



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

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

TIME OF ISSUE: 0900 HOURS IST

DATED: 10.06.2019

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, TAMILNADU (FAX NO. 044-25672304)

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

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

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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

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

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

Sub: Depression over Southeast and adjoining Lakshadweep & Eastcentral Arabian Sea.

Latest satellite imageries and surface observations indicate that a depression has formed over Southeast and adjoining Lakshadweep & Eastcentral Arabian Sea and lay centred at 0530 hrs IST of today, the 10th June, 2019 near latitude 11.7°N and longitude 71.0°E, about 200 km west-northwest of Aminidivi (Lakshadweep), 840 km south-southwest of Mumbai (Maharashtra) and 1020 km south-southeast of Veraval (Gujarat). It is very likely to intensify further into a deep depression during next 12 hours and into a Cyclonic Storm during the subsequent 24 hours. It is likely to move north-northwestwards during next 72 hours.

Warnings:

(i) Heavy rainfall warning:

Sub-Divisions	10 June 2019 *	11 June 2019*	12 June 2019*	13 June 2019*	14 June 2019*
Kerala	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places
Lakshadweep area	Widespread rainfall with heavy falls at isolated places	Widespread rainfall	Widespread rainfall	Widespread rainfall	Widespread rainfall
Coastal Karnataka	Widespread rainfall with heavy to very heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
South Interior Karnataka	Fairly widespread rainfall with heavy falls at isolated places	Rainfall at a few places	Rainfall at a few places	Rainfall at a few places	Rainfall at a few places

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

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

Konkan & Goa	Rainfall at isolated places with isolated heavy falls over Goa	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Dry	Rainfall at isolated places	Rainfall at a few places with heavy rainfall at isolated places	Rainfall at a few places with heavy rainfall at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning**
Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **10th June:** Squally wind speed reaching 40-50 kmph gusting to 60 kmph very likely to prevail over Southeast and adjoining Lakshadweep area & Eastcentral Arabian Sea. The strong wind speed reaching 35-45 kmph gusting to 55 kmph very likely to prevail over Kerala & Karnataka Coasts.
- **11th June:** Wind speed is very likely to increase gradually and become squally wind speed reaching 55-65 kmph gusting to 75 kmph over eastcentral & adjoining southeast Arabian Sea. It is very likely to be 40-50 kmph gusting to 60 kmph over Lakshadweep area, Kerala, Karnataka & south Maharashtra Coasts.
- **12th June:** Wind speed is very likely to increase further becoming gale wind speed reaching **70-80 kmph gusting to 90 kmph** over eastcentral & adjoining northeast Arabian Sea. It is very likely to be 45-55 kmph gusting to 65 kmph over Gujarat & Maharashtra Coasts.
- **13th June:** Wind speed is very likely to increase further becomes **90-100 kmph gusting to 110 kmph** over north Arabian Sea. It is very likely to be 55-65 kmph gusting to 75 kmph over Gujarat and north Maharashtra Coasts.

(iii) Sea condition

- The sea condition is very likely to be rough to very rough over Southeast and adjoining Lakshadweep area & Eastcentral Arabian Sea on 10th and very rough to high over eastcentral & adjoining southeast Arabian Sea on 11th. The sea condition is very likely to be high to very high over eastcentral & adjoining northeast Arabian Sea on 12th and over north Arabian Sea on 13th June 2019.
- The sea condition is very likely to be rough along & off Kerala & Karnataka Coasts on 10th; Lakshadweep area, along & off Kerala, Karnataka & south Maharashtra Coasts on 11th; rough to very rough along & off Gujarat and north Maharashtra Coasts on 12th & 13th.

(i) Fishermen Warning

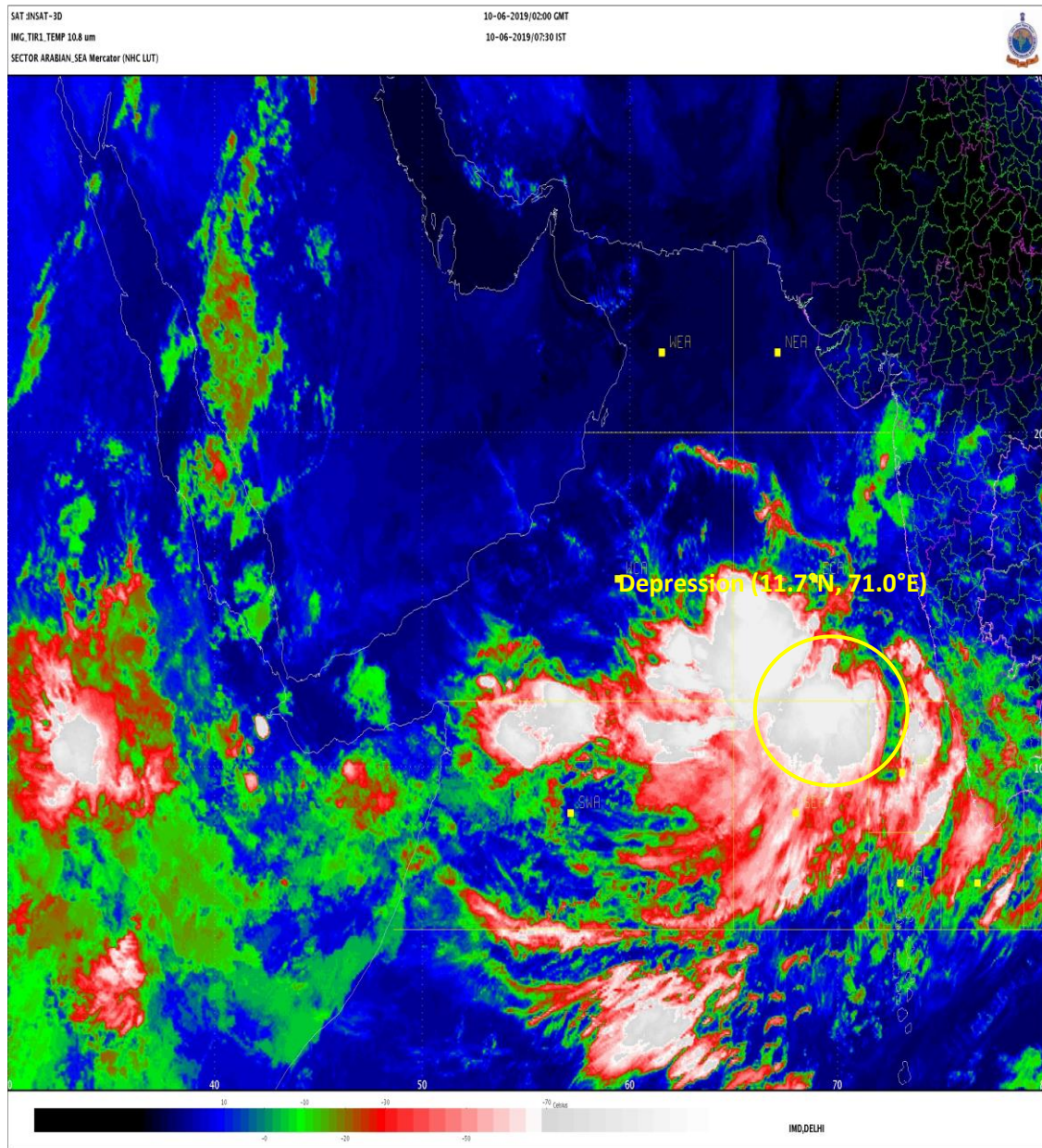
- The fishermen are advised not to venture into Southeast Arabian Sea, Lakshadweep area, along & off Kerala and Karnataka on 10th & 11th; Eastcentral Arabian Sea and along & off Maharashtra Coast on 11th & 12th; northeast Arabian sea and along & off Gujarat coast on 12th & 13th.
- Those, who are out in deep sea areas are advised return to the coast.

The next bulletin will be issued at 1130 hrs IST of 10th June, 2019.

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

Copy to: CRS, Pune/ 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.



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BULLETIN NO. : 02 (ARB/01/2019)

TIME OF ISSUE: 1230 HOURS IST

DATED: 10.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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)

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

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

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

**Sub: Depression over Eastcentral and adjoining Southeast Arabian Sea & Lakshadweep area:
Pre- Cyclone Watch for Gujarat Coast**

The depression over Southeast and adjoining Lakshadweep & Eastcentral Arabian Sea moved northwards with a speed of about 31 kmph in last three hours and lay centred at 0830 hrs IST of today, the 10th June, 2019 near latitude 12.5°N and longitude 71.0°E over Eastcentral and adjoining Southeast Arabian Sea & Lakshadweep area, about 240 km northwest of Aminidivi (Lakshadweep), 760 km south-southwest of Mumbai (Maharashtra) and 930 km south-southeast of Veraval (Gujarat). It is very likely to intensify further into a deep depression during next 06 hours, into a Cyclonic Storm during the subsequent 24 hours and into a Severe Cyclonic Storm thereafter. It is likely to move north-northwestwards during next 72 hours.

It is very likely to cause adverse impact in terms of wind & rainfall over Saurashtra & Kutch mainly on 13th & 14th June, 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
10.06.19/0830	12.5/71.0	40-50 gusting to 60	Depression
10.06.19/1730	13.2/70.8	55-65 gusting to 75	Deep Depression
11.06.19/0530	14.6/70.5	65-75 gusting to 85	Cyclonic Storm
11.06.19/1730	16.0/70.3	80-90 gusting to 100	Cyclonic Storm
12.06.19/0530	17.5/70.0	90-100 gusting to 115	Severe Cyclonic Storm
12.06.19/1730	19.0/69.8	100-110 gusting to 125	Severe Cyclonic Storm
13.06.19/0530	20.3/69.6	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) Heavy rainfall warning:

Sub-Divisions	10 June 2019 *	11 June 2019*	12 June 2019*	13 June 2019*	14 June 2019*
Kerala	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places
Lakshadweep area	Widespread rainfall with heavy to very heavy falls at isolated places	Widespread rainfall	Widespread rainfall	Widespread rainfall	Widespread rainfall
Coastal Karnataka	Widespread rainfall with heavy to very heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places
South Interior Karnataka	Fairly widespread rainfall with heavy falls at isolated places	Rainfall at a few places	Rainfall at a few places	Rainfall at a few places	Rainfall at a few places
Konkan & Goa	Rainfall at a few places with isolated heavy falls over Goa	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Dry	Rainfall at isolated places	Rainfall at a few places with heavy rainfall at isolated places	Fairly widespread rainfall with heavy to very heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning**

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **10th June:** Squally wind speed reaching 50-60 kmph gusting to 70 kmph very likely to prevail over Eastcentral and adjoining Southeast Arabian Sea & Lakshadweep area. The strong wind speed reaching 35-45 kmph gusting to 55 kmph very likely to prevail over Kerala & Karnataka Coasts.
- **11th June:** Wind speed is very likely to increase gradually and become gale wind speed reaching 65-75 kmph gusting to 85 kmph over eastcentral & adjoining southeast Arabian Sea. It is very likely to be 40-50 kmph gusting to 60 kmph over Lakshadweep area, Kerala, Karnataka & south Maharashtra Coasts.
- **12th June:** Wind speed is very likely to increase further becoming gale wind speed reaching **90-100 kmph gusting to 115 kmph** over eastcentral & adjoining northeast Arabian Sea. It is very likely to be 50-60 kmph gusting to 70 kmph over South Gujarat & Maharashtra Coasts.
- **13th June:** Wind speed is very likely to increase further becomes **110-120 kmph gusting to 135 kmph** over north Arabian Sea. It is very likely to be 65-75 kmph gusting to 75 kmph over Gujarat coast; and 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.

(iii) Sea condition

- The sea condition is very likely to be rough to very rough over Southeast and adjoining Lakshadweep area & Eastcentral Arabian Sea on 10th and very rough to high over eastcentral & adjoining southeast Arabian Sea on 11th. The sea condition is very likely to be

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

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

high to very high over eastcentral & adjoining northeast Arabian Sea on 12th and over north Arabian Sea on 13th June 2019.

- The sea condition is very likely to be rough along & off Kerala & Karnataka Coasts on 10th; Lakshadweep area, along & off Kerala, Karnataka & south Maharashtra Coasts on 11th; rough to very rough along & off south Gujarat and Maharashtra Coasts on 12th; very rough to high over along & off Gujarat, north Maharashtra Coasts & northern parts of eastcentral Arabian Sea on 13th June, 2019.

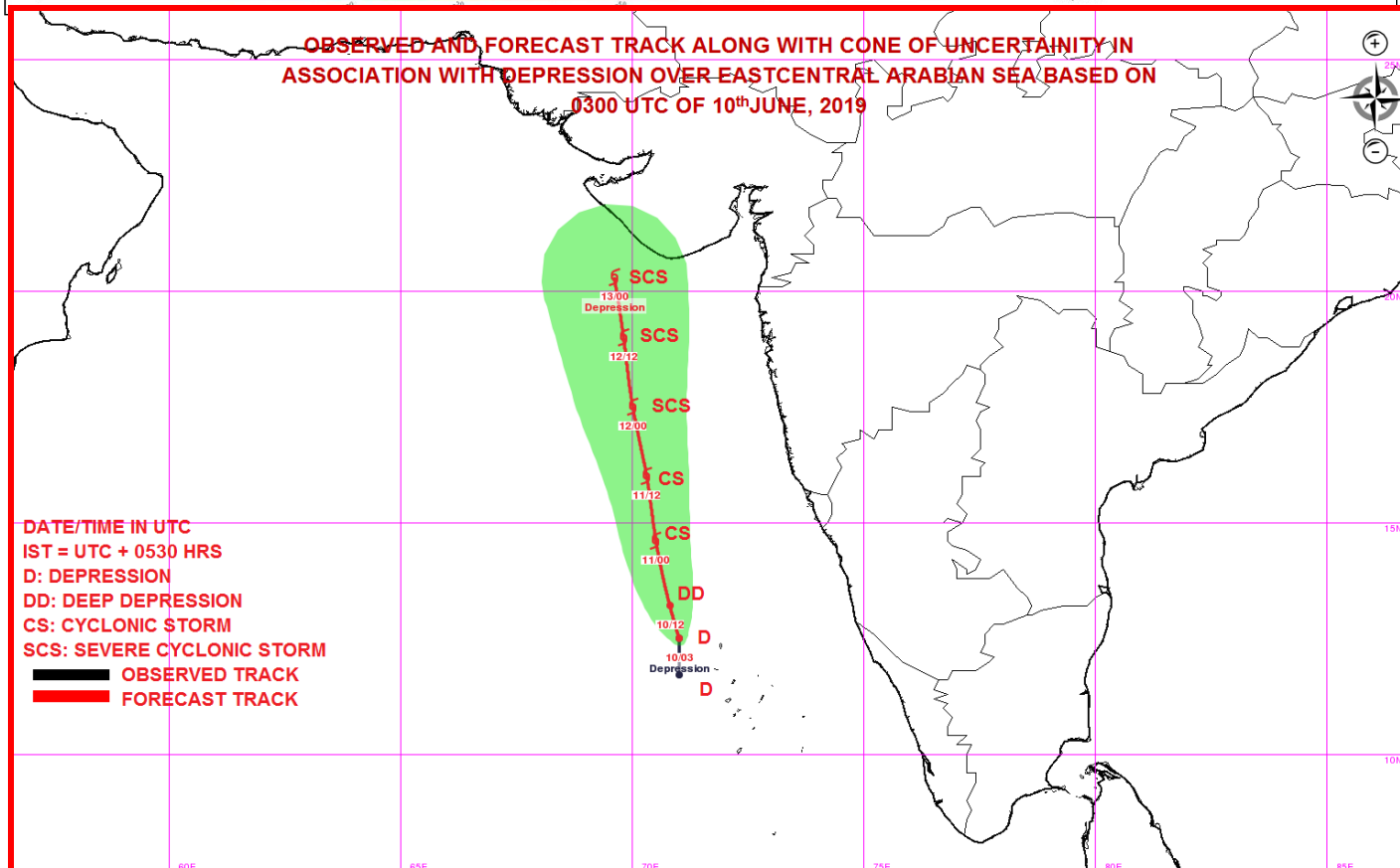
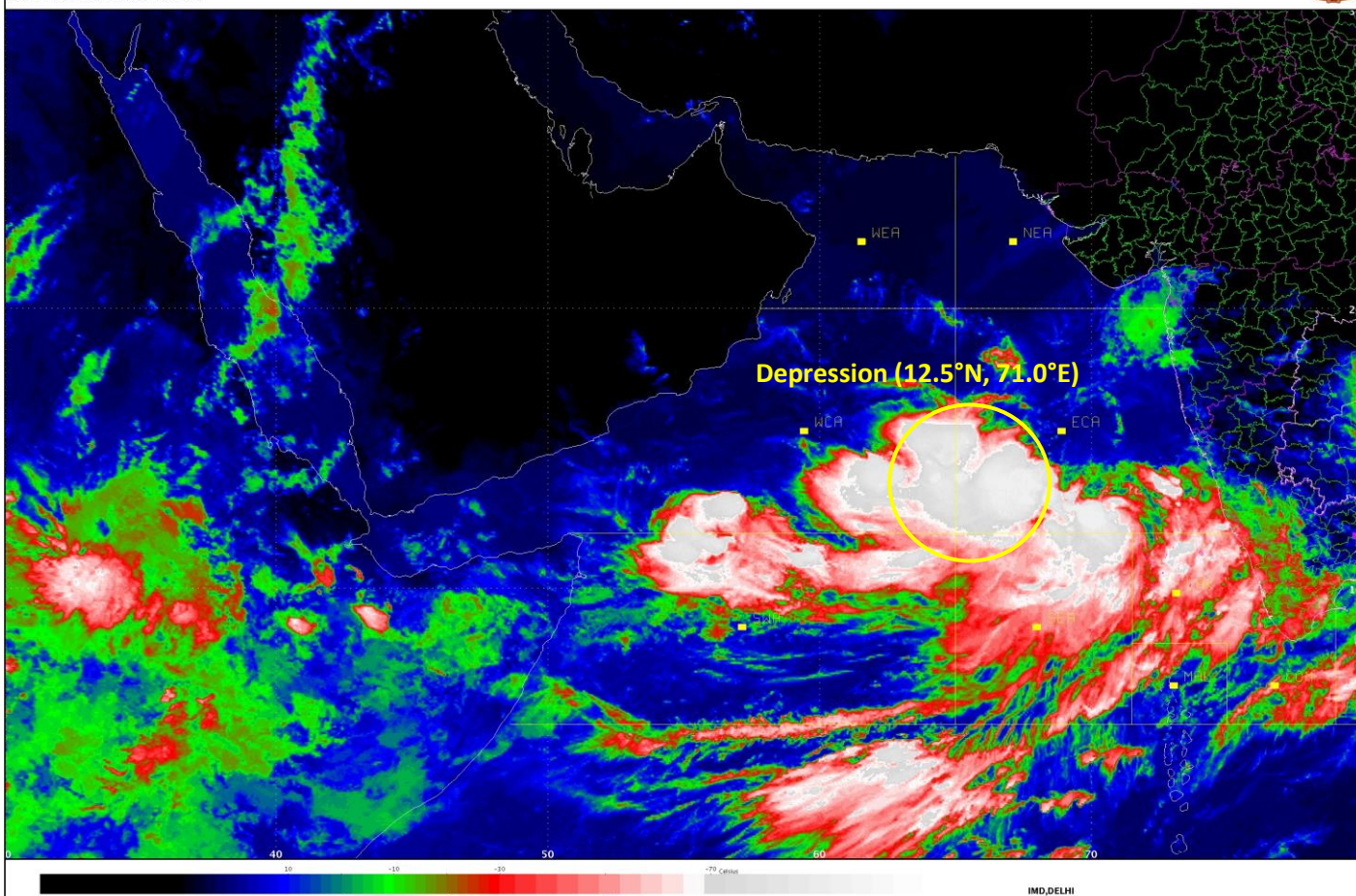
(i) Fishermen Warning

- The fishermen are advised not to venture into Southeast Arabian Sea, Lakshadweep area, along & off Kerala and Karnataka on 10th & 11th; Eastcentral Arabian Sea and along & off Maharashtra Coast on 11th & 12th; northeast Arabian sea and along & off Gujarat coast on 12th & 13th.
- Those, who are out in deep sea areas are advised return to the coast.

The next bulletin will be issued at 1430 hrs IST of 10th June, 2019.

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

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



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 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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BULLETIN NO. : 03 (ARB/01/2019)

TIME OF ISSUE: 1400 HOURS IST

DATED: 10.06.2019

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

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

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

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

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

Sub: Depression intensified into Deep Depression over Eastcentral and adjoining Southeast Arabian Sea & Lakshadweep area: Pre- Cyclone Watch for Gujarat Coast (modified)

The depression over Eastcentral and adjoining Southeast Arabian Sea & Lakshadweep area moved north-northwestwards with a speed of about 15 kmph in last six hours, intensified into a deep depression and lay centred at 1130 hrs IST of today, the 10th June, 2019 near latitude 12.5°N and longitude 70.9°E over Eastcentral and adjoining Southeast Arabian Sea & Lakshadweep area, about 250 km northwest of Aminidivi (Lakshadweep), 760 km south-southwest of Mumbai (Maharashtra) and 930 km south-southeast of Veraval (Gujarat). It is very likely to intensify further into a Cyclonic Storm during next 24 hours and into a Severe Cyclonic Storm subsequent 24 hours. It is likely to move north-northwestwards during next 72 hours.

It is very likely to cause adverse impact in terms of wind & rainfall over Saurashtra & Kutch mainly on 13th & 14th June, 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
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11.06.19/1730	16.0/70.3	80-90 gusting to 100	Cyclonic Storm
12.06.19/0530	17.5/70.0	90-100 gusting to 115	Severe Cyclonic Storm
12.06.19/1730	19.0/69.8	100-110 gusting to 125	Severe Cyclonic Storm
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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.

Warnings:

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Note: * Rainfall till 0830 IST of next day.

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Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **10th June:** Squally wind speed reaching 50-60 kmph gusting to 70 kmph very likely to prevail over Eastcentral and adjoining Southeast Arabian Sea & Lakshadweep area. The strong wind speed reaching 35-45 kmph gusting to 55 kmph very likely to prevail over Kerala & Karnataka Coasts.
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- **12th June:** Wind speed is very likely to increase further becoming gale wind speed reaching **90-100 kmph gusting to 115 kmph** over eastcentral & adjoining northeast Arabian Sea. It is very likely to be 50-60 kmph gusting to 70 kmph over Gujarat Coast from 12th morning and become 65-75 kmph gusting to 85 kmph by 12th evening. It is very likely to be 50-60 kmph gusting to 70 kmph over Maharashtra Coast.
- **13th June:** Wind speed is very likely to increase further becomes **110-120 kmph gusting to 135 kmph** over north Arabian Sea. It is very likely to be 65-75 kmph gusting to 85 kmph over Gujarat coast; and 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.

(iii) Sea condition

- The sea condition is very likely to be rough to very rough over Southeast and adjoining Lakshadweep area & Eastcentral Arabian Sea on 10th and very rough to high over

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

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eastcentral & adjoining southeast Arabian Sea on 11th. The sea condition is very likely to be high to very high over eastcentral & adjoining northeast Arabian Sea on 12th and over north Arabian Sea on 13th June 2019.

- The sea condition is very likely to be rough along & off Kerala & Karnataka Coasts on 10th; Lakshadweep area, along & off Kerala, Karnataka & south Maharashtra Coasts on 11th; rough to very rough along & off south Gujarat and Maharashtra Coasts on 12th; very rough to high over along & off Gujarat, north Maharashtra Coasts & northern parts of eastcentral Arabian Sea on 13th June, 2019.

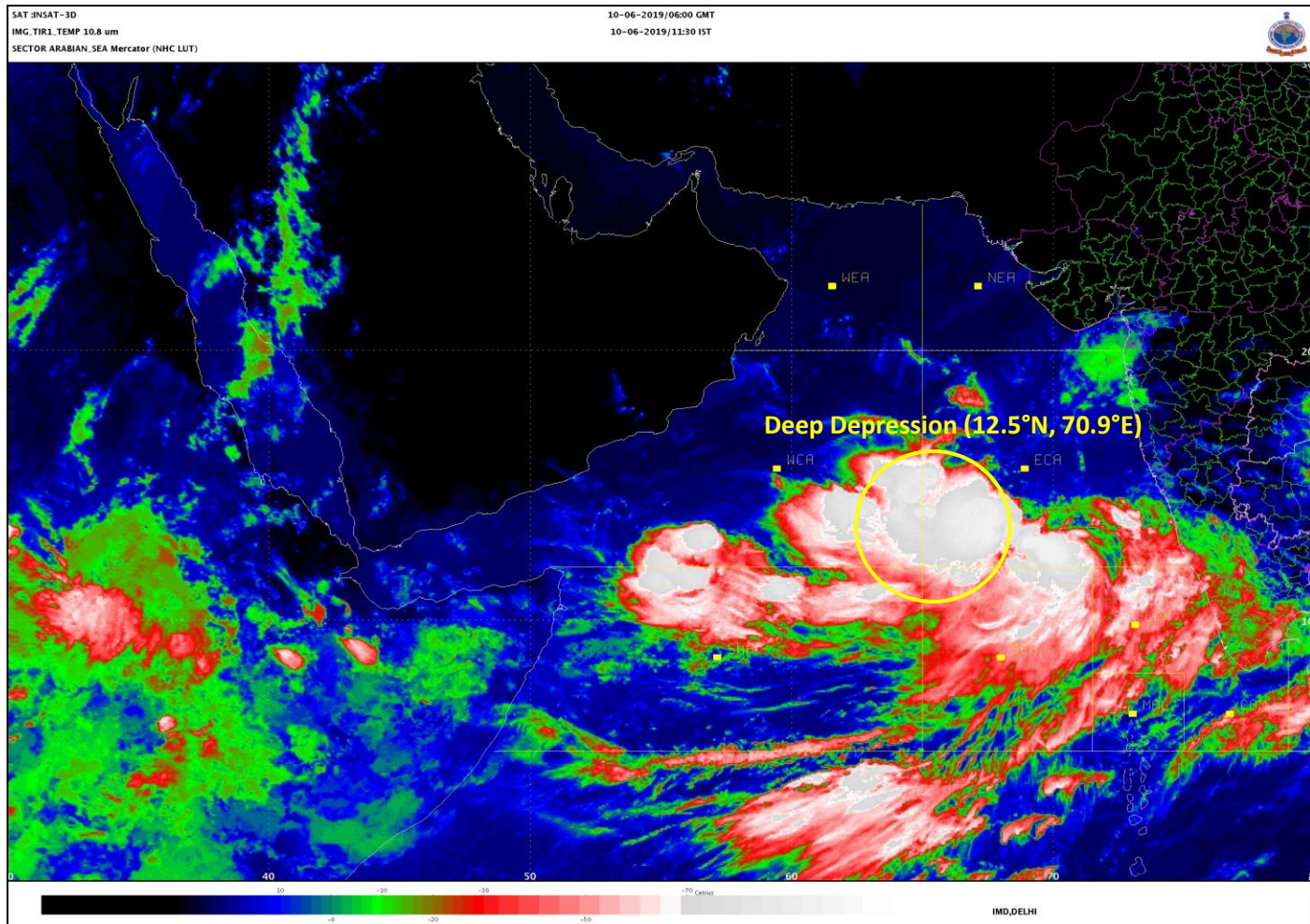
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- Those, who are out in deep sea areas are advised return to the coast.

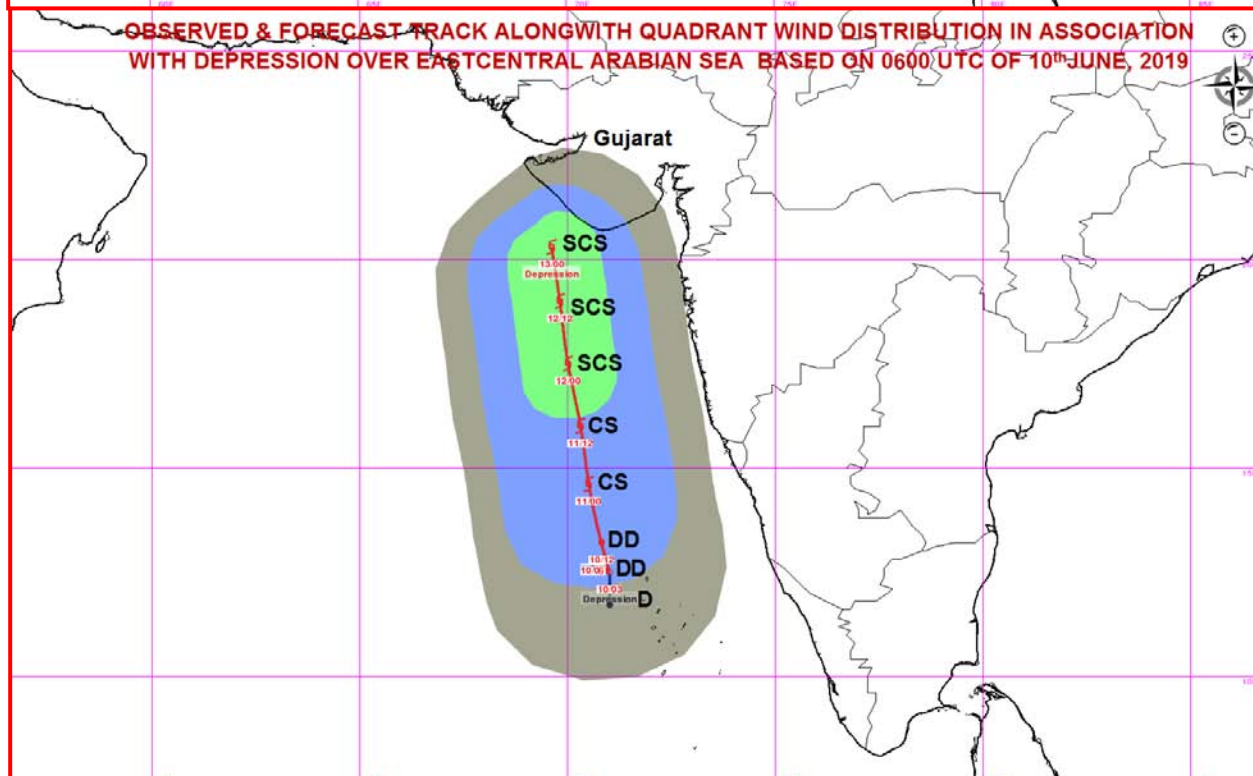
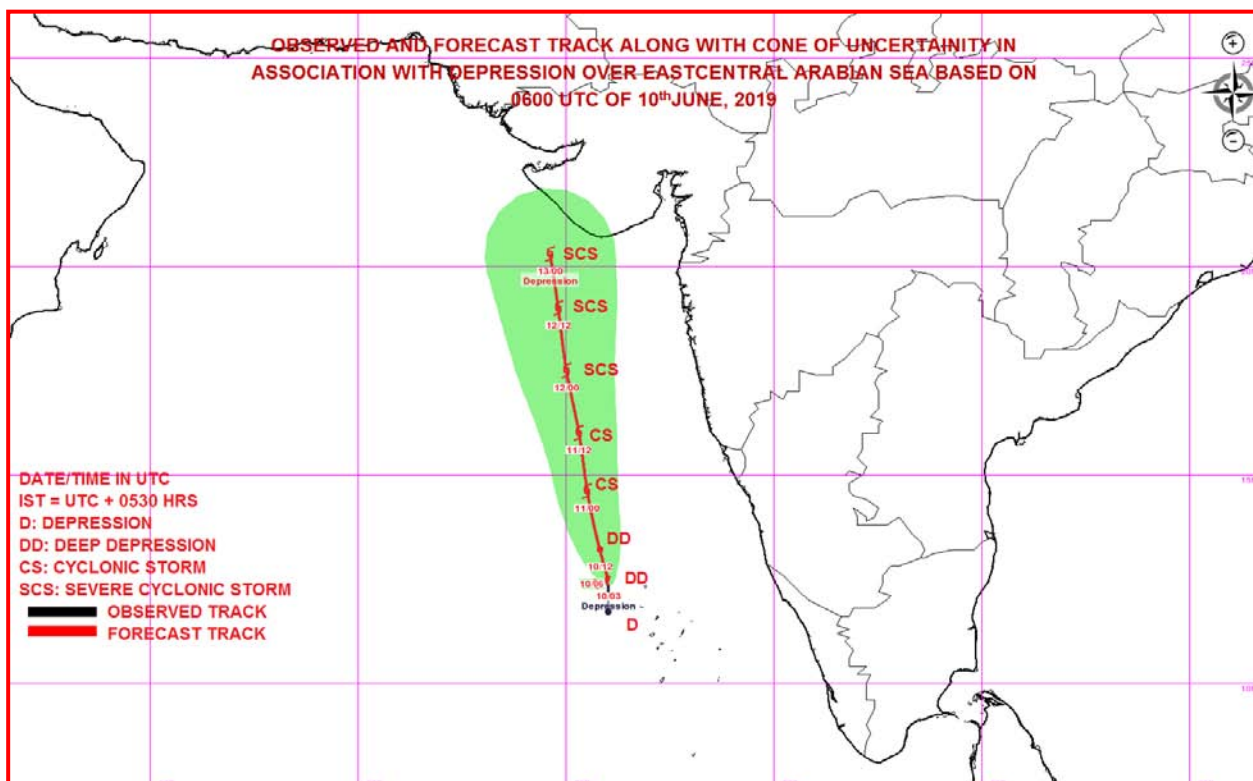
The next bulletin will be issued at 2030 hrs IST of 10th June, 2019.

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

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



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



MSW(knot)/kmph)	Impact	Action
28-33 /(51-62)	Very rough seas.	Total suspension of fishing operations
34-49/(63-91)	High to very high seas	Total suspension of fishing operations
50-63/(92-117)	Very High seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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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BULLETIN NO. : 04 (ARB/01/2019)

TIME OF ISSUE: 2100 HOURS IST

DATED: 10.06.2019

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

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

DIRECTOR GENERAL, DOORDARSHAN (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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

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

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

Sub: Deep Depression over Eastcentral & adjoining Southeast Arabian Sea: Cyclone Alert for Gujarat Coast: Yellow Message

The deep depression over Eastcentral and adjoining Southeast Arabian Sea & Lakshadweep area moved north-northwestwards with a speed of about 15 kmph in last six hours and lay centred at 1730 hrs IST of today, the 10th June, 2019 near latitude 13.3°N and longitude 70.8°E over Eastcentral & adjoining Southeast Arabian Sea, about 320 km northwest of Aminidivi (Lakshadweep), 680 km south-southwest of Mumbai (Maharashtra) and 840 km south-southeast of Veraval (Gujarat). It is very likely to intensify further into a Cyclonic Storm during next 12 hours and into a Severe Cyclonic Storm in subsequent 24 hours.

It is very likely to move nearly northward and cross Gujarat coast between Porbandar and Mahuva around Veraval & Diu region as a Very Severe Cyclonic Storm with wind speed 130-140 kmph gusting to 155 kmph during mid-night of 12th June 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
10.06.19/1730	13.3/70.8	55-65 gusting to 75	Deep Depression
10.06.19/2330	14.1/70.8	65-75 gusting to 85	Cyclonic Storm
11.06.19/0530	14.9/70.7	80-90 gusting to 100	Cyclonic Storm
11.06.19/1130	15.7/70.7	90-100 gusting to 110	Severe Cyclonic Storm
11.06.19/1730	16.5/70.7	100-110 gusting to 125	Severe Cyclonic Storm
12.06.19/0530	18.3/70.5	120-130 gusting to 145	Very Severe Cyclonic Storm
12.06.19/1730	20.1/70.5	130-140 gusting to 155	Very Severe Cyclonic Storm
13.06.19/0530	21.9/70.4	110-120 gusting to 135	Severe Cyclonic Storm
13.06.19/1730	23.1/69.9	70-80 gusting to 90	Cyclonic Storm
14.06.19/0530	23.6/69.5	50-60 gusting to 70	Deep Depression
14.06.19/1730	24.1/69.3	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) Heavy rainfall warning:

Sub-Divisions	10 June 2019 *	11 June 2019*	12 June 2019*	13 June 2019*	14 June 2019*
Kerala	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places
Lakshadweep area	Widespread rainfall with heavy to very heavy falls at isolated places	Widespread rainfall	Widespread rainfall	Widespread rainfall	Widespread rainfall
Coastal Karnataka	Widespread rainfall with heavy to very heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places
South Interior Karnataka	Fairly widespread rainfall with heavy falls at isolated places	Rainfall at a few places	Rainfall at a few places	Rainfall at a few places	Rainfall at a few places
Konkan & Goa	Rainfall at a few places with isolated heavy falls over Goa	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Dry	Rainfall at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at isolated places
South Gujarat Region	Dry	Rainfall at isolated places	Fairly widespread rainfall with heavy to very heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **10th June:** Squally wind speed reaching 50-60 kmph gusting to 70 kmph very likely to prevail over Eastcentral & adjoining Southeast Arabian Sea. The strong wind speed reaching 35-45 kmph gusting to 55 kmph very likely to prevail over Lakshadweep area, Kerala & Karnataka Coasts.
- **11th June:** Wind speed is very likely to increase gradually and become gale wind speed reaching 80-90 kmph gusting to 100 kmph over eastcentral & adjoining southeast Arabian Sea. It is very likely to be 40-50 kmph gusting to 60 kmph over Lakshadweep area, Kerala, Karnataka & south Maharashtra Coasts.
- **12th June:** Wind speed is very likely to increase further becoming gale wind speed reaching **130-140 kmph gusting to 155 kmph** over eastcentral & adjoining northeast Arabian Sea. It is very likely to be 60-70 kmph gusting to 80 kmph over Gujarat Coast from 12th morning and become gale wind speed reaching **130-140 kmph gusting to 155 kmph** by 12th night. It is very likely to be 50-60 kmph gusting to 70 kmph over Maharashtra 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.

- **13th June:** Wind speed is very likely to decrease and becomes **110-120 kmph gusting to 135 kmph** over north Arabian Sea and Gujarat coast in morning hours and decrease gradually thereafter. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.

(iii) Sea condition

- The sea condition is very likely to be rough to very rough over Southeast and adjoining Lakshadweep area & Eastcentral Arabian Sea on 10th and high to very high over eastcentral & adjoining southeast Arabian Sea on 11th. The sea condition is very likely to become very high to phenomenal over eastcentral & adjoining northeast Arabian Sea & Gujarat coast from 12th evening and over north Arabian Sea on 13th June 2019.
- The sea condition is very likely to be rough along & off Kerala & Karnataka Coasts on 10th; Lakshadweep area, along & off Kerala, Karnataka & south Maharashtra Coasts on 11th; rough to very rough along & off Maharashtra Coast on 12th; very rough to high along & off Gujarat, north Maharashtra Coasts & northern parts of eastcentral Arabian Sea on 13th June, 2019.

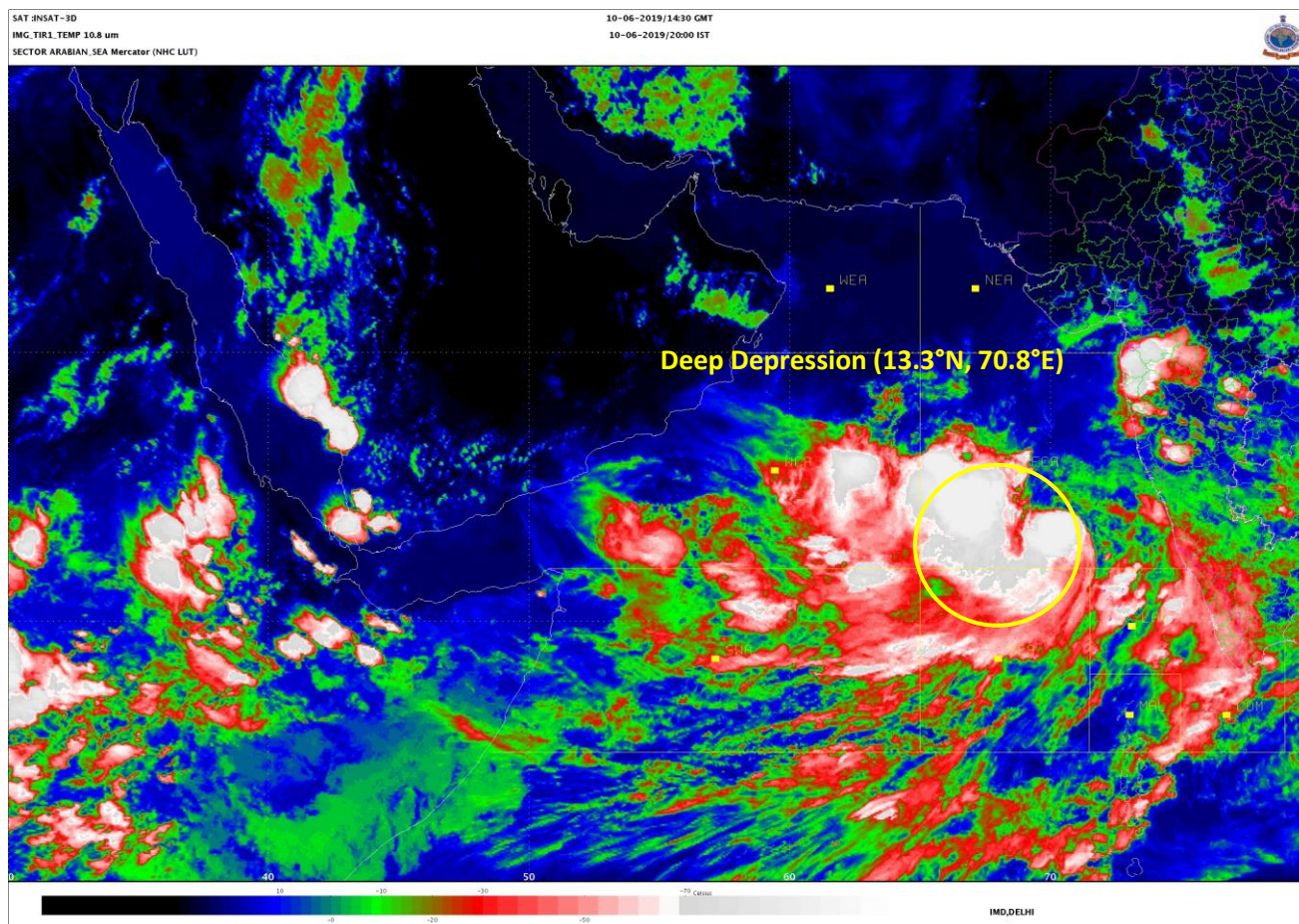
(i) Fishermen Warning

- The fishermen are advised not to venture into Southeast Arabian Sea, Lakshadweep area, along & off Kerala and Karnataka on 10th & 11th; Eastcentral Arabian Sea and along & off Maharashtra Coast on 11th & 12th; northeast Arabian sea and along & off Gujarat coast on 12th & 13th.
- Those, who are out in deep sea areas are advised to return to the coast.

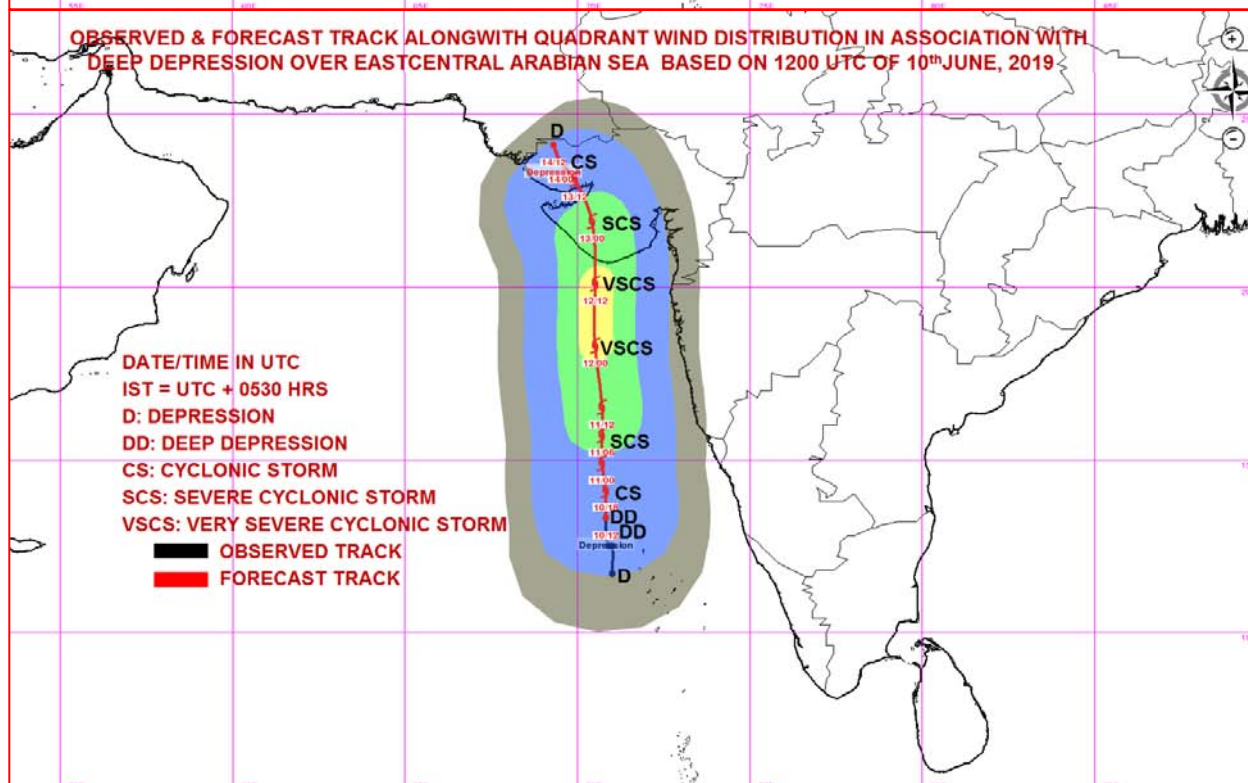
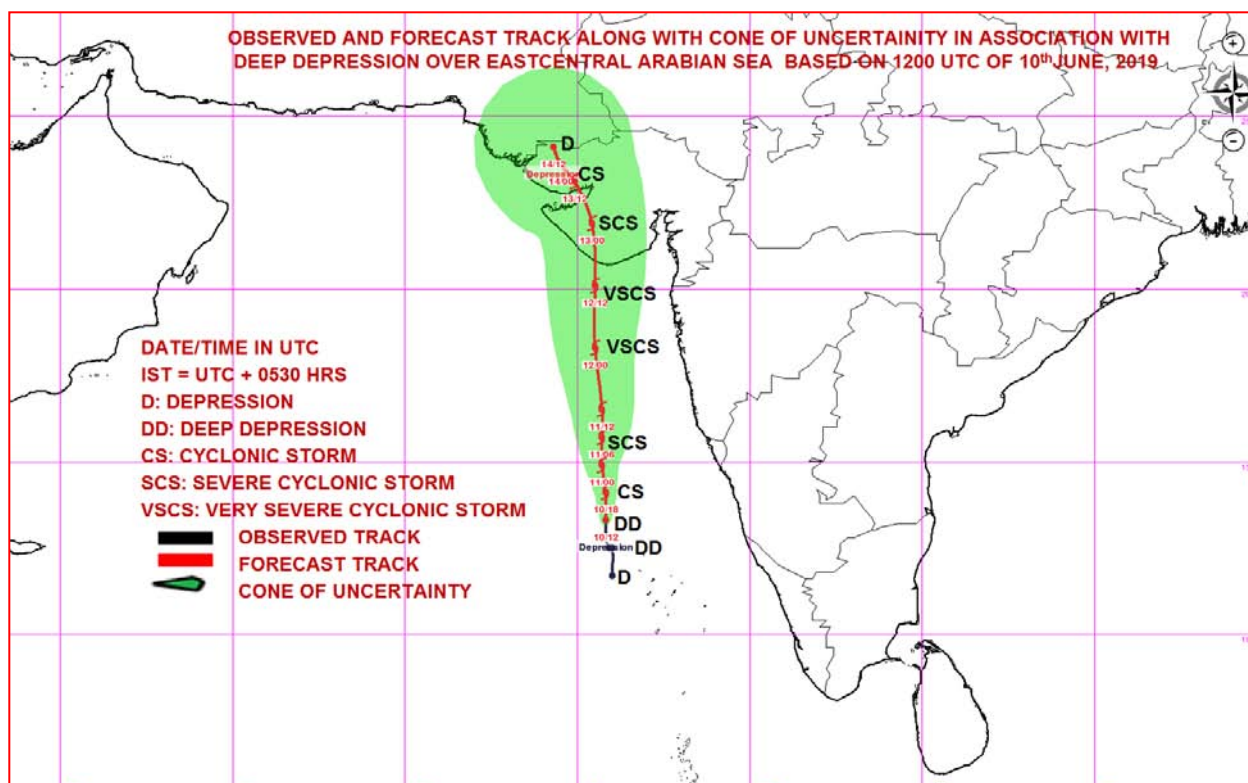
The next bulletin will be issued at 0230 hrs IST of 11th June, 2019.

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

Copy to: CRS, Pune/ 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.



MSW(knot)/kmph)	Impact	Action
28-33/(51-62)	Very rough seas.	Total suspension of fishing operations
34-49/(63-91)	High to very high seas	Total suspension of fishing operations
50-63/(92-117)	Very High seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 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. : 05 (ARB/01/2019)

TIME OF ISSUE: 0300 HOURS IST

DATED: 11.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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

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

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

Sub: Cyclonic Storm 'VAYU' over Eastcentral & adjoining Southeast Arabian Sea: Cyclone Alert for Gujarat Coast: Yellow Message

The deep depression over Eastcentral and adjoining Southeast Arabian Sea intensified into **Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**), moved north-northwestwards with a speed of about 12 kmph in last six hours and lay centred at 2330 hrs IST of yesterday, the 10th June, 2019 near latitude 13.9°N and longitude 70.6°E over Eastcentral & adjoining Southeast Arabian Sea, about 380 km northwest of Aminidivi (Lakshadweep), 630 km south-southwest of Mumbai (Maharashtra) and 780 km nearly south of Veraval (Gujarat). It is very likely to intensify further into a Severe Cyclonic Storm during next 24 hours.

It is very likely to move nearly northward and cross Gujarat coast between Porbandar and Mahuva around Veraval & Diu region as a Severe Cyclonic Storm with wind speed 110-120 kmph gusting to 135 kmph during early morning of 13th June 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
10.06.19/2330	13.9/70.6	65-75 gusting to 85	Cyclonic Storm
11.06.19/0530	14.6/70.6	70-80 gusting to 90	Cyclonic Storm
11.06.19/1130	15.3/70.6	80-90 gusting to 100	Cyclonic Storm
11.06.19/1730	16.0/70.6	90-100 gusting to 115	Severe Cyclonic Storm
11.06.19/2330	16.7/70.5	95-105 gusting to 120	Severe Cyclonic Storm
12.06.19/1130	18.3/70.5	100-110 gusting to 125	Severe Cyclonic Storm
12.06.19/2330	19.9/70.4	110-120 gusting to 135	Severe Cyclonic Storm
13.06.19/1130	21.5/70.2	100-110 gusting to 125	Severe Cyclonic Storm
13.06.19/2330	22.4/69.9	70-80 gusting to 90	Cyclonic Storm
14.06.19/1130	23.3/69.4	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) Heavy rainfall warning:

Sub-Divisions	10 June 2019 *	11 June 2019*	12 June 2019*	13 June 2019*	14 June 2019*
Kerala	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places
Lakshadweep area	Widespread rainfall with heavy to very heavy falls at isolated places	Widespread rainfall	Widespread rainfall	Widespread rainfall	Widespread rainfall
Coastal Karnataka	Widespread rainfall with heavy to very heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places
South Interior Karnataka	Fairly widespread rainfall with heavy falls at isolated places	Rainfall at a few places	Rainfall at a few places	Rainfall at a few places	Rainfall at a few places
Konkan & Goa	Rainfall at a few places with isolated heavy falls over Goa	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Dry	Rainfall at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at isolated places
South Gujarat Region	Dry	Rainfall at isolated places	Fairly widespread rainfall with heavy to very heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **11th June:** Wind speed is very likely to increase gradually and become gale wind speed reaching 90-100 kmph gusting to 115 kmph over Eastcentral & adjoining Southeast Arabian Sea by 11th evening. It is very likely to be 40-50 kmph gusting to 60 kmph over Lakshadweep area, Kerala, Karnataka & south Maharashtra Coasts.
- **12th June:** Wind speed is very likely to increase further becoming gale wind speed reaching **110-120 kmph gusting to 135 kmph** over eastcentral & adjoining northeast Arabian Sea by 12th night. It is very likely to be 60-70 kmph gusting to 80 kmph over Gujarat Coast from 12th morning and become gale wind speed reaching **110-120 kmph gusting to 135 kmph** by 12th night. It is very likely to be 50-60 kmph gusting to 70 kmph over Maharashtra Coast.
- **13th June:** Wind speed is very likely to decrease and becomes **100-110 kmph gusting to 125 kmph** over north Arabian Sea and Gujarat coast in morning hours and decrease gradually thereafter. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral 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.

(iii) Sea condition

- The sea condition is very likely to be high to very high over eastcentral & adjoining southeast Arabian Sea on 11th. The sea condition is very likely to become very high to phenomenal over eastcentral & adjoining northeast Arabian Sea & Gujarat coast from 12th evening and over north Arabian Sea on 13th June 2019.
- The sea condition is very likely to be rough over Lakshadweep area, along & off Kerala, Karnataka & south Maharashtra Coasts on 11th; rough to very rough along & off Maharashtra Coast on 12th; very rough to high along & off Gujarat, north Maharashtra Coasts & northern parts of eastcentral Arabian Sea on 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into Southeast Arabian Sea, Lakshadweep area, along & off Kerala and Karnataka on 11th; Eastcentral Arabian Sea and along & off Maharashtra Coast on 11th & 12th; northeast Arabian sea and along & off Gujarat coast on 12th & 13th.
- Those, who are out in deep sea areas are advised to return to the coast.

(iv) Storm Surge Warning

Storm surge of height of about 0.5 m above the astronomical tides likely to inundate the low lying coastal areas of Porbandar, Junagarh, Gir Somnath and Amreli districts at the time of landfall.

(v) Damage Expected and Action suggested for Porbandar, Junagarh, Gir Somnath and Amreli districts of Gujarat:

(i) Major damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly. (ii) Minor damage to power and communication lines. (iii) Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes. (iv) Breaking of tree branches, uprooting of large avenue trees. Moderate damage to banana and papaya trees. Large dead limbs blown from trees. (v) Major damage to coastal crops. (vi) Damage to embankments/ salt pans.

Action suggested:

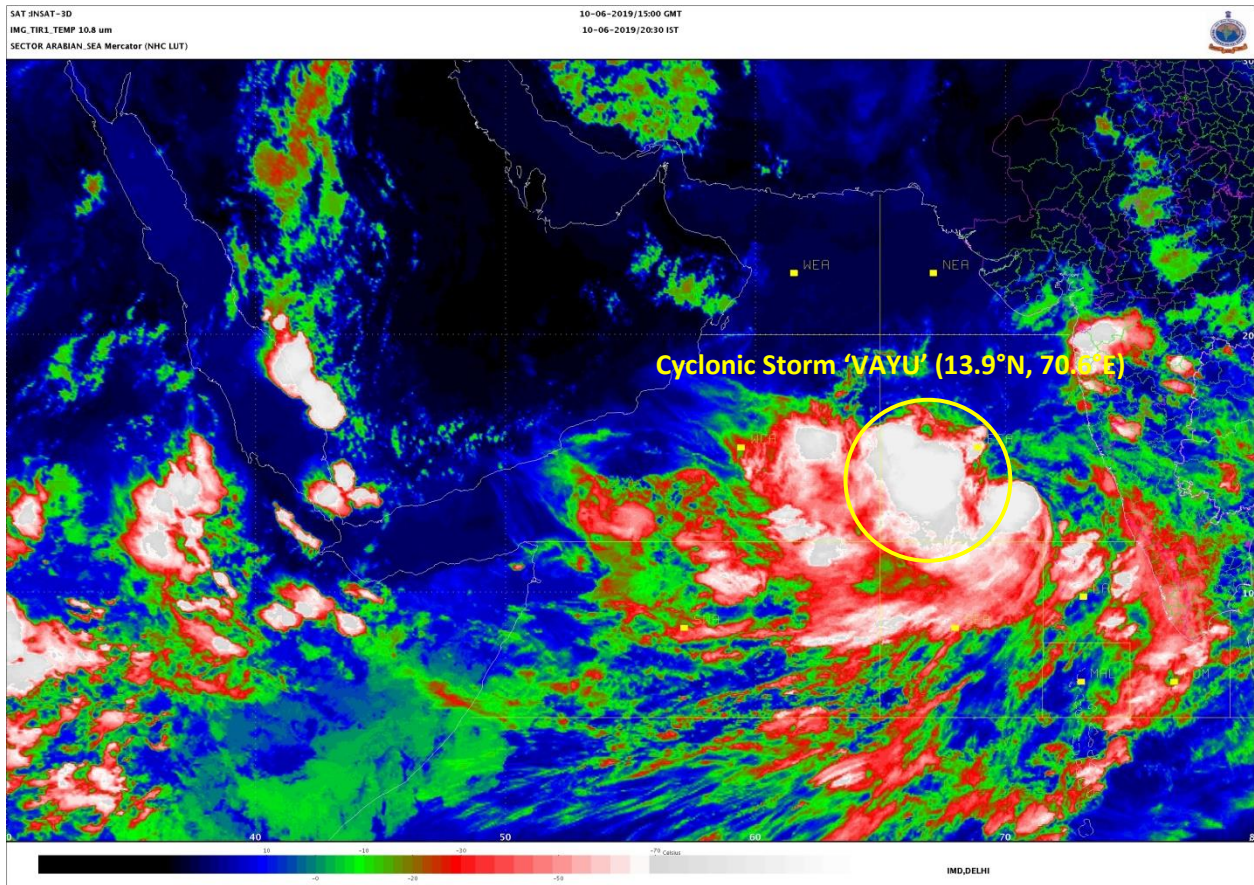
(i) Total suspension of fishing operations. (ii) Coastal hutment dwellers to be moved to safer places. People in affected areas to remain indoors. (iii) Movement in motor boats unsafe.

The next bulletin will be issued at 0530 hrs IST of 11th June, 2019.

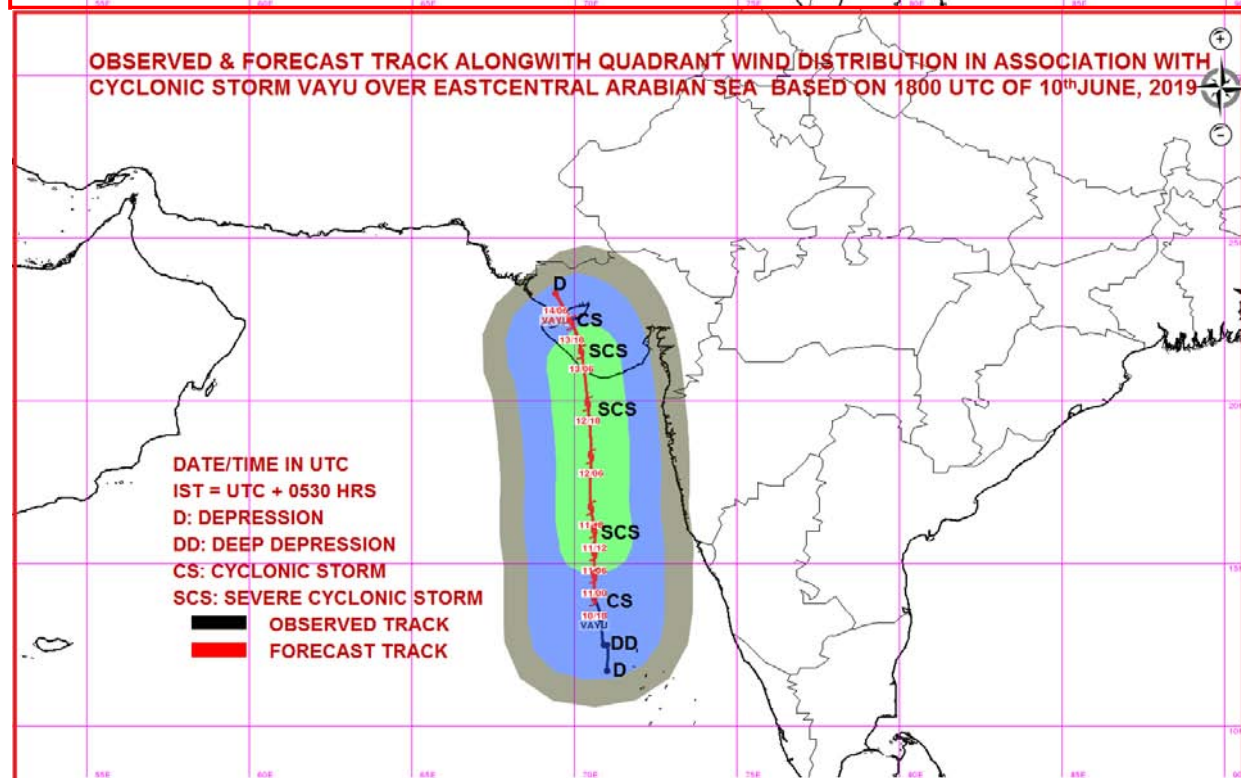
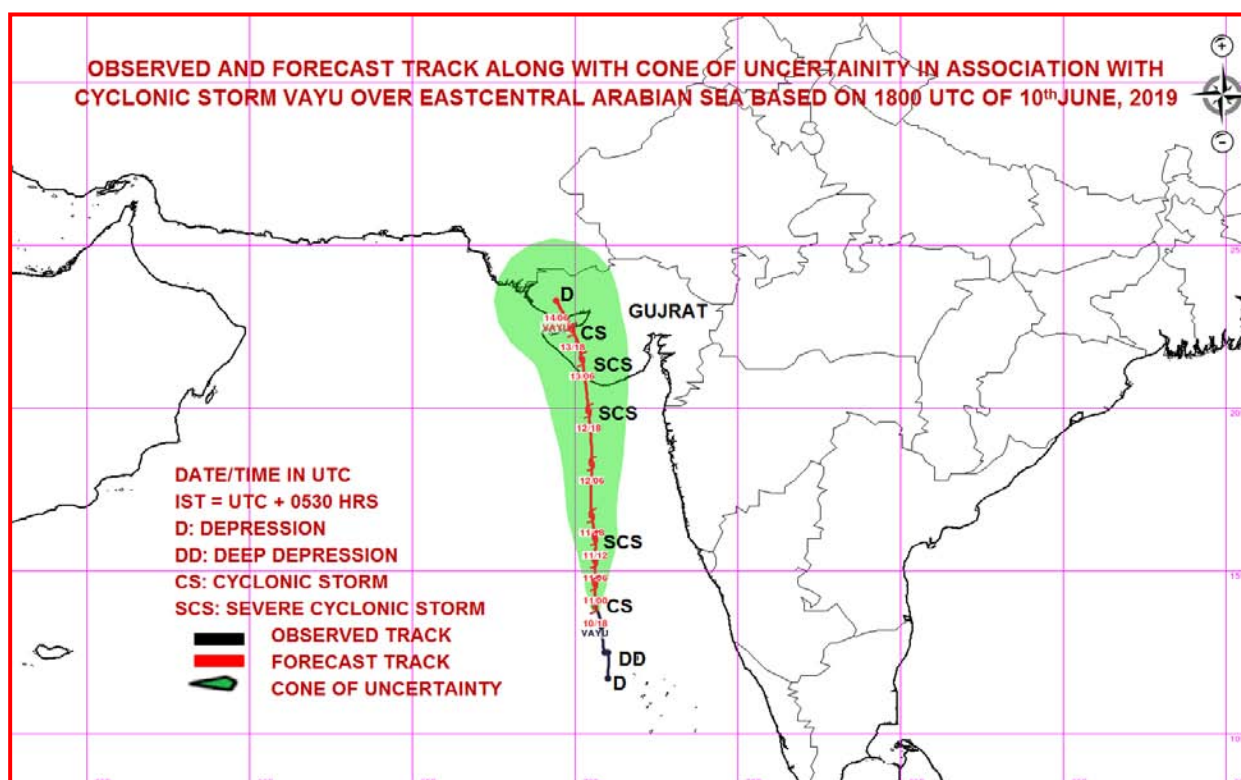
(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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.



MSW(knot)/kmph)	Impact	Action
28-33/(51-62)	Very rough seas.	Total suspension of fishing operations
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50-63/(92-117)	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
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 06 (ARB/01/2019)

TIME OF ISSUE: 0410 HOURS IST

DATED: 11.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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

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

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

Sub: Cyclonic Storm 'VAYU' over Eastcentral & adjoining Southeast Arabian Sea: Cyclone Alert for Gujarat Coast: Yellow Message

The **Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over Eastcentral & adjoining Southeast Arabian Sea moved north-northwestwards with a speed of about 11 kmph in last six hours and lay centred at 0230 hrs IST of today, the 11th June, 2019 near latitude 14.2°N and longitude 70.6°E over Eastcentral & adjoining Southeast Arabian Sea, about 410 km north-northwest of Aminidivi (Lakshadweep), 600 km south-southwest of Mumbai (Maharashtra) and 740 km nearly south of Veraval (Gujarat). It is very likely to intensify further into a Severe Cyclonic Storm during next 24 hours.

It is very likely to move nearly northward and cross Gujarat coast between Porbandar and Mahuva around Veraval & Diu region as a Severe Cyclonic Storm with wind speed 110-120 kmph gusting to 135 kmph during early morning of 13th June 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
11.06.19/0230	14.2/70.6	65-75 gusting to 85	Cyclonic Storm
11.06.19/0530	14.6/70.6	70-80 gusting to 90	Cyclonic Storm
11.06.19/1130	15.3/70.6	80-90 gusting to 100	Cyclonic Storm
11.06.19/1730	16.0/70.6	90-100 gusting to 115	Severe Cyclonic Storm
11.06.19/2330	16.7/70.5	95-105 gusting to 120	Severe Cyclonic Storm
12.06.19/1130	18.3/70.5	100-110 gusting to 125	Severe Cyclonic Storm
12.06.19/2330	19.9/70.4	110-120 gusting to 135	Severe Cyclonic Storm
13.06.19/1130	21.5/70.2	100-110 gusting to 125	Severe Cyclonic Storm
13.06.19/2330	22.4/69.9	70-80 gusting to 90	Cyclonic Storm
14.06.19/1130	23.3/69.4	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) Heavy rainfall warning:

Sub-Divisions	10 June 2019 *	11 June 2019*	12 June 2019*	13 June 2019*	14 June 2019*
Kerala	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places
Lakshadweep area	Widespread rainfall with heavy to very heavy falls at isolated places	Widespread rainfall	Widespread rainfall	Widespread rainfall	Widespread rainfall
Coastal Karnataka	Widespread rainfall with heavy to very heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places
South Interior Karnataka	Fairly widespread rainfall with heavy falls at isolated places	Rainfall at a few places	Rainfall at a few places	Rainfall at a few places	Rainfall at a few places
Konkan & Goa	Rainfall at a few places with isolated heavy falls over Goa	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Dry	Rainfall at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at isolated places
South Gujarat Region	Dry	Rainfall at isolated places	Fairly widespread rainfall with heavy to very heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **11th June:** Wind speed is very likely to increase gradually and become gale wind speed reaching 90-100 kmph gusting to 115 kmph over Eastcentral & adjoining Southeast Arabian Sea by 11th evening. It is very likely to be 40-50 kmph gusting to 60 kmph over Lakshadweep area, Kerala, Karnataka & south Maharashtra Coasts.
- **12th June:** Wind speed is very likely to increase further becoming gale wind speed reaching **110-120 kmph gusting to 135 kmph** over eastcentral & adjoining northeast Arabian Sea by 12th night. It is very likely to be 60-70 kmph gusting to 80 kmph over Gujarat Coast from 12th morning and become gale wind speed reaching **110-120 kmph gusting to 135 kmph** by 12th night. It is very likely to be 50-60 kmph gusting to 70 kmph over Maharashtra Coast.
- **13th June:** Wind speed is very likely to decrease and becomes **100-110 kmph gusting to 125 kmph** over north Arabian Sea and Gujarat coast in morning hours and decrease gradually thereafter. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral 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.

(iii) Sea condition

- The sea condition is very likely to be high to very high over eastcentral & adjoining southeast Arabian Sea on 11th. The sea condition is very likely to become very high to phenomenal over eastcentral & adjoining northeast Arabian Sea & Gujarat coast from 12th evening and over north Arabian Sea on 13th June 2019.
- The sea condition is very likely to be rough over Lakshadweep area, along & off Kerala, Karnataka & south Maharashtra Coasts on 11th; rough to very rough along & off Maharashtra Coast on 12th; very rough to high along & off Gujarat, north Maharashtra Coasts & northern parts of eastcentral Arabian Sea on 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into Southeast Arabian Sea, Lakshadweep area, along & off Kerala and Karnataka on 11th; Eastcentral Arabian Sea and along & off Maharashtra Coast on 11th & 12th; northeast Arabian sea and along & off Gujarat coast on 12th & 13th.
- Those, who are out in deep sea areas are advised to return to the coast.

(iv) Storm Surge Warning

Storm surge of height of about 0.5 m above the astronomical tides likely to inundate the low lying coastal areas of Porbandar, Junagarh, Gir Somnath and Amreli districts at the time of landfall.

(v) Damage Expected and Action suggested for Porbandar, Junagarh, Gir Somnath and Amreli districts of Gujarat:

(i) Major damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly. (ii) Minor damage to power and communication lines. (iii) Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes. (iv) Breaking of tree branches, uprooting of large avenue trees. Moderate damage to banana and papaya trees. Large dead limbs blown from trees. (v) Major damage to coastal crops. (vi) Damage to embankments/ salt pans.

Action suggested:

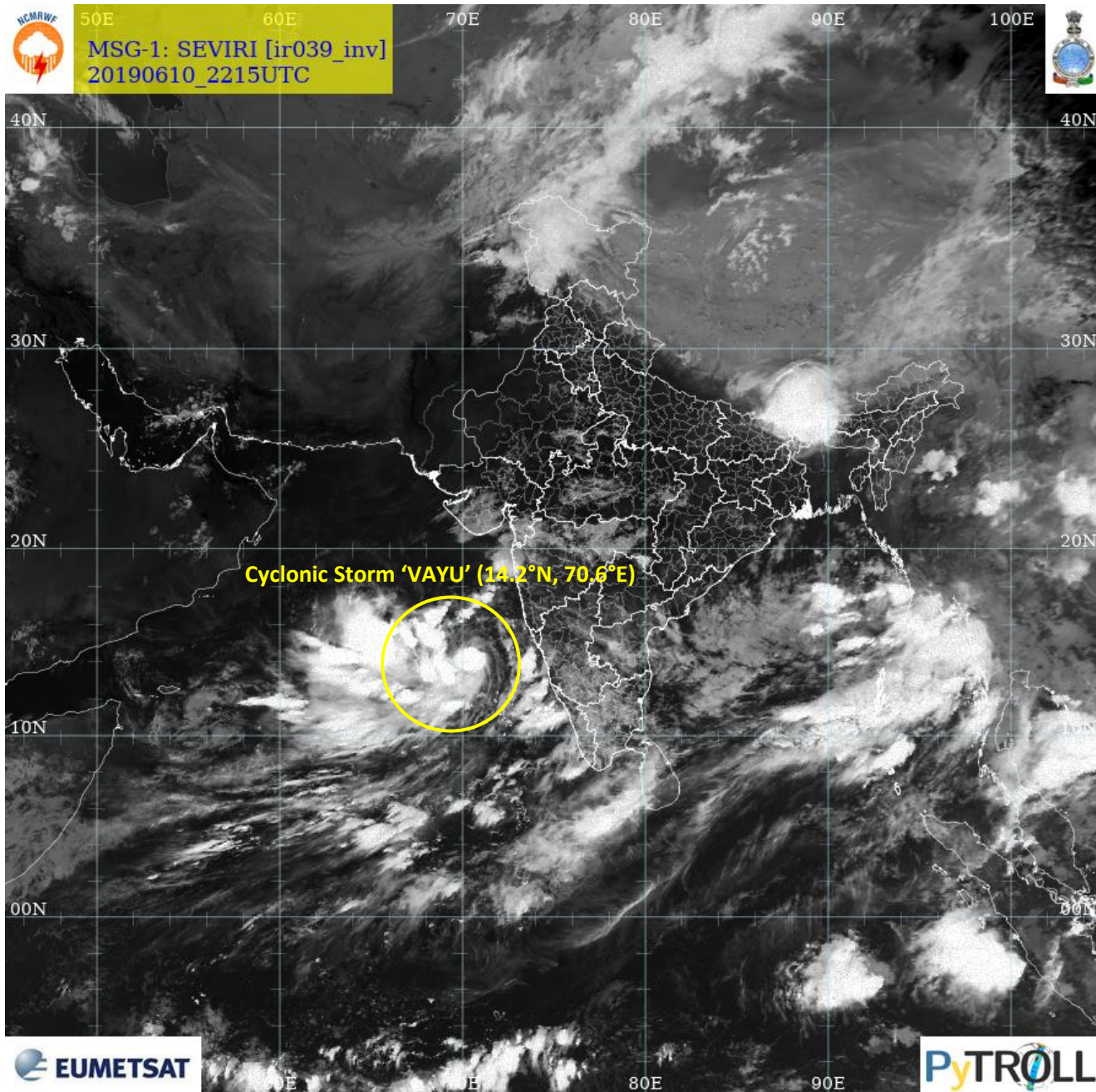
(i) Total suspension of fishing operations. (ii) Coastal hutment dwellers to be moved to safer places. People in affected areas to remain indoors. (iii) Movement in motor boats unsafe.

The next bulletin will be issued at 0830 hrs IST of 11th June, 2019.

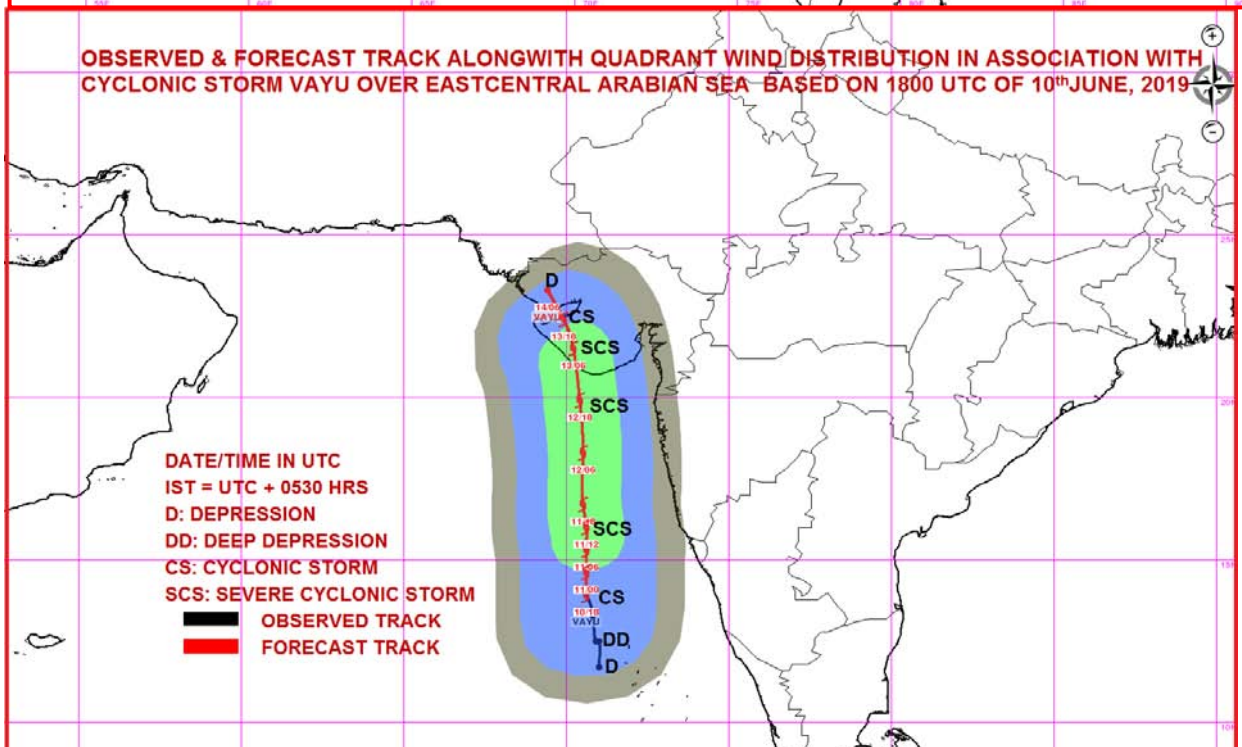
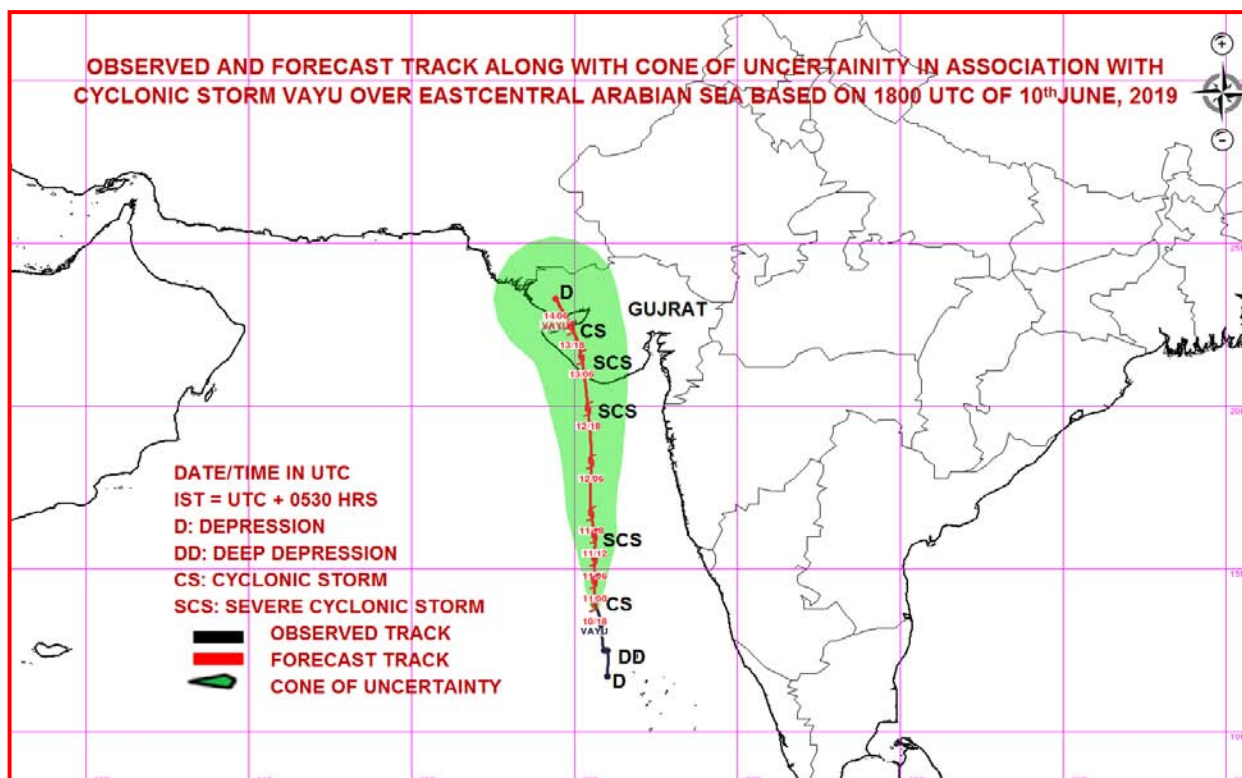
(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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.



MSW(knot)/kmph)	Impact	Action
28-33 /(51-62)	Very rough seas.	Total suspension of fishing operations
34-49/(63-91)	High to very high seas	Total suspension of fishing operations
50-63/(92-117)	Very High seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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. : 07 (ARB/01/2019)

TIME OF ISSUE: 0830 HOURS IST

DATED: 11.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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

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

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

Sub: Cyclonic Storm 'VAYU' over Eastcentral Arabian Sea: Cyclone Alert for Gujarat Coast: Yellow Message

The **Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over Eastcentral & adjoining Southeast Arabian Sea moved northwards with a speed of about 15 kmph in last six hours and lay centred at 0530 hrs IST of today, the 11th June, 2019 near latitude 14.7°N and longitude 70.6°E over Eastcentral Arabian Sea, about 460 km north-northwest of Aminidivi (Lakshadweep), 540 km south-southwest of Mumbai (Maharashtra) and 690 km nearly south of Veraval (Gujarat). It is very likely to intensify further into a Severe Cyclonic Storm during next 24 hours.

It is very likely to move nearly northwards and cross Gujarat coast between Porbandar and Mahuva around Veraval & Diu region as a Severe Cyclonic Storm with wind speed 110-120 kmph gusting to 135 kmph during early morning of 13th June 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
11.06.19/0530	14.7/70.6	70-80 gusting to 90	Cyclonic Storm
11.06.19/1130	15.3/70.6	80-90 gusting to 100	Cyclonic Storm
11.06.19/1730	16.0/70.6	90-100 gusting to 115	Severe Cyclonic Storm
11.06.19/2330	16.7/70.5	95-105 gusting to 120	Severe Cyclonic Storm
12.06.19/0530	17.5/70.5	100-110 gusting to 125	Severe Cyclonic Storm
12.06.19/1730	19.1/70.4	110-120 gusting to 135	Severe Cyclonic Storm
13.06.19/0530	20.8/70.3	110-120 gusting to 135	Severe Cyclonic Storm
13.06.19/1730	22.0/70.0	70-80 gusting to 90	Cyclonic Storm
14.06.19/0530	22.9/69.7	40-50 gusting to 60	Depression
14.06.19/1730	23.8/69.3	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) Heavy rainfall warning:

Sub-Divisions	11 June 2019*	12 June 2019*	13 June 2019*	14 June 2019*
Kerala	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places
Lakshadweep area	Widespread rainfall	Widespread rainfall	Widespread rainfall	Widespread rainfall
Coastal Karnataka	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places
South Interior Karnataka	Rainfall at a few places	Rainfall at a few places	Rainfall at a few places	Rainfall at a few places
Konkan & Goa	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Rainfall at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at isolated places
South Gujarat Region	Rainfall at isolated places	Fairly widespread rainfall with heavy to very heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning**
 Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **11th June:** Wind speed is very likely to increase gradually and become gale wind speed reaching 90-100 kmph gusting to 115 kmph over Eastcentral Arabian Sea and 50-60 kmph gusting to 70 kmph along and off North Maharashtra coast by 11th evening. It is very likely to be 40-50 kmph gusting to 60 kmph over Lakshadweep area, Kerala, Karnataka & south Maharashtra Coasts.
- **12th June:** Wind speed is very likely to increase further becoming gale wind speed reaching **110-120 kmph gusting to 135 kmph** over eastcentral & adjoining northeast Arabian Sea by 12th night. It is very likely to be 60-70 kmph gusting to 80 kmph over Gujarat Coast from 12th morning and become gale wind speed reaching **110-120 kmph gusting to 135 kmph** by 12th night. It is very likely to be 50-60 kmph gusting to 70 kmph over Maharashtra Coast.
- **13th June:** Wind speed is very likely to decrease and become **100-110 kmph gusting to 125 kmph** over north Arabian Sea and Gujarat coast in morning hours and decrease gradually thereafter. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral 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.

(iii) Sea condition

- The Sea condition is very likely to be high to very high over eastcentral Arabian Sea on 11th. The sea condition is very likely to become very high to phenomenal over eastcentral & adjoining northeast Arabian Sea & Gujarat coast from 12th evening and over north Arabian Sea on 13th June 2019.
- The sea condition is very likely to be rough over Lakshadweep area, along & off Kerala, Karnataka & south Maharashtra Coasts on 11th; rough to very rough along & off Maharashtra Coast on 12th; very rough to high along & off Gujarat, north Maharashtra Coasts & northern parts of eastcentral Arabian Sea on 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into Southeast Arabian Sea, Lakshadweep area, along & off Kerala and Karnataka coasts on 11th; Eastcentral Arabian Sea and along & off Maharashtra Coast on 11th & 12th; northeast Arabian sea and along & off Gujarat coast on 12th & 13th.

(iv) Storm Surge Warning

Storm surge of height of about 0.5 m above the astronomical tides likely to inundate the low lying coastal areas of Porbandar, Junagarh, Gir Somnath and Amreli districts at the time of landfall.

(v) Damage Expected and Action suggested for Porbandar, Junagarh, Gir Somnath and Amreli districts of Gujarat:

(i) Major damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly. (ii) Minor damage to power and communication lines. (iii) Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes. (iv) Breaking of tree branches, uprooting of large avenue trees. Moderate damage to banana and papaya trees. Large dead limbs blown from trees. (v) Major damage to coastal crops. (vi) Damage to embankments/ salt pans.

Action suggested:

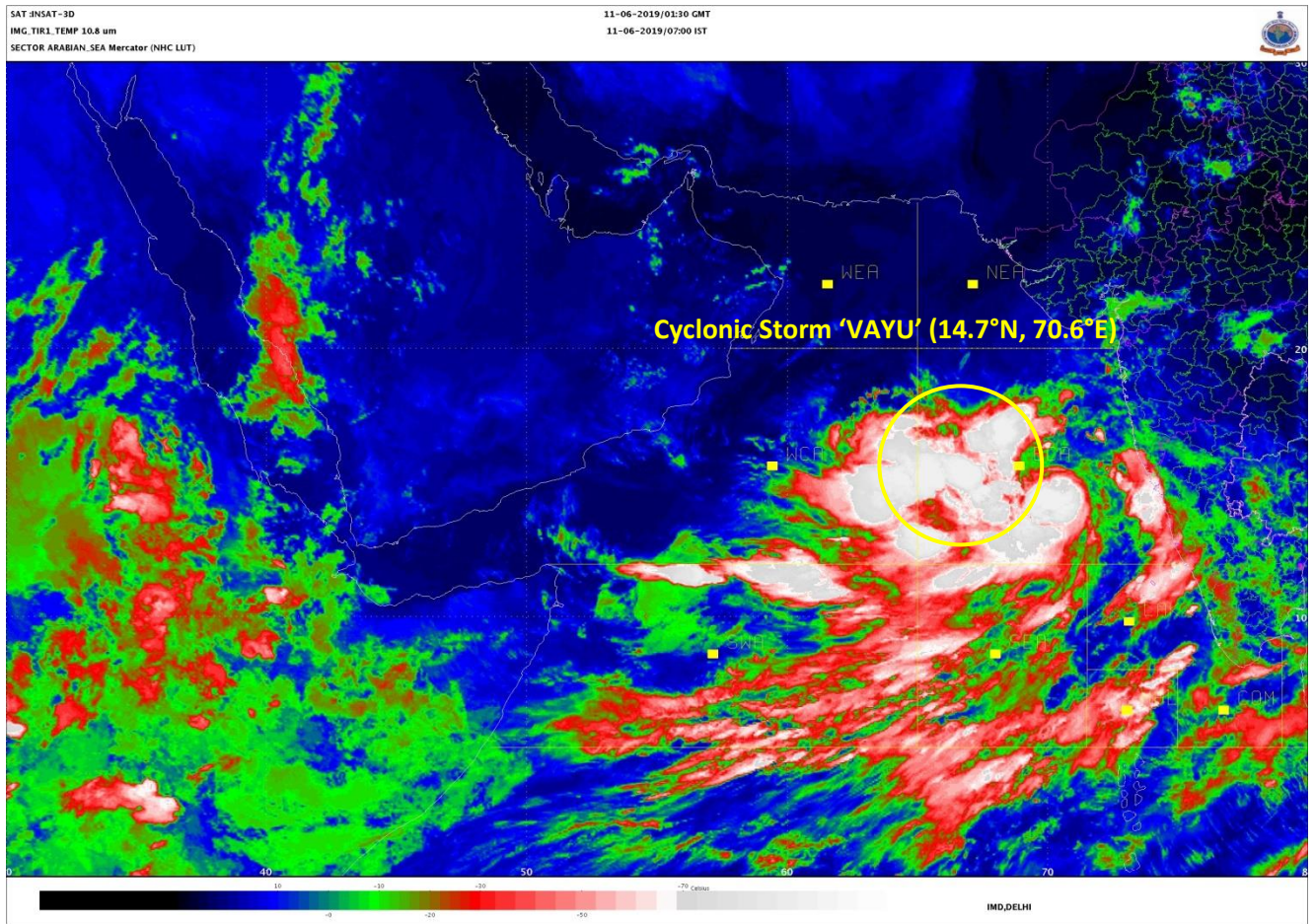
(i) Total suspension of fishing operations. (ii) Coastal hutment dwellers to be moved to safer places. People in affected areas to remain indoors. (iii) Movement in motor boats unsafe.

The next bulletin will be issued at 1130 hrs IST of 11th June, 2019.

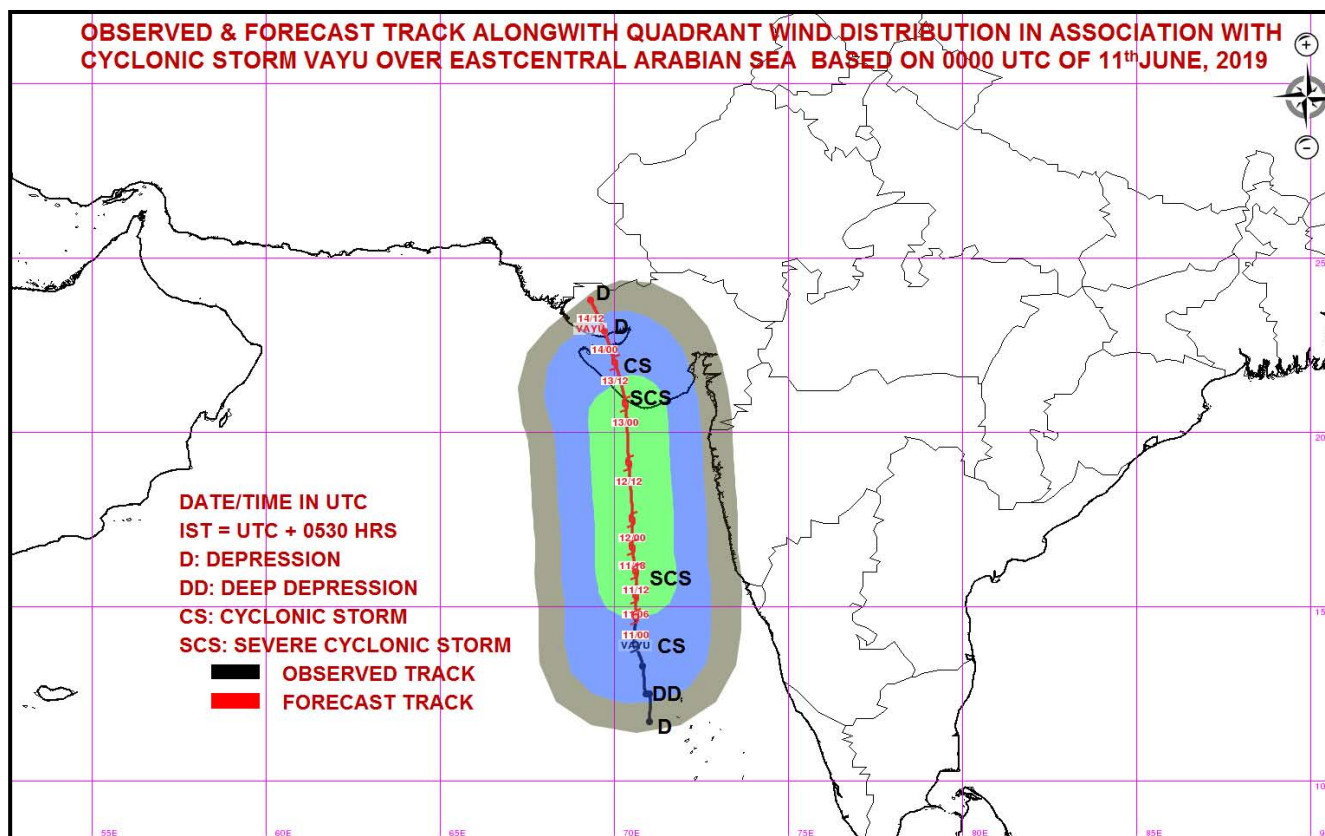
(Sunitha Devi.S)
Scientist-E, RSMC, New Delhi

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

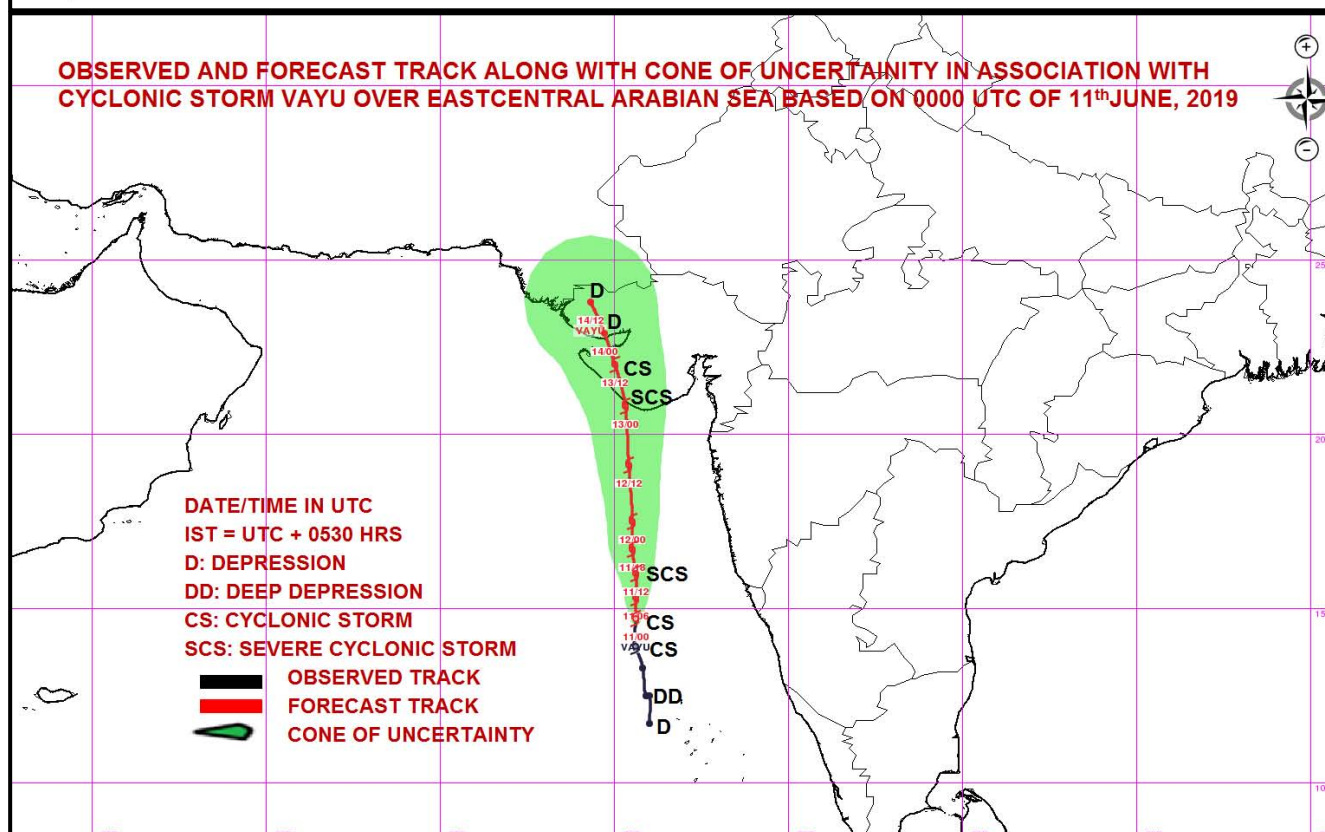
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



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.



MSW(knot)/kmph)	Impact	Action
28-33 /(51-62)	Very rough seas.	Total suspension of fishing operations
34-49/(63-91)	High to very high seas	Total suspension of fishing operations
50-63/(92-117)	Very High seas	Total suspension of fishing operations



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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/01/2019)

TIME OF ISSUE: 1130 HOURS IST

DATED: 11.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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

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

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

Sub: Cyclonic Storm 'VAYU' over Eastcentral Arabian Sea: Cyclone Alert for Gujarat Coast: Yellow Message

The **Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over Eastcentral Arabian Sea moved northwards with a speed of about 15 kmph in last six hours and lay centred at 0830 hrs IST of today, the 11th June, 2019 near latitude 15.0°N and longitude 70.6°E over Eastcentral Arabian Sea, about 350 km west-southwest of Goa, 510 km south-southwest of Mumbai (Maharashtra) and 650 km nearly south of Veraval (Gujarat). It is very likely to intensify further into a Severe Cyclonic Storm during next 12 hours.

