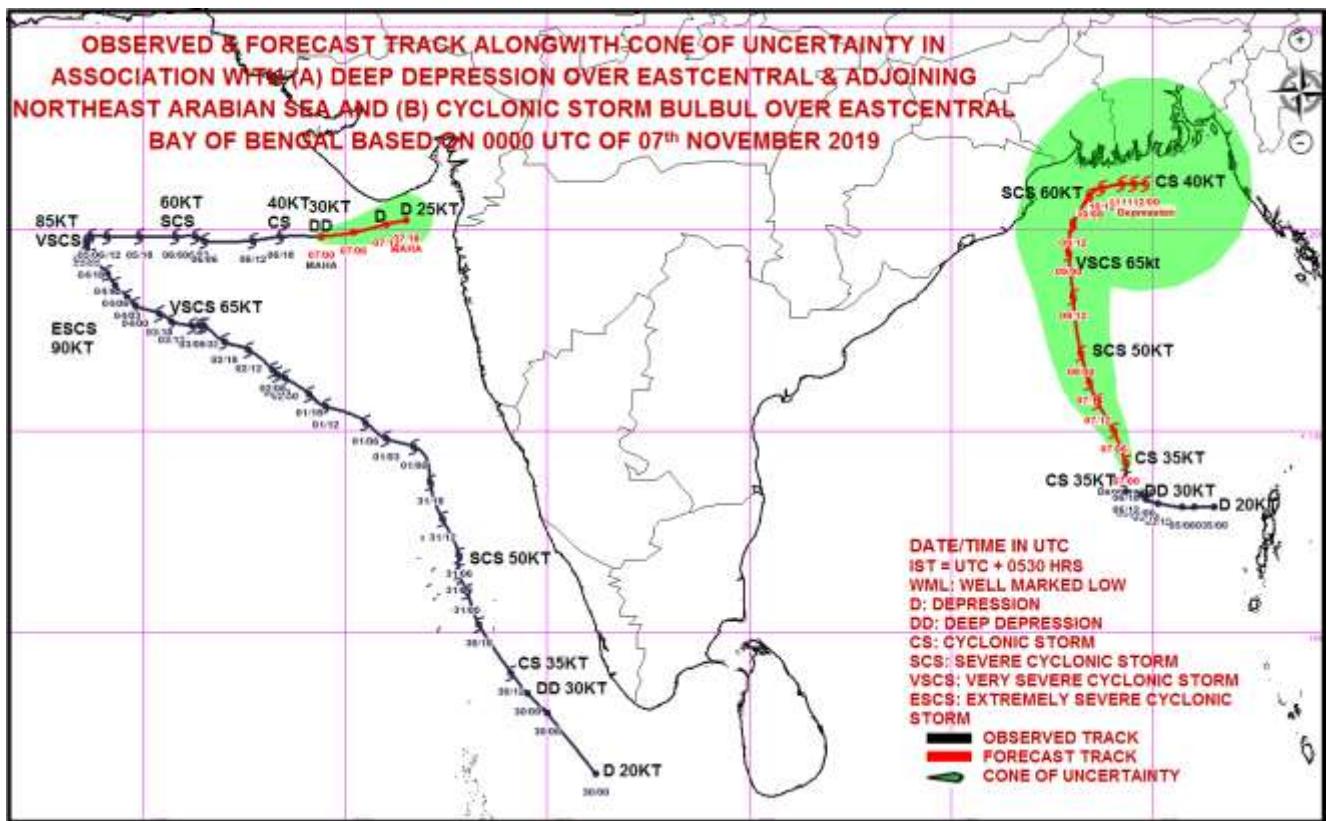
The next bulletin will be issued at 1130 hrs IST of 07th November, 2019.

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

Copy to: ACWC Chennai/ ACWC Mumbai/ ACWC Kolkata/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram/ CWC Visakhapatnam/ CWC Bhubaneswar/ M.O. Port Blair.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO.: 18 (ARB/04/2019) & BULLETIN NO.: 65 (BOB/04/2019)

TIME OF ISSUE: 1200 HOURS IST

DATED: 07.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

JS NDMA (FAX.NO. 26701864)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

**Sub:(A) Cyclonic Storm 'Bulbul' (Pronounced as Bul bul) over eastcentral Bay of Bengal: CYCLONE
ALERT FOR WEST BENGAL COAST: YELLOW MESSAGE**

(B) Deep Depression over eastcentral & adjoining northeast Arabian Sea

BULLETIN NO. : 18 (BOB/04/2019)

(B) Cyclonic Storm 'Bulbul' (Pronounced as Bul bul) over eastcentral Bay of Bengal.

The **Cyclonic Storm 'Bulbul' (Pronounced as Bul bul)** over eastcentral Bay of Bengal continued to move north-northwestwards with a speed of 15 kmph during past 06 hours and lay centred at 1130 hrs IST of today, the 7th November 2019, over eastcentral Bay of Bengal, near Lat.15.0°N and Long. 89.2°E about 680 km south-southeast of Paradip (Odisha), 780 km south-southeast of Sagar Islands (West Bengal) and 810 km south-southwest of Khepupara (Bangladesh) . It is very likely to intensify into a Severe Cyclonic Storm during next 24 hours. It is very likely to move north-northwestwards towards West Bengal and Bangladesh coasts.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position		Maximum sustained surface wind speed (kmph)	Category of cyclonic disturbance
	Lat. (⁰ N)	Long. (⁰ E)		
07.11.19/0830	14.7	89.3	65-75 gusting to 85	Cyclonic Storm
07.11.19/1130	15.0	89.2	70-80 gusting to 90	Cyclonic Storm
07.11.19/1730	15.7	88.8	80-90 gusting to 100	Cyclonic Storm
07.11.19/2330	16.2	88.4	80-90 gusting to 100	Cyclonic Storm
08.11.19/0530	16.9	88.2	85-95 gusting to 105	Severe Cyclonic Storm
08.11.19/1730	18.3	88.0	95-105 gusting to 115	Severe Cyclonic Storm
09.11.19/0530	19.4	87.9	120-130 gusting to 145	Very Severe Cyclonic Storm
09.11.19/1730	20.1	88.0	120-130 gusting to 145	Very Severe Cyclonic Storm
10.11.19/0530	21.8	88.4	110-120 gusting to 135	Severe Cyclonic Storm
10.11.19/1730	21.0	88.7	100-110 gusting to 120	Severe Cyclonic Storm
11.11.19/0530	21.1	89.2	90-100 gusting to 110	Severe Cyclonic Storm
11.11.19/1730	21.1	89.5	75-85 gusting to 95	Cyclonic Storm
12.11.19/0530	21.1	89.8	60-70 gusting to 80	Cyclonic Storm

Warnings:

(i) Rainfall:

- **Andaman and Nicobar Islands:** Light to moderate rainfall at most places very likely over **Andaman and Nicobar Islands** during next 24 hours.
- **Odisha:**
 - (i) Light to moderate rainfall at many places very likely over **north coastal districts of Odisha** with isolated heavy to very heavy falls over Puri, Kendrapara and Jagatsinghpur districts and heavy falls at isolated places over in the remaining districts on 8th November 2019.
 - (ii) Light to moderate rainfall at most places very likely over **north coastal districts of Odisha** with isolated heavy to very heavy falls over Balasore, Bhadrak, Kendrapara and Jagatsinghpur districts and heavy falls at isolated places over Mayurbhanj, Cuttack and Jajpur districts on 9th November 2019.
- **West Bengal:**
 - (i) Light to moderate rainfall at most places very likely over **coastal districts of West Bengal** with extremely heavy falls at isolated places North and South 24 Parganas, isolated heavy to very heavy falls over East and West Medinipur, Howrah, Hooghly on 9th November 2019.
 - (ii) Light to moderate rainfall at most places very likely over **coastal districts of West Bengal** with isolated heavy to very heavy falls at isolated places North and South 24 Parganas, isolated heavy falls over East Medinipur, Howrah, Hooghly and Nadiya districts on 9th November 2019.

(ii) Wind warning

- **Bay of Bengal:** Gale wind speed reaching 65-75 kmph gusting to 85 kmph is prevailing over east central Bay of Bengal around the system centre. It is very likely to increase gradually and become 85-95 kmph gusting to 105 kmph by 8th November morning. It will increase further becoming 120-130 kmph gusting to 145 kmph over north Bay of Bengal by 9th November morning for subsequent 12 hours.
- **Odisha coast:** Strong wind speed reaching 35 – 45 kmph gusting to 55 kmph becoming squally 45-55 gusting to 65 by afternoon of 8th over Kendrapara, Jagatsinghpur, Balasore and Bhadrak districts. Gale wind speed reaching 70-80 kmph gusting to 90 kmph likely towards evening of 9th November over Jagatsinghpur, Balasore and Bhadrak districts. It is likely to decrease from 10th onwards. Puri, Ganjam and Jajpur districts are likely to experience squally wind speed reaching 40-50kmph gusting to 60 kmph on 8th and 9th November.
- **West Bengal coast:** Squally wind speed reaching 40 – 50 kmph gusting to 60 kmph likely to commence over West Bengal coasts from 8th November night and gradually increase and

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

becoming 55-65 kmph gusting to 75 kmph from 9th November evening. It is likely to increase to gale wind speed becoming 70-80 kmph gusting to 90 kmph by 10th morning.

(iii) Sea condition

- Sea condition will be high over eastcentral Bay of Bengal during next 24 hours and become very high from 8th November morning for subsequent 24 hours over central & adjoining northwest Bay of Bengal and very high to phenomenal over North Bay of Bengal by 9th November morning for subsequent 12 hours.
- Sea condition will be rough to very rough along and off Odisha coast from 8th onwards becoming very high on 9th and 10th November.

(iv) Fishermen Warning

- Total suspension of fishing operations from 8th onwards over Odisha-West Bengal coasts.
- Fishermen are advised not to venture into eastcentral Bay of Bengal during next 2 days and into westcentral & adjoining northwest Bay of Bengal during 8th & 9th Nov. 2019 and over north Bay of Bengal during 9th – 12th November.
- Fishermen are advised not to venture into northwest Bay of Bengal along & off Odisha – west Bengal coasts from 8th November onwards.
- The fishermen out at Sea are advised to return to the coast from these areas.

