



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

BULLETIN NO. : 01 (ARB/01/2020)

TIME OF ISSUE: 1730 HOURS IST DATED: 29.05.2020
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)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0413-262184)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

**Sub: (1) Depression over south coastal Oman and adjoining Yemen &
(2) Likely formation of a Low pressure area over southeast and adjoining Eastcentral Arabian Sea
around 31st May 2020**

Latest satellite imageries indicate that the well marked Low pressure area over west central Arabian Sea off south Oman & east Yemen coasts has concentrated into a **depression over south coastal Oman and adjoining Yemen** and lay centred at 1430 hrs IST of today, the 29th May, 2020 near latitude 17.5°N and longitude 54.0°E, about 50 km north of Salalah (Oman) and 240 km northeast of Al Ghaydah (Yemen). It is very likely to intensify further into a deep depression during next 12 hours. It is very likely to move north-northwestwards during next 24 hours and west-southwestwards thereafter.

Warnings:

(i) Rainfall:

- No adverse weather is likely over the Indian land areas, with the first system, as it is located over south coastal Oman and is expected to move over Oman and Yemen during next 48 hours and dissipate there.

(ii) Wind warning

Squally wind speed reaching 45-55 kmph gusting to 65 kmph very likely to prevail over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 48 hours.

(iii) Sea condition

The sea condition is very likely to be rough to very rough over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 48 hours.

(iv) Fishermen Warning

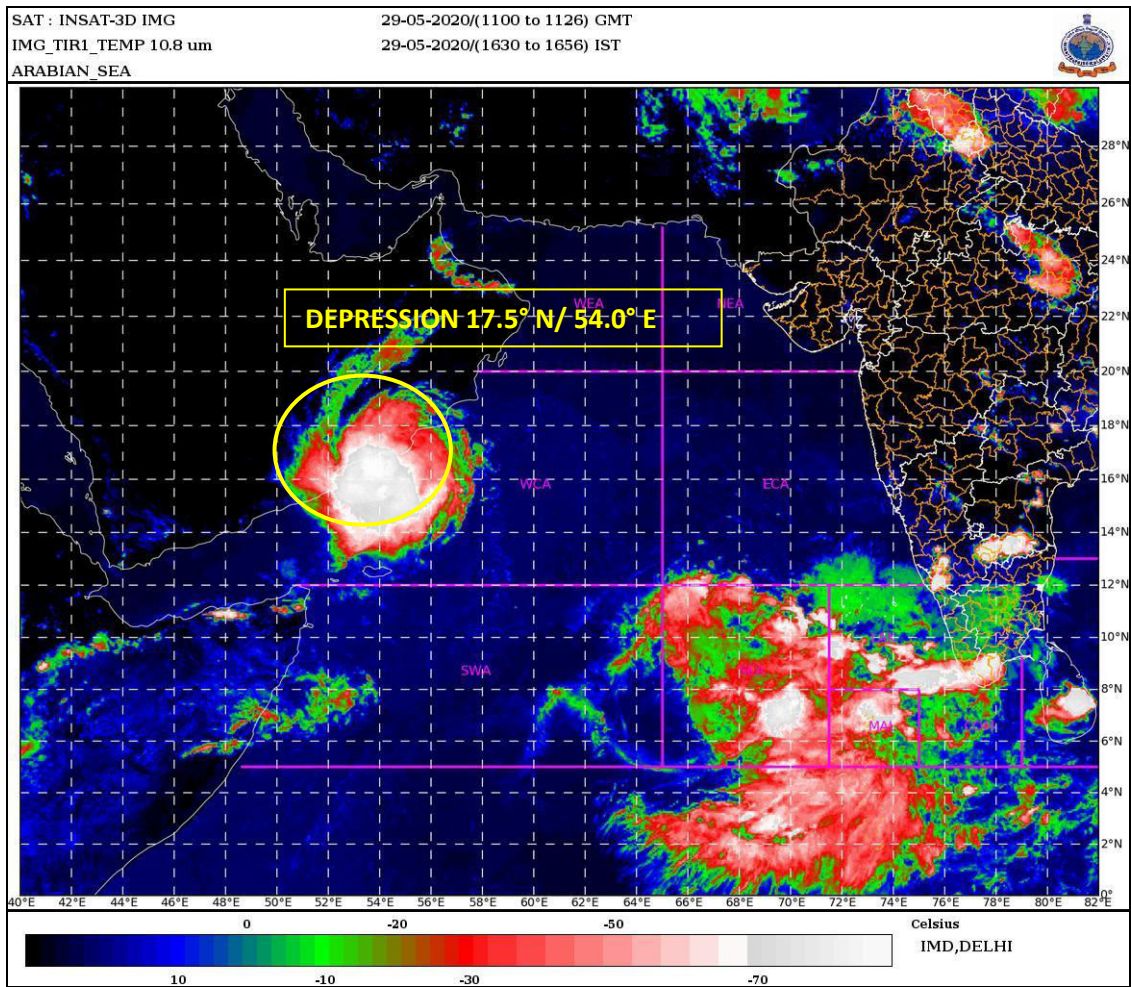
- The fishermen are advised not to venture into over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 48 hours.
- In view of the likely development of the second low pressure system over southeast & adjoining east-central Arabian Sea, Fishermen are advised not to venture into southeast and adjoining east-central Arabian Sea from 31st May, until further advisories.

The next bulletin will be issued at 2030 hrs IST of 29th May, 2020.

**(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: 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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BULLETIN NO. : 02 (ARB/01/2020)

TIME OF ISSUE: 2015 HOURS IST

DATED: 29.05.2020

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)

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

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

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

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

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

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

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

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

**Sub: (1) Depression over south coastal Oman and adjoining Yemen &
(2) Likely formation of a Low pressure area over southeast and adjoining Eastcentral Arabian Sea
around 31st May 2020**

(1) The depression over south coastal Oman and adjoining Yemen moved north-northwestwards with a speed of 8 kmph during past 3 hours and lay centred at 1730 hrs IST of today, the 29th May, 2020 near latitude 17.4°N and longitude 54.2°E, about 40 km north of Salalah (Oman) and 250 km northeast of Al Ghaydah (Yemen). It is very likely to intensify further into a deep depression during next 12 hours. It is very likely to move north-northwestwards during next 24 hours and west-southwestwards 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
29.05.20/1730	17.4/54.2	40-50 gusting to 60	Depression
30.05.20/0530	17.6/54.1	50-60 gusting to 70	Deep Depression
30.05.20/1730	17.7/54.0	50-60 gusting to 70	Deep Depression
31.05.20/0530	17.6/53.7	50-60 gusting to 70	Deep Depression
31.05.20/1730	17.2/53.2	50-60 gusting to 70	Deep Depression

(2) Another low pressure area is likely to form over southeast & adjoining eastcentral as around 31st May. It is very likely to move north-northwestwards and concentrate into a depression over eastcentral and adjoining southeast Arabian Sea during subsequent 72 hours.