It is very likely to move nearly northwards and cross Gujarat coast between Porbandar and Mahuva around Veraval & Diu region as a Severe Cyclonic Storm with wind speed 110-120 kmph gusting to 135 kmph during early morning of 13th June 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
11.06.19/0830	15.0/70.6	70-80 gusting to 90	Cyclonic Storm
11.06.19/1130	15.3/70.6	80-90 gusting to 100	Cyclonic Storm
11.06.19/1730	16.0/70.6	90-100 gusting to 115	Severe Cyclonic Storm
11.06.19/2330	16.7/70.5	95-105 gusting to 120	Severe Cyclonic Storm
12.06.19/0530	17.5/70.5	100-110 gusting to 125	Severe Cyclonic Storm
12.06.19/1730	19.1/70.4	110-120 gusting to 135	Severe Cyclonic Storm
13.06.19/0530	20.8/70.3	110-120 gusting to 135	Severe Cyclonic Storm
13.06.19/1730	22.0/70.0	70-80 gusting to 90	Cyclonic Storm
14.06.19/0530	22.9/69.7	40-50 gusting to 60	Depression
14.06.19/1730	23.8/69.3	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) Heavy rainfall warning:

Sub-Divisions	11 June 2019*	12 June 2019*	13 June 2019*	14 June 2019*
Konkan & Goa	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Rainfall at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places	Fairly widespread rainfall with heavy to very heavy falls at isolated places
South Gujarat Region	Rainfall at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning**
Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **11th June:** Gale Wind speed reaching 70-80 kmph gusting to 90 kmph over Eastcentral Arabian Sea and 50-60 kmph gusting to 70 kmph along & off North Maharashtra coast by 11th evening. It is very likely to be 40-50 kmph gusting to 60 kmph over Lakshadweep area, Kerala, Karnataka & south Maharashtra Coasts.
- **12th June:** Wind speed is very likely to increase further becoming gale wind speed reaching **110-120 kmph gusting to 135 kmph** over eastcentral & adjoining northeast Arabian Sea by 12th night. It is very likely to be 60-70 kmph gusting to 80 kmph over Gujarat Coast from 12th morning and become gale wind speed reaching **110-120 kmph gusting to 135 kmph** by 12th night. It is very likely to be 50-60 kmph gusting to 70 kmph over Maharashtra Coast.
- **13th June:** Gale wind speed of the order of **110-120 kmph gusting to 135 kmph** very likely over north Arabian Sea & Gujarat coast in morning hours and decrease gradually thereafter. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.

(iii) Sea condition

- The Sea condition is very likely to be high to very high over eastcentral Arabian Sea on 11th. The sea condition is very likely to become very high to phenomenal over eastcentral & adjoining northeast Arabian Sea & Gujarat coast from 12th evening and over north Arabian Sea on 13th June 2019.
- The sea condition is very likely to be rough over Lakshadweep area, along & off Kerala, Karnataka & south Maharashtra Coasts on 11th; rough to very rough along & off Maharashtra Coast on 12th; very rough to high along & off Gujarat, north Maharashtra Coasts & northern parts of eastcentral Arabian Sea on 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into Southeast Arabian Sea, Lakshadweep area, along & off Kerala and Karnataka coasts on 11th; Eastcentral Arabian Sea and along & off Maharashtra Coast on 11th & 12th; northeast Arabian sea and along & off Gujarat coast on 12th & 13th.

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

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

Storm surge of height of about 1.0- 1.5 m above the astronomical tides likely to inundate the low lying coastal areas of Kutch, Devbhoomi Dwarka, Porbandar, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts at the time of landfall.

(v) Damage Expected and Action suggested for Kutch, Devbhoomi Dwarka, Porbandar, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts of Gujarat:

(i) Major damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly. (ii) Minor damage to power and communication lines. (iii) Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes. (iv) Breaking of tree branches, uprooting of large avenue trees. Moderate damage to banana and papaya trees. Large dead limbs blown from trees. (v) Major damage to coastal crops. (vi) Damage to embankments/ salt pans.

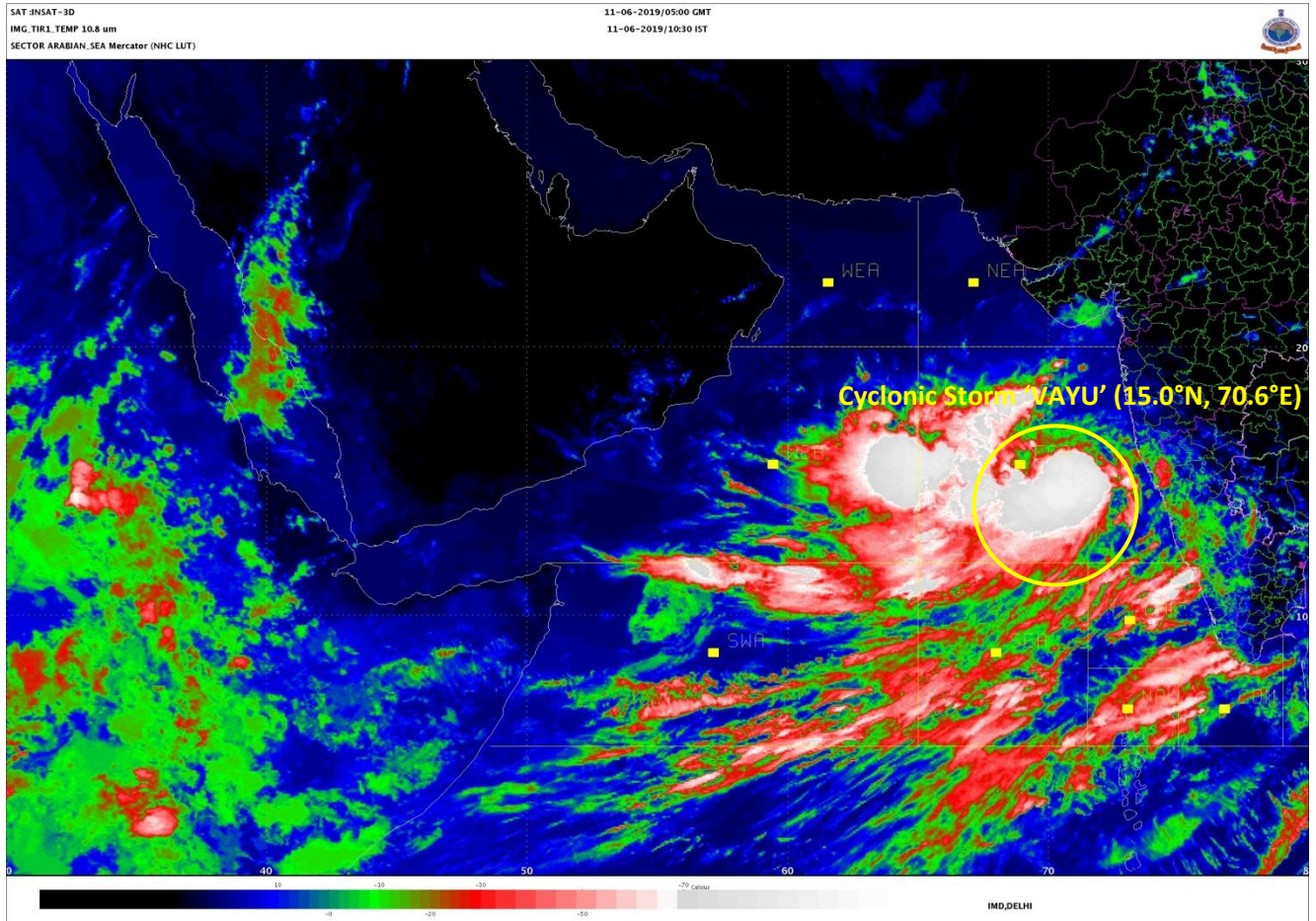
Action suggested:

(i) Total suspension of fishing operations. (ii) Coastal hutment dwellers to be moved to safer places. People in affected areas to remain indoors. (iii) Movement in motor boats unsafe.

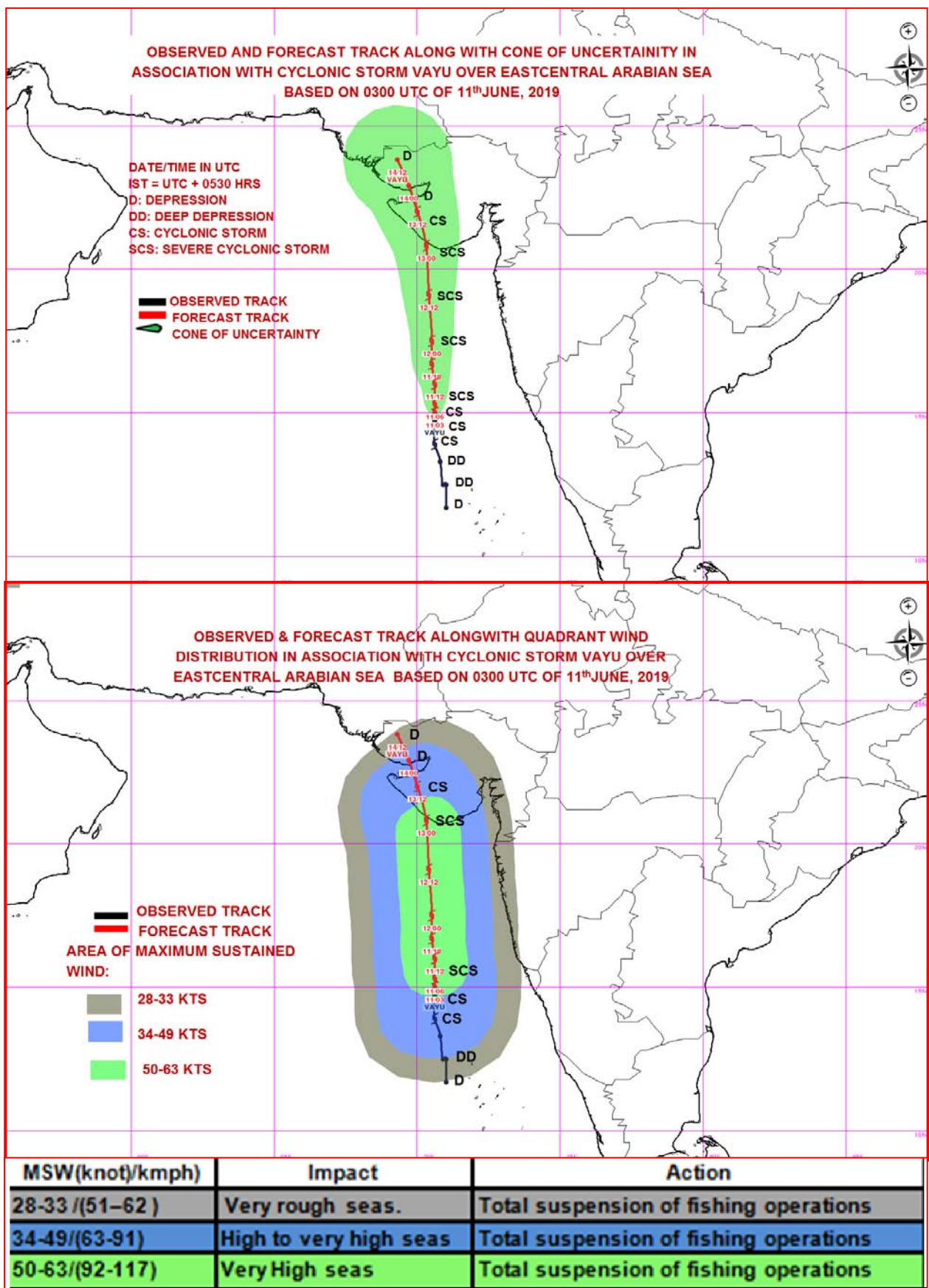
The next bulletin will be issued at 1430 hrs IST of 11th June, 2019.

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

Copy to: CRS, Pune/ 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. : 09 (ARB/01/2019)

TIME OF ISSUE: 1430 HOURS IST

DATED: 11.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

CONTROL ROOM NDMA (FAX.NO. 26701729)

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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 (23114964)

DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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

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

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

Sub: Cyclonic Storm 'VAYU' over Eastcentral Arabian Sea: Cyclone Warning for Gujarat Coast: Orange Message

The **Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over Eastcentral Arabian Sea moved further northwards with a speed of about 09 kmph in last six hours, slightly intensified further and lay centred at 1130 hrs IST of today, the 11th June, 2019 near latitude 15.2°N and longitude 70.6°E over Eastcentral Arabian Sea, about 340 km west-southwest of Goa, 490 km south-southwest of Mumbai (Maharashtra) and 630 km nearly south of Veraval (Gujarat). It is very likely to intensify further into a Severe Cyclonic Storm during next 12 hours.

It is very likely to move nearly northwards and cross Gujarat coast between Porbandar and Mahuva around Veraval & Diu region as a Severe Cyclonic Storm with wind speed 110-120 kmph gusting to 135 kmph during early morning of 13th June 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
11.06.19/1130	15.2/70.6	80-90 gusting to 100	Cyclonic Storm
11.06.19/1730	16.1/70.6	90-100 gusting to 115	Severe Cyclonic Storm
11.06.19/2330	16.7/70.6	95-105 gusting to 120	Severe Cyclonic Storm
12.06.19/0530	17.5/70.5	100-110 gusting to 125	Severe Cyclonic Storm
12.06.19/1130	18.4/70.5	105-115 gusting to 130	Severe Cyclonic Storm
12.06.19/2330	19.9/70.4	110-120 gusting to 135	Severe Cyclonic Storm
13.06.19/1130	21.3/70.2	110-120 gusting to 135	Severe Cyclonic Storm
13.06.19/2330	22.0/69.9	80-90 gusting to 100	Cyclonic Storm
14.06.19/1130	22.5/69.7	50-60 gusting to 70	Deep Depression
14.06.19/2330	23.1/69.3	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) Heavy rainfall warning:

Sub-Divisions	11 June 2019*	12 June 2019*	13 June 2019*	14 June 2019*
Konkan & Goa	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Rainfall at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places	Fairly widespread rainfall with heavy to very heavy falls at isolated places
South Gujarat Region	Rainfall at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **11th June:** Gale Wind speed reaching 80-90 kmph gusting to 100 kmph over Eastcentral Arabian Sea and 50-60 kmph gusting to 70 kmph along & off North Maharashtra coast by 11th evening. It is very likely to be 40-50 kmph gusting to 60 kmph over Lakshadweep area, Kerala, Karnataka & south Maharashtra Coasts.
- **12th June:** Wind speed is very likely to increase further becoming gale wind speed reaching **110-120 kmph gusting to 135 kmph** over eastcentral & adjoining northeast Arabian Sea by 12th night. It is very likely to be 60-70 kmph gusting to 80 kmph over Gujarat Coast from 12th morning and become gale wind speed reaching **110-120 kmph gusting to 135 kmph** by 12th night. It is very likely to be 50-60 kmph gusting to 70 kmph over Maharashtra Coast.
- **13th June:** Gale wind speed of the order of **110-120 kmph gusting to 135 kmph** very likely over north Arabian Sea & Gujarat coast in morning hours and decrease gradually thereafter. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.

(iii) Sea condition

- The Sea condition is very likely to be high to very high over eastcentral Arabian Sea on 11th. The sea condition is very likely to become very high to phenomenal over eastcentral & adjoining northeast Arabian Sea & Gujarat coast from 12th evening and over north Arabian Sea on 13th June 2019.
- The sea condition is very likely to be rough over Lakshadweep area, along & off Kerala, Karnataka & south Maharashtra Coasts on 11th; rough to very rough along & off Maharashtra Coast on 12th; very rough to high along & off Gujarat, north Maharashtra Coasts & northern parts of eastcentral Arabian Sea on 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into Southeast Arabian Sea, Lakshadweep area, along & off Kerala and Karnataka coasts on 11th; Eastcentral Arabian Sea and along & off Maharashtra Coast on 11th & 12th; northeast Arabian sea and along & off Gujarat coast on 12th & 13th.

(iv) Storm Surge Warning

Storm surge of height of about 1.0- 1.5 m above the astronomical tides likely to inundate the low lying coastal areas of Kutch, Devbhoomi Dwarka, Porbandar, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts at the time of landfall.

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

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

(v) Damage Expected and Action suggested for Kutch, Devbhoomi Dwarka, Porbandar, Rajkot, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts of Gujarat:

(i) Damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly. (ii) Damage to power and communication lines. (iii) Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes. (iv) Breaking of tree branches, uprooting of large avenue trees. Damage to banana and papaya trees. Large dead limbs blown from trees. (v) Major damage to coastal crops. (vi) Damage to embankments/ salt pans.

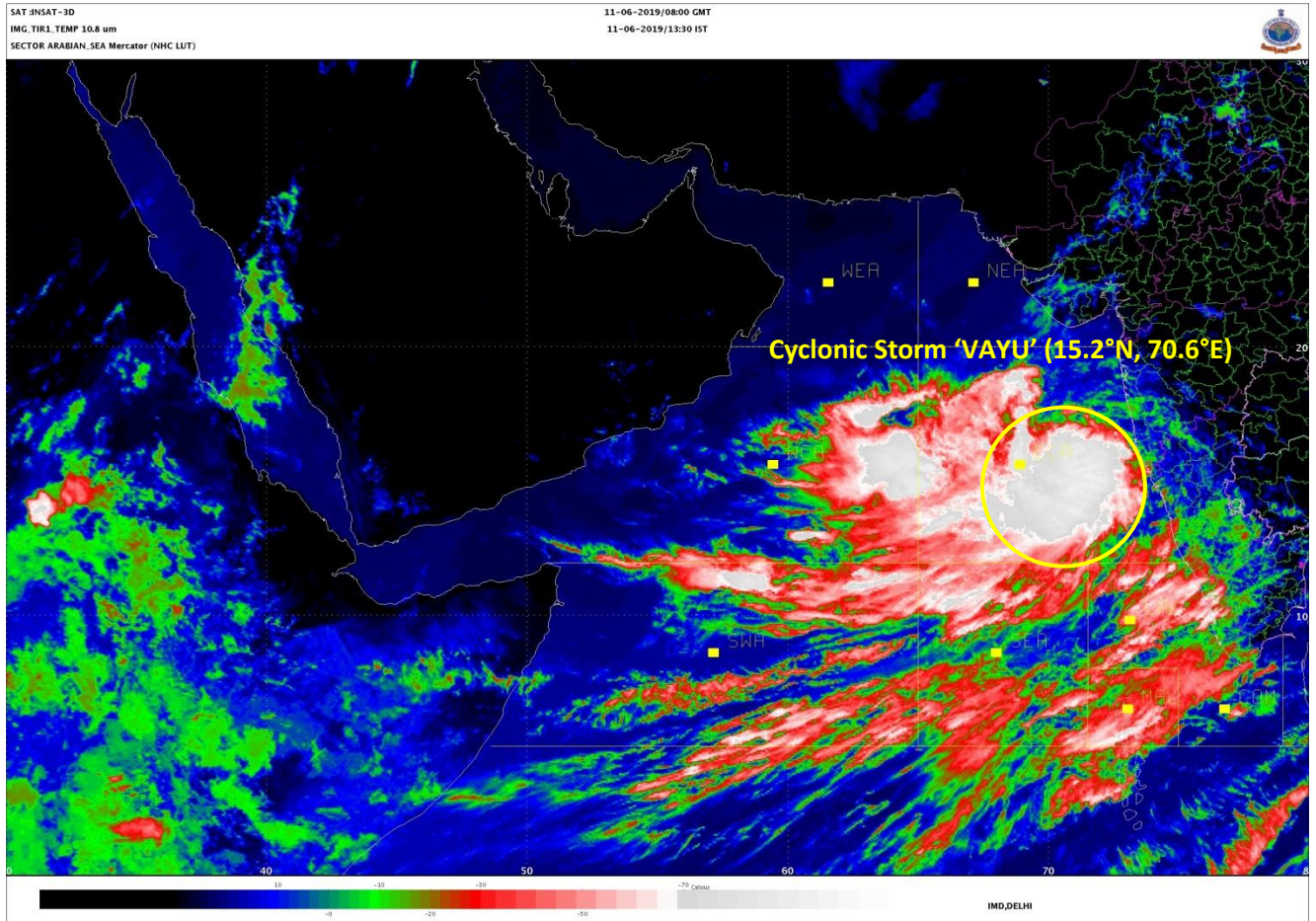
Action suggested:

(i) Regulate road & rail traffic (ii) Total suspension of fishing operations. (iii) Coastal hutment dwellers to be moved to safer places. People in affected areas to remain indoors. (iv) Movement in motor boats unsafe. (v) Inundation of low lying areas in the along the coasts due to heavy rainfall and storm surge.

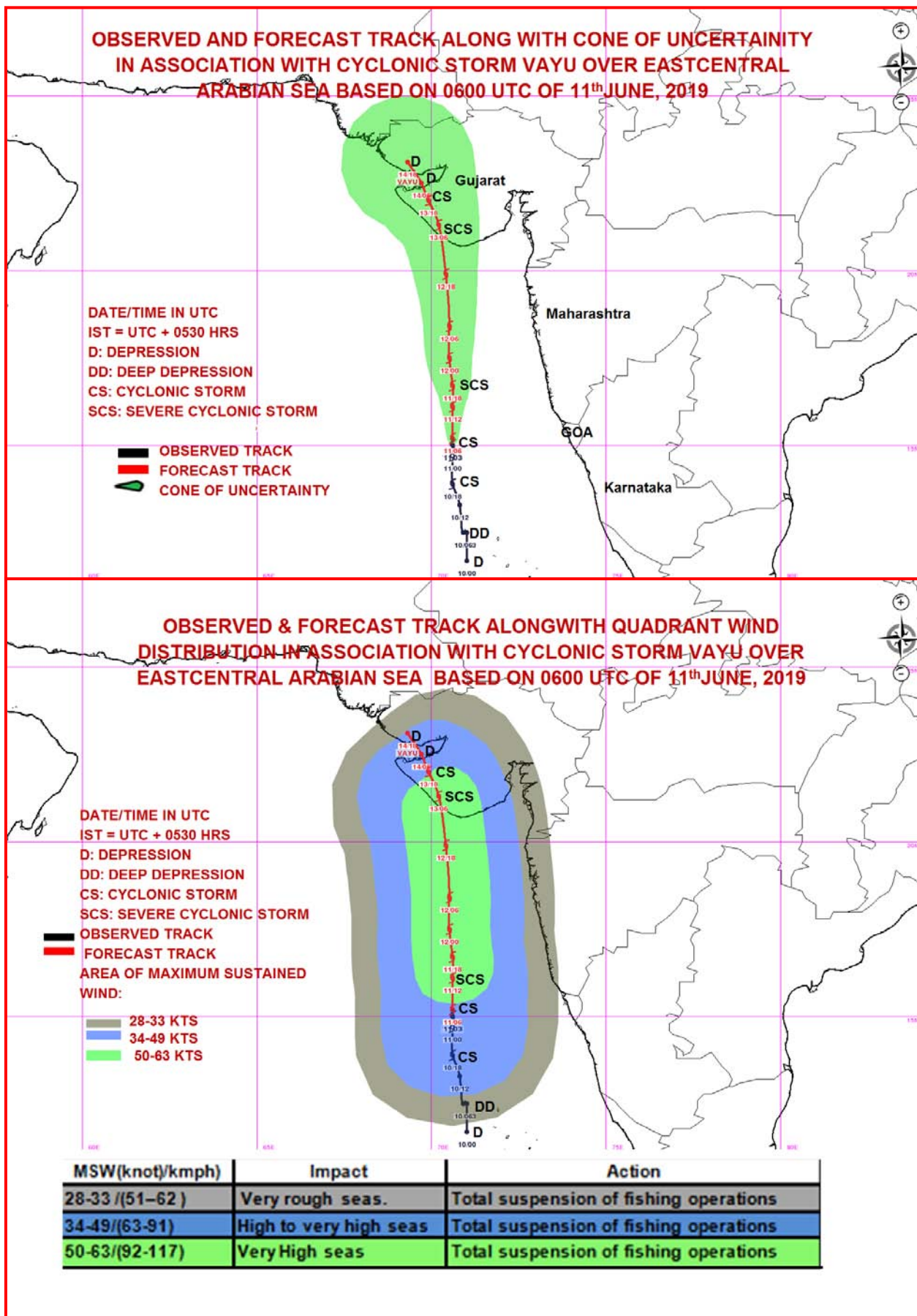
The next bulletin will be issued at 1730 hrs IST of 11th June, 2019.

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

Copy to: CRS, Pune/ 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. : 10 (ARB/01/2019)

TIME OF ISSUE: 1730 HOURS IST

DATED: 11.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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

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

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

Sub: Cyclonic Storm 'VAYU' over Eastcentral Arabian Sea: Cyclone Warning for Gujarat Coast: Orange Message

The **Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over Eastcentral Arabian Sea moved further northwards with a speed of about 13 kmph in last six hours, slightly intensified further and lay centred at 1430 hrs IST of today, the 11th June, 2019 near latitude 15.7°N and longitude 70.6°E over Eastcentral Arabian Sea, about 340 km west-northwest of Goa, 440 km south-southwest of Mumbai (Maharashtra) and 570 km nearly south of Veraval (Gujarat). It is very likely to intensify further into a Severe Cyclonic Storm during next 06 hours.

It is very likely to move nearly northwards and cross Gujarat coast between Porbandar and Mahuva around Veraval & Diu region as a Severe Cyclonic Storm with wind speed 110-120 kmph gusting to 135 kmph during early morning of 13th June 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
11.06.19/1430	15.7/70.6	85-95 gusting to 105	Cyclonic Storm
11.06.19/1730	16.1/70.6	90-100 gusting to 115	Severe Cyclonic Storm
11.06.19/2330	16.7/70.6	95-105 gusting to 120	Severe Cyclonic Storm
12.06.19/0530	17.5/70.5	100-110 gusting to 125	Severe Cyclonic Storm
12.06.19/1130	18.4/70.5	105-115 gusting to 130	Severe Cyclonic Storm
12.06.19/2330	19.9/70.4	110-120 gusting to 135	Severe Cyclonic Storm
13.06.19/1130	21.3/70.2	110-120 gusting to 135	Severe Cyclonic Storm
13.06.19/2330	22.0/69.9	80-90 gusting to 100	Cyclonic Storm
14.06.19/1130	22.5/69.7	50-60 gusting to 70	Deep Depression
14.06.19/2330	23.1/69.3	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) Heavy rainfall warning:

Sub-Divisions	11 June 2019*	12 June 2019*	13 June 2019*	14 June 2019*
Konkan & Goa	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Rainfall at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places	Fairly widespread rainfall with heavy to very heavy falls at isolated places
South Gujarat Region	Rainfall at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **11th June:** Gale Wind speed reaching 90-100 kmph gusting to 115 kmph is likely to prevail over Eastcentral Arabian Sea and 70-80 kmph gusting to 90 kmph along & off North Maharashtra coast from 11th evening. It is very likely to be 40-50 kmph gusting to 60 kmph over Lakshadweep area, Kerala, Karnataka & south Maharashtra Coasts.
- **12th June:** Wind speed is very likely to increase further becoming gale wind speed reaching **110-120 kmph gusting to 135 kmph** over eastcentral & adjoining northeast Arabian Sea by 12th night. It is very likely to be 60-70 kmph gusting to 80 kmph over Gujarat Coast from 12th morning and become gale wind speed reaching **110-120 kmph gusting to 135 kmph** by 12th night. It is very likely to be 50-60 kmph gusting to 70 kmph over Maharashtra Coast.
- **13th June:** Gale wind speed of the order of **110-120 kmph gusting to 135 kmph** very likely over north Arabian Sea & Gujarat coast in morning hours and decrease gradually thereafter. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.

(iii) Sea condition

- The Sea condition is very likely to be high to very high over eastcentral Arabian Sea on 11th. The sea condition is very likely to become very high to phenomenal over eastcentral & adjoining northeast Arabian Sea & Gujarat coast from 12th evening and over north Arabian Sea on 13th June 2019.
- The Sea condition is very likely to be rough over Lakshadweep area, along & off Kerala, Karnataka & south Maharashtra Coasts on 11th; very rough to high along & off Maharashtra Coast on 12th & 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into Southeast Arabian Sea, Lakshadweep area, along & off Kerala and Karnataka coasts on 11th; Eastcentral Arabian Sea and along & off Maharashtra Coast on 11th & 12th; northeast Arabian sea and along & off Gujarat coast on 12th & 13th.

(iv) Storm Surge Warning

Storm surge of height of about 1.0- 1.5 m above the astronomical tides likely to inundate the low lying coastal areas of Kutch, Devbhoomi Dwarka, Porbandar, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts at the time of landfall.

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

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

(v) Damage Expected and Action suggested for Kutch, Devbhoomi Dwarka, Porbandar, Rajkot, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts of Gujarat:

(i) Damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly. (ii) Damage to power and communication lines. (iii) Major damage to Kutch and some damage to Pucca roads. Flooding of escape routes. (iv) Breaking of tree branches, uprooting of large avenue trees. Damage to banana and papaya trees. Large dead limbs blown from trees. (v) Major damage to coastal crops. (vi) Damage to embankments/ salt pans.

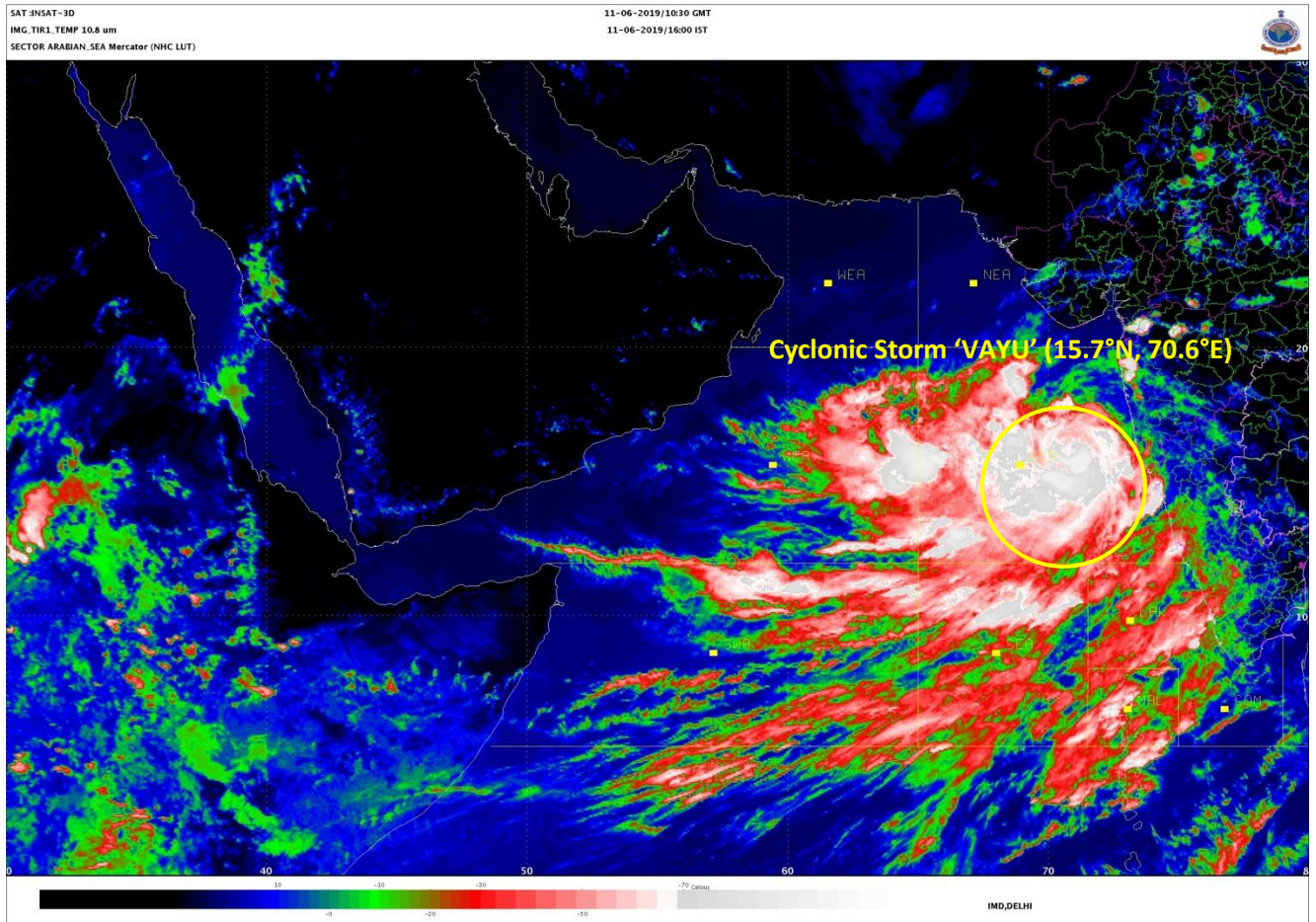
Action suggested:

(i) Regulate road & rail traffic (ii) Total suspension of fishing operations. (iii) Evacuation from low lying areas of the above mentioned Districts, coastal Hutment dwellers, urban slum dwellers and people staying in unsafe house to safer places. People in affected areas to remain indoors. (iv) Movement in motor boats unsafe. (v) Inundation of low lying areas in the along the coasts due to heavy rainfall and storm surge.

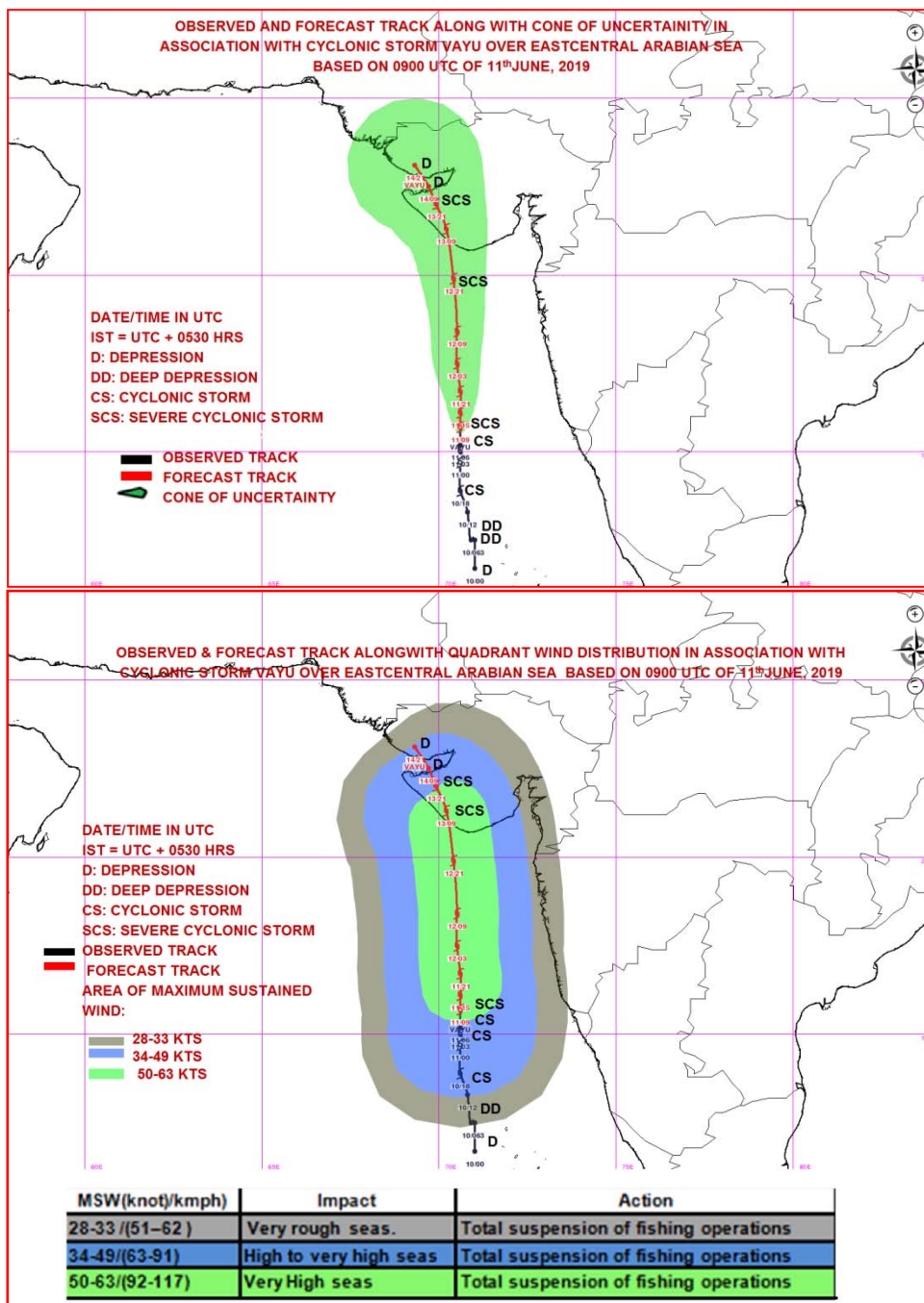
The next bulletin will be issued at 2030 hrs IST of 11th June, 2019.

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

Copy to: CRS, Pune/ 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. : 11 (ARB/01/2019)

TIME OF ISSUE: 1930 HOURS IST

DATED: 11.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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

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

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

Sub: Cyclonic Storm 'VAYU' over Eastcentral Arabian Sea intensified into Severe Cyclonic Storm:

Cyclone Warning for Gujarat Coast: Orange Message

The **Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over Eastcentral Arabian Sea moved further northwards with a speed of about 17 kmph in last six hours, intensified into **Severe Cyclonic Storm** and lay centred at 1730 hrs IST of today, the 11th June, 2019 near latitude 16.1°N and longitude 70.6°E over Eastcentral Arabian Sea, about 350 km west-northwest of Goa, 410 km south-southwest of Mumbai (Maharashtra) and 530 km nearly south of Veraval (Gujarat).

It is very likely to move nearly northwards and cross Gujarat coast between Porbandar and Mahuva around Veraval & Diu region as a Severe Cyclonic Storm with wind speed 110-120 kmph gusting to 135 kmph during early morning of 13th June 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
11.06.19/1730	16.1/70.6	90-100 gusting to 115	Severe Cyclonic Storm
11.06.19/2330	16.7/70.6	95-105 gusting to 120	Severe Cyclonic Storm
12.06.19/0530	17.5/70.5	100-110 gusting to 125	Severe Cyclonic Storm
12.06.19/1130	18.4/70.5	105-115 gusting to 130	Severe Cyclonic Storm
12.06.19/1730	19.3/70.4	110-120 gusting to 135	Severe Cyclonic Storm
13.06.19/0530	20.7/70.3	110-120 gusting to 135	Severe Cyclonic Storm
13.06.19/1730	21.7/70.1	80-90 gusting to 110	Cyclonic Storm
14.06.19/0530	22.2/69.8	55-65 gusting to 75	Deep Depression
14.06.19/1730	22.8/69.5	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) Heavy rainfall warning:

Sub-Divisions	11 June 2019*	12 June 2019*	13 June 2019*	14 June 2019*
Konkan & Goa	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Rainfall at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places	Fairly widespread rainfall with heavy to very heavy falls at isolated places
South Gujarat Region	Rainfall at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **11th June:** Gale Wind speed reaching 90-100 kmph gusting to 115 kmph is likely to prevail over Eastcentral Arabian Sea and 70-80 kmph gusting to 90 kmph along & off North Maharashtra coast from 11th evening. It is very likely to be 40-50 kmph gusting to 60 kmph over Lakshadweep area, Kerala, Karnataka & south Maharashtra Coasts.
- **12th June:** Wind speed is very likely to increase further becoming gale wind speed reaching **110-120 kmph gusting to 135 kmph** over eastcentral & adjoining northeast Arabian Sea by 12th night. It is very likely to be 60-70 kmph gusting to 80 kmph over Gujarat Coast from 12th morning and become gale wind speed reaching **110-120 kmph gusting to 135 kmph** by 12th night. It is very likely to be 50-60 kmph gusting to 70 kmph over Maharashtra Coast.
- **13th June:** Gale wind speed of the order of **110-120 kmph gusting to 135 kmph** very likely over north Arabian Sea & Gujarat coast in morning hours and decrease gradually thereafter. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.

(iii) Sea condition

- The Sea condition is very likely to be high to very high over eastcentral Arabian Sea on 11th. The sea condition is very likely to become very high to phenomenal over eastcentral & adjoining northeast Arabian Sea & Gujarat coast from 12th evening and over north Arabian Sea on 13th June 2019.
- The Sea condition is very likely to be rough over Lakshadweep area, along & off Kerala, Karnataka & south Maharashtra Coasts on 11th; very rough to high along & off Maharashtra Coast on 12th & 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into Southeast Arabian Sea, Lakshadweep area, along & off Kerala and Karnataka coasts on 11th; Eastcentral Arabian Sea and along & off Maharashtra Coast on 11th & 12th; northeast Arabian sea and along & off Gujarat coast on 12th & 13th.

(iv) Storm Surge Warning

Storm surge of height of about 1.0- 1.5 m above the astronomical tides likely to inundate the low lying coastal areas of Kutch, Devbhoomi Dwarka, Porbandar, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts at the time of landfall.

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

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

(v) Damage Expected and Action suggested for Kutch, Devbhoomi Dwarka, Porbandar, Rajkot, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts of Gujarat:

(i) Damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly. (ii) Damage to power and communication lines. (iii) Major damage to Kutch and some damage to Pucca roads. Flooding of escape routes. (iv) Breaking of tree branches, uprooting of large avenue trees. Damage to banana and papaya trees. Large dead limbs blown from trees. (v) Major damage to coastal crops. (vi) Damage to embankments/ salt pans.

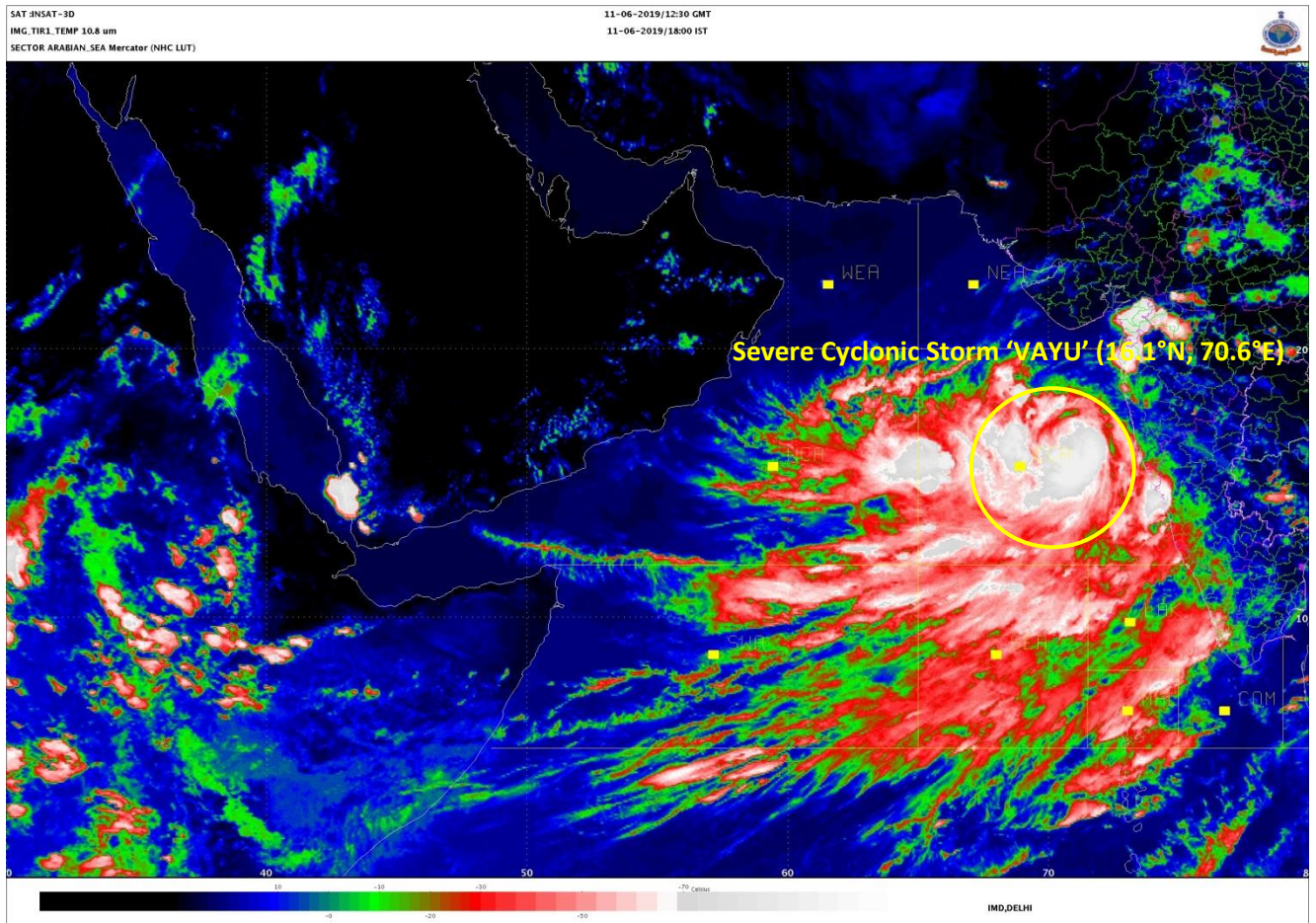
Action suggested:

(i) Regulate road & rail traffic (ii) Total suspension of fishing operations. (iii) Evacuation from low lying areas of the above mentioned Districts, coastal Hutment dwellers, urban slum dwellers and people staying in unsafe house to safer places. People in affected areas to remain indoors. (iv) Movement in motor boats unsafe. (v) Inundation of low lying areas in the along the coasts due to heavy rainfall and storm surge.

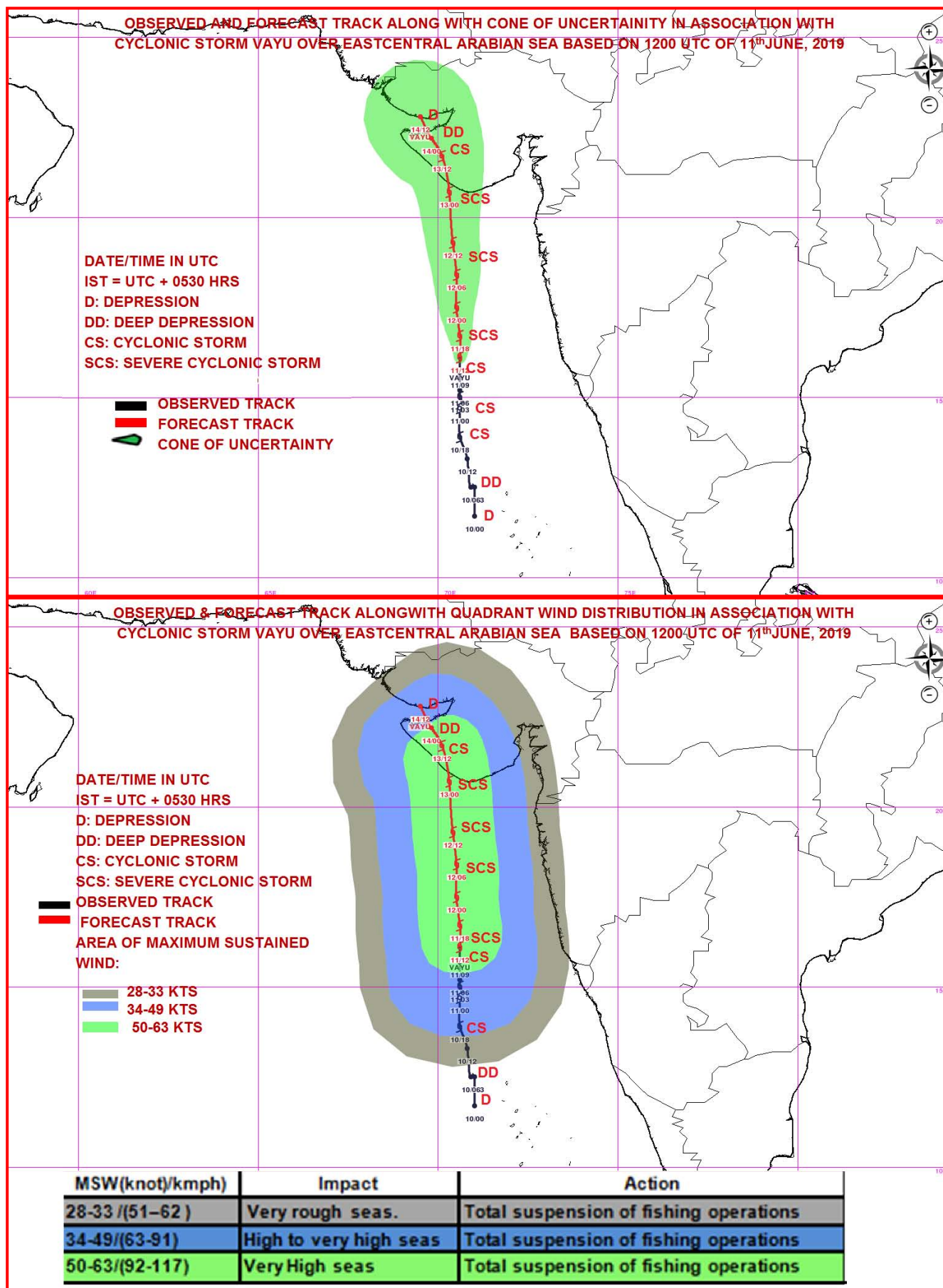
The next bulletin will be issued at 2330 hrs IST of 11th June, 2019.

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

Copy to: CRS, Pune/ 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. : 12 (ARB/01/2019)

TIME OF ISSUE: 2240 HOURS IST

DATED: 11.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Eastcentral Arabian Sea:
Cyclone Warning for Gujarat Coast: Orange Message**

The **Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over Eastcentral Arabian Sea moved further northwards with a speed of about 18 kmph in last six hours and lay centred at 2030 hrs IST of today, the 11th June, 2019 near latitude 16.7°N and longitude 70.6°E over Eastcentral Arabian Sea, about 400 km west-northwest of Goa, 350 km south-southwest of Mumbai (Maharashtra) and 470 km nearly south of Veraval (Gujarat). It is very likely to intensify further into a Very Severe Cyclonic Storm during next 06 hours.

It is very likely to move nearly northwards and cross Gujarat coast between Porbandar and Mahuva around Veraval & Diu region as a Very Severe Cyclonic Storm with wind speed 140-150 kmph gusting to 165 kmph during early morning of 13th June 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
11.06.19/2030	16.7/70.6	100-110 gusting to 125	Severe Cyclonic Storm
11.06.19/2330	17.2/70.6	120-130 gusting to 145	Very Severe Cyclonic Storm
12.06.19/0530	17.7/70.5	130-140 gusting to 155	Very Severe Cyclonic Storm
12.06.19/1130	18.4/70.5	135-145 gusting to 160	Very Severe Cyclonic Storm
12.06.19/1730	19.3/70.4	140-150 gusting to 165	Very Severe Cyclonic Storm
13.06.19/0530	20.7/70.3	140-150 gusting to 165	Very Severe Cyclonic Storm
13.06.19/1730	21.7/70.1	110-120 gusting to 135	Severe Cyclonic Storm
14.06.19/0530	22.2/69.8	70-80 gusting to 90	Cyclonic Storm
14.06.19/1730	22.8/69.5	45-55 gusting to 65	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) Heavy rainfall warning:

Sub-Divisions	11 June 2019*	12 June 2019*	13 June 2019*	14 June 2019*
Konkan & Goa	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Rainfall at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places	Fairly widespread rainfall with heavy to very heavy falls at isolated places
South Gujarat Region	Rainfall at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **11th June:** Gale Wind speed reaching 90-100 kmph gusting to 115 kmph is likely to prevail over Eastcentral Arabian Sea and 70-80 kmph gusting to 90 kmph along & off North Maharashtra coast from 11th evening. It is very likely to be 40-50 kmph gusting to 60 kmph over Lakshadweep area, Kerala, Karnataka & south Maharashtra Coasts.
- **12th June:** Wind speed is very likely to increase further becoming gale wind speed reaching **110-120 kmph gusting to 135 kmph** over eastcentral & adjoining northeast Arabian Sea by 12th night. It is very likely to be 60-70 kmph gusting to 80 kmph over Gujarat Coast from 12th morning and become gale wind speed reaching **110-120 kmph gusting to 135 kmph** by 12th night. It is very likely to be 50-60 kmph gusting to 70 kmph over Maharashtra Coast.
- **13th June:** Gale wind speed of the order of **110-120 kmph gusting to 135 kmph** very likely over north Arabian Sea & Gujarat coast in morning hours and decrease gradually thereafter. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.

(iii) Sea condition

- The Sea condition is very likely to be high to very high over eastcentral Arabian Sea on 11th. The sea condition is very likely to become very high to phenomenal over eastcentral & adjoining northeast Arabian Sea & Gujarat coast from 12th evening and over north Arabian Sea on 13th June 2019.
- The Sea condition is very likely to be rough over Lakshadweep area, along & off Kerala, Karnataka & south Maharashtra Coasts on 11th; very rough to high along & off Maharashtra Coast on 12th & 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into Southeast Arabian Sea, Lakshadweep area, along & off Kerala and Karnataka coasts on 11th; Eastcentral Arabian Sea and along & off Maharashtra Coast on 11th & 12th; northeast Arabian sea and along & off Gujarat coast on 12th & 13th.

(iv) Storm Surge Warning

Storm surge of height of about 1.5-2.0 m above the astronomical tides likely to inundate the low lying coastal areas of Kutch, Devbhoomi Dwarka, Porbandar, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts at the time of landfall.

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

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

(v) Damage Expected and Action suggested for Kutch, Devbhoomi Dwarka, Porbandar, Rajkot, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts of Gujarat:

(i) Total destruction of thatched houses/extensive damage to Kutcha houses. Some damage to pucca houses. Potential threat from flying objects. (ii) Bending/uprooting of power and communication poles. (iii) Major damage to Kutcha and Pucca roads. Flooding of escape routes. Minor disruption of railways, overhead power lines and signalling systems. (iv) Widespread damage to standing crops, plantation, orchards, falling of green coconuts and tearing of palm fronds. Blowing down bushy trees like mango. (v) Small boats, country crafts may get detached from moorings. (vi) Visibility severe affected.

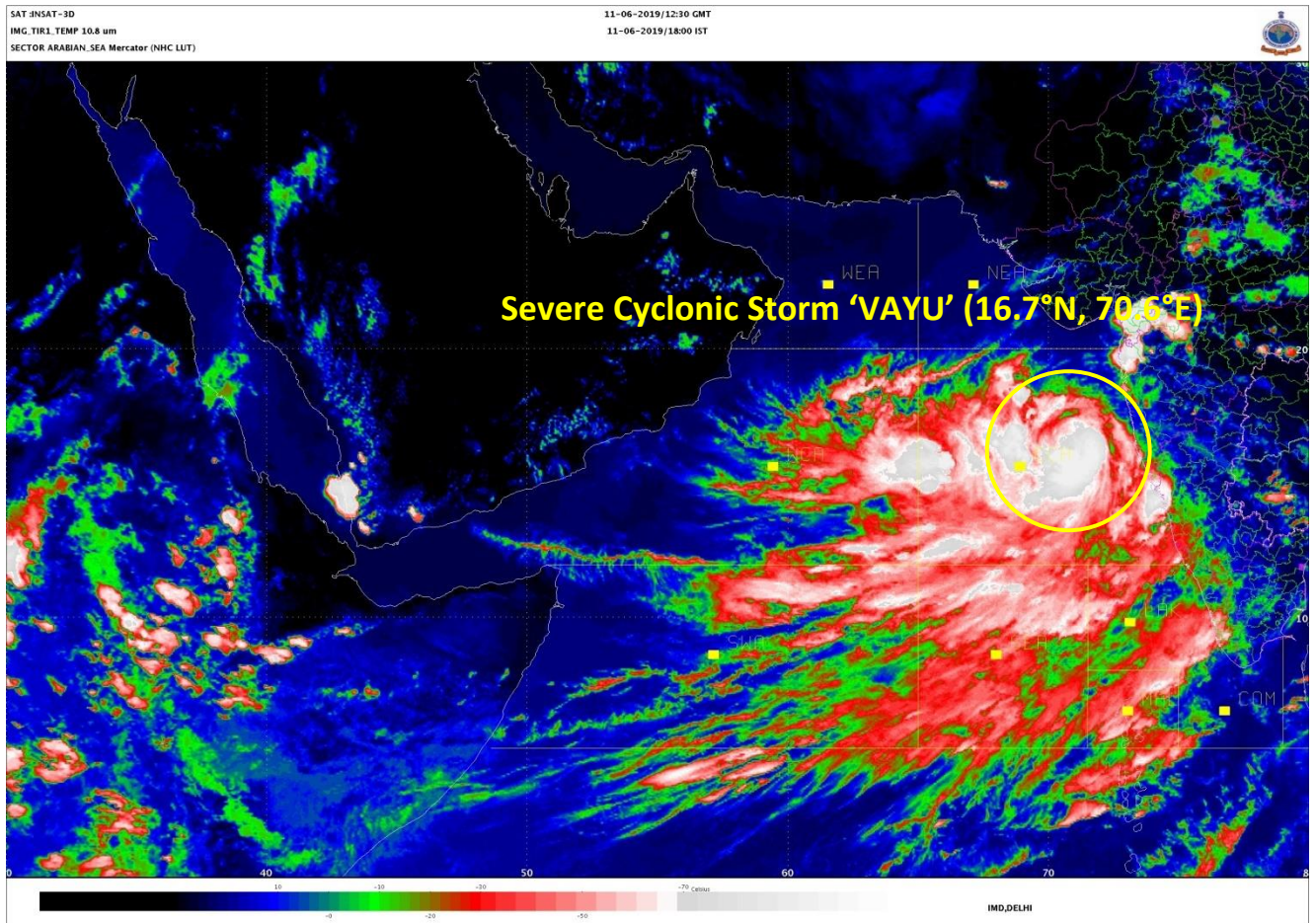
Action suggested:

(i) Regulate road & rail traffic (ii) Total suspension of fishing operations. (iii) Evacuation from low lying areas of the above mentioned Districts, coastal Hutment dwellers, urban slum dwellers and people staying in unsafe house to safer places. People in affected areas to remain indoors. (iv) Movement in motor boats & small ships unsafe. (v) Inundation of low lying areas in the along the coasts due to heavy rainfall and storm surge.

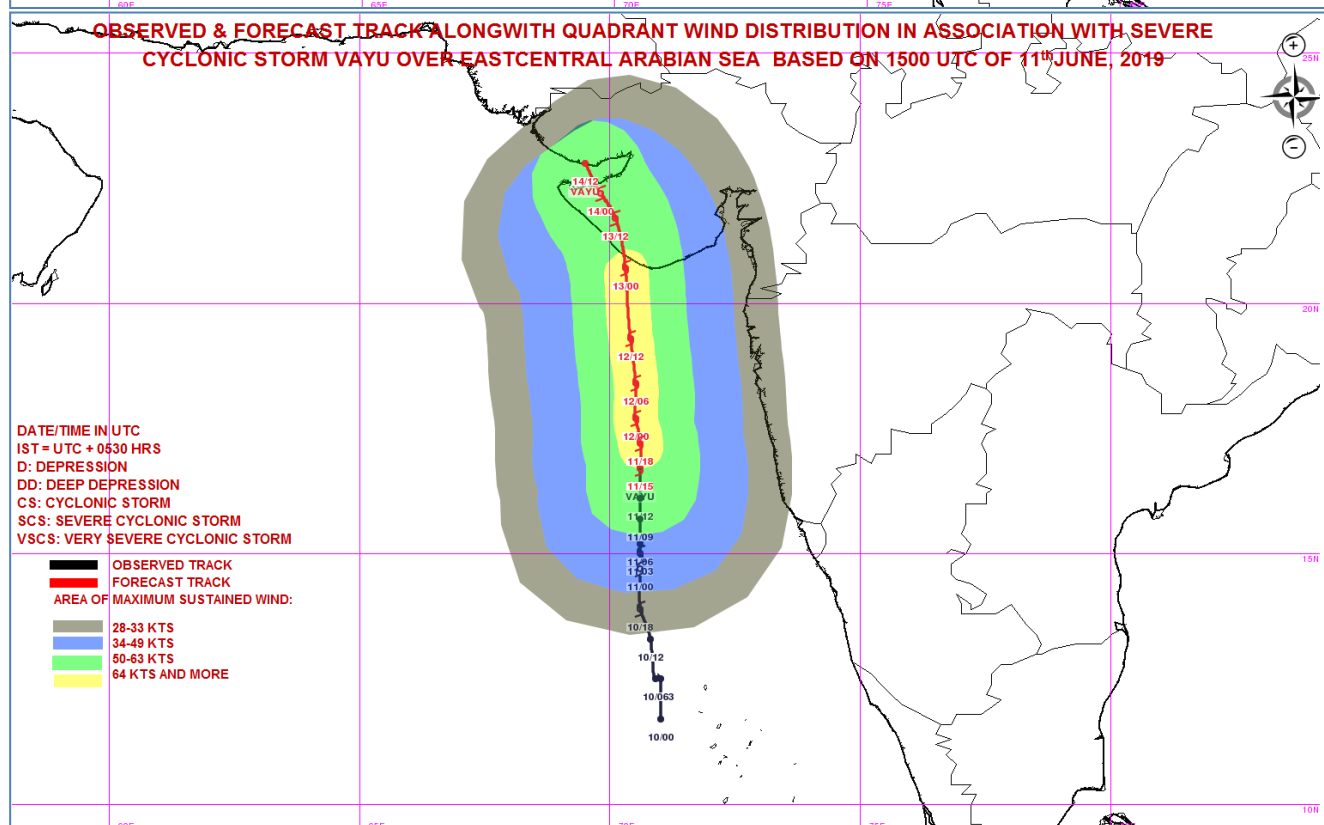
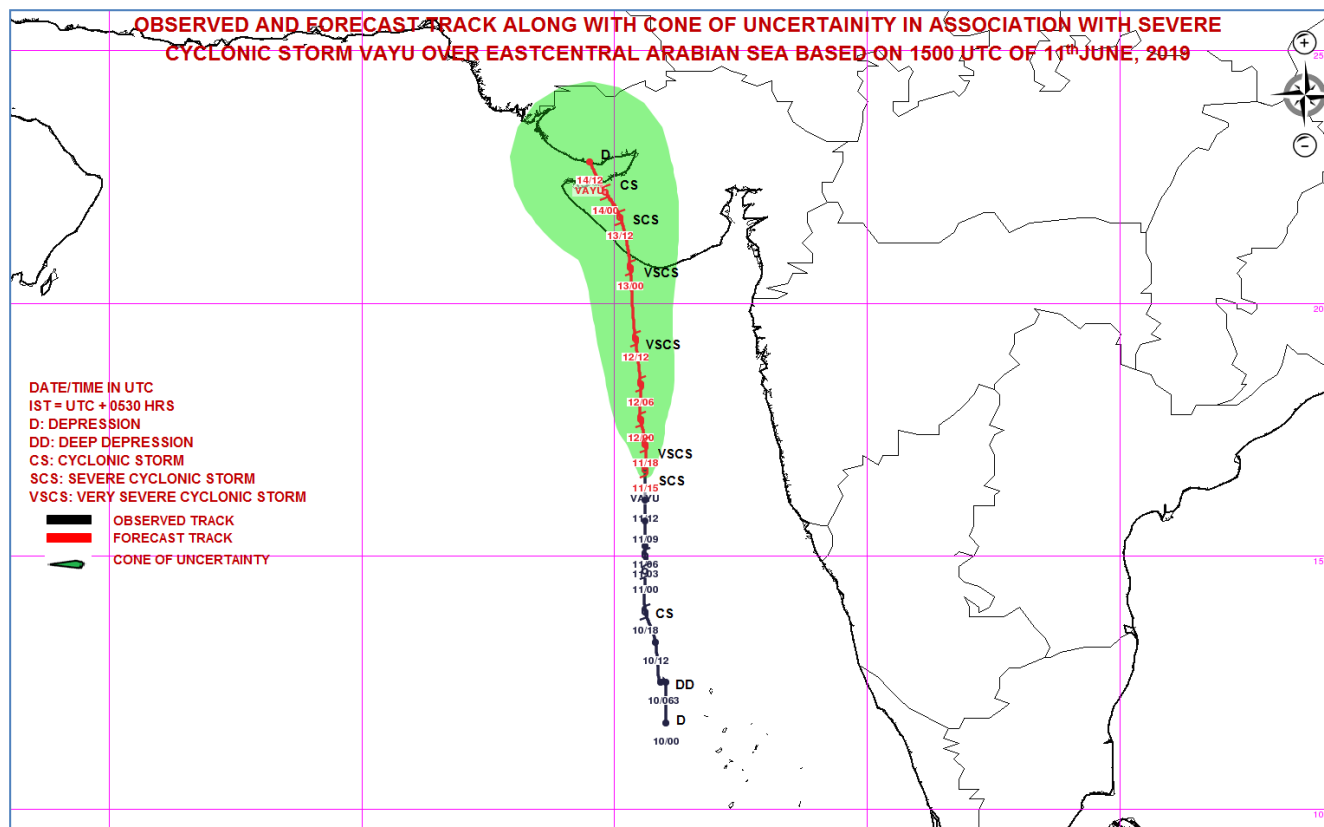
The next bulletin will be issued at 0230 hrs IST of 12th June, 2019.

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

Copy to: CRS, Pune/ 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.



MSW(knot)/kmph)	Impact	Action
28-33 / (51-62)	Very rough seas.	Total suspension of fishing operations
34-49 / (63-91)	High to very high seas	Total suspension of fishing operations
50-63 / (92-117)	Very High seas	Total suspension of fishing operations
64-89 / (118-166)	Very High seas	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
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 13 (ARB/01/2019)

TIME OF ISSUE: 0330 HOURS IST

DATED: 12.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over East-central Arabian Sea intensified into Very Severe Cyclonic Storm:

Cyclone Warning for Gujarat Coast: Orange Message

The **Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over Eastcentral Arabian Sea moved further northwards with a speed of about 18 kmph in last six hours, intensified into **Very Severe Cyclonic Storm** and lay centred at 2330 hrs IST of 11th June, 2019 near latitude 17.1°N and longitude 70.6°E over Eastcentral Arabian Sea, about 420 km west-northwest of Goa, 320 km south-southwest of Mumbai (Maharashtra) and 420 km nearly south of Veraval (Gujarat).

It is very likely to move nearly northwards and cross Gujarat coast between Porbandar and Mahuva around Veraval & Diu region as a Very Severe Cyclonic Storm with wind speed 140-150 kmph gusting to 165 kmph around morning of 13th June 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
11.06.19/2330	17.1/70.6	120-130 gusting to 145	Very Severe Cyclonic Storm
12.06.19/0530	17.8/70.5	125-135gusting to 150	Very Severe Cyclonic Storm
12.06.19/1130	18.6/70.5	130-140 gusting to 155	Very Severe Cyclonic Storm
12.06.19/1730	19.4/70.4	135-145 gusting to 160	Very Severe Cyclonic Storm
12.06.19/2330	20.1/70.4	140-150 gusting to 165	Very Severe Cyclonic Storm
13.06.19/1130	21.2/70.2	125-135 gusting to 145	Very Severe Cyclonic Storm
13.06.19/2330	22.0/69.8	95-105 gusting to 115	Severe Cyclonic Storm
14.06.19/1130	22.5/69.4	60-70 gusting to 80	Cyclonic Storm
14.06.19/2330	22.9/69.0	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) Heavy rainfall warning:

Sub-Divisions	11 June 2019*	12 June 2019*	13 June 2019*	14 June 2019*
Konkan& Goa	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Rainfall at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places	Fairly widespread rainfall with heavy to very heavy falls at isolated places
South Gujarat Region	Rainfall at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **12th June:** Wind speed is very likely to become gale wind speed reaching **120-130 kmph gusting to 145 kmph** over eastcentral & adjoining northeast Arabian Sea by 12th. It is very likely to be 60-70 kmph gusting to 80 kmph over Gujarat Coast from 12th morning and become gale wind speed reaching **140-150 kmph gusting to 165 kmph** by 12th night. It is very likely to be 50-60 kmph gusting to 70 kmph over Maharashtra Coast.
- **13th June:** Gale wind speed of the order of **125-135 kmph gusting to 145 kmph** very likely over north Arabian Sea & Gujarat coast in morning hours and decrease gradually thereafter. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.

(iii) Sea condition

- The sea condition is very likely to become very high to phenomenal over eastcentral & adjoining northeast Arabian Sea & Gujarat coast from 12th June and over north Arabian Sea on 13th June 2019.
- The Sea condition is very likely to very rough to high along & off Maharashtra Coast on 12th & 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into Eastcentral Arabian Sea and along & off Maharashtra Coast on 12th; northeast Arabian sea and along & off Gujarat coast on 12th & 13th.

(iv) Storm Surge Warning

Storm surge of height of about 1.5-2.0 m above the astronomical tides likely to inundate the low lying coastal areas of Kutch, Devbhoomi, Dwarka, Porbandar, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts at the time of landfall.

(v) Damage Expected and Action suggested for Kutch, Devbhoomi Dwarka, Porbandar, Rajkot, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts of Gujarat:

- (i) Total destruction of thatched houses/extensive damage to Kutcha houses. Some damage to pucca houses. Potential threat from flying objects. (ii) Bending/uprooting of power and communication poles. (iii) Major damage to Kutcha and Pucca roads. Flooding of escape routes. Minor disruption of railways, overhead power lines and signalling systems. (iv) Widespread damage to standing crops, plantation, orchards, falling of green coconuts 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.

tearing of palm fronds. Blowing down bushy trees like mango.(v) Small boats, country crafts may get detached from moorings.(vi) Visibility severe affected.

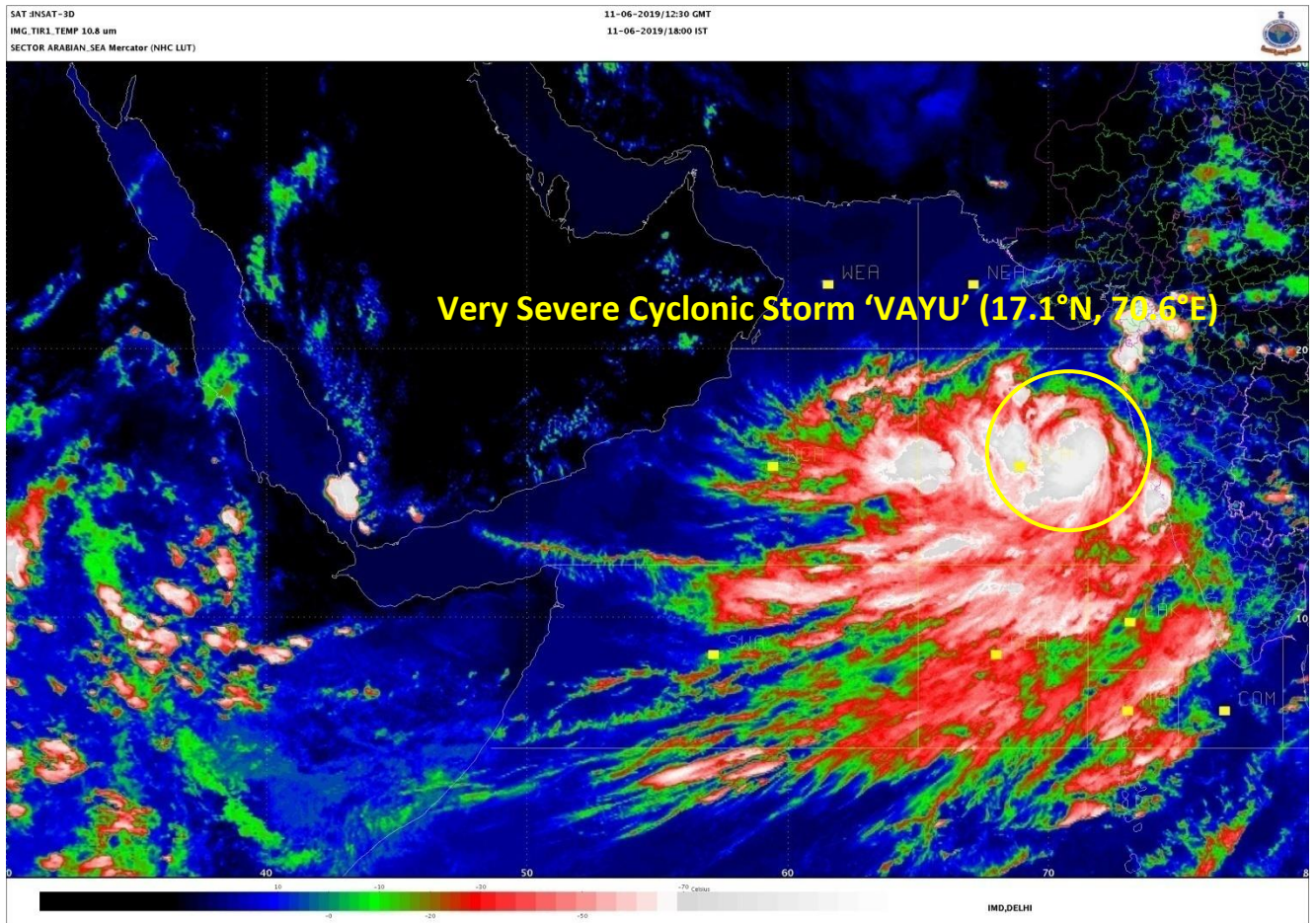
Action suggested:

(i) Regulate road & rail traffic (ii) Total suspension of fishing operations. (iii) Evacuation from low lying areas of the above mentioned Districts, coastal Hutment dwellers, urban slum dwellers and people staying in unsafe house to safer places. People in affected areas to remain indoors.(iv) Movement in motor boats & small ships unsafe.(v) Inundation of low lying areas in the along the coasts due to heavy rainfall and storm surge.

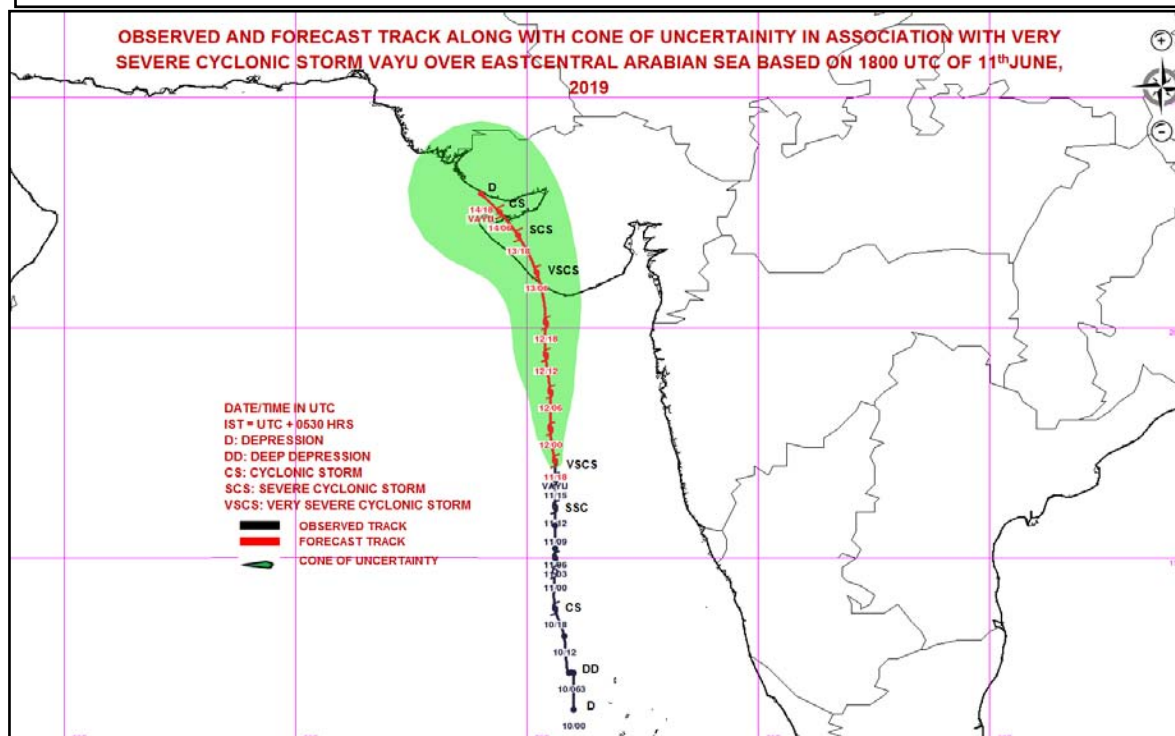
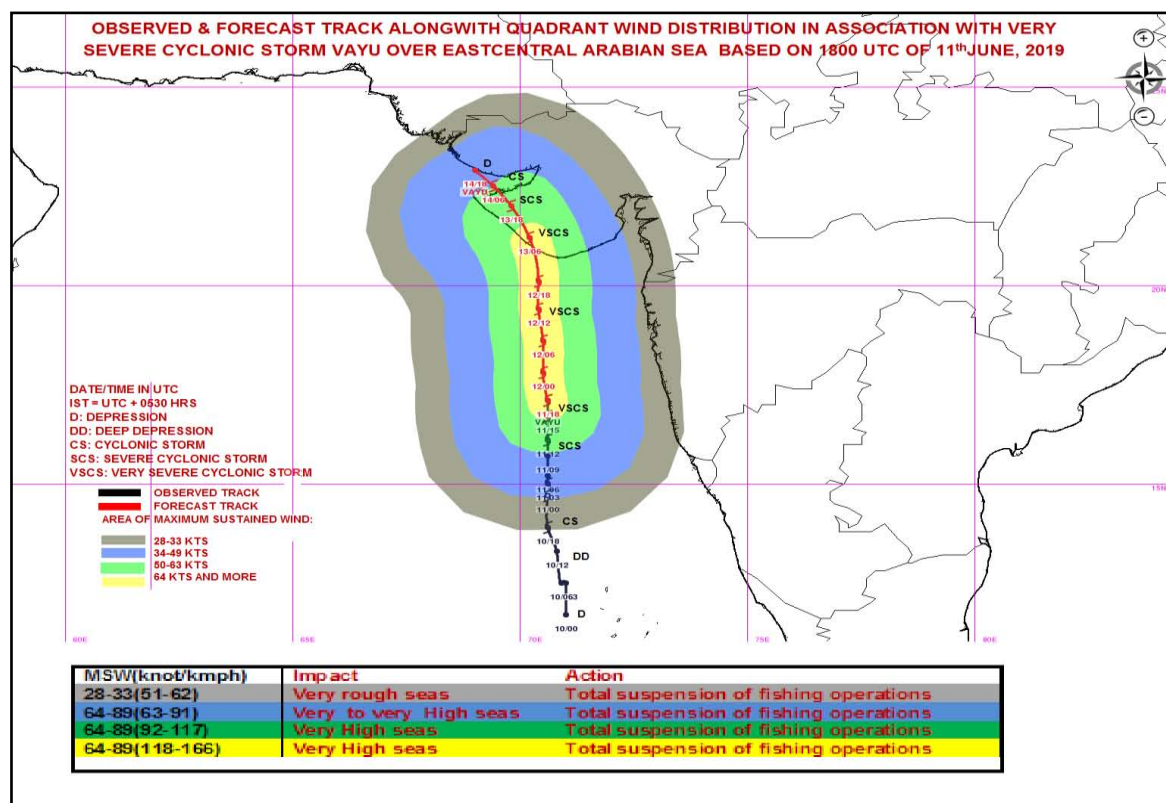
The next bulletin will be issued at 0530 hrs IST of 12th June, 2019.

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

**Copy to: CRS, Pune/ 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. : 14 (ARB/01/2019)

TIME OF ISSUE: 0530 HOURS IST

DATED: 12.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over East-central Arabian:
Cyclone Warning for Gujarat Coast: Orange Message**

The Very **Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over Eastcentral Arabian Sea moved further northwards with a speed of about 11 kmph in last six hours and lay centred at 0230 hrs IST of 12th June, 2019 near latitude 17.5°N and longitude 70.6°E over Eastcentral Arabian Sea, about 450 km west-northwest of Goa, 290 km south-southwest of Mumbai (Maharashtra) and 380 km nearly south of Veraval (Gujarat).

It is very likely to move nearly northwards and cross Gujarat coast between Porbandar and Mahuva around Veraval & Diu region as a Very Severe Cyclonic Storm with wind speed 140-150 kmph gusting to 165 kmph around morning of 13th June 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
12.06.19/0230	17.5/70.6	120-130 gusting to 145	Very Severe Cyclonic Storm
12.06.19/0530	17.8/70.5	125-135gusting to 150	Very Severe Cyclonic Storm
12.06.19/1130	18.6/70.5	130-140 gusting to 155	Very Severe Cyclonic Storm
12.06.19/1730	19.4/70.4	135-145 gusting to 160	Very Severe Cyclonic Storm
12.06.19/2330	20.1/70.4	140-150 gusting to 165	Very Severe Cyclonic Storm
13.06.19/1130	21.2/70.2	125-135 gusting to 145	Very Severe Cyclonic Storm
13.06.19/2330	22.0/69.8	95-105 gusting to 115	Severe Cyclonic Storm
14.06.19/1130	22.5/69.4	60-70 gusting to 80	Cyclonic Storm
14.06.19/2330	22.9/69.0	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) Heavy rainfall warning:

Sub-Divisions	11 June 2019*	12 June 2019*	13 June 2019*	14 June 2019*
Konkan& Goa	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Rainfall at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places	Fairly widespread rainfall with heavy to very heavy falls at isolated places
South Gujarat Region	Rainfall at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **12th June:** Wind speed is very likely to become gale wind speed reaching **120-130 kmph gusting to 145 kmph** over eastcentral & adjoining northeast Arabian Sea by 12th. It is very likely to be 60-70 kmph gusting to 80 kmph over Gujarat Coast from 12th morning and become gale wind speed reaching **140-150 kmph gusting to 165 kmph** by 12th night. It is very likely to be 50-60 kmph gusting to 70 kmph over Maharashtra Coast.
- **13th June:** Gale wind speed of the order of **125-135 kmph gusting to 145 kmph** very likely over north Arabian Sea & Gujarat coast in morning hours and decrease gradually thereafter. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.

(iii) Sea condition

- The sea condition is very likely to become very high to phenomenal over eastcentral & adjoining northeast Arabian Sea & Gujarat coast from 12th June and over north Arabian Sea on 13th June 2019.
- The Sea condition is very likely to very rough to high along & off Maharashtra Coast on 12th & 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into Eastcentral Arabian Sea and along & off Maharashtra Coast on 12th; northeast Arabian sea and along & off Gujarat coast on 12th & 13th.

(iv) Storm Surge Warning

Storm surge of height of about 1.5-2.0 m above the astronomical tides likely to inundate the low lying coastal areas of Kutch, Devbhoomi, Dwarka, Porbandar, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts at the time of landfall.

(v) Damage Expected and Action suggested for Kutch, Devbhoomi Dwarka, Porbandar, Rajkot, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts of Gujarat:

- (i) Total destruction of thatched houses/extensive damage to Kutcha houses. Some damage to pucca houses. Potential threat from flying objects.
- (ii) Bending/uprooting of power and communication poles.
- (iii) Major damage to Kutcha and Pucca roads. Flooding of escape routes. Minor disruption of railways, overhead power lines and signalling systems.
- (iv) Widespread damage to standing crops, plantation, orchards, falling of green coconuts 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.

tearing of palm fronds. Blowing down bushy trees like mango.(v) Small boats, country crafts may get detached from moorings.(vi) Visibility severe affected.

Action suggested:

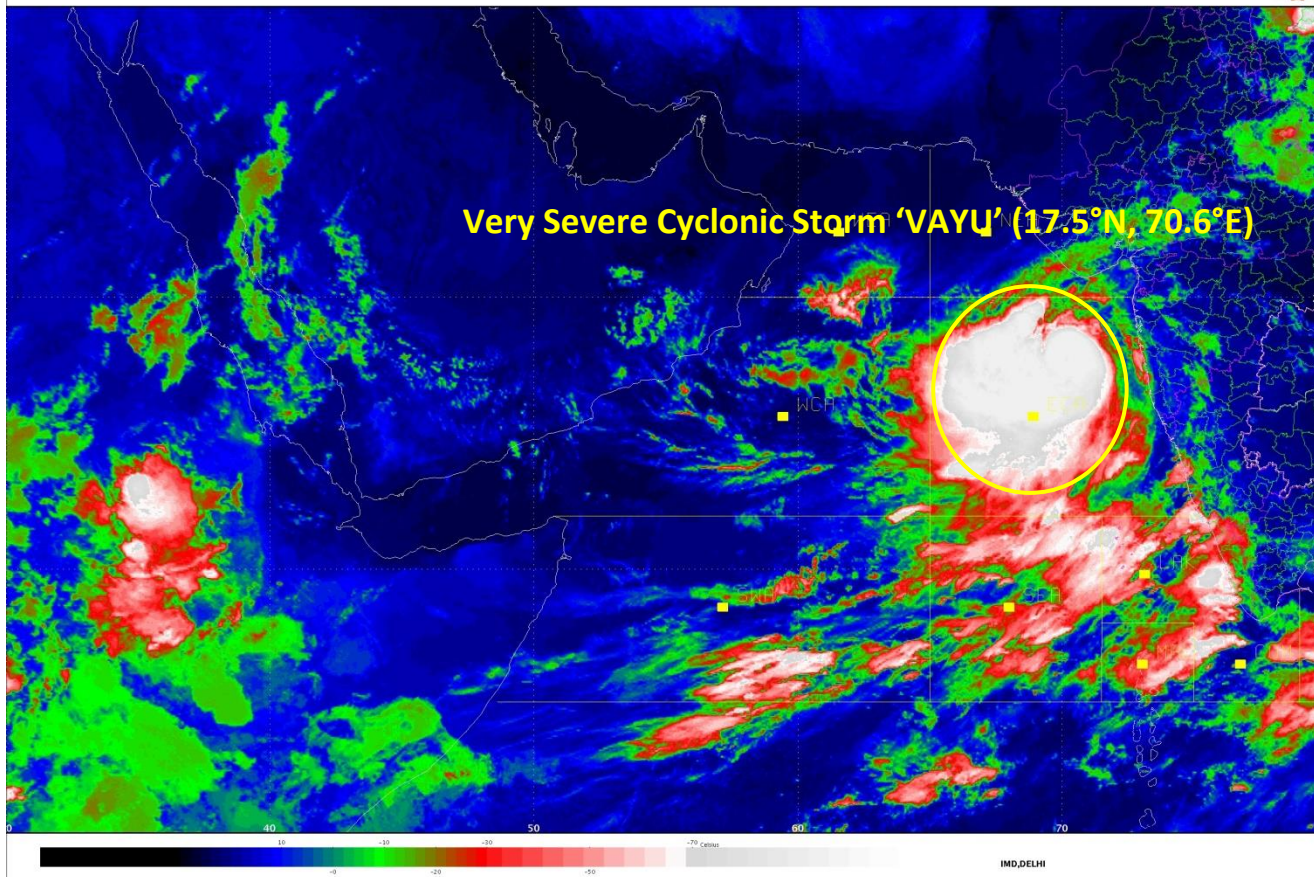
(i) Regulate road & rail traffic (ii) Total suspension of fishing operations. (iii) Evacuation from low lying areas of the above mentioned Districts, coastal Hutment dwellers, urban slum dwellers and people staying in unsafe house to safer places. People in affected areas to remain indoors.(iv) Movement in motor boats & small ships unsafe.(v) Inundation of low lying areas in the along the coasts due to heavy rainfall and storm surge.

The next bulletin will be issued at 0830 hrs IST of 12th June, 2019.

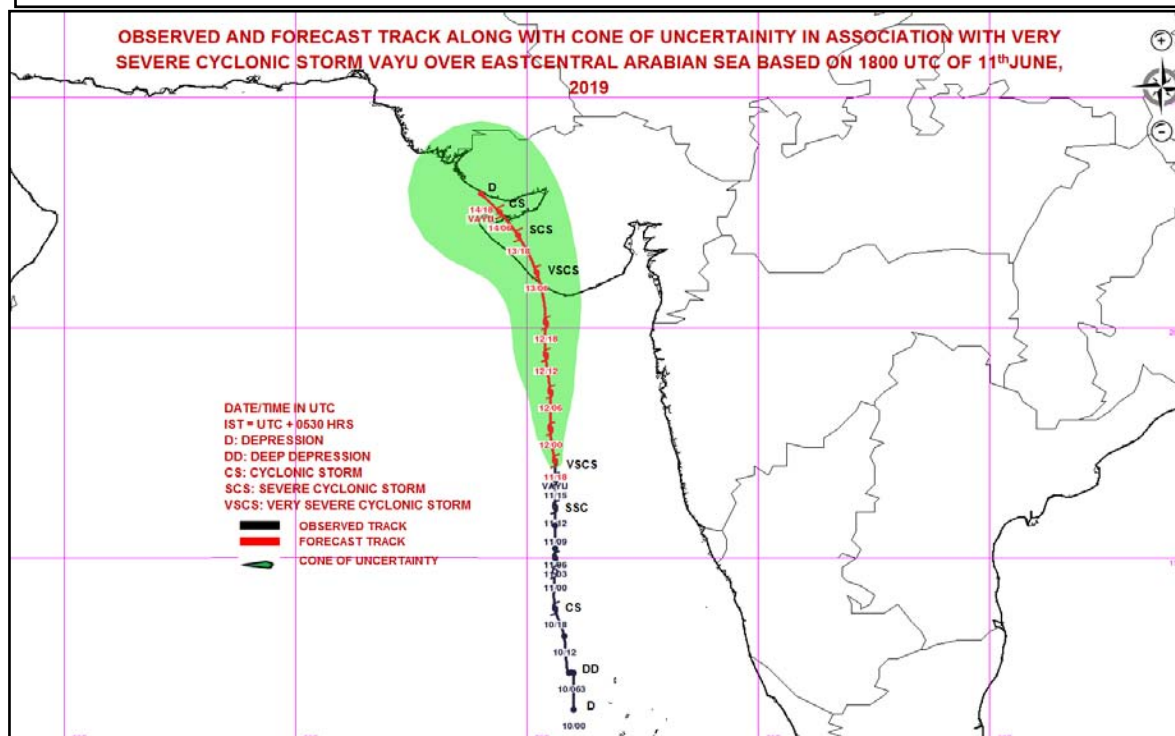
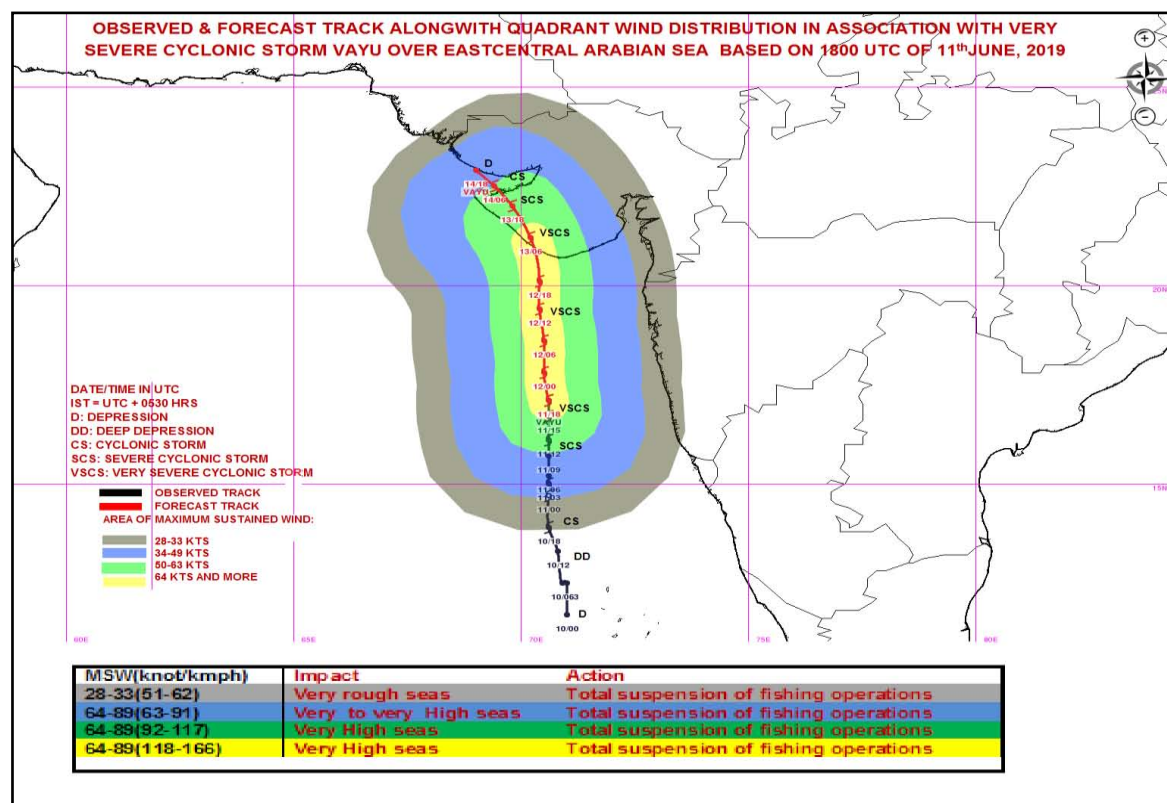
(D.R. Pattanaik)
Scientist-E, RSMC, New Delhi

**Copy to: CRS, Pune/ 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. : 15 (ARB/01/2019)

TIME OF ISSUE: 0830 HOURS IST

DATED: 12.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over East-central Arabian:
Cyclone Warning for Gujarat Coast: Orange Message**

The Very **Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over Eastcentral Arabian Sea moved nearly northwards with a speed of about 13 kmph in last six hours and lay centred at 0530 hrs IST of 12th June, 2019 near latitude 17.8°N and longitude 70.5°E over Eastcentral Arabian Sea, about 470 km west-northwest of Goa, 280 km south-southwest of Mumbai (Maharashtra) and 340 km nearly south of Veraval (Gujarat).

It is very likely to move nearly northwards and cross Gujarat coast between Porbandar and Mahuva around Veraval & Diu region as a Very Severe Cyclonic Storm with wind speed 145-155 kmph gusting to 170 kmph around morning of 13th June 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
12.06.19/0530	17.8/70.5	135-145 gusting to 160	Very Severe Cyclonic Storm
12.06.19/1130	18.6/70.5	135-145 gusting to 160	Very Severe Cyclonic Storm
12.06.19/1730	19.4/70.4	140-150 gusting to 165	Very Severe Cyclonic Storm
12.06.19/2330	20.1/70.4	145-155 gusting to 170	Very Severe Cyclonic Storm
13.06.19/0530	20.7/.70.3	145-155 gusting to 170	Very Severe Cyclonic Storm
13.06.19/1730	21.6/70.0	115-125 gusting to 135	Severe Cyclonic Storm
14.06.19/0530	22.2/69.6	85-95 gusting to 105	Severe Cyclonic Storm
14.06.19/1730	22.7/69.2	60-70 gusting 80	Cyclonic Storm
15.06.19/0530	23.1/68.8	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) Heavy rainfall warning:

Sub-Divisions	12 June 2019*	13 June 2019*	14 June 2019*
Konkan & Goa	Widespread rainfall with heavy to very heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places	Fairly widespread rainfall with heavy to very heavy falls at isolated places
South Gujarat Region	Fairly widespread rainfall with heavy falls at isolated places	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **12th June:** Wind speed is very likely to become gale wind speed reaching **135-145 kmph gusting to 160 kmph** over eastcentral & adjoining northeast Arabian Sea by 12th June. It is very likely to be 60-70 kmph gusting to 80 kmph over Gujarat Coast from 12th morning and become gale wind speed reaching **145-155 kmph gusting to 170 kmph** by 12th night. It is very likely to be 50-60 kmph gusting to 70 kmph over Maharashtra Coast.
- **13th June:** Gale wind speed of the order of **145-155 kmph gusting to 170 kmph** very likely over north Arabian Sea & Gujarat coast in morning hours and decrease gradually thereafter. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.

(iii) Sea condition

- The sea condition is very likely to become very high to phenomenal over eastcentral & adjoining northeast Arabian Sea & Gujarat coast from 12th June and over north Arabian Sea on 13th June 2019.
- The Sea condition is very likely to very rough to high along & off Maharashtra Coast on 12th & 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into Eastcentral Arabian Sea and along & off Maharashtra Coast on 12th; northeast Arabian sea and along & off Gujarat coast on 12th & 13th.