BULLETIN NO. : 65 (ARB/04/2019)

B) Deep Depression over eastcentral & adjoining northeast Arabian Sea

The **Deep Depression** over eastcentral & adjoining northeast Arabian Sea moved nearly eastwards with a speed of 19 kmph during past 06 hours, and lay centered at 0830 hrs IST of today, the 07th November, 2019 over eastcentral & adjoining northeast Arabian Sea near latitude 20.0°N and longitude 70.0°E, about 100 km south-southwest of Veraval (Gujarat) and 120 km west-southwest of Diu. It is very likely to move east-northeastwards, weaken into a Depression over northeast & adjoining eastcentral Arabian Sea off south Gujarat coast during next 12 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position		Maximum sustained surface wind speed (kmph)	Category of cyclonic disturbance
	Lat. (°N)	Long. (°E)		
07.11.19/0530	20.0	70.0	55-65 gusting to 75	Deep Depression
07.11.19/1130	20.0	70.3	50-60 gusting to 70	Deep Depression
07.11.19/1730	20.1	71.0	45-55 gusting to 65	Depression
07.11.19/2330	20.2	71.7	40-50 gusting to 60	Depression

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall very likely at many places over south Gujarat state with heavy falls at isolated places over **Diu, Junagarh, Gir Somnath, Amreli, Bhavnagar** during next 24 hours.
- **Maharashtra:** Light to moderate rainfall at many places over northern most districts of Konkan (Palghar & Thane districts) during next 24 hours.

(ii) Wind warning

- **Gujarat: Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 55-65 kmph gusting to 75 kmph likely to prevail over northeast Arabian Sea along & off **Junagarh, Gir Somnath, Diu, Amreli, Bhavnagar, Bharuch, Surat, Navsari, Valsad, Daman and Dadra & Nagar Haveli**

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

districts. It is very likely to become 45-55 Kmph gusting to 65 Kmph over these areas from today, the 7th November evening for the subsequent 12 hours.

- **Maharashtra:** Squally wind speed reaching 45-55 kmph gusting to 60 kmph likely along & off north Maharashtra coast (along & off Palghar & Thane districts) from today, the 7th November evening for subsequent 24 hours.
- **Arabian Sea:** Gale wind speed reaching 55-65 kmph gusting to 75 kmph is prevailing over eastcentral & adjoining northeast Arabian Sea around the system centre. It is very likely to decrease gradually and become 45-55 kmph gusting 65 kmph from today, the 7th November evening over northeast & adjoining eastcentral Arabian Sea and further decrease thereafter.

(iii) Sea condition

- **Gujarat Coast:** Sea condition will be rough to very rough along & off Gujarat coast during next 24 hours.
- **Maharashtra Coast:** Sea condition will be rough to very rough along & off north Maharashtra coast during next 24 hours.
- **Arabian Sea:** Sea condition will be rough to very rough over eastcentral and adjoining northeast Arabian Sea during next 24 hours.

(v) Fishermen Warning

- The fishermen are advised not to venture into eastcentral & adjoining northeast Arabian Sea along & off south Gujarat coast and adjoining north Maharashtra coast during next 24 hours.

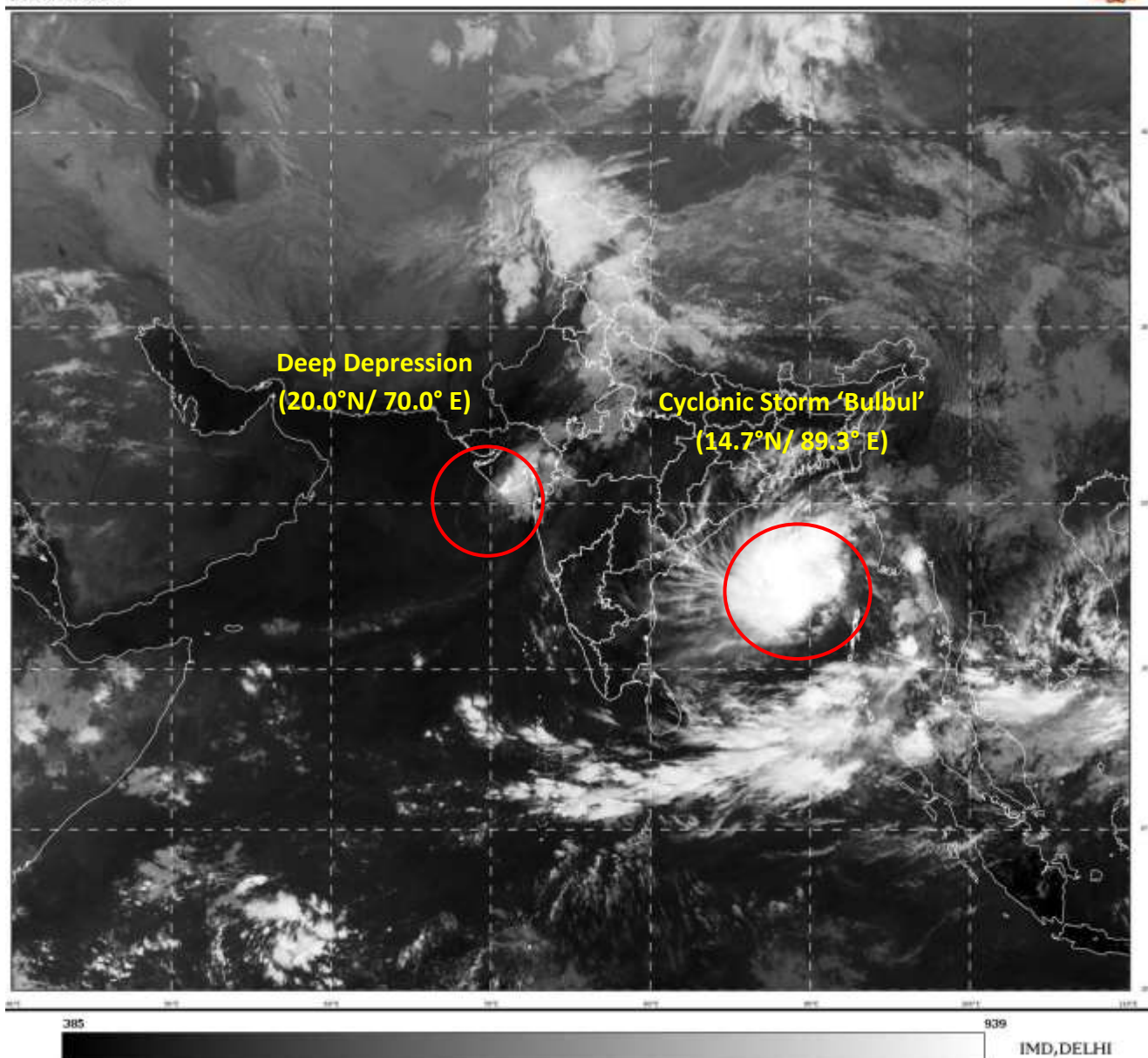
The next bulletin will be issued at 1430 hrs IST of 07th November, 2019.

(Sunitha Devi S)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ ACWC Kolkata/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram/ CWC Visakhapatnam/ CWC Bhubaneswar/ M.O. Port Blair.

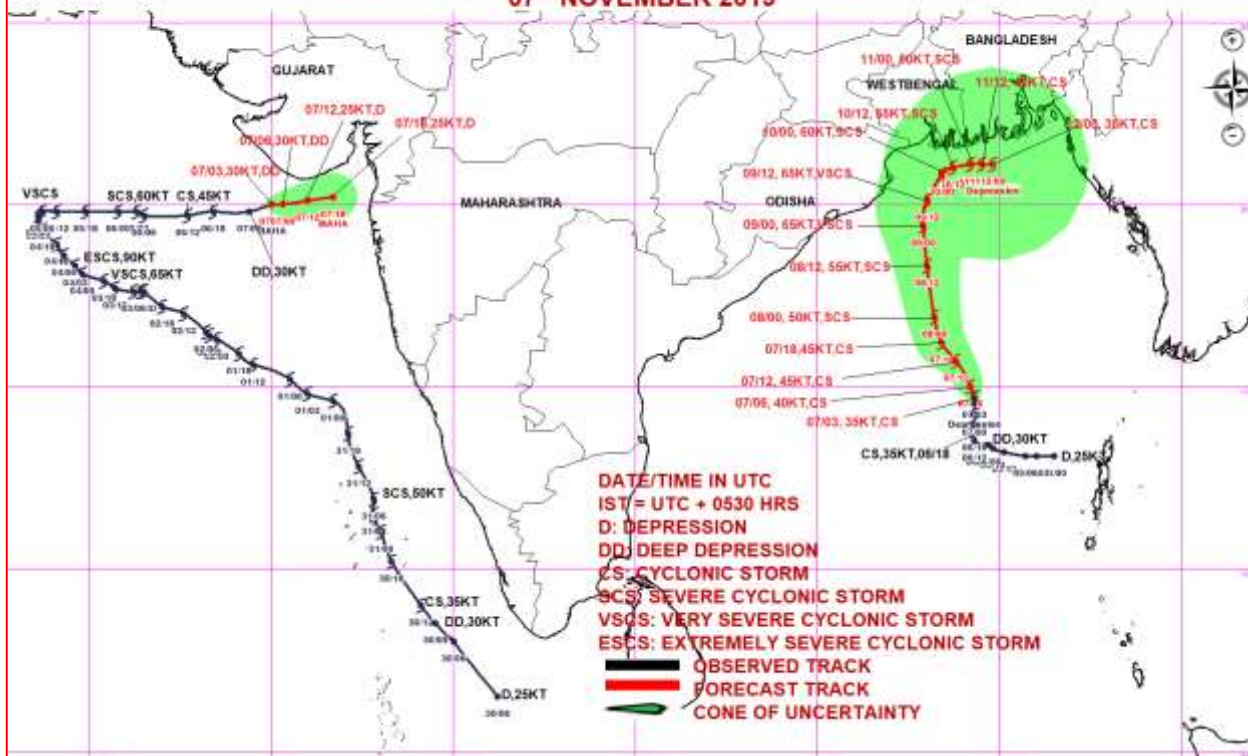
SAT : INSAT-3D IMG
IMG_TIR1 10.8 um
LIC Mercator