Warnings:

(i) Rainfall:

- No adverse weather is likely over the Indian land areas, with the first system, as it is located over south coastal Oman and is expected to move over Oman and Yemen during next 48 hours and dissipate there.

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

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 reaching 45-55 kmph gusting to 65 kmph very likely to prevail over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 48 hours.

(iii) Sea condition

The sea condition is very likely to be rough to very rough over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 48 hours.

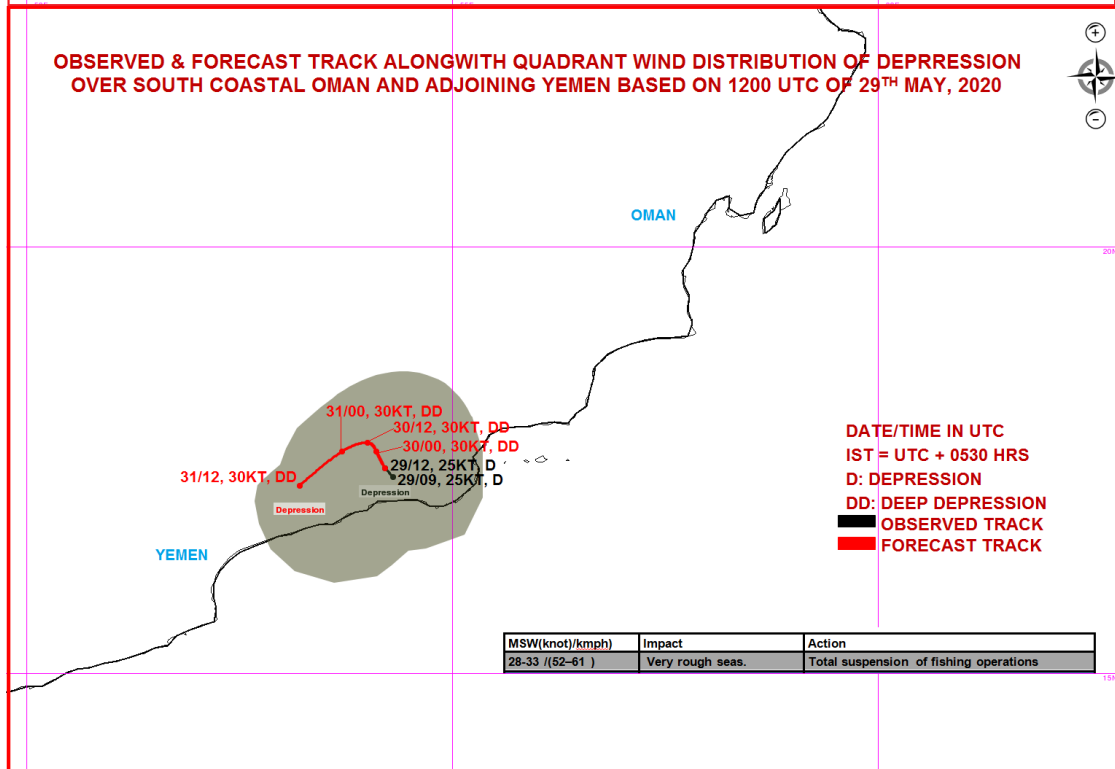
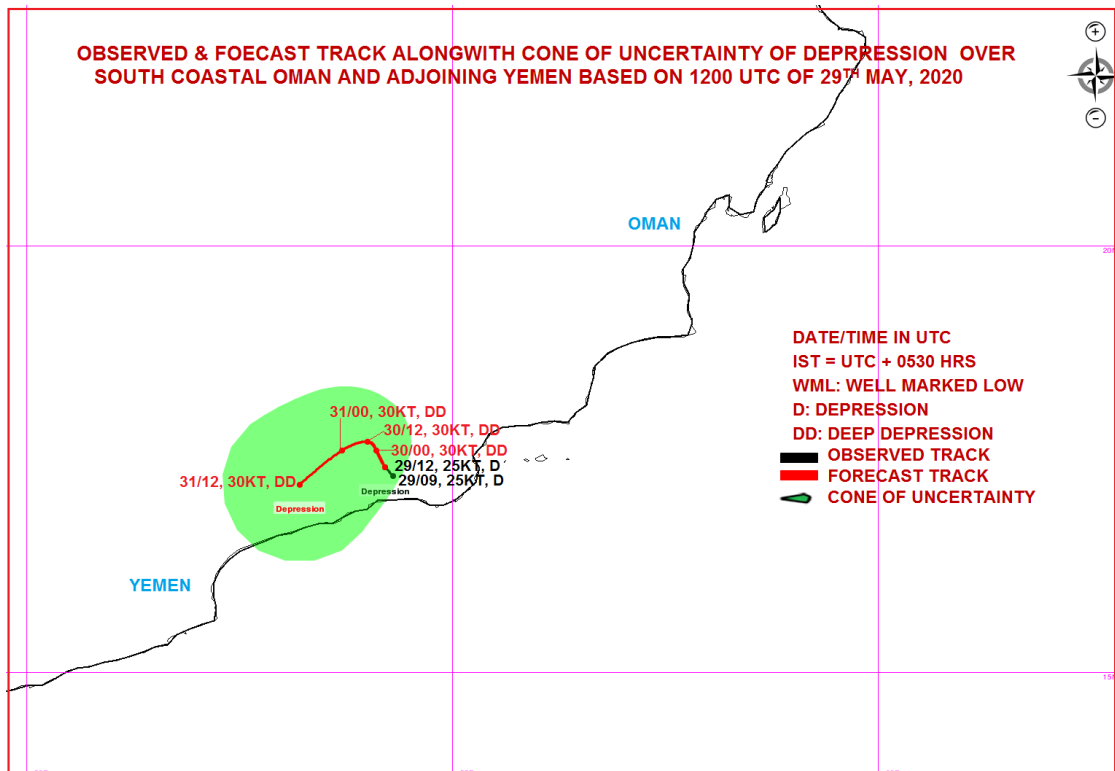
(iv) Fishermen Warning

- The fishermen are advised not to venture into over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 48 hours.
- In view of the likely development of the second low pressure system over southeast & adjoining east-central Arabian Sea, Fishermen are advised not to venture into southeast and adjoining east-central Arabian Sea from 31st May, until further advisories.