(iv) Storm Surge Warning

Storm surge of height of about 1.5-2.0 m above the astronomical tides likely to inundate the low lying coastal areas of Kutch, Devbhoomi, Dwarka, Porbandar, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts at the time of landfall.

(v) Damage Expected and Action suggested for Kutch, Devbhoomi Dwarka, Porbandar, Rajkot, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts of Gujarat:

- (i) Total destruction of thatched houses/extensive damage to Kutcha houses. Some damage to pucca houses. Potential threat from flying objects.(ii) Bending/uprooting of power and communication poles. (iii) Major damage to Kutcha and Pucca roads. Flooding of escape routes. Minor disruption of railways, overhead power lines and signalling systems.(iv) Widespread damage to standing crops, plantation, orchards, falling of green coconuts 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.

tearing of palm fronds. Blowing down bushy trees like mango.(v) Small boats, country crafts may get detached from moorings.(vi) Visibility severe affected.

Action suggested:

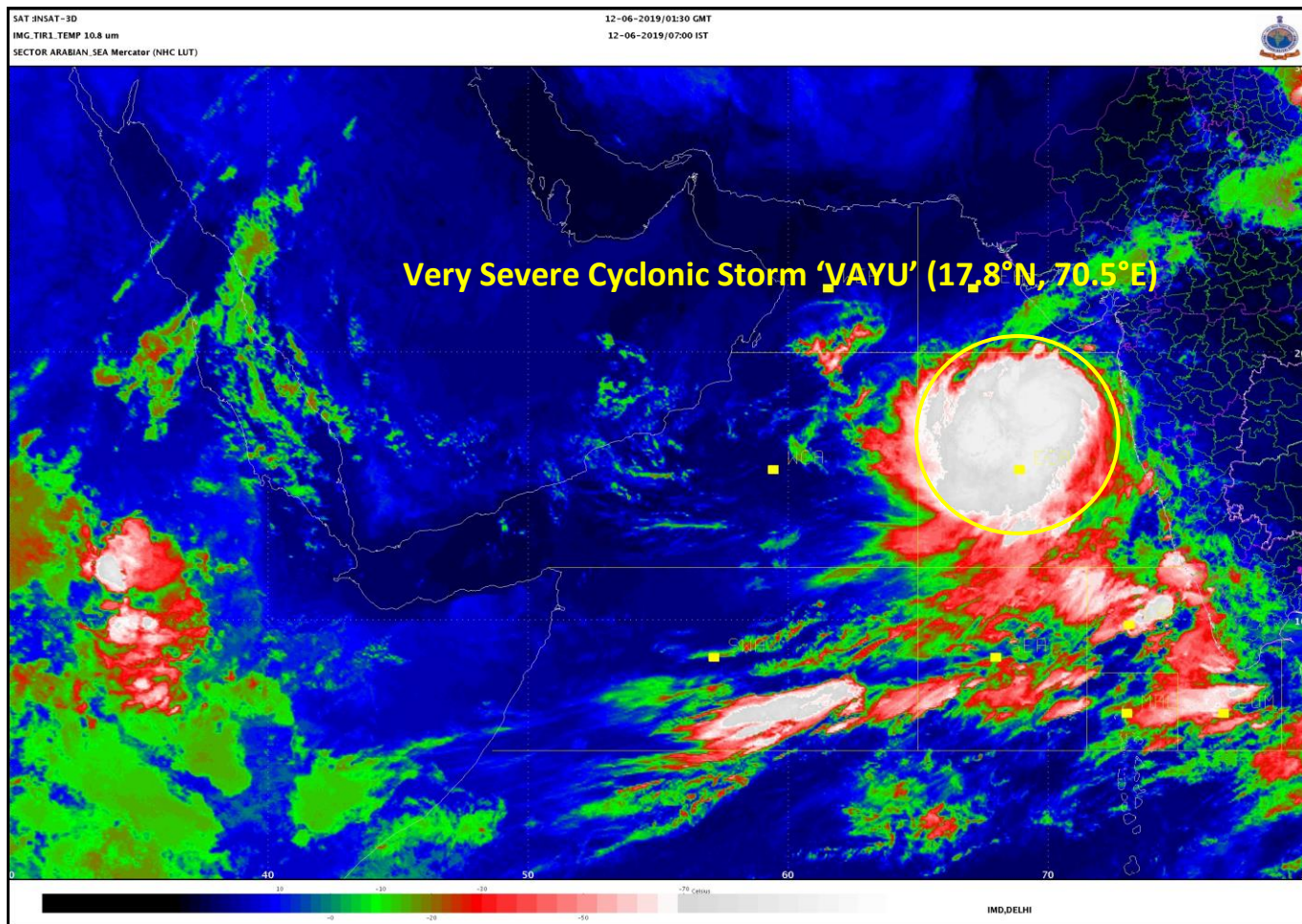
(i) Regulate road & rail traffic (ii) Total suspension of fishing operations. (iii) Evacuation from low lying areas of the above mentioned Districts, coastal Hutment dwellers, urban slum dwellers and people staying in unsafe house to safer places. People in affected areas to remain indoors.(iv) Movement in motor boats & small ships unsafe.(v) Inundation of low lying areas in the along the coasts due to heavy rainfall and storm surge.

The next bulletin will be issued at 1130 hrs IST of 12th June, 2019.

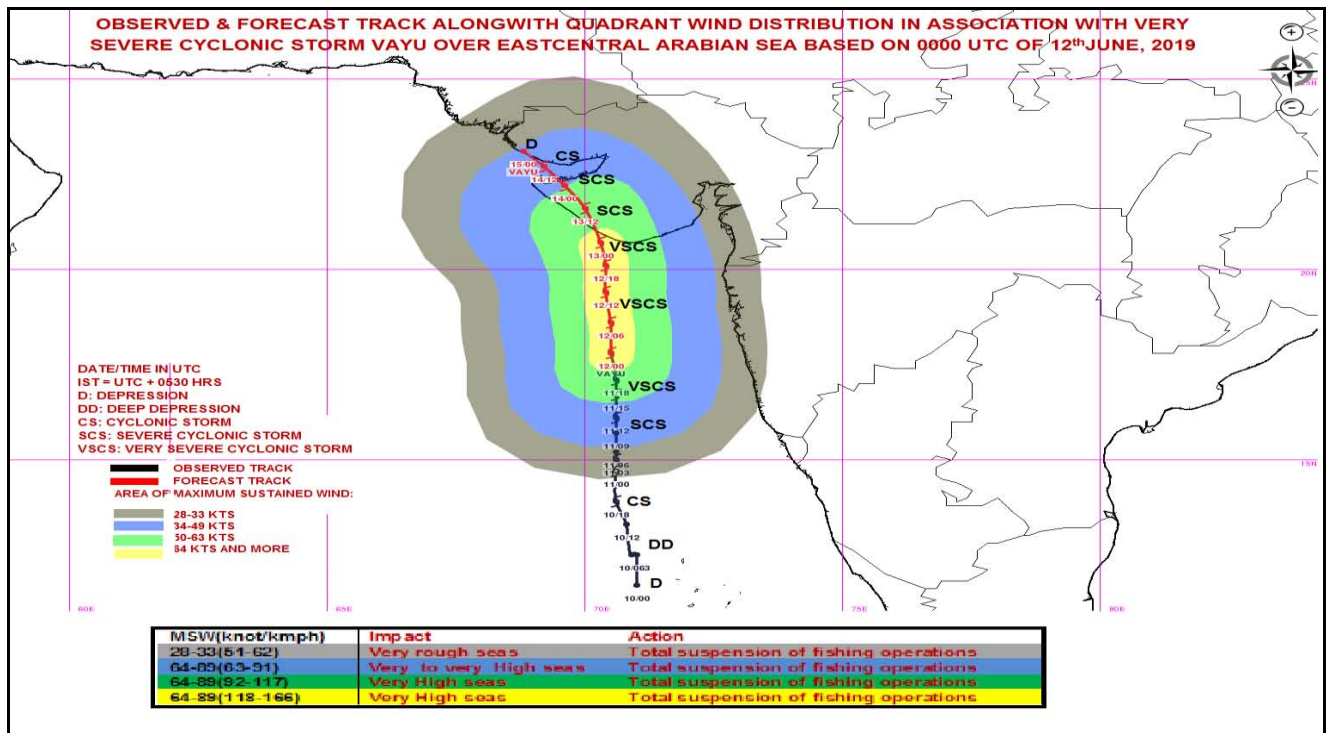
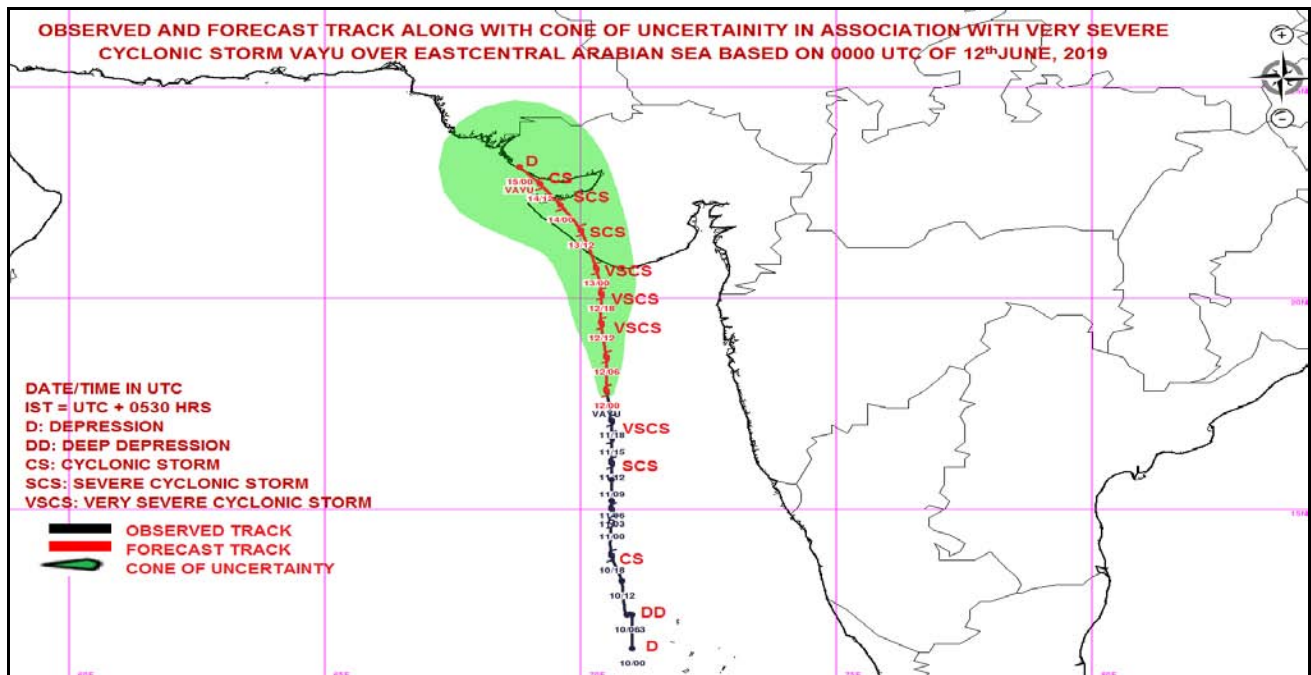
(D.R. Pattanaik)
Scientist-E, RSMC, New Delhi

**Copy to: CRS, Pune/ 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. : 16 (ARB/01/2019)

TIME OF ISSUE: 1200 HOURS IST

DATED: 12.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over East-central Arabian:
Cyclone Warning for Gujarat Coast: Orange Message**

The Very **Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over Eastcentral Arabian Sea moved north-northwestwards with a speed of about 11 kmph in last six hours and lay centred at 0830 hrs IST of 12th June, 2019 near latitude 18.0°N and longitude 70.3°E over Eastcentral Arabian Sea, about 460 km northwest of Goa, 290 km west-southwest of Mumbai (Maharashtra) and 320 km nearly south of Veraval (Gujarat).

It is very likely to move nearly northwards and cross Gujarat coast between Porbandar and Diu around west of Veraval as a Very Severe Cyclonic Storm with wind speed 145-155 kmph gusting to 170 kmph around morning of 13th June 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
12.06.19/0830	18.0/70.3	140-150 gusting to 165	Very Severe Cyclonic Storm
12.06.19/1130	18.4/70.1	140-150 gusting to 165	Very Severe Cyclonic Storm
12.06.19/1730	19.2/70.1	140-150 gusting to 165	Very Severe Cyclonic Storm
12.06.19/2330	20.0/70.0	145-155 gusting to 170	Very Severe Cyclonic Storm
13.06.19/0530	20.9/.70.0	145-155 gusting to 170	Very Severe Cyclonic Storm
13.06.19/1730	21.6/69.6	115-125 gusting to 135	Severe Cyclonic Storm
14.06.19/0530	22.1/69.6	85-95 gusting to 105	Severe Cyclonic Storm
14.06.19/1730	22.6/69.2	60-70 gusting 80	Cyclonic Storm
15.06.19/0530	23.1/68.8	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) Heavy rainfall warning:

Sub-Divisions	12 June 2019*	13 June 2019*	14 June 2019*
Konkan & Goa	Widespread rainfall with heavy to very heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places	Fairly widespread rainfall with heavy to very heavy falls at isolated places
South Gujarat Region	Fairly widespread rainfall with heavy falls at isolated places	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **12th June:** Gale wind speed reaching **140-150 kmph gusting to 165 kmph** prevails over eastcentral & adjoining northeast Arabian Sea and become **145-155 kmph gusting to 170 kmph** by 12th night. It is very likely to be 60-70 kmph gusting to 80 kmph over Gujarat Coast from 12th morning and become gale wind speed reaching **145-155 kmph gusting to 170 kmph** by 12th night. It is very likely to be 50-60 kmph gusting to 70 kmph over Maharashtra Coast.
- **13th June:** Gale wind speed of the order of **145-155 kmph gusting to 170 kmph** very likely over north Arabian Sea & Gujarat coast in morning hours and decrease gradually thereafter. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.

(iii) Sea condition

- The sea condition is phenomenal over eastcentral & adjoining northeast Arabian Sea & Gujarat coast on 12th & 13th June 2019.
- The Sea condition is very likely to very rough to high along & off Maharashtra Coast on 12th & 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into Eastcentral Arabian Sea and along & off Maharashtra Coast on 12th; north Arabian sea and along & off Gujarat coast on 12th & 13th.

(iv) Storm Surge Warning

Storm surge of height of about 1.5-2.0 m above the astronomical tides likely to inundate the low lying coastal areas of Kutch, Devbhoomi, Dwarka, Porbandar, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts at the time of landfall.

(v) Damage Expected and Action suggested for Kutch, Devbhoomi Dwarka, Porbandar, Jamnagar, Rajkot, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts of Gujarat:

- (i) Total destruction of thatched houses/extensive damage to Kutcha houses. Some damage to pucca houses. Potential threat from flying objects.(ii) Bending/uprooting of power and communication poles. (iii) Major damage to Kutcha and Pucca roads. Flooding of escape routes. Minor disruption of railways, overhead power lines and signalling systems.
- (iv) Widespread damage to standing crops, plantation, orchards, falling of green coconuts 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.

tearing of palm fronds. Blowing down bushy trees like mango.(v) Small boats, country crafts may get detached from moorings.(vi) Visibility severe affected.

Action suggested:

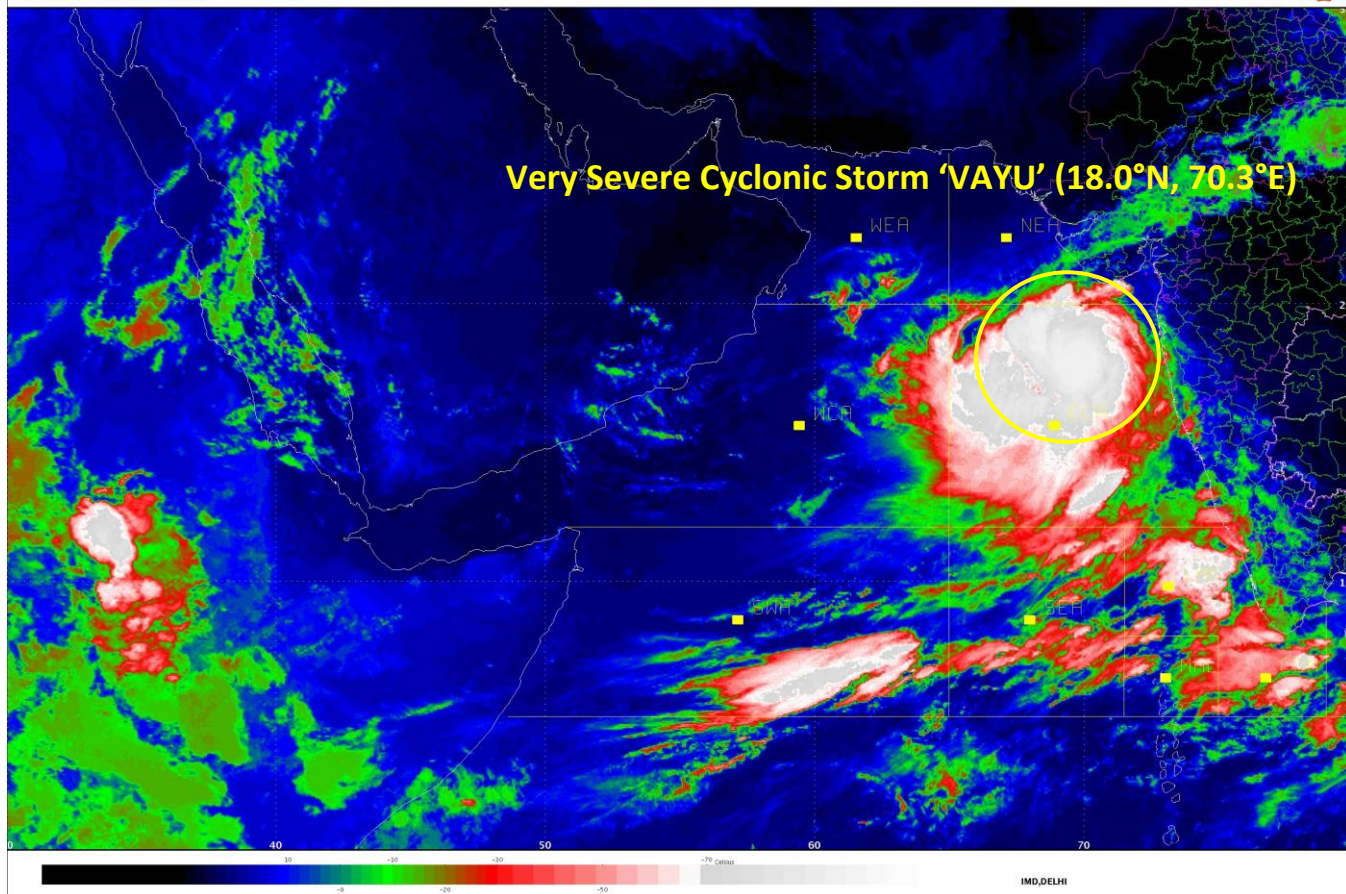
(i) Regulate road & rail traffic (ii) Total suspension of fishing operations. (iii) Evacuation from low lying areas of the above mentioned Districts, coastal Hutment dwellers, urban slum dwellers and people staying in unsafe house to safer places. People in affected areas to remain indoors.(iv) Movement in motor boats & small ships unsafe.(v) Inundation of low lying areas in the along the coasts due to heavy rainfall and storm surge.

The next bulletin will be issued at 1430 hrs IST of 12th June, 2019.

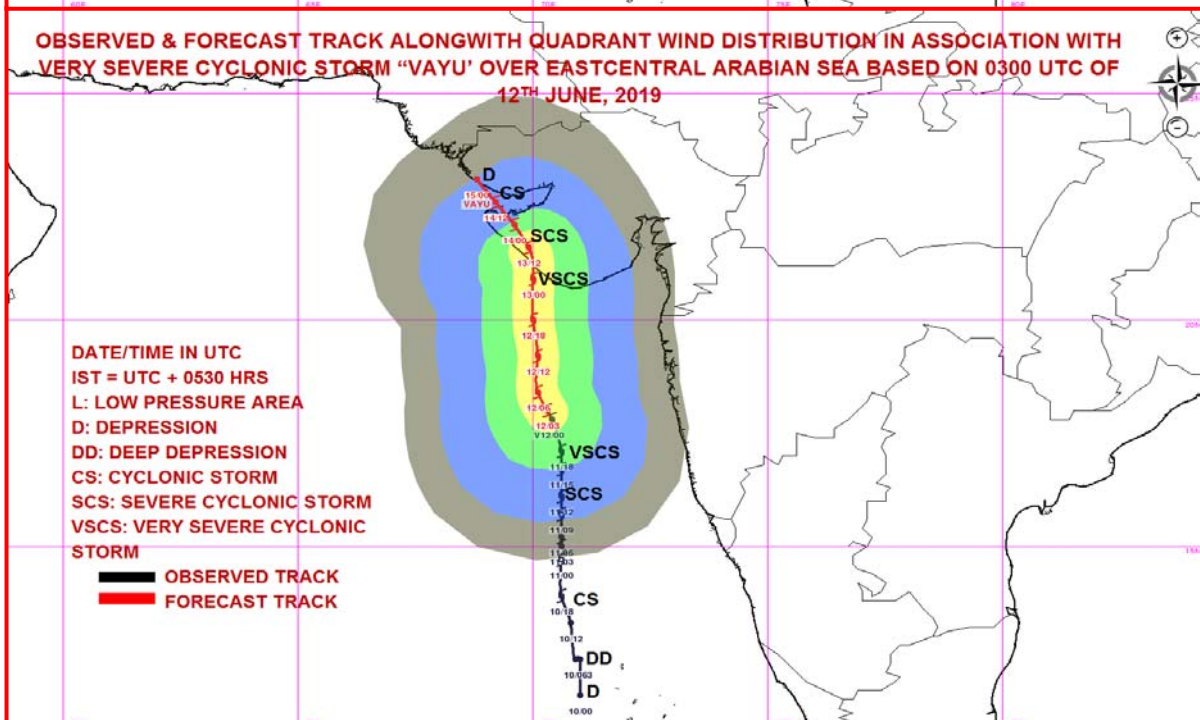
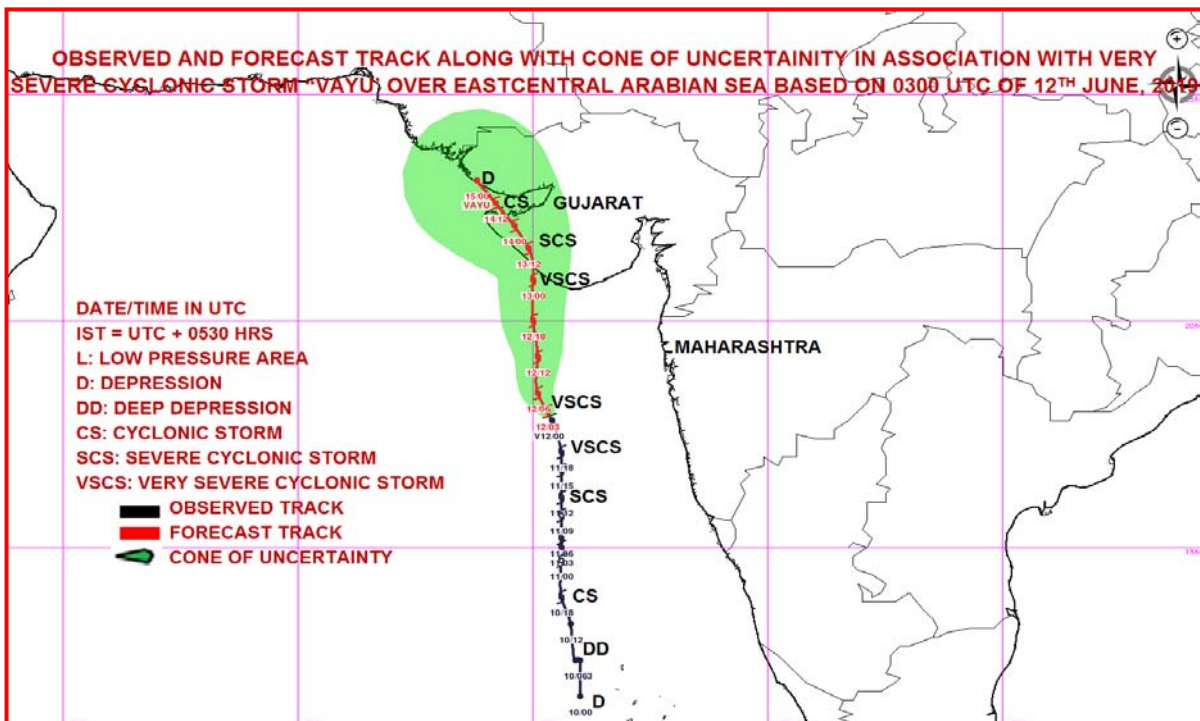
(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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.



MSW(knot)/kmph)	Impact	Action
28-33 /(51-62)	Very rough seas.	Total suspension of fishing operations
34-49/(63-91)	High to very high seas	Total suspension of fishing operations
50-63/(92-117)	Very High seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 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/01/2019)

TIME OF ISSUE: 1530 HOURS IST

DATED: 12.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

CONTROL ROOM NDMA (FAX.NO. 26701729)

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SECRETARY, MOES, (FAX NO. 24629777)

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DIRECTOR GENERAL, DOORDARSHAN (23114964)

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

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ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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

**Sub: Very Severe Cyclonic Storm 'VAYU' over East-central Arabian:
Cyclone Warning for Gujarat Coast: Orange Message**

The Very **Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over Eastcentral Arabian Sea moved northwestwards with a speed of about 14 kmph in last six hours and lay centred at 1130 hrs IST of 12th June, 2019 near latitude 18.4°N and longitude 70.0°E over Eastcentral Arabian Sea, about 310 km west-southwest of Mumbai (Maharashtra), 280 km nearly south of Veraval (Gujarat) and 360 km nearly south of Porbandar (Gujarat).

It is very likely to move nearly northwards and cross Gujarat coast between Dwarka and Veraval as a Very Severe Cyclonic Storm with wind speed 155-165 kmph gusting to 180 kmph around afternoon of 13th June 2019.

After crossing, the system is likely to move along & parallel to Saurashtra & Kutch Coast affecting Amreli, Gir Somnath, Diu, Junagarh, Porbandar, Rajkot, Jamnagar, Devbhoomi Dwarka and Kutch.

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
12.06.19/1130	18.4/70.0	140-150 gusting to 165	Very Severe Cyclonic Storm
12.06.19/1730	19.2/69.9	140-150 gusting to 165	Very Severe Cyclonic Storm
12.06.19/2330	20.0/69.8	145-155 gusting to 170	Very Severe Cyclonic Storm
13.06.19/0530	20.9/69.8	150-160 gusting to 175	Very Severe Cyclonic Storm
13.06.19/1130	21.2/69.8	155-165 gusting to 180	Very Severe Cyclonic Storm
13.06.19/2330	21.9/69.6	130-140 gusting to 155	Very Severe Cyclonic Storm
14.06.19/1130	22.3/69.3	120-130 gusting to 145	Very Severe Cyclonic Storm
14.06.19/2330	22.7/68.8	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/1130	22.9/68.3	100-110 gusting to 125	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) Heavy rainfall warning:

Sub-Divisions	12 June 2019*	13 June 2019*	14 June 2019*
Konkan & Goa	Widespread rainfall with heavy to very heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places	Fairly widespread rainfall with heavy to very heavy falls at isolated places
South Gujarat Region	Fairly widespread rainfall with heavy falls at isolated places	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **12th June:** Gale wind speed reaching **140-150 kmph gusting to 165 kmph** prevails over eastcentral & adjoining northeast Arabian Sea and become **145-155 kmph gusting to 170 kmph** by 12th night. Gale wind speed reaching 60-70 kmph gusting to 80 kmph prevails over Gujarat Coast and become gale wind speed reaching **100-110 kmph gusting to 125 kmph** by 12th night. It is very likely to be 50-60 kmph gusting to 70 kmph over Maharashtra Coast.
- **13th June:** Gale wind speed of the order of **155-165 kmph gusting to 180 kmph** very likely over north Arabian Sea & Gujarat coast till afternoon and decrease gradually thereafter. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.

(iii) Sea condition

- The sea condition is phenomenal over eastcentral & adjoining northeast Arabian Sea & Gujarat coast on 12th & 13th June 2019.
- The Sea condition is very likely to very rough to high along & off Maharashtra Coast on 12th & 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into Eastcentral Arabian Sea and along & off Maharashtra Coast on 12th; north Arabian sea and along & off Gujarat coast on 12th & 13th.

(iv) Storm Surge Warning

Storm surge of height of about 1.5-2.0 m above the astronomical tides likely to inundate the low lying coastal areas of Kutch, Devbhoomi, Dwarka, Porbandar, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts at the time of landfall.

(v) Damage Expected and Action suggested for Amreli, Gir Somnath, Diu, Junagarh, Porbandar, Rajkot, Jamnagar, Devbhoomi Dwarka and Kutch:

(i) Total destruction of thatched houses/extensive damage to Kutcha houses. Some damage to pucca houses. Potential threat from flying objects.(ii) Bending/uprooting of power and communication poles. (iii) Major damage to Kutcha and Pucca roads. Flooding of escape routes. Minor disruption of railways, overhead power lines and signalling systems.

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

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

(iv) Widespread damage to standing crops, plantation, orchards, falling of green coconuts and tearing of palm fronds. Blowing down bushy trees like mango.(v) Small boats, country crafts may get detached from moorings.(vi) Visibility severe affected.

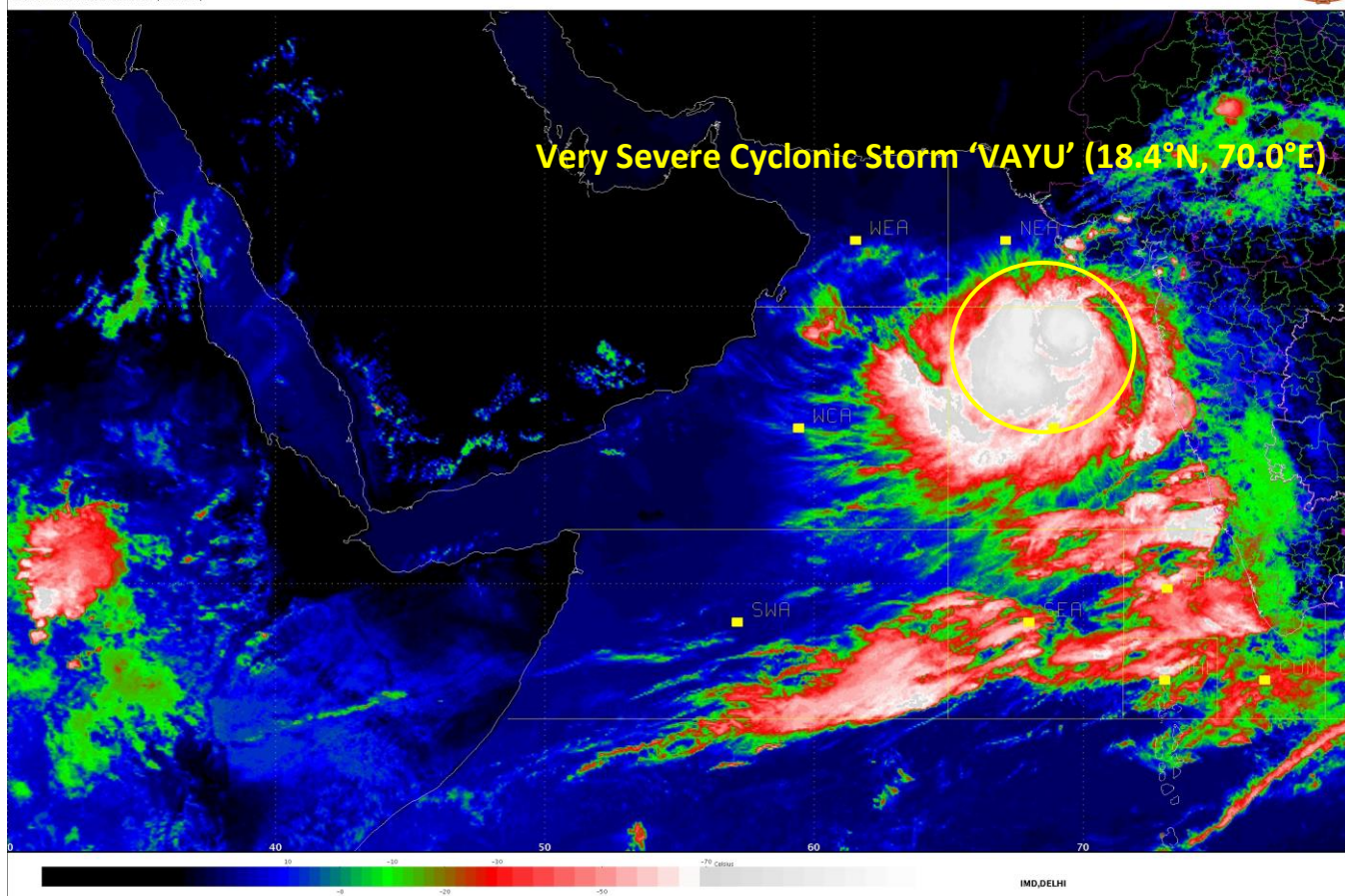
Action suggested:

(i) Regulate road & rail traffic (ii) Total suspension of fishing operations. (iii) Evacuation from low lying areas of the above mentioned Districts, coastal Hutment dwellers, urban slum dwellers and people staying in unsafe house to safer places. People in affected areas to remain indoors.(iv) Movement in motor boats & small ships unsafe.(v) Inundation of low lying areas in the along the coasts due to heavy rainfall and storm surge.

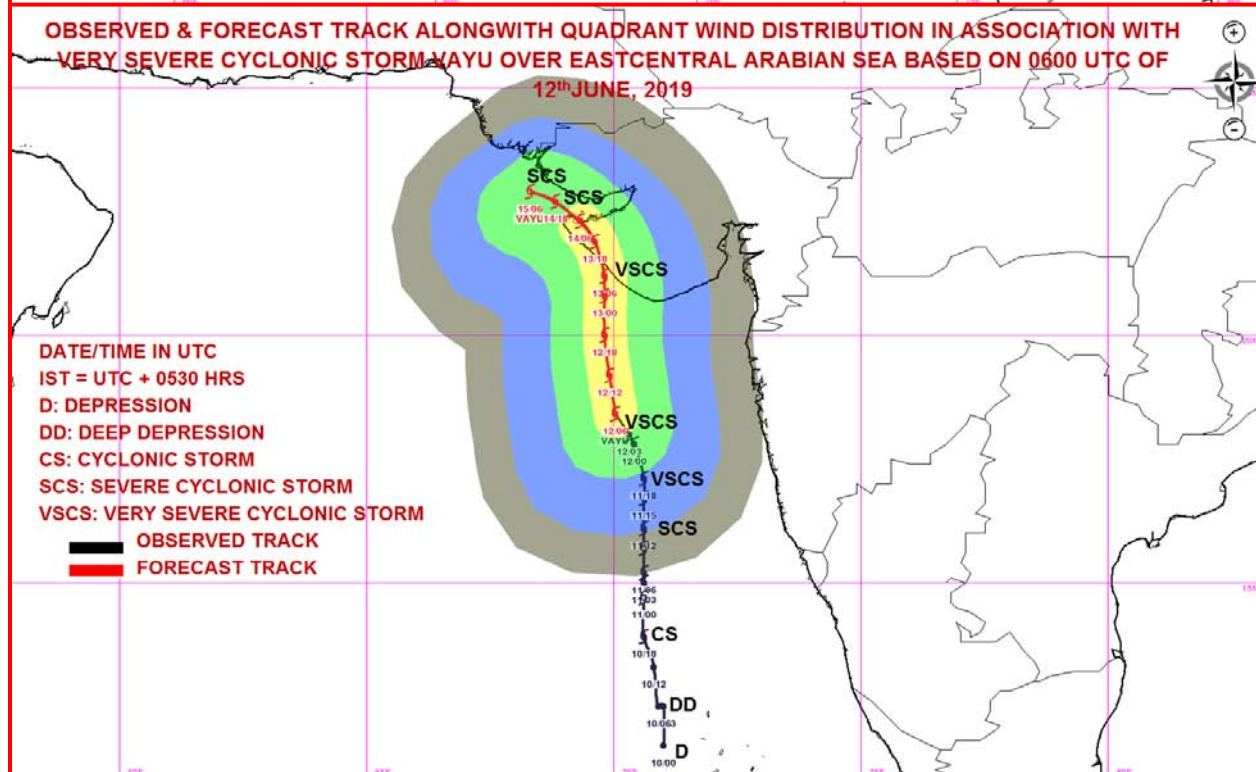
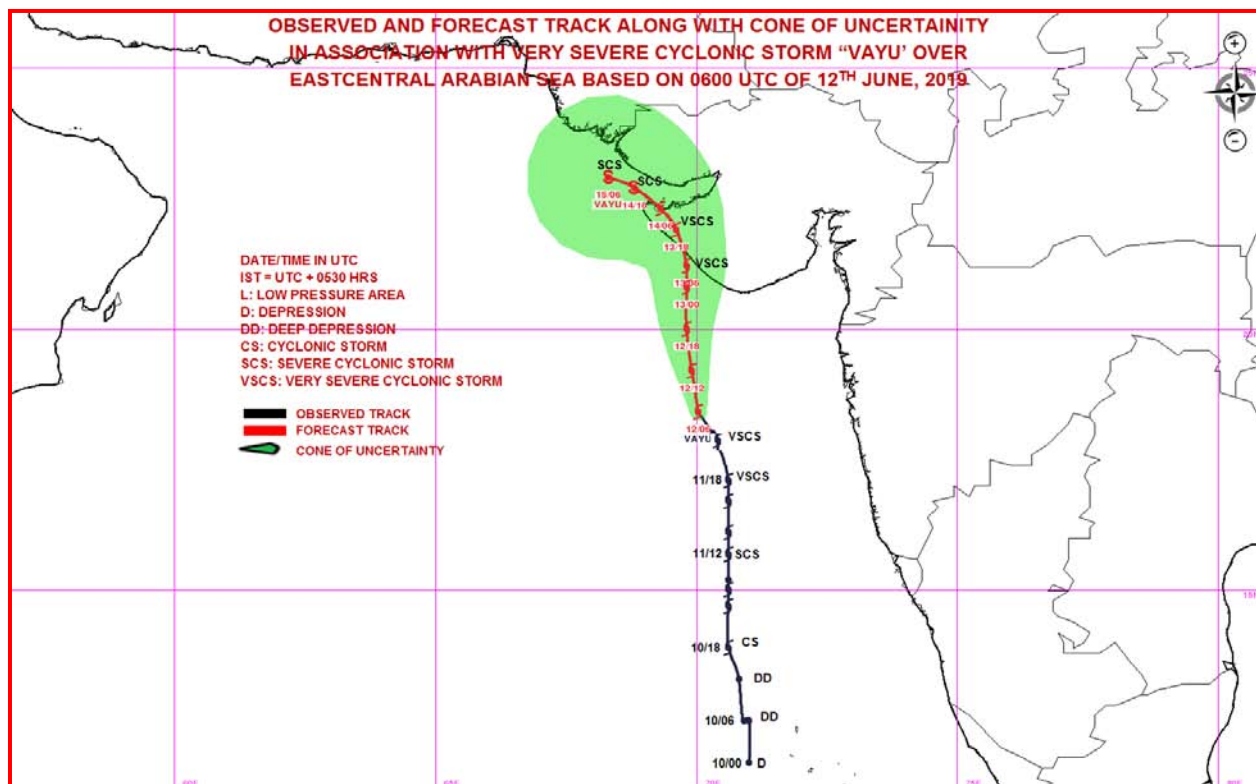
The next bulletin will be issued at 1730 hrs IST of 12th June, 2019.

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

Copy to: CRS, Pune/ 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.



MSW(knot/kmph)	Impact	Action
28-33(51-62)	Very rough seas	Total suspension of fishing operations
64-89(63-91)	Very to very High seas	Total suspension of fishing operations
64-89(92-117)	Very High seas	Total suspension of fishing operations
64-89(118-166)	Very High seas	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
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 18 (ARB/01/2019)

TIME OF ISSUE: 1700 HOURS IST

DATED: 12.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over East-central Arabian:

Cyclone Warning for Gujarat Coast: Orange Message

The Very **Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over Eastcentral Arabian Sea moved north-northwestwards with a speed of about 16 kmph in last six hours and lay centred at 1430 hrs IST of 12th June, 2019 near latitude 18.8°N and longitude 69.9°E over Eastcentral Arabian Sea, about 310 km nearly west of Mumbai (Maharashtra), 230 km south-southwest of Veraval (Gujarat) and 310 km nearly south of Porbandar (Gujarat).

It is very likely to move nearly northwards and cross Gujarat coast between Dwarka and Veraval as a Very Severe Cyclonic Storm with wind speed 155-165 kmph gusting to 180 kmph around afternoon of 13th June 2019.

After crossing, the system is likely to move along & parallel to Saurashtra & Kutch Coast affecting Amreli, Gir Somnath, Diu, Junagarh, Porbandar, Rajkot, Jamnagar, Devbhoomi Dwarka and Kutch.

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
12.06.19/1430	18.8/69.9	140-150 gusting to 165	Very Severe Cyclonic Storm
12.06.19/1730	19.2/69.9	140-150 gusting to 165	Very Severe Cyclonic Storm
12.06.19/2330	20.0/69.8	145-155 gusting to 170	Very Severe Cyclonic Storm
13.06.19/0530	20.9/69.8	150-160 gusting to 175	Very Severe Cyclonic Storm
13.06.19/1130	21.2/69.8	155-165 gusting to 180	Very Severe Cyclonic Storm
13.06.19/2330	21.9/69.6	130-140 gusting to 155	Very Severe Cyclonic Storm
14.06.19/1130	22.3/69.3	120-130 gusting to 145	Very Severe Cyclonic Storm
14.06.19/2330	22.7/68.8	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/1130	22.9/68.3	100-110 gusting to 125	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) Heavy rainfall warning:

Sub-Divisions	12 June 2019*	13 June 2019*	14 June 2019*
Konkan & Goa	Widespread rainfall with heavy to very heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places	Fairly widespread rainfall with heavy to very heavy falls at isolated places
South Gujarat Region	Fairly widespread rainfall with heavy falls at isolated places	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **12th June:** Gale wind speed reaching **140-150 kmph gusting to 165 kmph** prevails over eastcentral & adjoining northeast Arabian Sea and become **145-155 kmph gusting to 170 kmph** by 12th night. Gale wind speed reaching 60-70 kmph gusting to 80 kmph prevails over Gujarat Coast and become gale wind speed reaching **100-110 kmph gusting to 125 kmph** by 12th night. It is very likely to be 50-60 kmph gusting to 70 kmph over Maharashtra Coast.
- **13th June:** Gale wind speed of the order of **155-165 kmph gusting to 180 kmph** very likely over north Arabian Sea & Gujarat coast till afternoon and decrease gradually thereafter. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.

(iii) Sea condition

- The sea condition is phenomenal over eastcentral & adjoining northeast Arabian Sea & Gujarat coast on 12th & 13th June 2019.
- The Sea condition is very likely to very rough to high along & off Maharashtra Coast on 12th & 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into Eastcentral Arabian Sea and along & off Maharashtra Coast on 12th; north Arabian sea and along & off Gujarat coast on 12th & 13th.

(iv) Storm Surge Warning

Storm surge of height of about 1.5-2.0 m above the astronomical tides likely to inundate the low lying coastal areas of Kutch, Devbhoomi, Dwarka, Porbandar, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts at the time of landfall.

(v) Damage Expected and Action suggested for Amreli, Gir Somnath, Diu, Junagarh, Porbandar, Rajkot, Jamnagar, Devbhoomi Dwarka and Kutch:

- (i) Total destruction of thatched houses/extensive damage to Kutcha houses. Some damage to pucca houses. Potential threat from flying objects.
- (ii) Bending/uprooting of power and communication poles.
- (iii) Major damage to Kutcha and Pucca roads. Flooding of escape routes. Minor disruption of railways, overhead power lines and signalling systems.
- (iv) Widespread damage to standing crops, plantation, orchards, falling of green coconuts and tearing of palm fronds. Blowing down bushy trees like mango.
- (v) Small boats, country crafts may get detached from moorings.
- (vi) Visibility severe affected.

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

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

Action suggested:

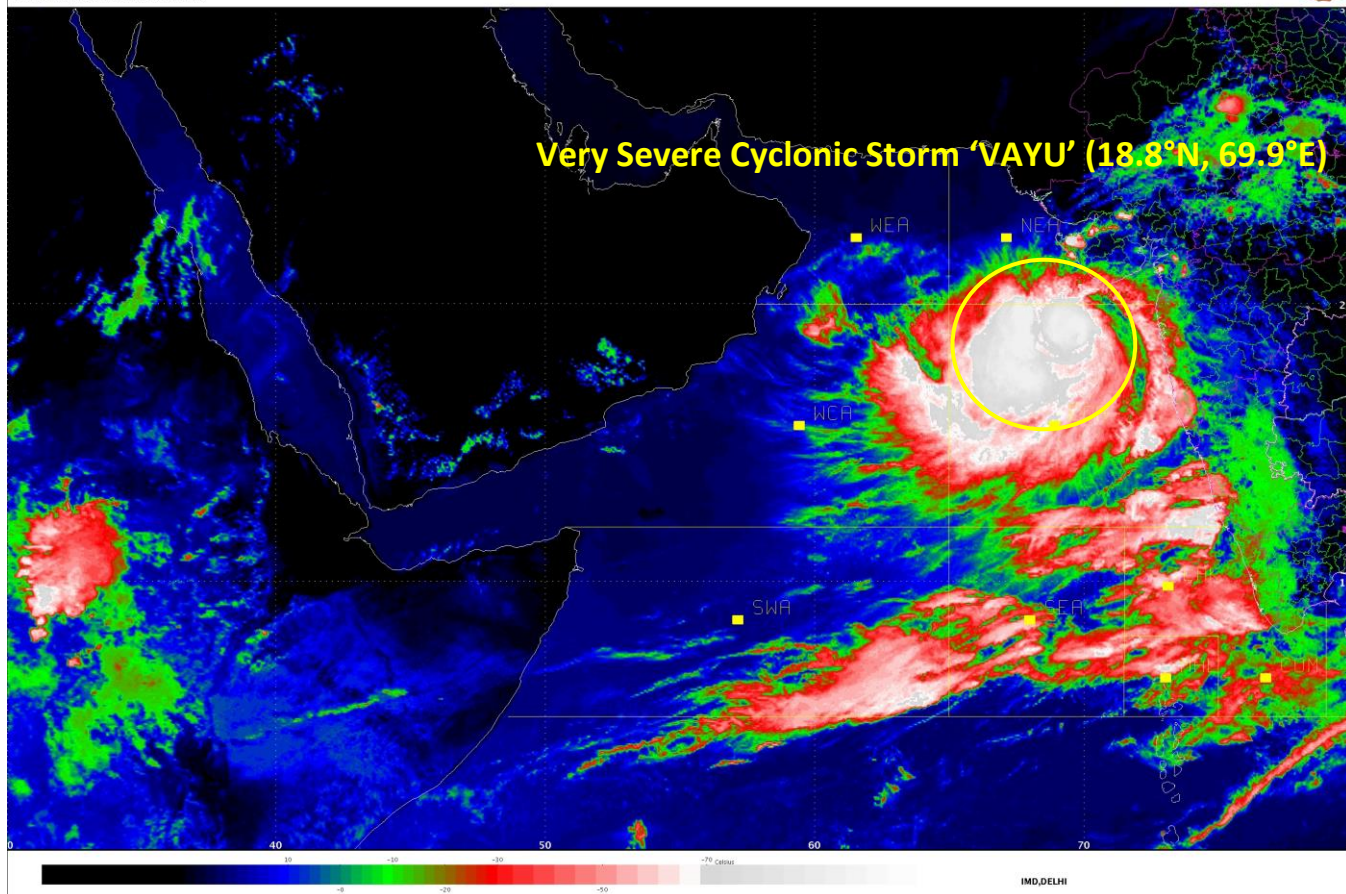
(i) Regulate road & rail traffic (ii) Total suspension of fishing operations. (iii) Evacuation from low lying areas of the above mentioned Districts, coastal Hutment dwellers, urban slum dwellers and people staying in unsafe house to safer places. People in affected areas to remain indoors.(iv) Movement in motor boats & small ships unsafe.(v) Inundation of low lying areas in the along the coasts due to heavy rainfall and storm surge.

The next bulletin will be issued at 2030 hrs IST of 12th June, 2019.

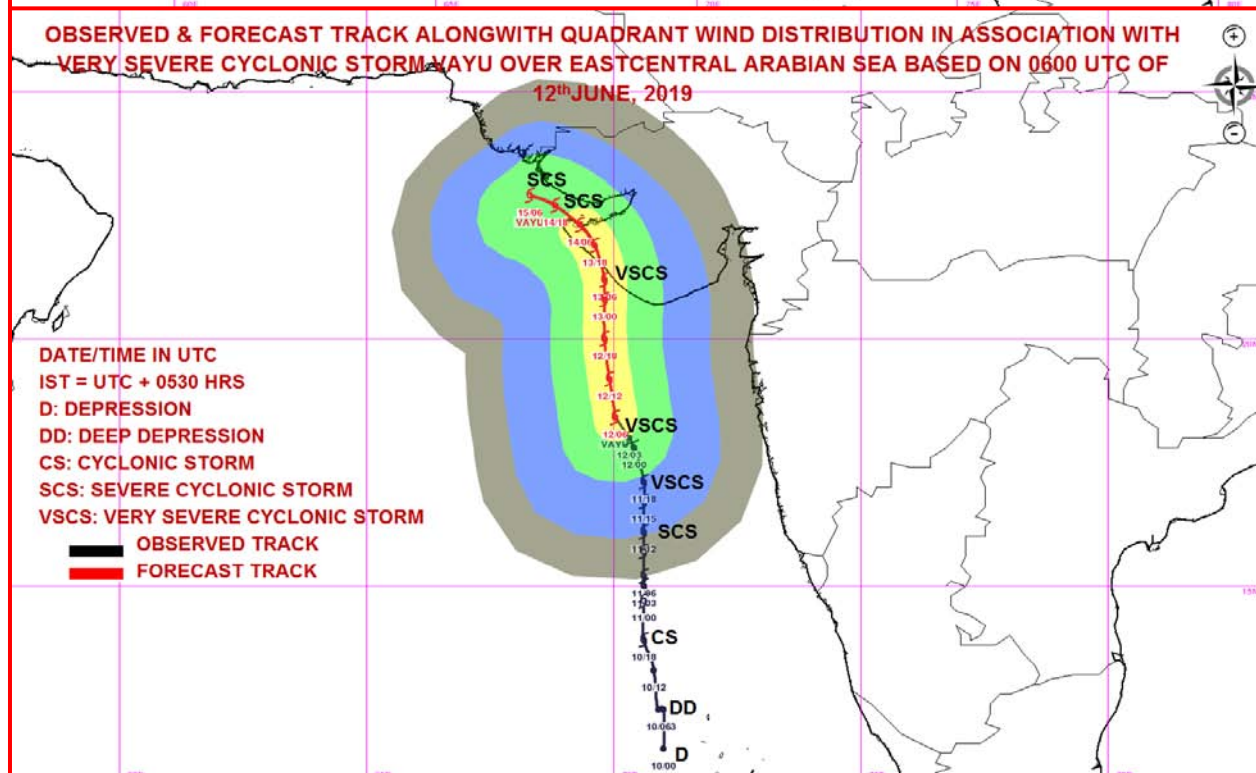
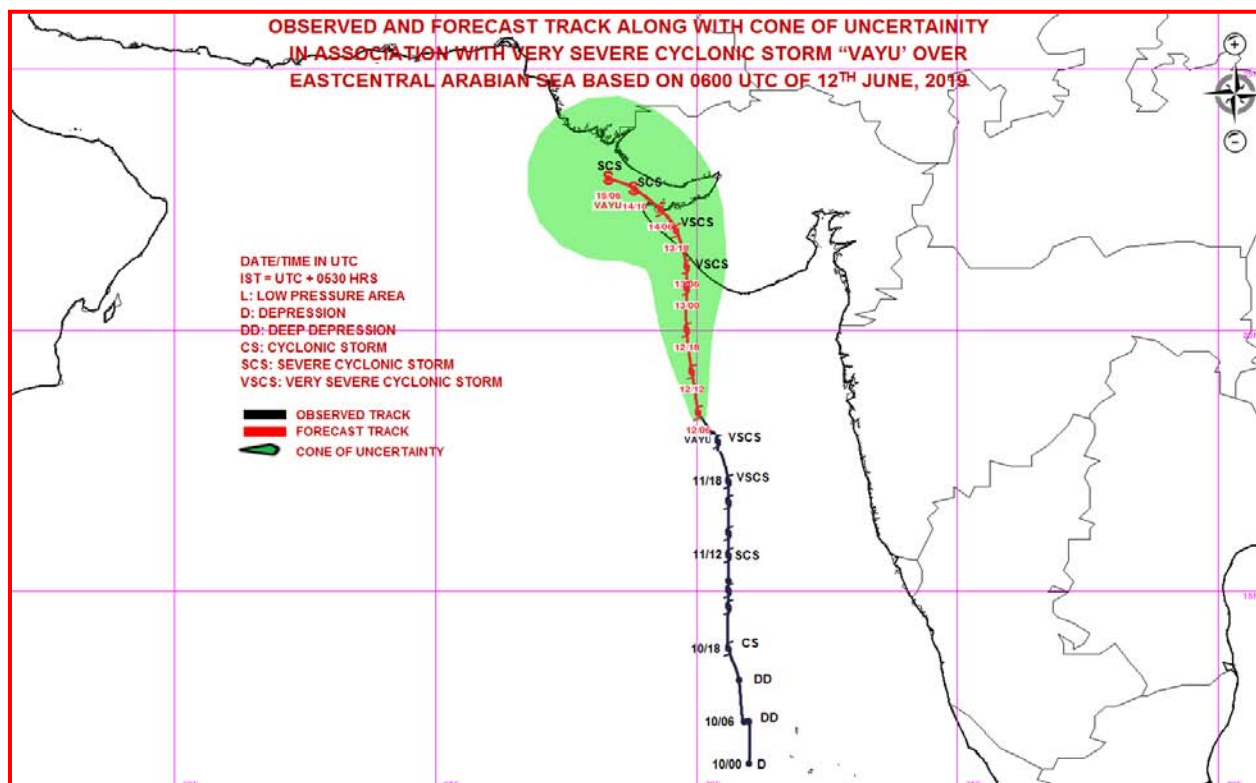
(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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.



MSW(knot/kmph)	Impact	Action
28-33(51-62)	Very rough seas	Total suspension of fishing operations
64-89(63-91)	Very to very High seas	Total suspension of fishing operations
64-89(92-117)	Very High seas	Total suspension of fishing operations
64-89(118-166)	Very High seas	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
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 19 (ARB/01/2019)

TIME OF ISSUE: 2030 HOURS IST

DATED: 12.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Eastcentral & adjoining Northeast Arabian Sea:
Cyclone Warning for Gujarat Coast: Orange Message**

The Very **Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over Eastcentral Arabian Sea moved further north-northwestwards with a speed of about 13 kmph in last six hours and lay centred at 1730 hrs IST of 12th June, 2019 near latitude 19.1°N and longitude 69.9°E over Eastcentral & adjoining Northeast Arabian Sea, about 310 km nearly west of Mumbai (Maharashtra), 200 km south-southwest of Veraval (Gujarat) and 280 km nearly south of Porbandar (Gujarat).

It is very likely to move nearly northwards and cross Gujarat coast between Dwarka and Veraval as a Very Severe Cyclonic Storm with wind speed 155-165 kmph gusting to 180 kmph around afternoon of 13th June 2019.

After crossing, the system is likely to move along & parallel to Saurashtra & Kutch Coast affecting Amreli, Gir Somnath, Diu, Junagarh, Porbandar, Rajkot, Jamnagar, Devbhoomi Dwarka and Kutch districts of Gujarat.

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
12.06.19/1730	19.1/69.9	145-155 gusting to 170	Very Severe Cyclonic Storm
12.06.19/2330	20.0/69.8	145-155 gusting to 170	Very Severe Cyclonic Storm
13.06.19/0530	20.9/69.8	150-160 gusting to 175	Very Severe Cyclonic Storm
13.06.19/1130	21.2/69.8	155-165 gusting to 180	Very Severe Cyclonic Storm
13.06.19/1730	21.6/69.7	155-165 gusting to 180	Very Severe Cyclonic Storm
14.06.19/0530	22.1/69.4	130-140 gusting to 155	Very Severe Cyclonic Storm
14.06.19/1730	22.5/69.1	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/0530	22.8/68.5	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/1730	23.1/67.9	100-110 gusting to 125	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) Heavy rainfall warning:

Sub-Divisions	12 June 2019*	13 June 2019*	14 June 2019*
Konkan & Goa	Widespread rainfall with heavy to very heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places
Gujarat Region	Fairly widespread rainfall with heavy falls at isolated places over south Gujarat Region	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **12th June:** Gale wind speed reaching **145-155 kmph gusting to 170 kmph** prevails over eastcentral & adjoining northeast Arabian Sea. Gale wind speed reaching 80-90 kmph gusting to 100 kmph prevails over Gujarat Coast and become gale wind speed reaching **100-110 kmph gusting to 125 kmph** by 12th night. It is very likely to be 50-60 kmph gusting to 70 kmph over Maharashtra Coast.
- **13th June:** Gale wind speed of the order of **155-165 kmph gusting to 180 kmph** very likely over north Arabian Sea & Gujarat coast till evening and decrease gradually thereafter. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.
- **14th June:** Gale wind speed of the order of **130-140 kmph gusting to 155 kmph** very likely over north Arabian Sea & Gujarat in morning hours and decrease gradually thereafter becoming **120-130 kmph gusting to 145 kmph**. It is very likely to be 40-50 kmph gusting to 60 kmph over northern parts of eastcentral Arabian Sea.
- **15th June:** Gale wind speed of the order of **120-130 kmph gusting to 145 kmph** very likely over north Arabian Sea & Gujarat coast till evening and decrease gradually thereafter.

(iii) Sea condition

- The sea condition is phenomenal over eastcentral & adjoining northeast Arabian Sea & Gujarat coast on 12th and over north Arabian Sea & Gujarat coast during 13th to 15th June 2019.
- The Sea condition is very likely to very rough to high along & off Maharashtra Coast and northern parts of eastcentral Arabian Sea on 12th & 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into Eastcentral Arabian Sea and along & off Maharashtra Coast on 12th & 13th; north Arabian sea and along & off Gujarat coast during 12th to 15th June, 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.

(iv) Storm Surge Warning

Storm surge of height of about 1.5-2.0 m above the astronomical tides likely to inundate the low lying coastal areas of Kutch, Devbhoomi, Dwarka, Porbandar, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts at the time of landfall.

(v) Damage Expected and Action suggested for Amreli, Gir Somnath, Diu, Junagarh, Porbandar, Rajkot, Jamnagar, Devbhoomi Dwarka and Kutch:

(i) Total destruction of thatched houses/extensive damage to Kutcha houses. Some damage to pucca houses. Potential threat from flying objects. (ii) Bending/uprooting of power and communication poles. (iii) Major damage to Kutcha and Pucca roads. Flooding of escape routes. Minor disruption of railways, overhead power lines and signalling systems. (iv) Widespread damage to standing crops, plantation, orchards, falling of green coconuts and tearing of palm fronds. Blowing down bushy trees like mango. (v) Small boats, country crafts may get detached from moorings. (vi) Visibility severe affected.

Action suggested:

(i) Regulate road & rail traffic (ii) Total suspension of fishing operations. (iii) Evacuation from low lying areas of the above mentioned Districts, coastal Hutment dwellers, urban slum dwellers and people staying in unsafe house to safer places. People in affected areas to remain indoors. (iv) Movement in motor boats & small ships unsafe. (v) Inundation of low lying areas in the along the coasts due to heavy rainfall and storm surge.

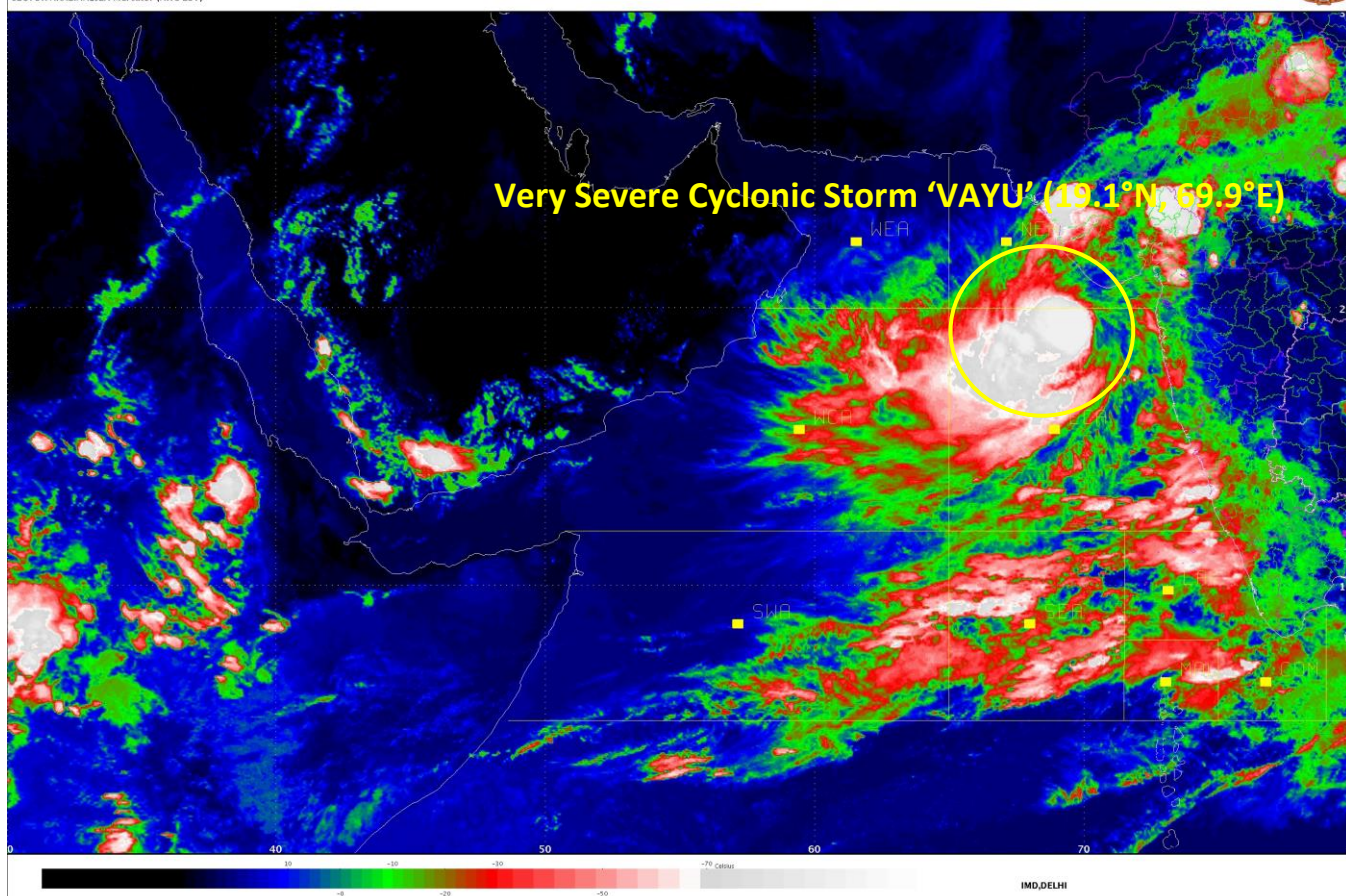
The next bulletin will be issued at 2330 hrs IST of 12th June, 2019.

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

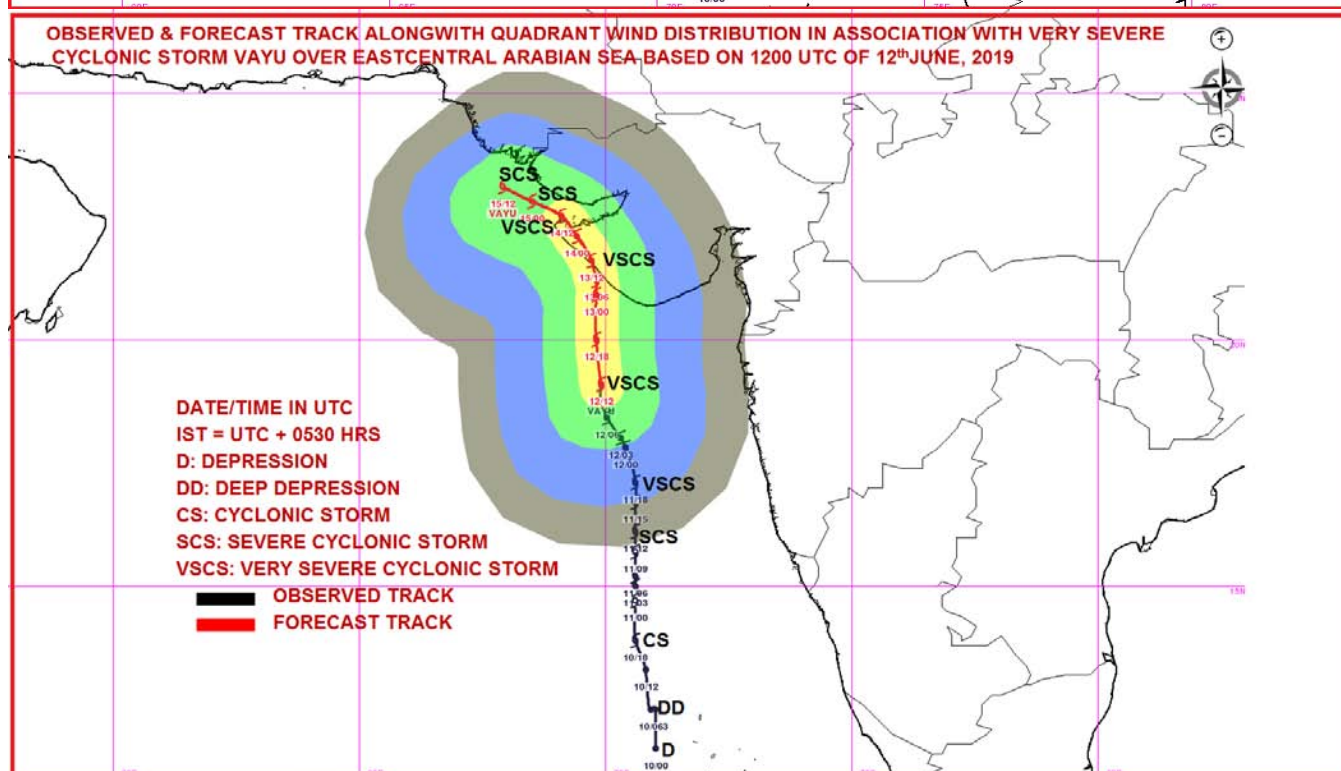
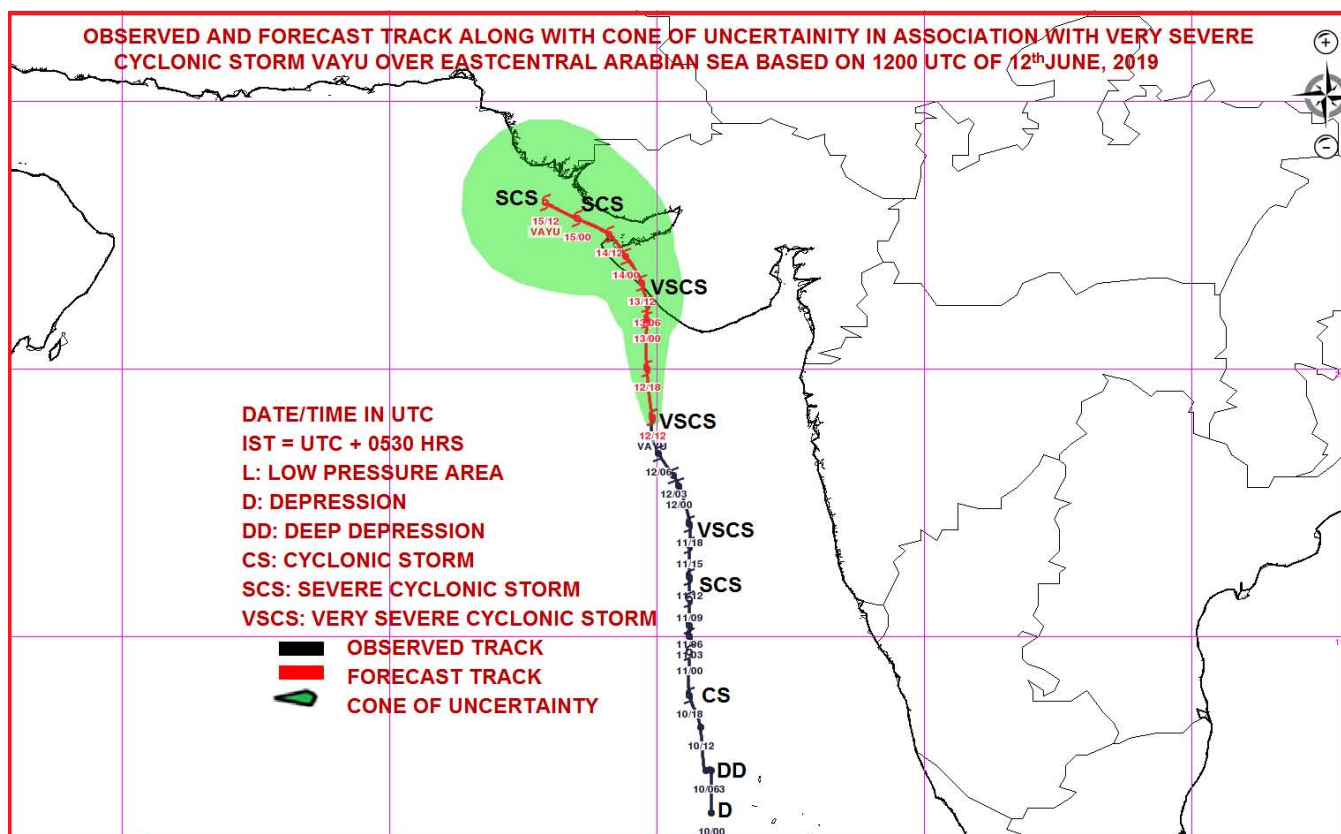
Copy to: CRS, Pune/ ACWC Chennai/ ACWC Mumbai/MC Goa/ MC Bengaluru/CWC Ahmedabad/Thiruvananthapuram.

SAT :INSAT-3D
IMG. TIR1, TEMP 10.8 um
SECTOR ARABIAN_SEA Mercator (NHC LUT)

12-06-2019/14:00 GMT
12-06-2019/19:30 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.



MSW(knot)/kmph)	Impact	Action
28-33 /(51-62)	Very rough seas.	Total suspension of fishing operations
34-49/(63-91)	High to very high seas	Total suspension of fishing operations
50-63/(92-117)	Very High seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 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/01/2019)

TIME OF ISSUE: 2230 HOURS IST

DATED: 12.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Eastcentral & adjoining Northeast Arabian Sea:
Cyclone Warning for Gujarat Coast: Orange Message**

The Very **Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over Eastcentral Arabian Sea moved further north-northwestwards with a speed of about 13 kmph in last six hours and lay centred at 2030 hrs IST of 12th June, 2019 near latitude 19.5°N and longitude 69.8°E over Eastcentral & adjoining Northeast Arabian Sea, about 320 km nearly west of Mumbai (Maharashtra), 160 km south-southwest of Veraval (Gujarat) and 240 km nearly south of Porbandar (Gujarat).

It is very likely to move nearly northwards and cross Gujarat coast between Dwarka and Veraval as a Very Severe Cyclonic Storm with wind speed 155-165 kmph gusting to 180 kmph around afternoon of 13th June 2019.

After crossing, the system is likely to move along & parallel to Saurashtra & Kutch Coast affecting Amreli, Gir Somnath, Diu, Junagarh, Porbandar, Rajkot, Jamnagar, Devbhoomi Dwarka and Kutch districts of Gujarat.

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
12.06.19/2030	19.5/69.8	145-155 gusting to 170	Very Severe Cyclonic Storm
12.06.19/2330	20.0/69.8	145-155 gusting to 170	Very Severe Cyclonic Storm
13.06.19/0530	20.9/69.8	150-160 gusting to 175	Very Severe Cyclonic Storm
13.06.19/1130	21.2/69.8	155-165 gusting to 180	Very Severe Cyclonic Storm
13.06.19/1730	21.6/69.7	155-165 gusting to 180	Very Severe Cyclonic Storm
14.06.19/0530	22.1/69.4	130-140 gusting to 155	Very Severe Cyclonic Storm
14.06.19/1730	22.5/69.1	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/0530	22.8/68.5	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/1730	23.1/67.9	100-110 gusting to 125	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) Heavy rainfall warning:

Sub-Divisions	12 June 2019*	13 June 2019*	14 June 2019*
Konkan & Goa	Widespread rainfall with heavy to very heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places
Gujarat Region	Fairly widespread rainfall with heavy falls at isolated places over south Gujarat Region	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **12th June:** Gale wind speed reaching **145-155 kmph gusting to 170 kmph** prevails over eastcentral & adjoining northeast Arabian Sea. Gale wind speed reaching 80-90 kmph gusting to 100 kmph prevails over Gujarat Coast and become gale wind speed reaching **100-110 kmph gusting to 125 kmph** by 12th night. It is very likely to be 50-60 kmph gusting to 70 kmph over Maharashtra Coast.
- **13th June:** Gale wind speed of the order of **155-165 kmph gusting to 180 kmph** very likely over north Arabian Sea & Gujarat coast till evening and decrease gradually thereafter. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.
- **14th June:** Gale wind speed of the order of **130-140 kmph gusting to 155 kmph** very likely over north Arabian Sea & Gujarat in morning hours and decrease gradually thereafter becoming **120-130 kmph gusting to 145 kmph**. It is very likely to be 40-50 kmph gusting to 60 kmph over northern parts of eastcentral Arabian Sea.
- **15th June:** Gale wind speed of the order of **120-130 kmph gusting to 145 kmph** very likely over north Arabian Sea & Gujarat coast till evening and decrease gradually thereafter.

(iii) Sea condition

- The sea condition is phenomenal over eastcentral & adjoining northeast Arabian Sea & Gujarat coast on 12th and over north Arabian Sea & Gujarat coast during 13th to 15th June 2019.
- The Sea condition is very likely to very rough to high along & off Maharashtra Coast and northern parts of eastcentral Arabian Sea on 12th & 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into Eastcentral Arabian Sea and along & off Maharashtra Coast on 12th & 13th; north Arabian sea and along & off Gujarat coast during 12th to 15th June, 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.

(iv) Storm Surge Warning

Storm surge of height of about 1.5-2.0 m above the astronomical tides likely to inundate the low lying coastal areas of Kutch, Devbhoomi, Dwarka, Porbandar, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts at the time of landfall.

(v) Damage Expected and Action suggested for Amreli, Gir Somnath, Diu, Junagarh, Porbandar, Rajkot, Jamnagar, Devbhoomi Dwarka and Kutch:

(i) Total destruction of thatched houses/extensive damage to Kutcha houses. Some damage to pucca houses. Potential threat from flying objects. (ii) Bending/uprooting of power and communication poles. (iii) Major damage to Kutcha and Pucca roads. Flooding of escape routes. Minor disruption of railways, overhead power lines and signalling systems. (iv) Widespread damage to standing crops, plantation, orchards, falling of green coconuts and tearing of palm fronds. Blowing down bushy trees like mango. (v) Small boats, country crafts may get detached from moorings. (vi) Visibility severe affected.

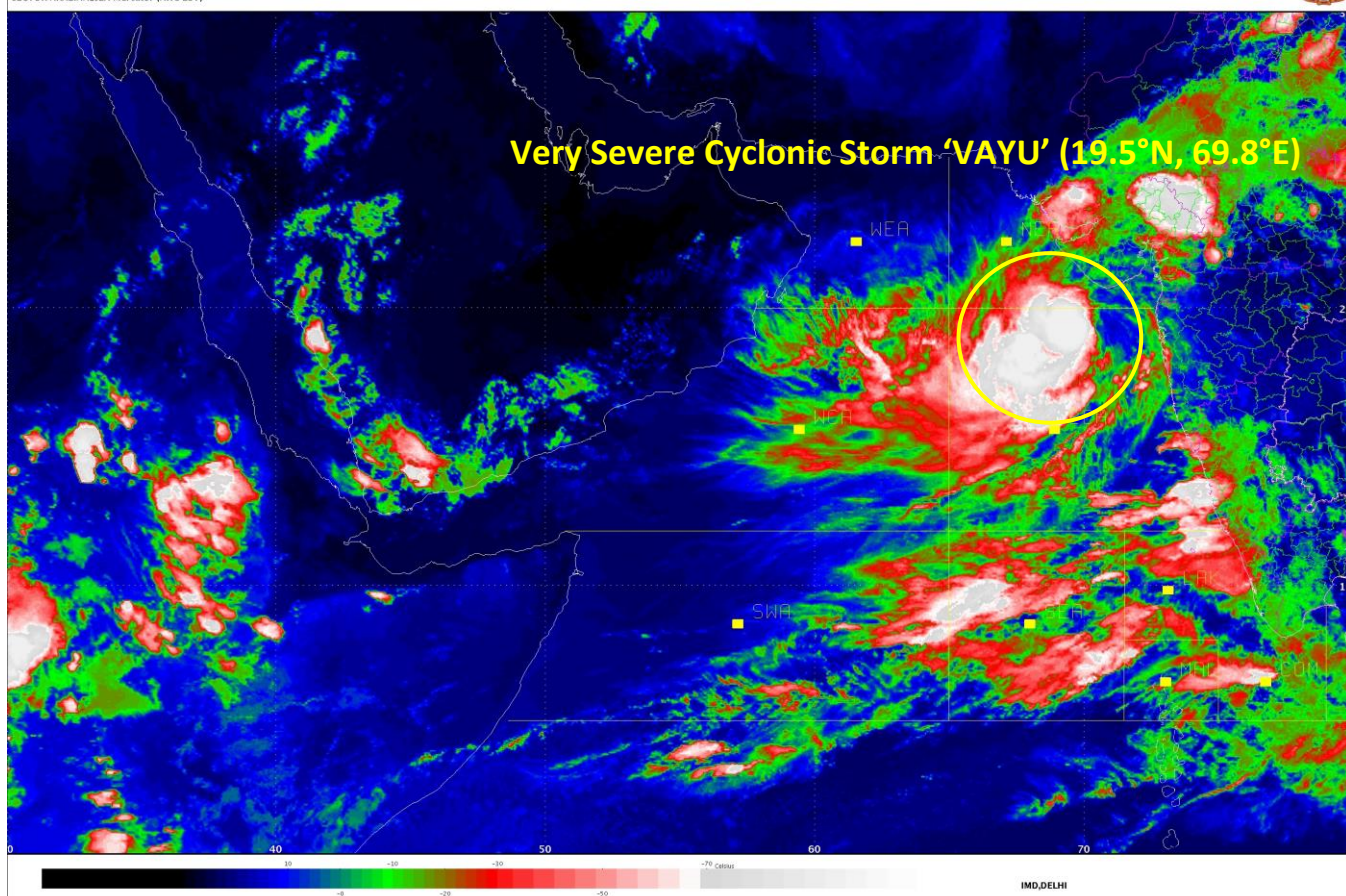
Action suggested:

(i) Regulate road & rail traffic (ii) Total suspension of fishing operations. (iii) Evacuation from low lying areas of the above mentioned Districts, coastal Hutment dwellers, urban slum dwellers and people staying in unsafe house to safer places. People in affected areas to remain indoors. (iv) Movement in motor boats & small ships unsafe. (v) Inundation of low lying areas in the along the coasts due to heavy rainfall and storm surge.

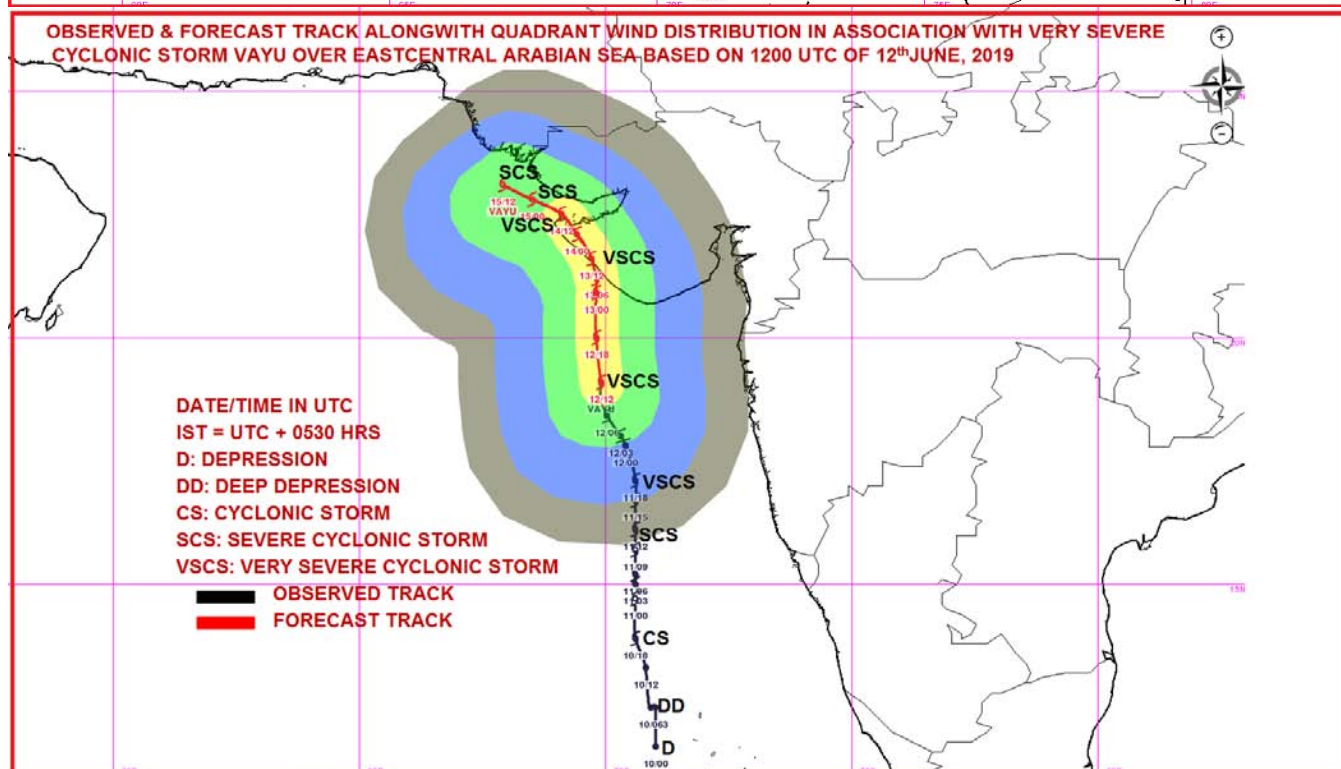
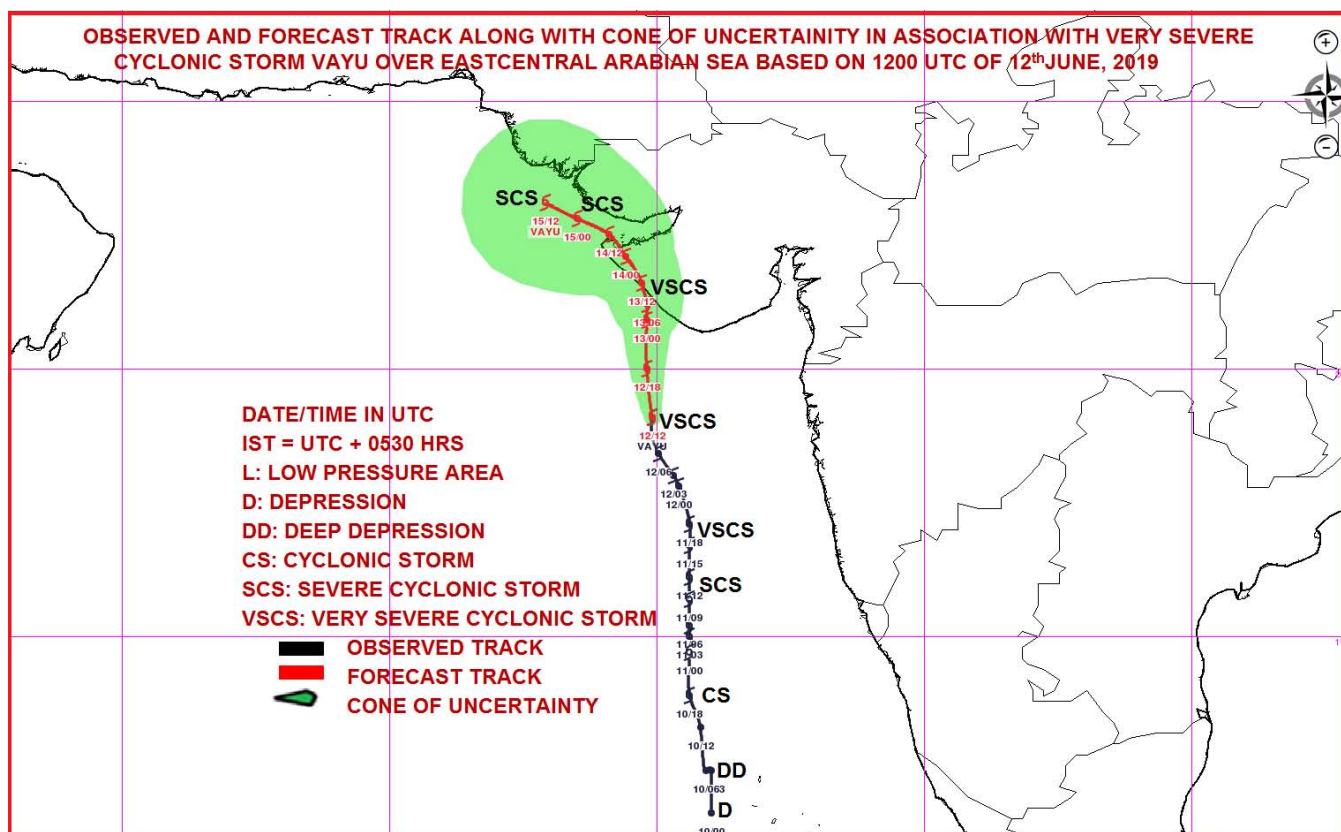
The next bulletin will be issued at 0230 hrs IST of 13th June, 2019.

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

Copy to: CRS, Pune/ 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.



MSW(knot)/kmph)	Impact	Action
28-33 /(51-62)	Very rough seas.	Total suspension of fishing operations
34-49/(63-91)	High to very high seas	Total suspension of fishing operations
50-63/(92-117)	Very High seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 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/01/2019)

TIME OF ISSUE: 0330 HOURS IST

DATED: 13.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Eastcentral & adjoining Northeast Arabian Sea:
Cyclone Warning for Gujarat Coast: Orange Message**

The Very **Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over Eastcentral Arabian Sea moved further north-northwestwards with a speed of about 12 kmph in last six hours and lay centred at 2330 hrs IST of yesterday, the 12th June, 2019 near latitude 19.7°N and longitude 69.7°E over Eastcentral & adjoining Northeast Arabian Sea, about 340 km northwest of Mumbai (Maharashtra), 150 km south-southwest of Veraval (Gujarat) and 210 km nearly south of Porbandar (Gujarat).

It is very likely to move nearly north-northwestwards along Saurashtra coast affecting Amreli, Gir Somnath, Diu, Junagarh, Porbandar, Rajkot, Jamnagar, Devbhoomi Dwarka and Kutch districts of Gujarat with wind speed 155-165 kmph gusting to 180 kmph likely from afternoon of 13th June 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
12.06.19/2330	19.7/69.7	145-155 gusting to 170	Very Severe Cyclonic Storm
13.06.19/0530	20.4/69.5	150-160 gusting to 175	Very Severe Cyclonic Storm
13.06.19/1130	20.8/69.4	155-165 gusting to 180	Very Severe Cyclonic Storm
13.06.19/1730	21.2/69.3	155-165 gusting to 180	Very Severe Cyclonic Storm
13.06.19/2330	21.5/69.1	140-150 gusting to 165	Very Severe Cyclonic Storm
14.06.19/1130	21.9/68.7	130-140 gusting to 155	Very Severe Cyclonic Storm
14.06.19/2330	22.1/68.3	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/1130	22.2/68.0	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/2330	22.2/67.8	100-110 gusting to 125	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) Heavy rainfall warning:

Sub-Divisions	12 June 2019*	13 June 2019*	14 June 2019*
Konkan & Goa	Widespread rainfall with heavy to very heavy falls at isolated places	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Fairly widespread rainfall with heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places
Gujarat Region	Fairly widespread rainfall with heavy falls at isolated places over south Gujarat Region	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **13th June:** Gale wind speed of the order of **155-165 kmph gusting to 180 kmph** very likely over north Arabian Sea & Gujarat coast till evening and decrease gradually thereafter. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.
- **14th June:** Gale wind speed of the order of **130-140 kmph gusting to 155 kmph** very likely over north Arabian Sea & Gujarat coast in morning hours and decrease gradually thereafter. It is very likely to be 40-50 kmph gusting to 60 kmph over northern parts of eastcentral Arabian Sea.
- **15th June:** Gale wind speed of the order of **110-120 kmph gusting to 135 kmph** very likely over north Arabian Sea & Gujarat coast till evening and decrease gradually thereafter.

(iii) Sea condition

- The sea condition is phenomenal over eastcentral & adjoining northeast Arabian Sea & Gujarat coast during next 12 hours and over north Arabian Sea & Gujarat coast during 13th to 15th June 2019.
- The Sea condition is very likely to very rough to high along & off Maharashtra Coast and northern parts of eastcentral Arabian Sea till 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into Eastcentral Arabian Sea and along & off Maharashtra Coast till 13th; north Arabian sea and along & off Gujarat coast during till 15th June, 2019.

(iv) Storm Surge Warning

Storm surge of height of about 1.5-2.0 m above the astronomical tides likely to inundate the low lying coastal areas of Kutch, Devbhoomi, Dwarka, Porbandar, Junagarh, Diu, Gir Somnath, Amreli and Bhavnagar districts in the afternoon of 13th June 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.

(v) Damage Expected and Action suggested for Amreli, Gir Somnath, Diu, Junagarh, Porbandar, Rajkot, Jamnagar, Devbhoomi Dwarka and Kutch:

(i) Total destruction of thatched houses/extensive damage to Kutcha houses. Some damage to pucca houses. Potential threat from flying objects.(ii) Bending/uprooting of power and communication poles. (iii) Major damage to Kutcha and Pucca roads. Flooding of escape routes. Minor disruption of railways, overhead power lines and signalling systems. (iv) Widespread damage to standing crops, plantation, orchards, falling of green coconuts and tearing of palm fronds. Blowing down bushy trees like mango.(v) Small boats, country crafts may get detached from moorings.(vi) Visibility severe affected.

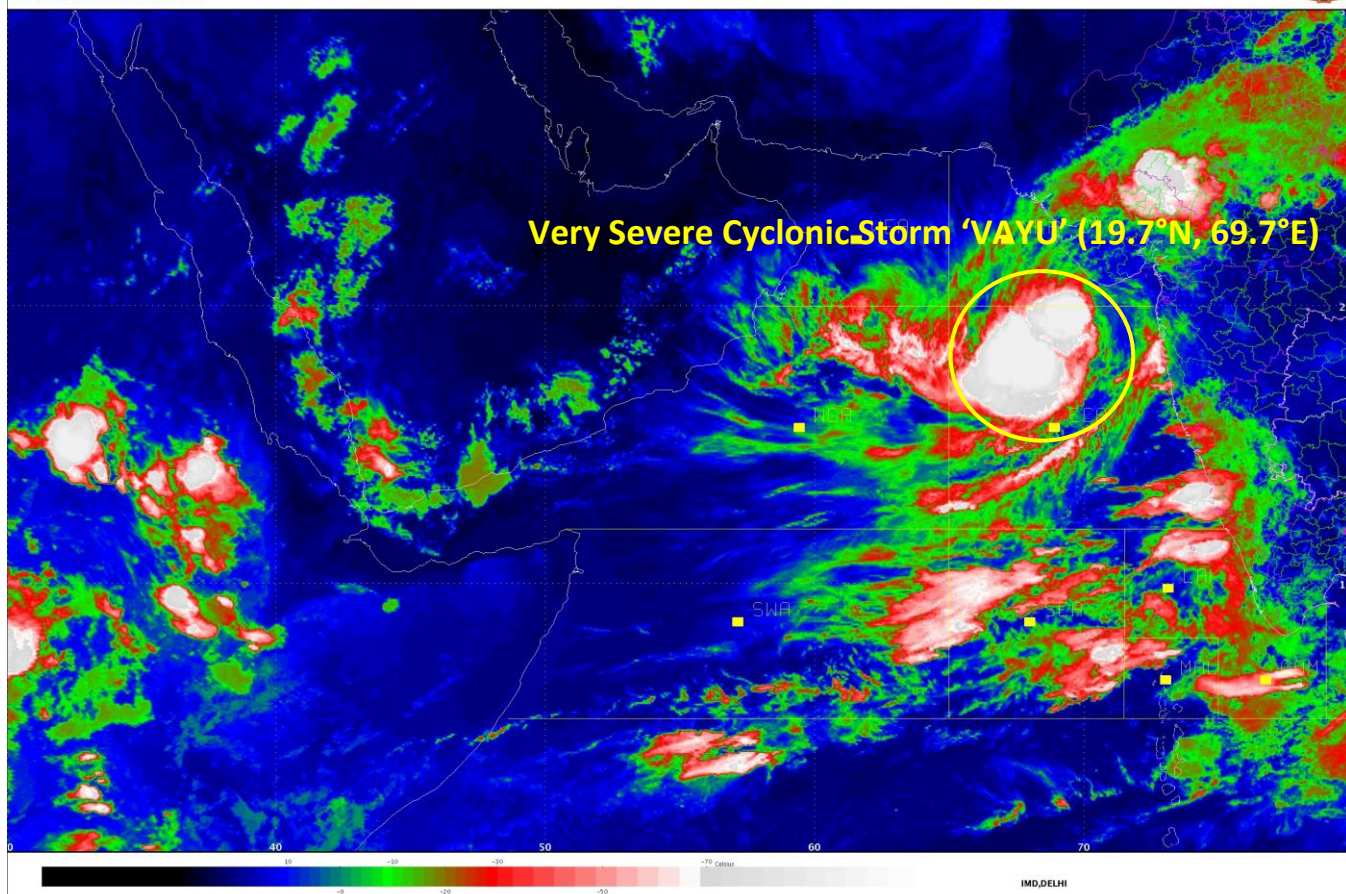
Action suggested:

(i) Regulate road & rail traffic (ii) Total suspension of fishing operations. (iii) Evacuation from low lying areas of the above mentioned Districts, coastal Hutment dwellers, urban slum dwellers and people staying in unsafe house to safer places. People in affected areas to remain indoors.(iv) Movement in motor boats & small ships unsafe.(v) Inundation of low lying areas in the along the coasts due to heavy rainfall and storm surge.