07-11-2019/(0400 to 0427) GMT
07-11-2019/(0930 to 0957) IST

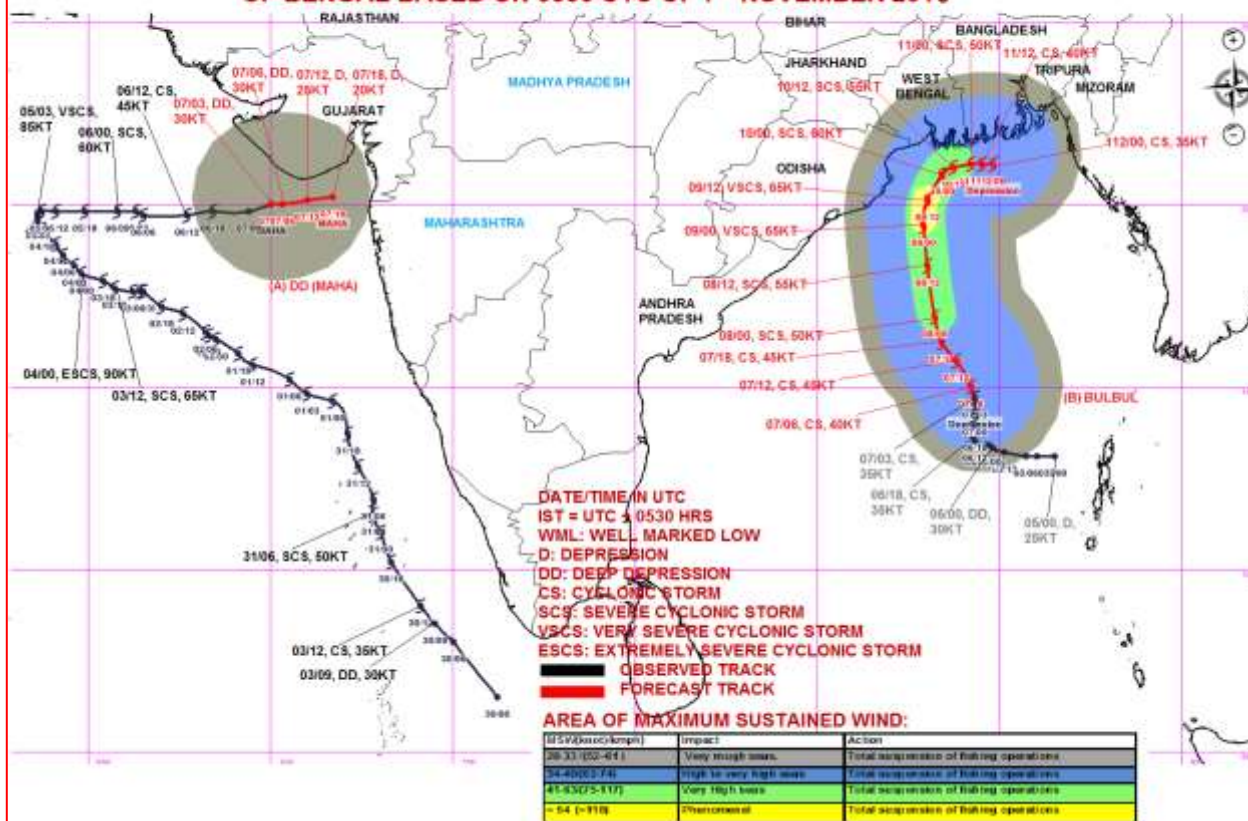


Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH (A) DEEP DEPRESSION OVER EASTCENTRAL & ADJOINING NORTHEAST ARABIAN SEA AND (B) CYCLONIC STORM "BULBUL" OVER EASTCENTRAL BAY OF BENGAL BASED ON 0300 UTC OF 07th NOVEMBER 2019



OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH (A) DEEP DEPRESSION (MAHA) OVER EASTCENTRAL & ADJOINING NORTHEAST ARABIAN SEA AND (B) CYCLONIC STORM "BULBUL" OVER EASTCENTRAL BAY OF BENGAL BASED ON 0300 UTC OF 7th NOVEMBER 2019



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO.: 66 (ARB/04/2019) & BULLETIN NO.: 19 (BOB/04/2019)

TIME OF ISSUE: 1440 HOURS IST

DATED: 07.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

JS NDMA (FAX.NO. 26701864)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub:(A) Cyclonic Storm 'Bulbul' (Pronounced as Bul bul) over eastcentral Bay of Bengal: CYCLONE WATCH FOR WEST BENGAL AND NORTH ODISHA COASTS

(B) Depression over eastcentral & adjoining northeast Arabian Sea

BULLETIN NO. : 19 (BOB/04/2019)

(A) Cyclonic Storm 'Bulbul' (Pronounced as Bul bul) over eastcentral Bay of Bengal.

The **Cyclonic Storm 'Bulbul' (Pronounced as Bul bul)** over eastcentral Bay of Bengal moved north- northwestwards with a speed of 15 kmph during past 06 hours and lay centred at 1130 hrs IST of today, the 7th November 2019, over eastcentral Bay of Bengal, near Lat.15.0°N and Long. 89.2°E about 640 km south-southeast of Paradip (Odisha), 740 km south-southeast of Sagar Islands (West Bengal) and 780 km south-southwest of Khepupara (Bangladesh) . It is very likely to intensify into a Severe Cyclonic Storm during next 24 hours. It is very likely to move initially north-northwestwards for next 12 hours and then nearly northwards till 9th November morning and then re-curve northeastwards towards Bangladesh and adjoining West Bengal.

Forecast track and intensity are given in the following table:

Date/Time (IST)	Position		Maximum sustained surface wind speed (kmph)	Category of cyclonic disturbance
	Lat. (°N)	Long. (°E)		
07.11.19/1130	15.0	89.2	70-80 gusting to 90	Cyclonic Storm
07.11.19/1730	15.6	88.5	80-90 gusting to 100	Cyclonic Storm
07.11.19/2330	16.2	88.2	90-100 gusting to 110	Severe Cyclonic Storm

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

08.11.19/0530	16.8	88.0	100-110 gusting to 115	Severe Cyclonic Storm
08.11.19/1130	16.7	88.0	110-120 gusting to 135	Severe Cyclonic Storm
08.11.19/2330	18.9	87.8	120-130 gusting to 145	Very Severe Cyclonic Storm
09.11.19/1130	19.9	87.8	110-120 gusting to 135	Severe Cyclonic Storm
09.11.19/2330	20.8	88.2	100-110 gusting to 115	Severe Cyclonic Storm
10.11.19/1130	21.4	89.0	90-100 gusting to 110	Severe Cyclonic Storm
10.11.19/2330	21.8	89.7	80-90 gusting to 100	Cyclonic Storm
11.11.19/1130	22.1	90.3	70-80 gusting to 90	Cyclonic Storm
11.11.19/2330	22.4	91.0	50-60 gusting to 70	Deep Depression
12.11.19/1130	22.6	91.8	40-50 gusting to 60	Depression

Warnings:

(i) Rainfall:

- **Andaman and Nicobar Islands:** Light to moderate rainfall at most places very likely over **Andaman and Nicobar Islands** during next 24 hours.
- **Odisha:**
 - (i) Light to moderate rainfall at many places very likely over **north coastal districts of Odisha** with isolated heavy falls over Puri, Kendrapara and Jagatsinghpur districts on 8th November 2019.
 - (ii) Light to moderate rainfall at most places very likely over **north coastal districts of Odisha** with isolated heavy to very heavy falls over Balasore, Bhadrak, Kendrapara and Jagatsinghpur districts and heavy falls at isolated places over Mayurbhanj, Cuttack and Jajpur districts on 9th November 2019.
- **West Bengal:**
 - (i) Light to moderate rainfall at most places very likely over **coastal districts of West Bengal** with extremely heavy falls (≥ 20 cm in 24 hours) at isolated places over North and South 24 Parganas, isolated heavy to very heavy falls over East and West Medinipur, Howrah, and Hooghly on 9th November 2019.
 - (ii) Light to moderate rainfall at most places very likely over **coastal districts of West Bengal** with heavy to very heavy falls at isolated places over North and South 24 Parganas, and isolated heavy falls over Howrah, Hooghly and Nadiya districts on 10th November 2019.

(ii) Wind warning

- **Bay of Bengal:** Gale wind speed reaching 70-80 kmph gusting to 90 kmph is prevailing over east central Bay of Bengal around the system centre. It is very likely to increase gradually and become 100-110 kmph gusting to 115 kmph by 8th November morning. It will increase further becoming 120-130 kmph gusting to 145 kmph over north Bay of Bengal from the night of 8th November for subsequent 12 hours.
- **Odisha coast:** Strong wind speed reaching 35 – 45 kmph gusting to 55 kmph becoming squally wind speed reaching 45-55 kmph gusting to 65 kmph by afternoon of 8th over Kendrapara, Jagatsinghpur, Balasore and Bhadrak districts. Gale wind speed reaching 70-80 kmph gusting to 90 kmph likely towards evening of 9th November over Jagatsinghpur, Balasore and Bhadrak districts. It is likely to decrease from 10th onwards. Puri, Ganjam and Jajpur districts are likely to experience squally wind speed reaching 40-50kmph gusting to 60 kmph on 8th and 9th November.
- **West Bengal coast:** Squally wind speed reaching 40 – 50 kmph gusting to 60 kmph likely to commence over West Bengal coasts from 8th November night and gradually increase and becoming 55-65 kmph gusting to 75 kmph from 9th November evening. It is likely to increase to gale wind speed reaching 70-80 kmph gusting to 90 kmph by 10th morning.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(iv) Sea condition

- Sea condition will be high over eastcentral Bay of Bengal during next 24 hours and become very high from 8th November morning for subsequent 24 hours over central & adjoining northwest Bay of Bengal and very high to phenomenal over North Bay of Bengal by 9th November morning for subsequent 12 hours.
- Sea condition will be rough to very rough along and off Odisha and West Bengal coasts from 8th onwards becoming very high on 9th and 10th November.