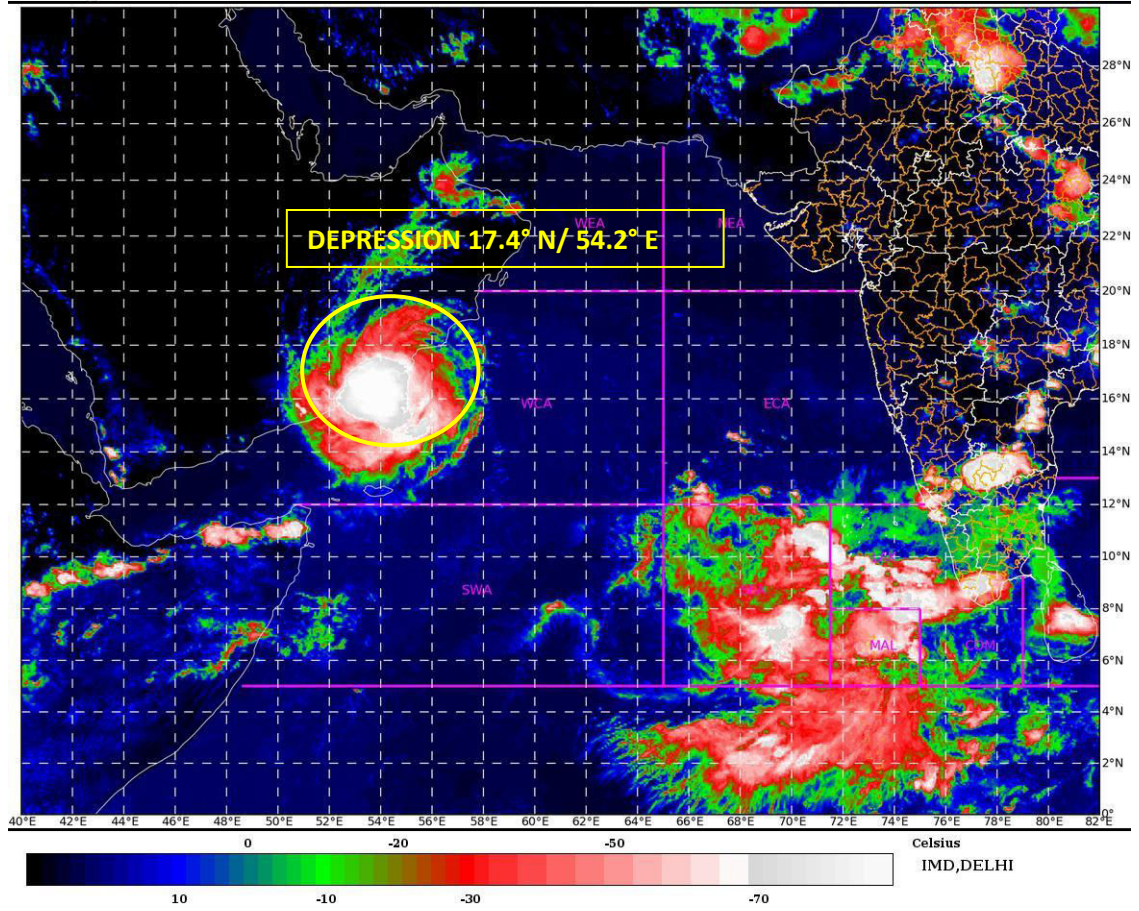
The next bulletin will be issued at 0530 hrs IST of 30th May, 2020.

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

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



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



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



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BULLETIN NO. : 03 (ARB/01/2020)

TIME OF ISSUE: 0835 HOURS IST

DATED: 30.05.2020

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)

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

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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: (1) Depression over south coastal Oman and adjoining Yemen

(2) Likely formation of a Low pressure area over southeast and adjoining Eastcentral Arabian Sea around 31st May 2020

(1) The depression over south coastal Oman and adjoining Yemen remained practically stationary during past 06 hours and lay centred at 0530 hrs IST of today, the 30th May, 2020 near latitude 17.3°N and longitude 54.2°E, about 30 km north-northeast of Salalah (Oman) and 240 km east-northeast of Al Ghaydah (Yemen). It is very likely to intensify further into a deep depression during next 12 hours. It is very likely to move slowly west-northwestwards during next 12 hours and west-southwestwards 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
30.05.20/0530	17.3/54.2	40-50 gusting to 60	Depression
30.05.20/1730	17.4/54.0	50-60 gusting to 70	Deep Depression
31.05.20/0530	17.3/53.6	50-60 gusting to 70	Deep Depression
31.05.20/1730	17.2/53.2	50-60 gusting to 70	Deep Depression
01.05.20/0530	17.0/52.7	50-60 gusting to 70	Deep Depression

(2) Another low pressure area is very likely to form over southeast & adjoining eastcentral Arabian Sea during next 48 hours. It is very likely to move north-northwestwards and concentrate into a depression over eastcentral and adjoining southeast Arabian Sea during subsequent 48 hours.

Warnings:

(i) Rainfall:

- No adverse weather is likely over the Indian land areas, with the first system, as it is located over south coastal Oman and is expected to move over Oman and Yemen during next 48 hours and dissipate there.

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

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 reaching 45-55 kmph gusting to 65 kmph very likely to prevail over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 48 hours.

(iii) Sea condition

The sea condition is very likely to be rough to very rough over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 48 hours.