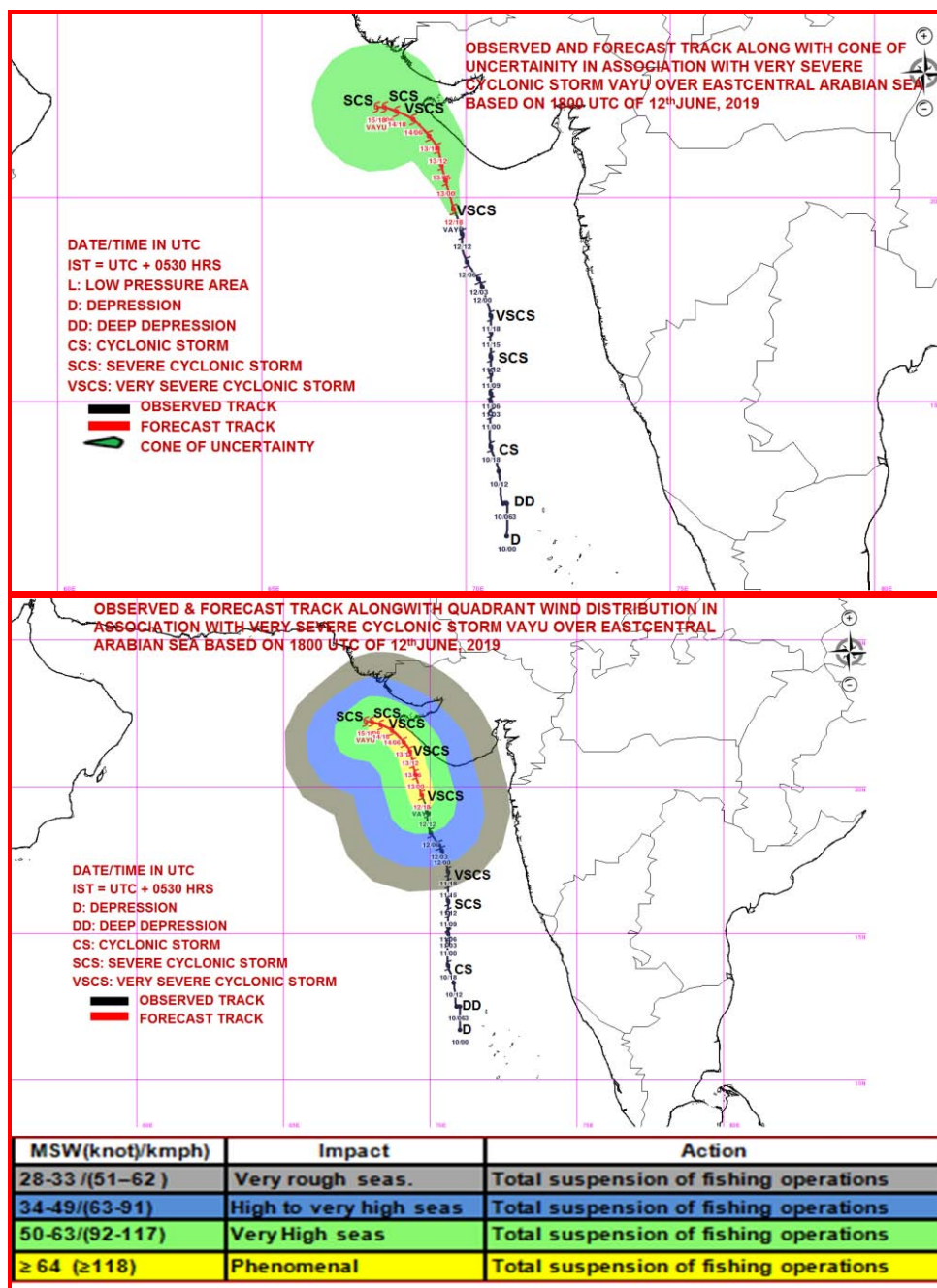
The next bulletin will be issued at 0530 hrs IST of 13th June, 2019.

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

Copy to: CRS, Pune/ 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. : 22 (ARB/01/2019)

TIME OF ISSUE: 0630 HOURS IST

DATED: 13.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Eastcentral & adjoining Northeast Arabian Sea:
Cyclone Warning for Gujarat Coast: Orange Message**

The Very **Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over Eastcentral Arabian Sea moved further north-northwestwards with a speed of about 10 kmph in last six hours and lay centred at 0230 hrs IST of today, the 13th June, 2019 near latitude 20.0°N and longitude 69.6°E over Eastcentral & adjoining Northeast Arabian Sea, about 350 km west-northwest of Mumbai (Maharashtra), 130 km southwest of Veraval (Gujarat) and 180 km nearly south of Porbandar (Gujarat).

It is very likely to move north-northwestwards for some time and then northwestwards skirting the Saurashtra coast affecting Gir Somnath, Diu, Junagarh, Porbandar and Devbhoomi Dwarka with wind speed 135-145 kmph gusting to 160 kmph from afternoon of 13th June 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
13.06.19/0230	20.0/69.6	135-145 gusting to 160	Very Severe Cyclonic Storm
13.06.19/0530	20.4/69.6	135-145 gusting to 160	Very Severe Cyclonic Storm
13.06.19/1130	20.8/69.5	135-145 gusting to 160	Very Severe Cyclonic Storm
13.06.19/1730	21.2/69.4	135-145 gusting to 160	Very Severe Cyclonic Storm
13.06.19/2330	21.5/69.2	130-140 gusting to 155	Very Severe Cyclonic Storm
14.06.19/1130	21.9/68.8	120-130 gusting to 145	Very Severe Cyclonic Storm
14.06.19/2330	22.1/68.4	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/1130	22.2/68.0	100-110 gusting to 125	Severe Cyclonic Storm
15.06.19/2330	22.2/67.8	90-100 gusting to 115	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) Heavy rainfall warning:

Sub-Divisions	13 June 2019*	14 June 2019*
Konkan & Goa	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places
Gujarat Region	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **13th June:** Gale wind speed of the order of **135-145 kmph gusting to 160 kmph** very likely over north Arabian Sea & Gujarat coast. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.
- **14th June:** Gale wind speed of the order of **120-130 kmph gusting to 145 kmph** very likely over north Arabian Sea & Gujarat coast in morning hours and decrease gradually thereafter. It is very likely to be 40-50 kmph gusting to 60 kmph over northern parts of eastcentral Arabian Sea.
- **15th June:** Gale wind speed of the order of **100-110 kmph gusting to 125 kmph** very likely over north Arabian Sea & Gujarat coast till evening and decrease gradually thereafter.

(iii) Sea condition

- The sea condition is phenomenal over north Arabian Sea & Gujarat coast till 15th June 2019 and over northern parts of eastcentral Arabian Sea during next 12 hours.
- The Sea condition is very likely to be very rough to high along & off north Maharashtra Coast on 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into north Arabian sea and along & off Gujarat coast till 15th and over Eastcentral Arabian Sea and along & off Maharashtra Coast on 13th June, 2019.

(iv) Storm Surge Warning

Storm surge of height of about 1.5-2.0 m above the astronomical tides likely to inundate the low lying coastal areas of Devbhoomi Dwarka, Porbandar, Junagarh, Diu and Gir Somnath districts in the afternoon of 13th June 2019.

(v) Damage Expected and Action suggested for Gir Somnath, Diu, Junagarh, Porbandar and Devbhoomi Dwarka:

- (i) Total destruction of thatched houses/extensive damage to Kutcha houses. Some damage to pucca houses. Potential threat from flying objects.(ii) Bending/uprooting of power and communication poles. (iii) Major damage to Kutcha and Pucca roads. Flooding of escape routes. Minor disruption of railways, overhead power lines and signalling systems. (iv) Widespread damage to standing crops, plantation, orchards, falling of green coconuts and tearing of palm fronds. Blowing down bushy trees like mango.(v) Small boats, country crafts may get detached from moorings.(vi) Visibility severe affected.

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

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

Action suggested:

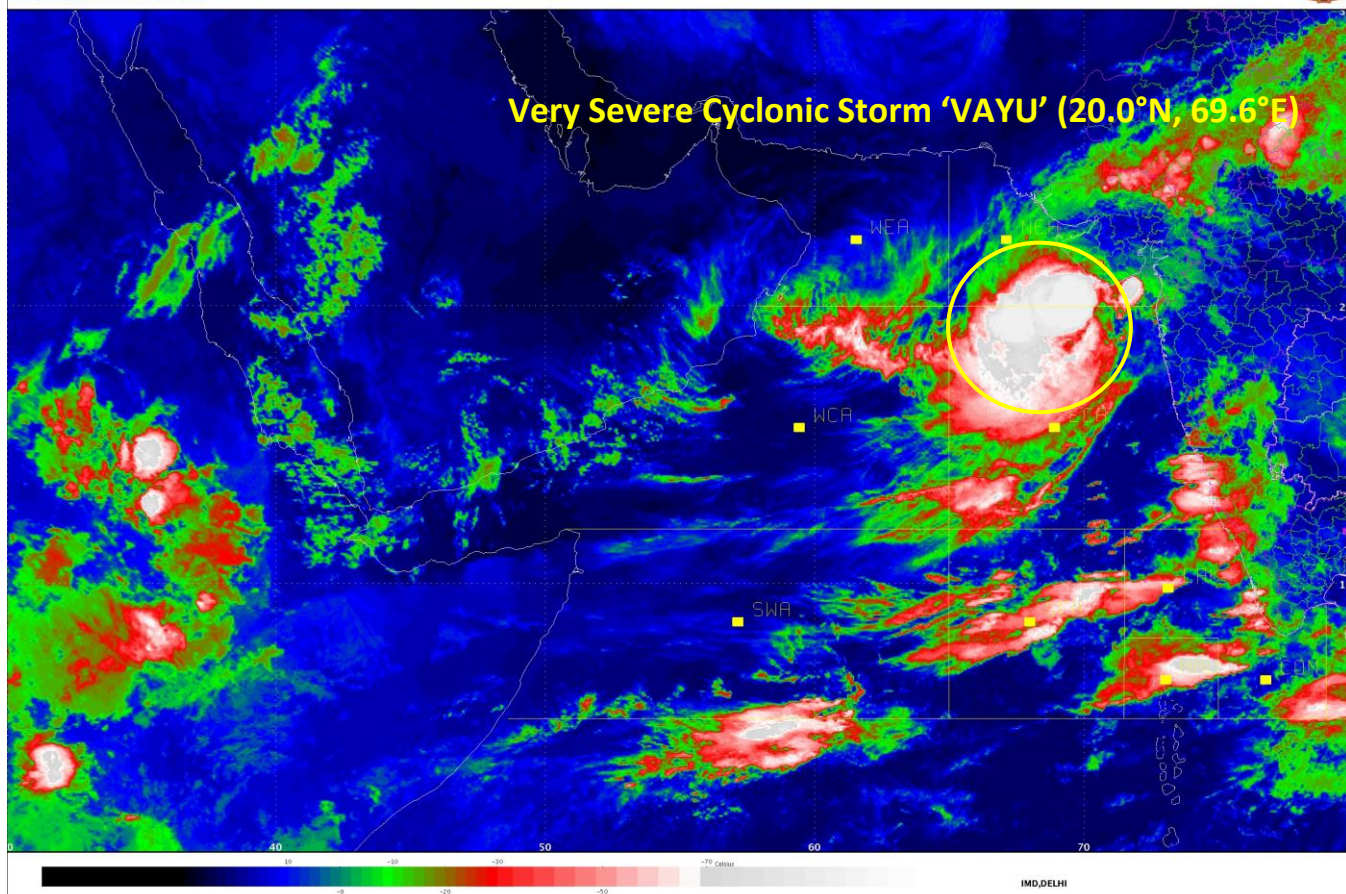
(i) Regulate road & rail traffic (ii) Total suspension of fishing operations. (iii) Evacuation from low lying areas of the above mentioned Districts, coastal Hutment dwellers, urban slum dwellers and people staying in unsafe house to safer places. People in affected areas to remain indoors.(iv) Movement in motor boats & small ships unsafe.(v) Inundation of low lying areas in the along the coasts due to heavy rainfall and storm surge.

The next bulletin will be issued at 0830 hrs IST of 13th June, 2019.

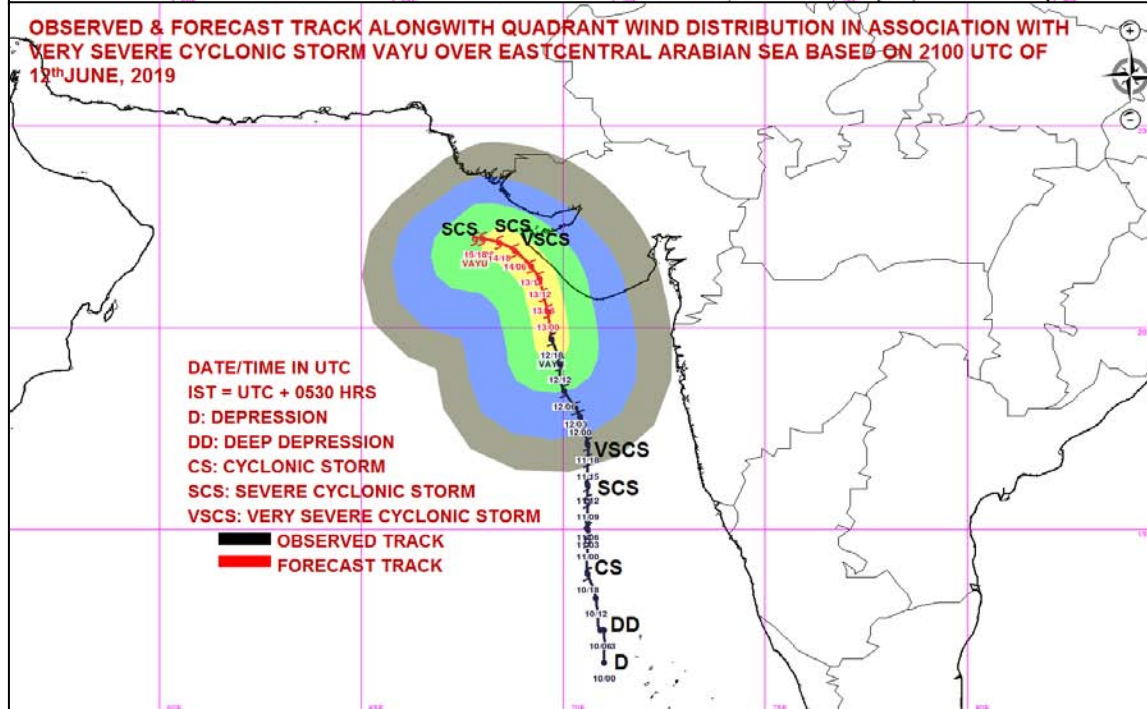
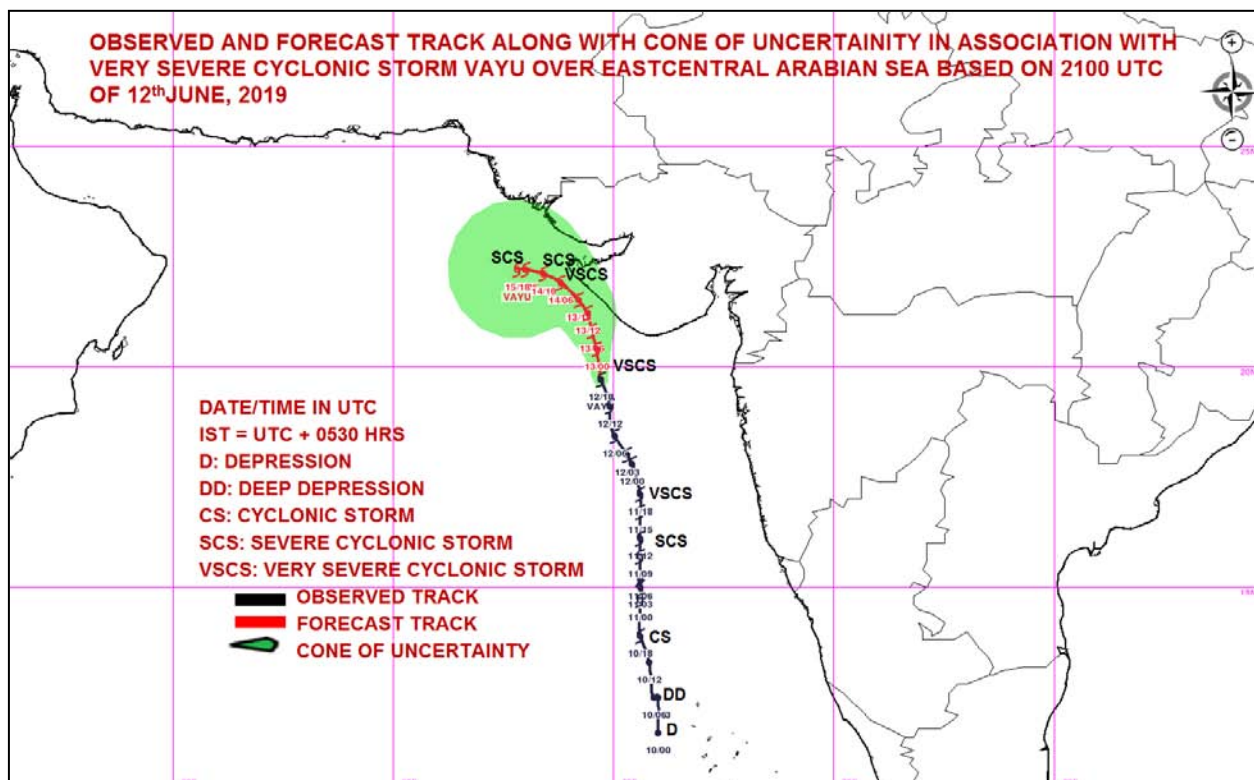
(Sunitha Devi)
Scientist-E, RSMC, New Delhi

**Copy to: CRS, Pune/ 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.



MSW(knot/kmph)	Impact	Action
28-33 /(51–62)	Very rough seas.	Total suspension of fishing operations
34-49/(63-91)	High to very high seas	Total suspension of fishing operations
50-63/(92-117)	Very High seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 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/01/2019)

TIME OF ISSUE: 0830 HOURS IST

DATED: 13.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea:
Cyclone Warning for Gujarat Coast: Orange Message**

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over Eastcentral & adjoining Northeast Arabian Sea moved north-northwestwards with a speed of about 11 kmph in last six hours and lay centred at 0530 hrs IST of today, the 13th June, 2019 near latitude 20.3°N and longitude 69.5°E over northeast & adjoining eastcentral Arabian Sea, about 150 km south-southwest of Diu, 110 km southwest of Veraval (Gujarat) and 150 km nearly south of Porbandar (Gujarat).

It is very likely to move north-northwestwards for some time and then northwestwards skirting the Saurashtra coast affecting Gir Somnath, Diu, Junagarh, Porbandar and Devbhoomi Dwarka with wind speed 135-145 kmph gusting to 160 kmph from afternoon of 13th June 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
13.06.19/0530	20.3/69.5	135-145 gusting to 160	Very Severe Cyclonic Storm
13.06.19/1130	20.8/69.4	135-145 gusting to 160	Very Severe Cyclonic Storm
13.06.19/1730	21.2/69.3	135-145 gusting to 160	Very Severe Cyclonic Storm
13.06.19/2330	21.5/69.1	130-140 gusting to 155	Very Severe Cyclonic Storm
14.06.19/0530	21.7/68.9	130-140 gusting to 155	Very Severe Cyclonic Storm
14.06.19/1730	22.0/68.5	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/0530	22.1/68.2	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/1730	22.2/67.8	100-110 gusting to 125	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) Heavy rainfall warning:

Sub-Divisions	13 June 2019*	14 June 2019*
Konkan & Goa	Fairly widespread rainfall with heavy falls at isolated places	Fairly widespread rainfall
Saurashtra & Kutch	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places in the coastal districts of Saurashtra	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places in the coastal districts of Saurashtra.
Gujarat Region	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **13th June:** Gale wind speed of the order of **135-145 kmph gusting to 160 kmph** very likely over north Arabian Sea & Gujarat coast. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.
- **14th June:** Gale wind speed of the order of **120-130 kmph gusting to 145 kmph** very likely over north Arabian Sea & Gujarat coast in morning hours and decrease gradually thereafter. It is very likely to be 40-50 kmph gusting to 60 kmph over northern parts of eastcentral Arabian Sea.
- **15th June:** Gale wind speed of the order of **100-110 kmph gusting to 125 kmph** very likely over north Arabian Sea & Gujarat coast till evening and decrease gradually thereafter.

(iii) Sea condition

- The sea condition is phenomenal over north Arabian Sea & Gujarat coast till 15th June 2019 and over northern parts of eastcentral Arabian Sea during next 12 hours.
- The Sea condition is very likely to be very rough to high along & off north Maharashtra Coast on 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into north Arabian Sea and along & off Gujarat coast till 15th and over Eastcentral Arabian Sea and along & off Maharashtra Coast on 13th June, 2019.

(iv) Storm Surge Warning

Storm surge of height of about 1.6m near Mangrol, Junagadh district above the astronomical tides likely to inundate the low lying coastal areas in the afternoon of 13th June 2019.

(v) Damage Expected and Action suggested for Gir Somnath, Diu, Junagarh, Porbandar and Devbhoomi Dwarka:

- (i) Total destruction of thatched houses/extensive damage to Kutcha houses. Some damage to pucca houses. Potential threat from flying objects.(ii) Bending/uprooting of power and communication poles. (iii) Major damage to Kutcha and Pucca roads. Flooding of escape routes. Minor disruption of railways, overhead power lines and signalling systems. (iv) Widespread damage to standing crops, plantation, orchards, falling of green coconuts and tearing of palm fronds. Blowing down bushy trees like mango.(v) Small boats, country crafts may get detached from moorings.(vi) Visibility severe affected.

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

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

Action suggested:

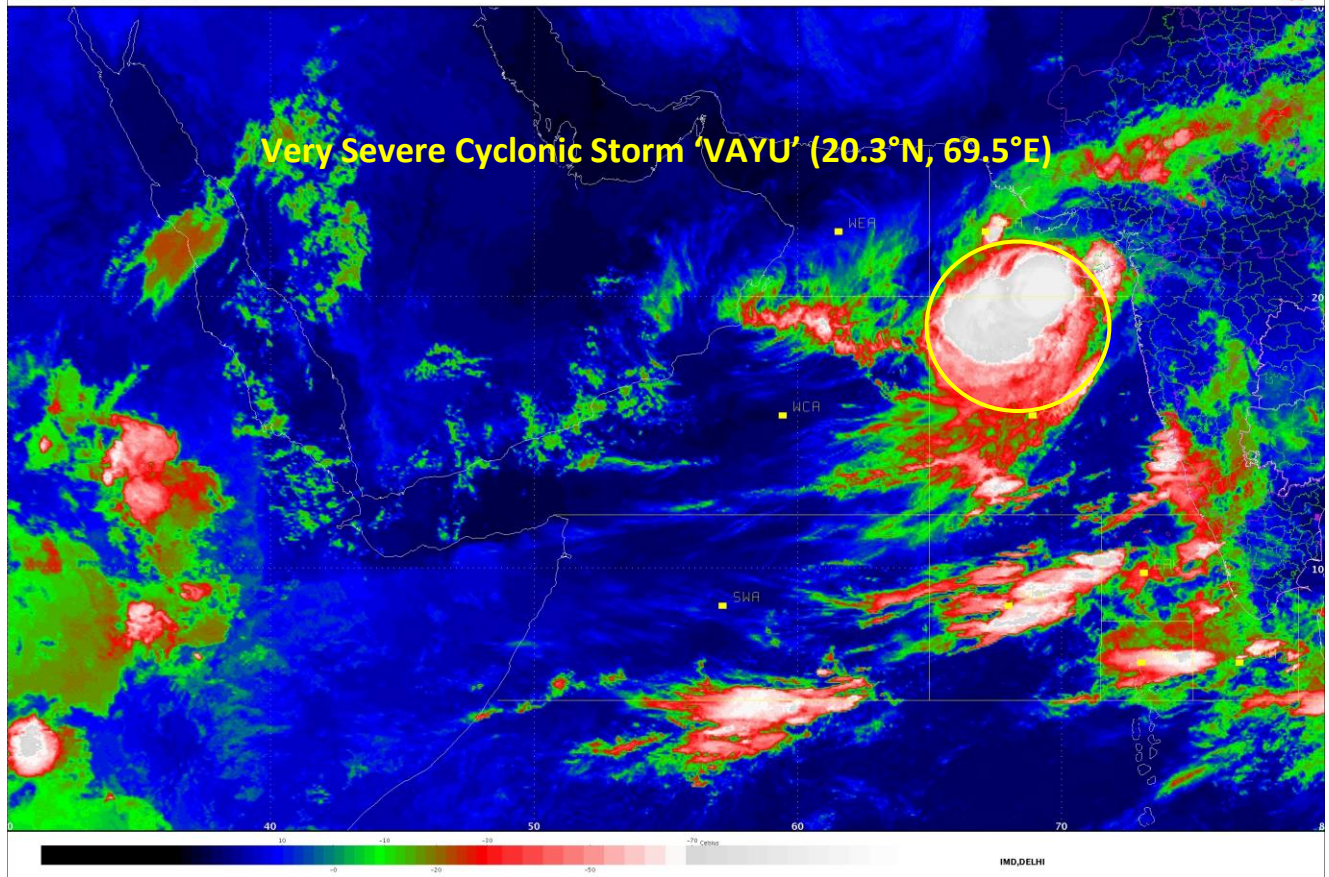
(i) Regulate road & rail traffic (ii) Total suspension of fishing operations. (iii) Evacuation from low lying areas of the above mentioned Districts, coastal Hutment dwellers, urban slum dwellers and people staying in unsafe house to safer places. People in affected areas to remain indoors.(iv) Movement in motor boats & small ships unsafe.(v) Inundation of low lying areas in the along the coasts due to heavy rainfall and storm surge.

The next bulletin will be issued at 1130 hrs IST of 13th June, 2019.

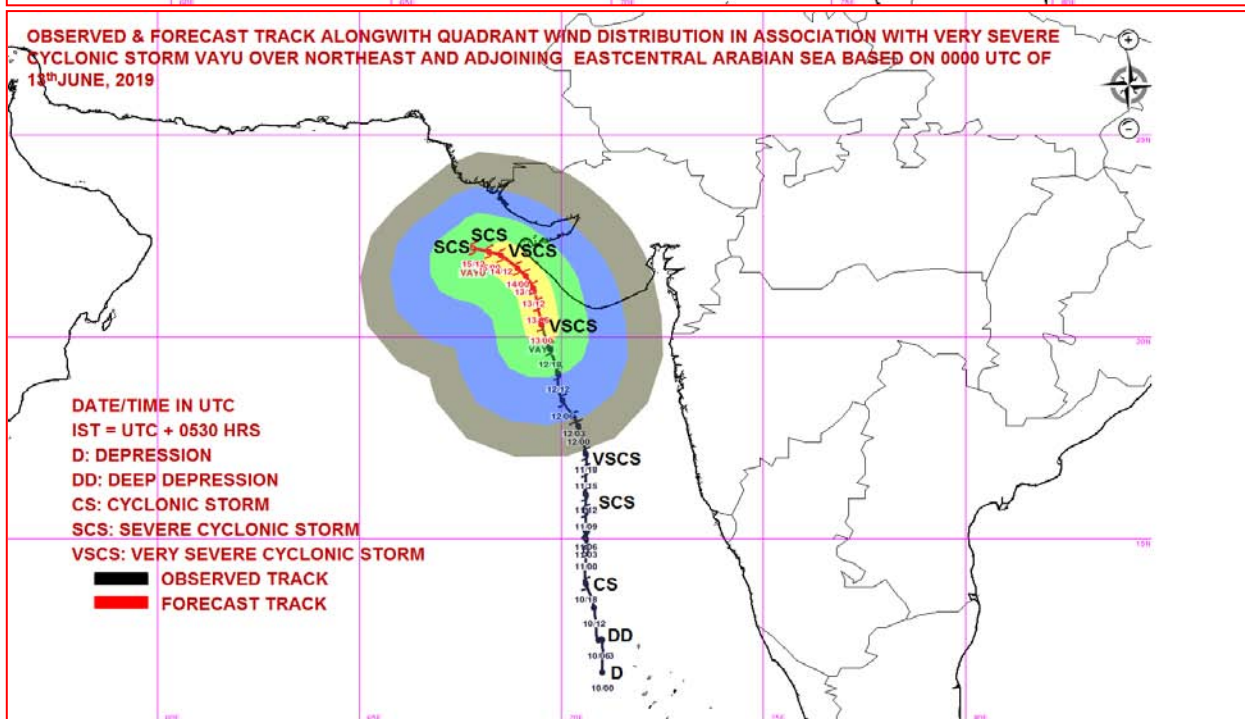
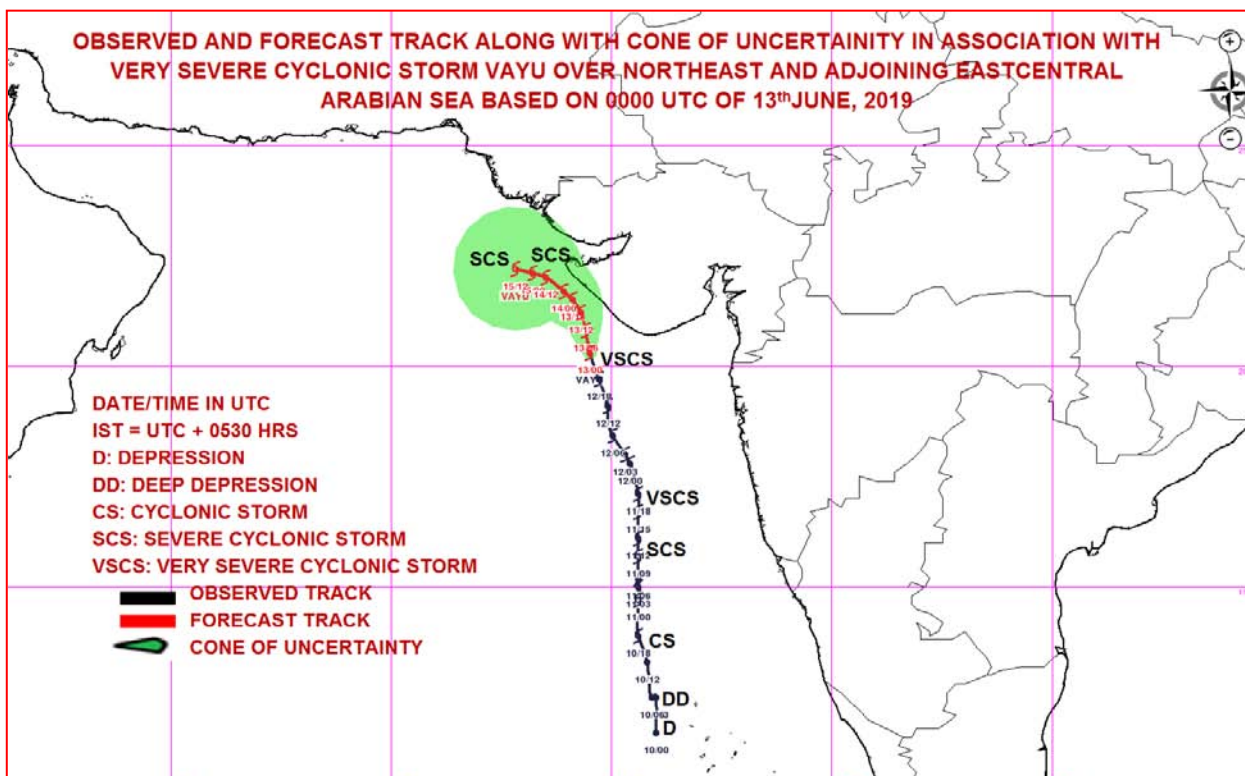
(Sunitha Devi)
Scientist-E, RSMC, New Delhi

**Copy to: CRS, Pune/ 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.



MSW(knot)/kmph)	Impact	Action
28-33/(51-62)	Very rough seas.	Total suspension of fishing operations
34-49/(63-91)	High to very high seas	Total suspension of fishing operations
50-63/(92-117)	Very High seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 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/01/2019)

TIME OF ISSUE: 1200 HOURS IST

DATED: 13.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea:
Cyclone Warning for Gujarat Coast: Orange Message**

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea moved north-northwestwards with a speed of about 08 kmph in last six hours and lay centred at 0830 hrs IST of today, the 13th June, 2019 near latitude 20.4°N and longitude 69.4°E over northeast & adjoining eastcentral Arabian Sea, about 160 km south-southwest of Diu, 110 km southwest of Veraval (Gujarat) and 140 km nearly south of Porbandar (Gujarat).

It is very likely to move north-northwestwards for some time and then northwestwards skirting the Saurashtra coast affecting Gir Somnath, Diu, Junagarh, Porbandar and Devbhoomi Dwarka with wind speed 135-145 kmph gusting to 160 kmph from afternoon of 13th June 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
13.06.19/0830	20.4/69.4	135-145 gusting to 160	Very Severe Cyclonic Storm
13.06.19/1130	20.8/69.4	135-145 gusting to 160	Very Severe Cyclonic Storm
13.06.19/1730	21.2/69.3	135-145 gusting to 160	Very Severe Cyclonic Storm
13.06.19/2330	21.5/69.1	130-140 gusting to 155	Very Severe Cyclonic Storm
14.06.19/0530	21.7/68.9	130-140 gusting to 155	Very Severe Cyclonic Storm
14.06.19/1730	22.0/68.5	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/0530	22.1/68.2	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/1730	22.2/67.8	100-110 gusting to 125	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) Heavy rainfall warning:

Sub-Divisions	13 June 2019*	14 June 2019*
Saurashtra & Kutch	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places in the coastal districts of Saurashtra	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places in the coastal districts of Saurashtra.
Gujarat Region	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning**
Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **13th June:** Gale wind speed of the order of **135-145 kmph gusting to 160 kmph** very likely over north Arabian Sea & Gujarat coast. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.
- **14th June:** Gale wind speed of the order of **120-130 kmph gusting to 145 kmph** very likely over north Arabian Sea & Gujarat coast in morning hours and decrease gradually thereafter. It is very likely to be 40-50 kmph gusting to 60 kmph over northern parts of eastcentral Arabian Sea.
- **15th June:** Gale wind speed of the order of **100-110 kmph gusting to 125 kmph** very likely over north Arabian Sea & Gujarat coast till evening and decrease gradually thereafter.

(iii) Sea condition

- The sea condition is phenomenal over north Arabian Sea & Gujarat coast till 15th June 2019 and over northern parts of eastcentral Arabian Sea during next 12 hours.
- The Sea condition is very likely to be very rough to high along & off north Maharashtra Coast on 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into north Arabian Sea and along & off Gujarat coast till 15th and over Eastcentral Arabian Sea and along & off Maharashtra Coast on 13th June, 2019.

(iv) Storm Surge Warning

Storm surge of height about 0.6m to 1.3 m above the astronomical tides likely to inundate the low lying coastal areas in the districts Gir Somnath, Diu, Junagarh, Porbandar and Devbhoomi Dwarka from the afternoon of 13th June 2019.

(v) Damage Expected and Action suggested for Gir Somnath, Diu, Junagarh, Porbandar and Devbhoomi Dwarka:

- (i) Total destruction of thatched houses/extensive damage to Kutcha houses. Some damage to pucca houses. Potential threat from flying objects.(ii) Bending/uprooting of power and communication poles. (iii) Major damage to Kutcha and Pucca roads. Flooding of escape routes. Minor disruption of railways, overhead power lines and signalling systems. (iv) Widespread damage to standing crops, plantation, orchards, falling of green coconuts and tearing of palm fronds. Blowing down bushy trees like mango.(v) Small boats, country crafts may get detached from moorings.(vi) Visibility severe affected.

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

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

Action suggested:

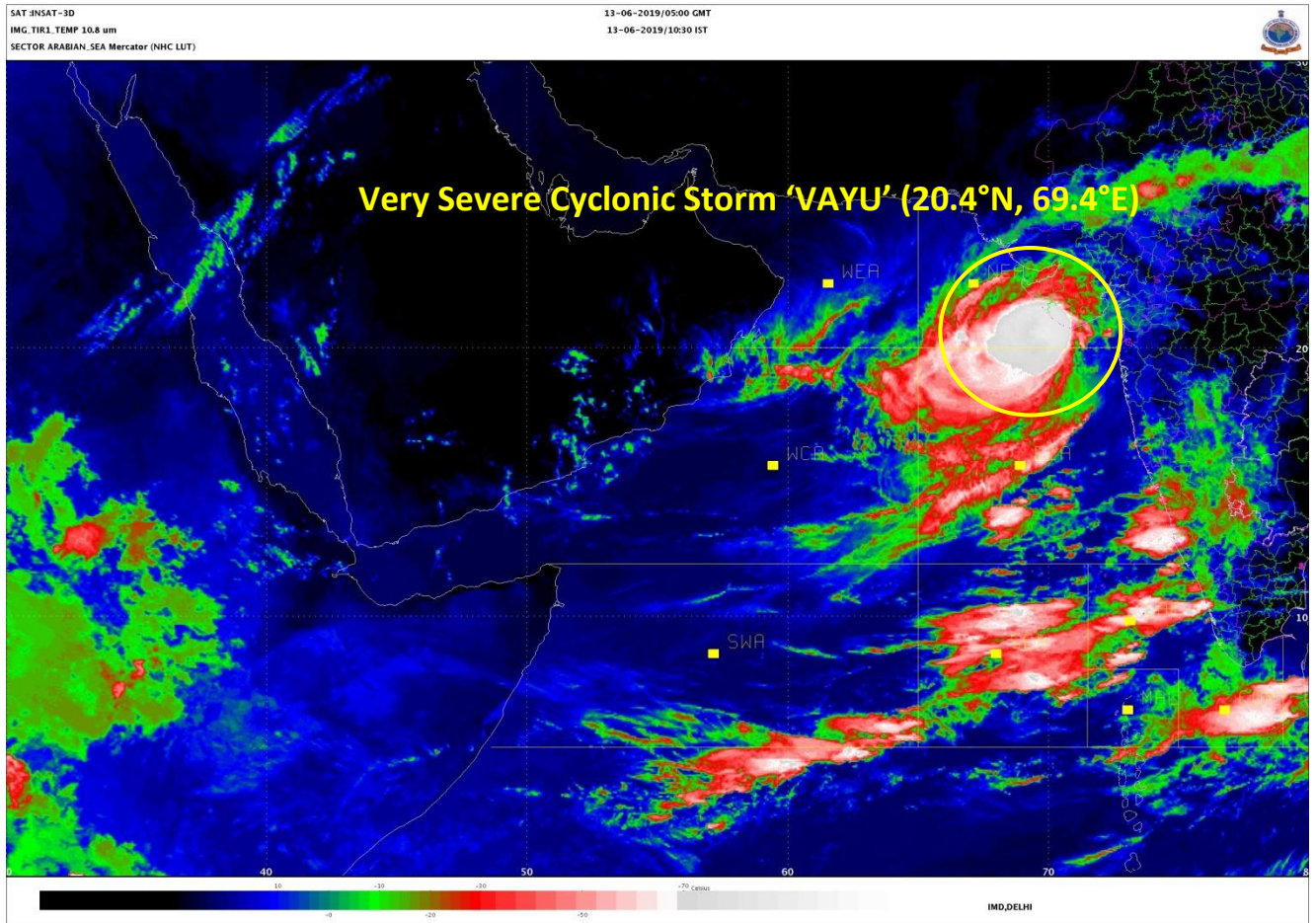
(i) Regulate road & rail traffic (ii) Total suspension of fishing operations. (iii) Evacuation from low lying areas of the above mentioned Districts, coastal hutment dwellers, urban slum dwellers and people staying in unsafe house to safer places. People in affected areas to remain indoors. (iv) Movement in motor boats & small ships unsafe. (v) Inundation of low lying areas along the above mentioned coastal districts due to heavy rainfall and storm surge.

The next bulletin will be issued at 1430 hrs IST of 13th June, 2019.

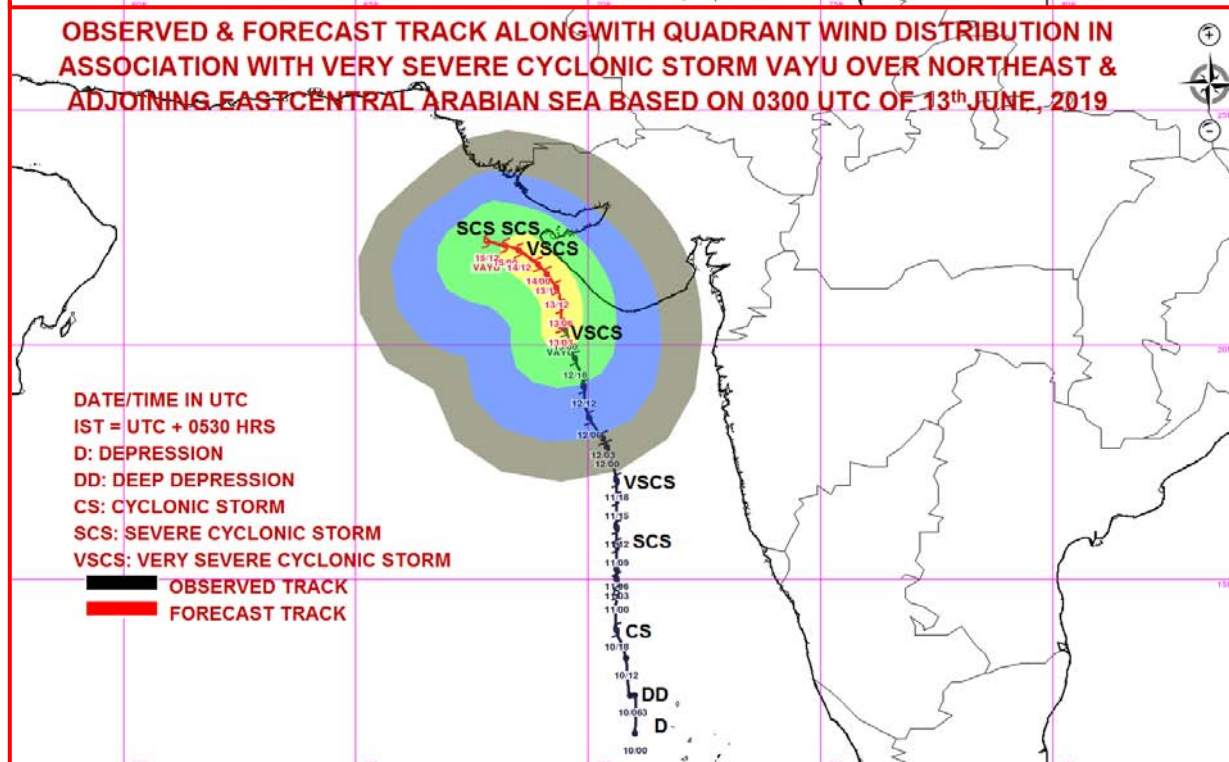
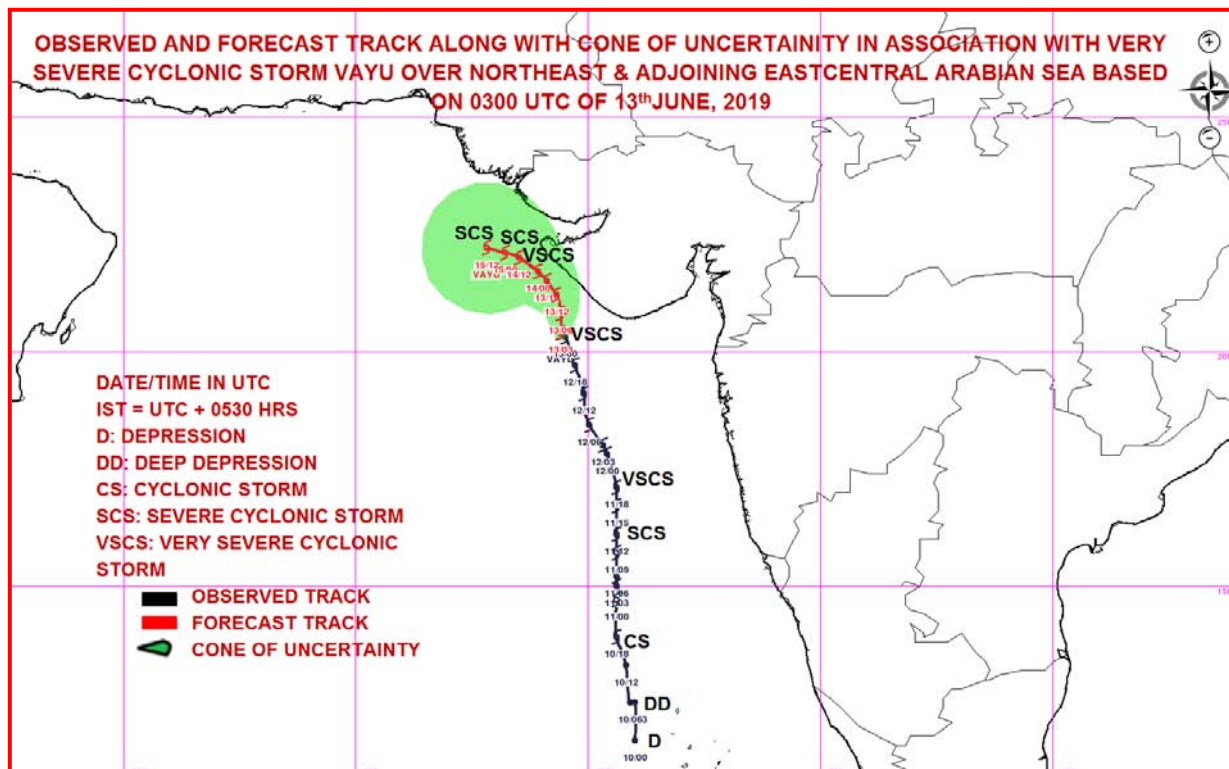
(Sunitha Devi)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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. : 25 (ARB/01/2019)

TIME OF ISSUE: 1630 HOURS IST

DATED: 13.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea:
Cyclone Warning for Gujarat Coast: Orange Message**

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea moved northwestwards with a speed of about 05 kmph in last six hours and lay centred at 1130 hrs IST of today, the 13th June, 2019 near latitude 20.5°N and longitude 69.3°E over northeast & adjoining eastcentral Arabian Sea, about 170 km south-southwest of Diu, 120 km west-southwest of Veraval (Gujarat) and 130 km nearly south of Porbandar (Gujarat).

It is very likely to move north-northwestwards for some time and then northwestwards skirting the Saurashtra coast affecting Gir Somnath, Diu, Junagarh, Porbandar and Devbhoomi Dwarka with wind speed 90-100 kmph gusting to 110 kmph 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
13.06.19/1130	20.5/69.3	135-145 gusting to 160	Very Severe Cyclonic Storm
13.06.19/1730	20.1/69.0	135-145 gusting to 160	Very Severe Cyclonic Storm
13.06.19/2330	21.3/68.7	130-140 gusting to 155	Very Severe Cyclonic Storm
14.06.19/0530	21.5/68.4	130-140 gusting to 155	Very Severe Cyclonic Storm
14.06.19/1130	21.6/68.1	120-130 gusting to 145	Very Severe Cyclonic Storm
14.06.19/2330	21.7/67.8	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/1130	21.8/67.5	100-110 gusting to 125	Severe Cyclonic Storm
15.06.19/2330	21.8/67.2	100-110 gusting to 125	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) Heavy rainfall warning:

Sub-Divisions	13 June 2019*	14 June 2019*
Saurashtra & Kutch	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places in the coastal districts of Saurashtra	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places in the coastal districts of Saurashtra.
Gujarat Region	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning**
Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **13th June:** Gale wind speed of the order of **135-145 kmph gusting to 160 kmph** very likely over north Arabian Sea & Gujarat coast. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.
- **14th June:** Gale wind speed of the order of **120-130 kmph gusting to 145 kmph** very likely over north Arabian Sea & Gujarat coast in morning hours and decrease gradually thereafter. It is very likely to be 40-50 kmph gusting to 60 kmph over northern parts of eastcentral Arabian Sea.
- **15th June:** Gale wind speed of the order of **100-110 kmph gusting to 125 kmph** very likely over north Arabian Sea & Gujarat coast till evening and decrease gradually thereafter.

(iii) Sea condition

- The sea condition is phenomenal over north Arabian Sea & Gujarat coast till 15th June 2019 and over northern parts of eastcentral Arabian Sea during next 12 hours.
- The Sea condition is very likely to be very rough to high along & off north Maharashtra Coast on 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into north Arabian Sea and along & off Gujarat coast till 15th and over Eastcentral Arabian Sea and along & off Maharashtra Coast on 13th June, 2019.

(iv) Storm Surge Warning

Storm surge of height about 0.6 m to 1.3 m above the astronomical tides likely to inundate the low lying coastal areas in the districts Gir Somnath, Diu, Junagarh, Porbandar and Devbhoomi Dwarka from the afternoon of 13th June 2019.

(v) Damage Expected and Action suggested for Gir Somnath, Diu, Junagarh, Porbandar and Devbhoomi Dwarka:

- (i) Total destruction of thatched houses/extensive damage to Kutcha houses. Some damage to pucca houses. Potential threat from flying objects.(ii) Bending/uprooting of power and communication poles. (iii) Major damage to Kutcha and Pucca roads. Flooding of escape routes. Minor disruption of railways, overhead power lines and signalling systems. (iv) Widespread damage to standing crops, plantation, orchards, falling of green coconuts and tearing of palm fronds. Blowing down bushy trees like mango.(v) Small boats, country crafts may get detached from moorings.(vi) Visibility severe affected.

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

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

Action suggested:

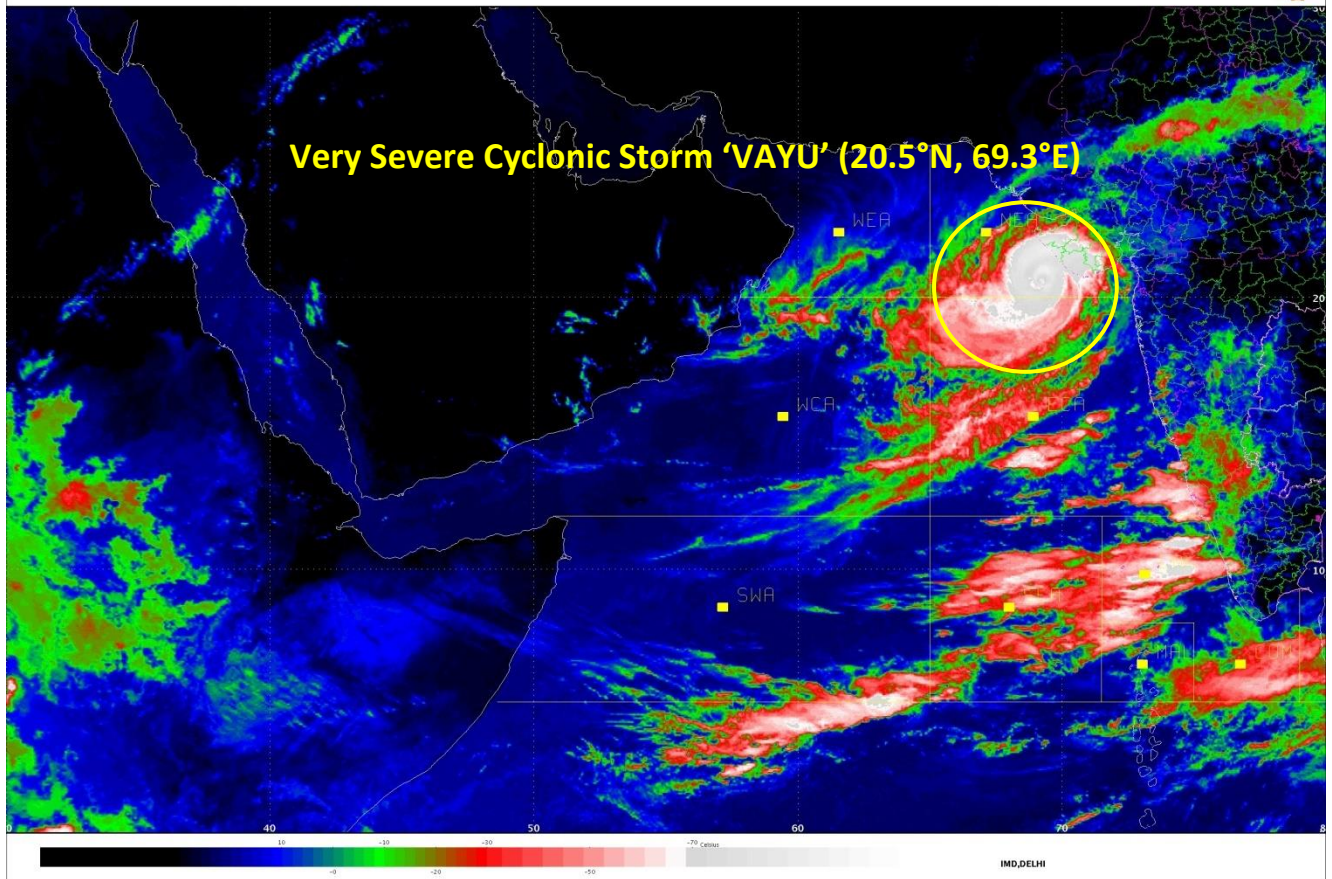
(i) Regulate road & rail traffic (ii) Total suspension of fishing operations. (iii) Evacuation from low lying areas of the above mentioned Districts, coastal Hutment dwellers, urban slum dwellers and people staying in unsafe house to safer places. People in affected areas to remain indoors.(iv) Movement in motor boats & small ships unsafe.(v) Inundation of low lying areas along the above mentioned coastal districts due to heavy rainfall and storm surge.

The next bulletin will be issued at 1730 hrs IST of 13th June, 2019.

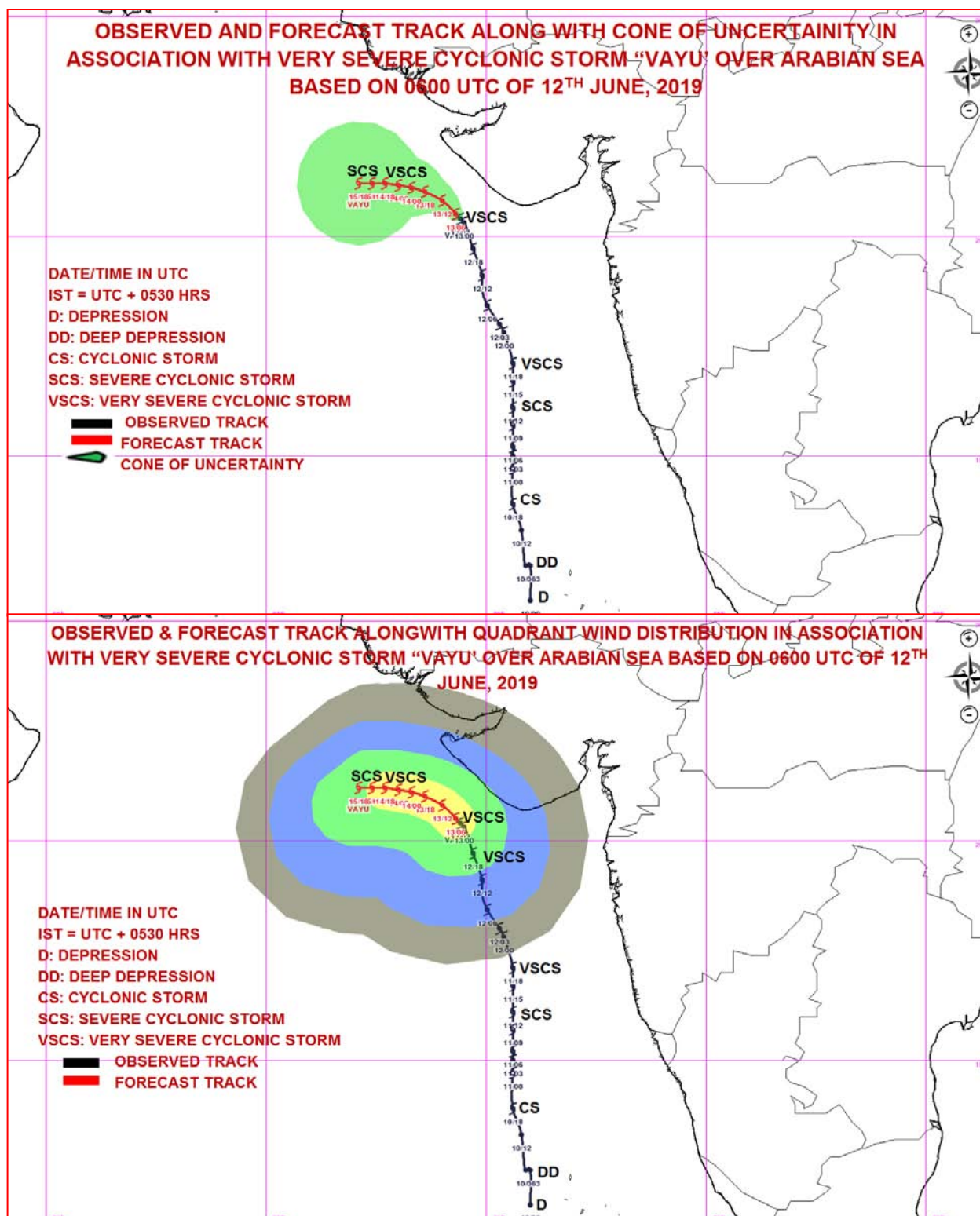
(Sunitha Devi)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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.



MSW(knot)/kmph)	Impact	Action
28-33 /(51-62)	Very rough seas.	Total suspension of fishing operations
34-49/(63-91)	High to very high seas	Total suspension of fishing operations
50-63/(92-117)	Very High seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 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/01/2019)

TIME OF ISSUE: 1700 HOURS IST

DATED: 13.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea:
Cyclone Warning for Gujarat Coast: Orange Message**

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea moved northwestwards with a speed of about 07 kmph in last six hours and lay centred at 1430 hrs IST of today, the 13th June, 2019 near latitude 20.7°N and longitude 69.1°E over northeast & adjoining eastcentral Arabian Sea, about 190 km west of Diu, 130 km west-southwest of Veraval (Gujarat) and 120 km nearly south of Porbandar (Gujarat).

It is very likely to move north-northwestwards for some time and then northwestwards skirting the Saurashtra coast affecting Gir Somnath, Diu, Junagarh, Porbandar and Devbhoomi Dwarka with wind speed 90-100 kmph gusting to 110 kmph 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
13.06.19/1430	20.7/69.1	135-145 gusting to 160	Very Severe Cyclonic Storm
13.06.19/1730	21.1/69.0	135-145 gusting to 160	Very Severe Cyclonic Storm
13.06.19/2330	21.3/68.7	130-140 gusting to 155	Very Severe Cyclonic Storm
14.06.19/0530	21.5/68.4	130-140 gusting to 155	Very Severe Cyclonic Storm
14.06.19/1130	21.6/68.1	120-130 gusting to 145	Very Severe Cyclonic Storm
14.06.19/2330	21.7/67.8	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/1130	21.8/67.5	100-110 gusting to 125	Severe Cyclonic Storm
15.06.19/2330	21.8/67.2	100-110 gusting to 125	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) Heavy rainfall warning:

Sub-Divisions	13 June 2019*	14 June 2019*
Saurashtra & Kutch	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places in the coastal districts of Saurashtra	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places in the coastal districts of Saurashtra.
Gujarat Region	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning**
Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **13th June:** Gale wind speed of the order of **135-145 kmph gusting to 160 kmph** very likely over north Arabian Sea. Gale wind speed of the order of **90-100 kmph gusting to 115 kmph** very likely over Gujarat coast. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.
- **14th June:** Gale wind speed of the order of **120-130 kmph gusting to 145 kmph** very likely over north Arabian Sea in morning hours and decrease gradually thereafter. Gale wind speed of the order of **60-70 kmph gusting to 80 kmph** very likely over Gujarat coast. It is very likely to be 40-50 kmph gusting to 60 kmph over northern parts of eastcentral Arabian Sea.
- **15th June:** Gale wind speed of the order of **100-110 kmph gusting to 125 kmph** very likely over north Arabian Sea till evening and decrease gradually thereafter. Squally wind speed of the order of **50-60 kmph gusting to 70 kmph** very likely over Gujarat coast.

(iii) Sea condition

- The sea condition is phenomenal over north Arabian Sea till 15th June 2019 and over northern parts of eastcentral Arabian Sea during next 12 hours. The sea condition is very high to phenomenal over Gujarat Coast on 13th and very rough to high on 14th June 2019.
- The Sea condition is very likely to be very rough to high along & off north Maharashtra Coast on 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into north Arabian Sea and along & off Gujarat coast till 15th and over Eastcentral Arabian Sea and along & off Maharashtra Coast on 13th June, 2019.

(iv) Storm Surge Warning

Storm surge of height about 0.6 m to 1.3 m above the astronomical tides likely to inundate the low lying coastal areas in the districts Gir Somnath, Diu, Junagarh, Porbandar and Devbhoomi Dwarka from the afternoon of 13th June 2019.

(v) Damage Expected and Action suggested for Gir Somnath, Diu, Junagarh, Porbandar and Devbhoomi Dwarka:

- (i) Total destruction of thatched houses/extensive damage to Kutcha houses. Some damage to pucca houses. Potential threat from flying objects.
- (ii) Bending/uprooting of power and communication poles.
- (iii) Major damage to Kutcha and Pucca roads. Flooding of escape routes. Minor disruption of railways, overhead power lines and signalling systems.
- (iv) Widespread damage to standing crops, plantation, orchards, falling of green coconuts 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.

tearing of palm fronds. Blowing down bushy trees like mango.(v) Small boats, country crafts may get detached from moorings.(vi) Visibility severe affected.

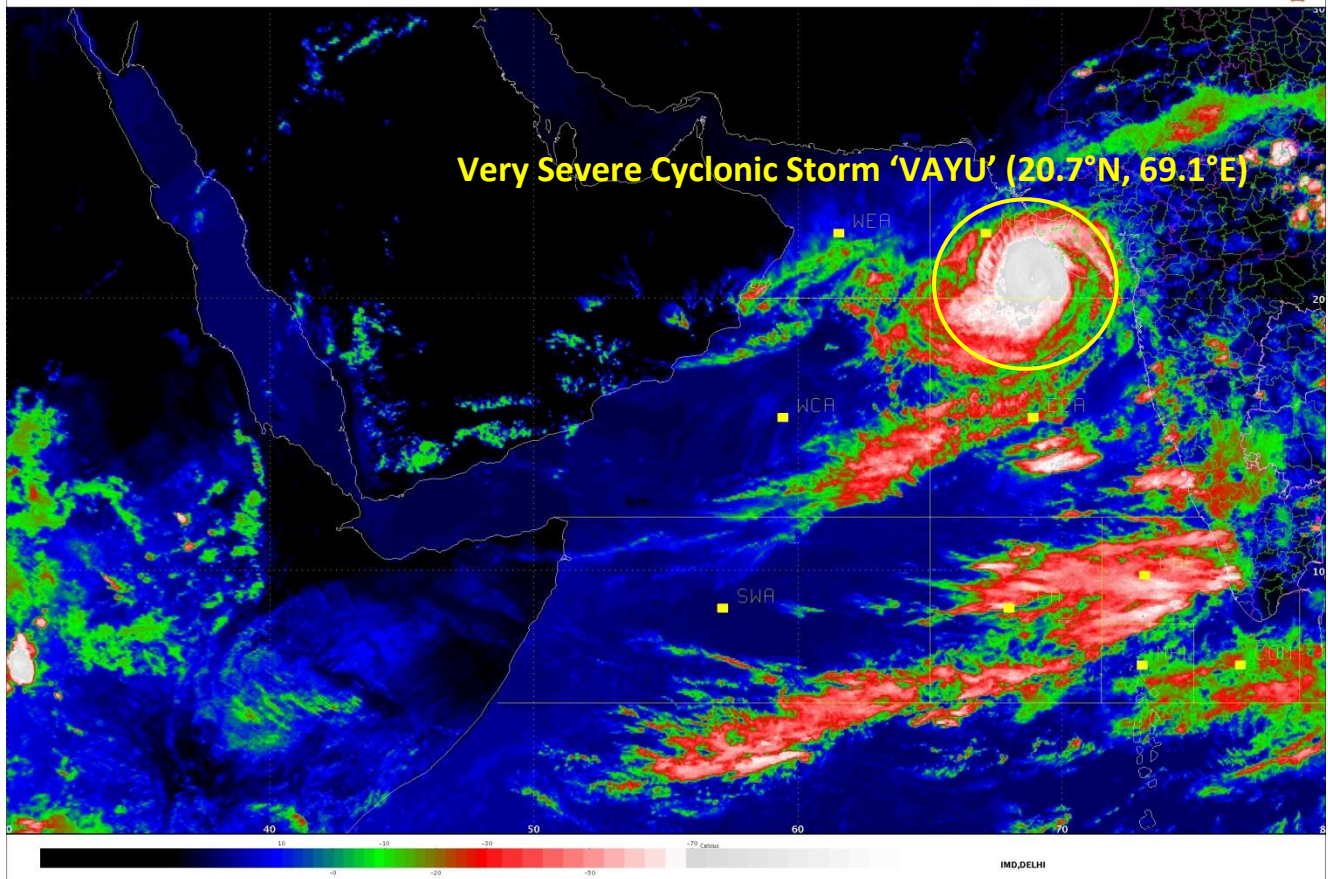
Action suggested:

(i) Regulate road & rail traffic (ii) Total suspension of fishing operations. (iii) Evacuation from low lying areas of the above mentioned Districts, coastal Hutment dwellers, urban slum dwellers and people staying in unsafe house to safer places. People in affected areas to remain indoors.(iv) Movement in motor boats & small ships unsafe.(v) Inundation of low lying areas along the above mentioned coastal districts due to heavy rainfall and storm surge.

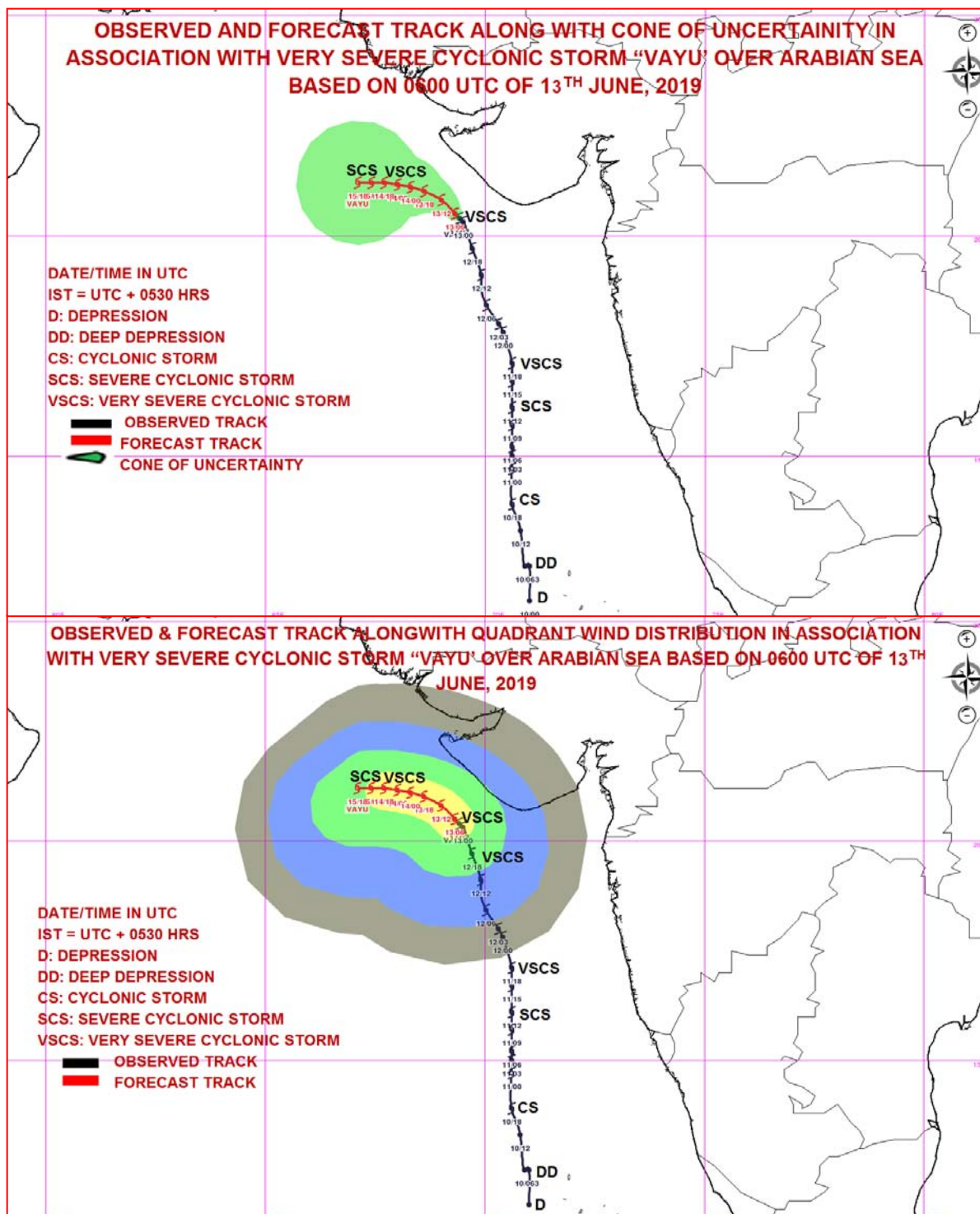
The next bulletin will be issued at 2030 hrs IST of 13th June, 2019.

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

Copy to: CRS, Pune/ 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.



MSW(knot)/kmph)	Impact	Action
28-33 /(51-62)	Very rough seas.	Total suspension of fishing operations
34-49/(63-91)	High to very high seas	Total suspension of fishing operations
50-63/(92-117)	Very High seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 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/01/2019)

TIME OF ISSUE: 2100 HOURS IST

DATED: 13.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea:
Cyclone Warning for Gujarat Coast: Orange Message**

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea moved northwestwards with a speed of about 09 kmph in last six hours and lay centred at 1730 hrs IST of today, the 13th June, 2019 near latitude 20.9°N and longitude 69.0°E over northeast & adjoining eastcentral Arabian Sea, about 200 km west-southwest of Diu, 130 km west of Veraval (Gujarat) and 100 km south-southwest of Porbandar (Gujarat).

It is very likely to move northwestwards for some time and then west-northwestwards skirting the Saurashtra coast affecting Gir Somnath, Junagarh, Porbandar and Devbhoomi Dwarka with wind speed 70-80 kmph gusting to 90 kmph 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
13.06.19/1730	20.9/69.0	135-145 gusting to 160	Very Severe Cyclonic Storm
13.06.19/2330	21.3/68.6	135-145 gusting to 160	Very Severe Cyclonic Storm
14.06.19/0530	21.5/68.3	130-140 gusting to 155	Very Severe Cyclonic Storm
14.06.19/1130	21.6/68.0	120-130 gusting to 145	Very Severe Cyclonic Storm
14.06.19/1730	21.7/67.7	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/0530	21.8/67.4	100-110 gusting to 125	Severe Cyclonic Storm
15.06.19/1730	21.8/67.1	100-110 gusting to 125	Severe Cyclonic Storm
16.06.19/0530	21.8/66.8	90-100 gusting to 115	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) Heavy rainfall warning:

Sub-Divisions	13 June 2019*	14 June 2019*
Saurashtra & Kutch	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places in the coastal districts of Saurashtra	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places in the coastal districts of Saurashtra.
Gujarat Region	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **13th June:** Gale wind speed of the order of **135-145 kmph gusting to 160 kmph** very likely over north Arabian Sea. Gale wind speed of the order of **70-80 kmph gusting to 90 kmph** very likely over Gujarat coast. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.
- **14th June:** Gale wind speed of the order of **130-140 kmph gusting to 155 kmph** very likely over north Arabian Sea in morning hours and decrease gradually thereafter. Gale wind speed of the order of **60-70 kmph gusting to 80 kmph** very likely over Gujarat coast. It is very likely to be 40-50 kmph gusting to 60 kmph over northern parts of eastcentral Arabian Sea.
- **15th June:** Gale wind speed of the order of **100-110 kmph gusting to 125 kmph** very likely over north Arabian Sea till evening and decrease gradually thereafter. Squally wind speed of the order of **50-60 kmph gusting to 70 kmph** very likely over Gujarat coast.

(iii) Sea condition

- The sea condition is phenomenal over north Arabian Sea till 15th June 2019 and over northern parts of eastcentral Arabian Sea during next 12 hours. The sea condition is very high to phenomenal over Gujarat Coast on 13th, very rough to high on 14th and rough to very rough on 15th June 2019.
- The Sea condition is very likely to be rough to very rough along & off north Maharashtra Coast on 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into north Arabian Sea and along & off Gujarat coast till 15th and over Eastcentral Arabian Sea and along & off Maharashtra Coast on 13th June, 2019.
- Total suspension of fishing operations.

(iv) Storm Surge Warning

Storm surge of height about 0.5 m to 1.0 m above the astronomical tides likely to inundate the low lying coastal areas in the districts Gir Somnath, Junagarh, Porbandar and Devbhoomi Dwarka.

(v) Damage Expected and Action suggested for Gir Somnath, Junagarh, Porbandar and Devbhoomi Dwarka:

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

The next bulletin will be issued at 2330 hrs IST of 13th June, 2019.

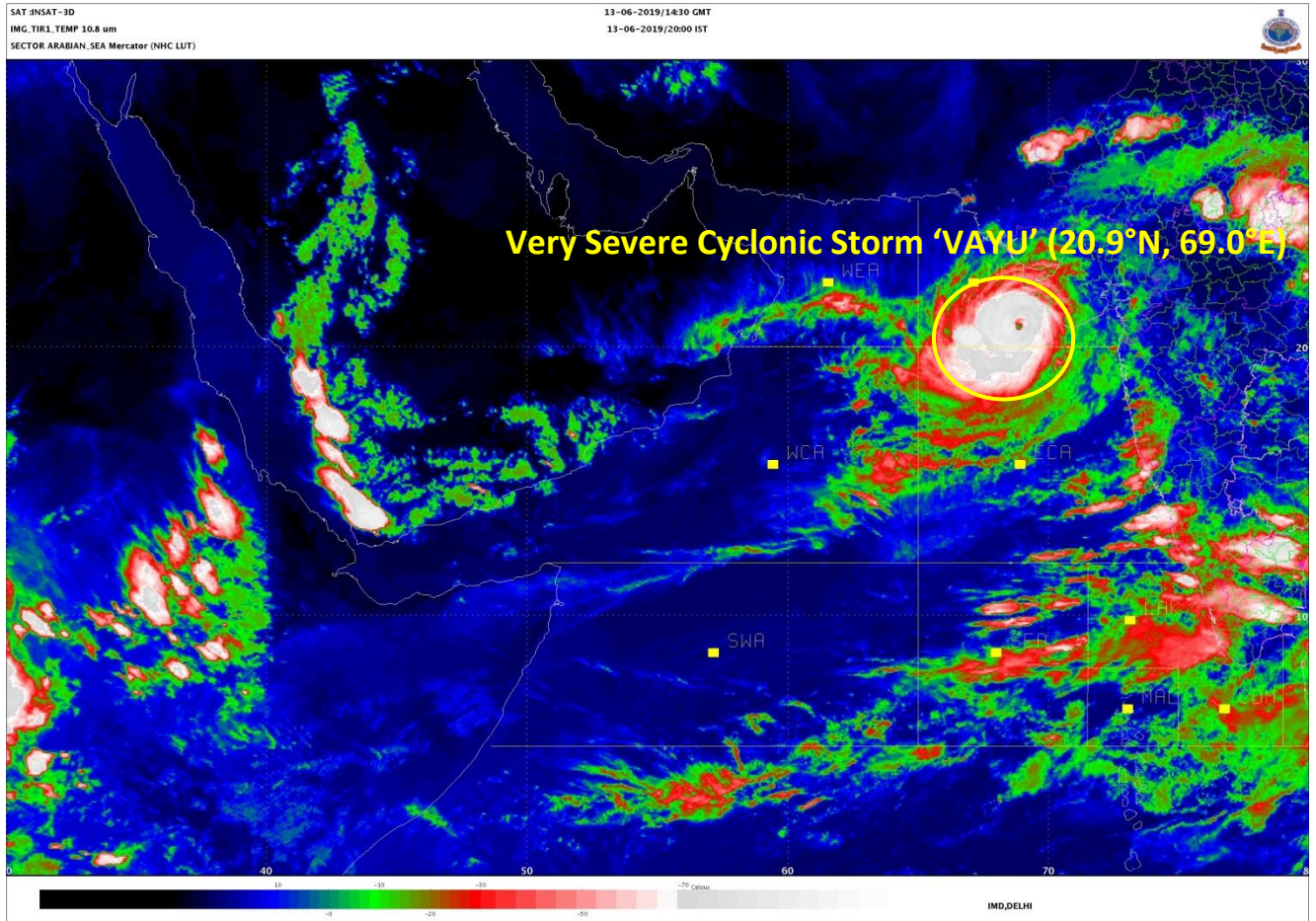
(Sunitha Devi)

Scientist-E, RSMC, New Delhi

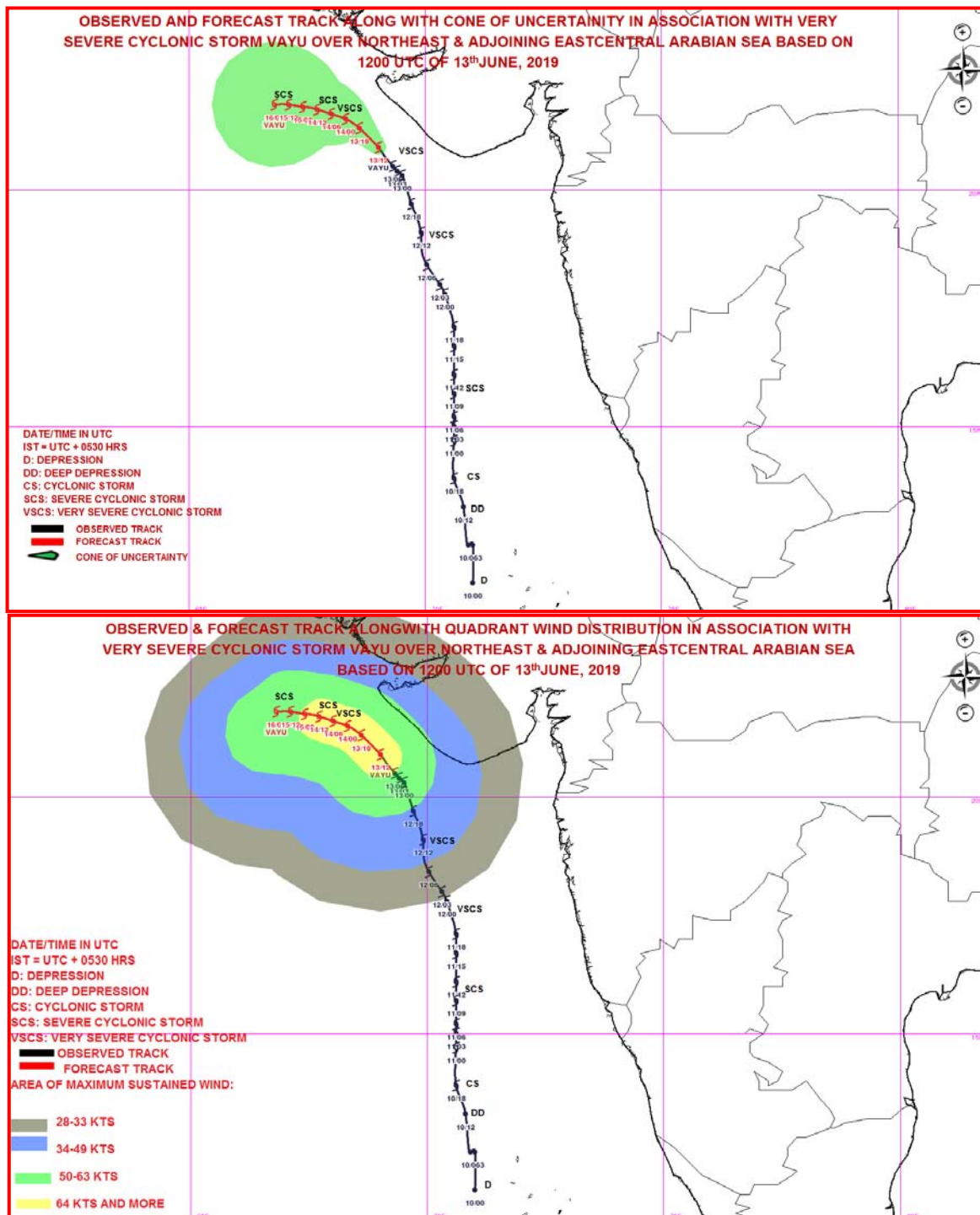
Copy to: CRS, Pune/ ACWC Chennai/ ACWC Mumbai/MC Goa/ MC Bengaluru/CWC Ahmedabad/Thiruvananthapuram.

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. : 28 (ARB/01/2019)

TIME OF ISSUE: 2200 HOURS IST

DATED: 13.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea:
Cyclone Warning for Gujarat Coast: Orange Message**

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea moved west-northwestwards with a speed of about 07 kmph in last six hours and lay centred at 2030 hrs IST of today, the 13th June, 2019 near latitude 20.9°N and longitude 68.8°E over northeast & adjoining eastcentral Arabian Sea, about 220 km west of Diu, 160 km west of Veraval (Gujarat) and 120 km southwest of Porbandar (Gujarat).

It is very likely to move northwestwards for some time and then west-northwestwards skirting the Saurashtra coast affecting Gir Somnath, Junagarh, Porbandar and Devbhoomi Dwarka with wind speed 65-75 kmph gusting to 85 kmph 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
13.06.19/2030	20.9/68.8	135-145 gusting to 160	Very Severe Cyclonic Storm
13.06.19/2330	21.3/68.6	135-145 gusting to 160	Very Severe Cyclonic Storm
14.06.19/0530	21.5/68.3	130-140 gusting to 155	Very Severe Cyclonic Storm
14.06.19/1130	21.6/68.0	120-130 gusting to 145	Very Severe Cyclonic Storm
14.06.19/1730	21.7/67.7	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/0530	21.8/67.4	100-110 gusting to 125	Severe Cyclonic Storm
15.06.19/1730	21.8/67.1	100-110 gusting to 125	Severe Cyclonic Storm
16.06.19/0530	21.8/66.8	90-100 gusting to 115	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) Heavy rainfall warning:

Sub-Divisions	13 June 2019*	14 June 2019*
Saurashtra & Kutch	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places in the coastal districts of Saurashtra	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places in the coastal districts of Saurashtra.
Gujarat Region	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **13th June:** Gale wind speed of the order of **135-145 kmph gusting to 160 kmph** very likely over north Arabian Sea. Gale wind speed of the order of **65-75 kmph gusting to 85 kmph** very likely over Gujarat coast. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.
- **14th June:** Gale wind speed of the order of **130-140 kmph gusting to 155 kmph** very likely over north Arabian Sea in morning hours and decrease gradually thereafter. Gale wind speed of the order of **60-70 kmph gusting to 80 kmph** very likely over Gujarat coast. It is very likely to be 40-50 kmph gusting to 60 kmph over northern parts of eastcentral Arabian Sea.
- **15th June:** Gale wind speed of the order of **100-110 kmph gusting to 125 kmph** very likely over north Arabian Sea till evening and decrease gradually thereafter. Squally wind speed of the order of **50-60 kmph gusting to 70 kmph** very likely over Gujarat coast.

(iii) Sea condition

- The sea condition is phenomenal over north Arabian Sea till 15th June 2019 and over northern parts of eastcentral Arabian Sea during next 12 hours. The sea condition is very high to phenomenal over Gujarat Coast on 13th, very rough to high on 14th and rough to very rough on 15th June 2019.
- The Sea condition is very likely to be rough to very rough along & off north Maharashtra Coast on 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into north Arabian Sea and along & off Gujarat coast till 15th and over Eastcentral Arabian Sea and along & off Maharashtra Coast on 13th June, 2019.
- Total suspension of fishing operations.

(iv) Storm Surge Warning

Storm surge of height about 0.5 m to 1.0 m above the astronomical tides likely to inundate the low lying coastal areas in the districts Gir Somnath, Junagarh, Porbandar and Devbhoomi Dwarka.

(v) Damage Expected and Action suggested for Gir Somnath, Junagarh, Porbandar and Devbhoomi Dwarka:

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

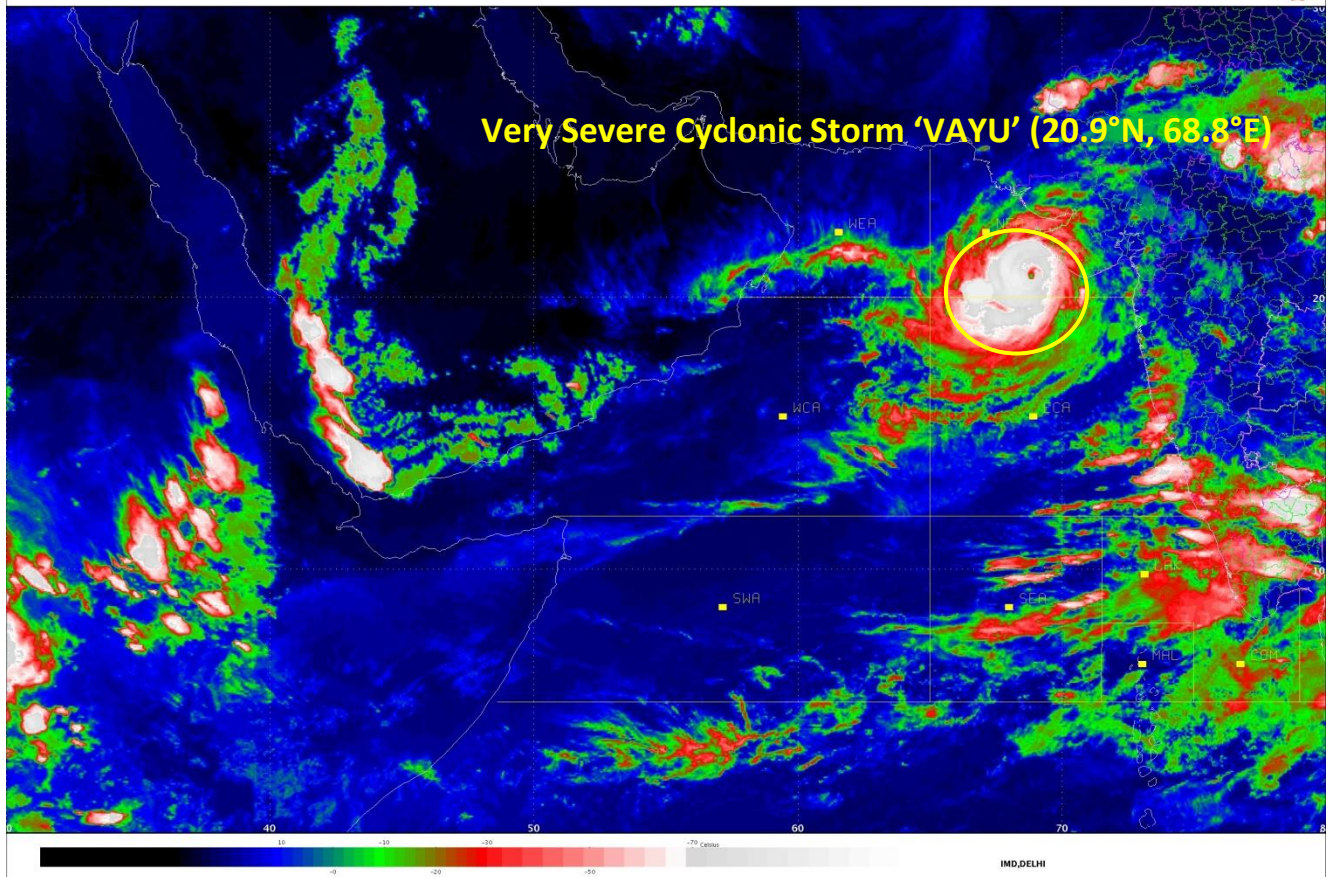
The next bulletin will be issued at 0230 hrs IST of 14th June, 2019.

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

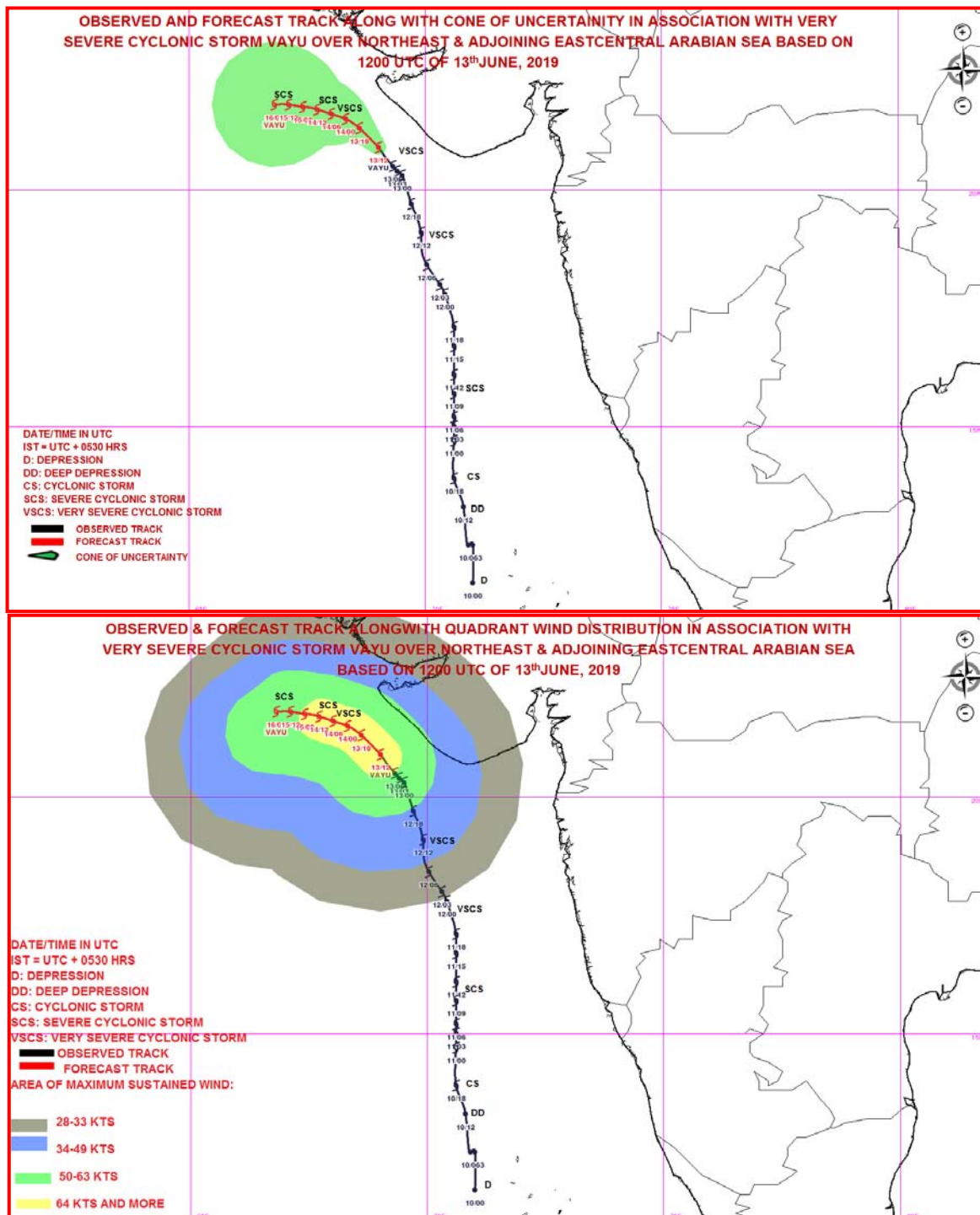
Copy to: CRS, Pune/ ACWC Chennai/ ACWC Mumbai/MC Goa/ MC Bengaluru/CWC Ahmedabad/Thiruvananthapuram.

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. : 29 (ARB/01/2019)

TIME OF ISSUE: 0145 HOURS IST

DATED: 14.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea:
Cyclone Warning for Gujarat Coast: Orange Message**

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea moved westwards with a speed of about 03 kmph in last six hours and lay centred at 2330 hrs IST of today, the 13th June, 2019 near latitude 20.9°N and longitude 68.8°E over northeast & adjoining eastcentral Arabian Sea, about 220 km west of Diu, 160 km west of Veraval (Gujarat) and 120 km southwest of Porbandar (Gujarat).

The system is moving west-northwestwards skirting the Saurashtra coast affecting Porbandar & Devbhoomi Dwarka with wind speed 65-75 kmph gusting to 85 kmph and Gir Somnath & Junagarh with wind speed 45-55 kmph gusting to 65 kmph. It is very likely to continue to affect these districts during next 12 hours and wind speed over these districts is very likely to decrease gradually 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
13.06.19/2330	20.9/68.8	135-145 gusting to 160	Very Severe Cyclonic Storm
14.06.19/0530	21.0/68.5	135-145 gusting to 160	Very Severe Cyclonic Storm
14.06.19/1130	21.1/68.2	120-130 gusting to 145	Very Severe Cyclonic Storm
14.06.19/1730	21.2/67.9	120-130 gusting to 145	Very Severe Cyclonic Storm
14.06.19/2330	21.3/67.4	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/1130	21.4/66.9	100-110 gusting to 125	Severe Cyclonic Storm
15.06.19/2330	21.5/66.4	90-100 gusting to 115	Severe Cyclonic Storm
16.06.19/1130	21.5/66.0	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.

Warnings:

(i) Heavy rainfall warning:

Sub-Divisions	13 June 2019*	14 June 2019*
Saurashtra & Kutch	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places in the coastal districts of Saurashtra	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places in the coastal districts of Saurashtra.
Gujarat Region	Rainfall at a few places with heavy falls at isolated places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning**
Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **13th June:** Gale wind speed of the order of **135-145 kmph gusting to 160 kmph** very likely over north Arabian Sea. Gale wind speed of the order of **65-75 kmph gusting to 85 kmph** very likely over Gujarat coast. It is very likely to be 50-60 kmph gusting to 70 kmph over north Maharashtra Coasts & northern parts of eastcentral Arabian Sea.
- **14th June:** Gale wind speed of the order of **120-130 kmph gusting to 145 kmph** very likely over north Arabian Sea in morning hours and decrease gradually thereafter. Gale wind speed of the order of **60-70 kmph gusting to 80 kmph** very likely over Gujarat coast. It is very likely to be 40-50 kmph gusting to 60 kmph over northern parts of eastcentral Arabian Sea.
- **15th June:** Gale wind speed of the order of **100-110 kmph gusting to 125 kmph** very likely over north Arabian Sea. Squally wind speed of the order of **50-60 kmph gusting to 70 kmph** very likely over Gujarat coast.

(iii) Sea condition

- The sea condition is phenomenal over north Arabian Sea till 15th June 2019 and over northern parts of eastcentral Arabian Sea during next 12 hours. The sea condition is very high to phenomenal over Gujarat Coast on 13th, very rough to high on 14th and rough to very rough on 15th June 2019.
- The Sea condition is very likely to be rough to very rough along & off north Maharashtra Coast on 13th June, 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into north Arabian Sea and along & off Gujarat coast till 15th and over Eastcentral Arabian Sea and along & off Maharashtra Coast on 13th June, 2019.
- Total suspension of fishing operations.

(iv) Storm Surge Warning

Storm surge of height about 0.5 m above the astronomical tides likely to inundate the low lying coastal areas in the districts Gir Somnath, Junagarh, Porbandar and Devbhoomi Dwarka.

(v) Damage Expected and Action suggested for Porbandar and Devbhoomi Dwarka:

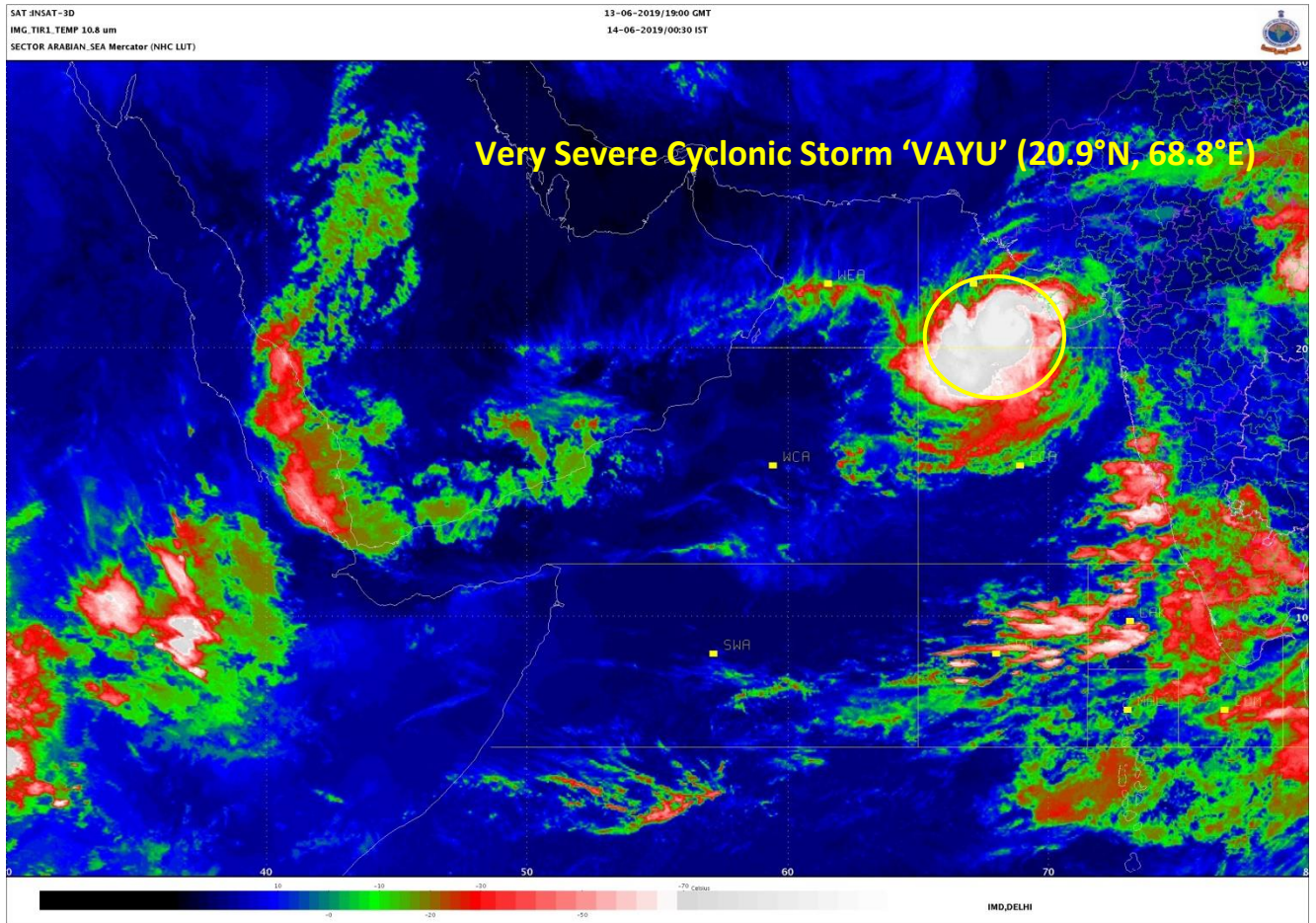
- (i) Damage to thatched huts. (ii) Damage to power and communication lines due to breaking of branches. (iii) Major damage to Kutcha and minor damage to Pucca roads. (iv) Some damage to paddy crops, banana, papaya trees and orchards. (v) Sea water inundation in low lying areas after erosion of Kutcha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

The next bulletin will be issued at 0530 hrs IST of 14th June, 2019.