(v) Damage Expected over coastal districts of north Odisha and West Bengal:

- Damage to thatched houses/ huts. Unattached metal sheets may fly.
- Damage to embankments/ salt pans.
- Partial damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Large dead limbs blown from trees.
- Major damage to coastal crops

(vi) Action Suggested for coastal districts of north Odisha and West Bengal

- Total suspension of fishing operations from 8th November onwards.
- People in affected areas to remain indoors.
- Movement in motor boats unsafe.
- Beach movement may be restricted

(vii) Fishermen Warning

- Total suspension of fishing operations from 8th onwards over Odisha-West Bengal coasts.
- Fishermen are advised not to venture into eastcentral Bay of Bengal during next 2 days and into westcentral & adjoining northwest Bay of Bengal during 8th & 9th Nov. 2019 and over north Bay of Bengal during 9th – 12th November.
- Fishermen are advised not to venture into northwest Bay of Bengal along & off Odisha – west Bengal coasts from 8th November onwards.
- The fishermen out at Sea are advised to return to the coast from these areas.

BULLETIN NO. : 66 (ARB/04/2019)

B) Depression over eastcentral & adjoining northeast Arabian Sea

The **Deep Depression** over eastcentral & adjoining northeast Arabian Sea moved nearly eastwards with a speed of 18 kmph during past 06 hours, weakened into a **Depression** and lay centered at 1130 hrs IST of today, the 07th November, 2019 over eastcentral & adjoining northeast Arabian Sea near latitude 20.0°N and longitude 70.4°E, about 100 km nearly to the south of Veraval (Gujarat) and 90 km nearly to the south of Diu. It is very likely to move east-northeastwards, weaken into a Well Marked Low Pressure Area over northeast & adjoining eastcentral Arabian Sea off south Gujarat coast during next 12 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position		Maximum sustained surface wind speed (kmph)	Category of cyclonic disturbance
	Lat. (°N)	Long. (°E)		
07.11.19/1130	20.0	70.4	40-50 gusting to 60	Depression
07.11.19/1730	20.2	70.9	30-40 gusting to 50	Depression
07.11.19/2330	20.4	71.4	20-30 gusting to 40	Well Marked Low

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall very likely at many places over south Gujarat state with heavy falls at isolated places over **Diu, Junagarh, Gir Somnath, Amreli, Bhavnagar** during next 24 hours.
- **Maharashtra:** Light to moderate rainfall at many places over northern most districts of Konkan (Palghar & Thane districts) during next 24 hours.

(ii) Wind warning

- **Gujarat: Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to prevail over northeast Arabian Sea along & off **Junagarh, Gir Somnath, Diu, Amreli, Bhavnagar, Bharuch, Surat, Navsari, Valsad, Daman and Dadra & Nagar Haveli** districts during next 12 hours and decrease thereafter.
- **North Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off north Maharashtra coast (Palghar & Thane districts) during next 12 hours and decrease thereafter.
- **Arabian Sea:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph is prevailing over eastcentral & adjoining northeast Arabian Sea around the system centre during next 12 hours and decrease thereafter.

(iii) Sea condition: Sea condition will be rough to very rough over eastcentral and adjoining northeast Arabian Sea, along & off Gujarat and adjoining north Maharashtra coasts during next 12 hours and improve thereafter.

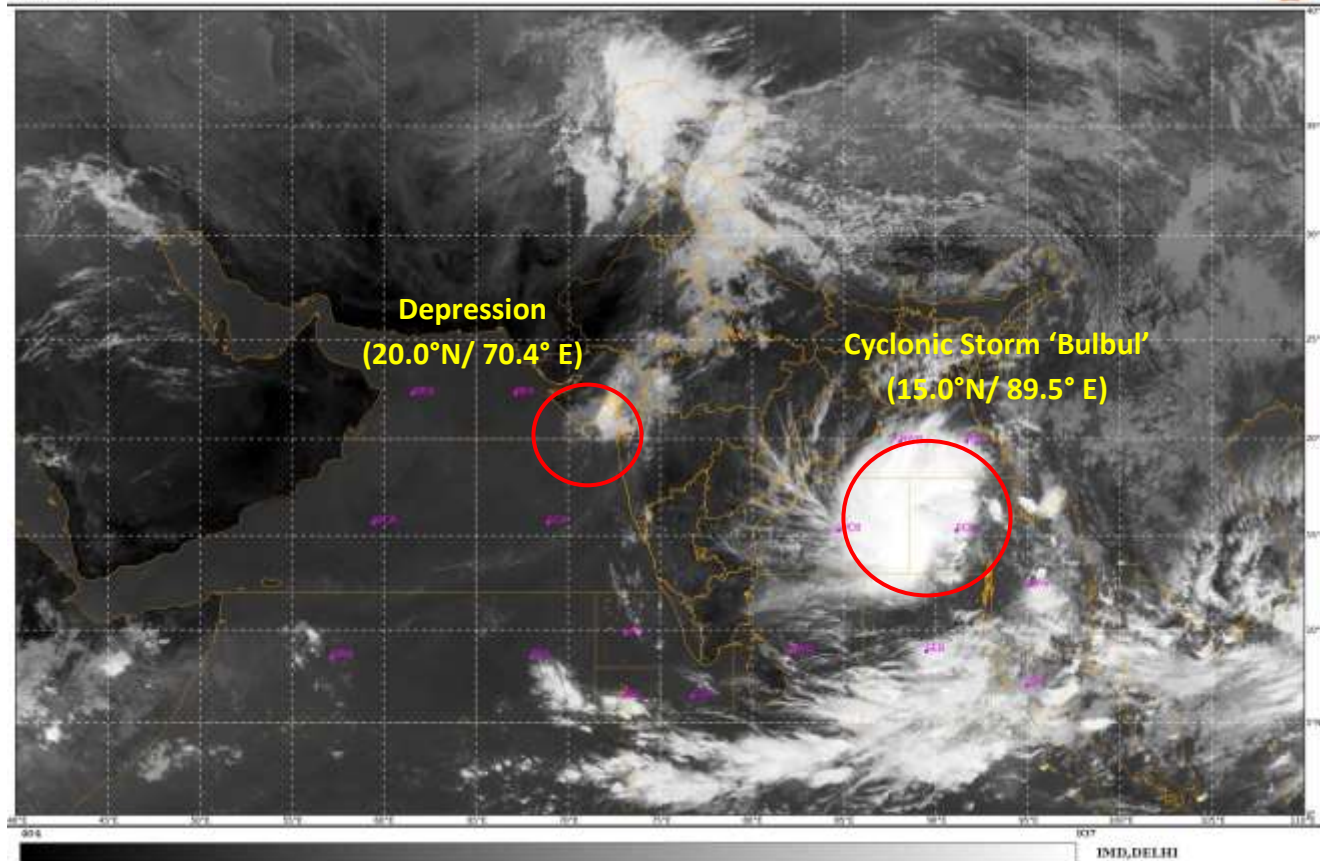
(v) Fishermen Warning

- The fishermen are advised not to venture into eastcentral & adjoining northeast Arabian Sea along & off south Gujarat coast and adjoining north Maharashtra coast during next 12 hours.

The next bulletin will be issued at 1730 hrs IST of 07th November, 2019.

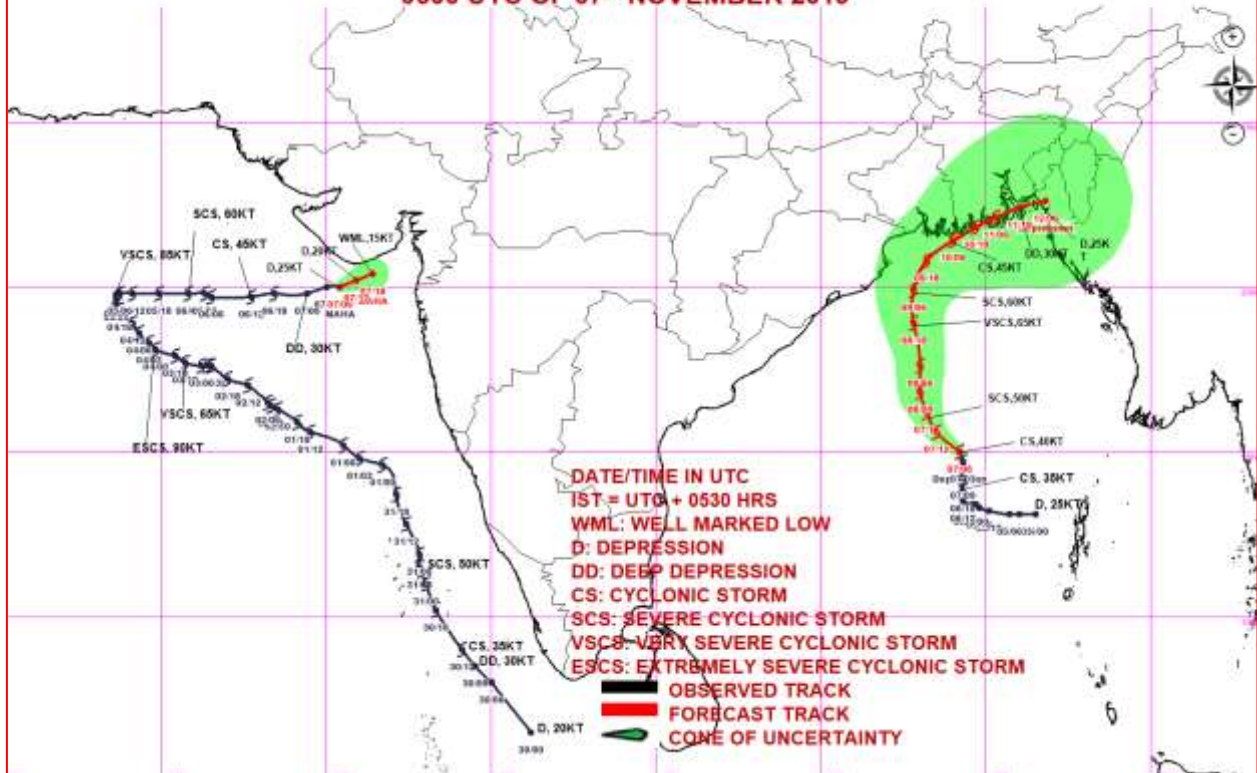
(Neetha K Gopal)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ ACWC Kolkata/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram/ CWC Visakhapatnam/ CWC Bhubaneswar/ M.O. Port Blair.