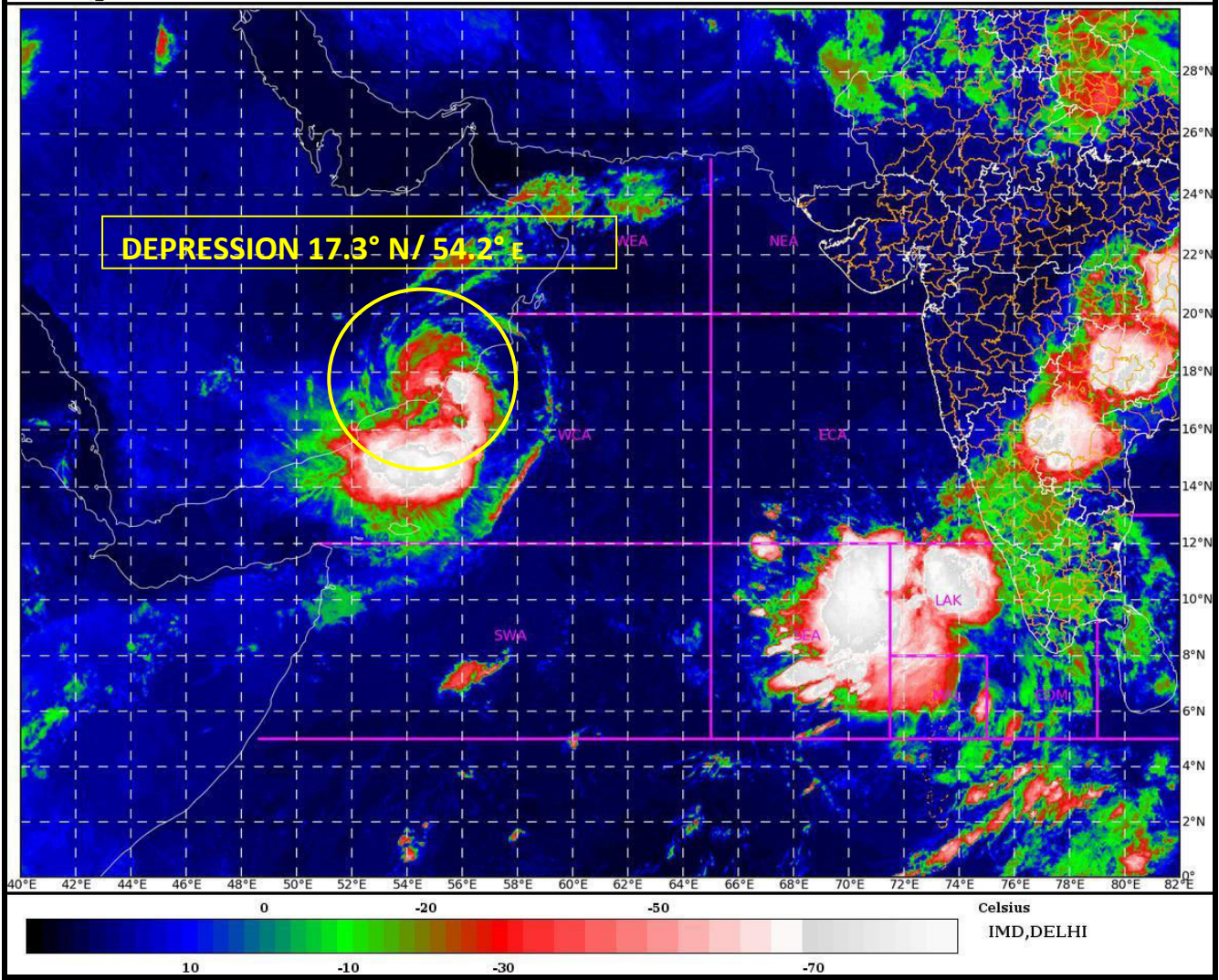
(iv) Fishermen Warning

- The fishermen are advised not to venture into over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 48 hours.
- In view of the likely development of the second low pressure system over southeast & adjoining east-central Arabian Sea, Fishermen are advised not to venture into southeast and adjoining east-central Arabian Sea from 31st May, until further advisories.

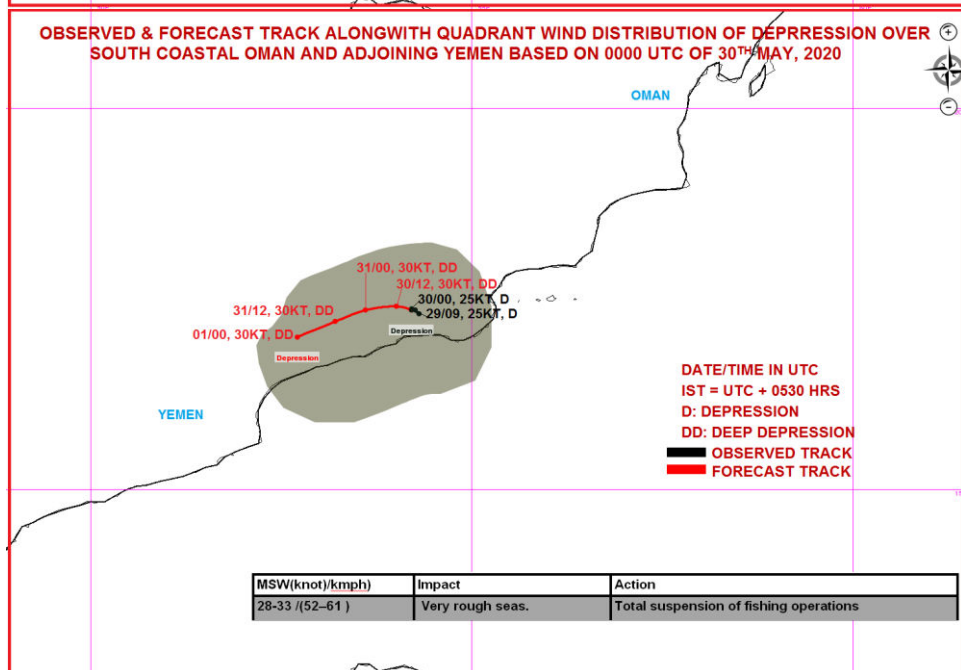
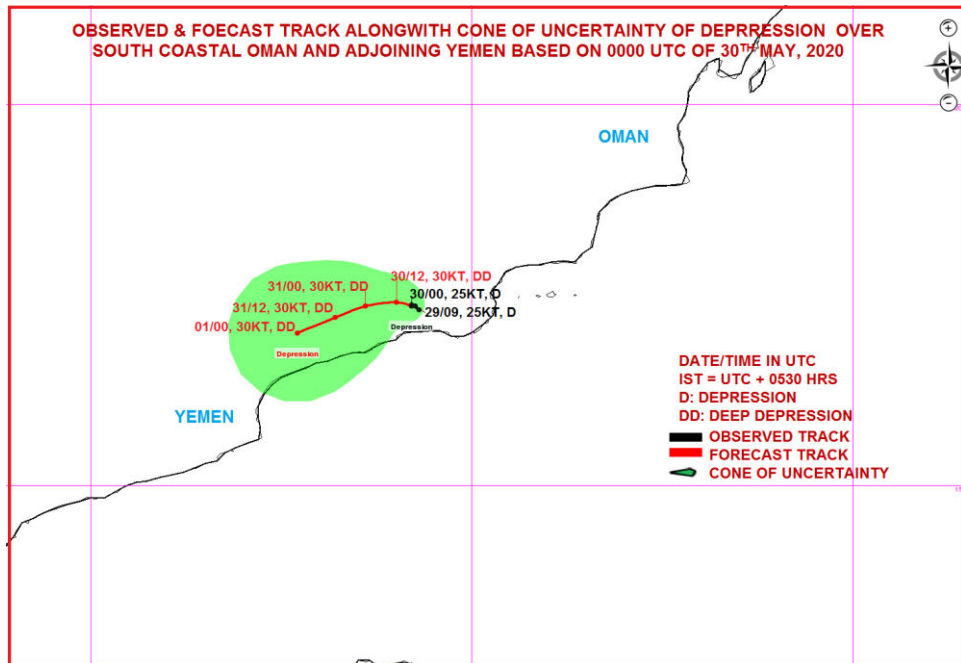
The next bulletin will be issued at 1130 hrs IST of 30th May, 2020.

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

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



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



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



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BULLETIN NO. : 04 (ARB/01/2020)

TIME OF ISSUE: 1145 HOURS IST **DATED: 30.05.2020**
FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)
TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
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CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (1) Depression over south coastal Oman and adjoining Yemen
(2) Likely formation of a Low pressure area over southeast and adjoining Eastcentral Arabian Sea during next 48 hours

(1) The depression over south coastal Oman and adjoining Yemen remained practically stationary during past 06 hours and lay centred at 0830 hrs IST of today, the 30th May, 2020 near latitude 17.3°N and longitude 54.2°E, about 30 km north-northeast of Salalah (Oman) and 240 km east-northeast of Al Ghaydah (Yemen). It is very likely to intensify further into a deep depression during next 12 hours. It is very likely to move slowly west-northwestwards during next 12 hours and west-southwestwards 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
30.05.20/0830	17.3/54.2	40-50 gusting to 60	Depression
30.05.20/1730	17.4/54.0	50-60 gusting to 70	Deep Depression
31.05.20/0530	17.3/53.6	50-60 gusting to 70	Deep Depression
31.05.20/1730	17.2/53.2	40-50 gusting to 60	Depression
01.05.20/0530	17.0/52.7	40-50 gusting to 60	Depression

(2) Another low pressure area is very likely to form over southeast & adjoining eastcentral Arabian Sea during next 48 hours. It is very likely to move north-northwestwards and concentrate into a depression over eastcentral and adjoining southeast Arabian Sea during subsequent 48 hours.