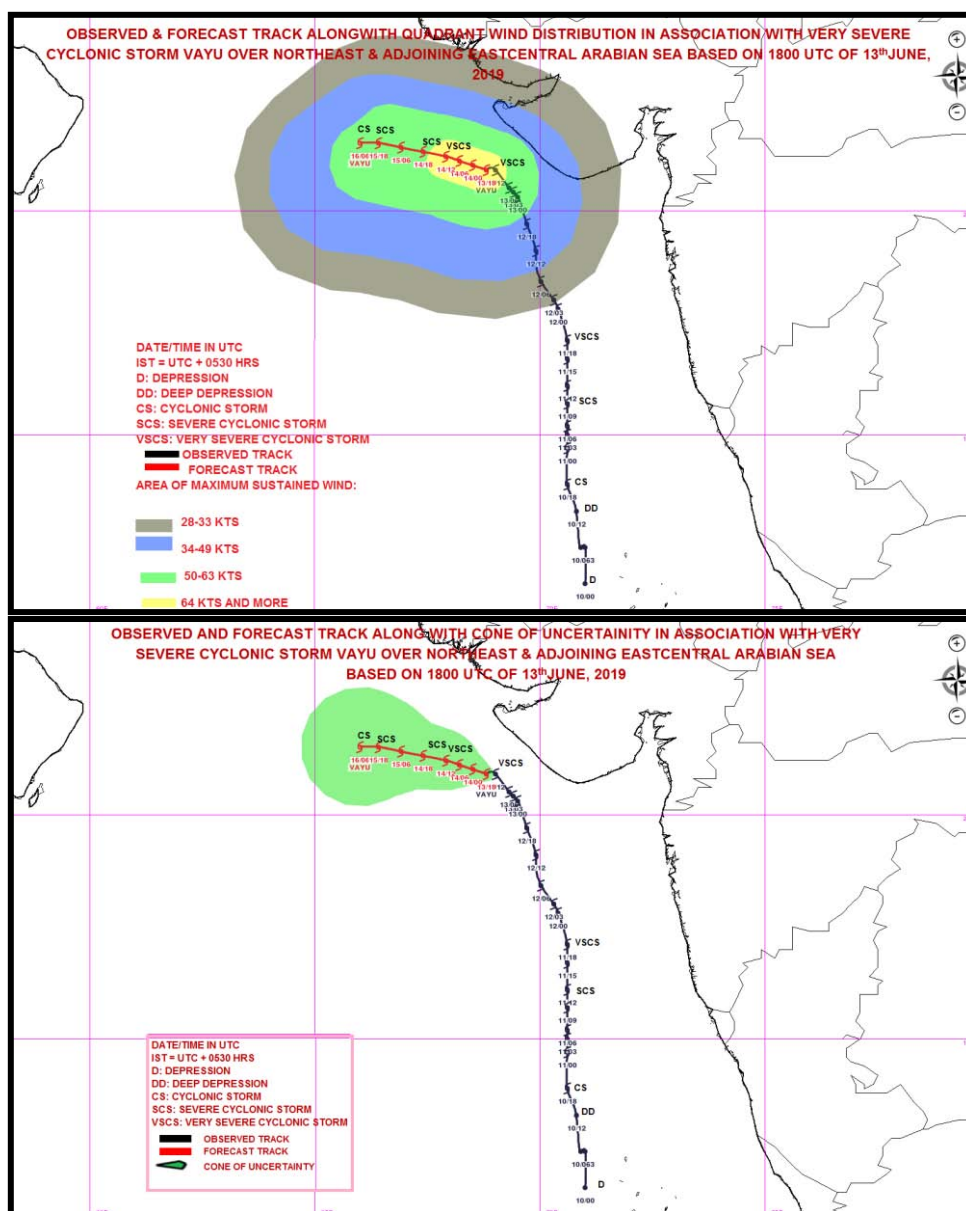
(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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.



MSW(knot)/kmph)	Impact	Action
28-33 /(52–61)	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
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 30 (ARB/01/2019)

TIME OF ISSUE: 0415 HOURS IST

DATED: 14.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea:
Cyclone Warning for Gujarat Coast: Orange Message**

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea moved westwards with a speed of about 03 kmph in last six hours and lay centred at 0230 hrs IST of today, the 14th June, 2019 near latitude 20.9°N and longitude 68.6°E over northeast & adjoining eastcentral Arabian Sea, about 130 km southwest of Porbandar (Gujarat), 175 km west of Veraval (Gujarat) and 240 km west of Diu.

The system is moving west-northwestwards skirting the Saurashtra coast affecting Porbandar & Devbhoomi Dwarka with wind speed 65-75 kmph gusting to 85 kmph and Gir Somnath & Junagarh with wind speed 45-55 kmph gusting to 65 kmph. It is very likely to continue to affect these districts during next 12 hours and wind speed over these districts is very likely to decrease gradually 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
14.06.19/0230	20.9/68.6	135-145 gusting to 160	Very Severe Cyclonic Storm
14.06.19/0530	21.0/68.5	135-145 gusting to 160	Very Severe Cyclonic Storm
14.06.19/1130	21.1/68.2	120-130 gusting to 145	Very Severe Cyclonic Storm
14.06.19/1730	21.2/67.9	120-130 gusting to 145	Very Severe Cyclonic Storm
14.06.19/2330	21.3/67.4	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/1130	21.4/66.9	100-110 gusting to 125	Severe Cyclonic Storm
15.06.19/2330	21.5/66.4	90-100 gusting to 115	Severe Cyclonic Storm
16.06.19/1130	21.5/66.0	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.

Warnings:

(i) Heavy rainfall warning:

Sub-Divisions	14 June 2019*	15 June 2019*
Saurashtra & Kutch	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places in the coastal districts of Saurashtra.	Rainfall at a few places with heavy falls at isolated places
Gujarat Region	Rainfall at a few places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **14th June:** Gale wind speed of the order of **120-130 kmph gusting to 145 kmph** very likely over north Arabian Sea in morning hours and decrease gradually thereafter. Gale wind speed of the order of **60-70 kmph gusting to 80 kmph** very likely over Gujarat coast. It is very likely to be 40-50 kmph gusting to 60 kmph over northern parts of eastcentral Arabian Sea.
- **15th June:** Gale wind speed of the order of **100-110 kmph gusting to 125 kmph** very likely over north Arabian Sea. Squally wind speed of the order of **50-60 kmph gusting to 70 kmph** very likely over Gujarat coast.

(iii) Sea condition

- The sea condition is phenomenal over north Arabian Sea till 15th June 2019 and over northern parts of eastcentral Arabian Sea during next 12 hours. The sea condition is rough to high on 14th and rough to very rough on 15th June 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into north Arabian Sea and along & off Gujarat coast till 15th and over Eastcentral Arabian Sea and along & off Maharashtra Coast on 14th June, 2019.
- Total suspension of fishing operations.

(iv) Storm Surge Warning

Storm surge of height about 0.5 m above the astronomical tides likely to inundate the low lying coastal areas in the districts Gir Somnath, Junagarh, Porbandar and Devbhoomi Dwarka.

(v) Damage Expected and Action suggested for Porbandar and Devbhoomi Dwarka:

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

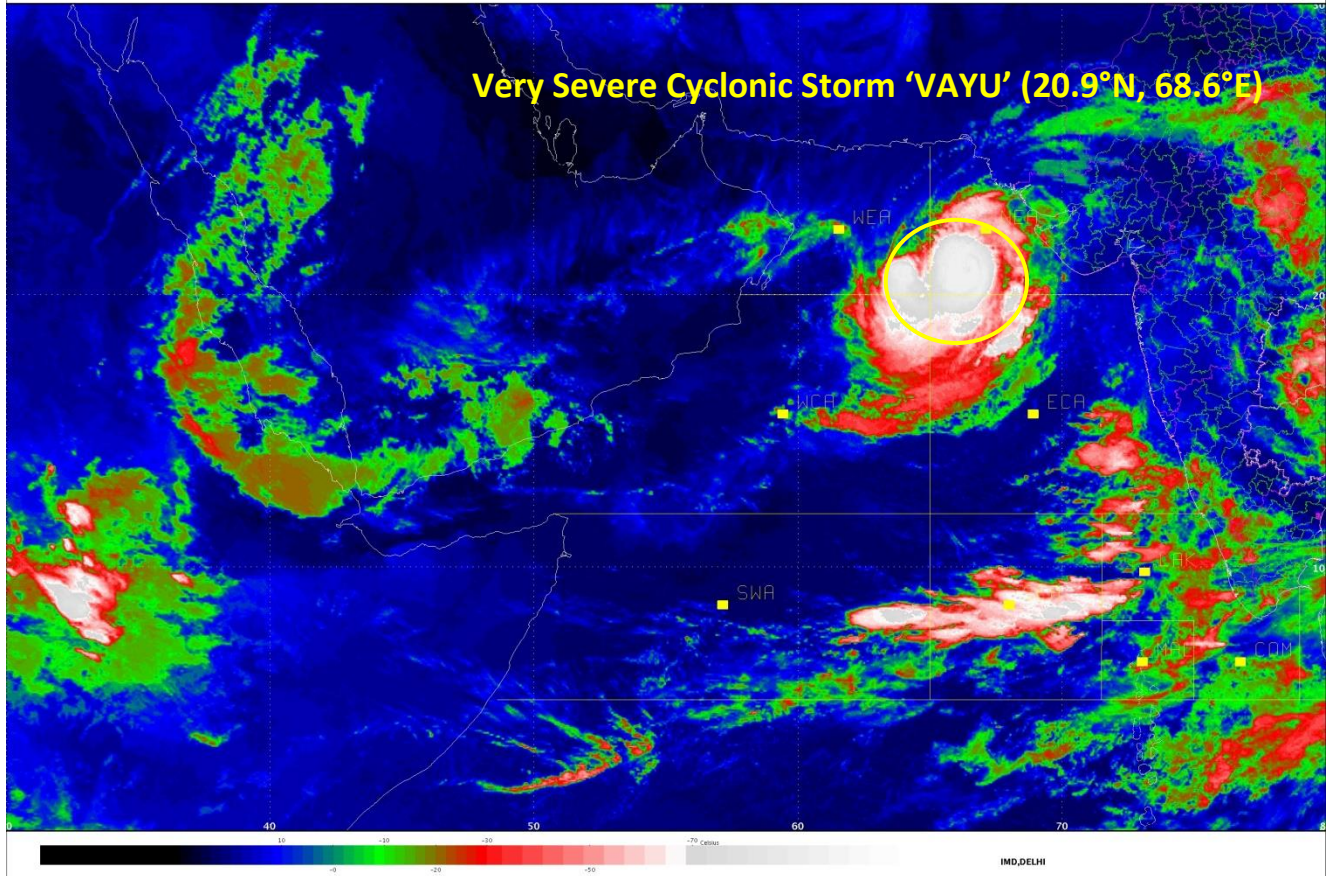
The next bulletin will be issued at 0830 hrs IST of 14th June, 2019.

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

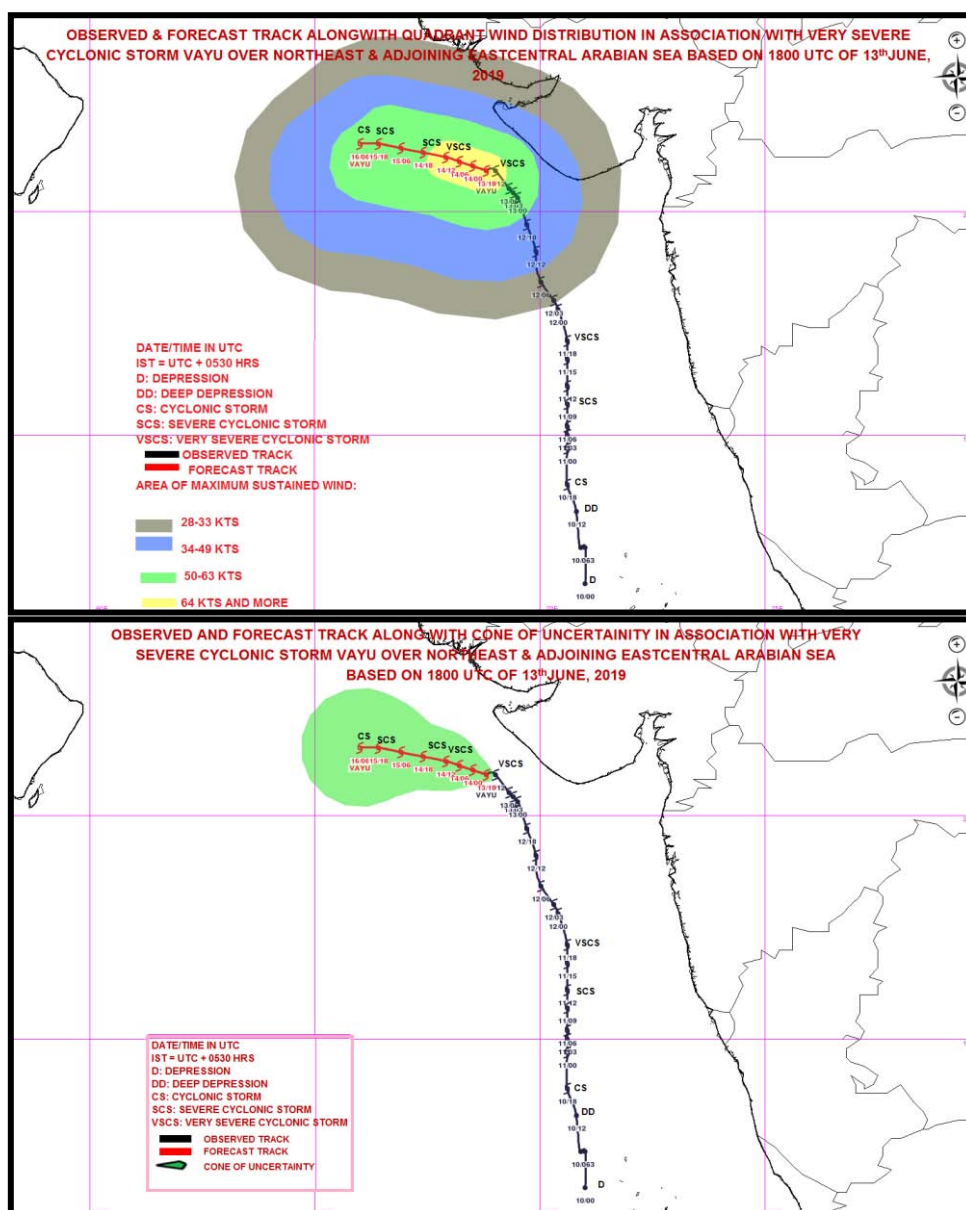
Copy to: CRS, Pune/ ACWC Chennai/ ACWC Mumbai/MC Goa/ MC Bengaluru/CWC Ahmedabad/Thiruvananthapuram.



Very Severe Cyclonic Storm 'VAYU' (20.9°N, 68.6°E)



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



MSW(knot)/kmph)	Impact	Action
28-33 /(52–61)	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
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 31 (ARB/01/2019)

TIME OF ISSUE: 0830 HOURS IST

DATED: 14.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea:
Cyclone Warning for Gujarat Coast: Orange Message**

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea moved westnorthwestwards with a speed of about 06 kmph in last six hours and lay centred at 0530 hrs IST of today, the 14th June, 2019 near latitude 21.0°N and longitude 68.5°E over northeast & adjoining eastcentral Arabian Sea, about 130 km southwest of Porbandar (Gujarat), 185 km west of Veraval (Gujarat) and 250 km west of Diu.

The system is moving west-northwestwards skirting the Saurashtra coast affecting Porbandar & Devbhoomi Dwarka with wind speed 60-70 kmph gusting to 80 kmph and Gir Somnath & Junagarh with wind speed 40-50 kmph gusting to 60 kmph. It is very likely to continue to affect these districts during next 12 hours and wind speed over these districts is very likely to decrease gradually 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
14.06.19/0530	21.0/68.5	135-145 gusting to 160	Very Severe Cyclonic Storm
14.06.19/1130	21.0/68.3	120-130 gusting to 145	Very Severe Cyclonic Storm
14.06.19/1730	21.1/67.9	120-130 gusting to 145	Very Severe Cyclonic Storm
14.06.19/2330	21.2/67.4	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/0530	21.3/67.1	100-110 gusting to 125	Severe Cyclonic Storm
15.06.19/1730	21.3/66.7	90-100 gusting to 115	Severe Cyclonic Storm
16.06.19/0530	21.4/66.2	80-90 gusting to 100	Cyclonic Storm
16.06.19/1730	21.4/66.1	70-80 gusting to 90	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) Heavy rainfall warning:

Sub-Divisions	14 June 2019*	15 June 2019*
Saurashtra & Kutch	Widespread rainfall with heavy to very heavy falls at few places and extremely heavy falls at isolated places in the coastal districts of Saurashtra.	Rainfall at a few places with heavy falls at isolated places
Gujarat Region	Rainfall at a few places	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **14th June:** Gale wind speed of the order of **120-130 kmph gusting to 145 kmph** very likely over north Arabian Sea. Gale wind speed of the order of **60-70 kmph gusting to 80 kmph** very likely over Gujarat coast during next 12 hours and decrease gradually thereafter. It is very likely to be 40-50 kmph gusting to 60 kmph over northern parts of eastcentral Arabian Sea.
- **15th June:** Gale wind speed of the order of **100-110 kmph gusting to 125 kmph** very likely over north Arabian Sea. Squally wind speed of the order of **50-60 kmph gusting to 70 kmph** very likely over Gujarat coast.

(iii) Sea condition

- The sea condition is phenomenal over north Arabian Sea till 15th June 2019 and over northern parts of eastcentral Arabian Sea during next 12 hours. The sea condition is rough to high over rest parts of eastcentral Arabian Sea on 14th and rough to very rough on 15th June 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into north Arabian Sea till 16th; along & off Gujarat coast till 15th and over Eastcentral Arabian Sea and along & off Maharashtra Coast on 14th June, 2019.
- Total suspension of fishing operations.

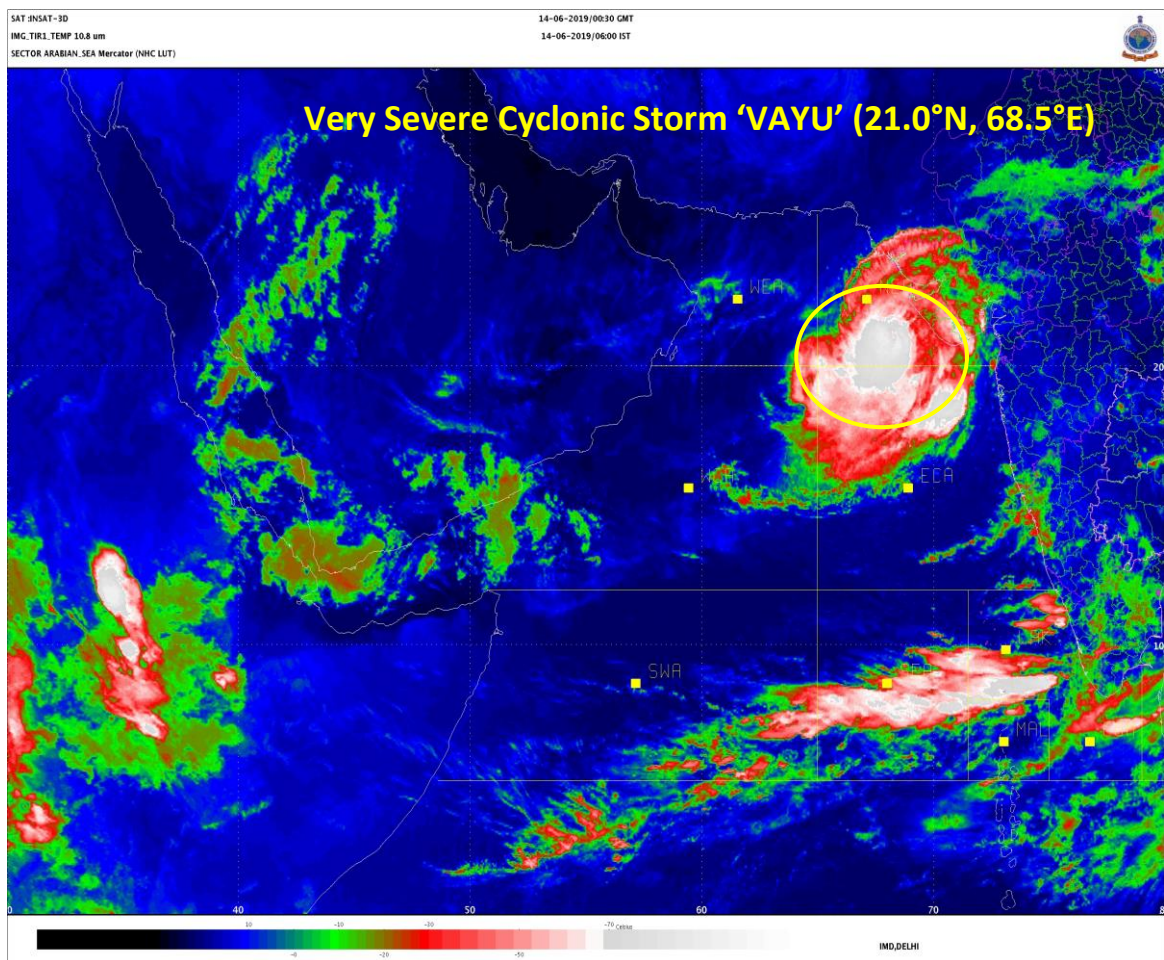
(v) Damage Expected and Action suggested for Porbandar and Devbhoomi Dwarka:

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

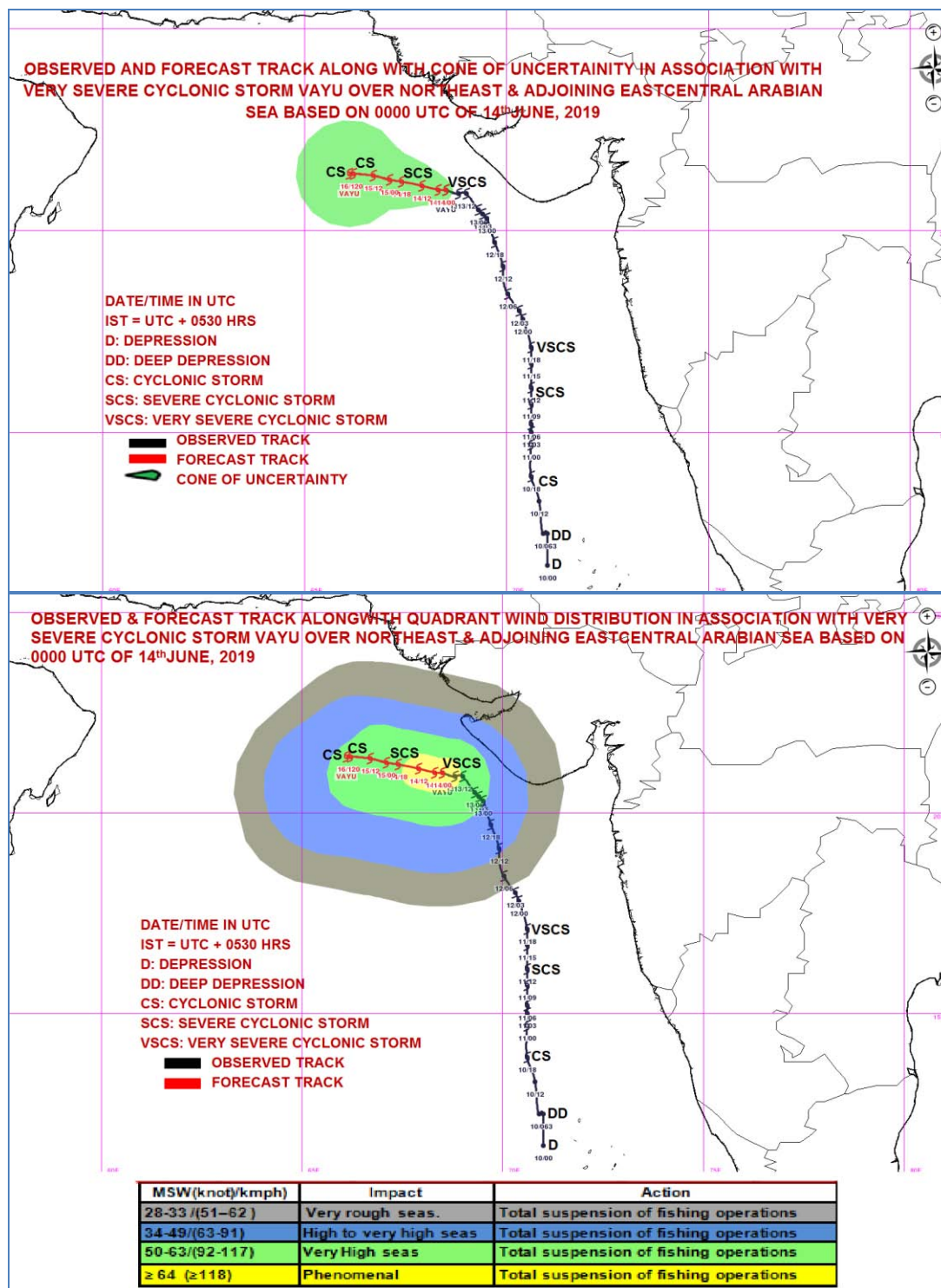
The next bulletin will be issued at 1130 hrs IST of 14th June, 2019.

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

Copy to: CRS, Pune/ 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. : 32 (ARB/01/2019)

TIME OF ISSUE: 1245 HOURS IST

DATED: 14.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea:

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea moved westwards with a speed of about 04 kmph in last six hours and lay centred at 0830 hrs IST of today, the 14th June, 2019 near latitude 21.0°N and longitude 68.3°E over northeast & adjoining eastcentral Arabian Sea, about 150 km west-southwest of Porbandar (Gujarat), 210 km west of Veraval (Gujarat) and 270 km west-northwest of Diu.

The system is moving nearly west-northwestwards affecting Porbandar & Devbhoomi Dwarka with wind speed 50-60 kmph gusting to 70 kmph and Gir Somnath & Junagarh with wind speed 30-40 kmph gusting to 50 kmph. The wind speed over these districts is very likely to decrease gradually, as the system is moving away from the 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
14.06.19/0830	21.0/68.3	135-145 gusting to 160	Very Severe Cyclonic Storm
14.06.19/1130	21.0/68.3	120-130 gusting to 145	Very Severe Cyclonic Storm
14.06.19/1730	21.1/67.9	120-130 gusting to 145	Very Severe Cyclonic Storm
14.06.19/2330	21.2/67.4	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/0530	21.3/67.1	100-110 gusting to 125	Severe Cyclonic Storm
15.06.19/1730	21.3/66.7	90-100 gusting to 115	Severe Cyclonic Storm
16.06.19/0530	21.4/66.2	80-90 gusting to 100	Cyclonic Storm
16.06.19/1730	21.4/66.1	70-80 gusting to 90	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) Heavy rainfall warning:

Sub-Divisions	14 June 2019*
Saurashtra & Kutch	Rainfall at many places with heavy falls at isolated places.
Gujarat Region	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **14th June:** Gale wind speed of the order of **120-130 kmph gusting to 145 kmph** very likely over north Arabian Sea. Gale wind speed of the order of **60-70 kmph gusting to 80 kmph** very likely over Gujarat coast during next 12 hours and decrease gradually thereafter. It is very likely to be 40-50 kmph gusting to 60 kmph over northern parts of eastcentral Arabian Sea.
- **15th June:** Gale wind speed of the order of **100-110 kmph gusting to 125 kmph** very likely over north Arabian Sea. Squally wind speed of the order of **50-60 kmph gusting to 70 kmph** very likely over Gujarat coast.
- **16th June:** Gale wind speed of the order of **80-90 kmph gusting to 100 kmph** very likely over north Arabian Sea. Squally wind speed of the order of **45-55 kmph gusting to 65 kmph** very likely over Gujarat coast.
-

(iii) Sea condition

- The sea condition is phenomenal over north Arabian Sea till 17th June 2019 and over northern parts of eastcentral Arabian Sea during next 12 hours. The sea condition is rough to high over rest parts of eastcentral Arabian Sea on 14th and rough to very rough on 15th June 2019.

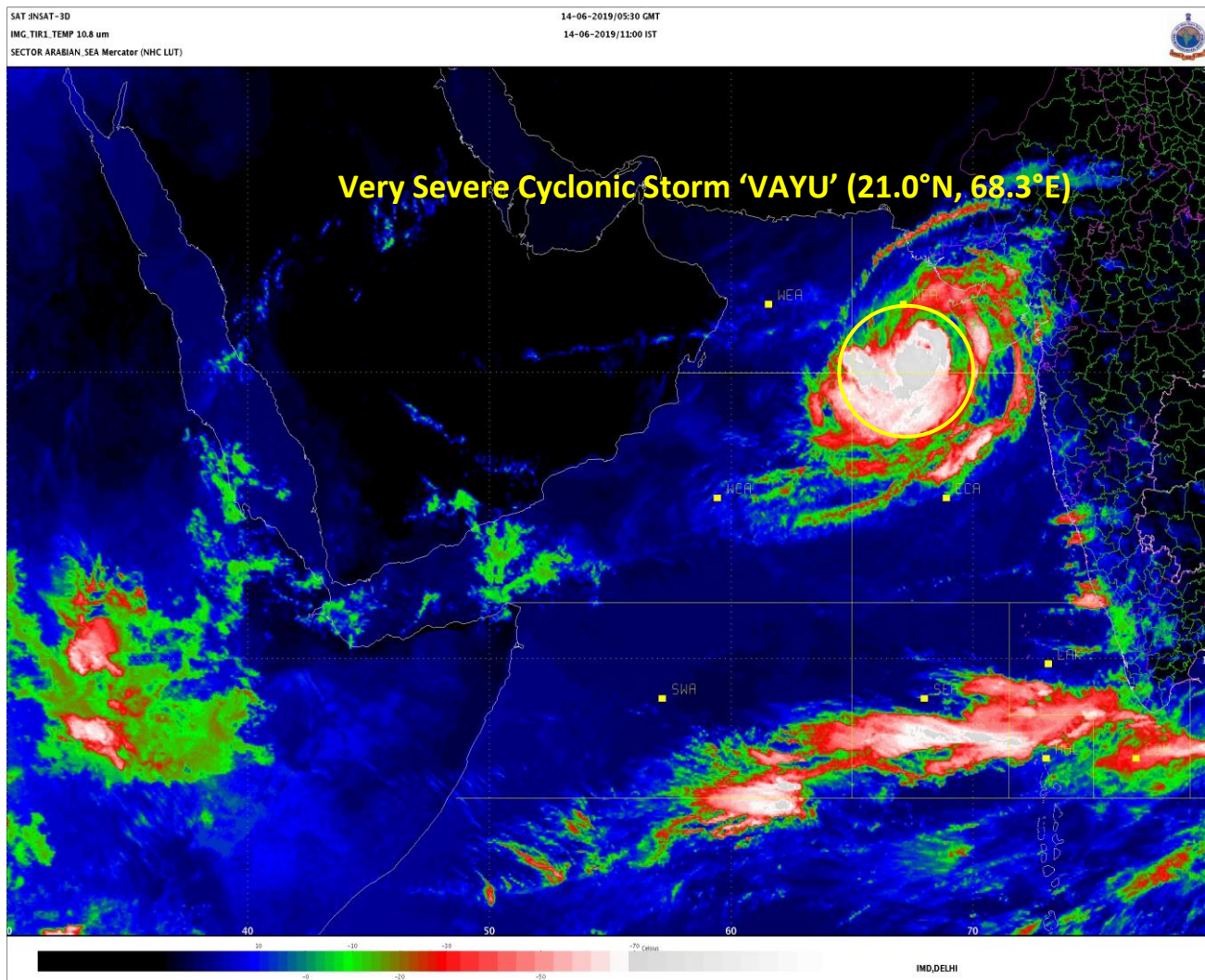
(iv) Fishermen Warning

- The fishermen are advised not to venture into north Arabian Sea and along & off Gujarat coast till 17th and over Eastcentral Arabian Sea and along & off Maharashtra Coast on 14th June, 2019.
- Total suspension of fishing operations.

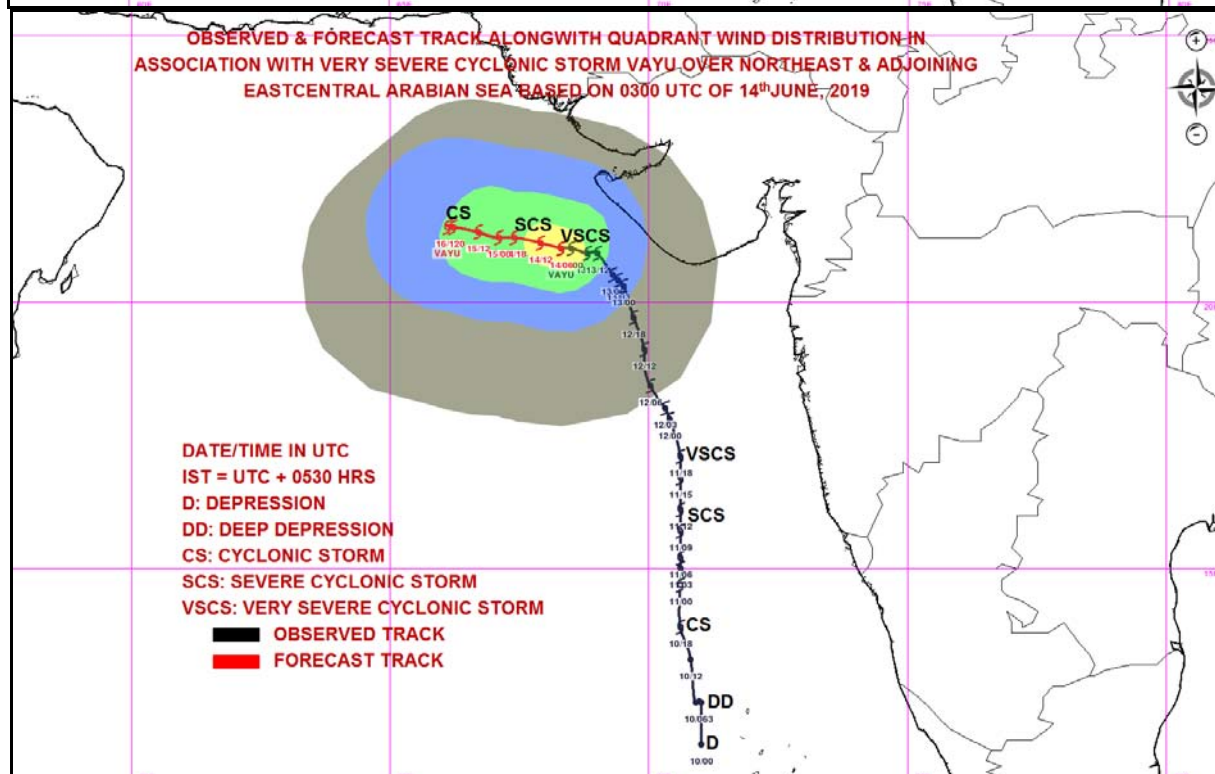
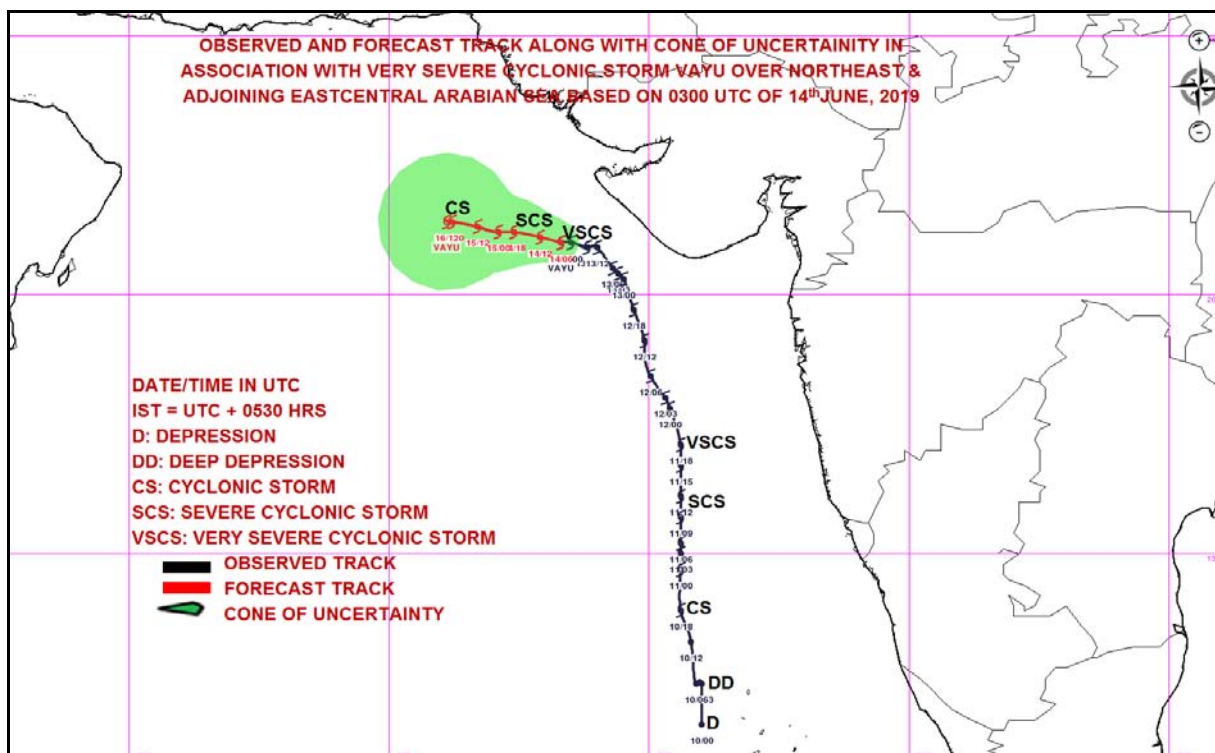
The next bulletin will be issued at 1430 hrs IST of 14th June, 2019.

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

Copy to: CRS, Pune/ 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.

MSW(knot)/kmph)	Impact	Action
28-33 /(52–61)	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
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 33 (ARB/01/2019)

TIME OF ISSUE: 1500 HOURS IST

DATED: 14.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea:

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea moved westwards with a speed of about 05 kmph in last six hours and lay centred at 1130 hrs IST of today, the 14th June, 2019 near latitude 21.0°N and longitude 68.2°E over northeast & adjoining eastcentral Arabian Sea, about 170 km west-southwest of Porbandar (Gujarat), 220 km west-southwest of Veraval (Gujarat) and 280 km west-northwest of Diu.

The system is moving nearly westwards affecting Porbandar & Devbhoomi Dwarka districts with wind speed 50-60 kmph gusting to 70 kmph and Gir Somnath & Junagarh districts with wind speed 30-40 kmph gusting to 50 kmph. The wind speed over these districts is very likely to decrease gradually.

The system is very likely to move nearly westwards during next 48 hours and recurve northeastwards 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
14.06.19/1130	21.0/68.2	135-145 gusting to 160	Very Severe Cyclonic Storm
14.06.19/1730	20.9/67.9	135-145 gusting to 160	Very Severe Cyclonic Storm
14.06.19/2330	20.8/67.5	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/0530	20.7/67.2	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/1130	20.7/66.8	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/2330	20.8/66.0	90-100 gusting to 115	Severe Cyclonic Storm
16.06.19/1130	21.3/66.3	80-90 gusting to 100	Cyclonic Storm
16.06.19/2330	21.8/67.2	70-80 gusting to 90	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) Heavy rainfall warning:

Sub-Divisions	14 June 2019*
Saurashtra & Kutch	Rainfall at many places with heavy falls at isolated places.
Gujarat Region	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Red- Take action, Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day; Extremely heavy rain: more than 204.4 mm/day

(ii) Wind warning

- **14th June:** Gale wind speed of the order of **135-145 kmph gusting to 160 kmph** very likely over north Arabian Sea. Squally wind speed of the order of **50-60 kmph gusting to 70 kmph** very likely over Gujarat coast during next 12 hours and decrease gradually thereafter. It is very likely to be 40-50 kmph gusting to 60 kmph over northern parts of eastcentral Arabian Sea.
- **15th June:** Gale wind speed of the order of **120-130 kmph gusting to 145 kmph** very likely over north Arabian Sea. Squally wind speed of the order of **45-55 kmph gusting to 65 kmph** very likely over Gujarat coast.
- **16th June:** Gale wind speed of the order of **80-90 kmph gusting to 100 kmph** very likely over north Arabian Sea. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely over Gujarat coast.

(iii) Sea condition

- The sea condition is phenomenal over north Arabian Sea till 17th June 2019 and over northern parts of eastcentral Arabian Sea during next 12 hours.
- The sea conditions are very likely to be very rough to high along & off Gujarat coast till 17th.
- The sea condition is rough to high over rest parts of eastcentral Arabian Sea on 14th and rough to very rough on 15th June 2019.

(iv) Fishermen Warning

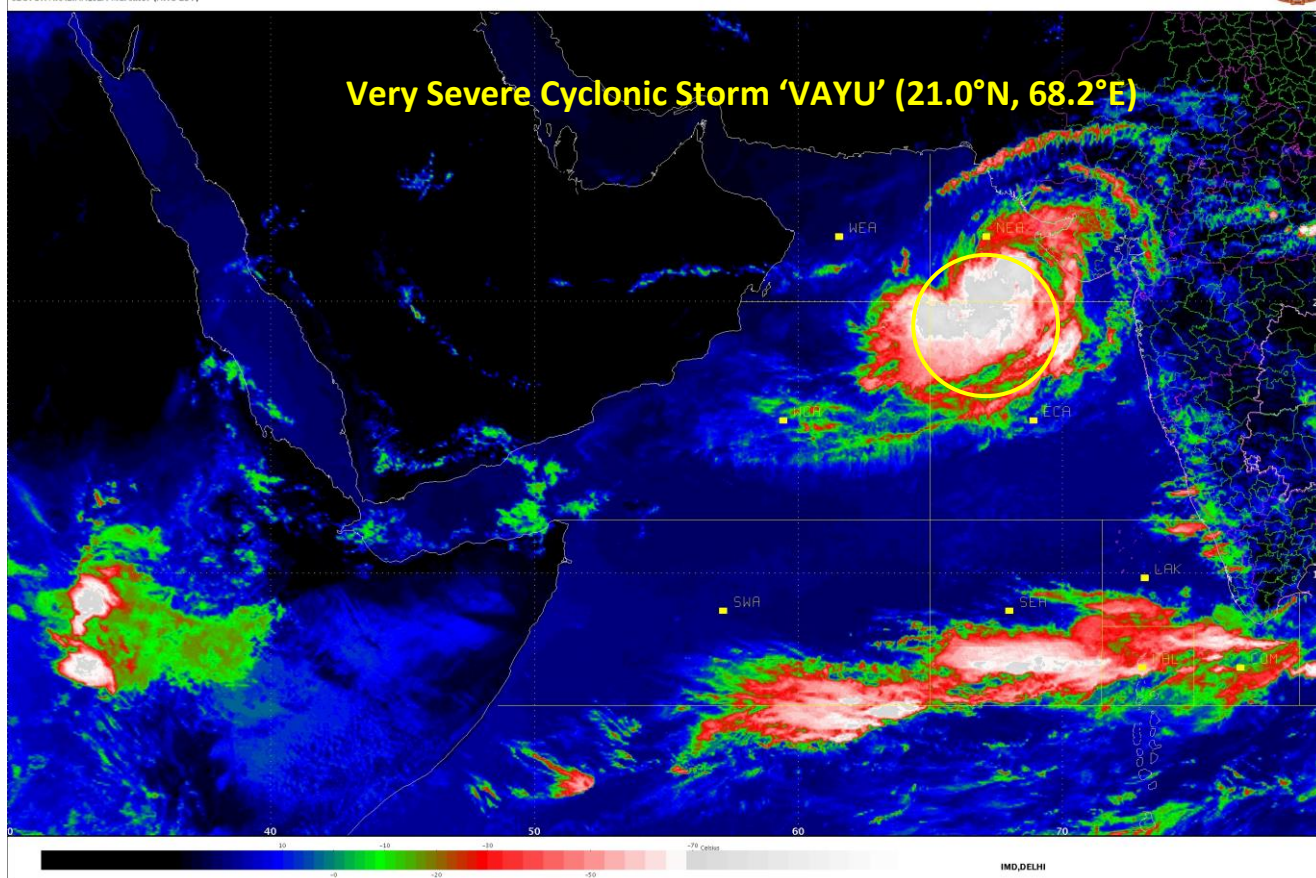
- The fishermen are advised not to venture into north Arabian Sea and along & off Gujarat coast till 17th and over Eastcentral Arabian Sea and along & off Maharashtra Coast on 14th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 1730 hrs IST of 14th June, 2019.

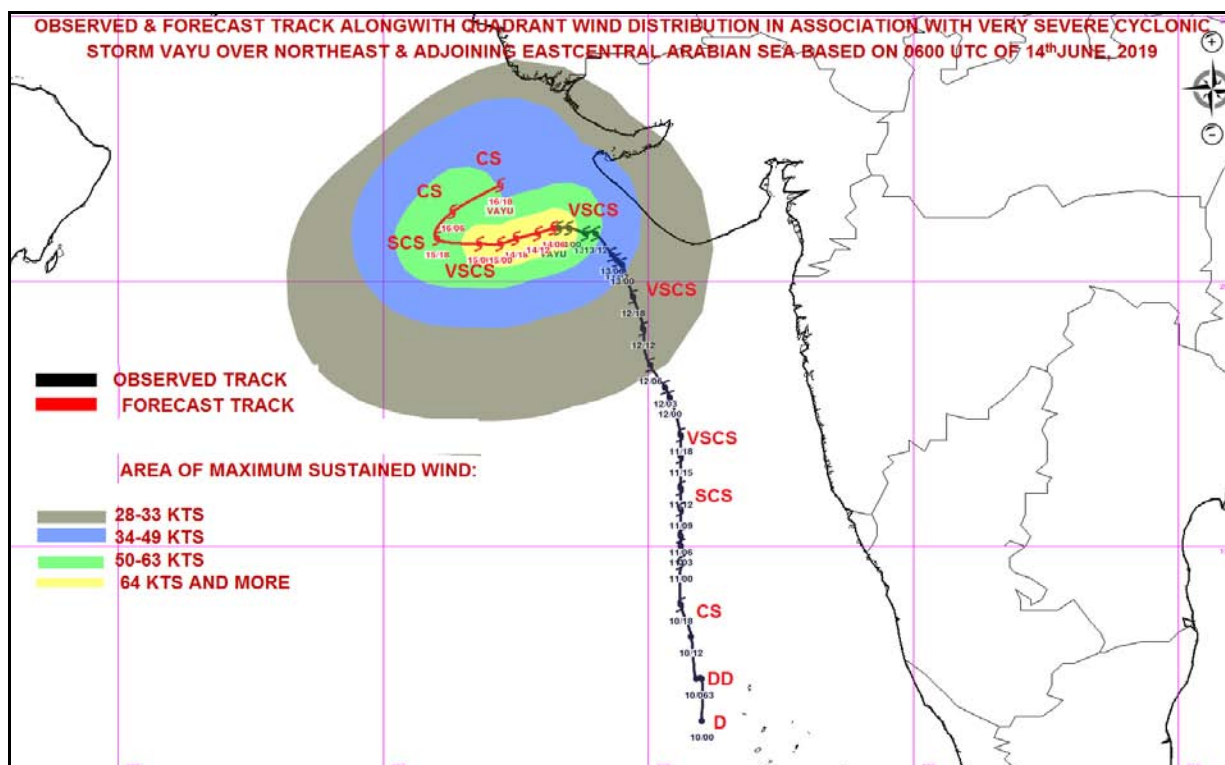
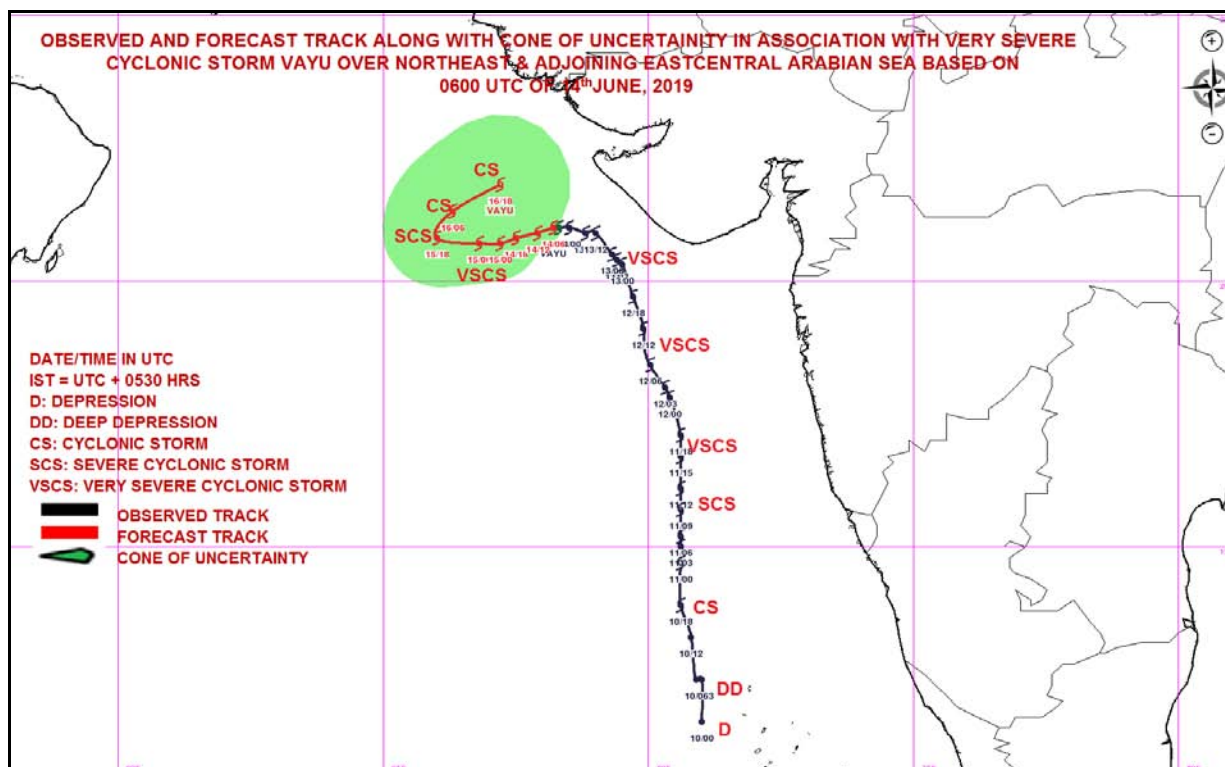
(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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.



MSW(knot)/kmph)	Impact	Action
28-33 /(52-61)	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
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 34 (ARB/01/2019)

TIME OF ISSUE: 1630 HOURS IST

DATED: 14.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea moved west-southwestwards with a speed of about 04 kmph in last six hours and lay centred at 1430 hrs IST of today, the 14th June, 2019 near latitude 20.9°N and longitude 68.1°E over northeast & adjoining eastcentral Arabian Sea, about 180 km west-southwest of Porbandar (Gujarat), 230 km west of Veraval (Gujarat) and 290 km west-northwest of Diu. **The system is very likely to move nearly westwards during next 48 hours and recurve northeastwards thereafter.**

The system is moving nearly westwards. However, Porbandar & Devbhoomi Dwarka districts are likely to experience squally winds speed reaching 50-60 kmph gusting to 70 kmph and Gir Somnath & Junagarh districts with strong winds speed reaching 30-40 kmph gusting to 50 kmph during next 12 hours decrease subsequently.

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
14.06.19/1430	20.9/68.1	135-145 gusting to 160	Very Severe Cyclonic Storm
14.06.19/1730	20.9/67.9	135-145 gusting to 160	Very Severe Cyclonic Storm
14.06.19/2330	20.8/67.5	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/0530	20.7/67.2	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/1130	20.7/66.8	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/2330	20.8/66.0	90-100 gusting to 115	Severe Cyclonic Storm
16.06.19/1130	21.3/66.3	80-90 gusting to 100	Cyclonic Storm
16.06.19/2330	21.8/67.2	70-80 gusting to 90	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) Heavy rainfall warning:

Sub-Divisions	14 June 2019*
Saurashtra & Kutch	Rainfall at many places with heavy falls at isolated places.
Gujarat Region	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Green: No warning**
Heavy rain: 64.5-115.5 mm/day

(ii) Wind warning

- **14th June:** Gale wind speed of the order of **135-145 kmph gusting to 160 kmph** very likely over north Arabian Sea. Squally wind speed of the order of **50-60 kmph gusting to 70 kmph** very likely over Gujarat coast during next 12 hours and decrease gradually thereafter. It is very likely to be 40-50 kmph gusting to 60 kmph over northern parts of eastcentral Arabian Sea.
- **15th June:** Gale wind speed of the order of **120-130 kmph gusting to 145 kmph** very likely over north Arabian Sea. Squally wind speed of the order of **45-55 kmph gusting to 65 kmph** very likely over Gujarat coast.
- **16th June:** Gale wind speed of the order of **80-90 kmph gusting to 100 kmph** very likely over north Arabian Sea. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely over Gujarat coast.

(iii) Sea condition

- The sea condition is very likely to be phenomenal over north Arabian Sea and adjoining eastcentral Arabian Sea on 14th June 2019. It is likely to be high to very high on 15th and very rough to high on 16th over these areas.
- The sea conditions are very likely to be very rough to high along & off Gujarat coast till 17th.
- The sea condition is very likely to be rough to very rough over rest parts of eastcentral Arabian Sea upto 16th June 2019.

(iv) Fishermen Warning

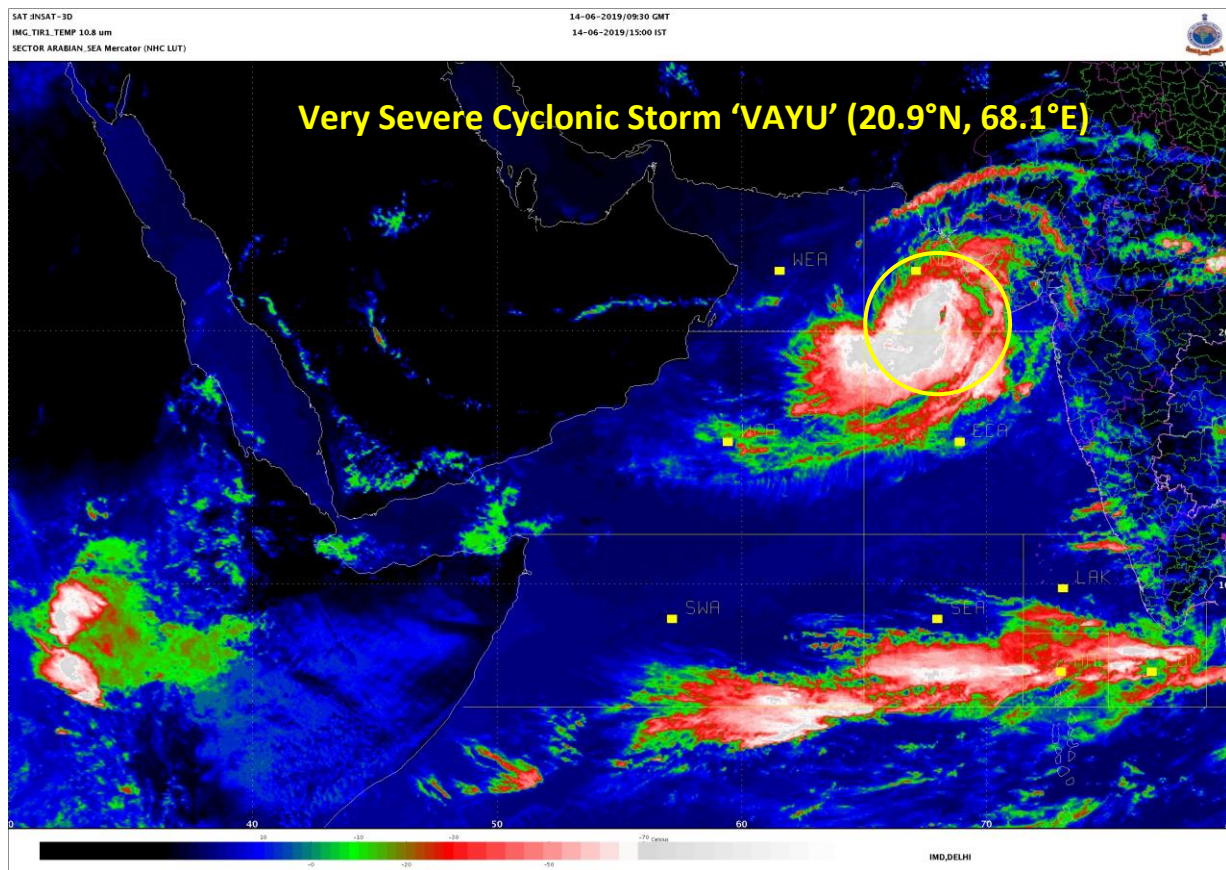
- The fishermen are advised not to venture into north Arabian Sea and along & off Gujarat coast till 17th and over Eastcentral Arabian Sea till 16th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 2030 hrs IST of 14th June, 2019.

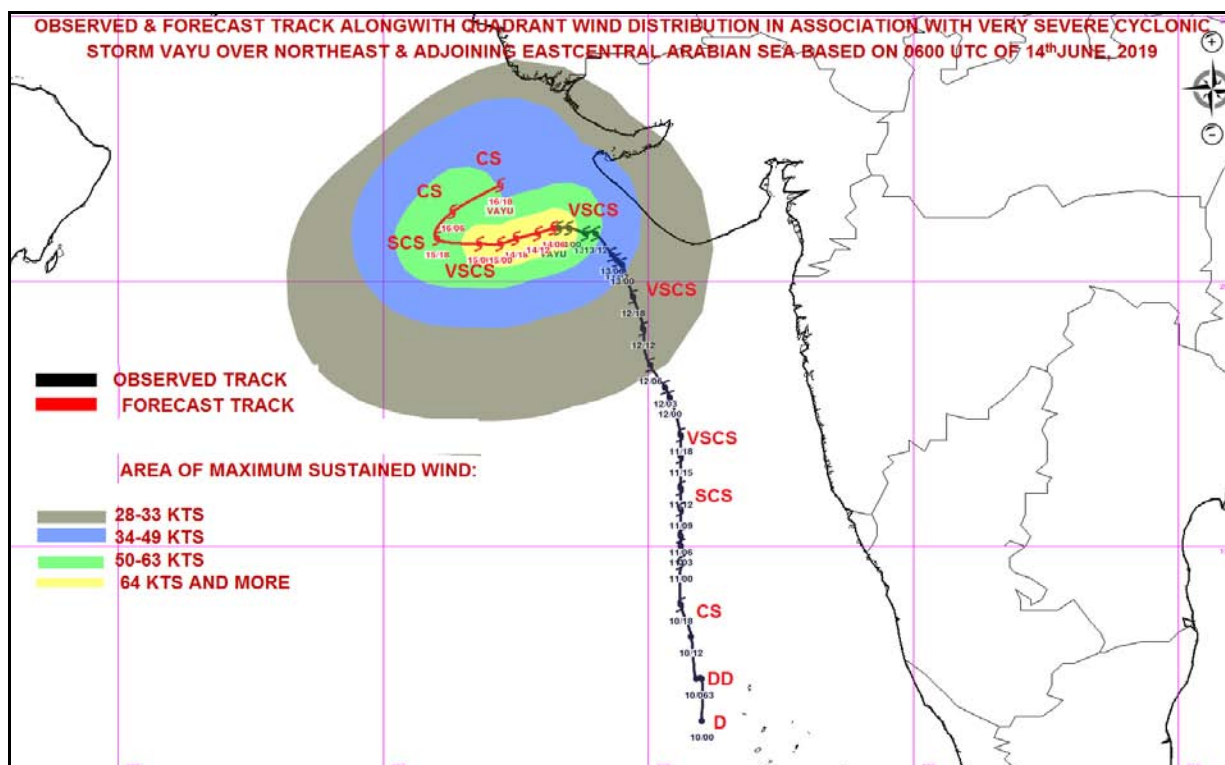
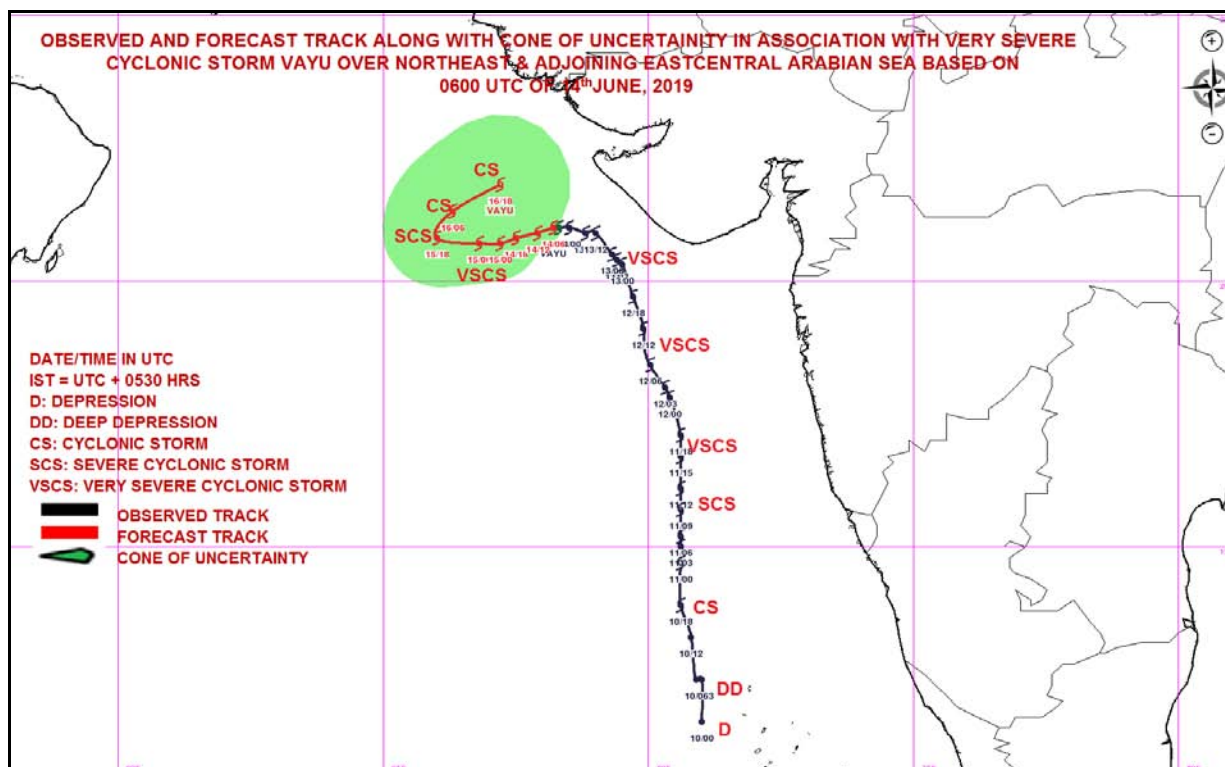
(Sunitha Devi S)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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.



MSW(knot)/kmph)	Impact	Action
28-33 /(52-61)	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
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 35 (ARB/01/2019)

TIME OF ISSUE: 2030 HOURS IST

DATED: 14.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea continued to move west-southwestwards with a speed of about 05 kmph in last six hours and lay centred at 1730 hrs IST of today, the 14th June, 2019 near latitude 20.8°N and longitude 68.0°E over northeast & adjoining eastcentral Arabian Sea, about 190 km west-southwest of Porbandar (Gujarat), 240 km west-southwest of Veraval (Gujarat) and 300 km west of Diu. **The system is very likely to move nearly westwards during next 48 hours and recurve northeastwards thereafter.**

The system is moving nearly westwards. However, Porbandar & Devbhoomi Dwarka districts are likely to experience squally winds speed reaching 50-60 kmph gusting to 70 kmph and Gir Somnath & Junagarh districts with strong winds speed reaching 30-40 kmph gusting to 50 kmph during next 12 hours and decrease subsequently.

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
14.06.19/1730	20.8/68.0	130-140 gusting to 155	Very Severe Cyclonic Storm
14.06.19/2330	20.7/67.5	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/0530	20.7/67.2	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/1130	20.7/66.8	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/1730	20.8/66.4	100-110 gusting to 125	Severe Cyclonic Storm
16.06.19/0530	21.1/66.2	90-100 gusting to 110	Cyclonic Storm
16.06.19/1730	21.5/66.8	80-90 gusting to 100	Cyclonic Storm
17.06.19/0530	21.8/67.2	70-80 gusting to 90	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) Heavy rainfall warning:

Sub-Divisions	14 June 2019*
Saurashtra & Kutch	Rainfall at many places with heavy falls at isolated places.
Gujarat Region	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Green: No warning**
Heavy rain: 64.5-115.5 mm/day

(ii) Wind warning

- **14th June:** Gale wind speed of the order of **130-140 kmph gusting to 155 kmph** very likely over north Arabian Sea. Squally wind speed of the order of **50-60 kmph gusting to 70 kmph** very likely over Gujarat coast during next 12 hours and decrease gradually thereafter. It is very likely to be 40-50 kmph gusting to 60 kmph over northern parts of eastcentral Arabian Sea.
- **15th June:** Gale wind speed of the order of **110-120 kmph gusting to 135 kmph** very likely over north Arabian Sea. Squally wind speed of the order of **45-55 kmph gusting to 65 kmph** very likely over Gujarat coast.
- **16th June:** Gale wind speed of the order of **80-90 kmph gusting to 100 kmph** very likely over north Arabian Sea. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely over Gujarat coast.

(iii) Sea condition

- The sea condition is very likely to be phenomenal over north Arabian Sea and adjoining eastcentral Arabian Sea on 14th June 2019. It is likely to be high to very high on 15th and very rough to high on 16th over these areas.
- The sea conditions are very likely to be very rough to high along & off Gujarat coast till 17th.
- The sea condition is very likely to be rough to very rough over rest parts of eastcentral Arabian Sea upto 16th June 2019.

(iv) Fishermen Warning

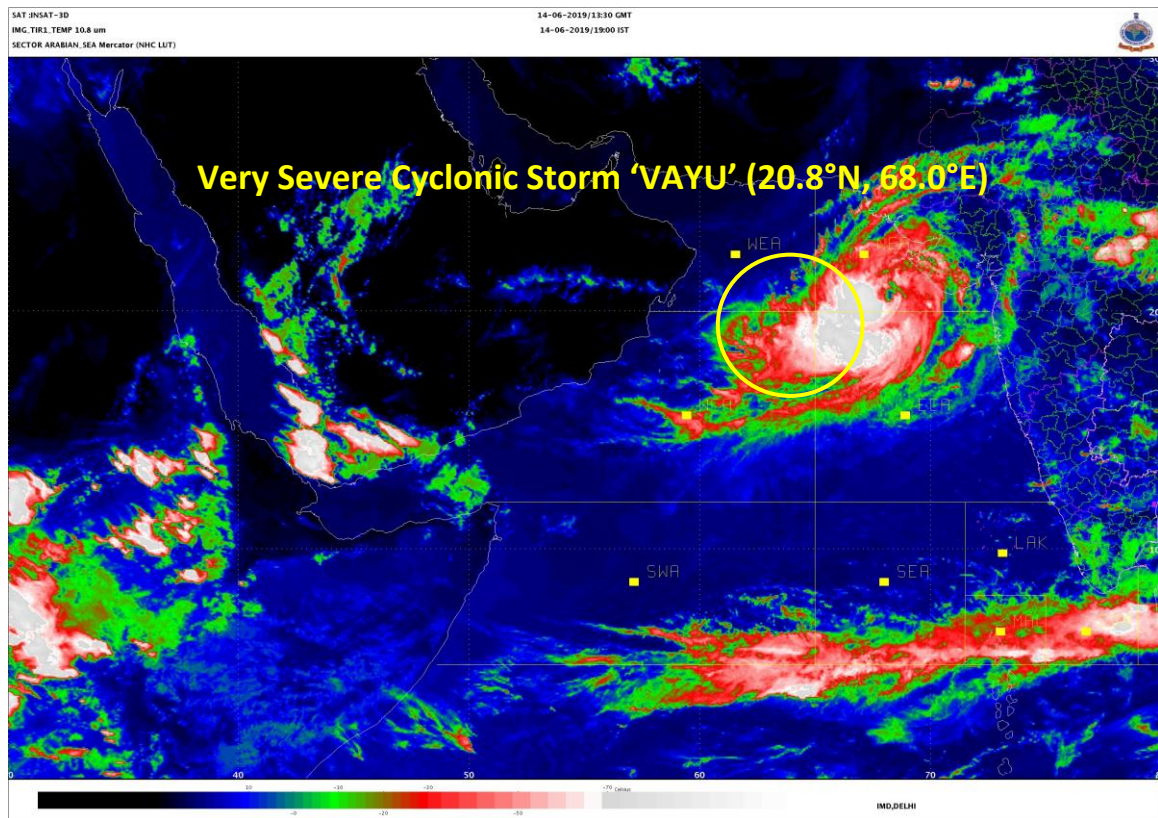
- The fishermen are advised not to venture into north Arabian Sea and along & off Gujarat coast till 17th and over Eastcentral Arabian Sea till 16th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 2330 hrs IST of 14th June, 2019.

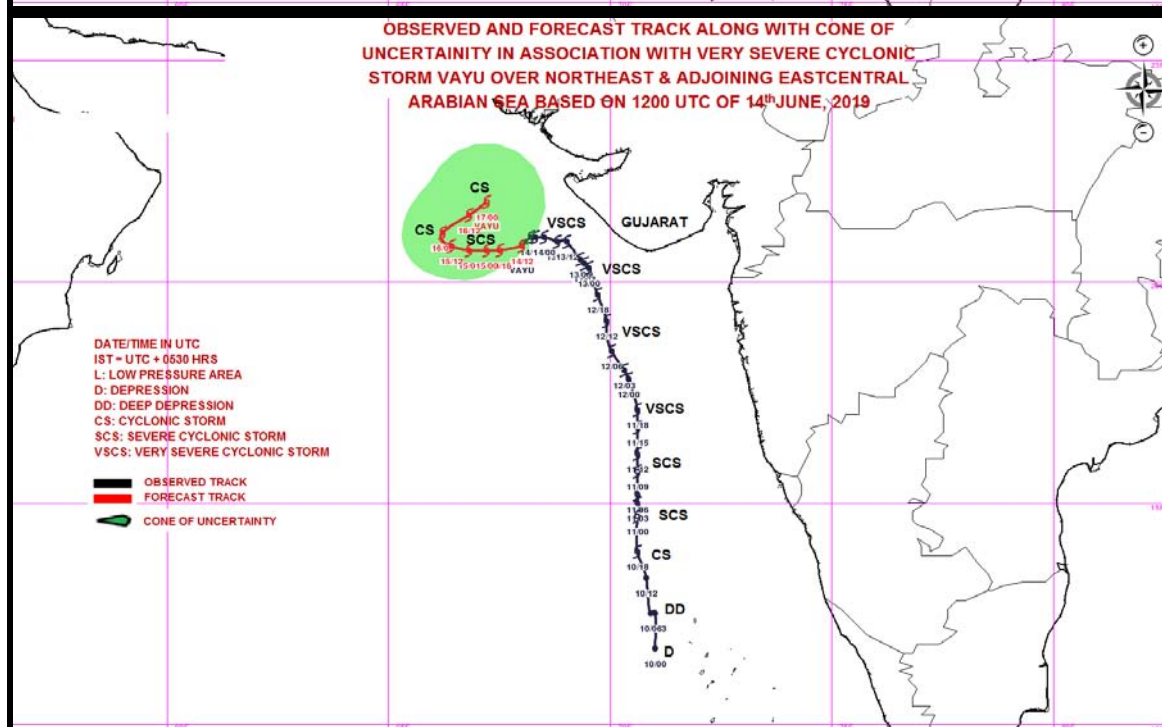
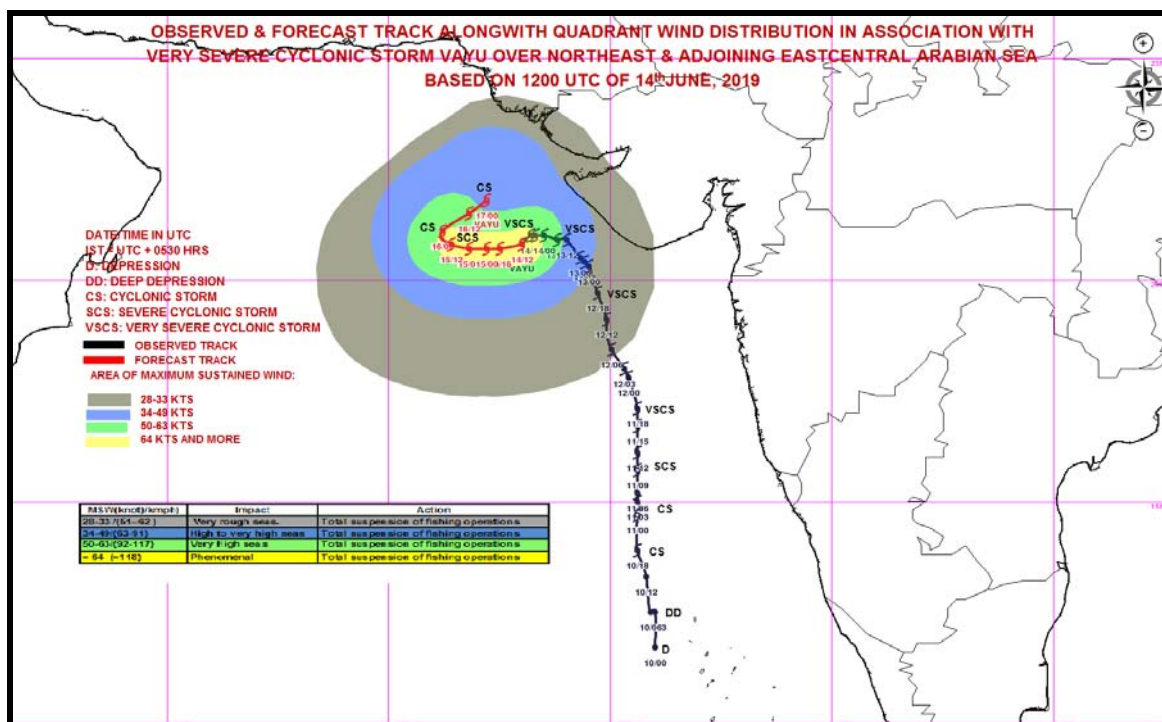
(Sunitha Devi S)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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.



MSW(knot)/kmph)	Impact	Action
28-33 /(52-61)	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
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 36 (ARB/01/2019)

TIME OF ISSUE: 2230 HOURS IST

DATED: 14.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea continued to move west-southwestwards with a speed of about 04 kmph in last six hours and lay centred at 2030 hrs IST of today, the 14th June, 2019 near latitude 20.8°N and longitude 67.9°E over northeast & adjoining eastcentral Arabian Sea, about 200 km west-southwest of Porbandar (Gujarat), 250 km west-southwest of Veraval (Gujarat) and 310 km nearly west of Diu (Gujarat). **The system is very likely to move nearly westwards during next 48 hours and recurve northeastwards thereafter.**

The system is moving nearly westwards. However, Porbandar & Devbhoomi Dwarka districts are likely to experience squally winds speed reaching 50-60 kmph gusting to 70 kmph and Gir Somnath & Junagarh districts with strong winds speed reaching 30-40 kmph gusting to 50 kmph during next 12 hours and decrease subsequently.

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
14.06.19/2030	20.8/67.9	120-130 gusting to 145	Very Severe Cyclonic Storm
14.06.19/2330	20.7/67.5	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/0530	20.7/67.2	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/1130	20.7/66.8	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/1730	20.8/66.4	100-110 gusting to 125	Severe Cyclonic Storm
16.06.19/0530	21.1/66.2	90-100 gusting to 110	Cyclonic Storm
16.06.19/1730	21.5/66.8	80-90 gusting to 100	Cyclonic Storm
17.06.19/0530	21.8/67.2	70-80 gusting to 90	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) Heavy rainfall warning:

Sub-Divisions	14 June 2019*
Saurashtra & Kutch	Rainfall at many places with heavy falls at isolated places.
Gujarat Region	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Green: No warning**
Heavy rain: 64.5-115.5 mm/day

(ii) Wind warning

- **14th June:** Gale wind speed of the order of **120-130 kmph gusting to 145 kmph** very likely over north Arabian Sea. Squally wind speed of the order of **50-60 kmph gusting to 70 kmph** very likely over Gujarat coast during next 12 hours and decrease gradually thereafter. It is very likely to be 40-50 kmph gusting to 60 kmph over northern parts of eastcentral Arabian Sea.
- **15th June:** Gale wind speed of the order of **110-120 kmph gusting to 135 kmph** very likely over north Arabian Sea. Squally wind speed of the order of **45-55 kmph gusting to 65 kmph** very likely over Gujarat coast.
- **16th June:** Gale wind speed of the order of **80-90 kmph gusting to 100 kmph** very likely over north Arabian Sea. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely over Gujarat coast.

(iii) Sea condition

- The sea condition is very likely to be phenomenal over north Arabian Sea and adjoining eastcentral Arabian Sea on 14th June 2019. It is likely to be high to very high on 15th and very rough to high on 16th over these areas.
- The sea conditions are very likely to be very rough to high along & off Gujarat coast till 17th.
- The sea condition is very likely to be rough to very rough over rest parts of eastcentral Arabian Sea upto 16th June 2019.

(iv) Fishermen Warning

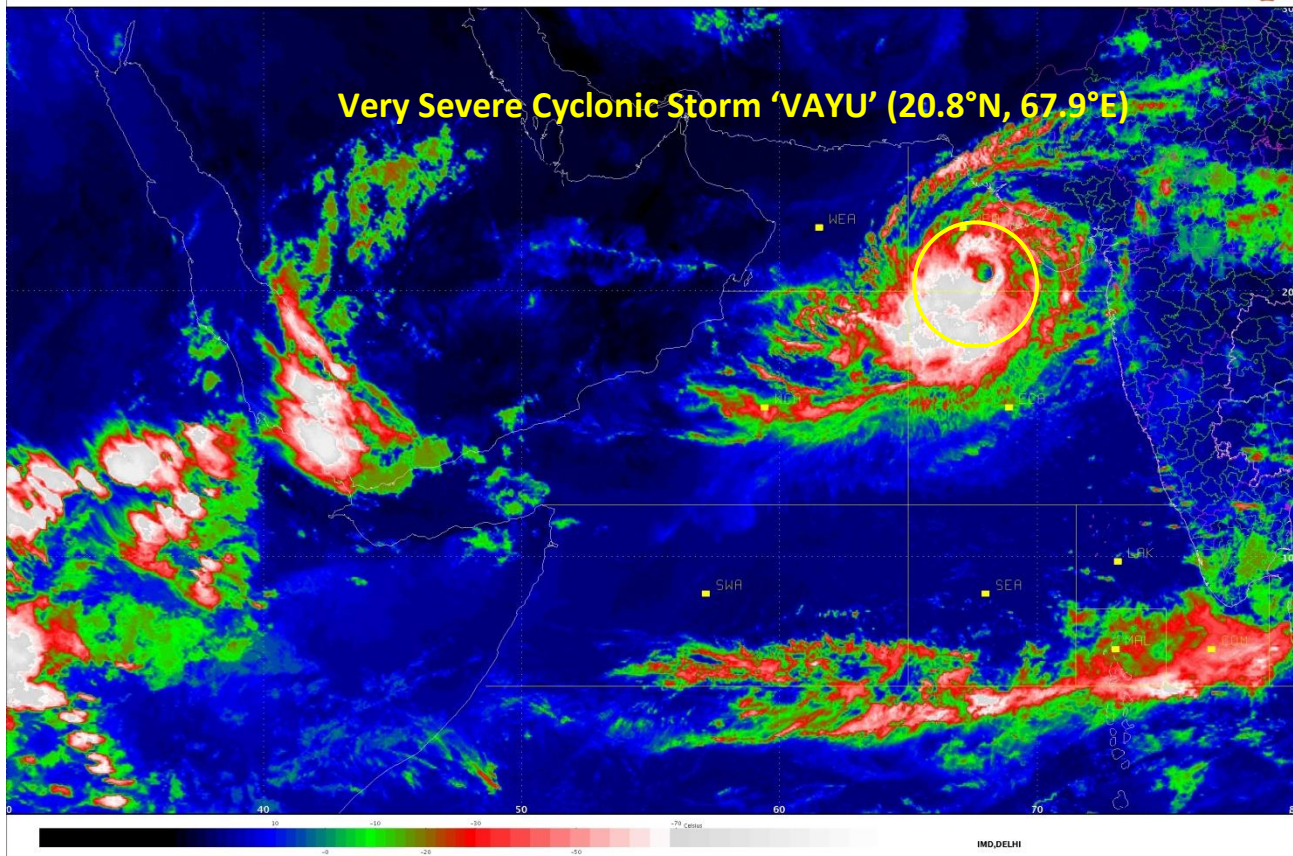
- The fishermen are advised not to venture into north Arabian Sea and along & off Gujarat coast till 17th and over Eastcentral Arabian Sea till 16th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 0230 hrs IST of 15th June, 2019.

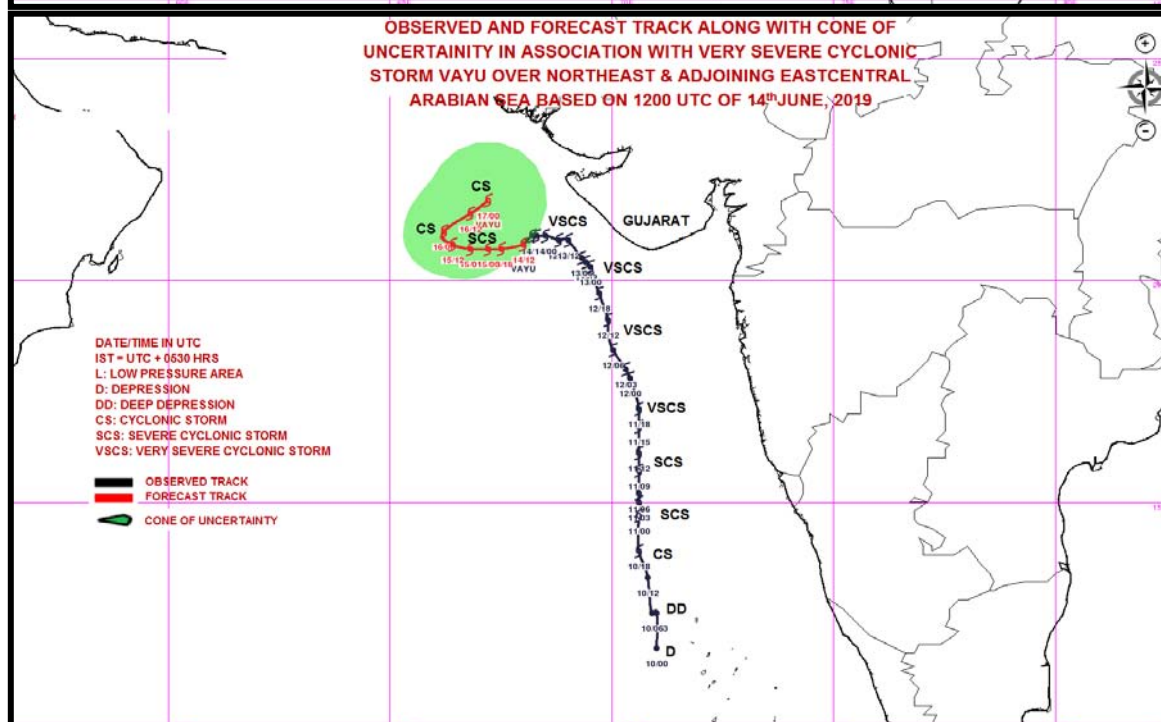
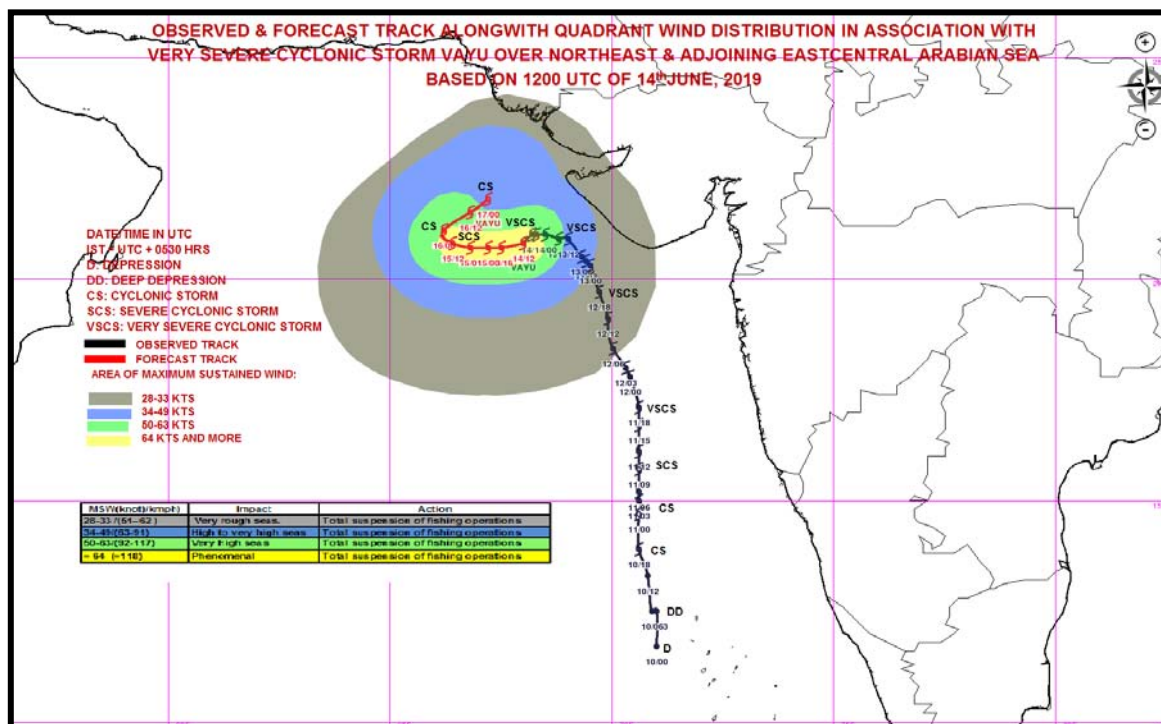
(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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.



MSW(knot)/kmph)	Impact	Action
28-33 /(52–61)	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
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 37 (ARB/01/2019)

TIME OF ISSUE: 0130 HOURS IST

DATED: 15.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea moved westwards with a speed of about 03 kmph in last six hours and lay centred at 2330 hrs IST of yesterday, the 14th June, 2019 near latitude 20.8°N and longitude 67.8°E over northeast & adjoining eastcentral Arabian Sea, about 210 km west-southwest of Porbandar (Gujarat), 270 km nearly west of Veraval (Gujarat) and 320 km nearly west of Diu (Gujarat). **The system is very likely to move nearly westwards during next 48 hours and recurve northeastwards thereafter.**

The system is moving nearly westwards. However, Porbandar & Devbhoomi Dwarka districts are likely to experience squally winds speed reaching 50-60 kmph gusting to 70 kmph and Gir Somnath & Junagarh districts with strong winds speed reaching 30-40 kmph gusting to 50 kmph during next 12 hours and decrease subsequently.

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
14.06.19/2330	20.8/67.8	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/0530	20.7/67.4	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/1130	20.6/67.0	100-110 gusting to 125	Severe Cyclonic Storm
15.06.19/1730	20.6/66.5	85-95 gusting to 105	Cyclonic Storm
15.06.19/2330	20.7/66.2	80-90 gusting to 100	Cyclonic Storm
16.06.19/1130	20.9/66.0	70-80 gusting to 90	Cyclonic Storm
16.06.19/2330	21.4/66.3	55-65 gusting to 75	Deep Depression
17.06.19/1130	22.2/67.3	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) Heavy rainfall warning:

Sub-Divisions	14 June 2019*
Saurashtra & Kutch	Rainfall at many places with heavy falls at isolated places.
Gujarat Region	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Green: No warning**
Heavy rain: 64.5-115.5 mm/day

(ii) Wind warning

- **14th June:** Gale wind speed of the order of **120-130 kmph gusting to 145 kmph** very likely over north Arabian Sea. Squally wind speed of the order of **50-60 kmph gusting to 70 kmph** very likely over Gujarat coast during next 12 hours and decrease gradually thereafter. It is very likely to be 40-50 kmph gusting to 60 kmph over northern parts of eastcentral Arabian Sea.
- **15th June:** Gale wind speed of the order of **110-120 kmph gusting to 135 kmph** very likely over north Arabian Sea in morning hours and decrease thereafter. Squally wind speed of the order of **45-55 kmph gusting to 65 kmph** very likely over Gujarat coast.
- **16th June:** Gale wind speed of the order of **70-80 kmph gusting to 90 kmph** very likely over north Arabian Sea. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely over Gujarat coast.

(iii) Sea condition

- The sea condition is very likely to be phenomenal over north Arabian Sea and adjoining eastcentral Arabian Sea on 14th June 2019. It is likely to be high to very high on 15th and very rough to high on 16th over these areas.
- The sea conditions are very likely to be very rough to high along & off Gujarat coast till 17th.
- The sea condition is very likely to be rough to very rough over rest parts of eastcentral Arabian Sea upto 16th June 2019.

(iv) Fishermen Warning

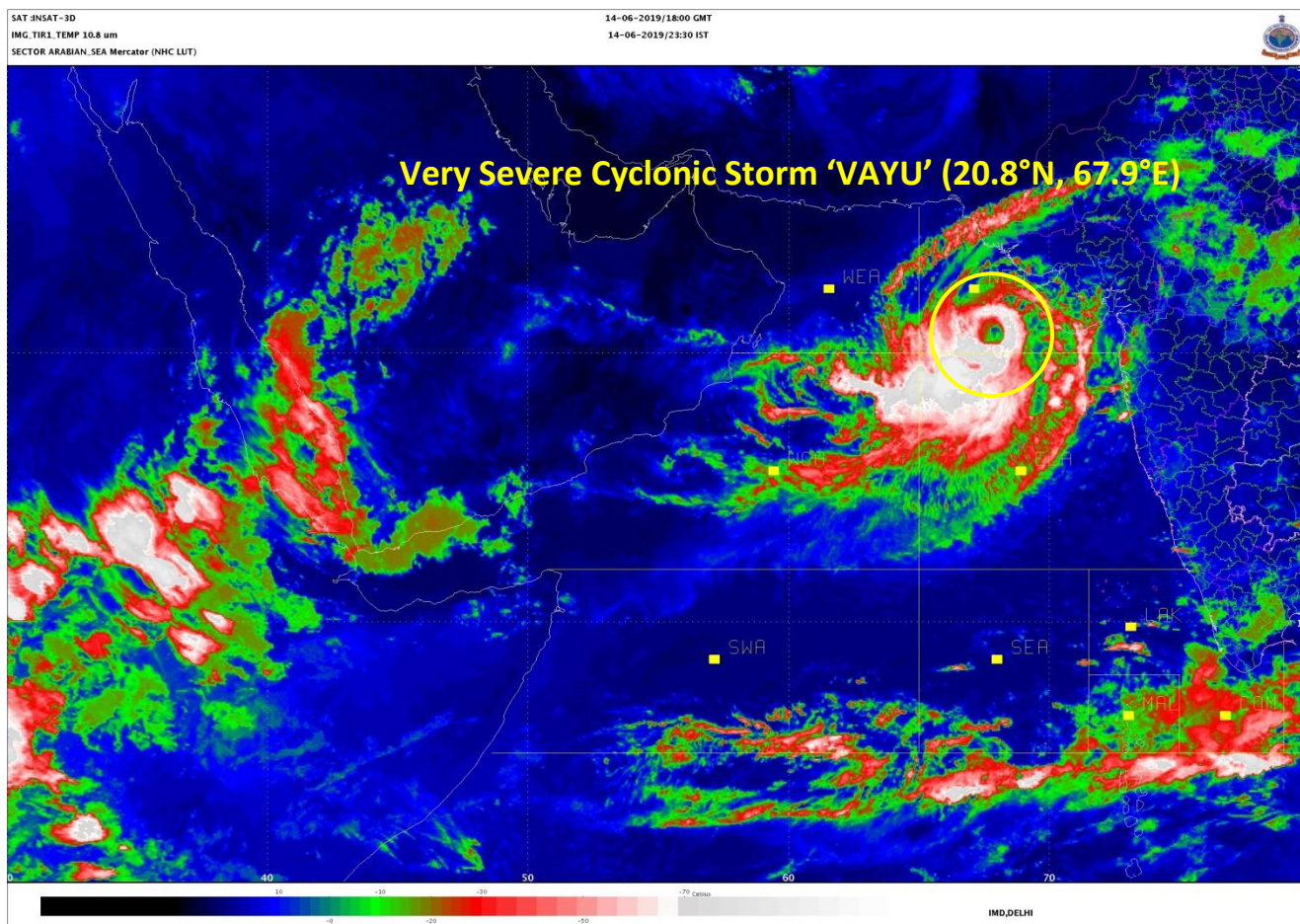
- The fishermen are advised not to venture into north Arabian Sea and along & off Gujarat coast till 17th and over Eastcentral Arabian Sea till 16th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 0530 hrs IST of 15th June, 2019.