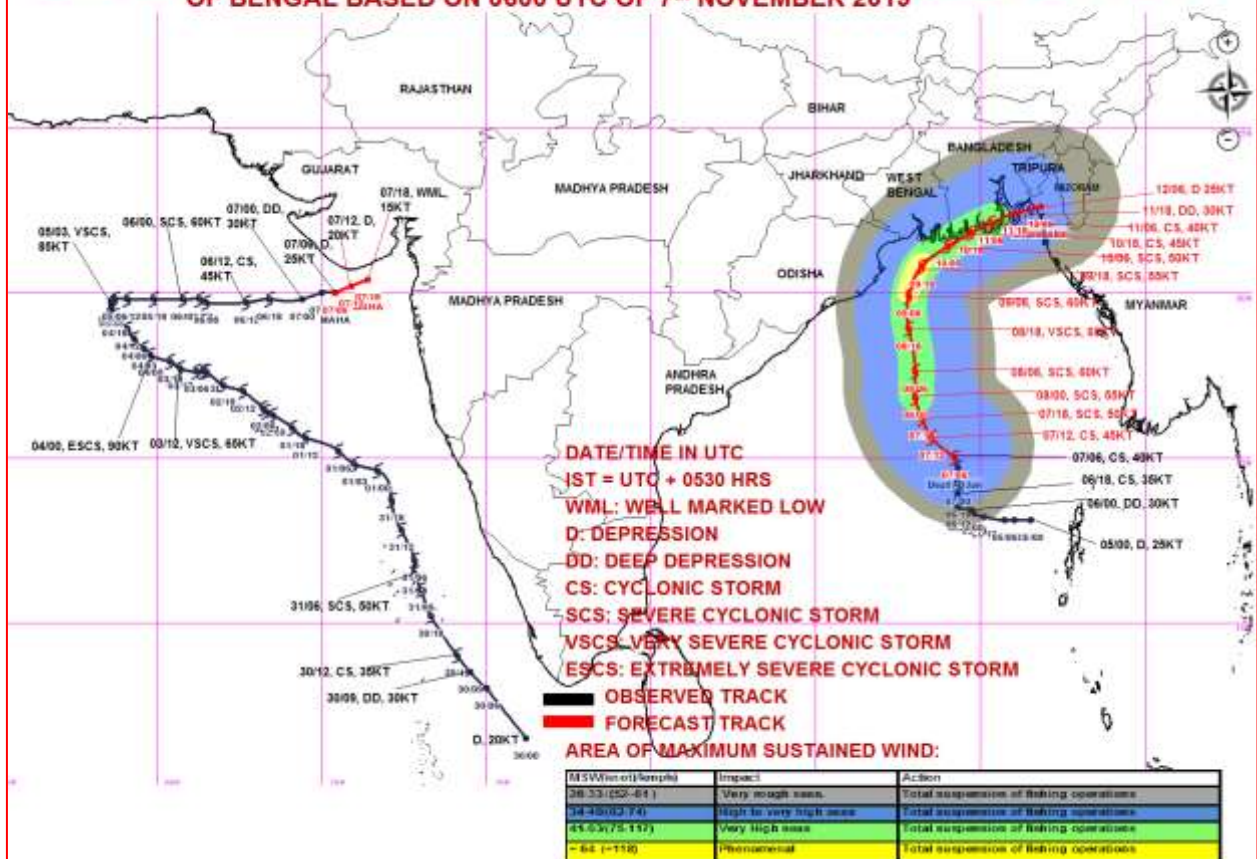


Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH (A) CYCLONIC STORM "BULBUL" OVER EASTCENTRAL BAY OF BENGAL (B) DEPRESSION OVER EASTCENTRAL & ADJOINING NORTHEAST ARABIAN SEA AND BASED ON 0600 UTC OF 07th NOVEMBER 2019



OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH (A) DEPRESSION (MAHA) OVER EASTCENTRAL & ADJOINING NORTHEAST ARABIAN SEA AND (B) CYCLONIC STORM "BULBUL" OVER EASTCENTRAL BAY OF BENGAL BASED ON 0600 UTC OF 7th NOVEMBER 2019



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO.: 20 (BOB/04/2019) & BULLETIN NO.: 67 (ARB/04/2019)

TIME OF ISSUE: 1700 HOURS IST

DATED: 07.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)
TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
JS NDMA (FAX.NO. 26701864)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)
CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)
CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub:(A) Cyclonic Storm 'Bulbul' (Pronounced as Bul bul) over westcentral and adjoining eastcentral Bay of Bengal: CYCLONE WATCH FOR WEST BENGAL AND NORTH ODISHA COASTS
(B) Depression over eastcentral & adjoining northeast Arabian Sea

BULLETIN NO. : 20 (BOB/04/2019)

(A) Cyclonic Storm 'Bulbul' (Pronounced as Bul bul) over westcentral and adjoining eastcentral Bay of Bengal.

The **Cyclonic Storm 'Bulbul' (Pronounced as Bul bul)** over eastcentral Bay of Bengal moved northwestwards with a speed of 21 kmph during past 06 hours and lay centred at 1430 hrs IST of today, the 7th November 2019, over westcentral & adjoining eastcentral Bay of Bengal, near Lat.15.5°N and Long. 88.4°E about 560 km south-southeast of Paradip (Odisha), 680 km south-southeast of Sagar Islands (West Bengal) and 740 km south-southwest of Khepupara (Bangladesh) . It is very likely to intensify into a Severe Cyclonic Storm during next 6 hours. It is very likely to move initially north-northwestwards for next 12 hours and then nearly northwards till 9th November morning and then re-curve northeastwards towards Bangladesh and adjoining West Bengal.

Forecast track and intensity are given in the following table:

Date/Time (IST)	Position		Maximum sustained surface wind speed (kmph)	Category of cyclonic disturbance
	Lat. (°N)	Long. (°E)		
07.11.19/1430	15.5	88.4	80-90 gusting to 100	Cyclonic Storm

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

07.11.19/1730	15.8	88.2	90-100 gusting to 110	Severe Cyclonic Storm
07.11.19/2330	16.2	88.1	95-105 gusting to 115	Severe Cyclonic Storm
08.11.19/0530	16.8	88.0	100-110 gusting to 115	Severe Cyclonic Storm
08.11.19/1130	16.7	88.0	110-120 gusting to 135	Severe Cyclonic Storm
08.11.19/2330	18.9	87.8	120-130 gusting to 145	Very Severe Cyclonic Storm
09.11.19/1130	19.9	87.8	110-120 gusting to 135	Severe Cyclonic Storm
09.11.19/2330	20.8	88.2	100-110 gusting to 115	Severe Cyclonic Storm
10.11.19/1130	21.4	89.0	90-100 gusting to 110	Severe Cyclonic Storm
10.11.19/2330	21.8	89.7	80-90 gusting to 100	Cyclonic Storm
11.11.19/1130	22.1	90.3	70-80 gusting to 90	Cyclonic Storm
11.11.19/2330	22.4	91.0	50-60 gusting to 70	Deep Depression
12.11.19/1130	22.6	91.8	40-50 gusting to 60	Depression

Warnings:

(i) Rainfall:

- **Andaman and Nicobar Islands:** Light to moderate rainfall at most places very likely over **Andaman and Nicobar Islands** during next 24 hours.
- **Odisha:**
 - (i) Light to moderate rainfall at many places very likely over **north coastal districts of Odisha** with isolated heavy falls over Puri, Kendrapara and Jagatsinghpur districts on 8th November 2019.
 - (ii) Light to moderate rainfall at most places very likely over **north coastal districts of Odisha** with isolated heavy to very heavy falls over Balasore, Bhadrak, Kendrapara and Jagatsinghpur districts and heavy falls at isolated places over Mayurbhanj, Cuttack and Jajpur districts on 9th November 2019.
- **West Bengal:**
 - (i) Light to moderate rainfall at most places very likely over **coastal districts of West Bengal** with extremely heavy falls (≥ 20 cm in 24 hours) at isolated places over North and South 24 Parganas, isolated heavy to very heavy falls over East and West Medinipur, Howrah, and Hooghly on 9th November 2019.
 - (ii) Light to moderate rainfall at most places very likely over **coastal districts of West Bengal** with heavy to very heavy falls at isolated places over North and South 24 Parganas, and isolated heavy falls over Howrah, Hooghly and Nadiya districts on 10th November 2019.

(ii) Wind warning

- **Bay of Bengal:** Gale wind speed reaching 70-80 kmph gusting to 90 kmph is prevailing over east central Bay of Bengal around the system centre. It is very likely to increase gradually and become 100-110 kmph gusting to 115 kmph by 8th November morning. It will increase further becoming 120-130 kmph gusting to 145 kmph over north Bay of Bengal from the night of 8th November for subsequent 12 hours.
- **Odisha coast:** Strong wind speed reaching 35 – 45 kmph gusting to 55 kmph becoming squally wind speed reaching 45-55 kmph gusting to 65 kmph by afternoon of 8th over Kendrapara, Jagatsinghpur, Balasore and Bhadrak districts. Gale wind speed reaching 70-80 kmph gusting to 90 kmph likely towards evening of 9th November over Jagatsinghpur, Balasore and Bhadrak districts. It is likely to decrease from 10th onwards. Puri, Ganjam and Jajpur districts are likely to experience squally wind speed reaching 40-50kmph gusting to 60 kmph on 8th and 9th November.
- **West Bengal coast:** Squally wind speed reaching 40 – 50 kmph gusting to 60 kmph likely to commence over West Bengal coasts from 8th November night and gradually increase and

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

becoming 55-65 kmph gusting to 75 kmph from 9th November evening. It is likely to increase to gale wind speed reaching 70-80 kmph gusting to 90 kmph by 10th morning.

(iv) Sea condition

- Sea condition will be high over eastcentral Bay of Bengal during next 24 hours and become very high from 8th November morning for subsequent 24 hours over central & adjoining northwest Bay of Bengal and very high to phenomenal over North Bay of Bengal by 9th November morning for subsequent 12 hours.
- Sea condition will be rough to very rough along and off Odisha and West Bengal coasts from 8th onwards becoming very high on 9th and 10th November.