Warnings:

(i) Rainfall:

- No adverse weather is likely over the Indian land areas, with the first system, as it is located over south coastal Oman and is expected to move over Oman and Yemen during next 48 hours and dissipate there.

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

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 reaching 45-55 kmph gusting to 65 kmph very likely to prevail over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 48 hours.

(iii) Sea condition

The sea condition is very likely to be rough to very rough over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 48 hours.

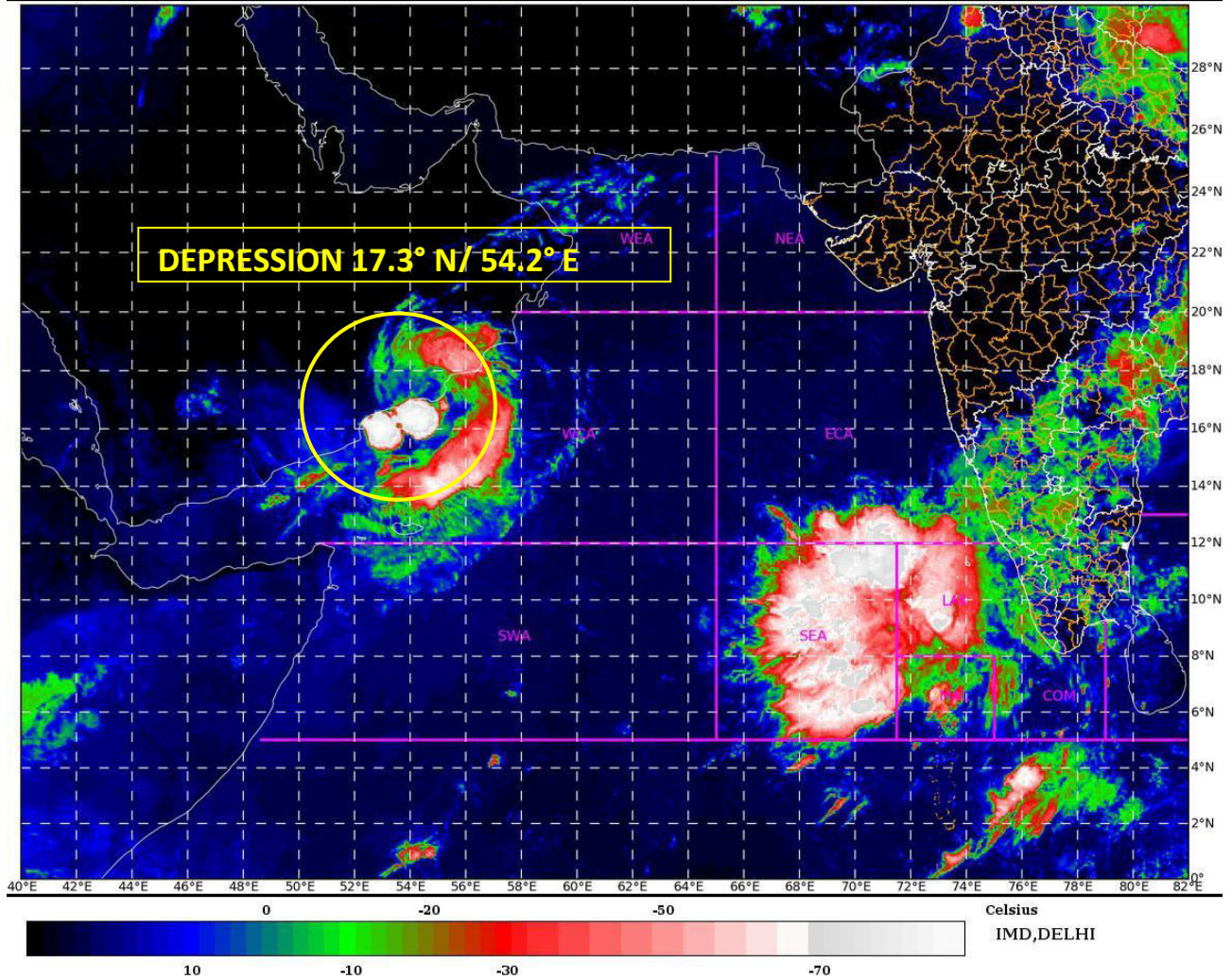
(iv) Fishermen Warning

- The fishermen are advised not to venture into over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 48 hours.
- In view of the likely development of the second low pressure system over southeast & adjoining east-central Arabian Sea, Fishermen are advised not to venture into southeast and adjoining east-central Arabian Sea from 31st May, until further advisories.