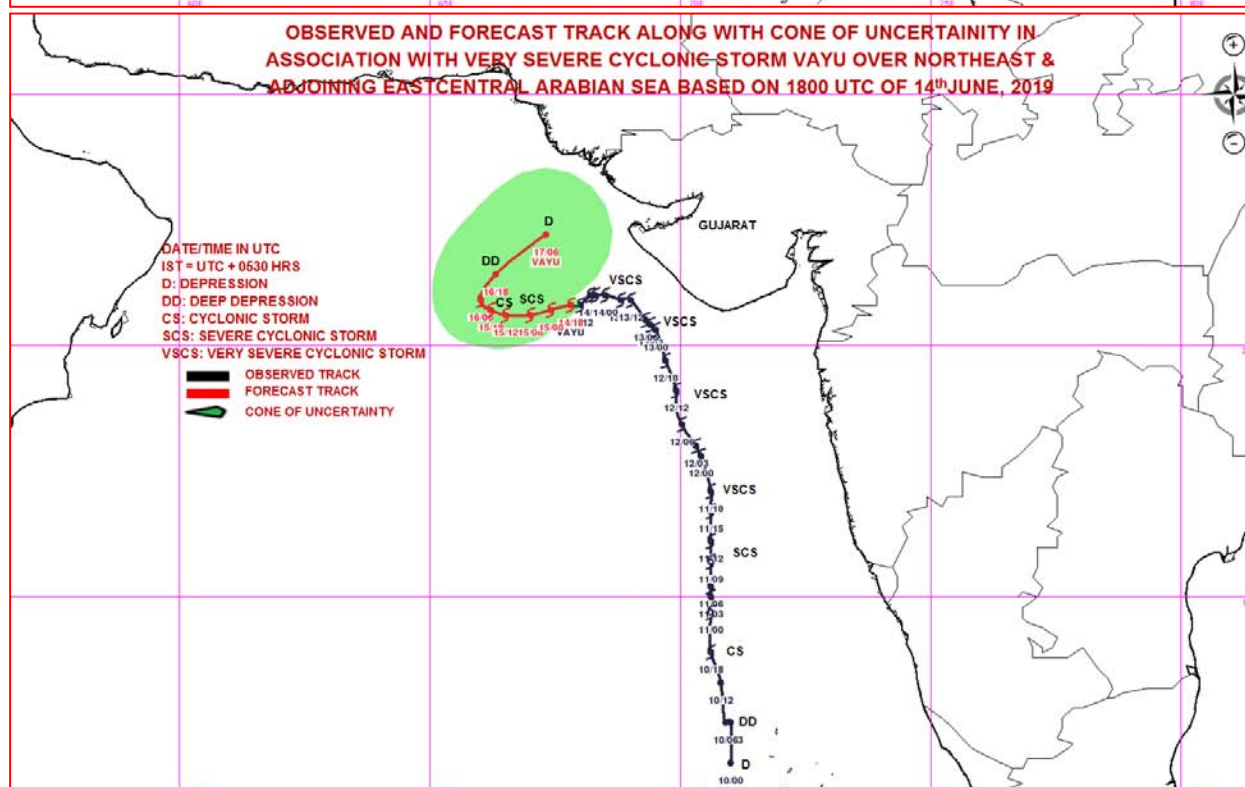
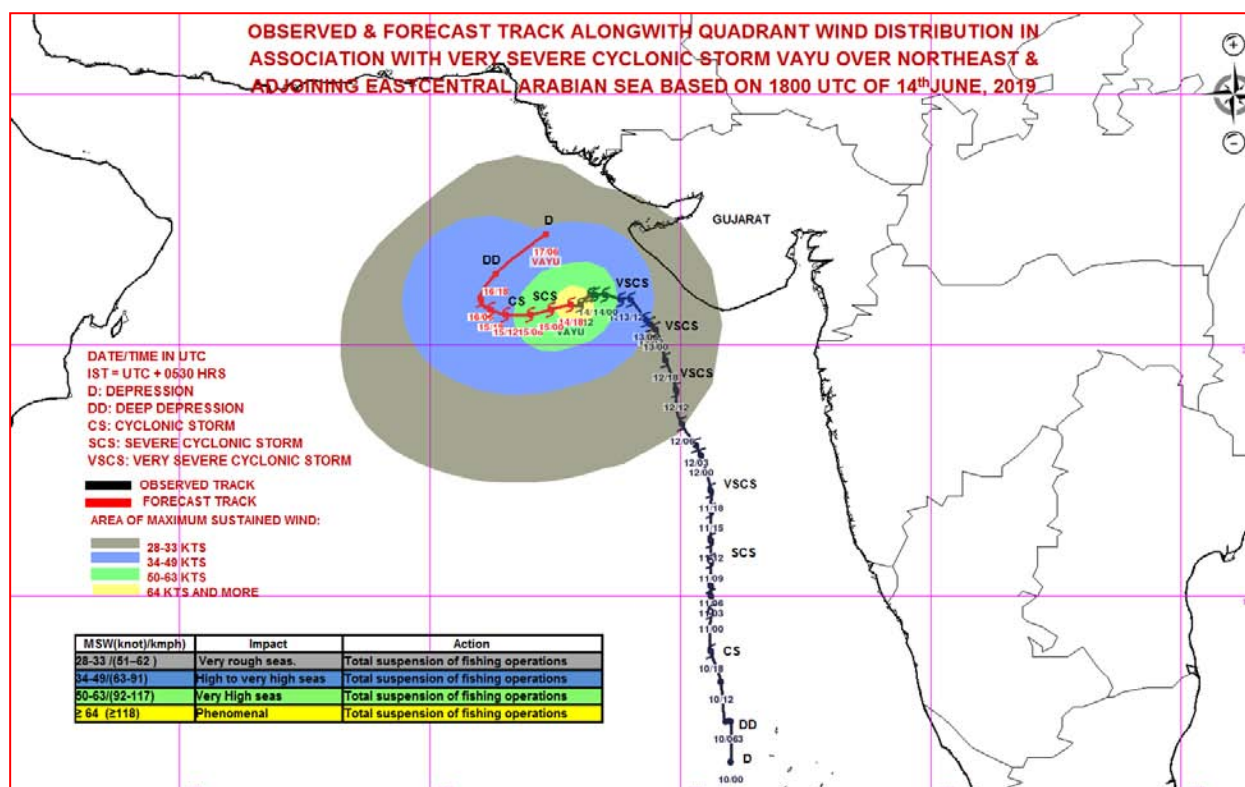
(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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. : 38 (ARB/01/2019)

TIME OF ISSUE: 0330 HOURS IST

DATED: 15.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea moved westwards with a speed of about 07 kmph in last six hours and lay centred at 0230 hrs IST of today, the 15th June, 2019 near latitude 20.7°N and longitude 67.6°E over northeast & adjoining eastcentral Arabian Sea, about 240 km west-southwest of Porbandar (Gujarat), 300 km nearly west of Veraval (Gujarat) and 350 km nearly west of Diu (Gujarat). **The system is very likely to move nearly westwards during next 48 hours and recurve northeastwards thereafter.**

The system is moving nearly westwards. However, Porbandar & Devbhoomi Dwarka districts are likely to experience squally winds speed reaching 50-60 kmph gusting to 70 kmph and Gir Somnath & Junagarh districts with strong winds speed reaching 30-40 kmph gusting to 50 kmph during next 12 hours and decrease subsequently.

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
15.06.19/0230	20.8/67.5	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/0530	20.7/67.4	110-120 gusting to 135	Severe Cyclonic Storm
15.06.19/1130	20.6/67.0	100-110 gusting to 125	Severe Cyclonic Storm
15.06.19/1730	20.6/66.5	85-95 gusting to 105	Cyclonic Storm
15.06.19/2330	20.7/66.2	80-90 gusting to 100	Cyclonic Storm
16.06.19/1130	20.9/66.0	70-80 gusting to 90	Cyclonic Storm
16.06.19/2330	21.4/66.3	55-65 gusting to 75	Deep Depression
17.06.19/1130	22.2/67.3	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) Heavy rainfall warning:

Sub-Divisions	14 June 2019*
Saurashtra & Kutch	Rainfall at many places with heavy falls at isolated places.
Gujarat Region	Rainfall at a few places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Green: No warning**
Heavy rain: 64.5-115.5 mm/day

(ii) Wind warning

- **15th June:** Gale wind speed of the order of **110-120 kmph gusting to 135 kmph** very likely over north Arabian Sea in morning hours and decrease thereafter. Squally wind speed of the order of **45-55 kmph gusting to 65 kmph** very likely over Gujarat coast.
- **16th June:** Gale wind speed of the order of **70-80 kmph gusting to 90 kmph** very likely over north Arabian Sea. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely over Gujarat coast.

(iii) Sea condition

- The sea condition is very likely to be high to very high on 15th and very rough to high on 16th over these areas.
- The sea conditions are very likely to be very rough to high along & off Gujarat coast till 17th.
- The sea condition is very likely to be rough to very rough over rest parts of eastcentral Arabian Sea upto 16th June 2019.

(iv) Fishermen Warning

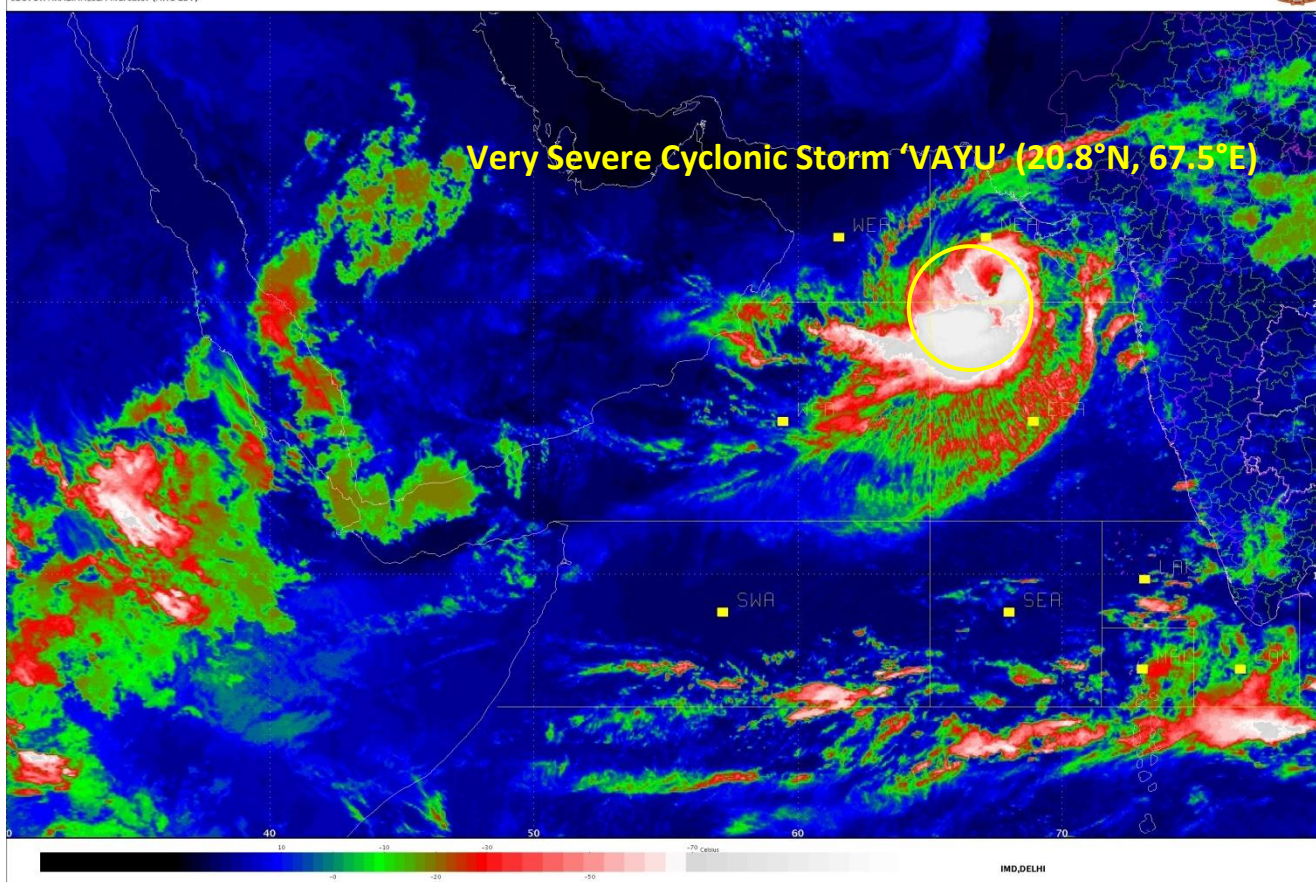
- The fishermen are advised not to venture into north Arabian Sea and along & off Gujarat coast till 17th and over Eastcentral Arabian Sea till 16th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 0830 hrs IST of 15th June, 2019.

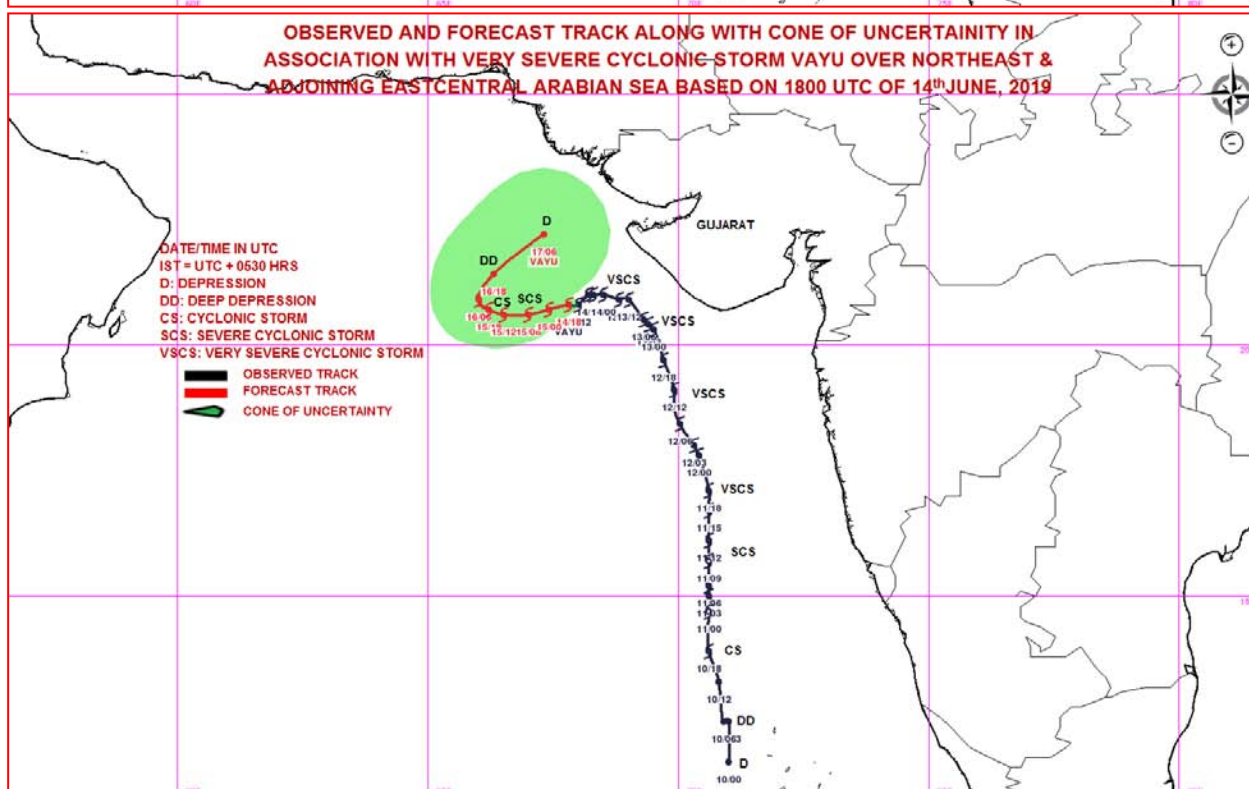
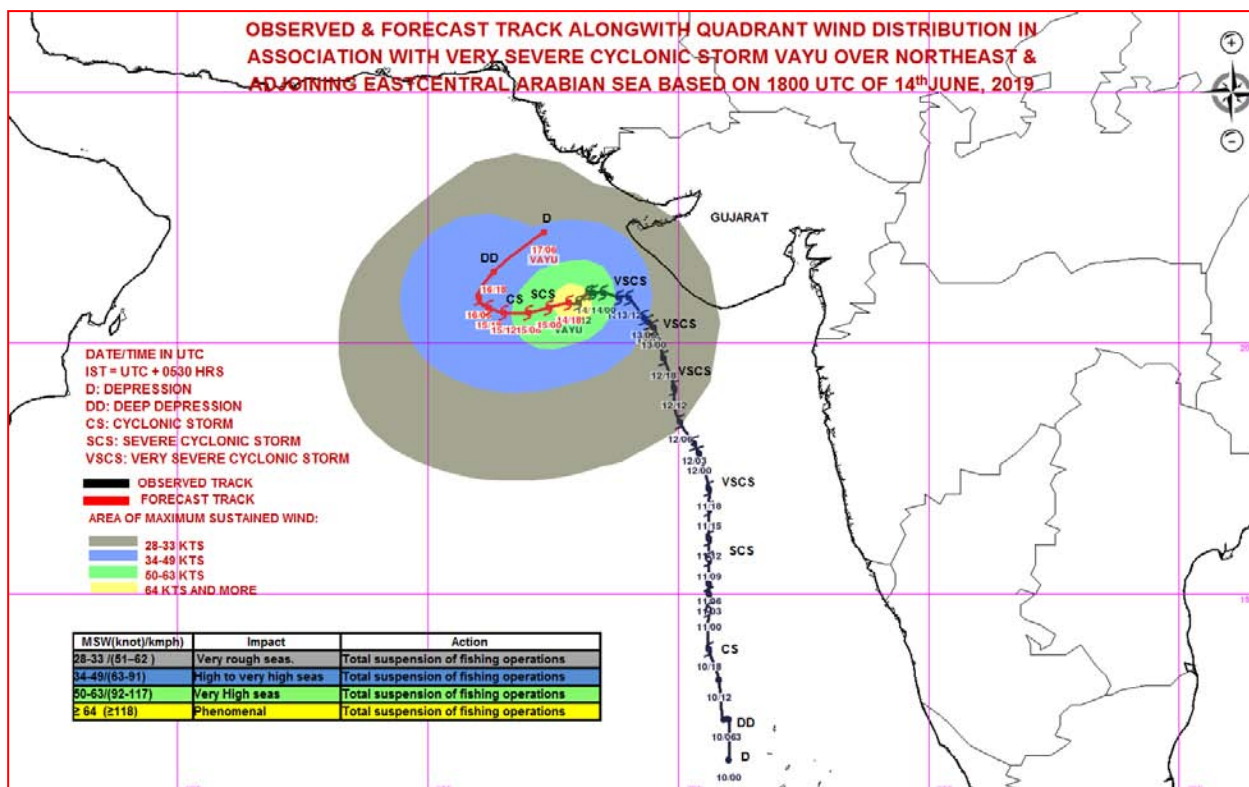
(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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. : 39 (ARB/01/2019) (Modified)

TIME OF ISSUE: 1050 HOURS IST

DATED: 15.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea moved nearly westwards with a speed of about 07 kmph in last six hours and lay centred at 0530 hrs IST of today, the 15th June, 2019 near latitude 20.7°N and longitude 67.4°E over northeast & adjoining eastcentral Arabian Sea, about 260 km west-southwest of Porbandar (Gujarat), 310 km west of Veraval (Gujarat) and 360 km west of Diu (Gujarat). **The system is very likely to move nearly westwards during next 24 to 36 hours with gradual weakening and recurve northeastwards 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
15.06.19/0530	20.7/67.4	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/1130	20.6/67.0	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/1730	20.6/66.5	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/2330	20.7/66.2	120-130 gusting to 145	Very Severe Cyclonic Storm
16.06.19/0530	20.8/66.1	100-110 gusting to 125	Severe Cyclonic Storm
16.06.19/1730	21.2/66.2	80-90 gusting to 100	Cyclonic Storm
17.06.19/0530	21.8/66.8	55-65 gusting to 75	Deep Depression
17.06.19/1730	23.0/68.3	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) Heavy rainfall warning: (Modified)

Sub-Divisions	15 June 2019*	16 June 2019*	17 June 2019*	18 June 2019*
Saurashtra & Kutch	NIL	NIL	Rainfall at a few places with heavy falls at isolated places in the coastal districts (Devbhoomi Dwarka, Porbandar, Junagarh & Gir Somnath)	NIL
North Gujarat Region	NIL	NIL	NIL	Rainfall at a few places with heavy falls at isolated places
South Rajasthan	NIL	NIL	NIL	Rainfall at a few places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Green: No warning**
Heavy rain: 64.5-115.5 mm/day

(ii) Wind warning

- **15th June:** Gale wind speed of the order of **120-130 kmph gusting to 145 kmph** very likely over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea. Squally wind speed of the order of **45-55 kmph gusting to 65 kmph** very likely along & off Gujarat coast.
- **16th June:** Gale wind speed of the order of **100-110 kmph gusting to 125 kmph** very likely over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely along & off Gujarat coast.
- **17th June:** Squally wind speed of the order of **55-65 kmph gusting to 75 kmph** very likely over northeast Arabian Sea and adjoining east central Arabian Sea. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely along & off Gujarat coast.

(iii) Sea condition

- The sea condition is very likely to be phenomenal on 15th and high to very high on 16th over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea.
- The sea condition is very likely to be rough to very rough along & off Gujarat coast till 17th.
- The sea condition is very likely to be rough to very rough over rest parts of eastcentral Arabian Sea upto 17th June 2019.

(iv) Fishermen Warning

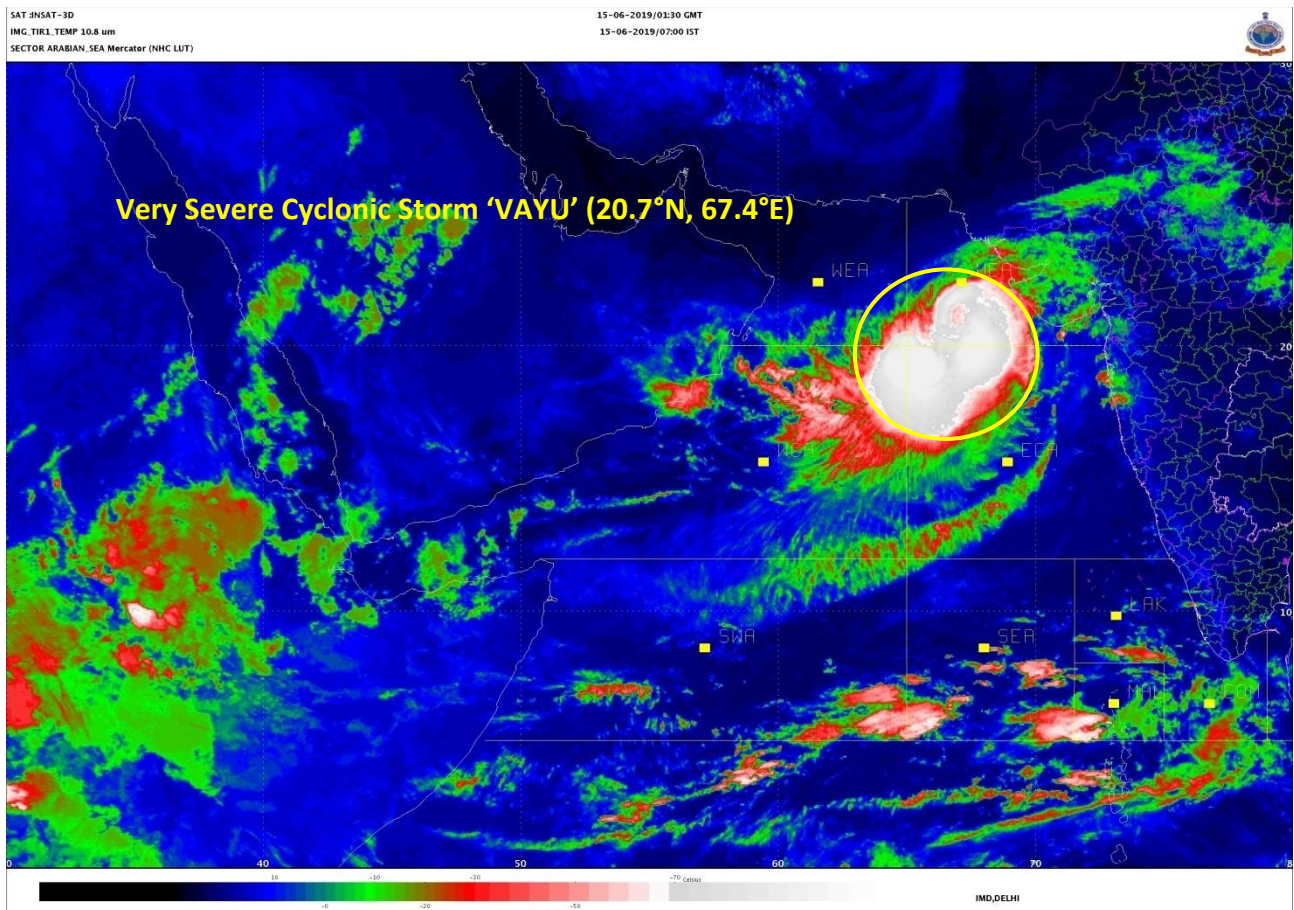
- The fishermen are advised not to venture into north Arabian Sea, Eastcentral Arabian Sea and along & off Gujarat coast till 17th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 1130 hrs IST of 15th June, 2019.

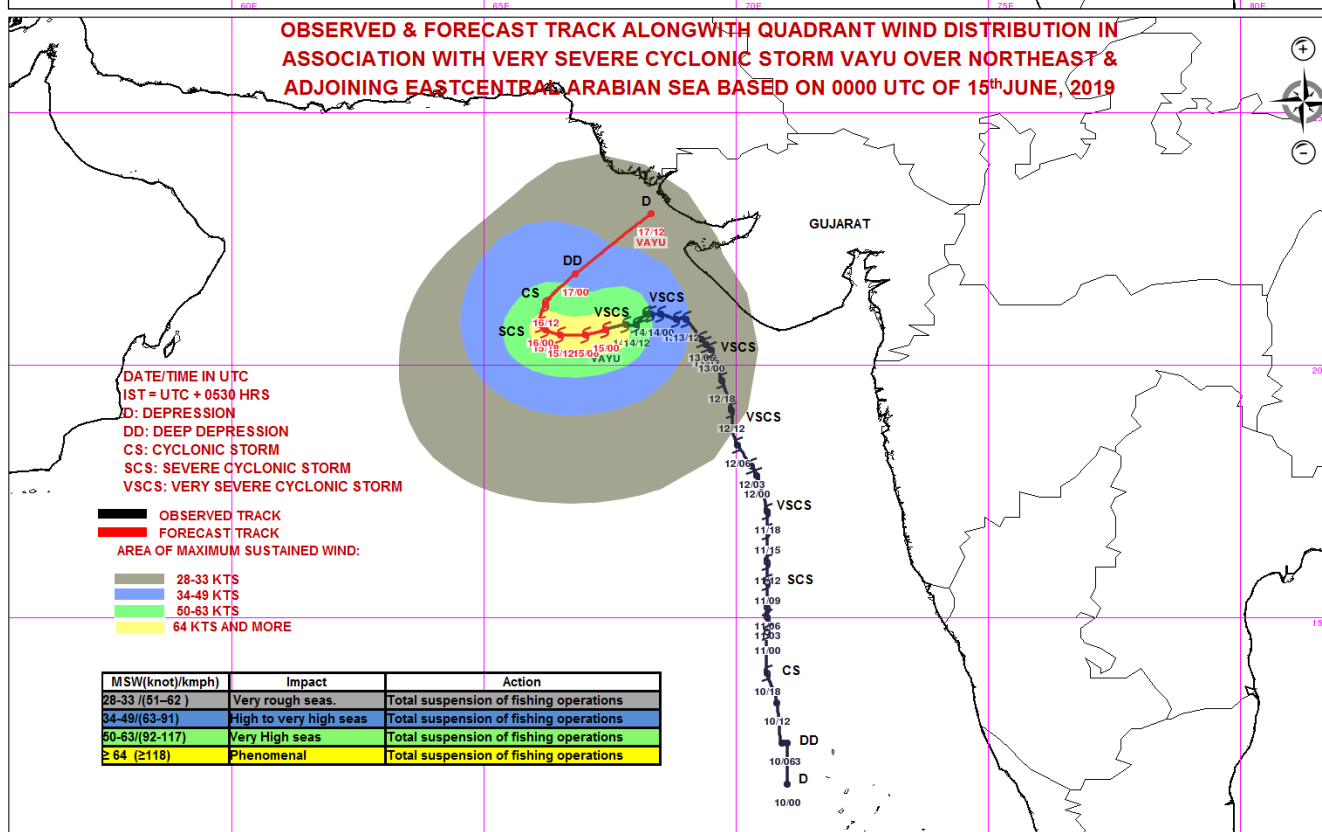
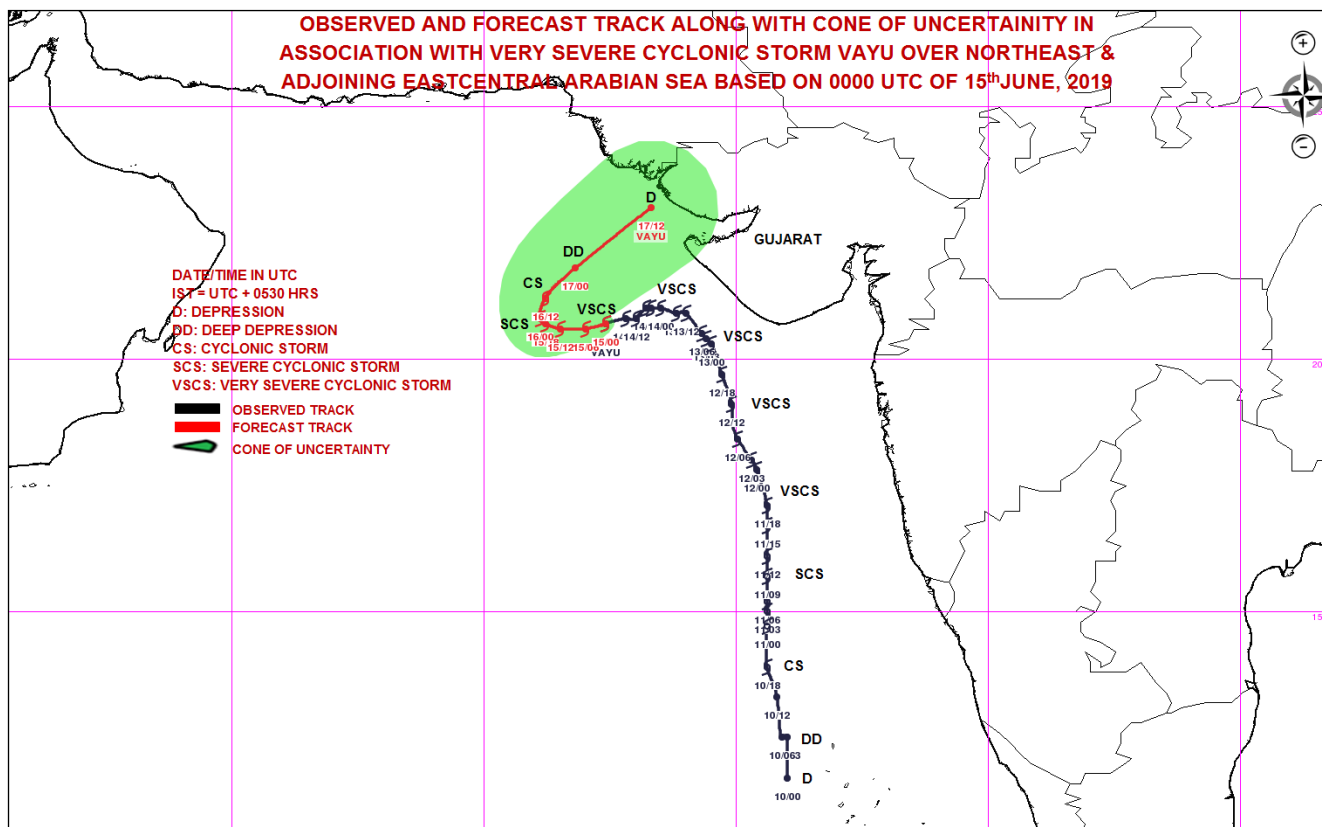
(Sunitha Devi.S)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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/01/2019)

TIME OF ISSUE: 1150 HOURS IST

DATED: 15.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea moved nearly westwards with a speed of about 06 kmph in last six hours and lay centred at 0830 hrs IST of today, the 15th June, 2019 near latitude 20.7°N and longitude 67.2°E over northeast & adjoining eastcentral Arabian Sea, about 275 km west-southwest of Porbandar (Gujarat), 330 km west-southwest of Veraval (Gujarat) and 385 km nearly west of Diu. **The system is very likely to move nearly westwards during next 24 to 36 hours with gradual weakening and recurve northeastwards thereafter and reach coastal Saurashtra and Kutch as a depression by the evening of 17th June 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
15.06.19/0830	20.7/67.2	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/1130	20.7/66.9	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/1730	20.7/66.5	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/2330	20.7/66.2	120-130 gusting to 145	Very Severe Cyclonic Storm
16.06.19/0530	20.8/66.1	100-110 gusting to 125	Severe Cyclonic Storm
16.06.19/1730	21.2/66.2	80-90 gusting to 100	Cyclonic Storm
17.06.19/0530	21.8/66.8	55-65 gusting to 75	Deep Depression
17.06.19/1730	23.0/68.3	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) Heavy rainfall warning:

Sub-Divisions	15 June 2019*	16 June 2019*	17 June 2019*	18 June 2019*
Saurashtra & Kutch	NIL	NIL	Rainfall at many places with heavy falls at isolated places in the coastal districts	Rainfall at many places with heavy falls at isolated places in the coastal districts
North Gujarat	NIL	NIL	NIL	Rainfall at most places with heavy falls at isolated places
South Rajasthan	NIL	NIL	NIL	Rainfall at a many places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Green: No warning**

Heavy rain: 64.5-115.5 mm/day

(ii) Wind warning

- **15th June:** Gale wind speed of the order of **120-130 kmph gusting to 145 kmph** very likely over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea. Squally wind speed of the order of **45-55 kmph gusting to 65 kmph** very likely along & off Gujarat coast.
- **16th June:** Gale wind speed of the order of **100-110 kmph gusting to 125 kmph** very likely over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely along & off Gujarat coast.
- **17th June:** Squally wind speed of the order of **55-65 kmph gusting to 75 kmph** very likely over northeast Arabian Sea and adjoining east central Arabian Sea. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely along & off Gujarat coast.

(iii) Sea condition

- The sea condition is very likely to be phenomenal on 15th and high to very high on 16th over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea.
- The sea condition is very likely to be rough to very rough along & off Gujarat coast till 17th.
- The sea condition is very likely to be rough to very rough over rest parts of eastcentral Arabian Sea upto 17th June 2019.

(iv) Fishermen Warning

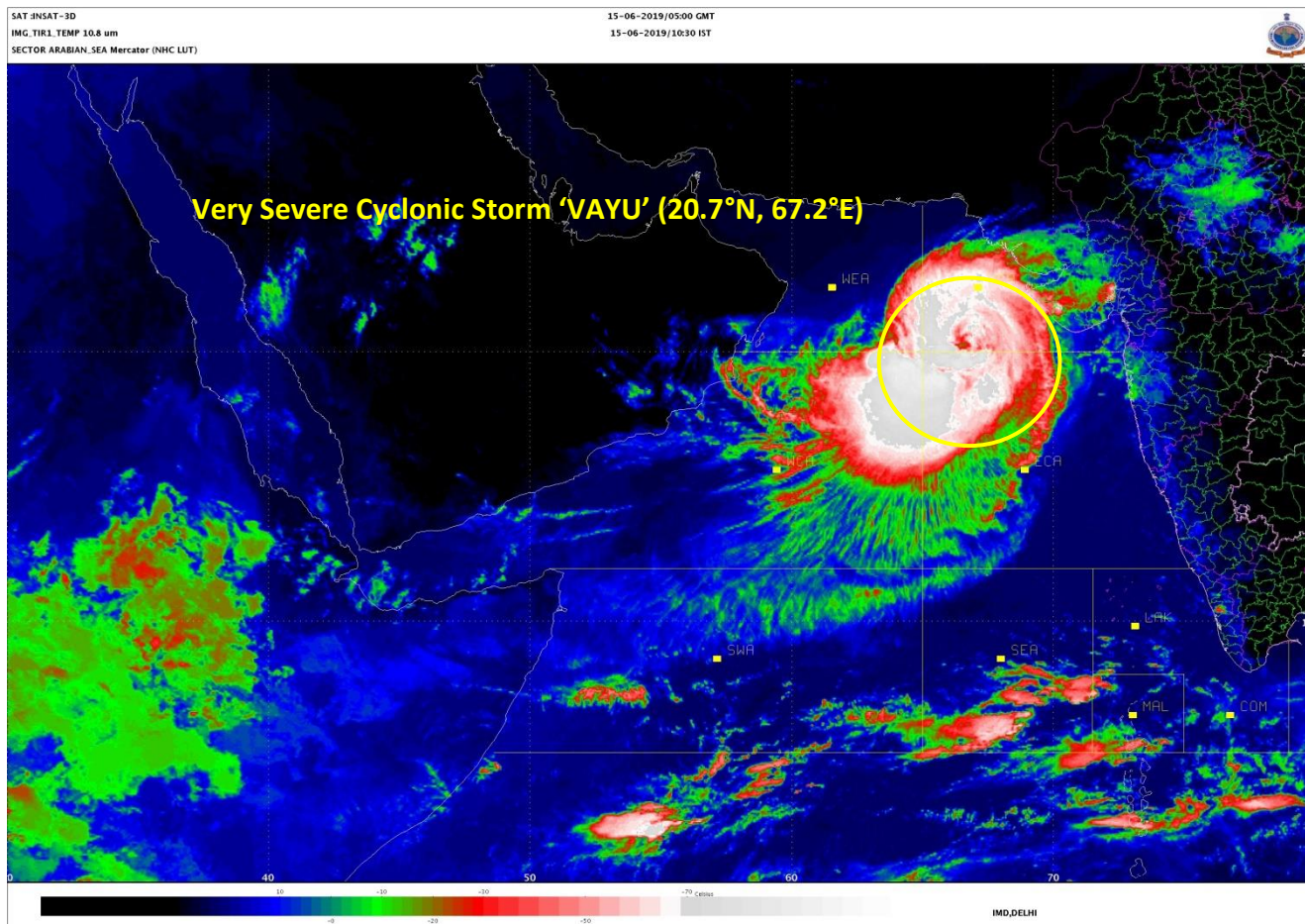
- The fishermen are advised not to venture into north Arabian Sea, northern parts of central Arabian Sea and along & off Gujarat coast till 17th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 1430 hrs IST of 15th June, 2019.

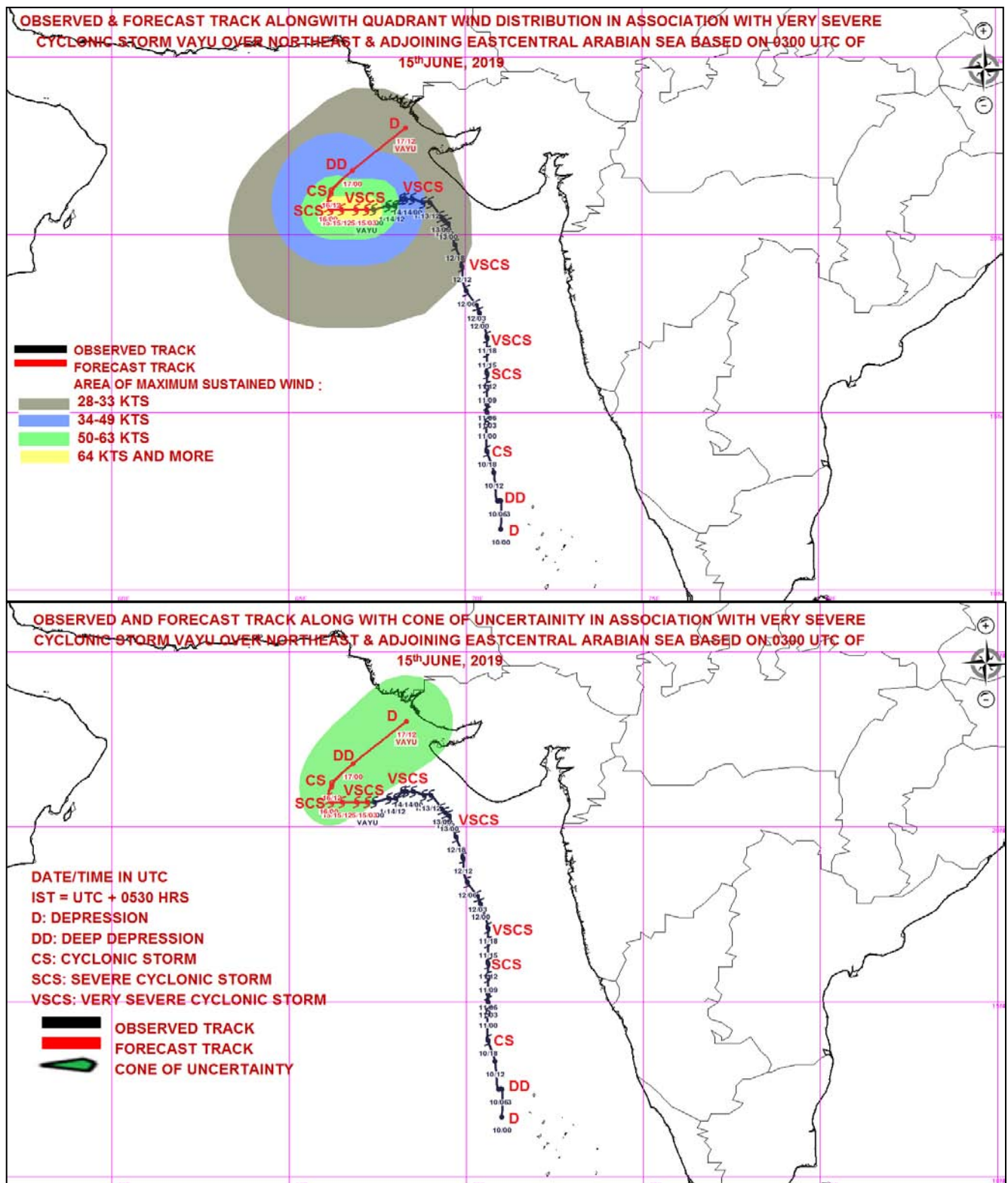
(Sunitha Devi.S)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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.



MSW(knot)/kmph)	Impact	Action
28-33 /(52-61)	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
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 41 (ARB/01/2019)

TIME OF ISSUE: 1440 HOURS IST

DATED: 15.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea moved westwards with a speed of about 08 kmph in last six hours and lay centred at 1130 hrs IST of today, the 15th June, 2019 near latitude 20.7°N and longitude 66.9°E over northeast & adjoining eastcentral Arabian Sea, about 305 km west-southwest of Porbandar (Gujarat), 360 km west-southwest of Veraval (Gujarat) and 415 km nearly west of Diu. **The system is very likely to move nearly westwards during next 24 to 36 hours with gradual weakening and recurve northeastwards thereafter and reach coastal Saurashtra and Kutch as a depression by the evening of 17th June 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
15.06.19/1130	20.7/66.9	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/1730	20.7/66.4	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/2330	20.7/66.0	120-130 gusting to 145	Very Severe Cyclonic Storm
16.06.19/0530	20.9/65.7	100-110 gusting to 125	Severe Cyclonic Storm
16.06.19/1130	21.2/65.9	100-110 gusting to 125	Severe Cyclonic Storm
16.06.19/2330	21.8/66.6	80-90 gusting to 100	Cyclonic Storm
17.06.19/1130	22.5/67.6	55-65 gusting to 75	Deep Depression
17.06.19/2330	23.5/69.0	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) Heavy rainfall warning:

Sub-Divisions	15 June 2019*	16 June 2019*	17 June 2019*	18 June 2019*
Saurashtra & Kutch	NIL	NIL	Rainfall at many places with heavy falls at isolated places in the coastal districts	Rainfall at many places with heavy falls at isolated places in the coastal districts
North Gujarat	NIL	NIL	NIL	Rainfall at most places with heavy falls at isolated places
South Rajasthan	NIL	NIL	NIL	Rainfall at a many places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Green: No warning**

Heavy rain: 64.5-115.5 mm/day

(ii) Wind warning

- **15th June:** Gale wind speed of the order of **120-130 kmph gusting to 145 kmph** very likely over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea. Squally wind speed of the order of **45-55 kmph gusting to 65 kmph** very likely along & off Gujarat coast.
- **16th June:** Gale wind speed of the order of **100-110 kmph gusting to 125 kmph** very likely over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely along & off Gujarat coast.
- **17th June:** Squally wind speed of the order of **55-65 kmph gusting to 75 kmph** very likely over northeast Arabian Sea and adjoining east central Arabian Sea. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely along & off Gujarat coast.

(iii) Sea condition

- The sea condition is very likely to be phenomenal on 15th and high to very high on 16th over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea.
- The sea condition is very likely to be rough to very rough along & off Gujarat coast till 17th.
- The sea condition is very likely to be rough to very rough over rest parts of eastcentral Arabian Sea upto 17th June 2019.

(iv) Fishermen Warning

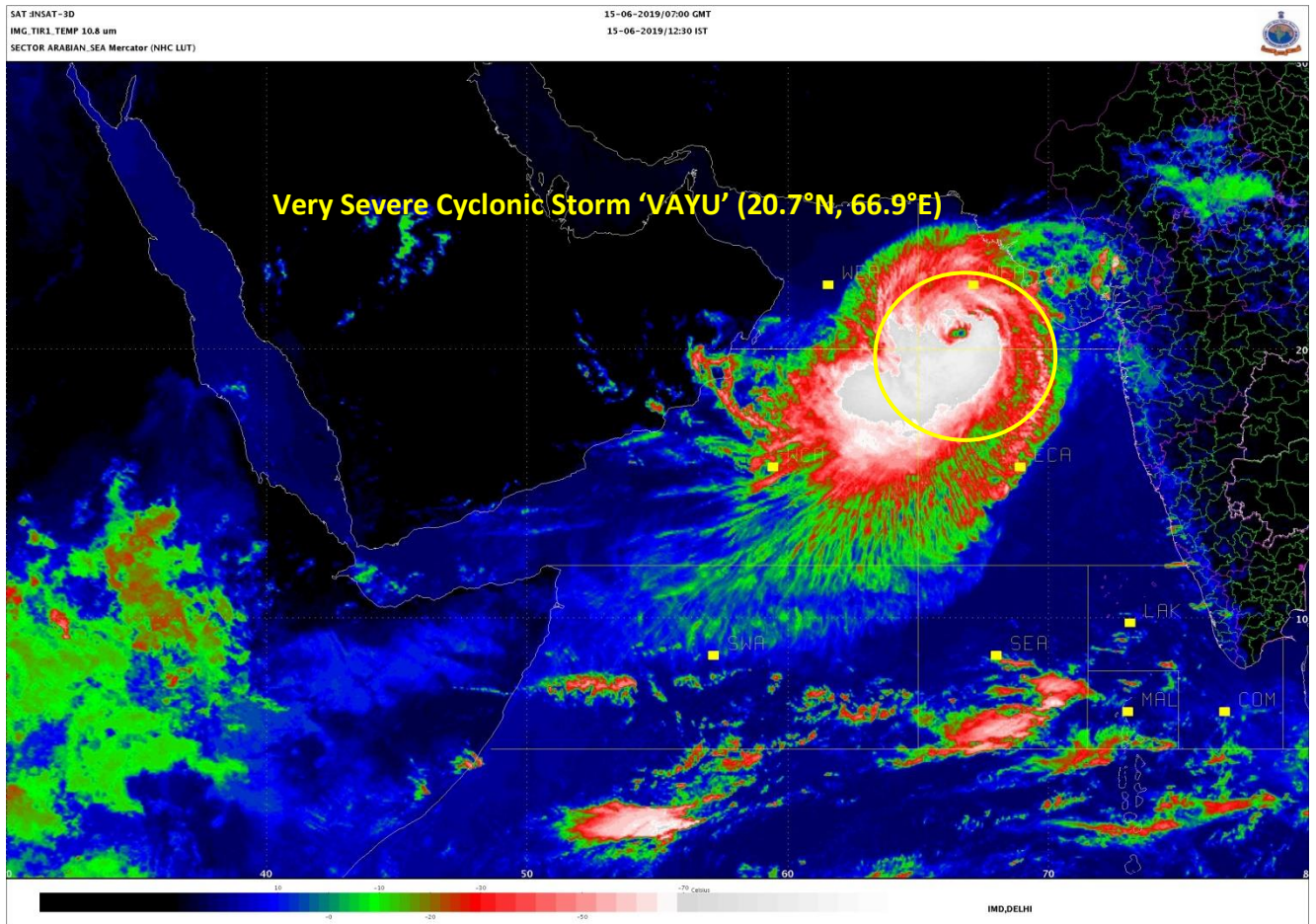
- The fishermen are advised not to venture into north Arabian Sea, northern parts of central Arabian Sea and along & off Gujarat coast till 17th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 1730 hrs IST of 15th June, 2019.

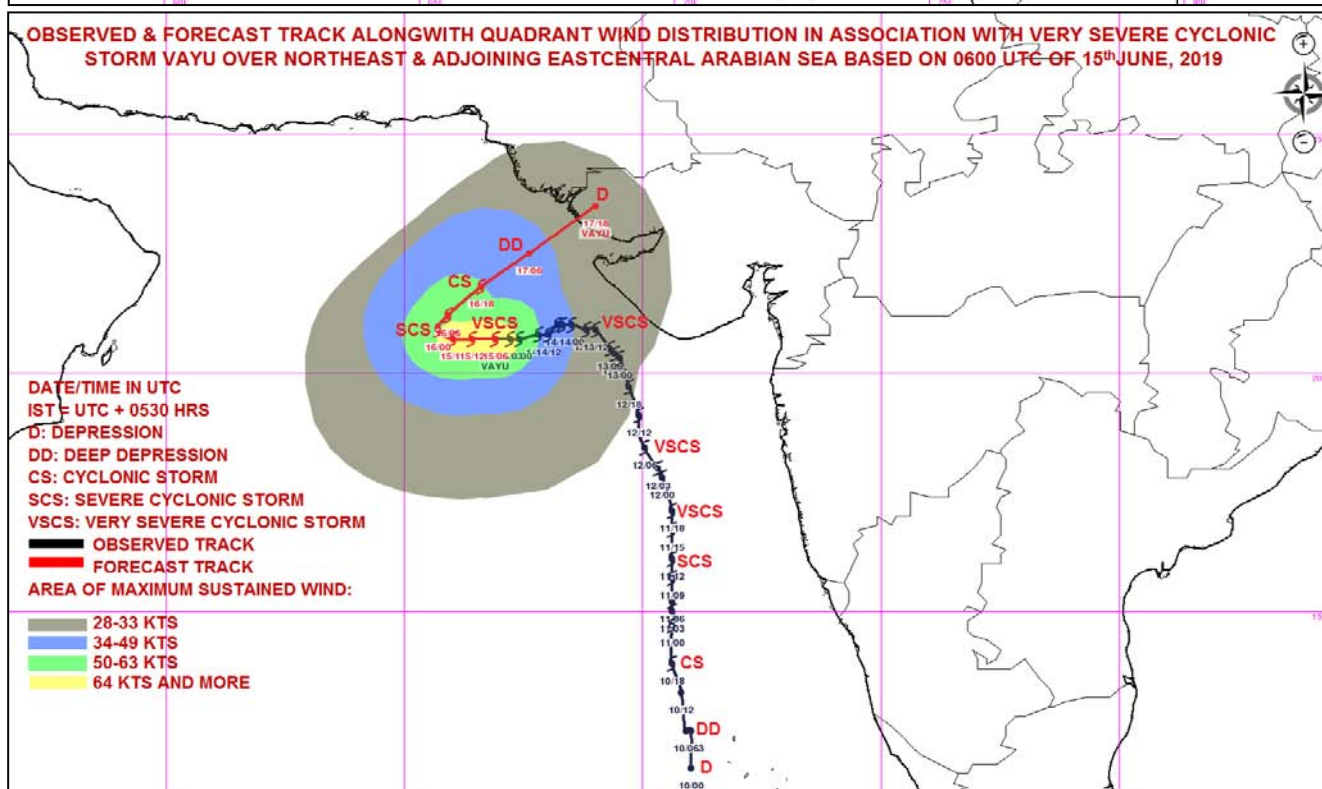
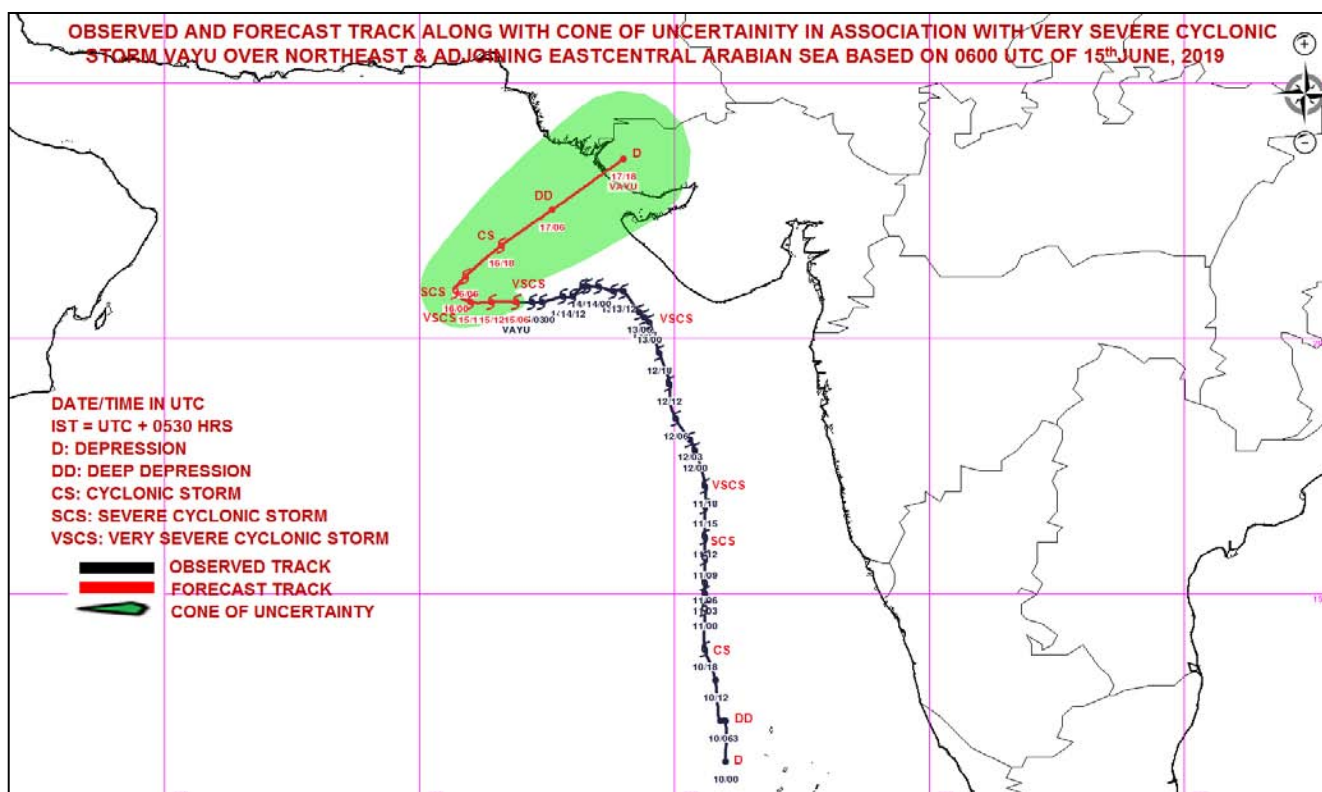
(Sunitha Devi.S)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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.



MSW(knot)/kmph)	Impact	Action
28-33 /(52-61)	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
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 42 (ARB/01/2019)

TIME OF ISSUE: 1630 HOURS IST

DATED: 15.06.2019

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

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

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

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

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PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea continued to move westwards with a speed of about 08 kmph in last six hours and lay centred at 1430 hrs IST of today, the 15th June, 2019 near latitude 20.7°N and longitude 66.7°E over northeast & adjoining eastcentral Arabian Sea, about 325 km west-southwest of Porbandar (Gujarat), 380 km west-southwest of Veraval (Gujarat) and 435 km nearly west of Diu. **The system is very likely to move nearly westwards during next 24 hours with gradual weakening and recurve northeastwards thereafter and cross north Gujarat coast as a Depression by the evening of 17th June 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
15.06.19/1430	20.7/66.7	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/1730	20.7/66.4	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/2330	20.7/66.0	120-130 gusting to 145	Very Severe Cyclonic Storm
16.06.19/0530	20.9/65.7	100-110 gusting to 125	Severe Cyclonic Storm
16.06.19/1130	21.2/65.9	100-110 gusting to 125	Severe Cyclonic Storm
16.06.19/2330	21.8/66.6	80-90 gusting to 100	Cyclonic Storm
17.06.19/1130	22.5/67.6	55-65 gusting to 75	Deep Depression
17.06.19/2330	23.5/69.0	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) Heavy rainfall warning:

Sub-Divisions	15 June 2019*	16 June 2019*	17 June 2019*	18 June 2019*
Saurashtra & Kutch	Rainfall at many places with heavy falls at isolated places in the coastal districts	Rainfall at many places with heavy falls at isolated places in the coastal districts	Rainfall at many places with heavy to very heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places
North Gujarat region	NIL	NIL	NIL	Rainfall at most places with heavy falls at isolated places
South Rajasthan	NIL	NIL	NIL	Rainfall at many places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Green: No warning**
Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day

(ii) Wind warning

- **15th June:** Gale wind speed of the order of **120-130 kmph gusting to 145 kmph** very likely over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea. Squally wind speed of the order of **45-55 kmph gusting to 65 kmph** very likely along & off Gujarat coast.
- **16th June:** Gale wind speed of the order of **100-110 kmph gusting to 125 kmph** very likely over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely along & off Gujarat coast.
- **17th June:** Squally wind speed of the order of **55-65 kmph gusting to 75 kmph** very likely over northeast Arabian Sea and adjoining east central Arabian Sea. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely to commence along & off Gujarat coast from the morning and gradually become squally winds speed reaching **50 – 60 kmph gusting to 70 kmph** towards evening.

(iii) Sea condition

- The Sea condition is very likely to be phenomenal on 15th and high to very high on 16th over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea.
- The Sea condition is very likely to be rough to very rough along & off Gujarat coast till 17th.
- The Sea condition is very likely to be rough to very rough over rest parts of eastcentral Arabian Sea upto 17th June 2019.

(iv) Fishermen Warning

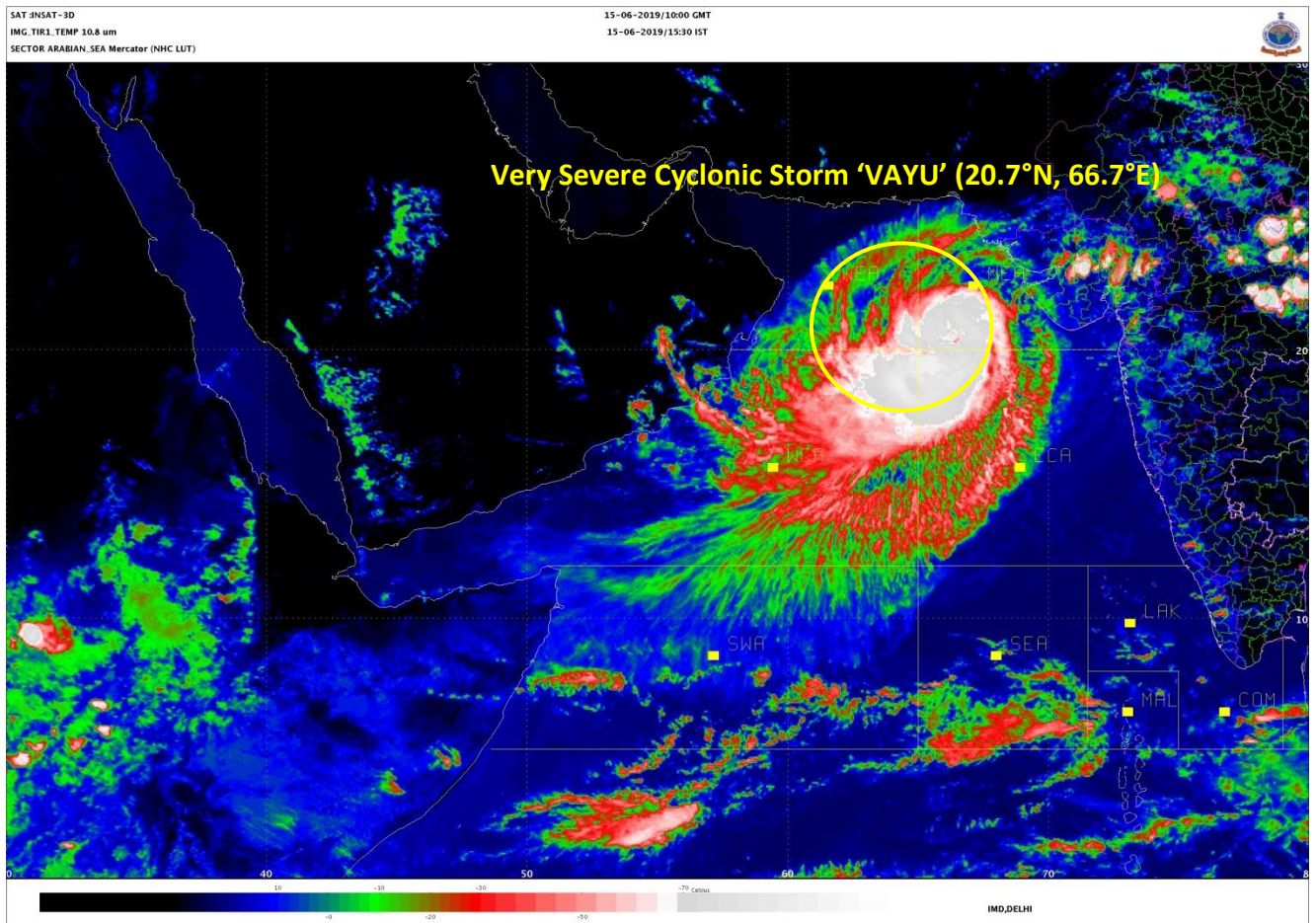
- The fishermen are advised not to venture into north Arabian Sea, northern parts of central Arabian Sea and along & off Gujarat coast till 17th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 2030 hrs IST of 15th June, 2019.

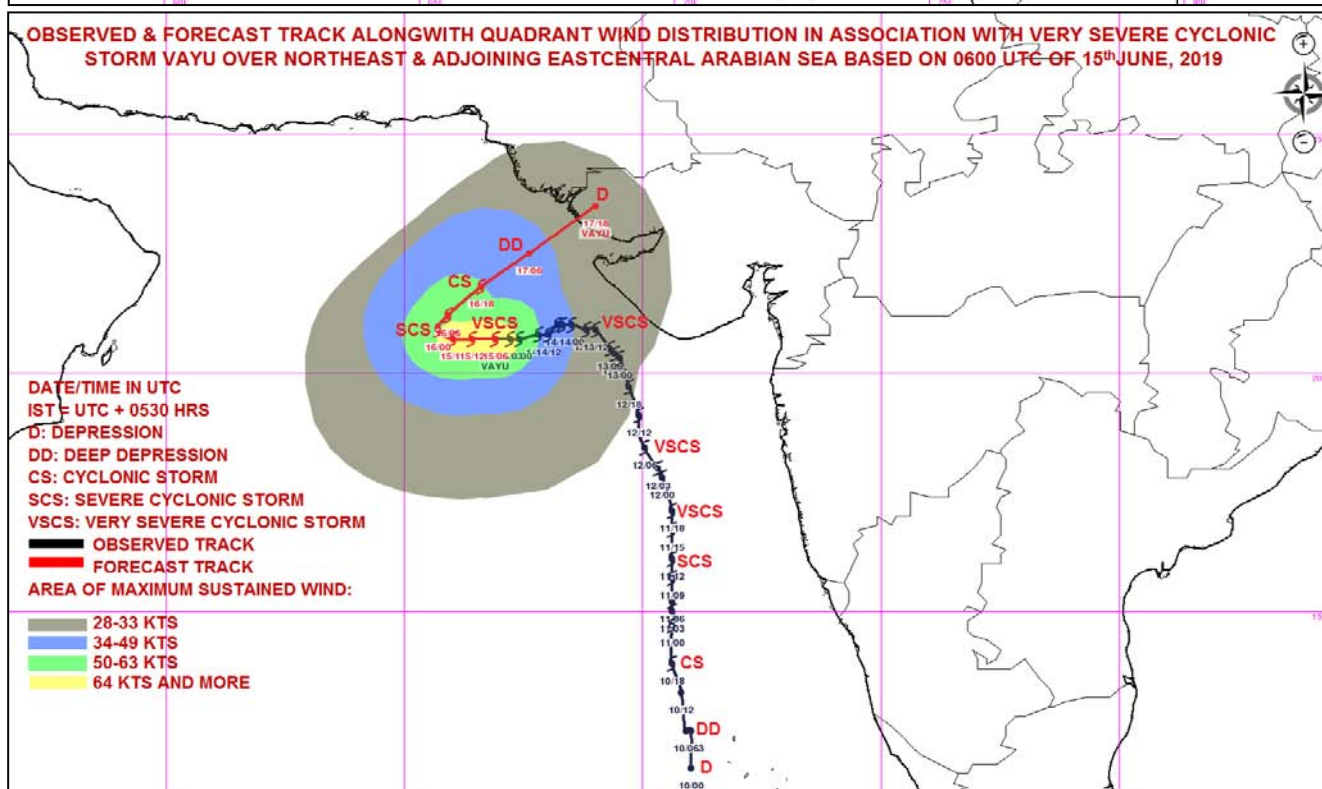
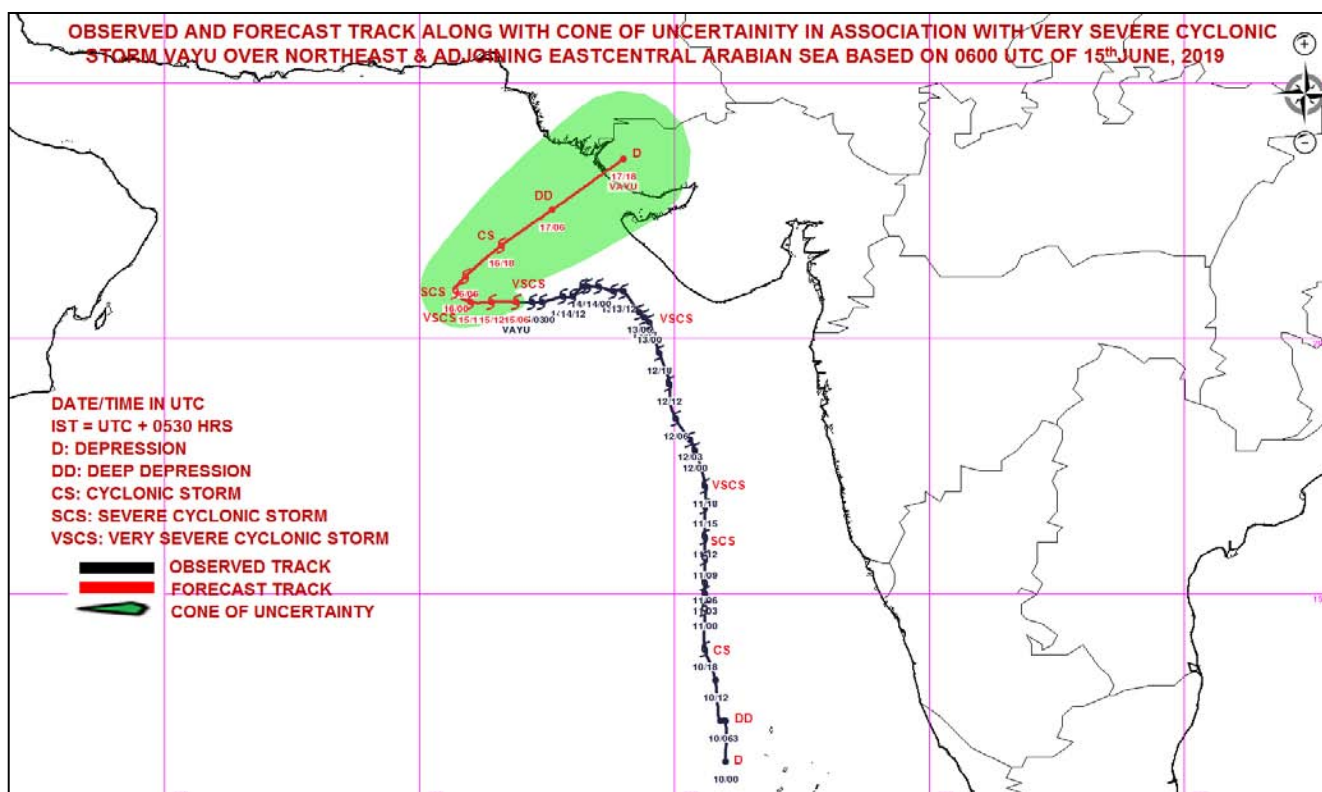
(Sunitha Devi.S)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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.



MSW(knot)/kmph)	Impact	Action
28-33 /(52-61)	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
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 43 (ARB/01/2019)

TIME OF ISSUE: 2030 HOURS IST

DATED: 15.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea continued to move westwards with a speed of about 08 kmph in last six hours and lay centred at 1730 hrs IST of today, the 15th June, 2019 near latitude 20.7°N and longitude 66.4°E over northeast & adjoining eastcentral Arabian Sea, about 355 km west-southwest of Porbandar (Gujarat), 330 km southwest of Dwarka (Gujarat) and 450 km southwest of Bhuj. **The system is very likely to weaken gradually into a Severe Cyclonic Storm during next 12 hours and into a Cyclonic Storm during the subsequent 24 hours. The system is very likely to move west-northwestwards during next 12 hours; gradually recurve thereafter northeastwards and cross north Gujarat coast by evening of 17th June 2019 as a Depression.**

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
15.06.19/1730	20.7/66.4	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/2330	20.8/66.1	120-130 gusting to 145	Very Severe Cyclonic Storm
16.06.19/0530	20.9/65.8	110-120 gusting to 135	Severe Cyclonic Storm
16.06.19/1130	21.2/66.0	100-110 gusting to 125	Severe Cyclonic Storm
16.06.19/1730	21.6/66.4	90-100 gusting to 115	Severe Cyclonic Storm
17.06.19/0530	22.3/67.2	65-75 gusting to 85	Cyclonic Storm
17.06.19/1730	23.2/68.5	45-55 gusting to 65	Depression
18.06.19/0530	23.9/69.6	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) Heavy rainfall warning:

Sub-Divisions	15 June 2019*	16 June 2019*	17 June 2019*	18 June 2019*
Saurashtra & Kutch	Rainfall at many places with heavy falls at isolated places in the coastal districts	Rainfall at many places with heavy falls at isolated places in the coastal districts	Rainfall at many places with heavy to very heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places
North Gujarat region	NIL	NIL	NIL	Rainfall at most places with heavy falls at isolated places
South Rajasthan	NIL	NIL	NIL	Rainfall at many places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Green: No warning**
Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day

(ii) Wind warning

- **15th June:** Gale wind speed of the order of **120-130 kmph gusting to 145 kmph** very likely over northeast Arabian Sea and adjoining areas of northwest & central Arabian Sea. Squally wind speed of the order of **45-55 kmph gusting to 65 kmph** very likely along & off Gujarat coast.
- **16th June:** Gale wind speed of the order of **110-120 kmph gusting to 135 kmph** very likely over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely along & off Gujarat coast.
- **17th June:** Gale wind speed of the order of **65-75 kmph gusting to 85 kmph** very likely over northeast Arabian Sea and adjoining east central Arabian Sea in morning hours and decrease gradually thereafter. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely to commence along & off Gujarat coast from the morning and gradually become squally winds speed reaching **50-60 kmph gusting to 70 kmph** towards afternoon.

(iii) Sea condition

- The Sea condition is very likely to be phenomenal on 15th and high to very high on 16th over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea.
- The Sea condition is very likely to be rough to very rough along & off Gujarat coast till 17th.
- The Sea condition is very likely to be rough to very rough over rest parts of eastcentral Arabian Sea upto 17th June 2019.

(iv) Fishermen Warning

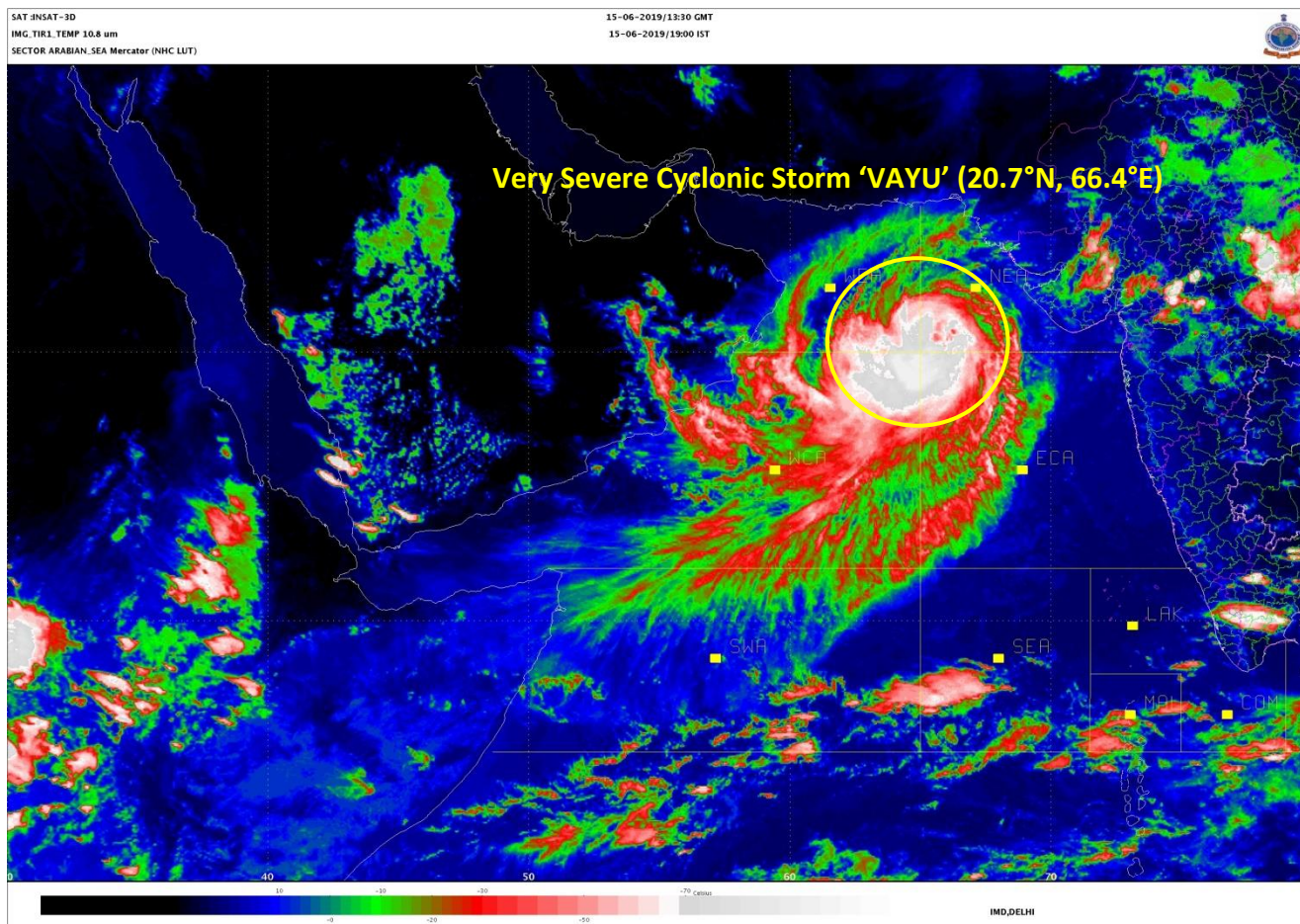
- The fishermen are advised not to venture into north Arabian Sea, northern parts of central Arabian Sea and along & off Gujarat coast till 17th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 2030 hrs IST of 15th June, 2019.

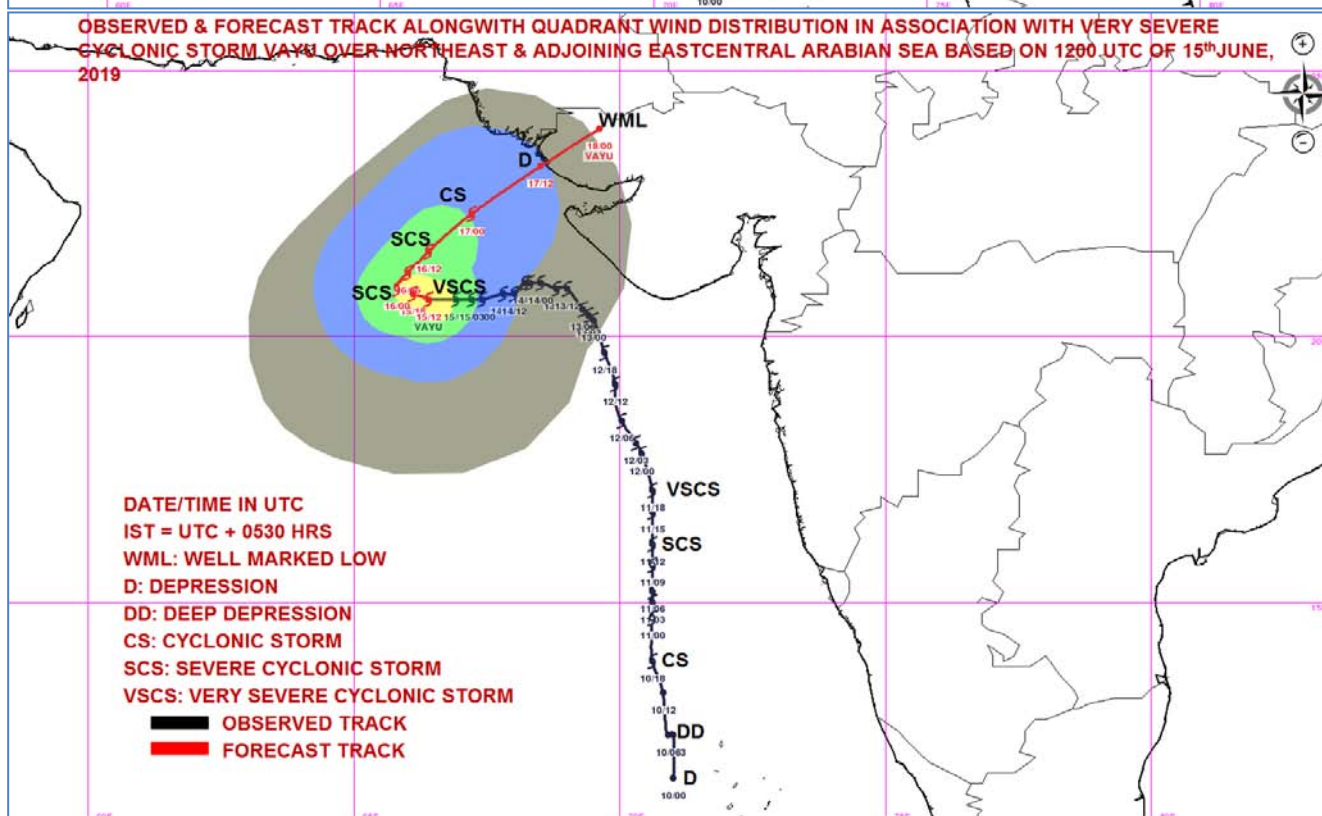
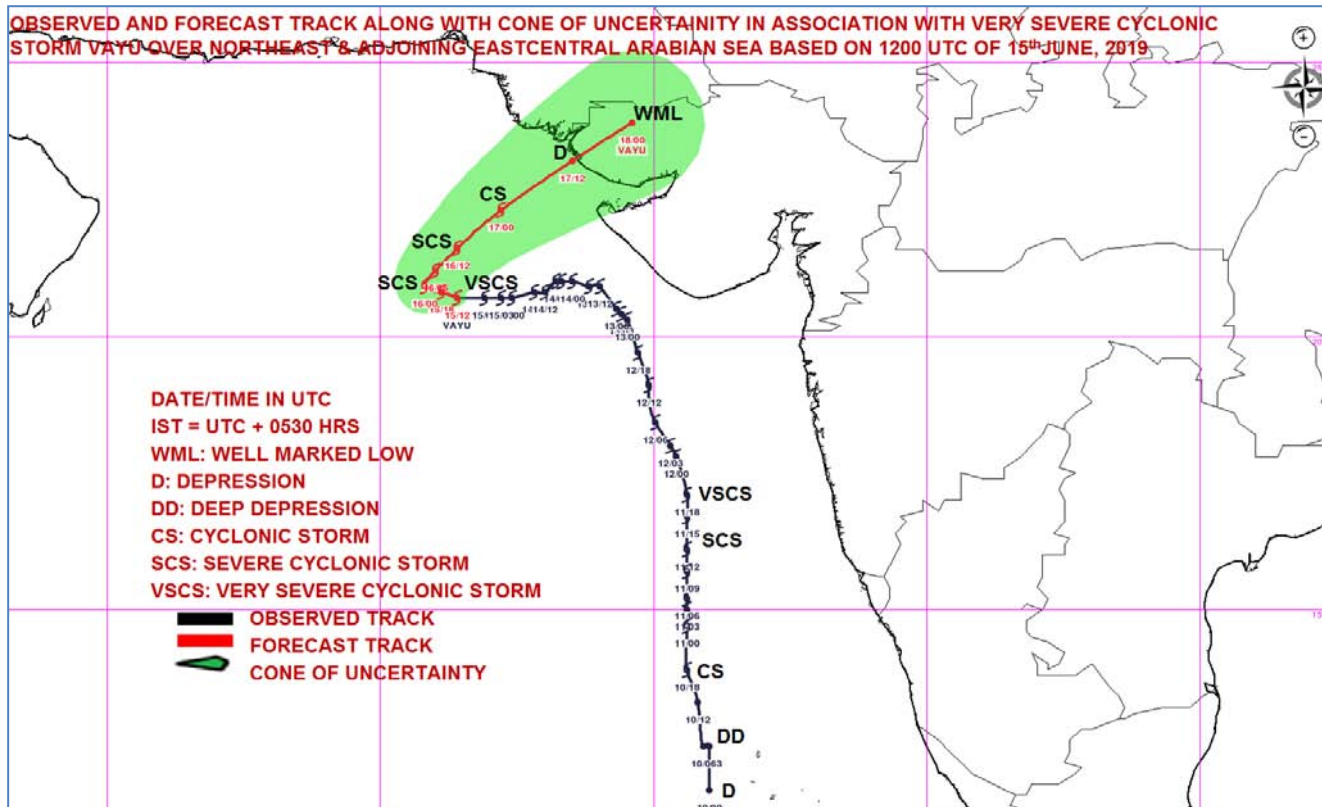
(Sunitha Devi.S)
Scientist-E, RSMC, New Delhi

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

Copy to: CRS, Pune/ 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.



MSW(knot)/kmph)	Impact	Action
28-33 /(51-62)	Very rough seas.	Total suspension of fishing operations
34-49/(63-91)	High to very high seas	Total suspension of fishing operations
50-63/(92-117)	Very High seas	Total suspension of fishing operations
= 64 (=118)	Phenomenal	Total suspension of fishing operations

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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/01/2019)

TIME OF ISSUE: 2130 HOURS IST

DATED: 15.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea continued to move westwards with a speed of about 07 kmph in last six hours and lay centred at 2030 hrs IST of today, the 15th June, 2019 near latitude 20.7°N and longitude 66.3°E over northeast & adjoining eastcentral Arabian Sea, about 365 km west-southwest of Porbandar (Gujarat), 340 km southwest of Dwarka (Gujarat) and 460 km southwest of Bhuj (Gujarat). **The system is very likely to weaken gradually into a Severe Cyclonic Storm during next 12 hours and into a Cyclonic Storm during the subsequent 24 hours. The system is very likely to move west-northwestwards during next 12 hours; gradually recurve thereafter northeastwards and cross north Gujarat coast by evening of 17th June 2019 as a Depression.**

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
15.06.19/2030	20.7/66.3	120-130 gusting to 145	Very Severe Cyclonic Storm
15.06.19/2330	20.8/66.1	120-130 gusting to 145	Very Severe Cyclonic Storm
16.06.19/0530	20.9/65.8	110-120 gusting to 135	Severe Cyclonic Storm
16.06.19/1130	21.2/66.0	100-110 gusting to 125	Severe Cyclonic Storm
16.06.19/1730	21.6/66.4	90-100 gusting to 115	Severe Cyclonic Storm
17.06.19/0530	22.3/67.2	65-75 gusting to 85	Cyclonic Storm
17.06.19/1730	23.2/68.5	45-55 gusting to 65	Depression
18.06.19/0530	23.9/69.6	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) Heavy rainfall warning:

Sub-Divisions	15 June 2019*	16 June 2019*	17 June 2019*	18 June 2019*
Saurashtra & Kutch	Rainfall at many places with heavy falls at isolated places in the coastal districts	Rainfall at many places with heavy falls at isolated places in the coastal districts	Rainfall at many places with heavy to very heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places
North Gujarat region	NIL	NIL	NIL	Rainfall at most places with heavy falls at isolated places
South Rajasthan	NIL	NIL	NIL	Rainfall at many places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Green: No warning**
Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day

(ii) Wind warning

- **15th June:** Gale wind speed of the order of **120-130 kmph gusting to 145 kmph** very likely over northeast Arabian Sea and adjoining areas of northwest & central Arabian Sea. Squally wind speed of the order of **45-55 kmph gusting to 65 kmph** very likely along & off Gujarat coast.
- **16th June:** Gale wind speed of the order of **110-120 kmph gusting to 135 kmph** very likely over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely along & off Gujarat coast.
- **17th June:** Gale wind speed of the order of **65-75 kmph gusting to 85 kmph** very likely over northeast Arabian Sea and adjoining east central Arabian Sea in morning hours and decrease gradually thereafter. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely to commence along & off Gujarat coast from the morning and gradually become squally winds speed reaching **50-60 kmph gusting to 70 kmph** towards afternoon.

(iii) Sea condition

- The Sea condition is very likely to be phenomenal on 15th and high to very high on 16th over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea.
- The Sea condition is very likely to be rough to very rough along & off Gujarat coast till 17th.
- The Sea condition is very likely to be rough to very rough over rest parts of eastcentral Arabian Sea upto 17th June 2019.

(iv) Fishermen Warning

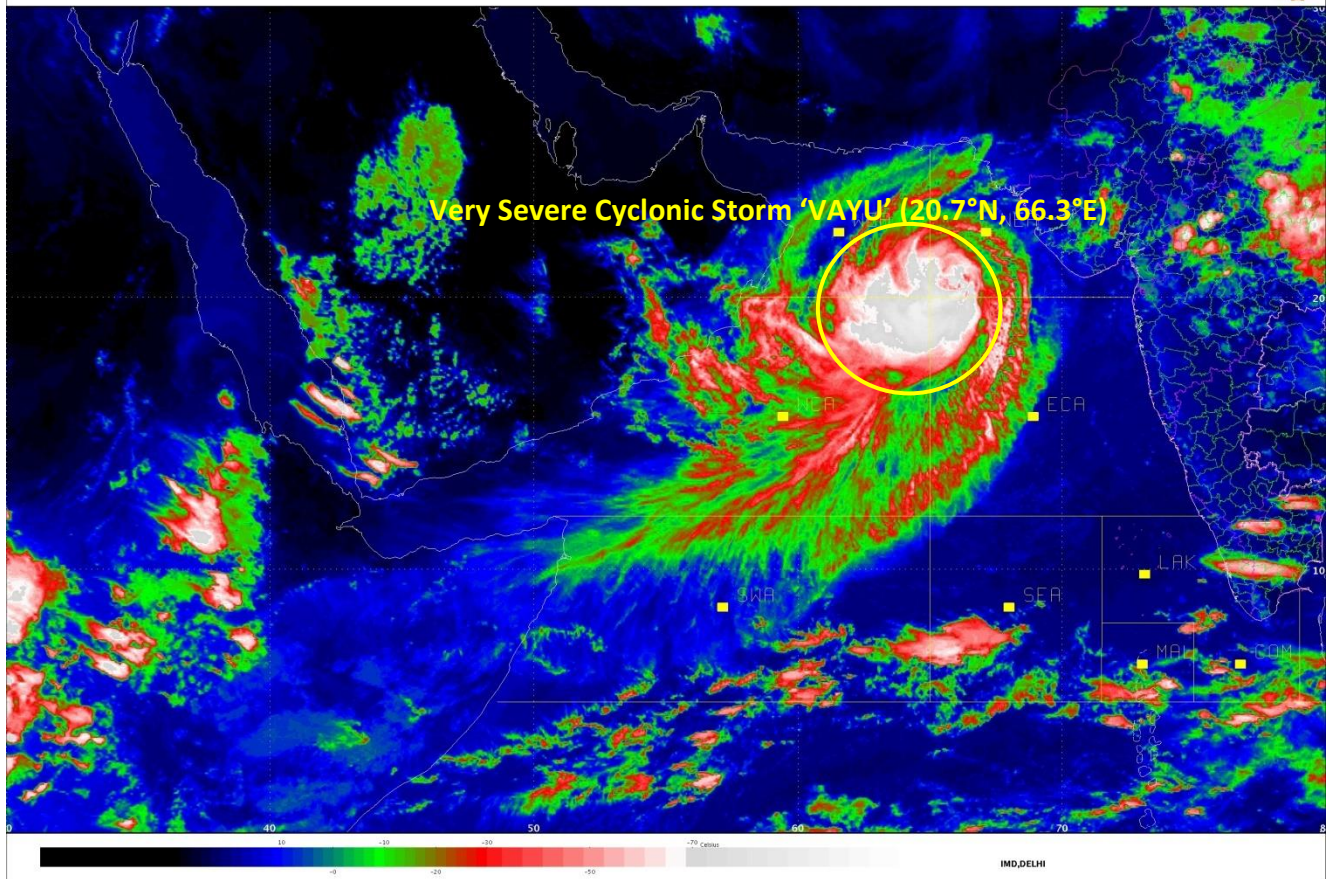
- The fishermen are advised not to venture into north Arabian Sea, northern parts of central Arabian Sea and along & off Gujarat coast till 17th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 0230 hrs IST of 16th June, 2019.

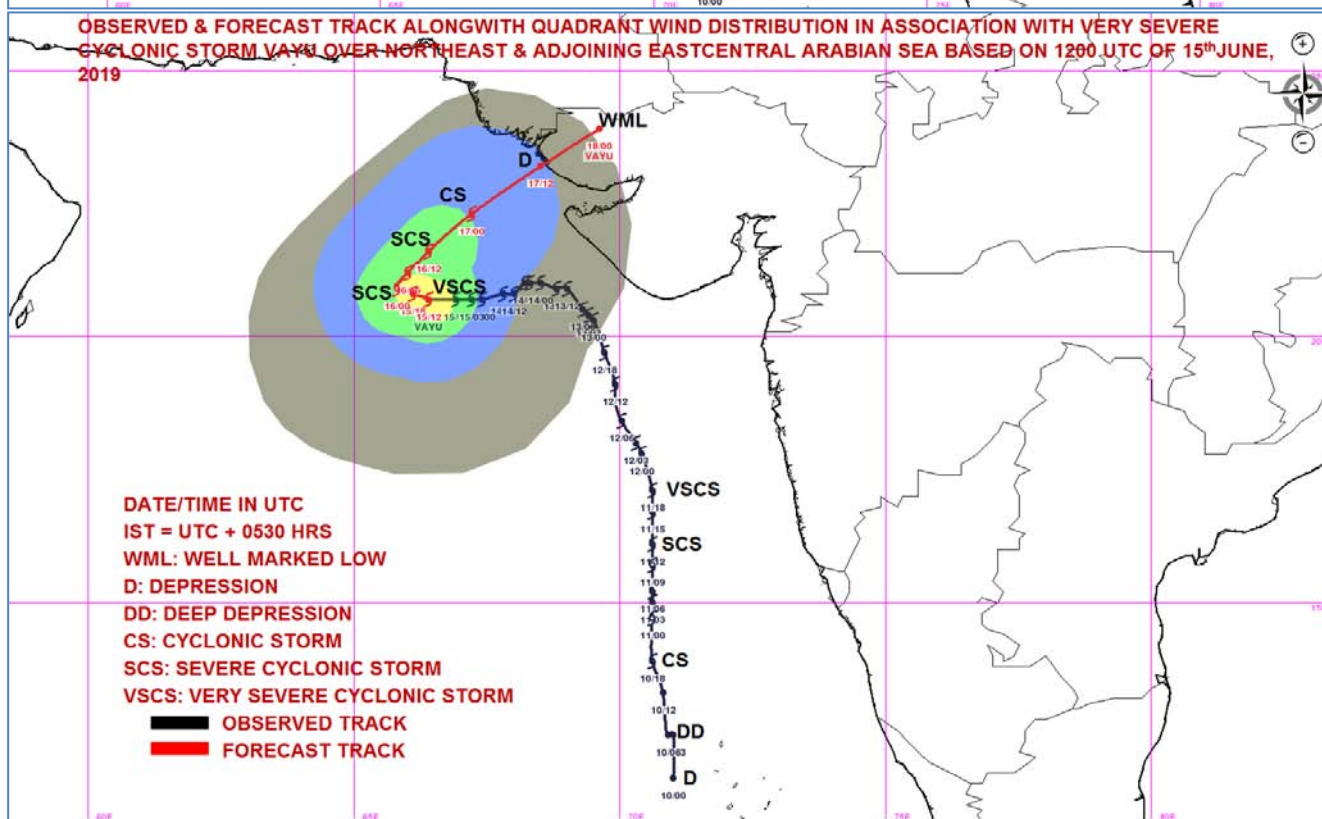
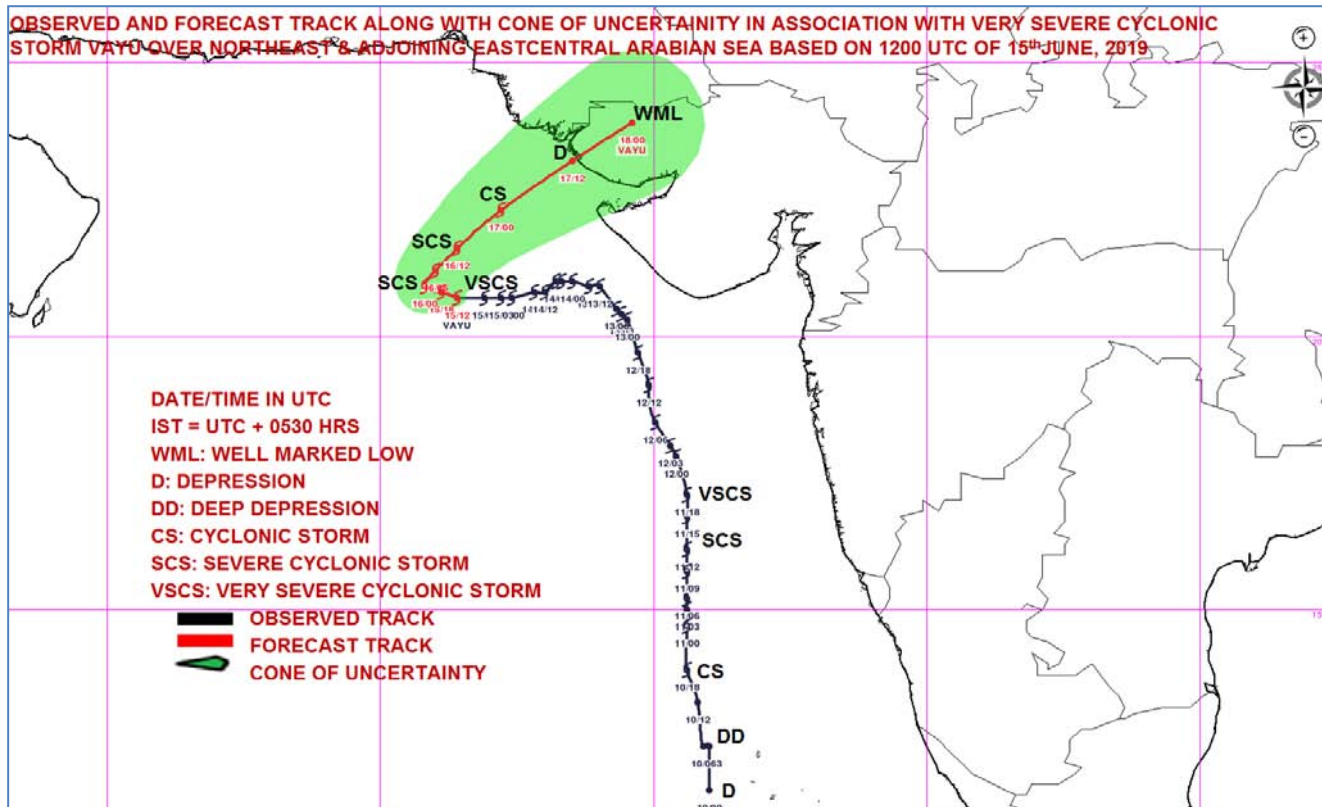
(D.R. Pattanaik)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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.