(v) Damage Expected over coastal districts of north Odisha and West Bengal:

- Damage to thatched houses/ huts. Unattached metal sheets may fly.
- Damage to embankments/ salt pans.
- Partial damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Large dead limbs blown from trees.
- Major damage to coastal crops

(vi) Action Suggested for coastal districts of north Odisha and West Bengal

- Total suspension of fishing operations from 8th November onwards.
- People in affected areas to remain indoors.
- Movement in motor boats unsafe.
- Beach movement may be restricted

(vii) Fishermen Warning

- Total suspension of fishing operations from 8th onwards over Odisha-West Bengal coasts.
- Fishermen are advised not to venture into eastcentral Bay of Bengal during next 2 days and into westcentral & adjoining northwest Bay of Bengal during 8th & 9th Nov. 2019 and over north Bay of Bengal during 9th – 12th November.
- Fishermen are advised not to venture into northwest Bay of Bengal along & off Odisha – west Bengal coasts from 8th November onwards.
- The fishermen out at Sea are advised to return to the coast from these areas.

BULLETIN NO. : 67 (ARB/04/2019)

B) Depression over eastcentral & adjoining northeast Arabian Sea

The **Depression** over eastcentral & adjoining northeast Arabian Sea moved east-northeastwards with a speed of 11 kmph during past 06 hours, and lay centered at 1430 hrs IST of today, the 07th November, 2019 over northeast and adjoining eastcentral Arabian Sea near latitude 20.2°N and longitude 70.6°E, about 80 km to the south of Veraval (Gujarat) and 70 km to the south of Diu. It is very likely to move east-northeastwards, weaken into a Well Marked Low Pressure Area over northeast & adjoining eastcentral Arabian Sea off south Gujarat coast during next 6 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position		Maximum sustained surface wind speed (kmph)	Category of cyclonic disturbance
	Lat. (°N)	Long. (°E)		
07.11.19/1430	20.2	70.6	30-40 gusting to 50	Depression
07.11.19/1730	20.2	70.9	25-35 gusting to 45	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

07.11.19/2330	20.4	71.4	20-30 gusting to 40	Well Marked Low
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Warnings:

(i) Rainfall:

- **Gujarat:** Light to moderate rainfall very likely at many places over south Gujarat state with heavy falls at isolated places over **Diu, Junagarh, Gir Somnath, Amreli, Bhavnagar** during next 24 hours.
- **Maharashtra:** Light to moderate rainfall at many places over northern most districts of Konkan (Palghar & Thane districts) during next 24 hours.

(ii) Wind warning

- **Gujarat: Daman, Diu, Dadra & Nagar Haveli:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely to prevail over northeast Arabian Sea along & off **Junagarh, Gir Somnath, Diu, Amreli, Bhavnagar, Bharuch, Surat, Navsari, Valsad, Daman and Dadra & Nagar Haveli** districts during next 12 hours and decrease thereafter.
- **North Maharashtra:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph likely along & off north Maharashtra coast (Palghar & Thane districts) during next 12 hours and decrease thereafter.
- **Arabian Sea:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph is prevailing over eastcentral & adjoining northeast Arabian Sea around the system centre during next 12 hours and decrease thereafter.

(iii) Sea condition: Sea condition will be rough to very rough over eastcentral and adjoining northeast Arabian Sea, along & off Gujarat and adjoining north Maharashtra coasts during next 12 hours and improve thereafter.

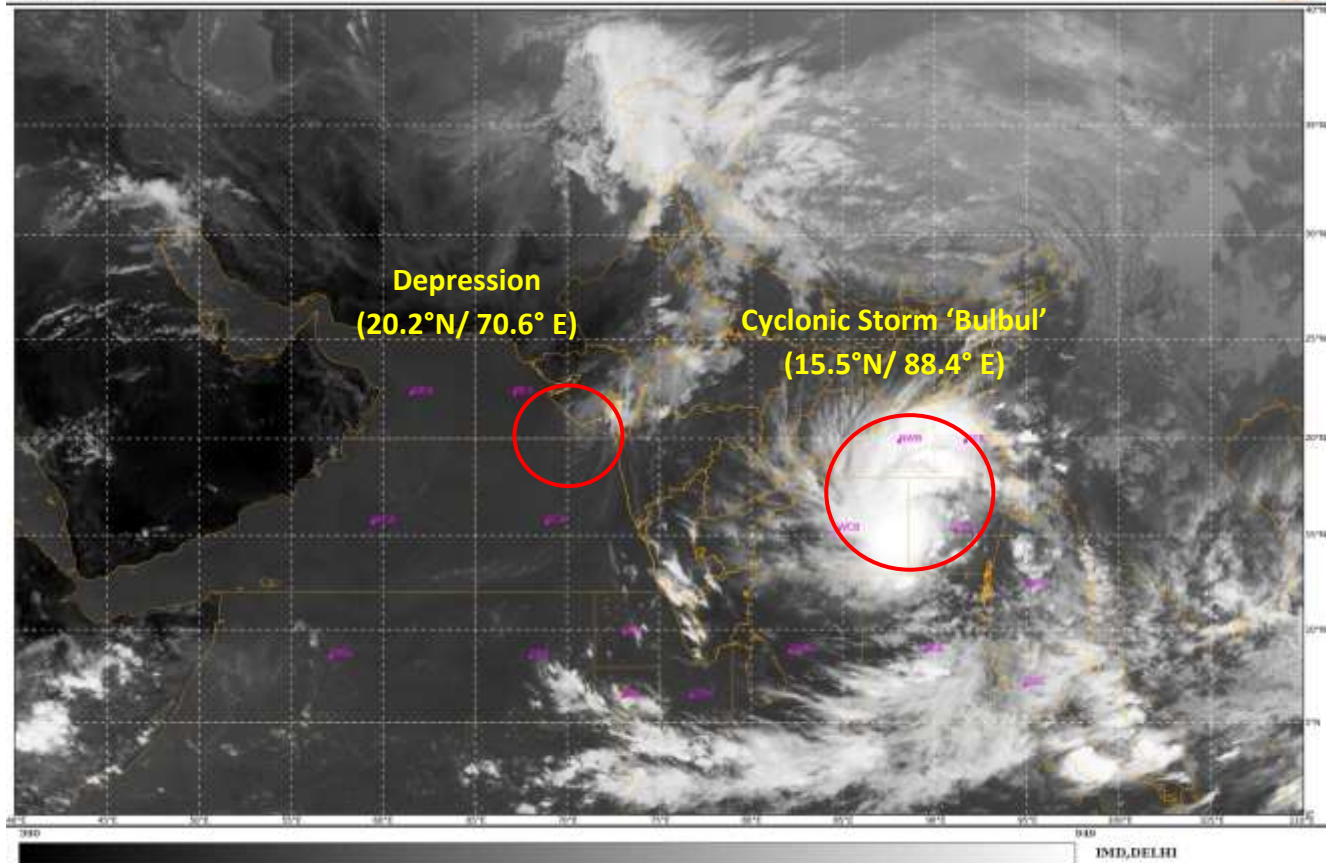
(v) Fishermen Warning

- The fishermen are advised not to venture into eastcentral & adjoining northeast Arabian Sea along & off south Gujarat coast and adjoining north Maharashtra coast during next 12 hours.

The next bulletin will be issued at 2030 hrs IST of 07th November, 2019.

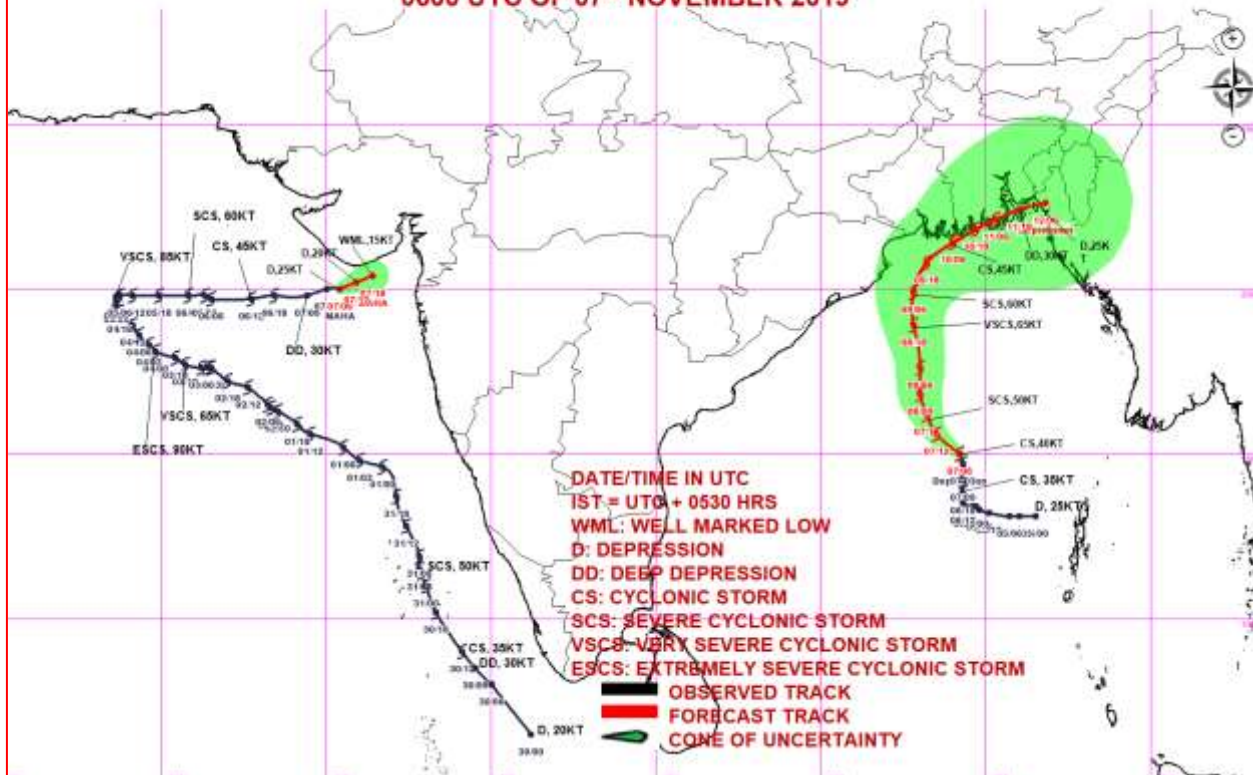
(RK JENAMANI)
Scientist-F, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ ACWC Kolkata/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram/ CWC Visakhapatnam/ CWC Bhubaneswar/ M.O. Port Blair.