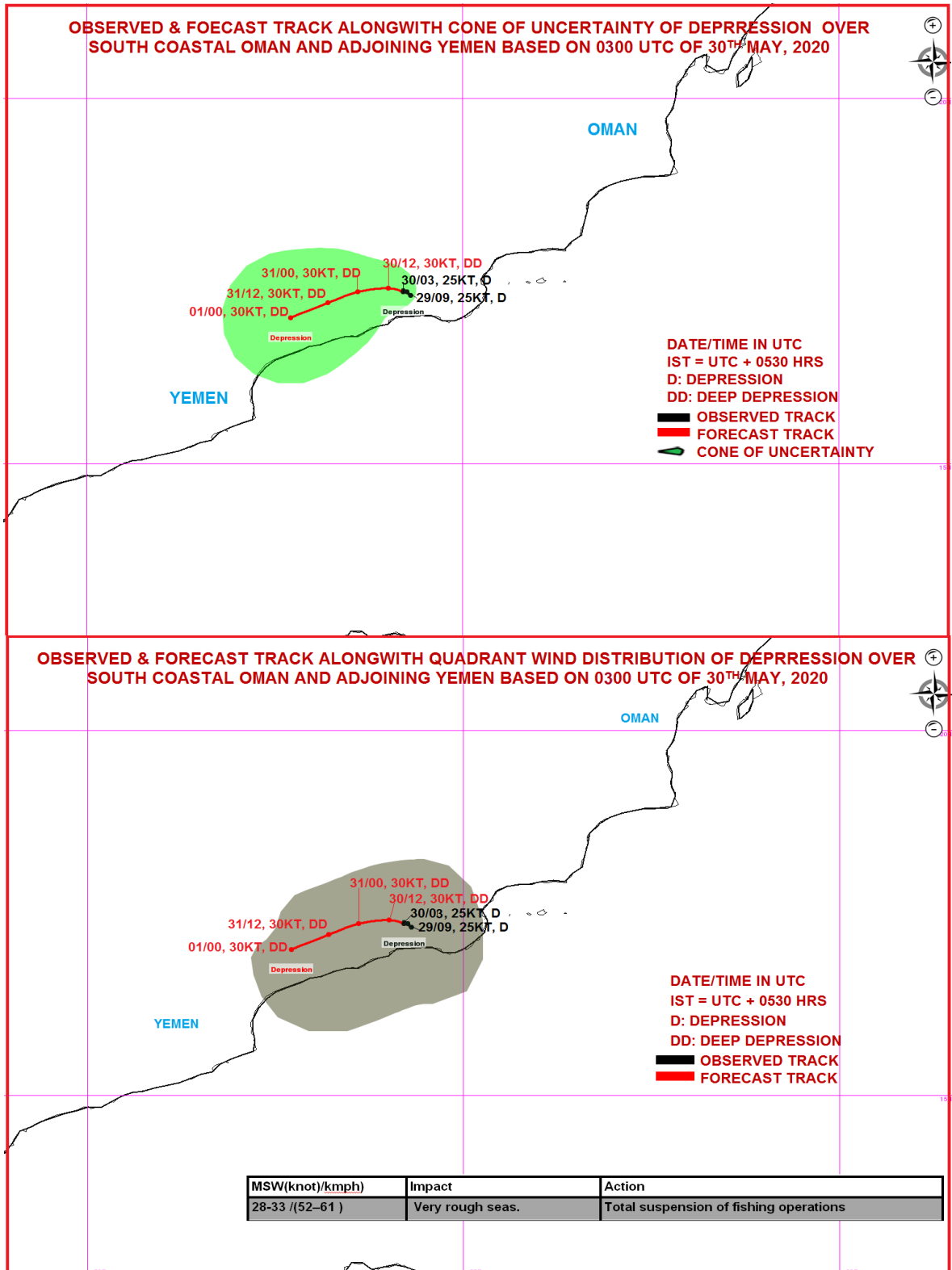
The next bulletin will be issued at 1430 hrs IST of 30th May, 2020.

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

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Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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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. : 05 (ARB/01/2020)

TIME OF ISSUE: 1430 HOURS IST

DATED: 30.05.2020

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

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

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

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

Sub: (1) Depression over south coastal Oman and adjoining Yemen

(2) Likely formation of a Low pressure area over Southeast and adjoining Eastcentral Arabian Sea during next 48 hours

(1) The Depression over south coastal Oman and adjoining Yemen moved slightly southwestwards with a speed of 03 kmph during past six hours and lay centred at 1130 hrs IST of today, the 30th May, 2020 near latitude 17.2°N and longitude 54.1°E, about 20 km north of Salalah (Oman) and 230 km east-northeast of Al-Ghaydah (Yemen). It is very likely to intensify further into a Deep Depression during next 12 hours. It is very likely to move slowly west-southwestwards along south Oman & Yemen coasts.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
30.05.20/1130	17.2/54.1	40-50 gusting to 60	Depression
30.05.20/1730	17.0/53.8	50-60 gusting to 70	Deep Depression
31.05.20/0530	16.9/53.5	50-60 gusting to 70	Deep Depression
31.05.20/1730	16.8/53.2	50-60 gusting to 70	Deep Depression
01.06.20/0530	16.7/52.8	40-50 gusting to 60	Depression

(2) Another low pressure area is very likely to form over Southeast & adjoining Eastcentral Arabian Sea during next 48 hours and concentrate into a Depression over Eastcentral and adjoining Southeast Arabian Sea during subsequent 48 hours and likely to intensify further. It is very likely to move north-northwestwards towards Gujarat & adjoining north Maharashtra coasts during next 4-5 days.

Warnings:

(i) Rainfall:

- No adverse weather is likely over the Indian land areas, with the first system, as it is located over south coastal Oman and is expected to move over coastal areas of Oman and Yemen during next 48 hours and dissipate there.

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

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 reaching 45-55 kmph gusting to 65 kmph, very likely to prevail over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 48 hours.

(iii) Sea condition

The sea condition is very likely to be rough to very rough over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 48 hours.

(iv) Fishermen Warning

- The fishermen are advised not to venture into Westcentral Arabian Sea along & off South Oman – Yemen coasts during next 48 hours.
- In view of the likely development of the second low pressure system over southeast & adjoining east-central Arabian Sea, Fishermen are advised not to venture into southeast and adjoining eastcentral Arabian Sea from 31st May, until further advisories.

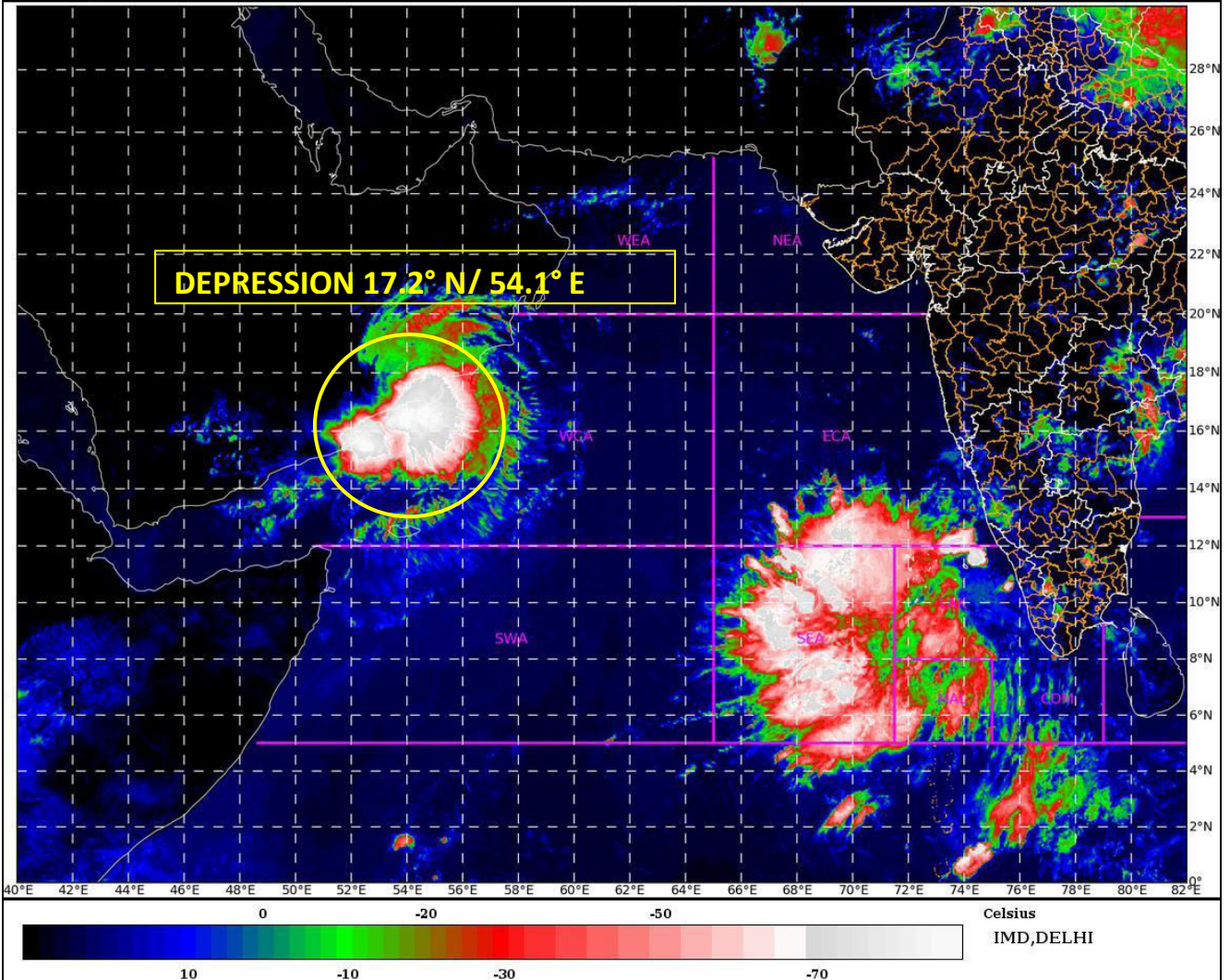
The next bulletin will be issued at 2030 hrs IST of 30th May, 2020.