MSW(knot)/kmph)	Impact	Action
28-33/(51-62)	Very rough seas.	Total suspension of fishing operations
34-49/(63-91)	High to very high seas	Total suspension of fishing operations
50-63/(92-117)	Very High seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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/01/2019)

TIME OF ISSUE: 0230 HOURS IST

DATED: 16.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea continued to move westwards with a speed of about 07 kmph in last six hours and lay centred at 2330 hrs IST of 15th June, 2019 near latitude 20.7°N and longitude 66.0°E over northeast & adjoining eastcentral Arabian Sea, about 395 km west-southwest of Porbandar (Gujarat), 365 km southwest of Dwarka (Gujarat) and 480 km southwest of Bhuj (Gujarat). **The system is very likely to weaken gradually into a Severe Cyclonic Storm during next 12 hours and into a Cyclonic Storm during the subsequent 24 hours. The system is very likely to move west-northwestwards during next 12 hours; gradually recurve thereafter northeastwards and cross north Gujarat coast by late evening of 17th June 2019 as a Depression.**

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
15.06.19/2330	20.7/66.0	120-130 gusting to 145	Very Severe Cyclonic Storm
16.06.19/0530	20.7/65.6	110-120 gusting to 135	Severe Cyclonic Storm
16.06.19/1130	20.8/65.8	100-110 gusting to 125	Severe Cyclonic Storm
16.06.19/1730	21.0/66.2	90-100 gusting to 115	Severe Cyclonic Storm
16.06.19/2330	21.5/66.8	70-80 gusting to 90	Cyclonic Storm
17.06.19/1130	22.3/67.8	55-65 gusting to 75	Deep Depression
17.06.19/2330	23.2/69.0	45-55 gusting to 65	Depression
18.06.19/1130	24.1/70.2	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) Heavy rainfall warning:

Sub-Divisions	15 June 2019*	16 June 2019*	17 June 2019*	18 June 2019*
Saurashtra & Kutch	Rainfall at many places with heavy falls at isolated places in the coastal districts	Rainfall at many places with heavy falls at isolated places in the coastal districts	Rainfall at many places with heavy to very heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places
North Gujarat region	NIL	NIL	NIL	Rainfall at most places with heavy falls at isolated places
South Rajasthan	NIL	NIL	NIL	Rainfall at many places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Green: No warning**
Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day

(ii) Wind warning

- **16th June:** Gale wind speed of the order of **110-120 kmph gusting to 135 kmph** very likely over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely along & off Gujarat coast.
- **17th June:** Gale wind speed of the order of **65-75 kmph gusting to 85 kmph** very likely over northeast Arabian Sea and adjoining east central Arabian Sea in morning hours and decrease gradually thereafter. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely to commence along & off Gujarat coast from the morning and gradually become squally winds speed reaching **50-60 kmph gusting to 70 kmph** towards afternoon.

(iii) Sea condition

- The Sea condition is very likely to be phenomenal on 15th night and high to very high from 16th morning over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea.
- The Sea condition is very likely to be rough to very rough along & off Gujarat coast till 17th.
- The Sea condition is very likely to be rough to very rough over rest parts of eastcentral Arabian Sea upto 17th June 2019.

(iv) Fishermen Warning

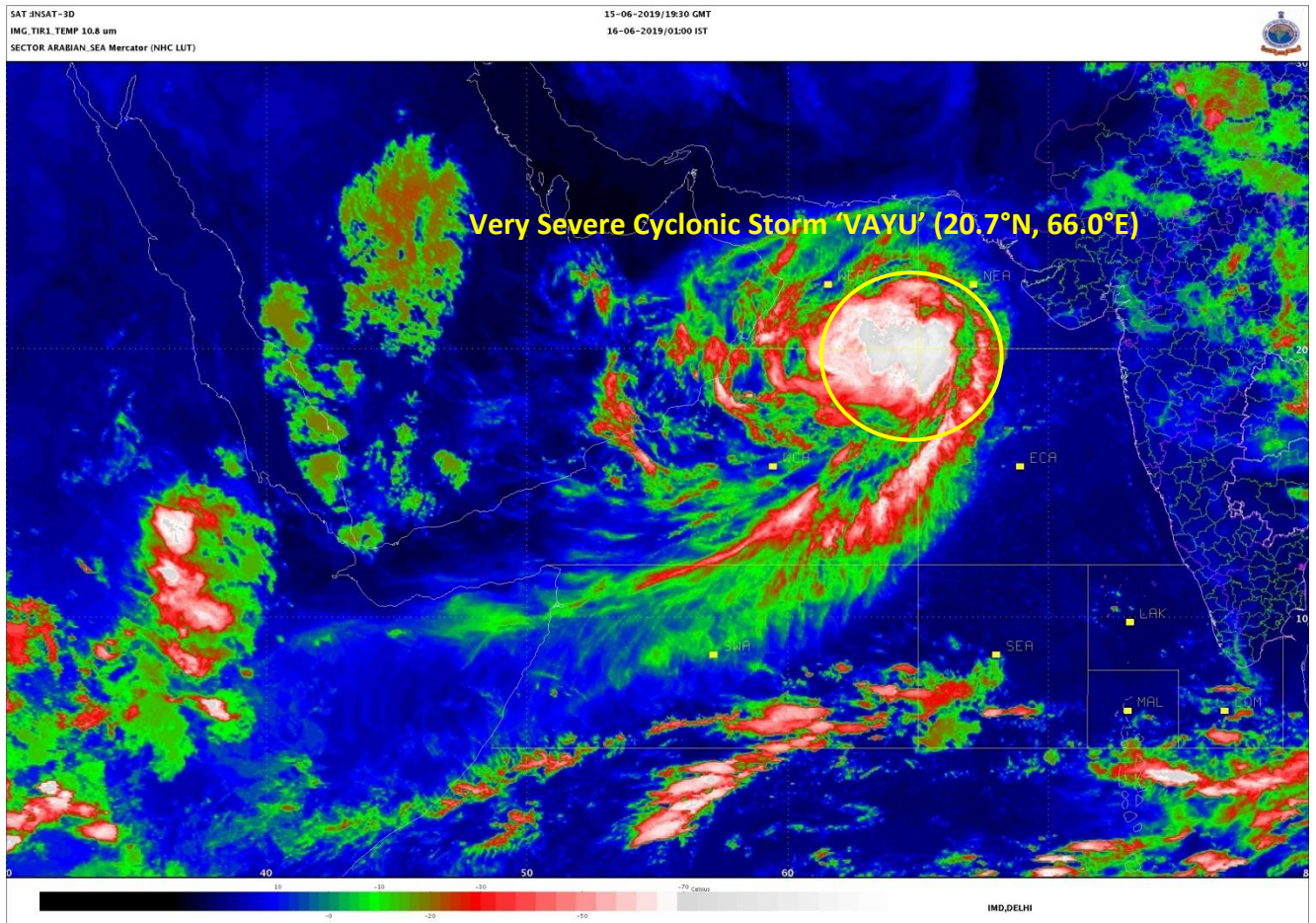
- The fishermen are advised not to venture into north Arabian Sea, northern parts of central Arabian Sea and along & off Gujarat coast till 17th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 0530 hrs IST of 16th June, 2019.

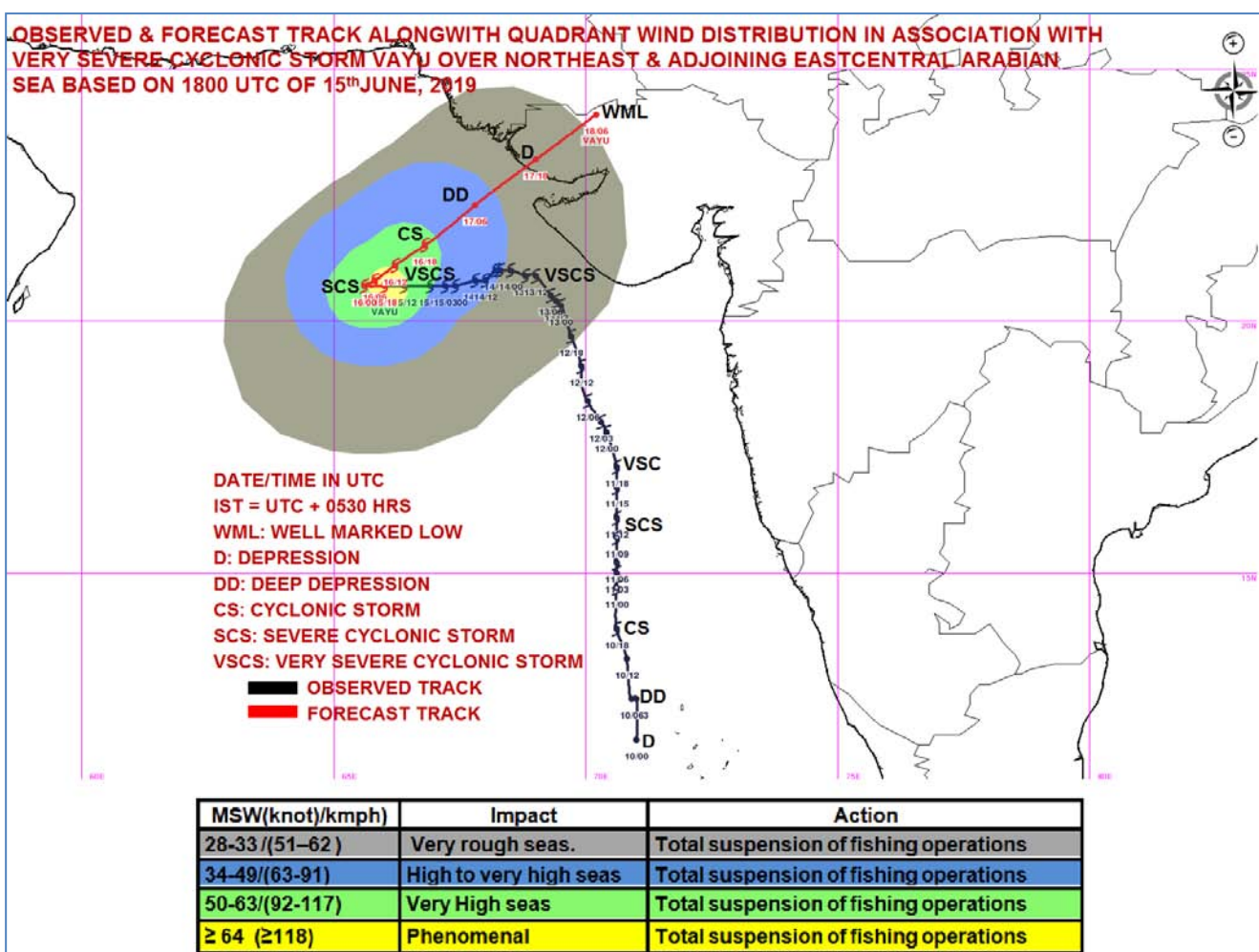
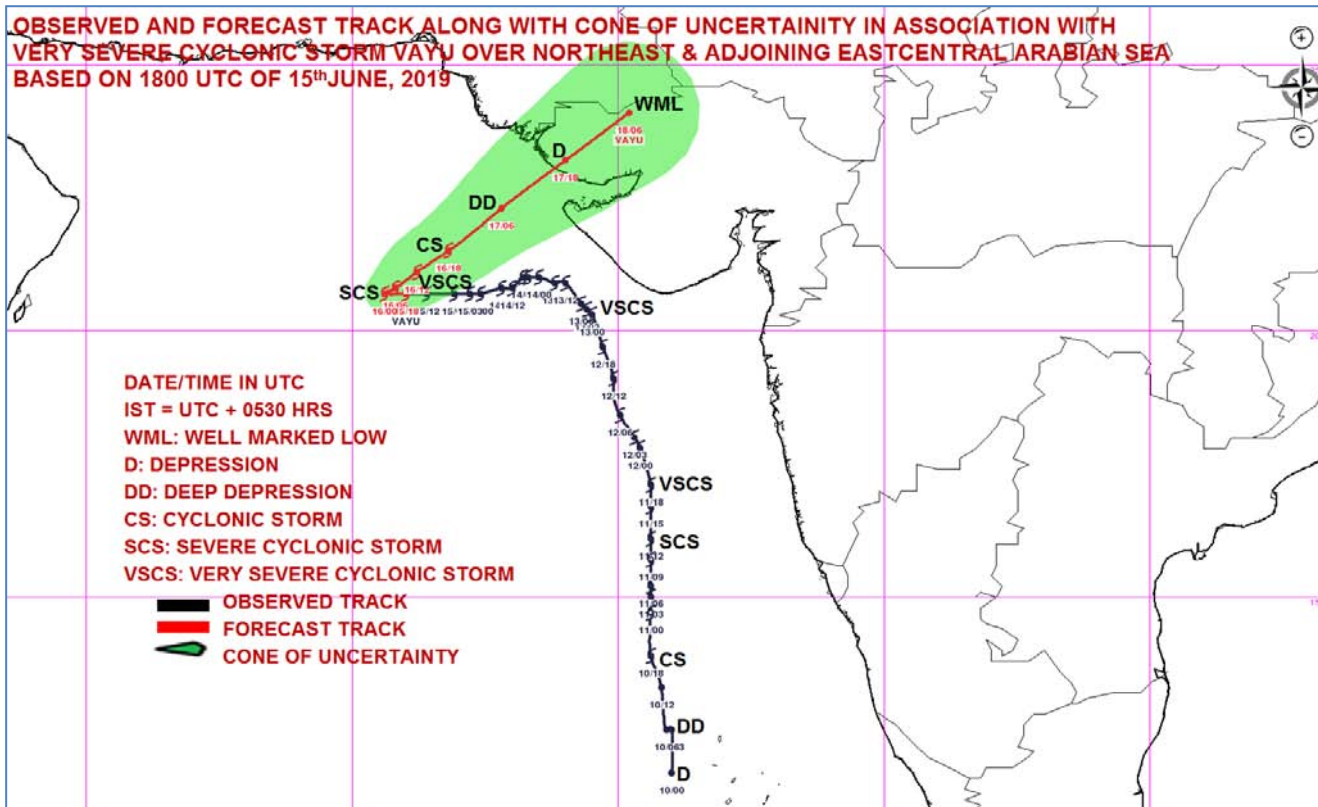
(D.R. Pattanaik)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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. : 46 (ARB/01/2019)

TIME OF ISSUE: 0430 HOURS IST

DATED: 16.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea continued to move westwards with a speed of about 07 kmph in last six hours and lay centred at 0230 hrs IST of 16th June, 2019 near latitude 20.7°N and longitude 65.9°E over northeast & adjoining eastcentral Arabian Sea, about 405 km west-southwest of Porbandar (Gujarat), 375 km southwest of Dwarka (Gujarat) and 490 km southwest of Bhuj (Gujarat). **The system is very likely to weaken gradually into a Severe Cyclonic Storm during next 06 hours and into a Cyclonic Storm during the subsequent 24 hours. The system is very likely to move west-northwestwards during next 12 hours; gradually recurve thereafter northeastwards and cross north Gujarat coast by late evening of 17th June 2019 as a Depression.**

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
16.06.19/0230	20.7/65.9	120-130 gusting to 145	Very Severe Cyclonic Storm
16.06.19/0530	20.7/65.6	110-120 gusting to 135	Severe Cyclonic Storm
16.06.19/1130	20.8/65.8	100-110 gusting to 125	Severe Cyclonic Storm
16.06.19/1730	21.0/66.2	90-100 gusting to 115	Severe Cyclonic Storm
16.06.19/2330	21.5/66.8	70-80 gusting to 90	Cyclonic Storm
17.06.19/1130	22.3/67.8	55-65 gusting to 75	Deep Depression
17.06.19/2330	23.2/69.0	45-55 gusting to 65	Depression
18.06.19/1130	24.1/70.2	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) Heavy rainfall warning:

Sub-Divisions	15 June 2019*	16 June 2019*	17 June 2019*	18 June 2019*
Saurashtra & Kutch	Rainfall at many places with heavy falls at isolated places in the coastal districts	Rainfall at many places with heavy falls at isolated places in the coastal districts	Rainfall at many places with heavy to very heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places
North Gujarat region	NIL	NIL	NIL	Rainfall at most places with heavy falls at isolated places
South Rajasthan	NIL	NIL	NIL	Rainfall at many places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Green: No warning**
Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day

(ii) Wind warning

- **16th June:** Gale wind speed of the order of **110-120 kmph gusting to 135 kmph** very likely over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely along & off Gujarat coast.
- **17th June:** Gale wind speed of the order of **65-75 kmph gusting to 85 kmph** very likely over northeast Arabian Sea and adjoining east central Arabian Sea in morning hours and decrease gradually thereafter. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely to commence along & off Gujarat coast from the morning and gradually become squally winds speed reaching **50-60 kmph gusting to 70 kmph** towards afternoon.

(iii) Sea condition

- The Sea condition is very likely to be phenomenal on 15th night and high to very high from 16th morning over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea.
- The Sea condition is very likely to be rough to very rough along & off Gujarat coast till 17th.
- The Sea condition is very likely to be rough to very rough over rest parts of eastcentral Arabian Sea upto 17th June 2019.

(iv) Fishermen Warning

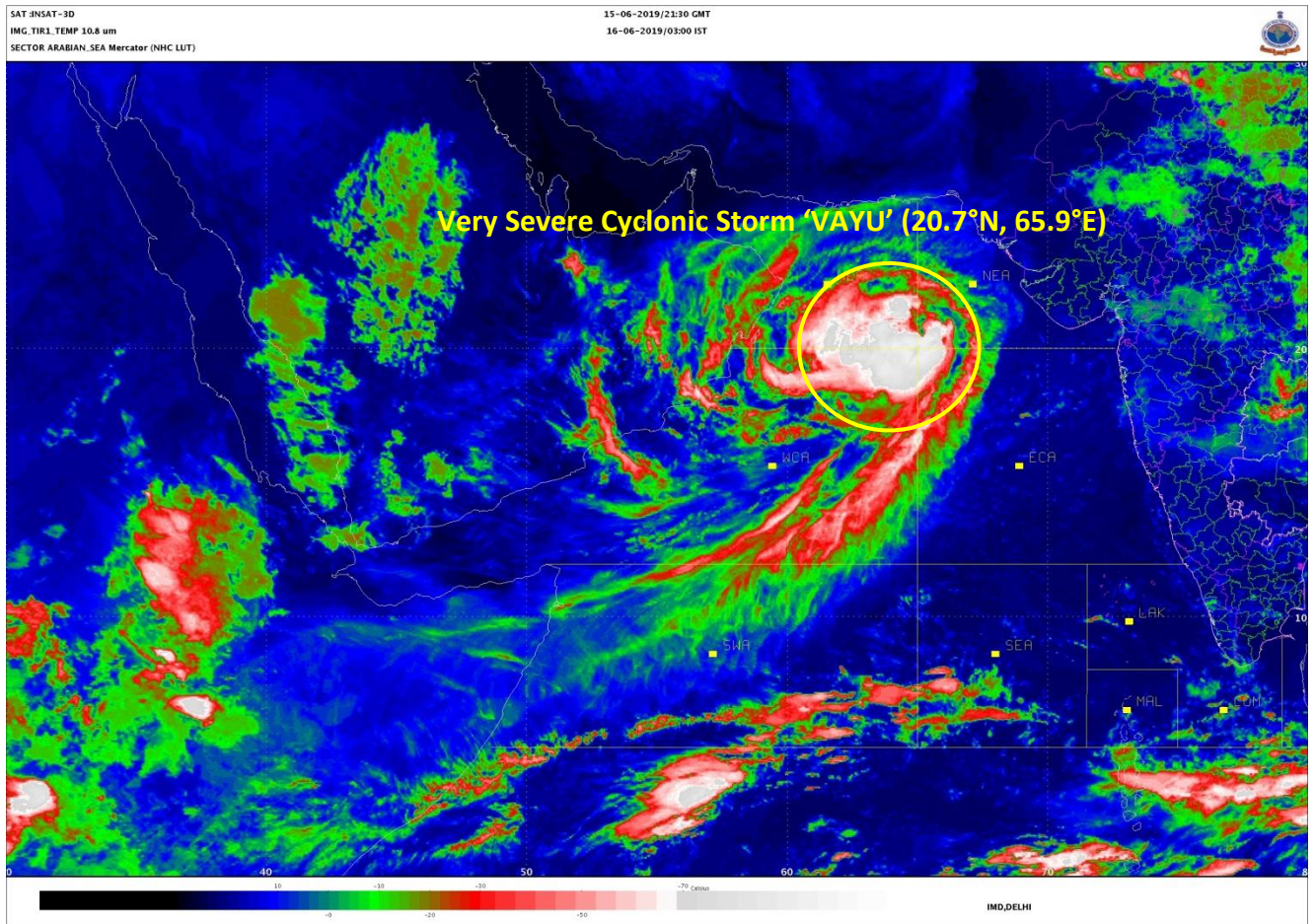
- The fishermen are advised not to venture into north Arabian Sea, northern parts of central Arabian Sea and along & off Gujarat coast till 17th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 0830 hrs IST of 16th June, 2019.

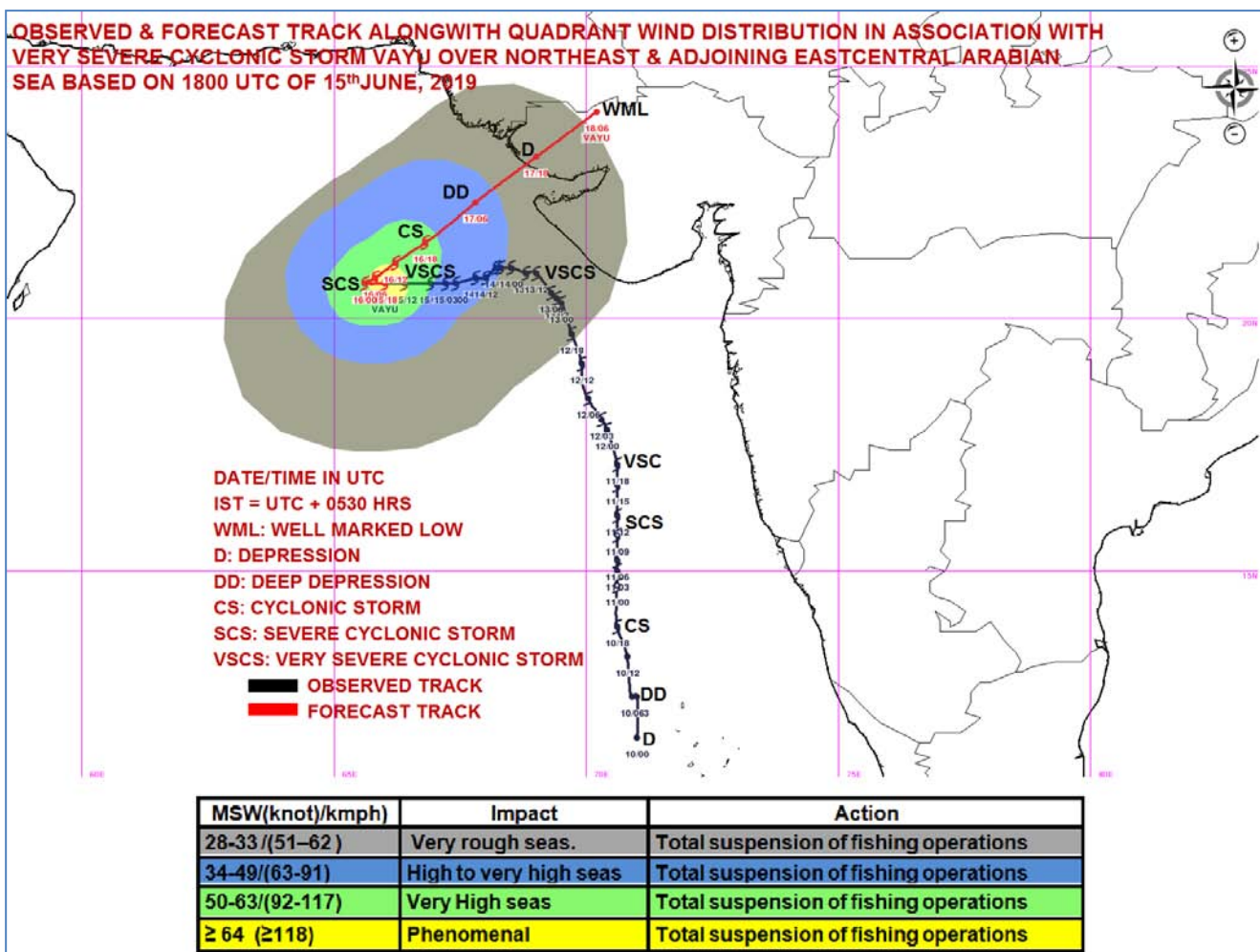
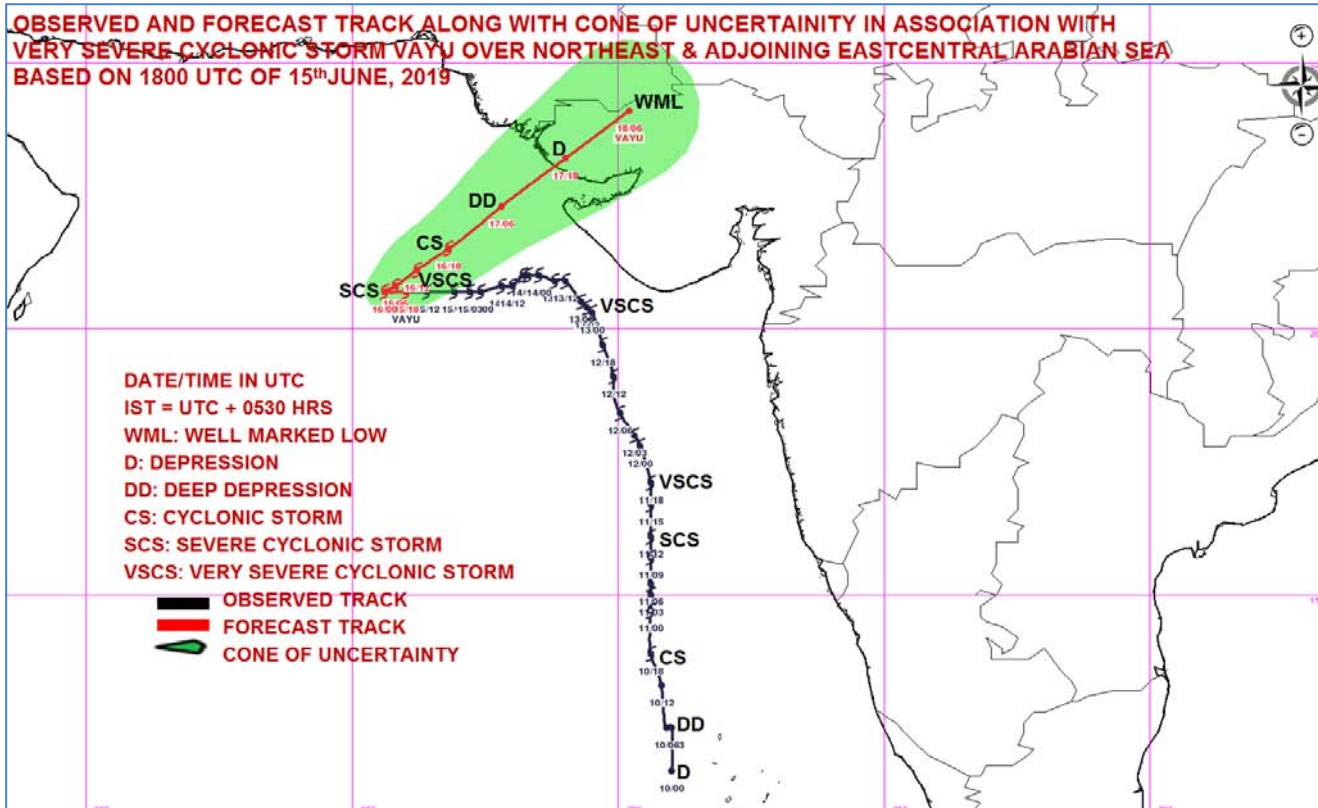
(D.R. Pattanaik)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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. : 47 (ARB/01/2019)

TIME OF ISSUE: 0845 HOURS IST

DATED: 16.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast & adjoining Eastcentral Arabian Sea weakened into a Severe Cyclonic Storm

The **Very Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea continued to move westwards with a speed of about 08 kmph in last six hours, weakened into a Severe Cyclonic Storm and lay centred at 0530 hrs IST of 16th June, 2019 near latitude 20.7°N and longitude 65.5°E over northeast & adjoining eastcentral Arabian Sea, about 440 km west-southwest of Porbandar (Gujarat), 415 km southwest of Dwarka (Gujarat) and 525 km southwest of Bhuj (Gujarat). The system is very likely to weaken gradually into a Cyclonic Storm during next 24 hrs. The system is very likely to move west-northwestwards during next 06 hours; gradually recurve thereafter northeastwards and cross north Gujarat coast by midnight of 17th June 2019 as a Depression.

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
16.06.19/0530	20.7/65.5	110-120 gusting to 135	Severe Cyclonic Storm
16.06.19/1130	21.0/65.1	100-110 gusting to 125	Severe Cyclonic Storm
16.06.19/1730	21.3/65.0	90-100 gusting to 115	Severe Cyclonic Storm
16.06.19/2330	21.6/65.4	80-90 gusting to 100	Cyclonic Storm
17.06.19/0530	21.9/66.1	70-80 gusting to 90	Cyclonic Storm
17.06.19/1730	22.8/68.1	50-60 gusting to 70	Deep Depression
18.06.19/0530	23.7/69.8	40-50 gusting to 60	Depression

Centre of Severe Cyclonic Storm 'VAYU' (pronounced as VAA'YU) at 0730 hrs IST of today, the 16th June, 2019 : 20.8 /65.3 E

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

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) Heavy rainfall warning:

Sub-Divisions	16 June 2019*	17 June 2019*	18 June 2019*
Saurashtra & Kutch	Rainfall at many places with heavy falls at isolated places in the coastal districts	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places
North Gujarat region	NIL	Rainfall at a few places with heavy falls at isolated places	Rainfall at most places with heavy falls at isolated places
South Rajasthan	NIL	Rainfall at isolated places with heavy falls at isolated places over southwest Rajasthan	Rainfall at many places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Green: No warning**
Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day

(ii) Wind warning

- **16th June:** Gale wind speed of the order of **110-120 kmph gusting to 135 kmph** very likely over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea and decrease gradually thereafter. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely along & off Gujarat coast.
- **17th June:** Gale wind speed of the order of **70-80 kmph gusting to 90 kmph** very likely over northeast Arabian Sea and adjoining east central Arabian Sea in morning hours and decrease gradually thereafter. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely along & off Gujarat coast from the morning and gradually become squally winds speed reaching **50-60 kmph gusting to 70 kmph** towards afternoon.

(iii) Sea condition

- The Sea condition is very likely to be high to very high from today, the 16th June over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea.
- The Sea condition is very likely to be rough to very rough along & off Gujarat coast till 17th.
- The Sea condition is very likely to be rough to very rough over rest parts of eastcentral Arabian Sea upto 17th June 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into north Arabian Sea, northern parts of central Arabian Sea and along & off Gujarat coast till 17th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 1130 hrs IST of 16th June, 2019.

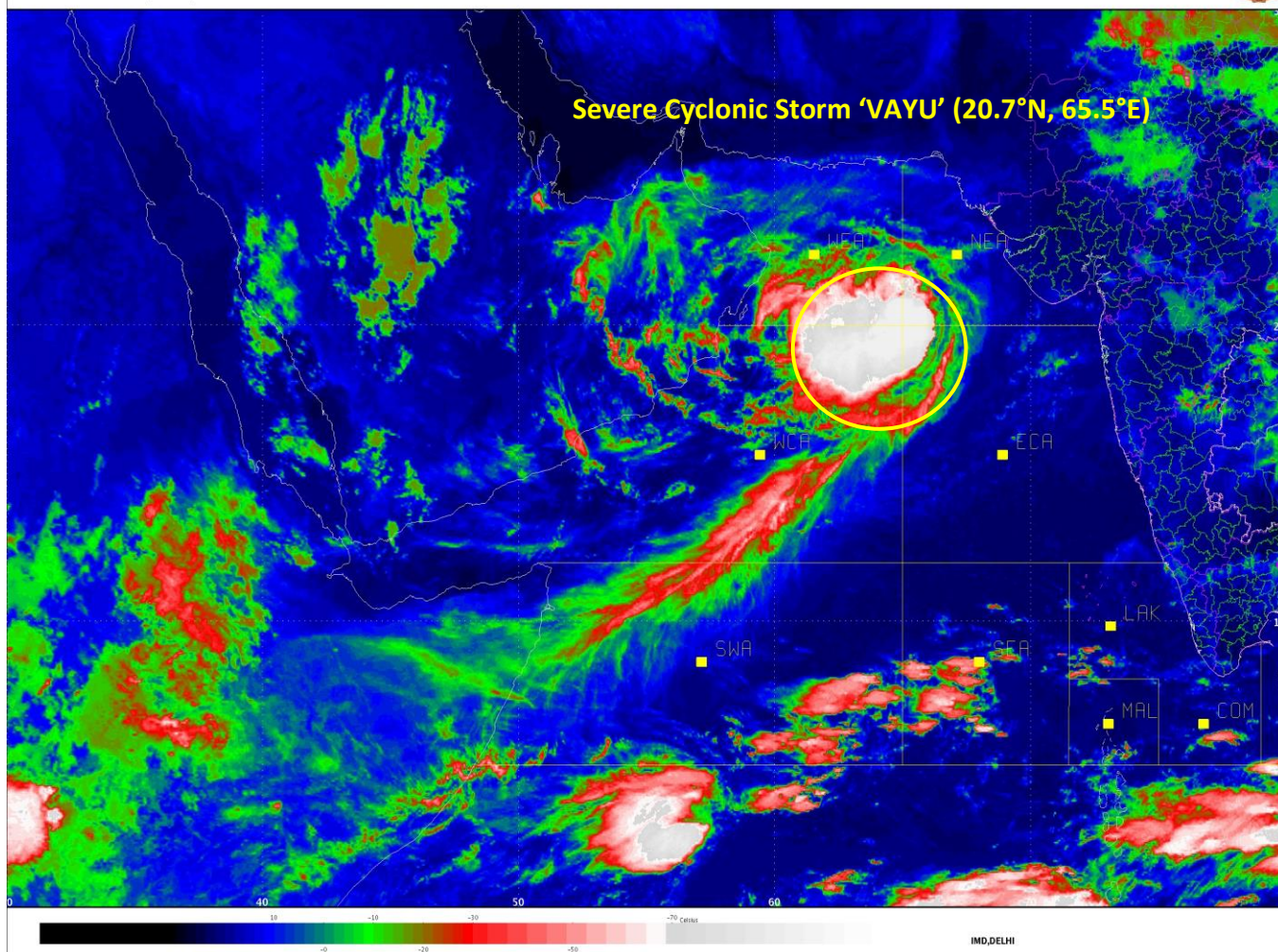
(D.R. Pattanaik)
Scientist-E, RSMC, New Delhi

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

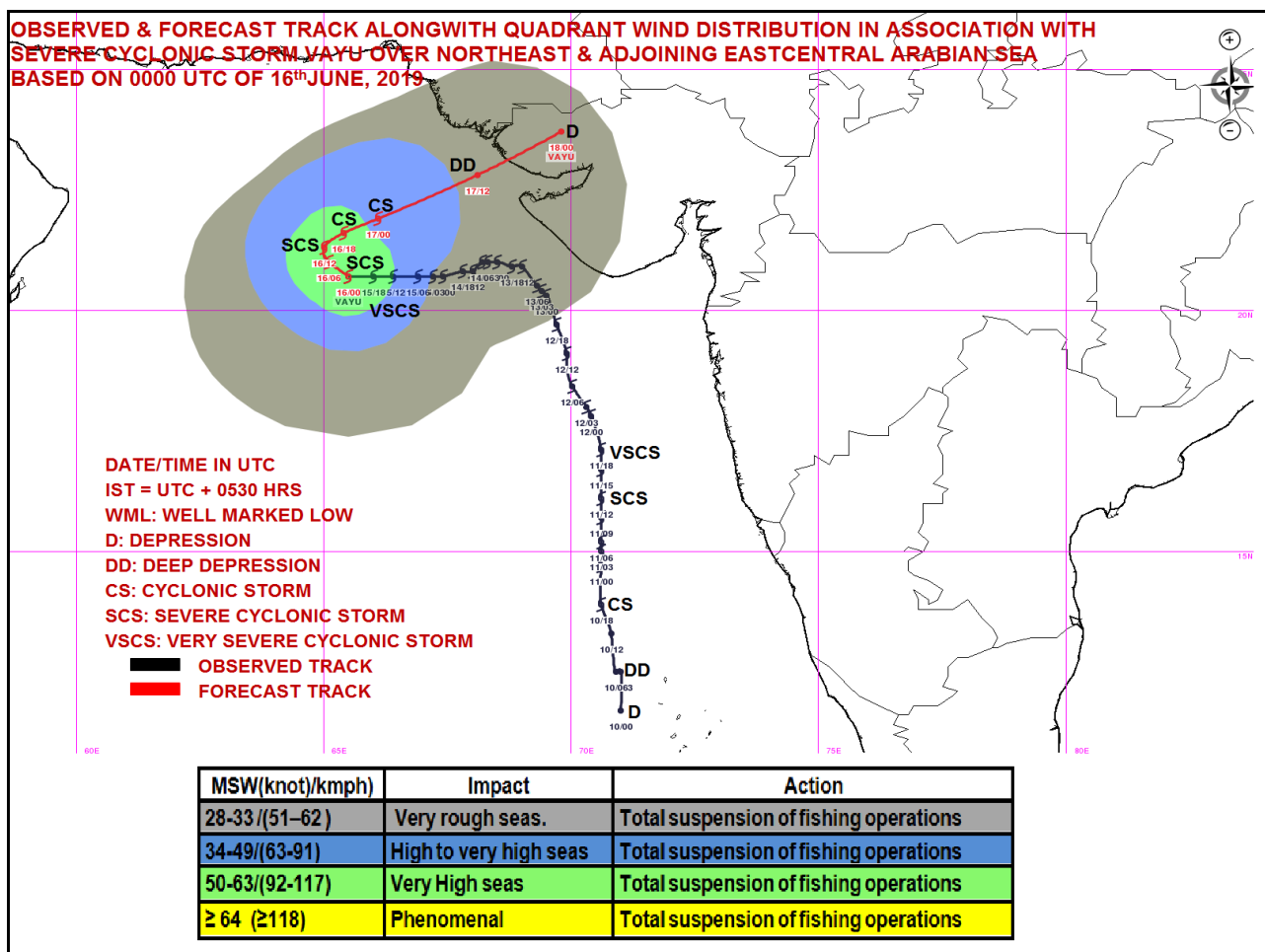
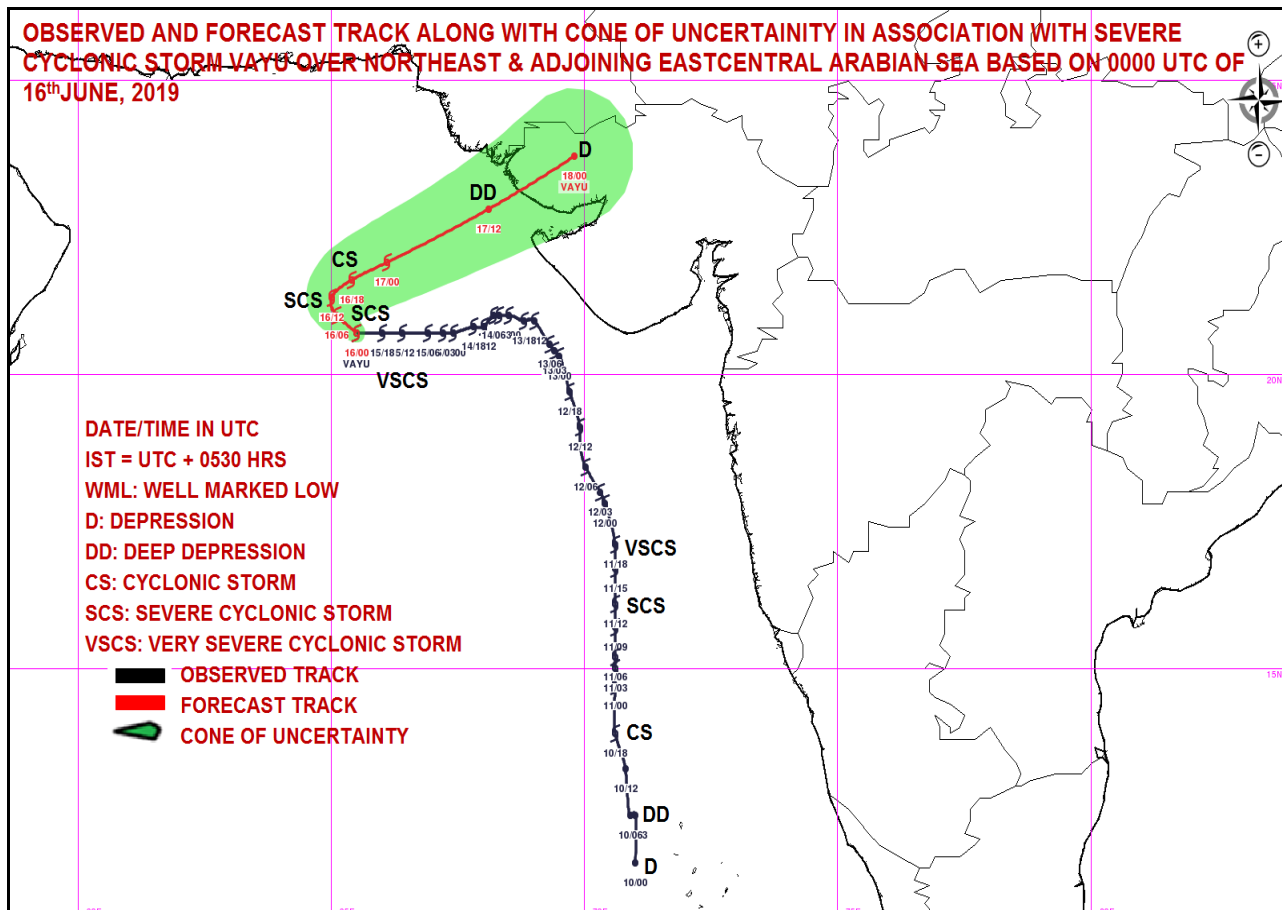
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

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SECTOR ARABIAN_SEA Mercator (NHC LUT)

16-06-2019/01:30 GMT
16-06-2019/07:00 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. : 48 (ARB/01/2019)

TIME OF ISSUE: 1100 HOURS IST

DATED: 16.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast and adjoining Northwest & Central Arabian Sea

The **Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast & adjoining eastcentral Arabian Sea moved nearly westwards with a speed of about 12 kmph in last six hours, and lay centred at 0830 hrs IST of 16th June, 2019 near latitude 20.8°N and longitude 65.2°E over Northeast and adjoining northwest & Central Arabian Sea, about 470 km west-southwest of Porbandar (Gujarat), 440 km southwest of Dwarka (Gujarat) and 545 km southwest of Bhuj (Gujarat). The system is very likely to weaken gradually into a Cyclonic Storm during next 24 hrs. The system is very likely to move west-northwestwards during next 06 hours; gradually recurve thereafter northeastwards and cross north Gujarat coast by midnight of 17th June 2019 as a Depression.

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
16.06.19/0830	20.8/65.2	105-115 gusting to 130	Severe Cyclonic Storm
16.06.19/1130	21.0/65.1	100-110 gusting to 125	Severe Cyclonic Storm
16.06.19/1730	21.3/65.1	90-100 gusting to 115	Severe Cyclonic Storm
16.06.19/2330	21.6/65.4	80-90 gusting to 100	Cyclonic Storm
17.06.19/0530	21.9/66.1	70-80 gusting to 90	Cyclonic Storm
17.06.19/1730	22.8/68.1	50-60 gusting to 70	Deep Depression
18.06.19/0530	23.7/69.8	40-50 gusting to 60	Depression

**Centre of Severe Cyclonic Storm 'VAYU' at 1030 hrs IST of today, the 16th June, 2019:
20.8°N/65.1°E**

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

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) Heavy rainfall warning:

Sub-Divisions	16 June 2019*	17 June 2019*	18 June 2019*
Saurashtra & Kutch	NIL	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy to very heavy falls at isolated places
North Gujarat region	NIL	NIL	Rainfall at many places with heavy to very heavy falls at isolated places
South Rajasthan	NIL	NIL	Rainfall at many places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Green: No warning**
Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day

(ii) Wind warning

- **16th June:** Gale wind speed of the order of **105-115 kmph gusting to 130 kmph** very likely over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea and decrease gradually thereafter. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely along & off Gujarat coast.
- **17th June:** Gale wind speed of the order of **70-80 kmph gusting to 90 kmph** very likely over northeast Arabian Sea and adjoining east central Arabian Sea in morning hours and decrease gradually thereafter. Strong wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely along & off Gujarat coast from the morning and gradually become squally winds speed reaching **50-60 kmph gusting to 70 kmph** towards evening.

(iii) Sea condition

- The Sea condition is very likely to be high to very high over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea on 16th June 2019.
- The Sea condition is very likely to be rough to very rough along & off Gujarat coast till 17th June 2019.
- The Sea condition is very likely to be rough to very rough over rest parts of eastcentral Arabian Sea till 17th June 2019.

(iv) Fishermen Warning

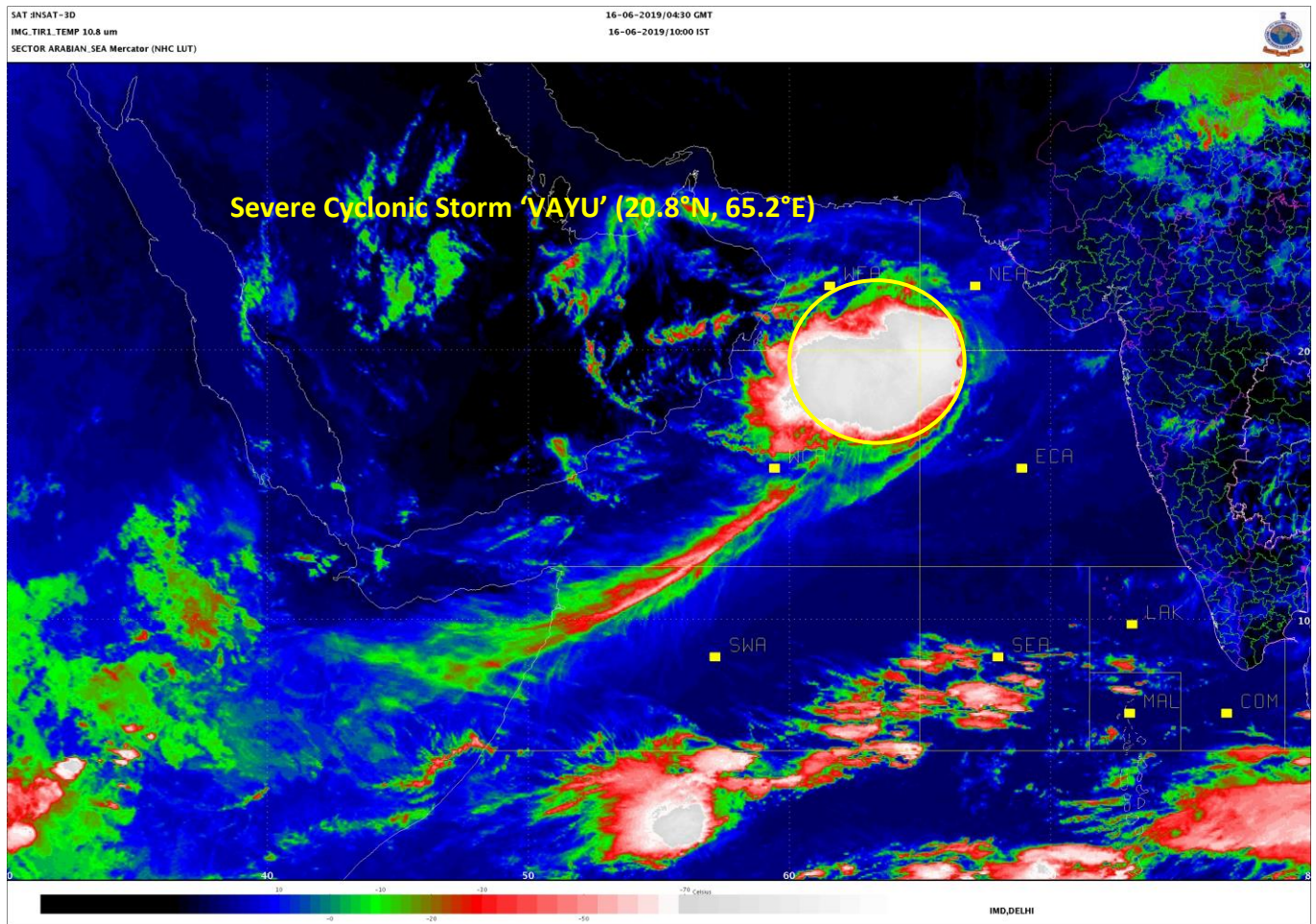
- The fishermen are advised not to venture into north Arabian Sea, northern parts of central Arabian Sea and along & off Gujarat coast till 17th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 1430 hrs IST of 16th June, 2019.

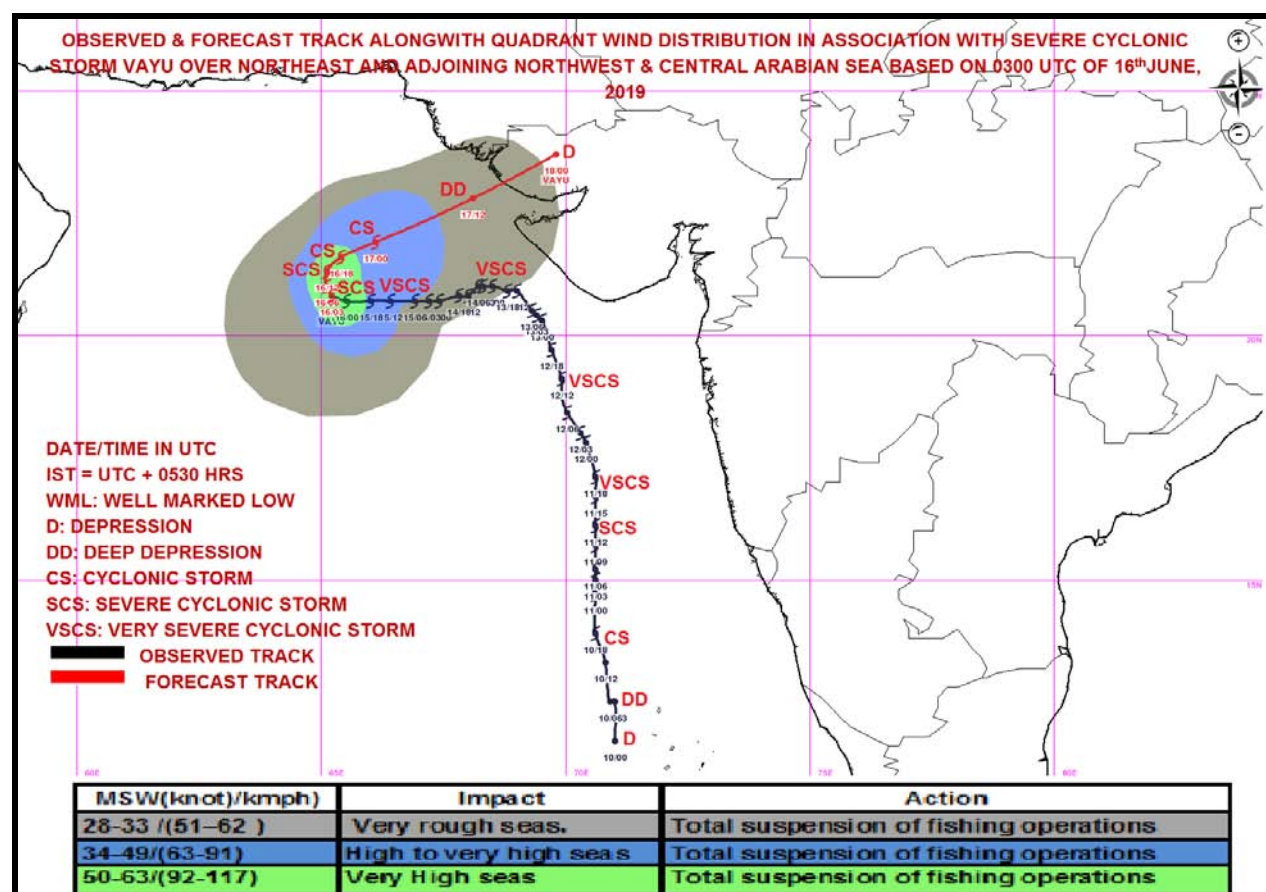
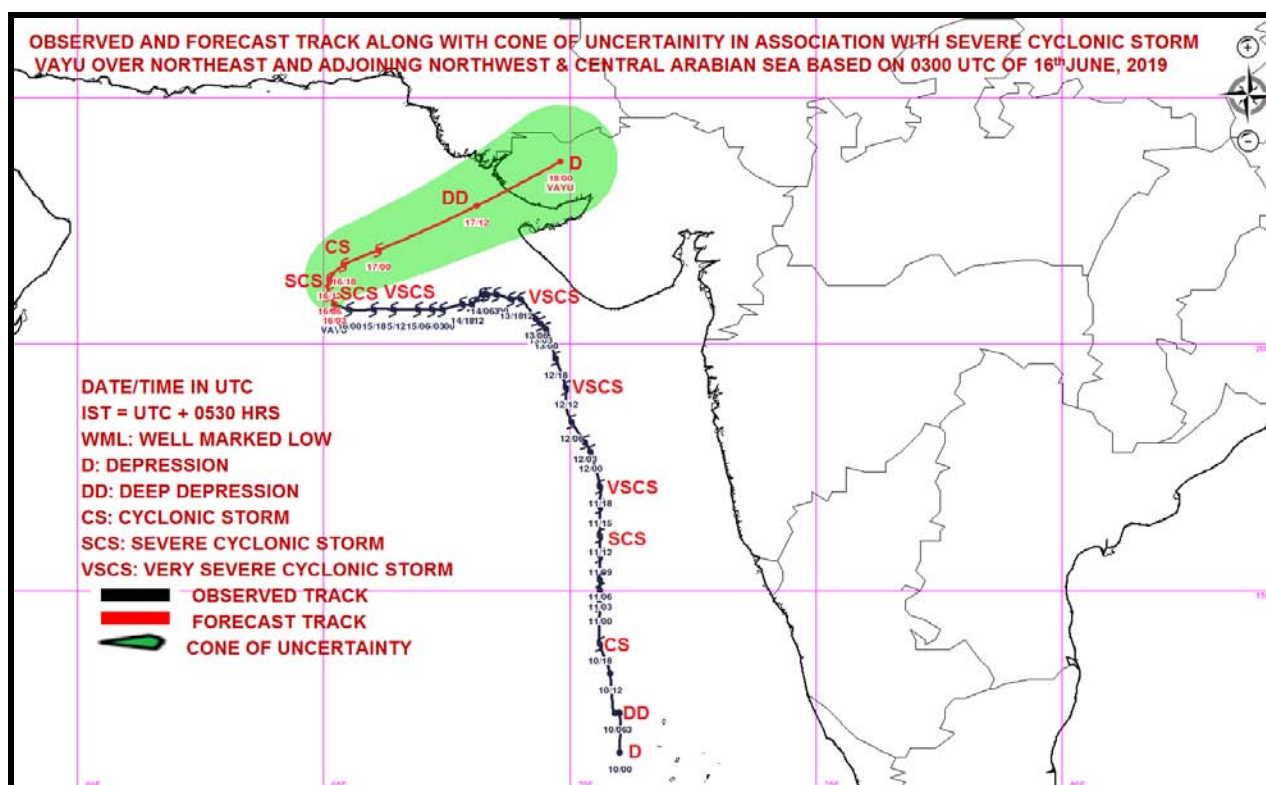
(Suntiha Devi. S)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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. : 49 (ARB/01/2019)

TIME OF ISSUE: 1430 HOURS IST

DATED: 16.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast and adjoining Northwest & Central Arabian Sea

The **Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over Northeast and adjoining northwest & Central Arabian Sea moved west-northwestwards with a speed of about 08 kmph in last six hours, and lay centred at 1130 hrs IST of 16th June, 2019 near latitude 20.9°N and longitude 65.1°E over Northeast and adjoining northwest & Central Arabian Sea, about 480 km west-southwest of Porbandar (Gujarat), 440 km west-southwest of Dwarka (Gujarat) and 550 km west-southwest of Bhuj (Gujarat). The system is very likely to weaken gradually into a Cyclonic Storm during next 12 hours and into a Deep Depression during subsequent 12 hours. The system is very likely to move slowly northwards during next 06 hours and then recurve gradually northeastwards and cross north Gujarat coast by midnight of 17th June 2019 as a Depression.

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
16.06.19/1130	20.9/65.1	100-110 gusting to 125	Severe Cyclonic Storm
16.06.19/1730	21.2/65.3	90-100 gusting to 115	Severe Cyclonic Storm
16.06.19/2330	21.6/65.7	80-90 gusting to 100	Cyclonic Storm
17.06.19/0530	22.0/66.3	70-80 gusting to 90	Cyclonic Storm
17.06.19/1130	22.4/67.2	55-65 gusting to 75	Deep Depression
17.06.19/2330	23.2/68.7	45-55 gusting to 65	Depression
18.06.19/1130	23.8/69.8	25-35 gusting to 45	Well Marked Low

**Centre of Severe Cyclonic Storm 'VAYU' at 1300 hrs IST of today, the 16th June, 2019:
20.9°N/65.1°E**

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

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) Heavy rainfall warning:

Sub-Divisions	16 June 2019*	17 June 2019*	18 June 2019*
Saurashtra & Kutch	NIL	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy to very heavy falls at isolated places
North Gujarat region	NIL	NIL	Rainfall at many places with heavy to very heavy falls at isolated places
South Rajasthan	NIL	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Green: No warning**
Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day

(ii) Wind warning

- **16th June:** Gale wind speed of the order of **100-110 kmph gusting to 125 kmph** very likely over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea and decrease gradually thereafter. Strong wind speed of the order of **30-40 kmph gusting to 50 kmph** very likely along & off Gujarat coast.
- **17th June:** Gale wind speed of the order of **70-80 kmph gusting to 90 kmph** very likely over northeast Arabian Sea and adjoining east central Arabian Sea in morning hours and decrease gradually thereafter becoming **55-65 kmph gusting to 75 kmph by evening**. Strong wind speed of the order of **35-45 kmph gusting to 55 kmph** very likely along & off Gujarat coast from the morning and gradually become squally winds speed reaching **45-55 kmph gusting to 65 kmph** towards evening.

(iii) Sea condition

- The Sea condition is high to very high over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea on 16th June 2019 and become very rough to high in the morning hours of 17th June 2019.
- The Sea condition is very likely to be rough to very rough along & off Gujarat coast till 17th June 2019.

(iv) Fishermen Warning

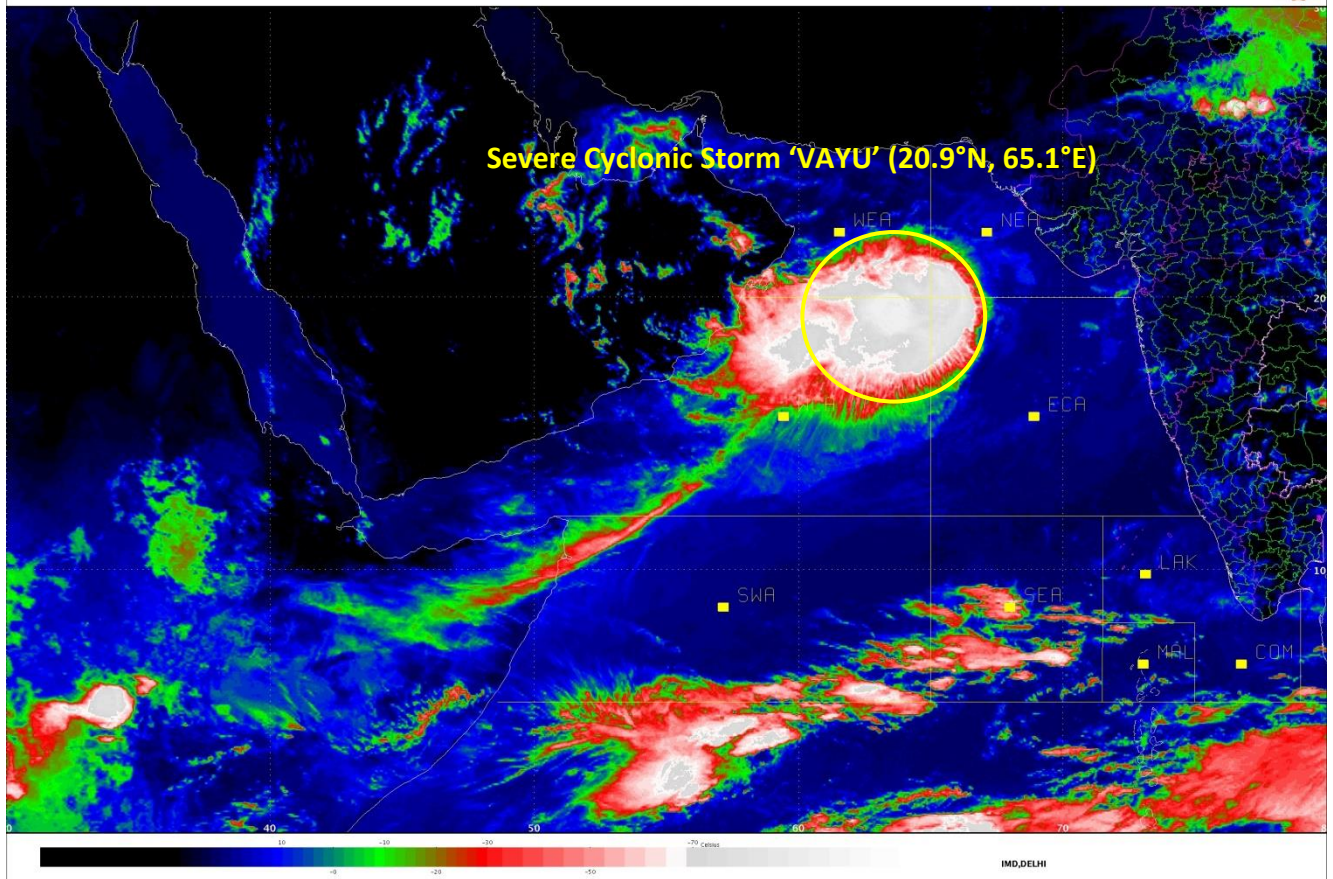
- The fishermen are advised not to venture into north Arabian Sea, northern parts of central Arabian Sea and along & off Gujarat coast till 17th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 1730 hrs IST of 16th June, 2019.

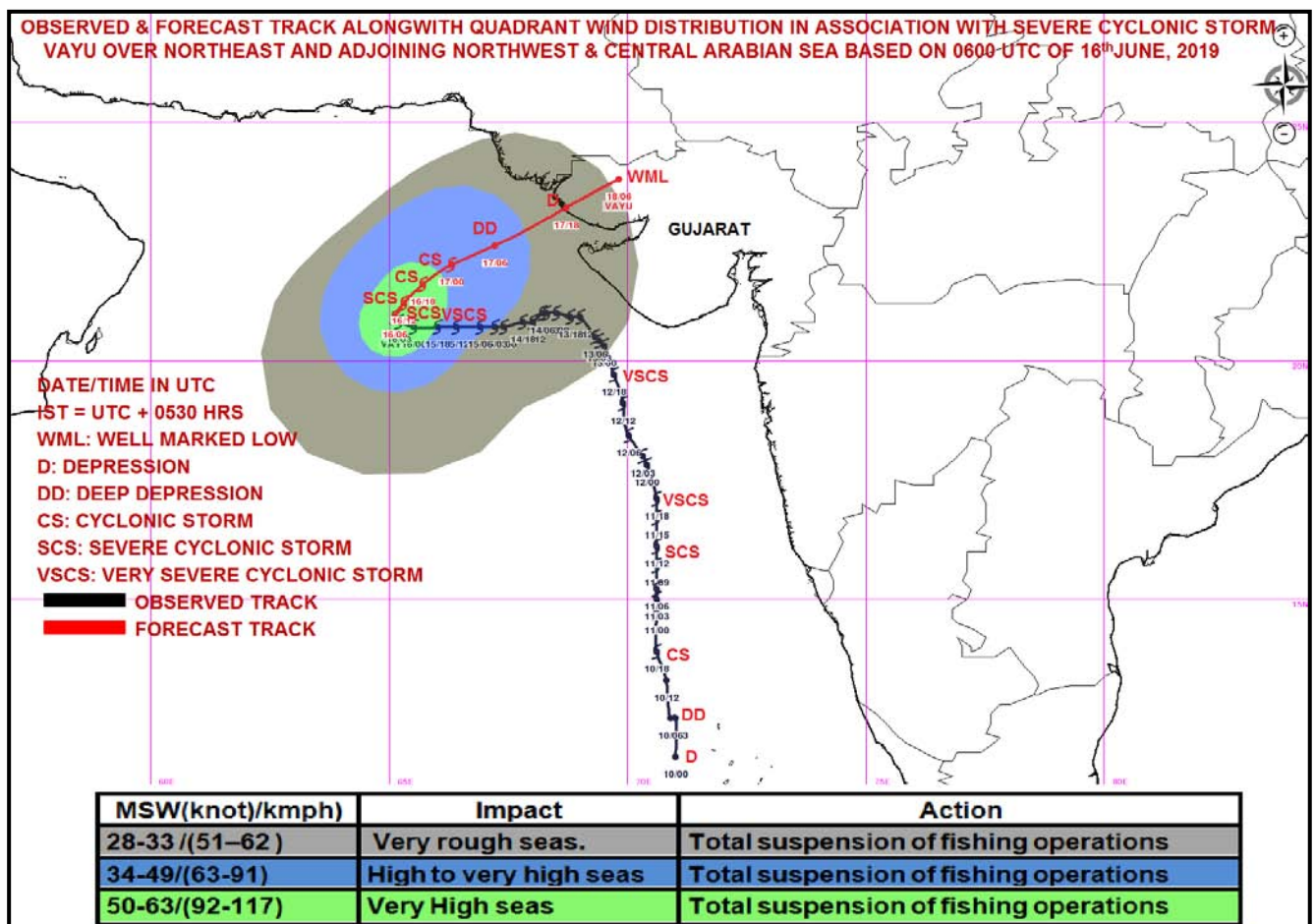
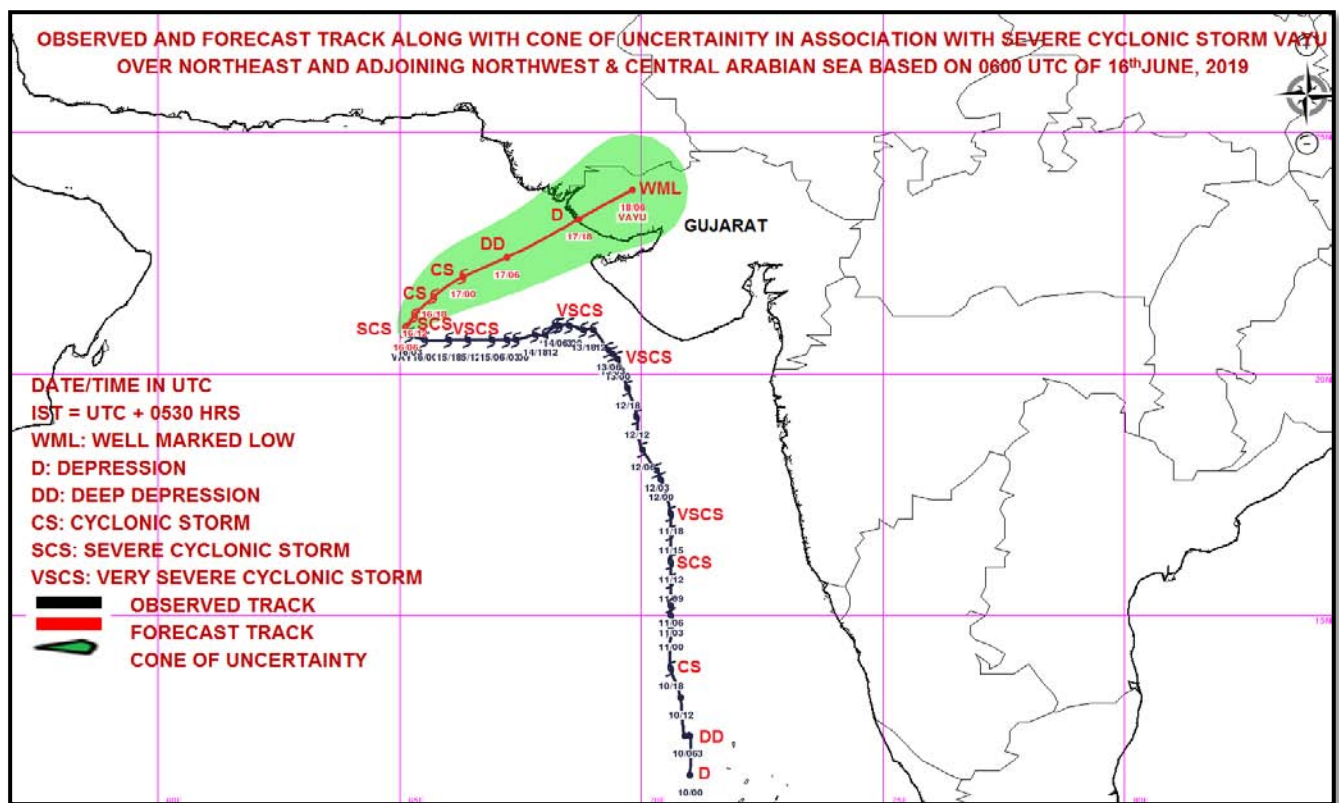
(Suntiha Devi. S)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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. : 50 (ARB/01/2019)

TIME OF ISSUE: 1630 HOURS IST

DATED: 16.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast and adjoining Northwest & Central Arabian Sea

The **Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over Northeast and adjoining northwest & Central Arabian Sea moved west-northwestwards with a speed of about 05 kmph in last six hours, and lay centred at 1430 hrs IST of 16th June, 2019 near latitude 21.0°N and longitude 65.0°E over Northeast and adjoining northwest & Central Arabian Sea, about 490 km west-southwest of Porbandar (Gujarat), 450 km west-southwest of Dwarka (Gujarat) and 550 km west-southwest of Bhuj (Gujarat). The system is very likely to weaken gradually into a Cyclonic Storm during next 12 hours and into a Deep Depression during subsequent 12 hours. The system is very likely to move slowly northwards during next 06 hours and then recurve gradually northeastwards and cross north Gujarat coast by midnight of 17th June 2019 as a Depression.

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
16.06.19/1430	21.0/65.0	100-110 gusting to 125	Severe Cyclonic Storm
16.06.19/1730	21.2/65.3	90-100 gusting to 115	Severe Cyclonic Storm
16.06.19/2330	21.6/65.7	80-90 gusting to 100	Cyclonic Storm
17.06.19/0530	22.0/66.3	70-80 gusting to 90	Cyclonic Storm
17.06.19/1130	22.4/67.2	55-65 gusting to 75	Deep Depression
17.06.19/2330	23.2/68.7	45-55 gusting to 65	Depression
18.06.19/1130	23.8/69.8	25-35 gusting to 45	Well Marked Low

**Centre of Severe Cyclonic Storm 'VAYU' at 1500 hrs IST of today, the 16th June, 2019:
21.0°N/65.0°E**

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

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) Heavy rainfall warning:

Sub-Divisions	<u>16 June 2019*</u>	<u>17 June 2019*</u>	<u>18 June 2019*</u>
Saurashtra & Kutch	NIL	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy to very heavy falls at isolated places
North Gujarat region	NIL	NIL	Rainfall at many places with heavy to very heavy falls at isolated places
South Rajasthan	NIL	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Green: No warning**
Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day

(ii) Wind warning

- **16th June:** Gale wind speed of the order of **100-110 kmph gusting to 125 kmph** very likely over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea and decrease gradually thereafter. Strong wind speed of the order of **30-40 kmph gusting to 50 kmph** very likely along & off Gujarat coast.
- **17th June:** Gale wind speed of the order of **70-80 kmph gusting to 90 kmph** very likely over northeast Arabian Sea and adjoining east central Arabian Sea in morning hours and decrease gradually thereafter becoming **55-65 kmph gusting to 75 kmph by evening**. Strong wind speed of the order of **35-45 kmph gusting to 55 kmph** very likely along & off Gujarat coast from the morning and gradually become squally winds speed reaching **45-55 kmph gusting to 65 kmph** towards evening.

(iii) Sea condition

- The Sea condition is high to very high over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea on 16th June 2019 and become very rough to high in the morning hours of 17th June 2019.
- The Sea condition is very likely to be rough to very rough along & off Gujarat coast till 17th June 2019.

(iv) Fishermen Warning

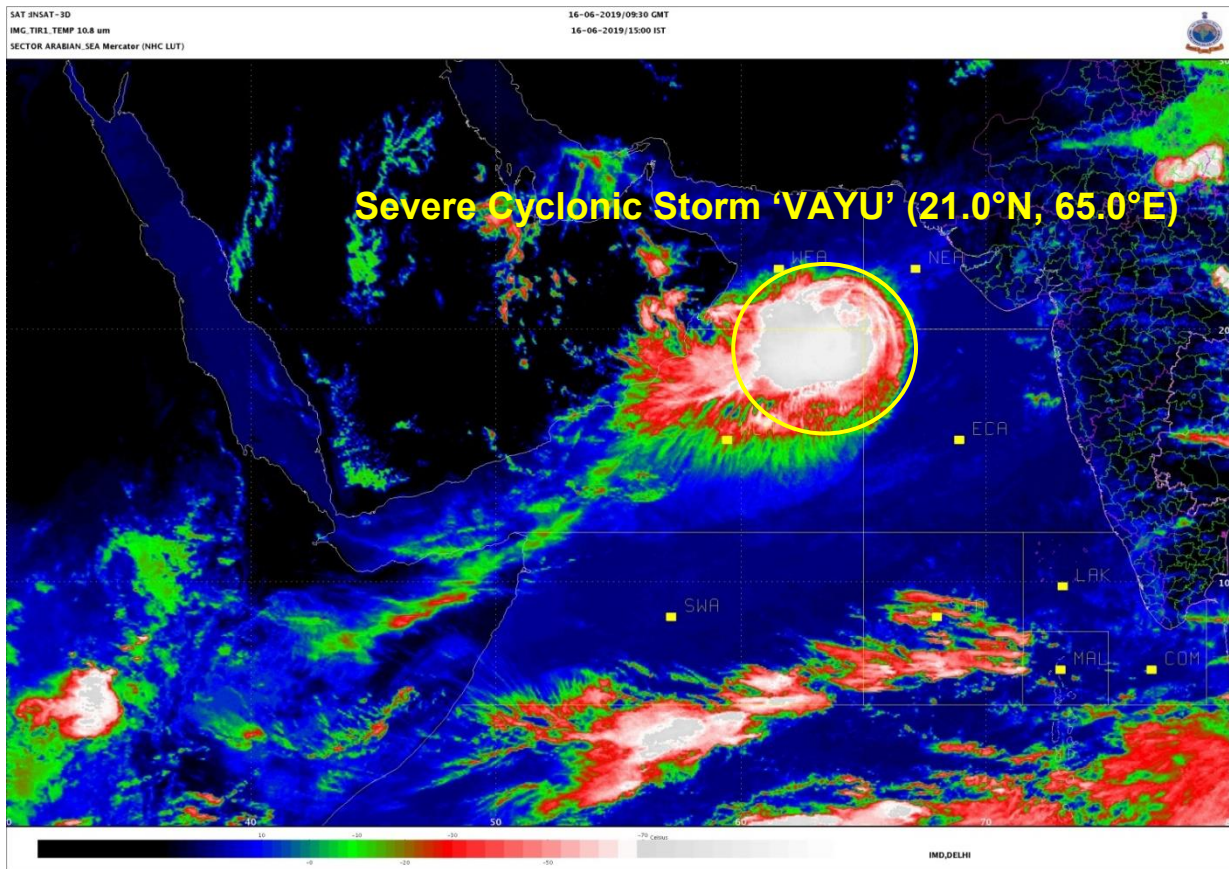
- The fishermen are advised not to venture into north Arabian Sea, northern parts of central Arabian Sea and along & off Gujarat coast till 17th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 2030 hrs IST of 16th June, 2019.

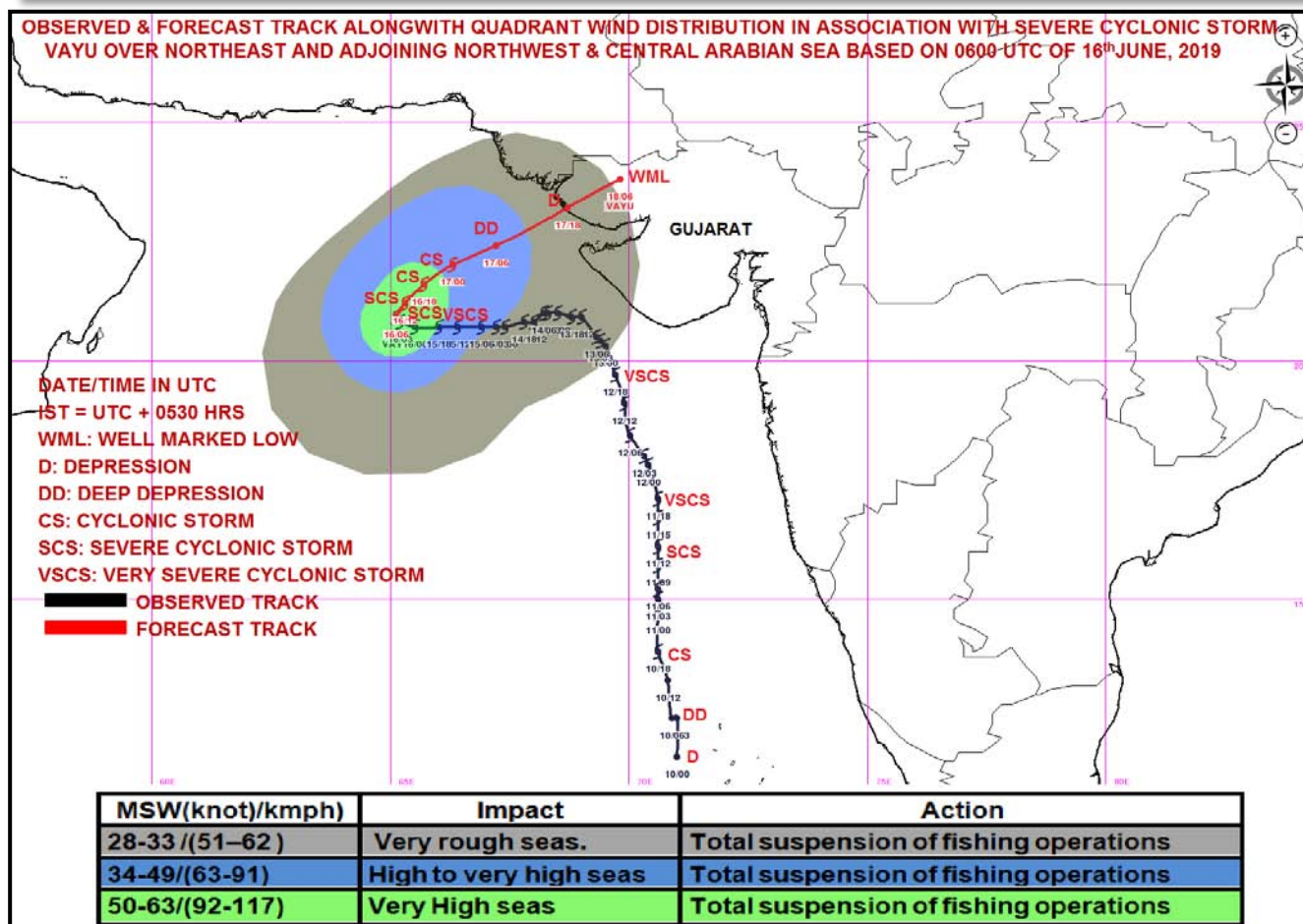
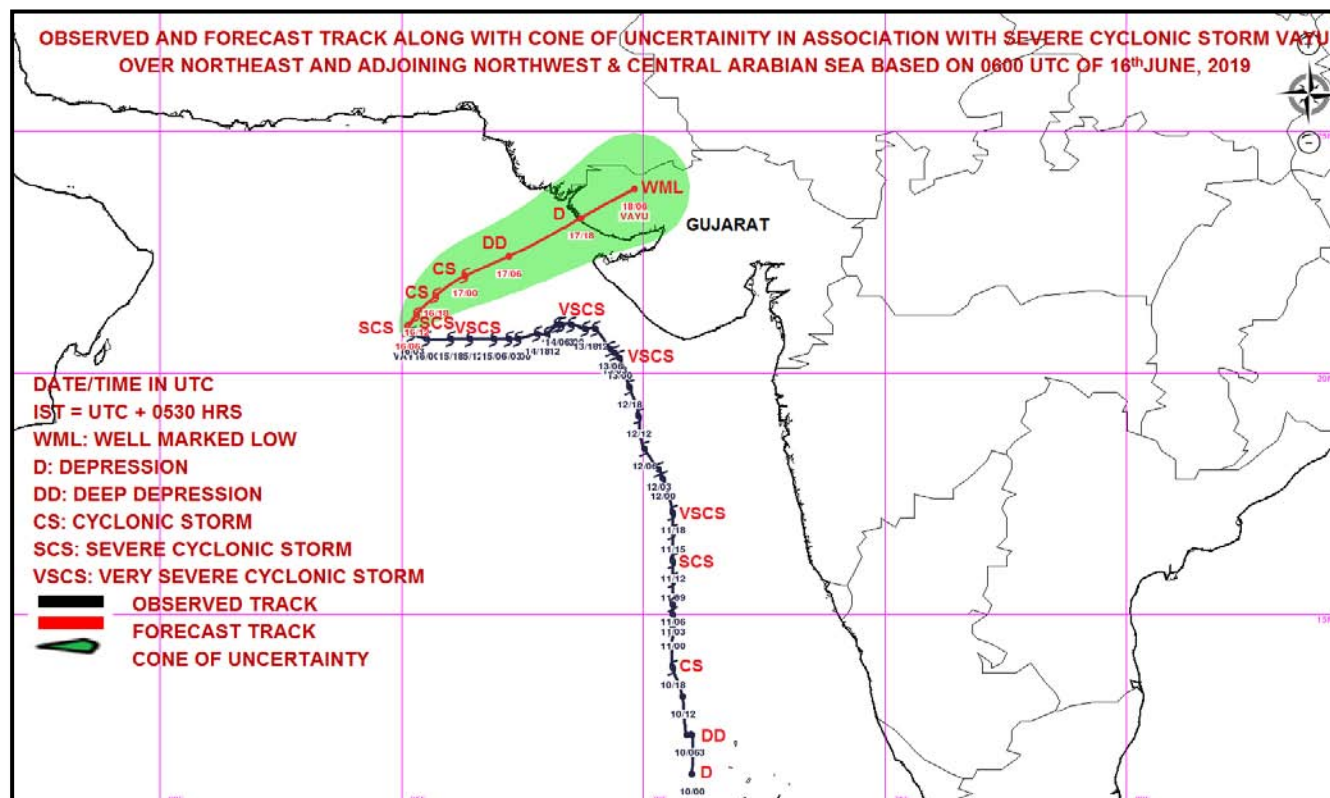
(Sunitha Devi. S)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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. : 51 (ARB/01/2019)

TIME OF ISSUE: 1930 HOURS IST

DATED: 16.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast and adjoining Northwest & Central Arabian Sea

The **Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast and adjoining northwest & Central Arabian Sea moved north-northwestwards with a speed of about 04 kmph in last six hours, and lay centred at 1730 hrs IST of 16th June, 2019 near latitude 21.1°N and longitude 65.0°E over Northeast and adjoining northwest & Central Arabian Sea, about 490 km west-southwest of Porbandar (Gujarat), 440 km west-southwest of Dwarka (Gujarat) and 550 km west-southwest of Bhuj (Gujarat).

The system is very likely to weaken gradually into a Cyclonic Storm during next 06 hours and into a Deep Depression during subsequent 12 hours. The system is very likely to recurve gradually northeastwards and cross north Gujarat coast by midnight of 17th June 2019 as a Depression.

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
16.06.19/1730	21.1/65.0	90-100 gusting to 115	Severe Cyclonic Storm
16.06.19/2330	21.6/65.7	75-85 gusting to 95	Cyclonic Storm
17.06.19/0530	22.0/66.3	60-70 gusting to 80	Cyclonic Storm
17.06.19/1130	22.5/67.2	55-65 gusting to 75	Deep Depression
17.06.19/1730	22.9/68.0	45-55 gusting to 65	Depression
18.06.19/0530	23.4/67.2	40-50 gusting to 60	Depression
18.06.19/1730	23.9/70.4	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) Heavy rainfall warning:

Sub-Divisions	16 June 2019*	17 June 2019*	18 June 2019*
Saurashtra & Kutch	NIL	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy to very heavy falls at isolated places
North Gujarat region	NIL	NIL	Rainfall at many places with heavy to very heavy falls at isolated places
South Rajasthan	NIL	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Green: No warning**
Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day

(ii) Wind warning

- **16th June:** Gale wind speed of the order of **90-100 kmph gusting to 115 kmph** very likely over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea. Strong wind speed of the order of **30-40 kmph gusting to 50 kmph** very likely along & off Gujarat coast.
- **17th June:** Gale wind speed of the order of **60-70 kmph gusting to 80 kmph** very likely over northeast Arabian Sea and adjoining east central Arabian Sea in morning hours and decrease gradually thereafter becoming **55-65 kmph gusting to 75 kmph by evening**. Strong wind speed of the order of **35-45 kmph gusting to 55 kmph** very likely along & off Gujarat coast from the morning and gradually become squally winds speed reaching **45-55 kmph gusting to 65 kmph** towards evening.

(iii) Sea condition

- The Sea condition is high to very high over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea on 16th June 2019 and become very rough to high in the morning hours of 17th June 2019.
- The Sea condition is very likely to be rough to very rough along & off Gujarat coast till 17th June 2019.

(iv) Fishermen Warning

- The fishermen are advised not to venture into north Arabian Sea, northern parts of central Arabian Sea and along & off Gujarat coast till 17th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 2330 hrs IST of 16th June, 2019.

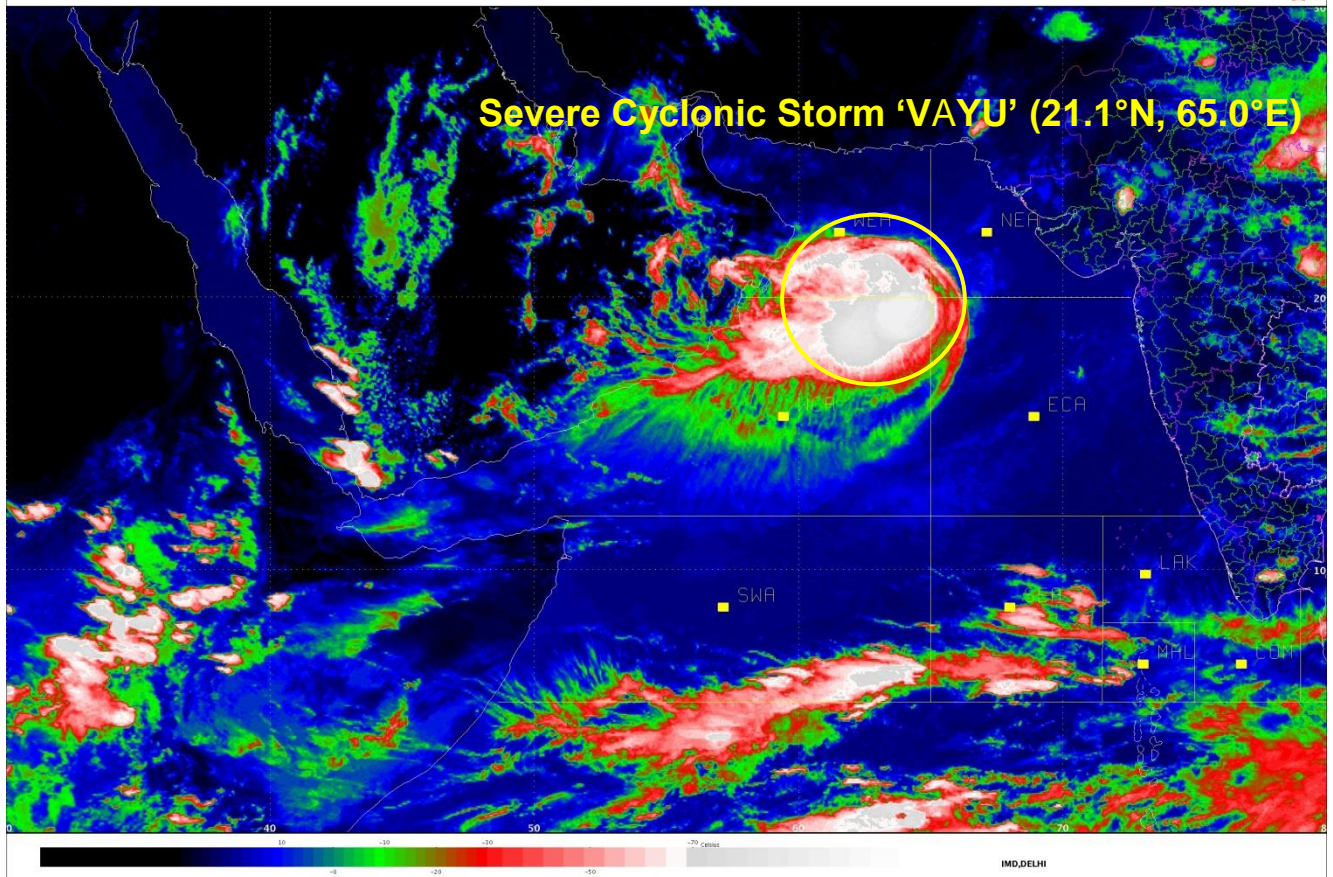
(Sunitha Devi. S)
Scientist-E, RSMC, New Delhi

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

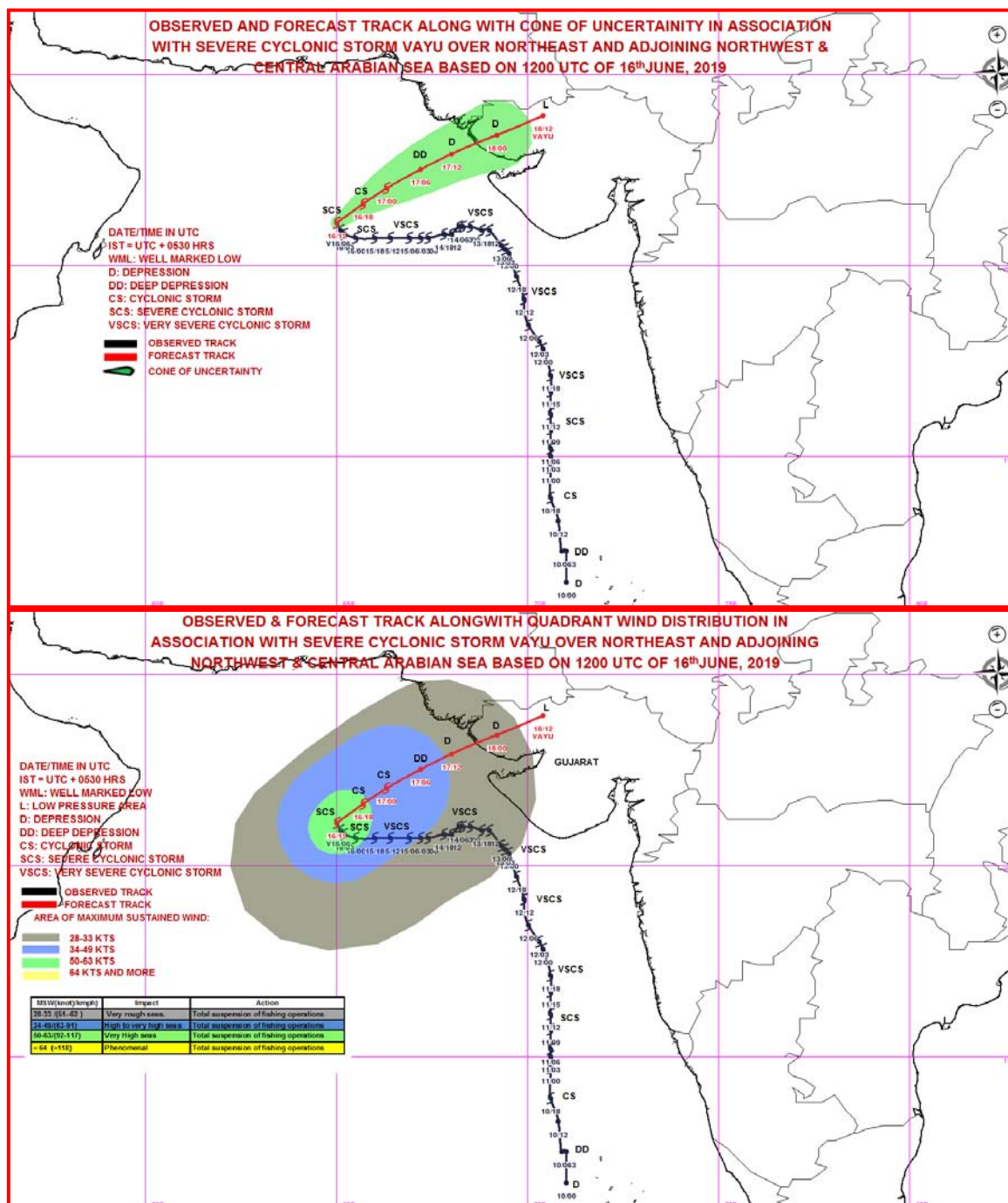
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

SAT JNSAT-3D
IMG.TIR1_TEMP 10.8 um
SECTOR ARABIAN_SEA Mercator (NHC LUT)

16-06-2019/12:30 GMT
16-06-2019/18:00 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. : 52 (ARB/01/2019)

TIME OF ISSUE: 2230 HOURS IST

DATED: 16.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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 'VAYU' over Northeast and adjoining Northwest & Central Arabian Sea weakened into a Cyclonic Storm

The **Severe Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast and adjoining northwest & Central Arabian Sea moved east-northeastwards with a speed of about 05 kmph in last six hours, **weakened into a Cyclonic Storm** and lay centred at 2030 hrs IST of 16th June, 2019 near latitude 21.1°N and longitude 65.3°E over Northeast and adjoining northwest & Central Arabian Sea, about 450 km west-southwest of Porbandar (Gujarat), 415 km west-southwest of Dwarka (Gujarat) and 520 km west-southwest of Bhuj (Gujarat).

The system is very likely to weaken into a Deep Depression during next 12 hours. The system is very likely to move northeastwards and cross north Gujarat coast by midnight of 17th June 2019 as a Depression.

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
16.06.19/2030	21.1/65.3	80-90 gusting to 100	Cyclonic Storm
16.06.19/2330	21.6/65.7	75-85 gusting to 95	Cyclonic Storm
17.06.19/0530	22.0/66.3	60-70 gusting to 80	Cyclonic Storm
17.06.19/1130	22.5/67.2	55-65 gusting to 75	Deep Depression
17.06.19/1730	22.9/68.0	45-55 gusting to 65	Depression
18.06.19/0530	23.4/69.2	40-50 gusting to 60	Depression
18.06.19/1730	23.9/70.4	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) Heavy rainfall warning:

Sub-Divisions	16 June 2019*	17 June 2019*	18 June 2019*
Saurashtra & Kutch	NIL	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy to very heavy falls at isolated places
North Gujarat region	NIL	NIL	Rainfall at many places with heavy to very heavy falls at isolated places
South Rajasthan	NIL	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Green: No warning**
Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day

(ii) Wind warning

- **16th June:** Gale wind speed of the order of **80-90 kmph gusting to 100 kmph** very likely over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea. Strong wind speed of the order of **30-40 kmph gusting to 50 kmph** very likely along & off Gujarat coast.
- **17th June:** Gale wind speed of the order of **60-70 kmph gusting to 80 kmph** very likely over northeast Arabian Sea and adjoining east central Arabian Sea in morning hours and decrease gradually thereafter becoming **45-55 kmph gusting to 65 kmph by evening**. Strong wind speed of the order of **35-45 kmph gusting to 55 kmph** very likely along & off Gujarat coast from the morning and gradually become squally winds speed reaching **45-55 kmph gusting to 65 kmph** towards evening.