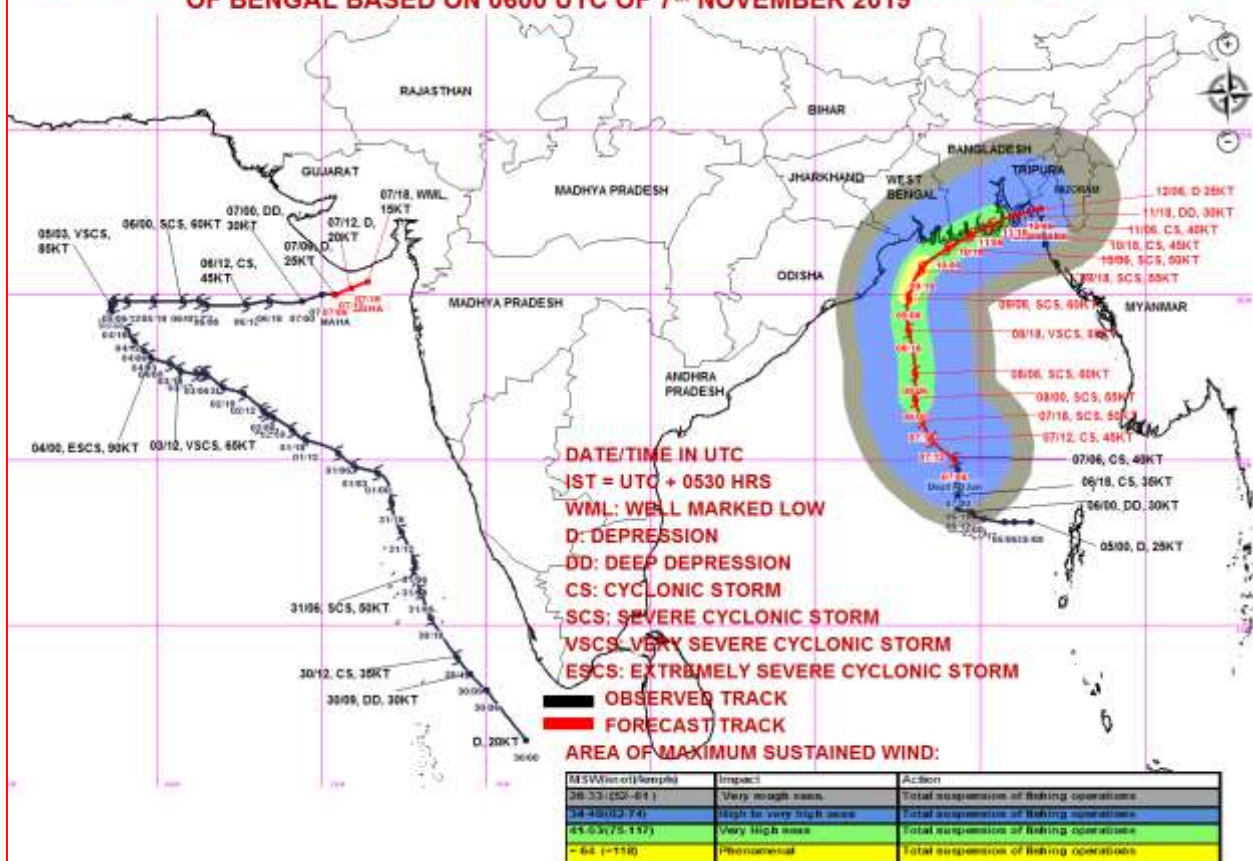


Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH (A) CYCLONIC STORM "BULBUL" OVER EASTCENTRAL BAY OF BENGAL (B) DEPRESSION OVER EASTCENTRAL & ADJOINING NORTHEAST ARABIAN SEA AND BASED ON 0600 UTC OF 07th NOVEMBER 2019



OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH (A) DEPRESSION (MAHA) OVER EASTCENTRAL & ADJOINING NORTHEAST ARABIAN SEA AND (B) CYCLONIC STORM "BULBUL" OVER EASTCENTRAL BAY OF BENGAL BASED ON 0600 UTC OF 7th NOVEMBER 2019



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)

BULLETIN NO.: 21 (BOB/04/2019) & BULLETIN NO.: 68 (ARB/04/2019)

TIME OF ISSUE: 2030 HOURS IST

DATED: 07.11.2019

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)
TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
JS NDMA (FAX.NO. 26701864)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0489-6263180)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)
CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0866-2441029)
CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub:(A) Severe Cyclonic Storm 'Bulbul' (Pronounced as Bul bul) over westcentral and adjoining eastcentral Bay of Bengal: CYCLONE WATCH FOR WEST BENGAL AND NORTH ODISHA COASTS
(B) Depression weakened into a Well marked low pressure area over northeast Arabian Sea and adjoining coastal Saurashtra.

BULLETIN NO. : 21 (BOB/04/2019)

(A) Severe Cyclonic Storm 'Bulbul' (Pronounced as Bul bul) over westcentral and adjoining eastcentral Bay of Bengal.

The Cyclonic Storm '**Bulbul**' (Pronounced as Bul bul) over eastcentral Bay of Bengal moved northwestwards with a speed of 27 kmph during past 06 hours, intensified into a **Severe Cyclonic Storm** and lay centred at 1730 hrs IST of today, the 7th November 2019, over westcentral & adjoining eastcentral Bay of Bengal, near Lat.15.9°N and Long. 88.0°E about 510 km south-southeast of Paradip (Odisha), 640 km south of Sagar Islands (West Bengal) and 710 km south-southwest of Khepupara (Bangladesh) . It is very likely to intensify further till early morning of 9th November. It is very likely to move initially north-northwestwards for next 12 hours then nearly northwards till 9th November morning and then re-curve northeastwards towards Bangladesh and adjoining West Bengal.

Forecast track and intensity are given in the following table:

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Date/Time (IST)	Position		Maximum sustained surface wind speed (kmph)	Category of cyclonic disturbance
	Lat. (^o N)	Long. (^o E)		
07.11.19/1730	15.9	88.0	90-100 gusting to 100	Severe Cyclonic Storm
07.11.19/2330	16.4	87.7	100-110 gusting to 120	Severe Cyclonic Storm
08.11.19/0530	16.8	87.5	105-115 gusting to 125	Severe Cyclonic Storm
08.11.19/1130	17.6	87.4	110-120 gusting to 135	Severe Cyclonic Storm
08.11.19/1730	18.3	87.4	120-130 gusting to 145	Very Severe Cyclonic Storm
09.11.19/0530	19.5	87.5	120-130 gusting to 145	Severe Cyclonic Storm
09.11.19/1730	20.4	87.9	110-120 gusting to 135	Severe Cyclonic Storm
10.11.19/0530	21.1	88.3	100-110 gusting to 115	Severe Cyclonic Storm
10.11.19/1730	21.5	89.0	90-100 gusting to 100	Severe Cyclonic Storm
11.11.19/0530	21.8	89.7	70-80 gusting to 90	Cyclonic Storm
11.11.19/1730	21.9	90.5	50-60 gusting to 70	Deep Depression
12.11.19/0530	22.0	91.2	35-45 gusting to 55	Depression

Warnings:

(i) Rainfall:

• Odisha:

(i) Light to moderate rainfall at most places very likely over **north coastal districts of Odisha** with isolated heavy falls over Puri, Kendrapara, Bhadrak and Jagatsinghpur districts on 8th November 2019.

(ii) Light to moderate rainfall at most places very likely over **north coastal districts of Odisha** with isolated heavy to very heavy falls over Balasore, Bhadrak, Kendrapara and Jagatsinghpur districts and heavy falls at isolated places over Mayurbhanj, Cuttack and Jajpur districts on 9th November 2019.

• West Bengal:

- ✓ Light to moderate rainfall at a few places with isolated heavy falls very likely over North and South 24 Parganas and east Medinipur districts on 8th November.
- ✓ Light to moderate rainfall at most places very likely over **coastal districts of West Bengal** with **extremely heavy falls (≥ 20 cm in 24 hours)** at isolated places over North & South 24 Parganas, isolated heavy to very heavy falls over East and West Medinipur, Howrah, and Hooghly on 9th November 2019.
- ✓ Light to moderate rainfall at most places very likely over **coastal districts of West Bengal** with heavy to very heavy falls at isolated places over North and South 24 Parganas, and isolated heavy falls over Howrah, Hooghly and Nadiya districts on 10th November 2019.

(ii) Wind warning

- **Bay of Bengal:** Gale wind speed reaching 90-100 kmph gusting to 110 kmph is prevailing over westcentral & adjoining eastcentral Bay of Bengal around the system centre. It is very likely to increase gradually and become 110-120 kmph gusting to 135 kmph by forenoon of 8th November. It will increase further becoming 120-130 kmph gusting to 145 kmph over westcentral & northwest Bay of Bengal from the 8th November evening for subsequent 12 hours and decrease gradually thereafter.
- **Odisha coast:** Strong wind speed reaching 35– 45 kmph gusting to 55 kmph likely to commence along & off Odisha coast from 8th morning. It is very likely to increase becoming squally wind speed reaching 45-55 kmph gusting to 65 kmph by afternoon of 8th over Kendrapara, Jagatsinghpur, Balasore and Bhadrak districts. Gale wind speed reaching 70-80 kmph gusting to 90 kmph likely from afternoon of 9th November along & off Jagatsinghpur, Balasore and Bhadrak districts and 60 – 70 kmph gusting to 80 kmph along & off Kendrapara district for subsequent 12 hours and decrease thereafter. It is likely to decrease from 10th onwards. Puri, Ganjam and

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Jajpur districts are likely to experience squally wind speed reaching 40-50 kmph gusting to 60 kmph on 8th & 9th November.