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

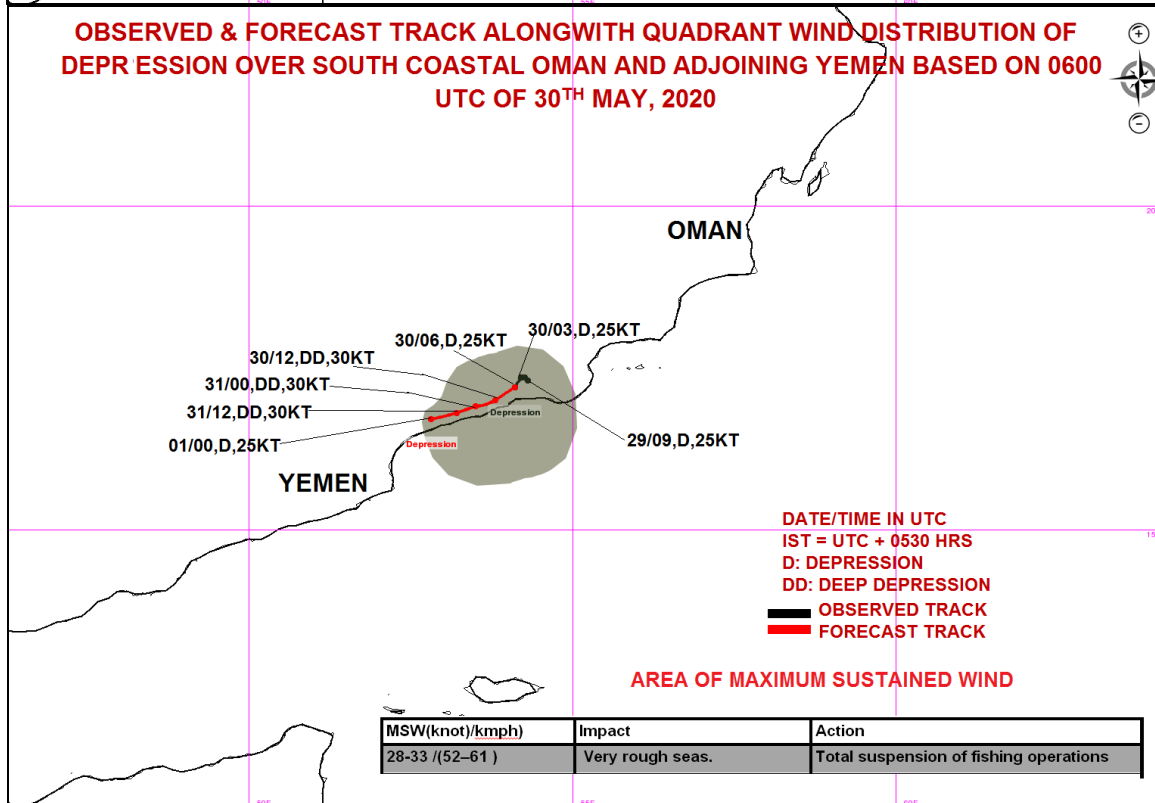
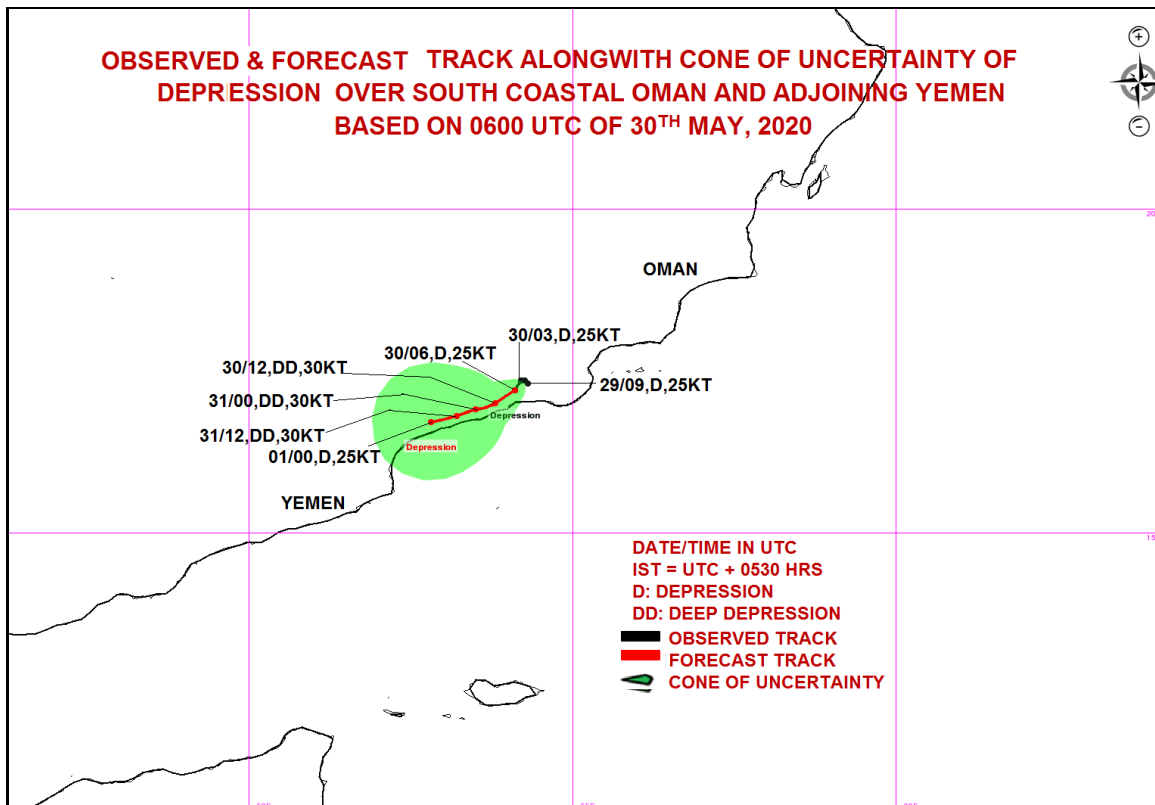
Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