(iii) Sea condition

- The Sea condition is high to very high over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea on 16th June 2019 and become very rough to high in the morning hours of 17th June 2019.
- The Sea condition is very likely to be rough to very rough along & off Gujarat coast till 17th June 2019.

(iv) Fishermen Warning

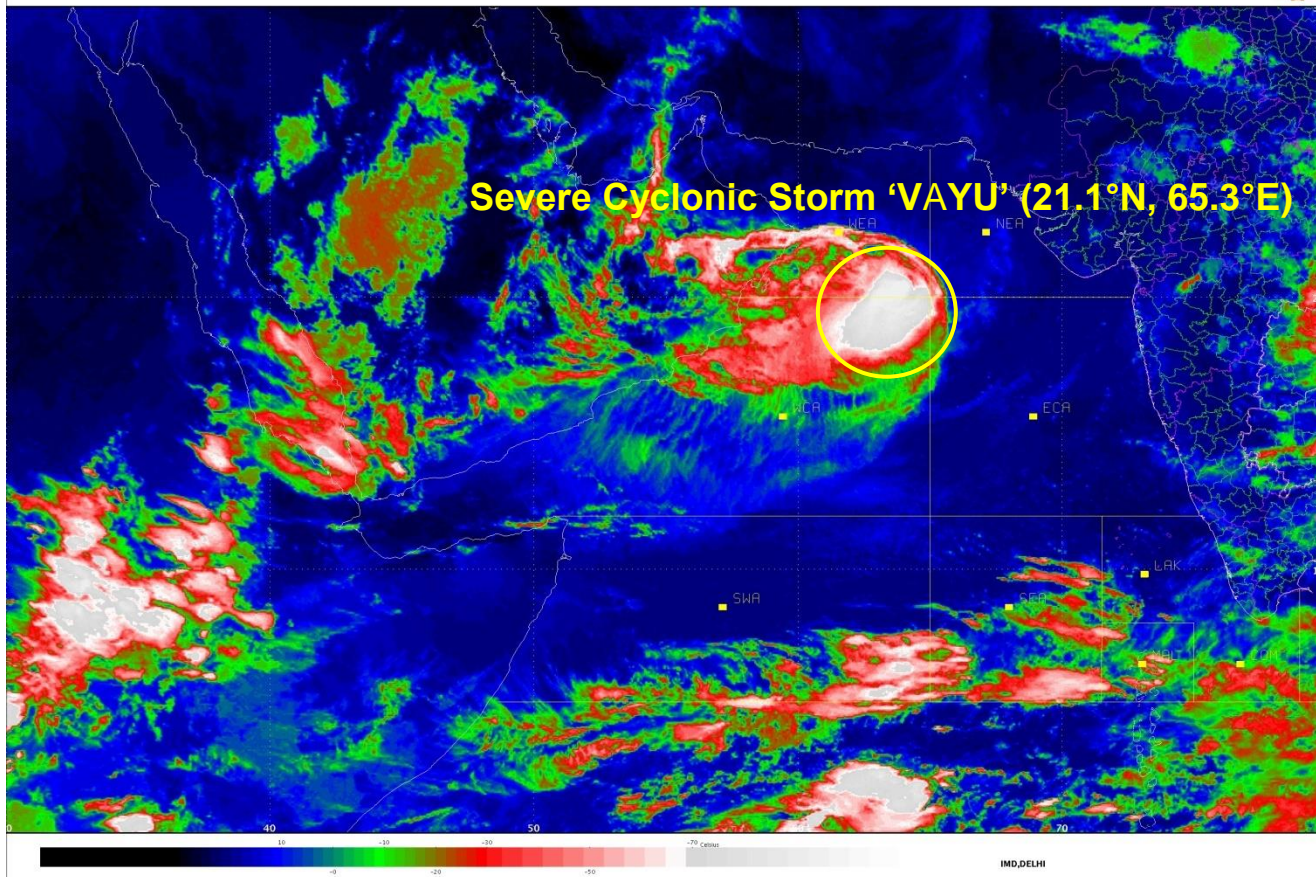
- The fishermen are advised not to venture into north Arabian Sea, northern parts of central Arabian Sea and along & off Gujarat coast till 17th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 0230 hrs IST of 17th June, 2019.

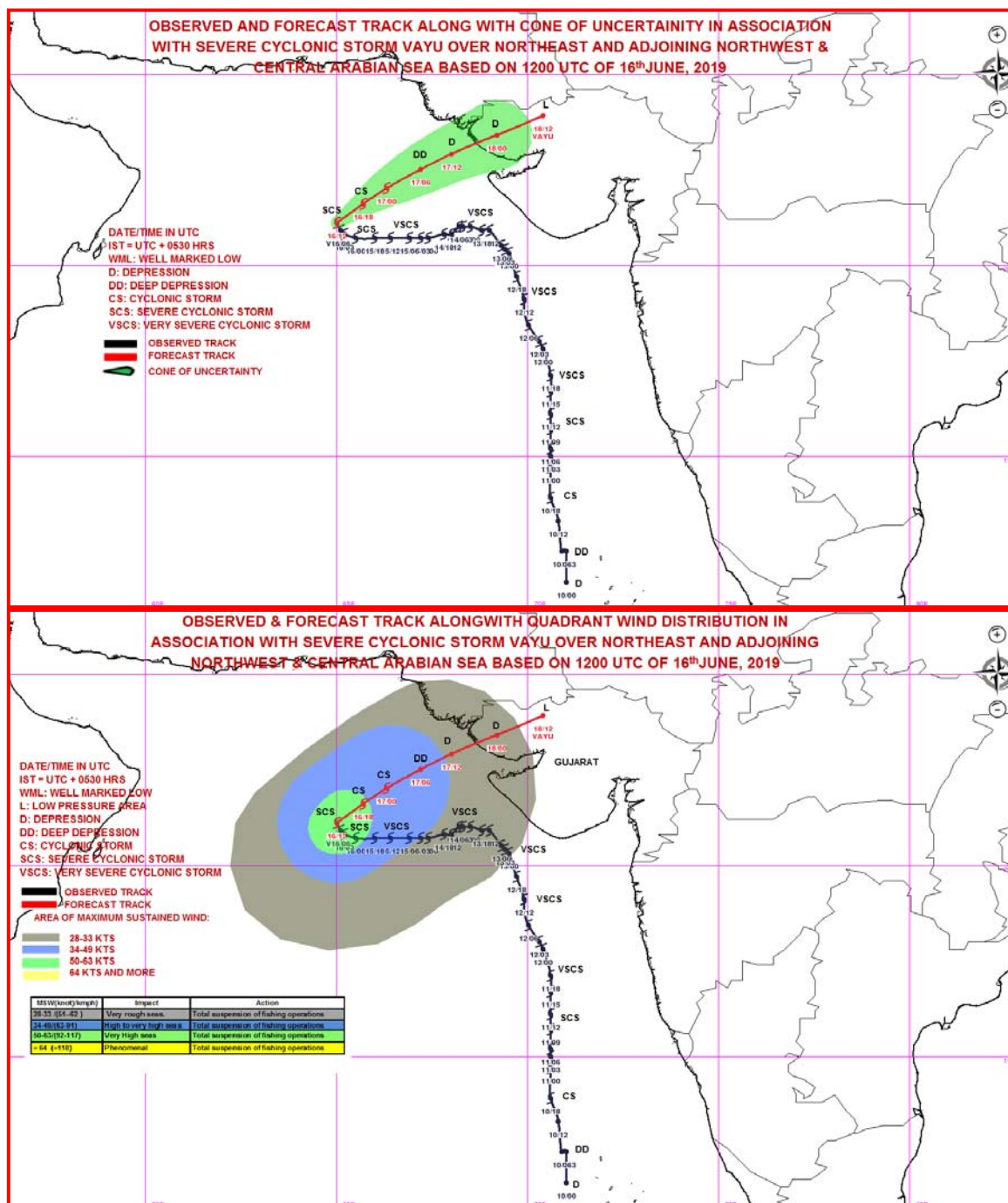
(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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. : 53 (ARB/01/2019)

TIME OF ISSUE: 0200 HOURS IST

DATED: 17.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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

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

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

Sub: Cyclonic Storm 'VAYU' over Northeast and adjoining Northwest & Central Arabian Sea

The **Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast and adjoining northwest & Central Arabian Sea moved further east-northeastwards with a speed of about 15 kmph in last six hours and lay centred at 2330 hrs IST of 16th June, 2019 near latitude 21.2°N and longitude 65.9°E over Northeast and adjoining northwest & Central Arabian Sea, about 390 km nearly west of Porbandar (Gujarat), 350 km west-southwest of Dwarka (Gujarat) and 460 km west-southwest of Bhuj (Gujarat).

The system is very likely to weaken into a Deep Depression during next 12 hours and into a depression during subsequent 12 hours. The system is very likely to move northeastwards and cross north Gujarat coast by midnight of 17th June 2019 as a Depression.

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
16.06.19/2330	21.2/65.9	75-85 gusting to 95	Cyclonic Storm
17.06.19/0530	21.6/66.5	60-70 gusting to 80	Cyclonic Storm
17.06.19/1130	22.1/67.2	55-65 gusting to 75	Deep Depression
17.06.19/1730	22.7/68.0	45-55 gusting to 65	Depression
17.06.19/2330	23.2/68.7	40-50 gusting to 60	Depression
18.06.19/1130	23.7/69.8	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) Heavy rainfall warning:

Sub-Divisions	16 June 2019*	17 June 2019*	18 June 2019*
Saurashtra & Kutch	NIL	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy to very heavy falls at isolated places
North Gujarat region	NIL	NIL	Rainfall at many places with heavy to very heavy falls at isolated places
South Rajasthan	NIL	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Green: No warning**
Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day

(ii) Wind warning

- **16th June:** Gale wind speed of the order of **75-85 kmph gusting to 95 kmph** very likely over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea. Strong wind speed of the order of **30-40 kmph gusting to 50 kmph** very likely along & off Gujarat coast.
- **17th June:** Gale wind speed of the order of **60-70 kmph gusting to 80 kmph** very likely over northeast Arabian Sea and adjoining east central Arabian Sea in morning hours and decrease gradually thereafter becoming **40-50 kmph gusting to 60 kmph by night**. Strong wind speed of the order of **35-45 kmph gusting to 55 kmph** very likely along & off Gujarat coast from the morning and gradually become squally winds speed reaching **40-50 kmph gusting to 60 kmph** towards evening.

(iii) Sea condition

- The Sea condition is high to very high over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea on 16th June 2019 and become very rough to high in the morning hours of 17th June 2019.
- The Sea condition is very likely to be rough to very rough along & off Gujarat coast till 17th June 2019.

(iv) Fishermen Warning

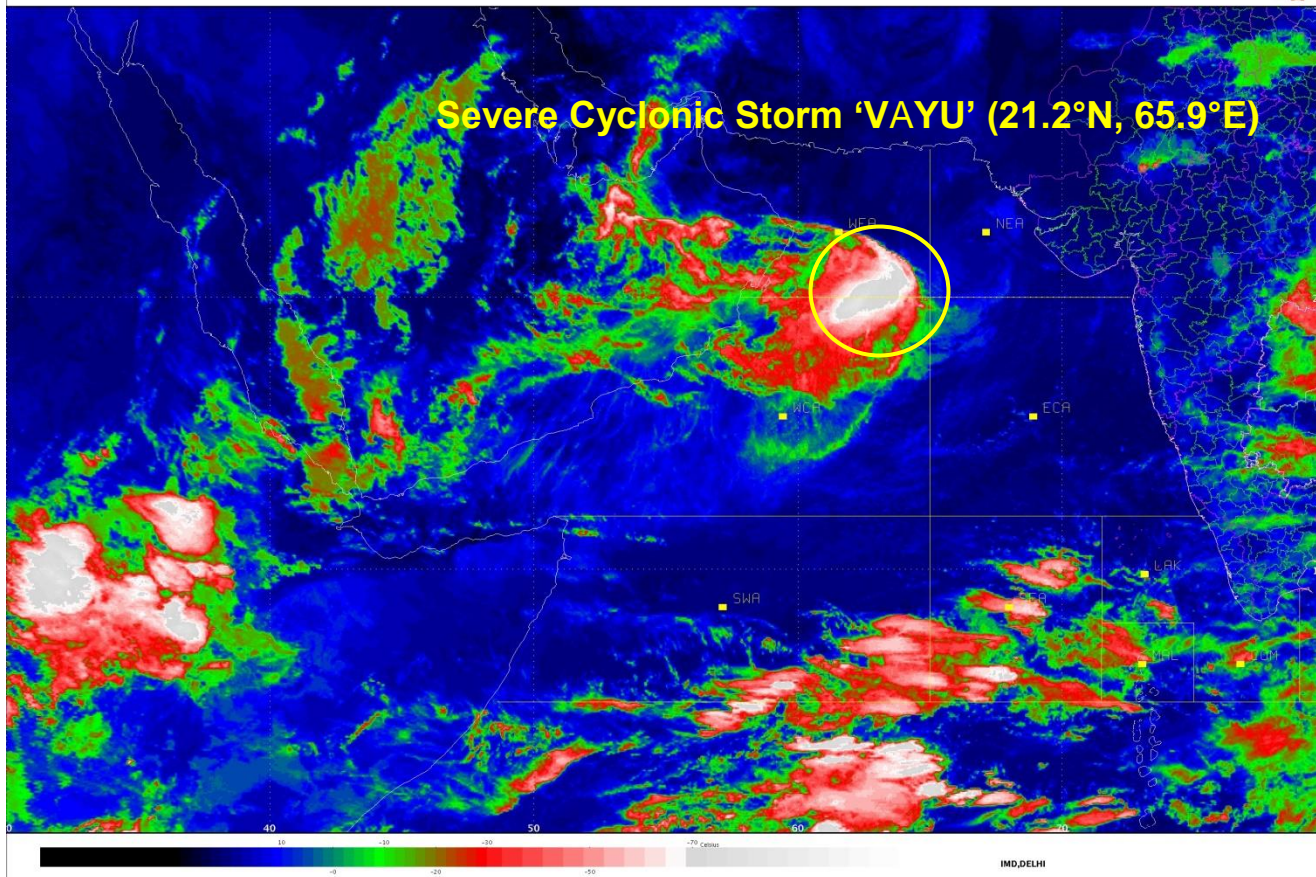
- The fishermen are advised not to venture into north Arabian Sea, northern parts of central Arabian Sea and along & off Gujarat coast till 17th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 0530 hrs IST of 17th June, 2019.

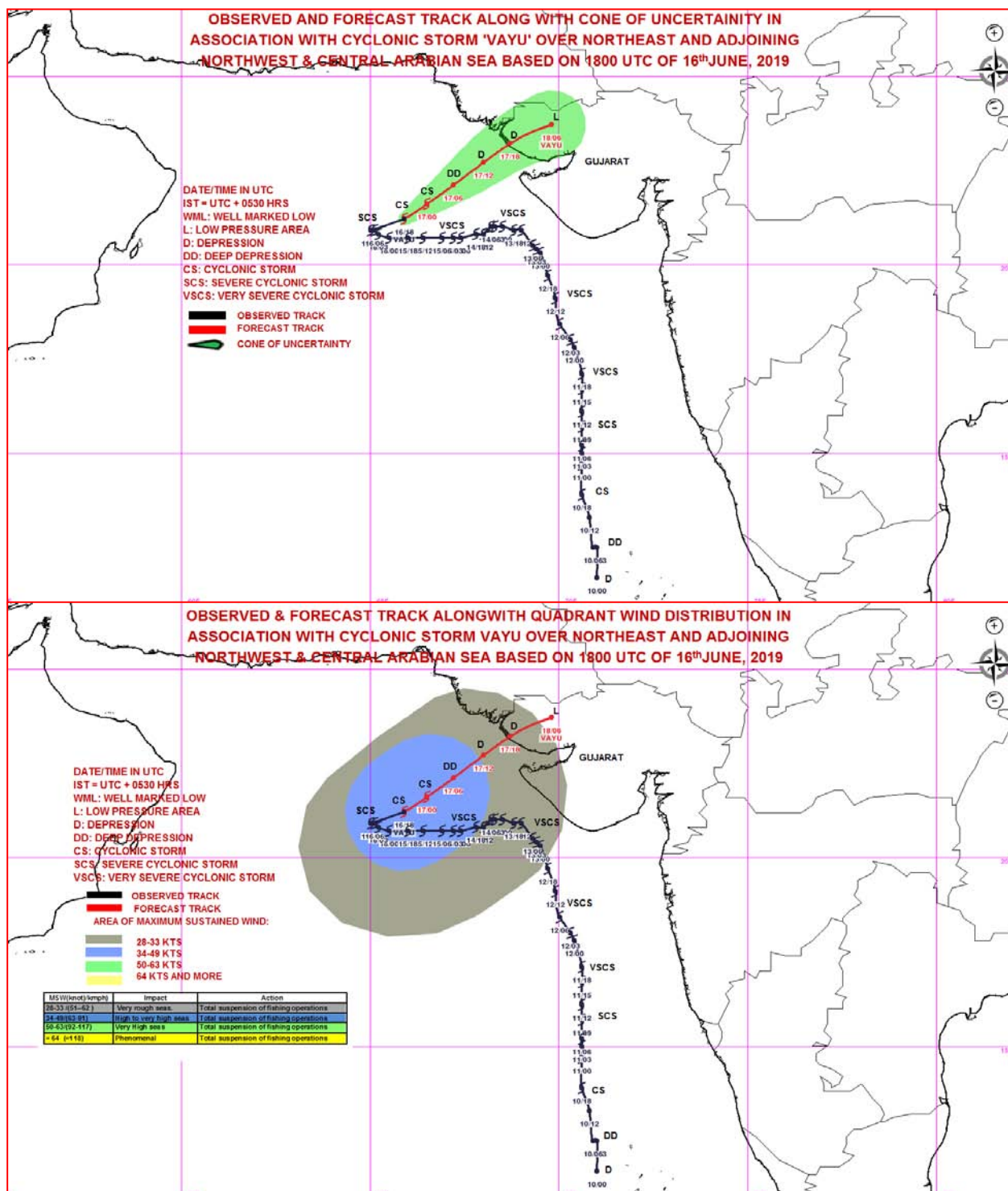
(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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. : 54 (ARB/01/2019)

TIME OF ISSUE: 0400 HOURS IST

DATED: 17.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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

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

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

Sub: Cyclonic Storm 'VAYU' over Northeast and adjoining Northwest & Central Arabian Sea

The **Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast and adjoining northwest & Central Arabian Sea moved further east-northeastwards with a speed of about 20 kmph in last six hours and lay centred at 0230 hrs IST of 17th June, 2019 near latitude 21.4°N and longitude 66.4°E over Northeast and adjoining northwest & Central Arabian Sea, about 340 km nearly west of Porbandar (Gujarat), 300 km west-southwest of Dwarka (Gujarat) and 400 km west-southwest of Bhuj (Gujarat).

The system is very likely to weaken into a Deep Depression during next 12 hours and into a depression during subsequent 12 hours. The system is very likely to move northeastwards and cross north Gujarat coast by midnight of 17th June 2019 as a Depression.

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
17.06.19/0230	21.4/66.4	70-80 gusting to 90	Cyclonic Storm
17.06.19/0530	21.6/66.5	60-70 gusting to 80	Cyclonic Storm
17.06.19/1130	22.1/67.2	55-65 gusting to 75	Deep Depression
17.06.19/1730	22.7/68.0	45-55 gusting to 65	Depression
17.06.19/2330	23.2/68.7	40-50 gusting to 60	Depression
18.06.19/1130	23.7/69.8	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) Heavy rainfall warning:

Sub-Divisions	17 June 2019*	18 June 2019*
Saurashtra & Kutch	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy to very heavy falls at isolated places
North Gujarat region	NIL	Rainfall at many places with heavy to very heavy falls at isolated places
South Rajasthan	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Green: No warning**
Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day

(ii) Wind warning

- Gale wind speed of the order of **70-80 kmph gusting to 80 kmph** is prevailing over northeast Arabian Sea and adjoining east central Arabian Sea and it is very likely to decrease gradually becoming **40-50 kmph gusting to 60 kmph by tonight of 17th June, 2019**. Strong wind speed of the order of **35-45 kmph gusting to 55 kmph** very likely along & off Gujarat coast in the morning hours and gradually become squally winds speed reaching **40-50 kmph gusting to 60 kmph** towards evening.

(iii) Sea condition

- The Sea condition is very rough to high over northeast Arabian Sea and adjoining areas of northwest and central Arabian Sea and likely to become rough to very rough by evening of 17th June, 2019.
- The Sea condition is very likely to be rough to very rough along & off Gujarat coast till 17th June 2019.

(iv) Fishermen Warning

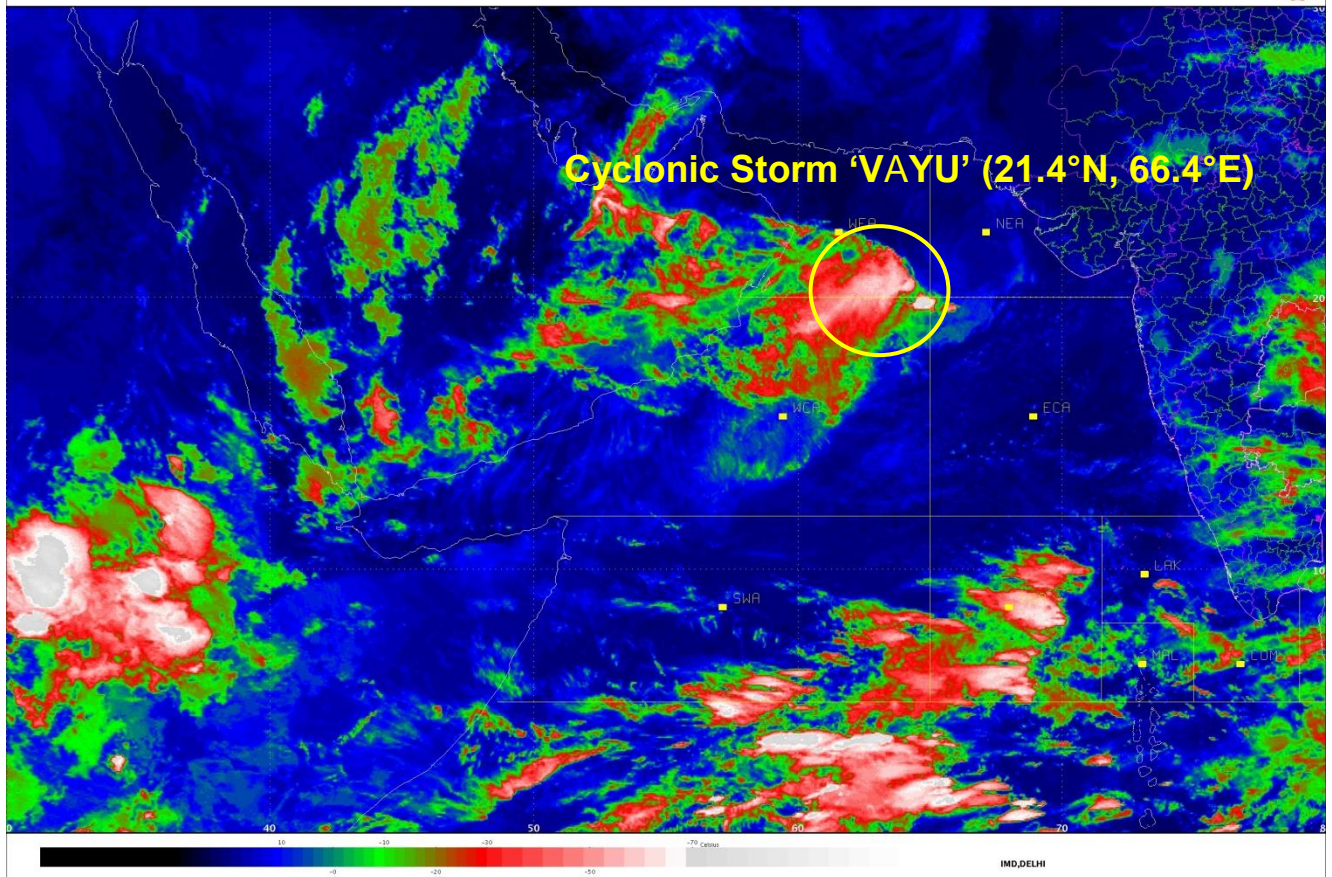
- The fishermen are advised not to venture into north Arabian Sea, northern parts of central Arabian Sea and along & off Gujarat coast till 17th June, 2019.
- Total suspension of fishing operations.

The next bulletin will be issued at 0830 hrs IST of 17th June, 2019.

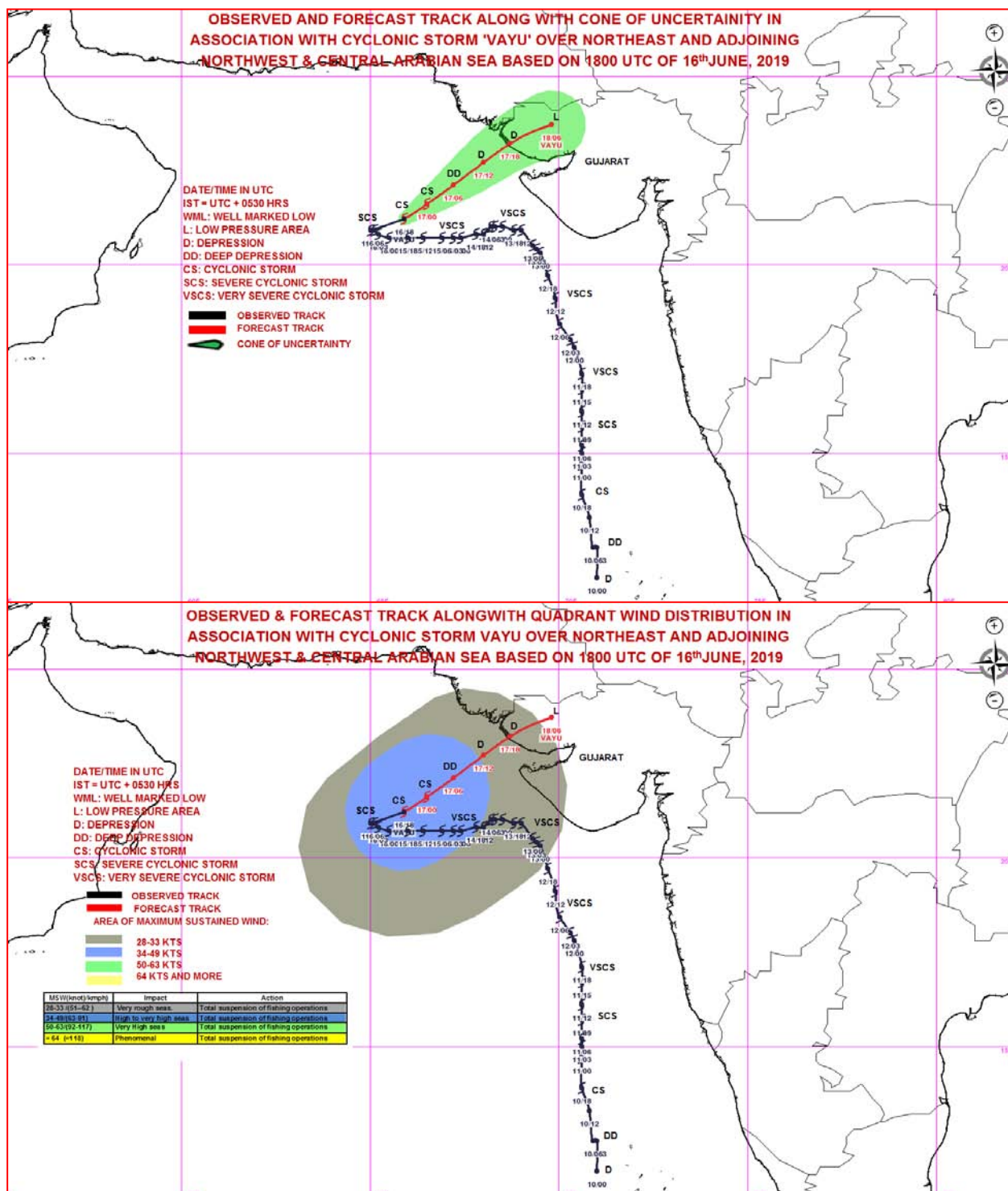
(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ 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. : 55 (ARB/01/2019)

TIME OF ISSUE: 0800 HOURS IST

DATED: 17.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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

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

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

Sub: Cyclonic Storm 'VAYU' over Northeast Arabian Sea & neighbourhood

The **Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast and adjoining northwest & Central Arabian Sea moved further east-northeastwards with a speed of about 17 kmph in last six hours and lay centred at 0530 hrs IST of 17th June, 2019 near latitude 21.7°N and longitude 66.7°E over Northeast Arabian Sea & neighbourhood, about 280 km west-southwest of Naliya (Gujarat), 260 km west-southwest of Dwarka (Gujarat) and 360 km west-southwest of Bhuj (Gujarat).

The system is very likely to weaken into a Deep Depression during next 06 hours and into a depression during subsequent 06 hours. The system is very likely to move northeastwards and cross north Gujarat coast by midnight of 17th June 2019 as a Depression.

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
17.06.19/0530	21.7/66.7	60-70 gusting to 80	Cyclonic Storm
17.06.19/1130	22.1/67.2	50-60 gusting to 70	Deep Depression
17.06.19/1730	22.7/68.0	40-50 gusting to 60	Depression
17.06.19/2330	23.2/68.7	35-45 gusting to 55	Depression
18.06.19/0530	23.7/69.8	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) Heavy rainfall warning:

Sub-Divisions	17 June 2019*	18 June 2019*
Saurashtra & Kutch	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy to very heavy falls at isolated places
North Gujarat region	NIL	Rainfall at many places with heavy to very heavy falls at isolated places
South Rajasthan	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends: **Yellow: Be Updated; Orange- Be prepared; Green: No warning**
Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day

(ii) Wind warning

- Gale wind speed of the order of **60-70 kmph gusting to 80 kmph** is prevailing over northeast Arabian Sea and adjoining central Arabian Sea and it is very likely to decrease gradually becoming **40-50 kmph gusting to 60 kmph by the night of 17th June, 2019**. Squally wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely to commence along & off Gujarat coast from the evening of 17th.

(iii) Sea condition

- The Sea condition is very rough to high over northeast Arabian Sea and adjoining areas of central Arabian Sea and likely to become rough to very rough by evening of 17th June, 2019.
- The Sea condition is very likely to be rough to very rough along & off Gujarat coast on 17th June 2019.

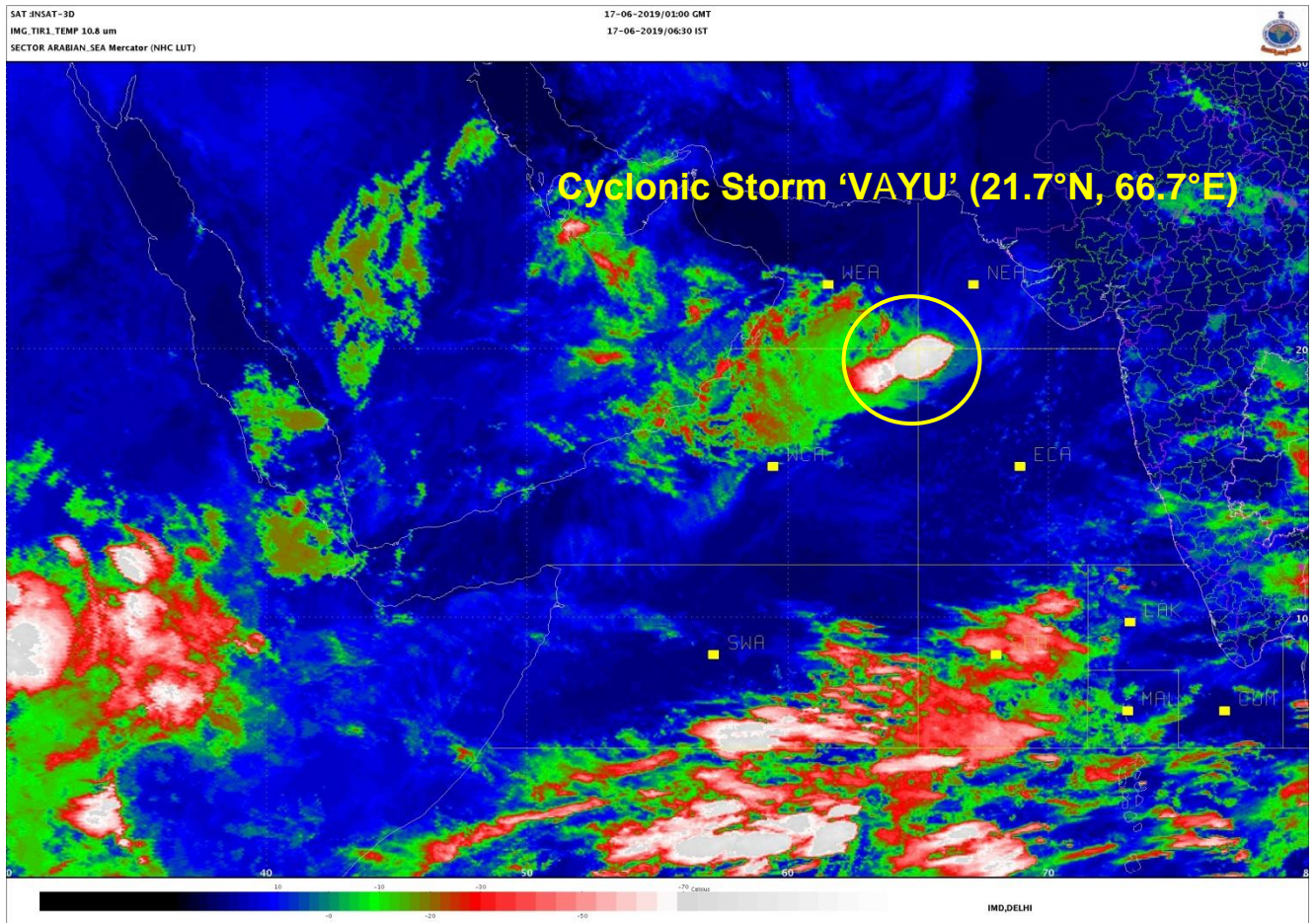
(iv) Fishermen Warning

- The fishermen are advised not to venture into north Arabian Sea, northern parts of central Arabian Sea and along & off Gujarat coast during next 24 hours.
- Total suspension of fishing operations during next 24 hours.

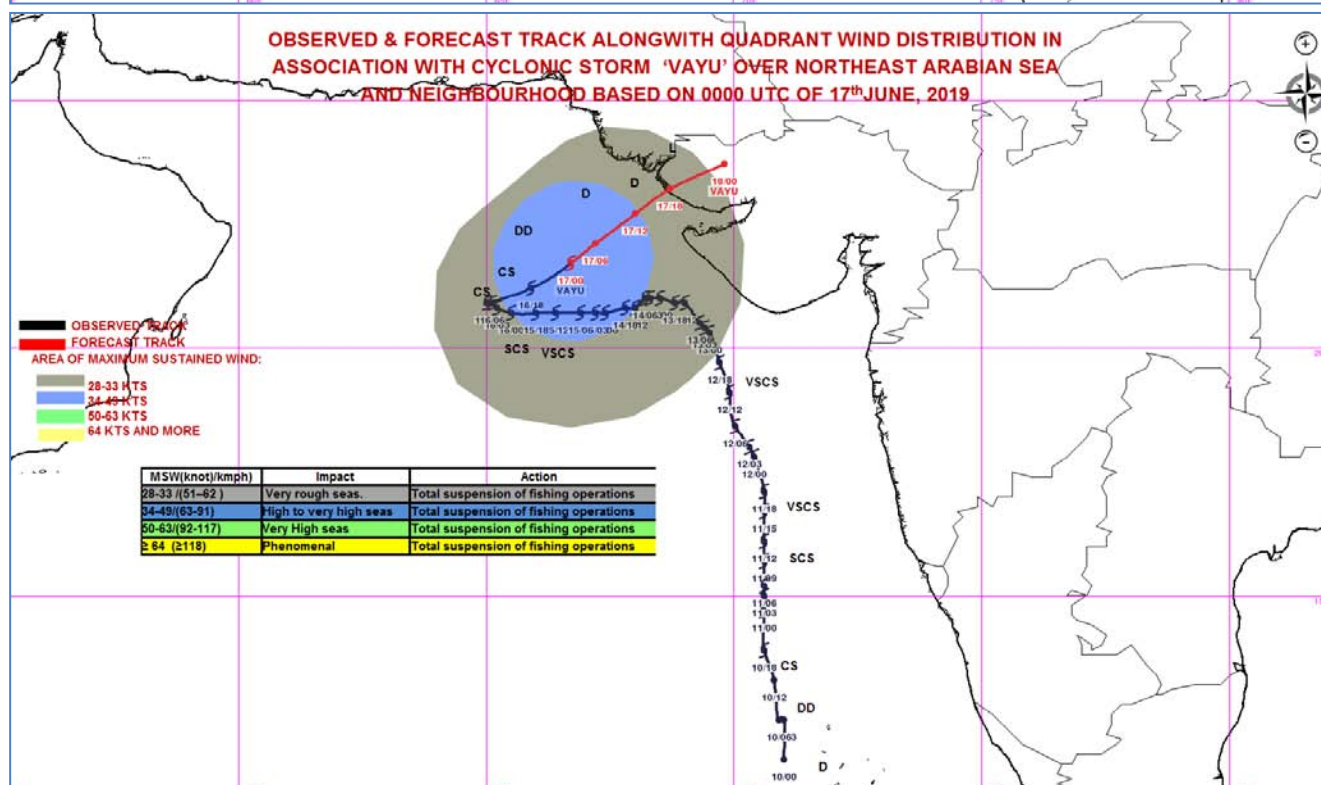
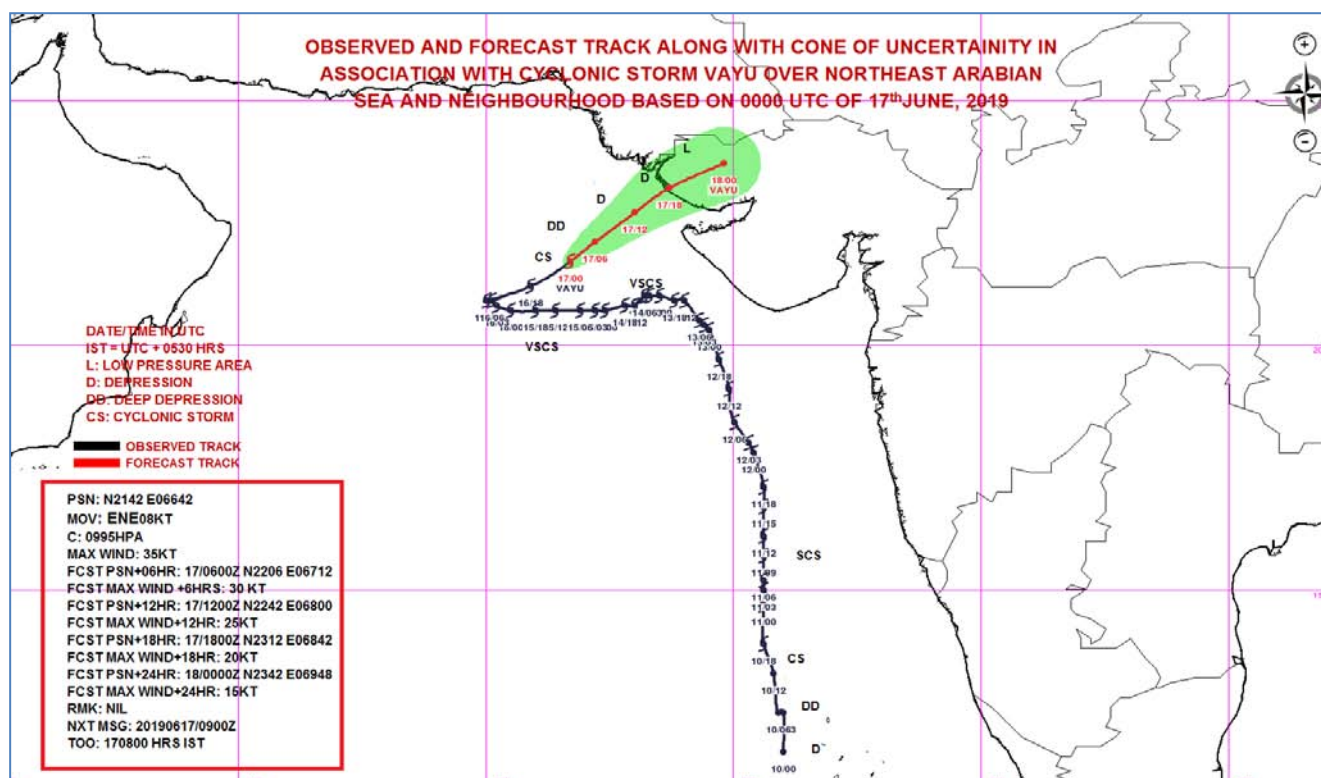
The next bulletin will be issued at 1130 hrs IST of 17th June, 2019.

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

Copy to: CRS, Pune/ 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. : 56 (ARB/01/2019)

TIME OF ISSUE: 1120 HOURS IST

DATED: 17.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

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

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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

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

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

Sub: Cyclonic Storm 'VAYU' over Northeast Arabian Sea & neighbourhood weakened into Deep Depression over the same area

The **Cyclonic Storm 'VAYU'** (pronounced as **VAA'YU**) over northeast Arabian Sea & neighbourhood moved northeastwards with a speed of about 13 kmph in last six hours, weakened into a **Deep Depression** and lay centred at 0830 hrs IST of 17th June, 2019 near latitude 21.9°N and longitude 66.8°E over Northeast Arabian Sea & neighbourhood, about 260 km west-southwest of Naliya (Gujarat), 240 km west-southwest of Dwarka (Gujarat) and 340 km west-southwest of Bhuj (Gujarat).

The system is very likely to weaken into a depression during next 06 hours. The system is very likely to move northeastwards and cross north Gujarat coast by midnight of 17th June 2019 as a Depression.

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
17.06.19/0830	21.9/66.8	50-60 gusting to 70	Deep Depression
17.06.19/1130	22.1/67.2	50-60 gusting to 70	Deep Depression
17.06.19/1730	22.7/68.0	40-50 gusting to 60	Depression
17.06.19/2330	23.2/68.7	35-45 gusting to 55	Depression
18.06.19/0530	23.7/69.8	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) Heavy rainfall warning:

Sub-Divisions	17 June 2019*	18 June 2019*
Saurashtra & Kutch	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places
North Gujarat region	NIL	Rainfall at many places with heavy to very heavy falls at isolated places
South Rajasthan	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy to very heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day

(ii) Wind warning

- Squally wind speed of the order of **50-60 kmph gusting to 70 kmph** is prevailing over northeast Arabian Sea and adjoining central Arabian Sea and it is very likely to decrease gradually becoming **40-50 kmph gusting to 60 kmph by the night of 17th June, 2019**. Squally wind speed of the order of **40-50 kmph gusting to 60 kmph** very likely to commence along & off Gujarat coast from the evening of 17th.

(iii) Sea condition

- The Sea condition is very rough over northeast Arabian Sea and adjoining areas of central Arabian Sea and likely to become rough to very rough by evening of 17th June, 2019.
- The Sea condition is very likely to be rough to very rough along & off Gujarat coast on 17th June 2019.

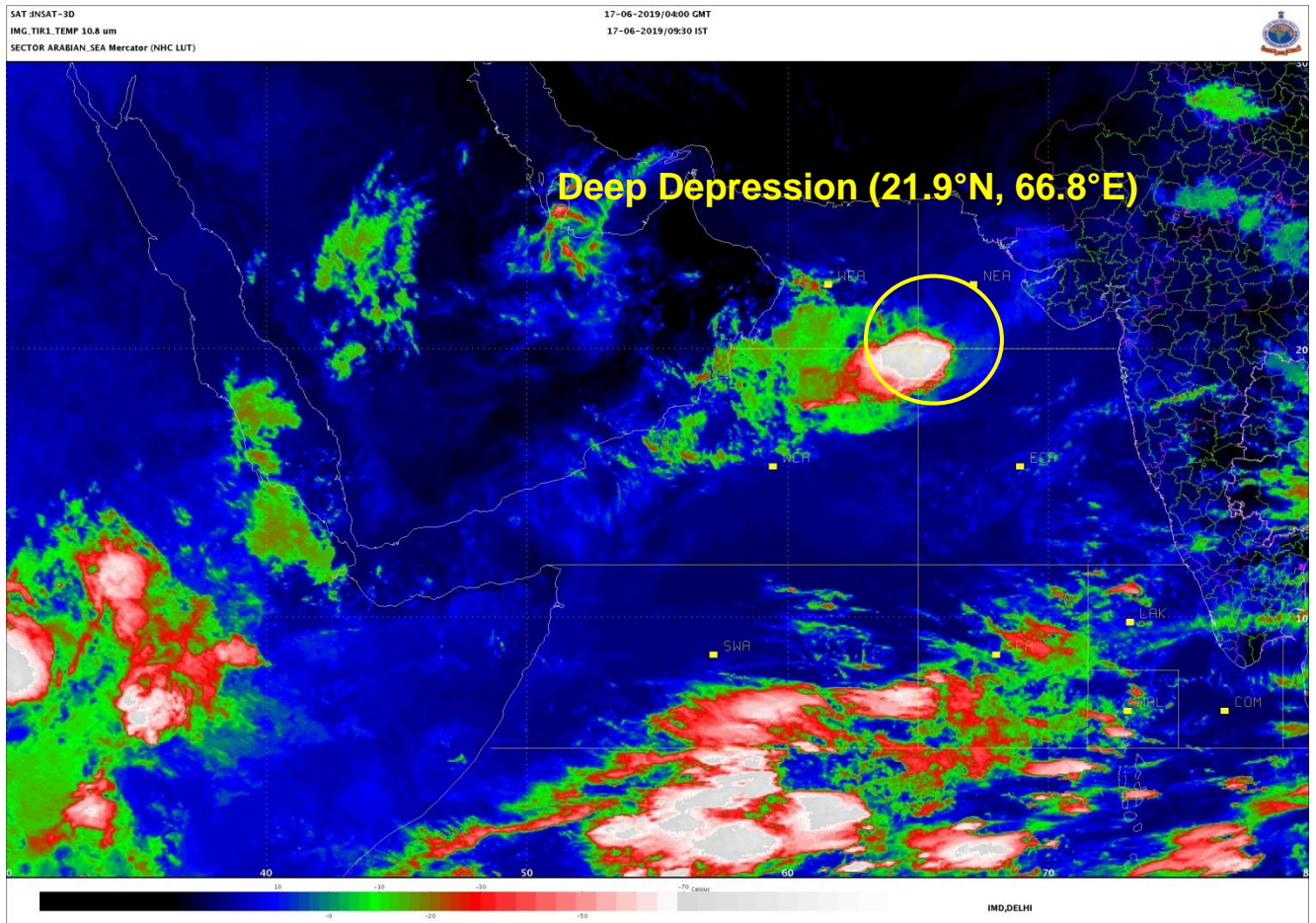
(iv) Fishermen Warning

- The fishermen are advised not to venture into north Arabian Sea, northern parts of central Arabian Sea and along & off Gujarat coast during next 24 hours.
- Total suspension of fishing operations during next 24 hours.

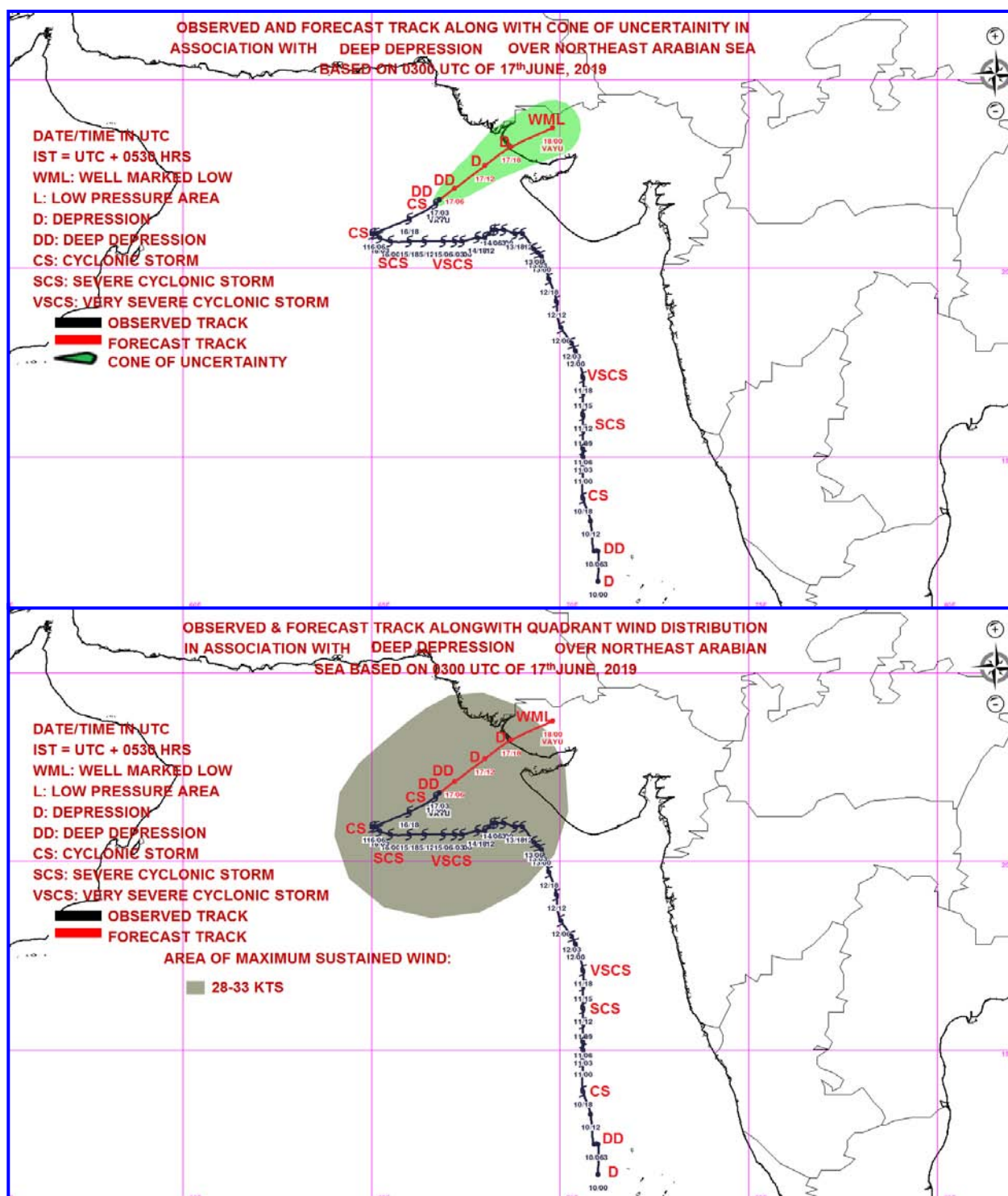
The next bulletin will be issued at 1430 hrs IST of 17th June, 2019.

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

Copy to: CRS, Pune/ 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.



MSW(knot)/kmph)	Impact	Action
28-33 /(52–61)	Very rough seas.	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
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 57 (ARB/01/2019)

TIME OF ISSUE: 1400 HOURS IST

DATED: 17.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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

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

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

Sub: Deep Depression over Northeast Arabian Sea & neighbourhood

The **Deep Depression** over northeast Arabian Sea & neighbourhood moved northeastwards with a speed of about 08 kmph in last six hours, and lay centred at 1130 hrs IST of 17th June, 2019 near latitude 22.0°N and longitude 67.0°E over Northeast Arabian Sea & neighbourhood, about 235 km west-southwest of Naliya (Gujarat), 220 km west-southwest of Dwarka (Gujarat) and 320 km west-southwest of Bhuj (Gujarat).

The system is very likely to weaken into a depression during next 03-06 hours and further weaken into a well marked low pressure area by evening of 17th June 2019, while moving towards north 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
17.06.19/1130	22.0/67.0	50-60 gusting to 70	Deep Depression
17.06.19/1730	22.7/68.0	25-35 gusting to 45	Well Marked Low

Warnings:

(i) Heavy rainfall warning:

Sub-Divisions	17 June 2019*	18 June 2019*
Saurashtra & Kutch	Rainfall at many places with heavy to very heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places
North Gujarat region	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places
South Rajasthan	NIL	Rainfall at many places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day

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

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

- Squally wind speed of the order of **50-60 kmph gusting to 70 kmph** is prevailing over northeast Arabian Sea and adjoining central Arabian Sea. It is very likely to decrease gradually becoming **30-40 kmph gusting to 50 kmph by the evening of 17th June, 2019.** Strong wind speed of the order of **25-35 kmph gusting to 45 kmph** very likely to commence along & off Gujarat coast from the evening of 17th June.

(iii) Sea condition

- The Sea condition is very rough over northeast Arabian Sea and adjoining areas of central Arabian Sea and likely to become rough to very rough by evening of 17th June, 2019.
- The Sea condition is very likely to be rough to very rough along & off Gujarat coast on 17th June 2019.

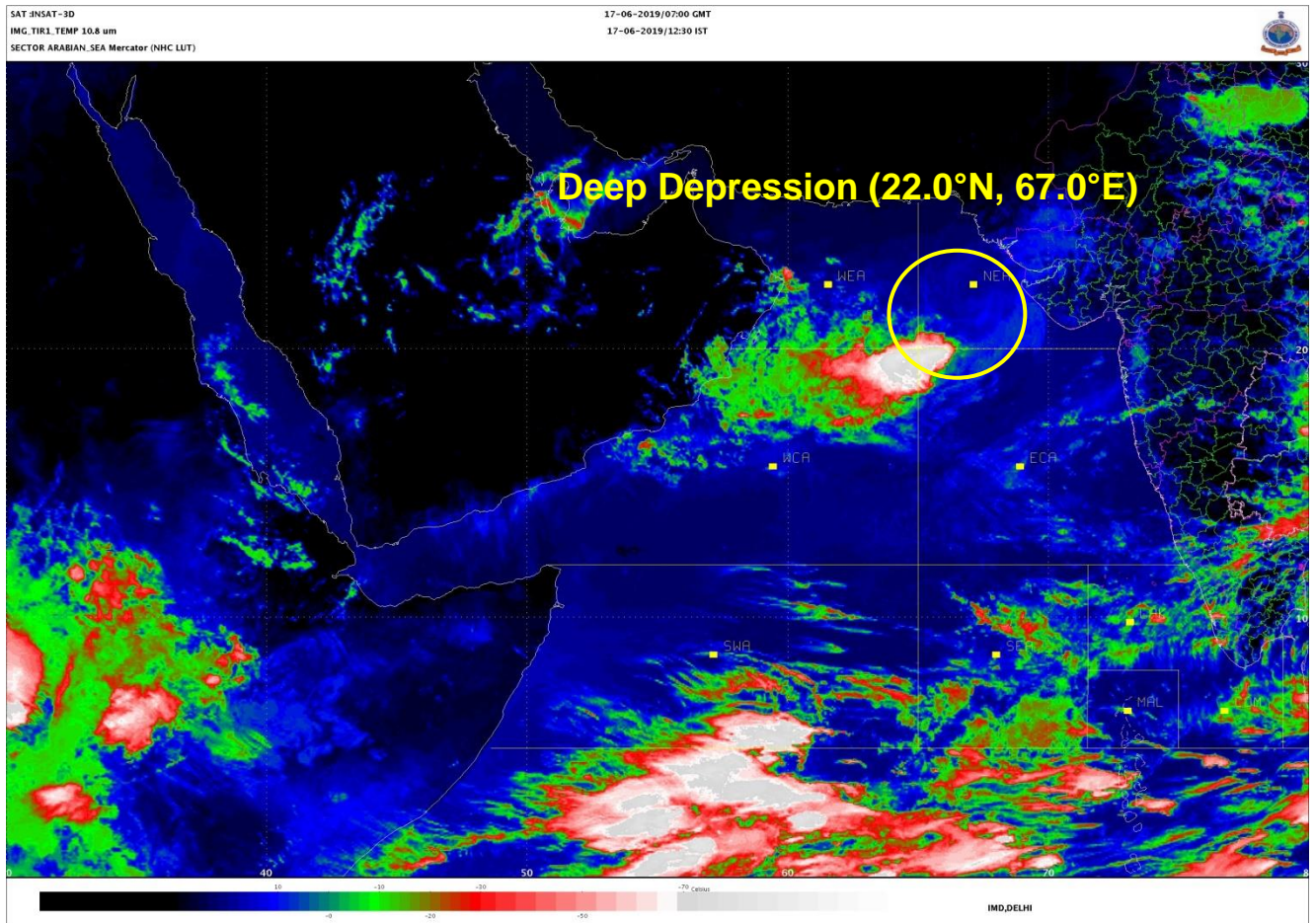
(iv) Fishermen Warning

- The fishermen are advised not to venture into north Arabian Sea, northern parts of central Arabian Sea and along & off Gujarat coast during next 24 hours.
- Total suspension of fishing operations during next 24 hours.

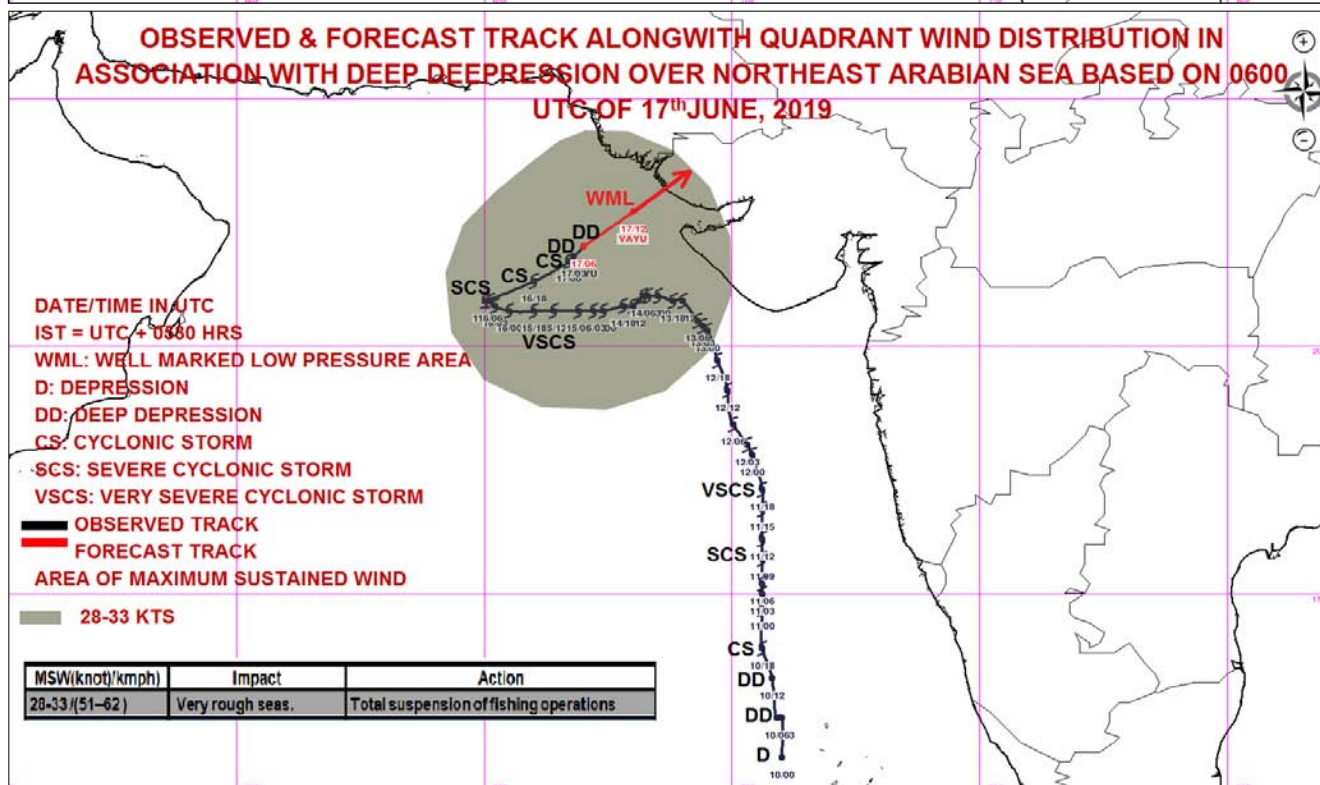
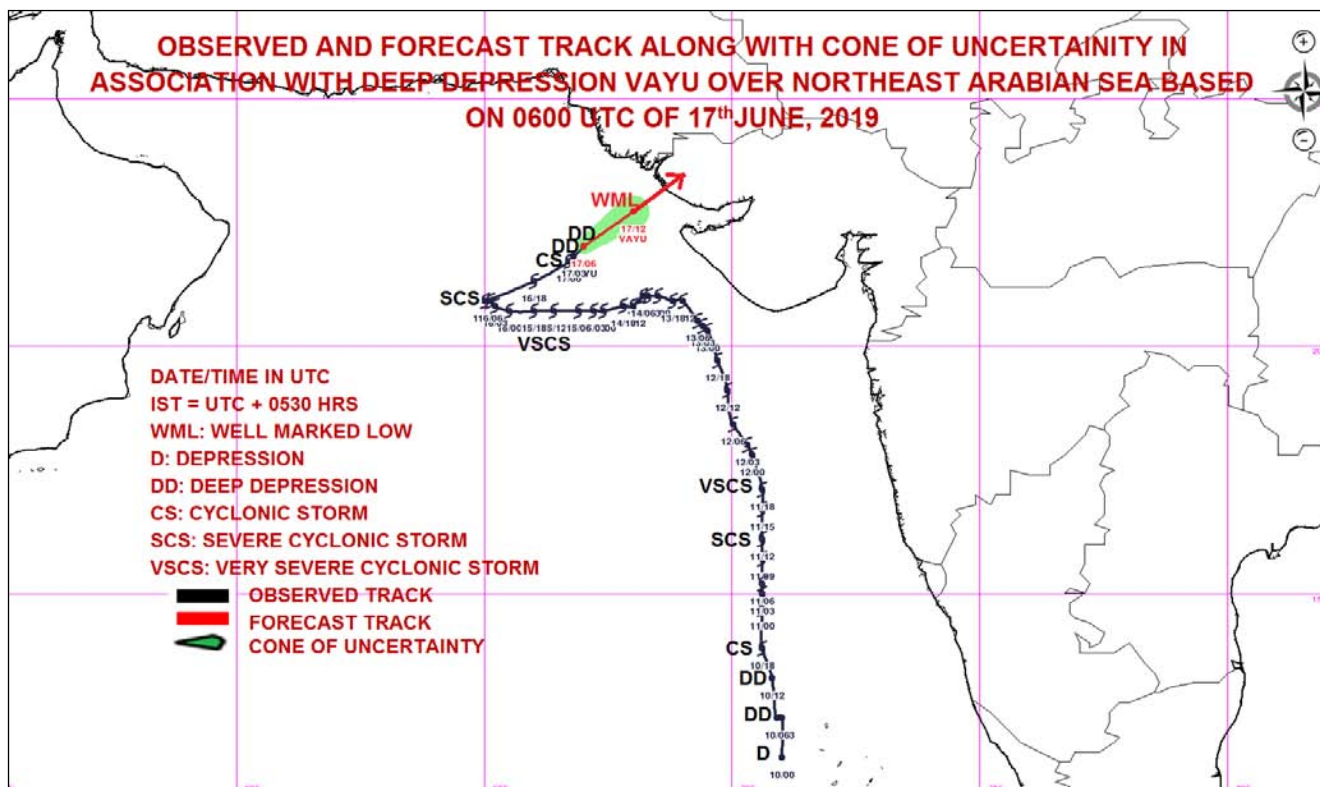
The next bulletin will be issued at 1730 hrs IST of 17th June, 2019.

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

Copy to: CRS, Pune/ 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. : 58 (ARB/01/2019)

TIME OF ISSUE: 1700 HOURS IST

DATED: 17.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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

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

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

Sub: Deep Depression over Northeast Arabian Sea & neighbourhood weakened into a depression

The **Deep Depression** over northeast Arabian Sea & neighbourhood moved east-northeastwards with a speed of about 12 kmph in last six hours, **weakened into a depression** and lay centred at 1430 hrs IST of 17th June, 2019 near latitude 22.2°N and longitude 67.4°E over Northeast Arabian Sea & neighbourhood, about 190 km west-southwest of Naliya (Gujarat), 175 km west-southwest of Dwarka (Gujarat) and 270 km west-southwest of Bhuj (Gujarat).

The system is very likely to weaken into a well marked low pressure area during next six hours and move towards north Gujarat coast.

Warnings:

(i) Heavy rainfall warning:

Sub-Divisions	17 June 2019*	18 June 2019*
Saurashtra & Kutch	Rainfall at many places with heavy to very heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places
North Gujarat region	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places
South Rajasthan	NIL	Rainfall at many places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends:

Yellow: Be Updated; Orange- Be prepared; Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day

(ii) Wind warning

- Squally wind speed of the order of **40-50 kmph gusting to 60 kmph** is prevailing over northeast Arabian Sea and adjoining central Arabian Sea and decrease gradually thereafter. Strong wind speed of the order of **25-35 kmph gusting to 45 kmph** very likely along & off Gujarat coast on 17th June.

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

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

- The Sea condition is very likely to be rough to very rough over northeast Arabian Sea and along & off Gujarat coast on 17th June, 2019.

(iv) Fishermen Warning

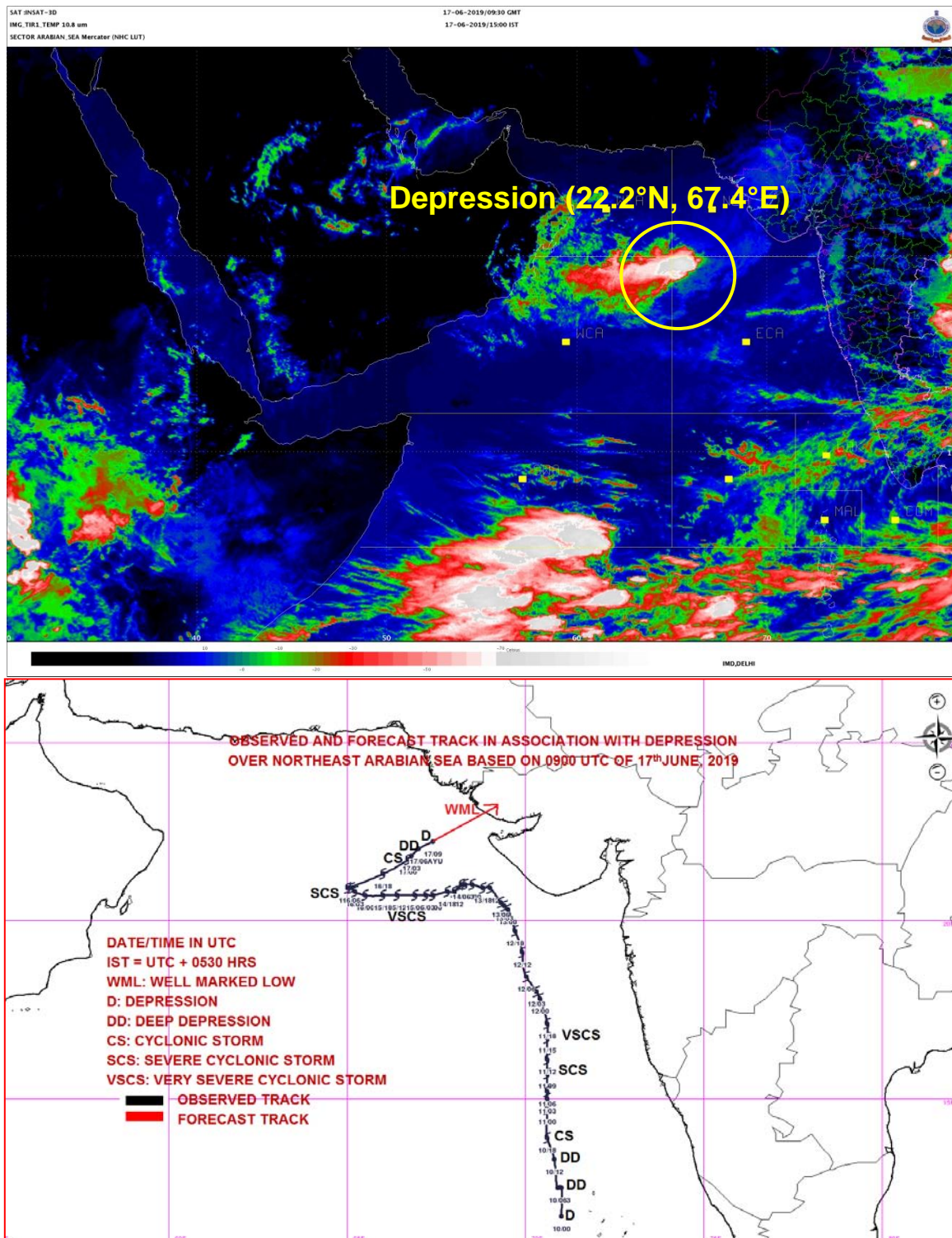
- The fishermen are advised not to venture into north Arabian Sea, northern parts of central Arabian Sea and along & off Gujarat coast during next 24 hours.

The next bulletin will be issued at 2030 hrs IST of 17th June, 2019.

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

**Copy to: CRS, Pune/ 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. : 59 (ARB/01/2019)

TIME OF ISSUE: 1900 HOURS IST

DATED: 17.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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

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

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

Sub: Depression over Northeast Arabian Sea & neighbourhood

The **Depression** over northeast Arabian Sea & neighbourhood moved east-northeastwards with a speed of about 16 kmph in last six hours and lay centred at 1730 hrs IST of 17th June, 2019 near latitude 22.5°N and longitude 67.8°E over Northeast Arabian Sea & neighbourhood, about 135 km west-southwest of Naliya (Gujarat), 130 km west-southwest of Dwarka (Gujarat) and 220 km west-southwest of Bhuj (Gujarat).

The system is very likely to weaken into a well marked low pressure area during next six hours and move towards north Gujarat coast.

Warnings:

(i) Heavy rainfall warning:

Sub-Divisions	17 June 2019*	18 June 2019*
Saurashtra & Kutch	Rainfall at many places with heavy to very heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places
North Gujarat region	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places
South Rajasthan	NIL	Rainfall at many places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends: Yellow: Be Updated; Orange- Be prepared; Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day

(ii) Wind warning

- Squally wind speed of the order **40-50 kmph gusting to 60 kmph** is very likely to prevail over northeast Arabian Sea & neighbourhood during next six hours and decrease gradually thereafter. Strong wind speed of the order of **25-35 kmph gusting to 45 kmph** very likely along & off Gujarat coast on 17th June.

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

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

- The Sea condition is very likely to be rough to very rough over northeast Arabian Sea and along & off Gujarat coast on 17th June, 2019.

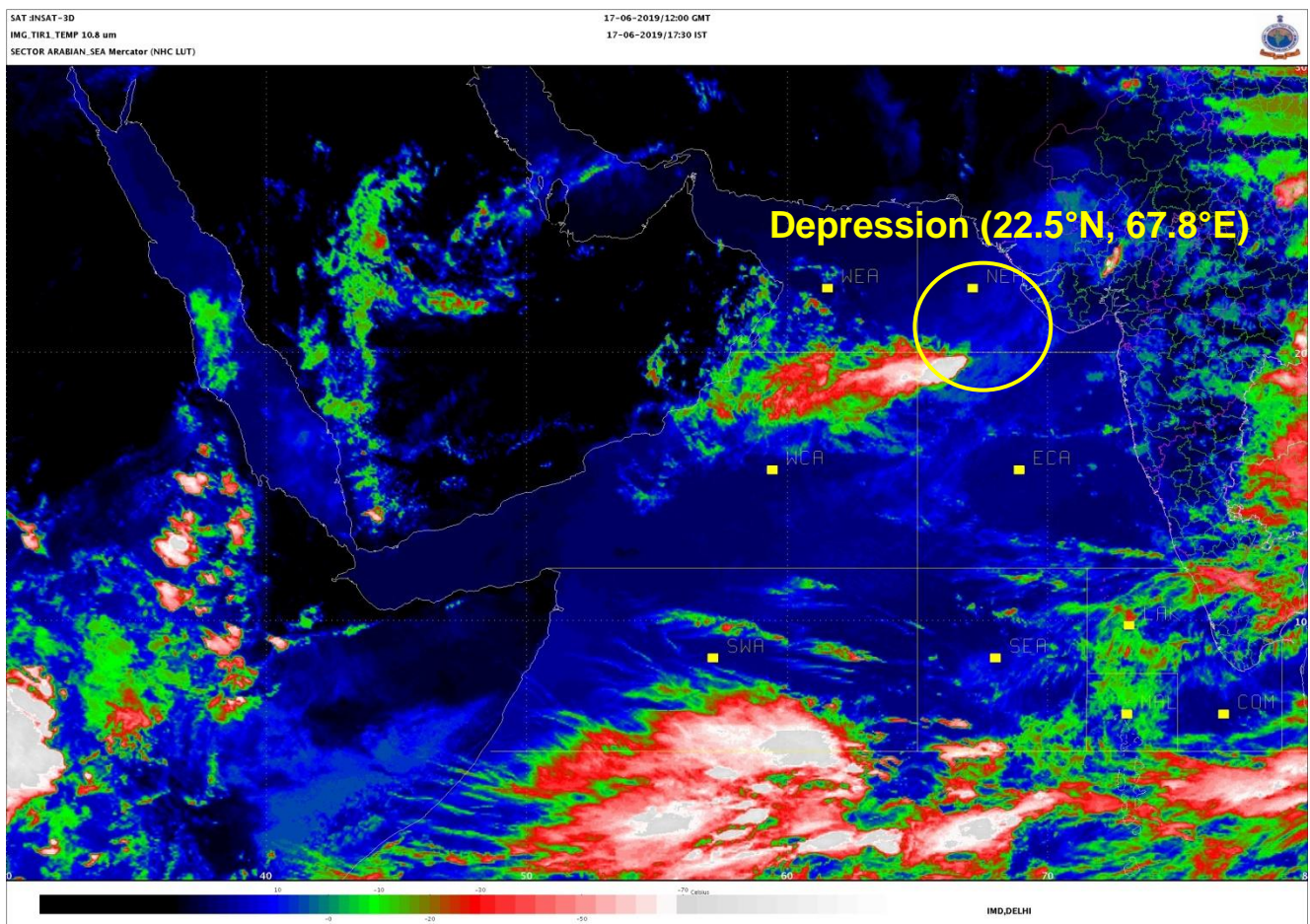
(iv) Fishermen Warning

- The fishermen are advised not to venture into north Arabian Sea, northern parts of central Arabian Sea and along & off Gujarat coast during next 24 hours.

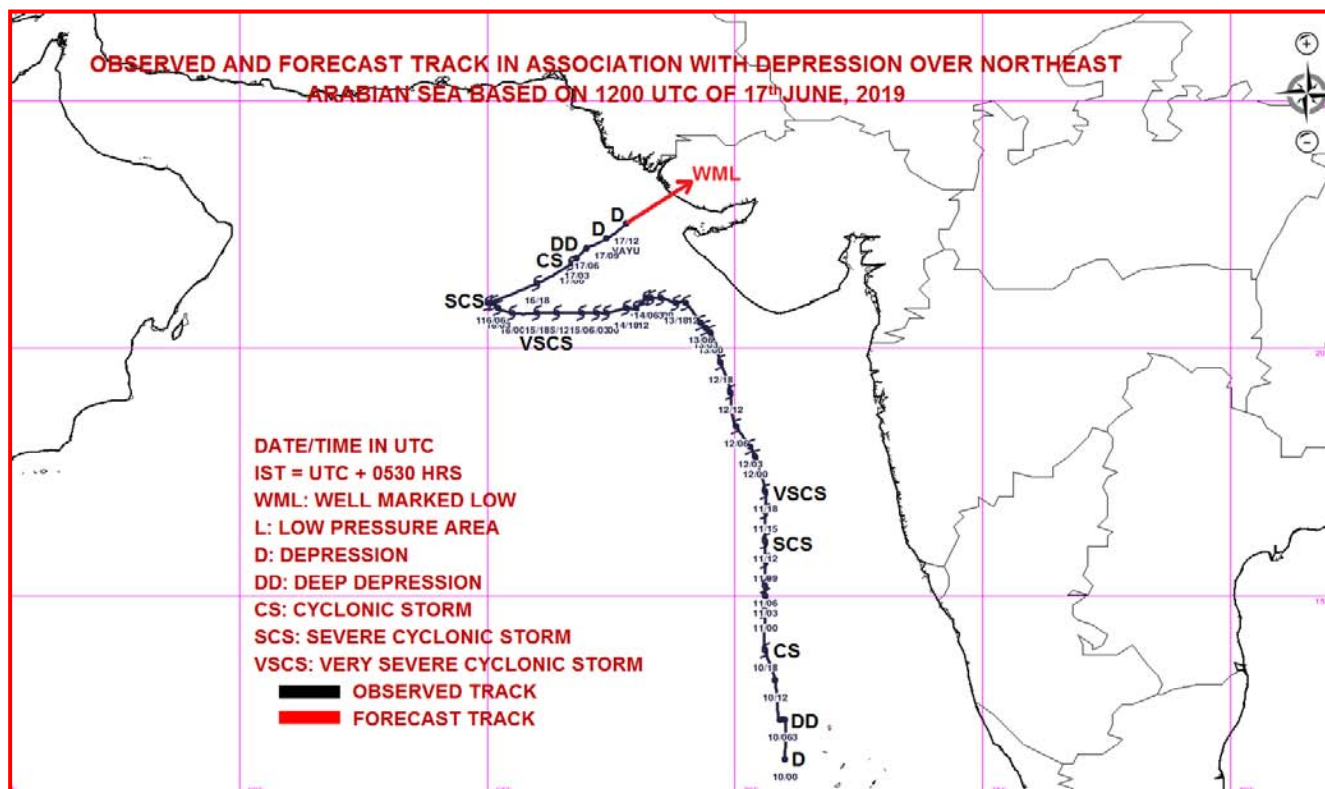
The next bulletin will be issued at 0230 hrs IST of 18th June, 2019.

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

Copy to: CRS, Pune/ 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. : 60 (ARB/01/2019)

TIME OF ISSUE: 2300 HOURS IST

DATED: 17.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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

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

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

Sub: Depression over Northeast Arabian Sea & neighbourhood

The **Depression** over northeast Arabian Sea & neighbourhood moved east-northeastwards with a speed of about 17 kmph in last six hours and lay centred at 2030 hrs IST of 17th June, 2019 near latitude 22.9°N and longitude 68.1°E over Northeast Arabian Sea & neighbourhood, about 85 km west-southwest of Naliya (Gujarat), 110 km west of Dwarka (Gujarat) and 180 km west-southwest of Bhuj (Gujarat).

The system is very likely to weaken into a well marked low pressure area during next three hours and move towards north Gujarat coast.

Warnings:

(i) Heavy rainfall warning:

Sub-Divisions	17 June 2019*	18 June 2019*
Saurashtra & Kutch	Rainfall at many places with heavy to very heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places
North Gujarat region	Rainfall at many places with heavy falls at isolated places	Rainfall at many places with heavy falls at isolated places
South Rajasthan	NIL	Rainfall at many places with heavy falls at isolated places

Note: * Rainfall till 0830 IST of next day.

Legends: Yellow: Be Updated; Orange- Be prepared; Green: No warning

Heavy rain: 64.5-115.5 mm/day; Very heavy rain: 115.6-204.4 mm/day

(ii) Wind warning

- Squally wind speed of the order **40-50 kmph gusting to 60 kmph** is very likely to prevail over northeast Arabian Sea & neighbourhood during next six hours and decrease gradually thereafter. Strong wind speed of the order of **25-35 kmph gusting to 45 kmph** very likely along & off Gujarat coast on 17th June.

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

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

- The Sea condition is very likely to be rough to very rough over northeast Arabian Sea and along & off Gujarat coast on 17th June, 2019.

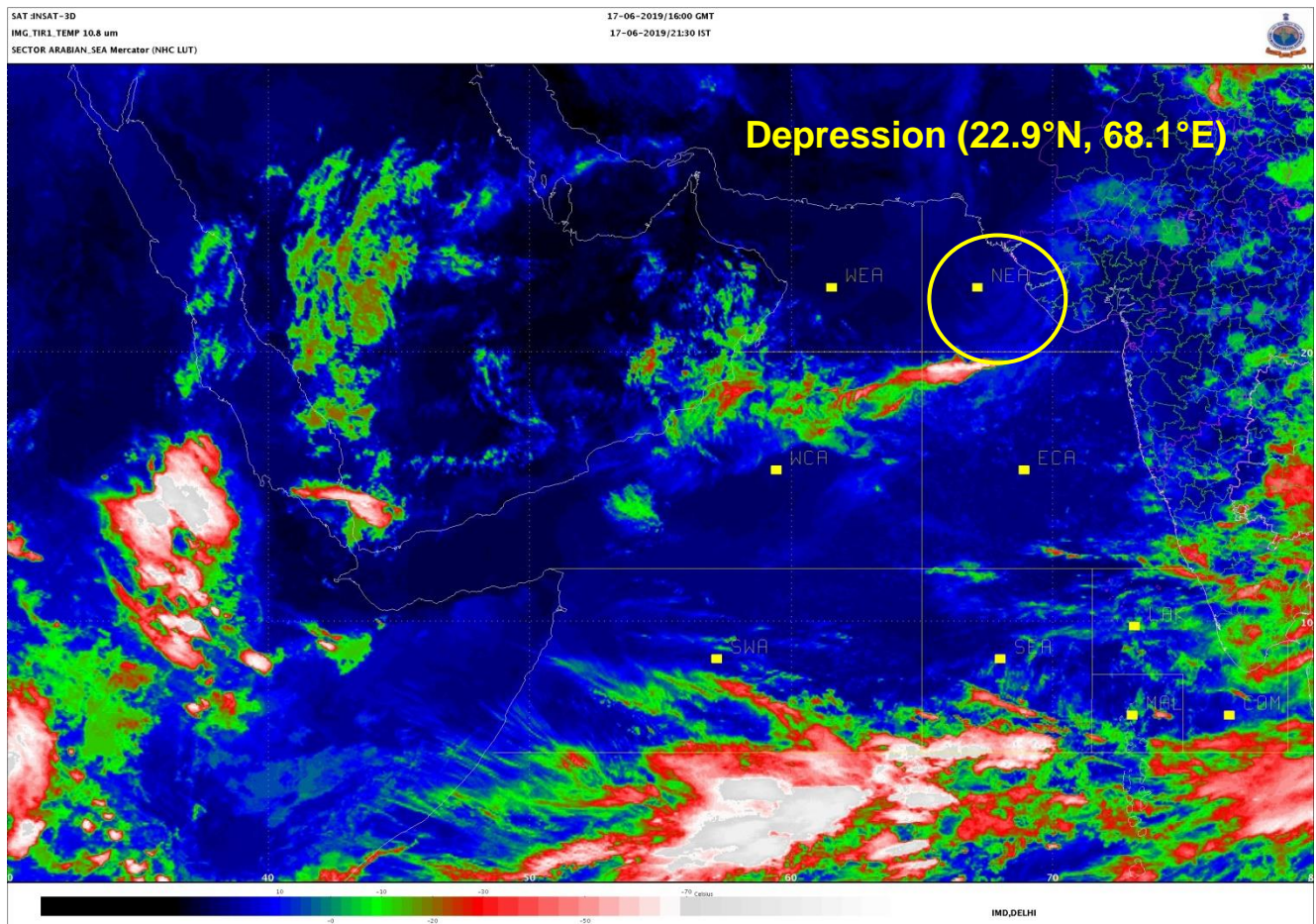
(iv) Fishermen Warning

- The fishermen are advised not to venture into north Arabian Sea, northern parts of central Arabian Sea and along & off Gujarat coast during next 24 hours.

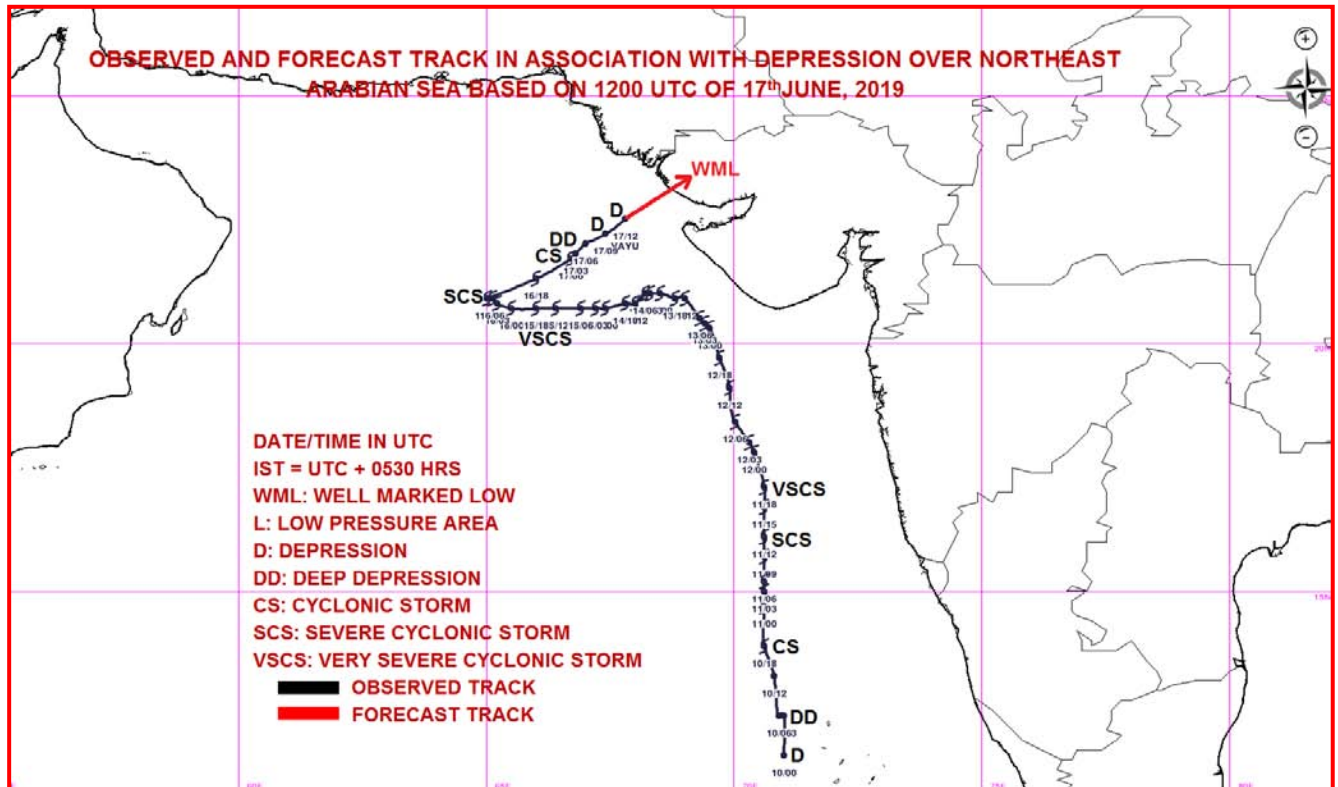
The next bulletin will be issued at 0230 hrs IST of 18th June, 2019.

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

Copy to: CRS, Pune/ 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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India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)

BULLETIN NO. : 61 (ARB/01/2019)

TIME OF ISSUE: 0100 HOURS IST

DATED: 18.06.2019

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

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

CONTROL ROOM (NERC) DM DIVISION MHA (FAX . NO. 23438254)

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 (23114964)

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, 23438091)

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

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 04896262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU AND DADRA NAGAR HAVELI (0260-2230775)

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

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

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

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

Sub: Depression weakened into a Well Marked Low pressure area over northeast Arabian Sea and adjoining Saurashtra & Kutch

The **Depression** over northeast Arabian Sea & neighbourhood moved east-northeastwards during past 6 hours and weakened into a Well Marked Low pressure area over northeast Arabian Sea and adjoining Saurashtra & Kutch at 2330 hrs IST of 17th June, 2019. It is very likely to move further east-northeastwards and weaken into a Low Pressure Area during next 12 hours.

Warnings:

(i) Heavy rainfall warning:

Light to moderate rainfall at many places with isolated heavy rainfall is likely over Saurashtra & Kutch, north Gujarat region and south Rajasthan during next 24 hours.

(ii) Wind warning

Strong wind speed of the order 30-40 kmph gusting to 50 kmph is very likely to prevail over northeast Arabian Sea and adjoining Saurashtra & Kutch during next 12 hours.

(iii) Sea condition

The Sea condition is very likely to be rough over northeast Arabian Sea and along & off Gujarat coast during next 12 hours.

(iv) Fishermen Warning

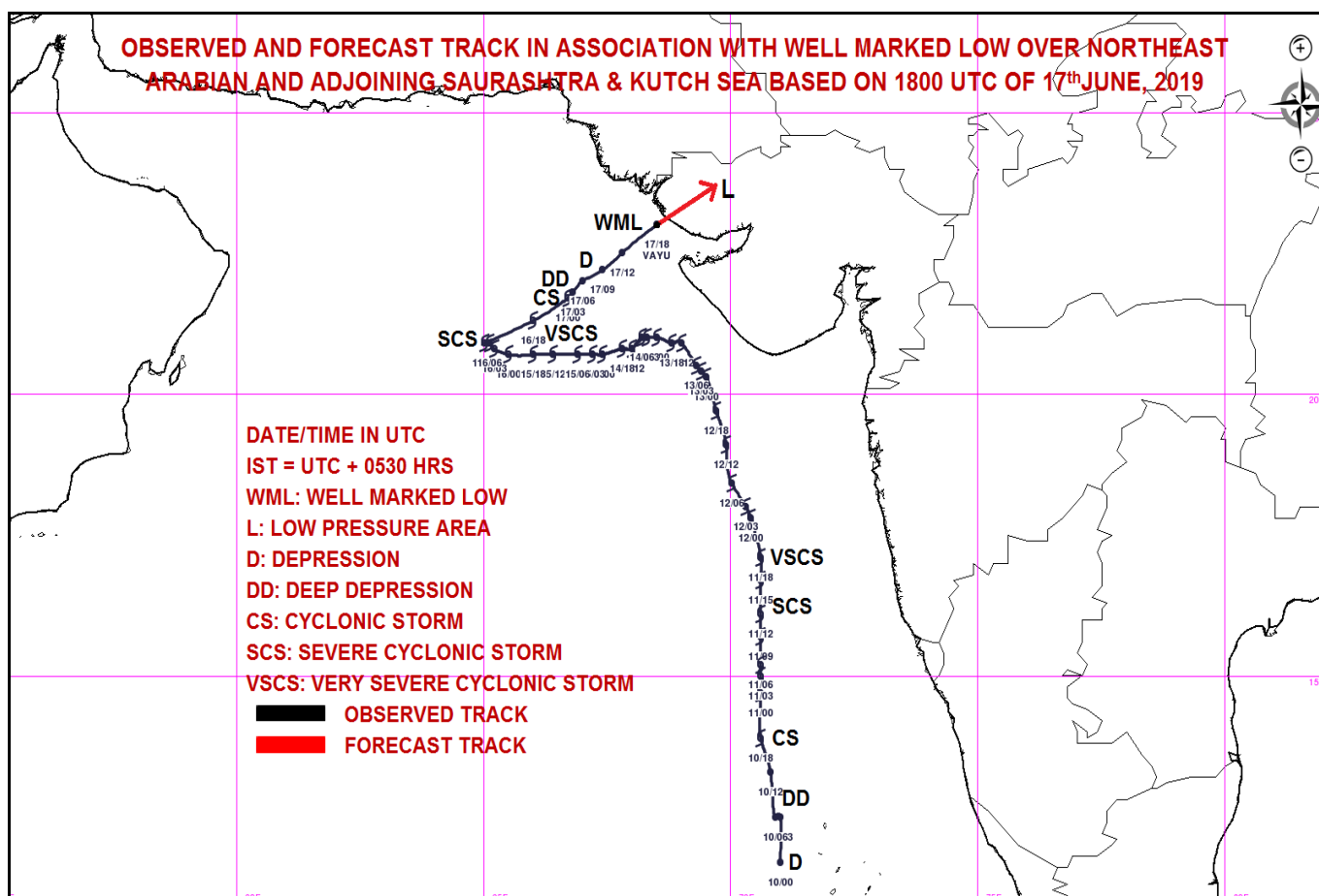
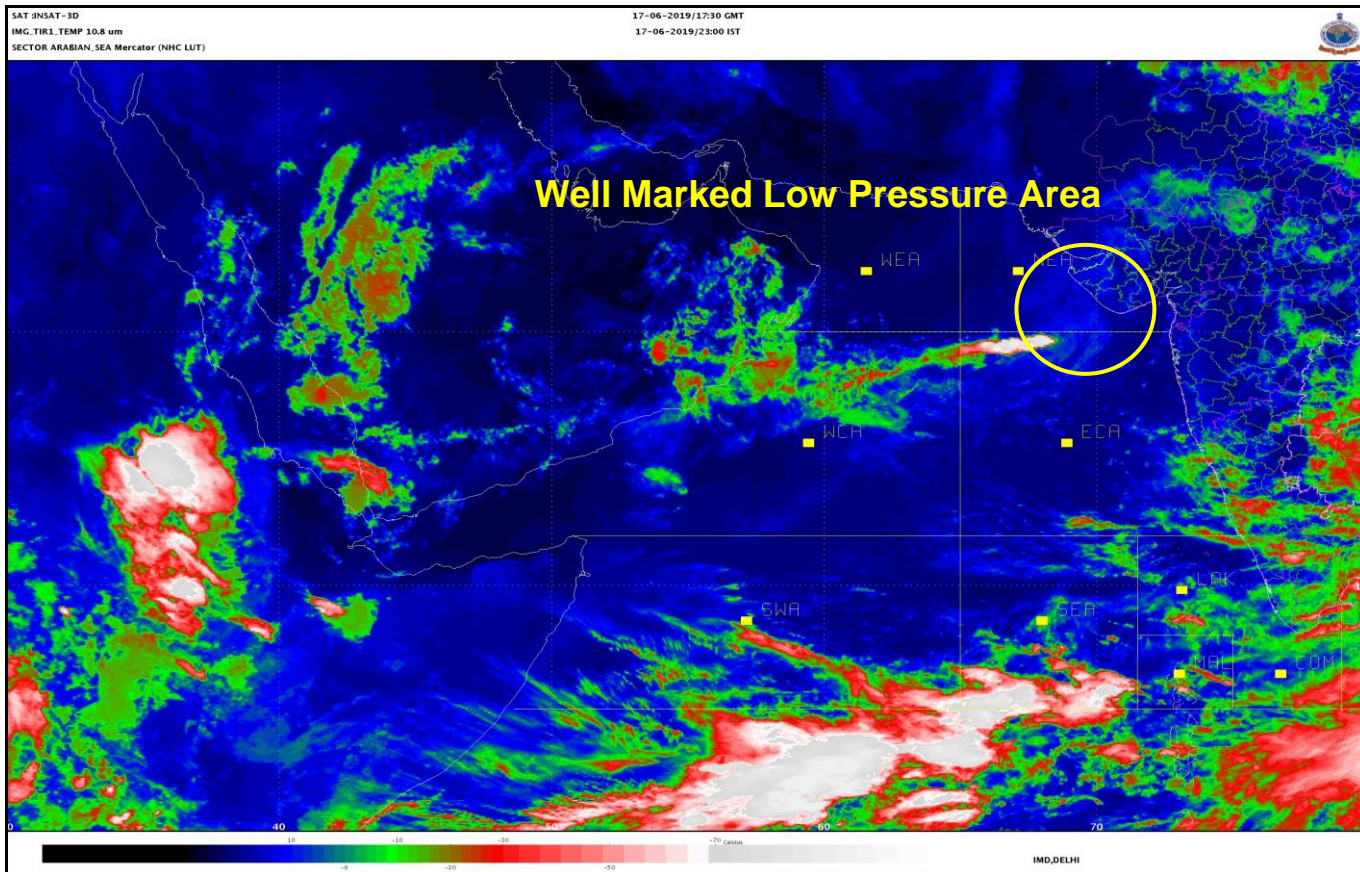
The fishermen are advised not to venture into northeast Arabian Sea and along & off Gujarat coast during next 12 hours.

This is the last bulletin for this system. However, regular bulletin will continue from Meteorological Centre Ahmedabad and National Weather Forecasting Centre, IMD New Delhi.

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

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

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