- **West Bengal coast:** Squally wind speed reaching 40 – 50 kmph gusting to 60 kmph likely to commence over West Bengal coasts from 8th November night, it will gradually increase becoming 55-65 kmph gusting to 75 kmph from 9th November evening and gale wind speed reaching 70-80 kmph gusting to 90 kmph by 10th morning.

(iii) Sea condition

- ✓ Sea condition will be very high over westcentral and adjoining eastcentral Bay of Bengal during next 24 hours and become phenomenal over westcentral and adjoining northwest Bay of Bengal from 8th November evening for subsequent 12 hours and high to very high over North Bay of Bengal from 9th November morning for subsequent 24 hours.
- ✓ Sea condition will be rough to very rough along & off Odisha and West Bengal coasts from 8th onwards becoming high to very high on 9th and 10th November.

(iv) Damage Expected over coastal districts of north Odisha and West Bengal:

- Damage to thatched houses/ huts. Unattached metal sheets may fly.
- Damage to embankments/ salt pans.
- Partial damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of trees. Damage to banana and papaya trees. Large dead limbs blown from trees.
- Major damage to coastal crops

(v) Action Suggested for coastal districts of north Odisha and West Bengal

- Total suspension of fishing operations from 8th November onwards.
- People in affected areas to remain indoors.
- Movement in motor boats unsafe.
- Beach movement to be restricted

(vi) Fishermen Warning

- Total suspension of fishing operations from 8th onwards over Odisha-West Bengal coasts.
- Fishermen are advised not to venture into eastcentral Bay of Bengal during next 24 hours and into westcentral & adjoining northwest Bay of Bengal during 8th & 9th Nov. 2019 and over north Bay of Bengal during 9th – 12th November.
- Fishermen are advised not to venture into northwest Bay of Bengal along & off Odisha – west Bengal coasts from 8th November onwards.
- The fishermen out at Sea are advised to return to the coast from these areas.

BULLETIN NO. : 68 (ARB/04/2019)

B) Depression weakened into a Well marked low pressure area over northeast Arabian Sea and adjoining south Gujarat coast.

The **Depression** over northeast & adjoining eastcentral Arabian Sea moved east-northeastwards, weakened into a **Well marked low pressure area** over northeast Arabian Sea and adjoining south Gujarat coast at 1730 hrs IST of today, the 07th November, 2019.

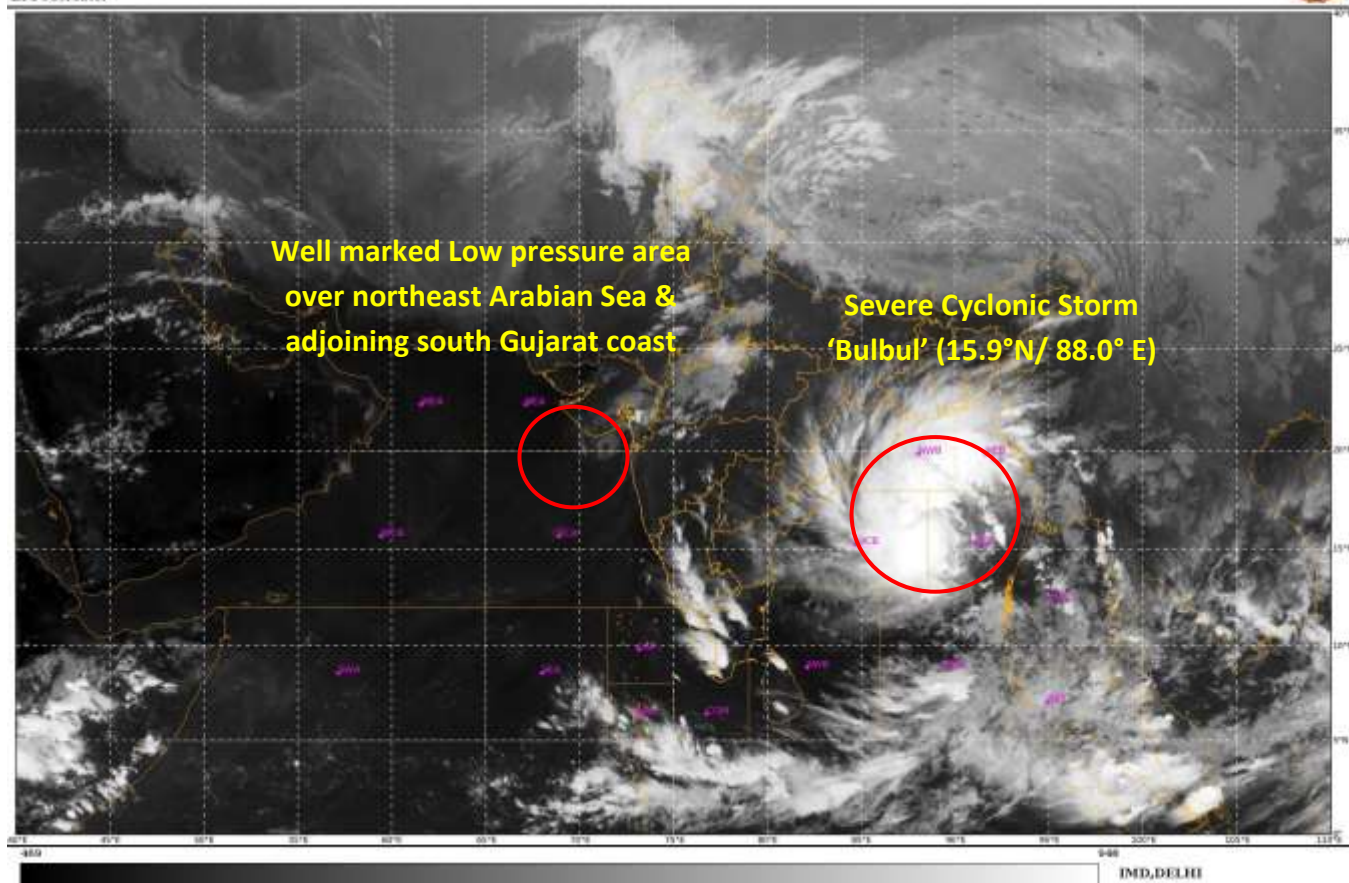
This is the last bulletin for this system. However, regular bulletins will continue from Meteorological Centre Ahmedabad

The next bulletin will be issued at 2330 hrs IST of 07th November, 2019.

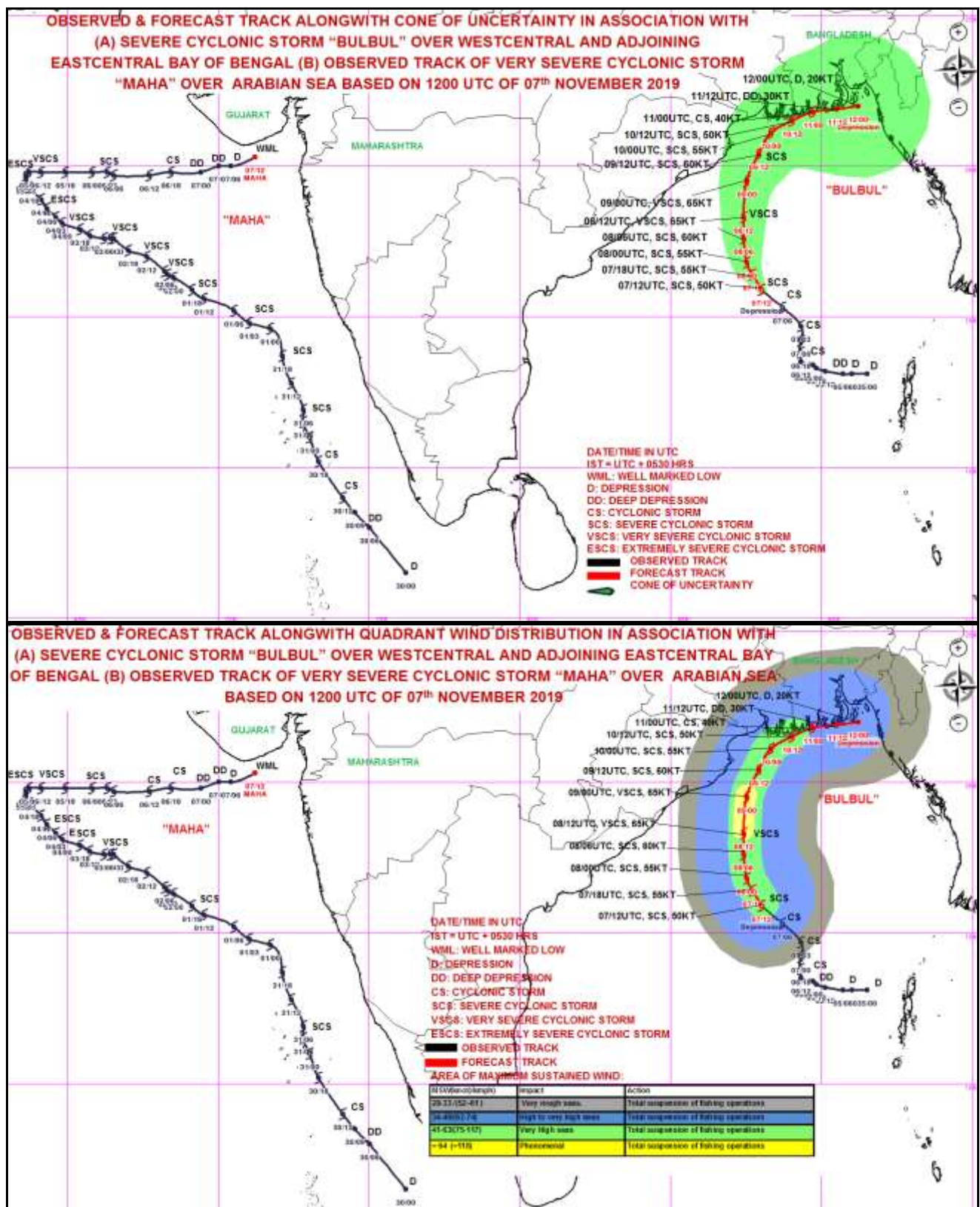
(RK JENAMANI)
Scientist-F, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ ACWC Kolkata/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram/ CWC Visakhapatnam/ CWC Bhubaneswar/ M.O. Port Blair.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.