SAT : INSAT-3DR IMG
IMG_TIR1_TEMP 10.8 um
ARABIAN SEA

30-05-2020/(0815 to 0841) GMT
30-05-2020/(1345 to 1411) 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. : 06 (ARB/01/2020)

TIME OF ISSUE: 2030 HOURS IST **DATED: 30.05.2020**
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)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0413-262184)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)

Sub: (1) Depression over south coastal Oman and adjoining Yemen
(2) Likely formation of a Low pressure area over Southeast and adjoining Eastcentral Arabian Sea during next 36 hours

(1) The Depression over south coastal Oman and adjoining Yemen moved further southwestwards with a speed of 05 kmph during past six hours and lay centred at 1730 hrs IST of today, the 30th May, 2020 near latitude 17.0°N and longitude 53.9°E, about 20 km west of Salalah (Oman) and 200 km east-northeast of Al-Ghaydah (Yemen). It is very likely to intensify further into a Deep Depression during next 12 hours. It is very likely to move slowly west-southwestwards along south Oman & Yemen coasts.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
30.05.20/1730	17.0/53.9	40-50 gusting to 60	Depression
31.05.20/0530	16.8/53.6	50-60 gusting to 70	Deep Depression
31.05.20/1730	16.6/53.2	50-60 gusting to 70	Deep Depression
01.06.20/0530	16.5/52.7	50-60 gusting to 70	Deep Depression
01.06.20/1730	16.2/52.2	40-50 gusting to 60	Depression

(2) Another low pressure area is very likely to form over Southeast & adjoining Eastcentral Arabian Sea during next 36 hours and concentrate into a Depression over Eastcentral and adjoining Southeast Arabian Sea during subsequent 48 hours and likely to intensify further. It is very likely to move north-northwestwards towards Gujarat & adjoining north Maharashtra coasts during next 4-5 days.

Warnings:

(i) Rainfall:

No adverse weather is likely over the Indian land areas, with the first system, as it is located over south coastal Oman and is expected to move over coastal areas of Oman and Yemen during next 48 hours and dissipate there.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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 reaching 45-55 kmph gusting to 65 kmph, very likely to prevail over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 48 hours.

(iii) Sea condition

The sea condition is very likely to be rough to very rough over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 48 hours.

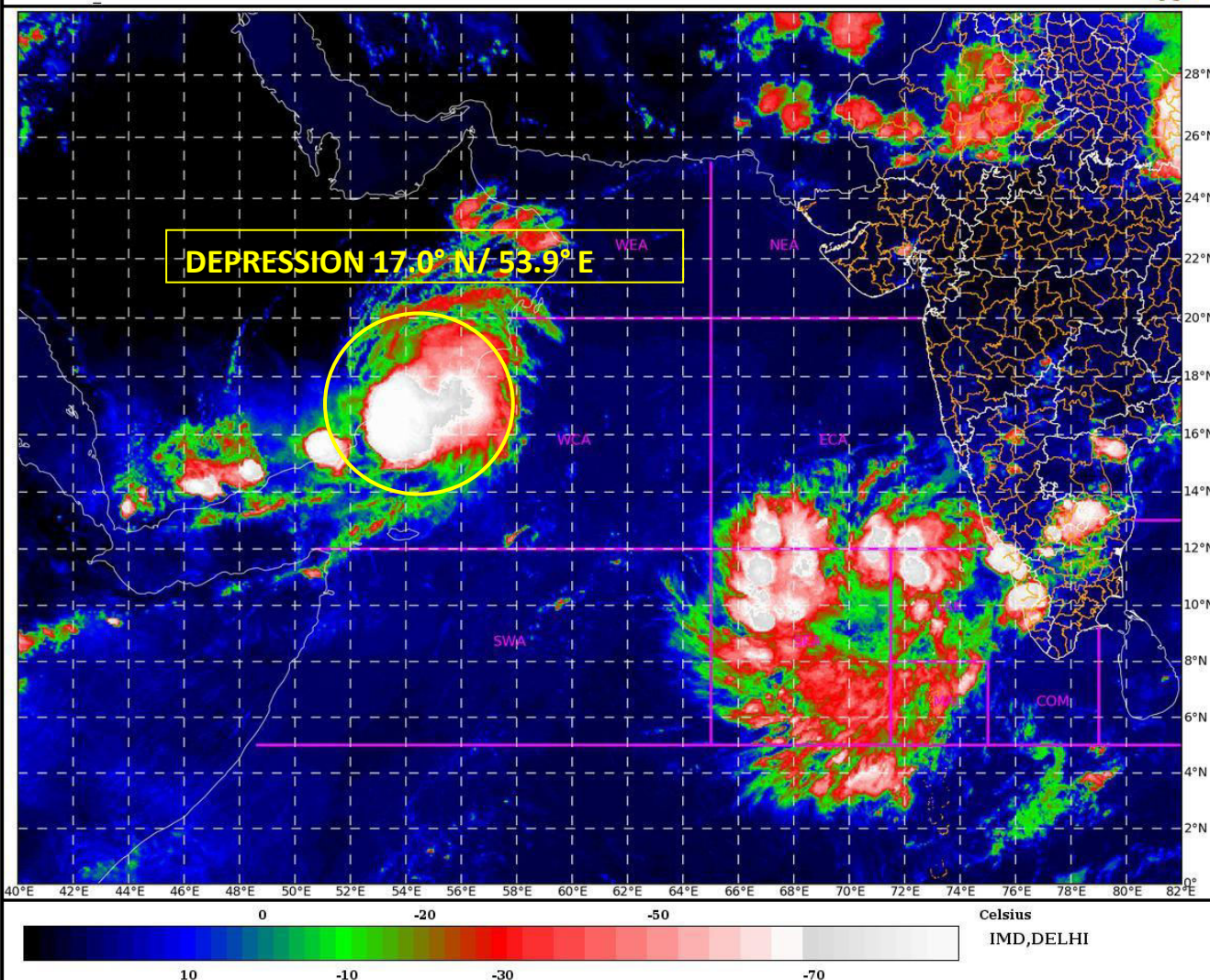
(iv) Fishermen Warning

- The fishermen are advised not to venture into Westcentral Arabian Sea along & off South Oman – Yemen coasts during next 48 hours.
- In view of the likely development of the second low pressure system over southeast & adjoining east-central Arabian Sea, Fishermen are advised not to venture into southeast and adjoining eastcentral Arabian Sea from 31st May, until further advisories.

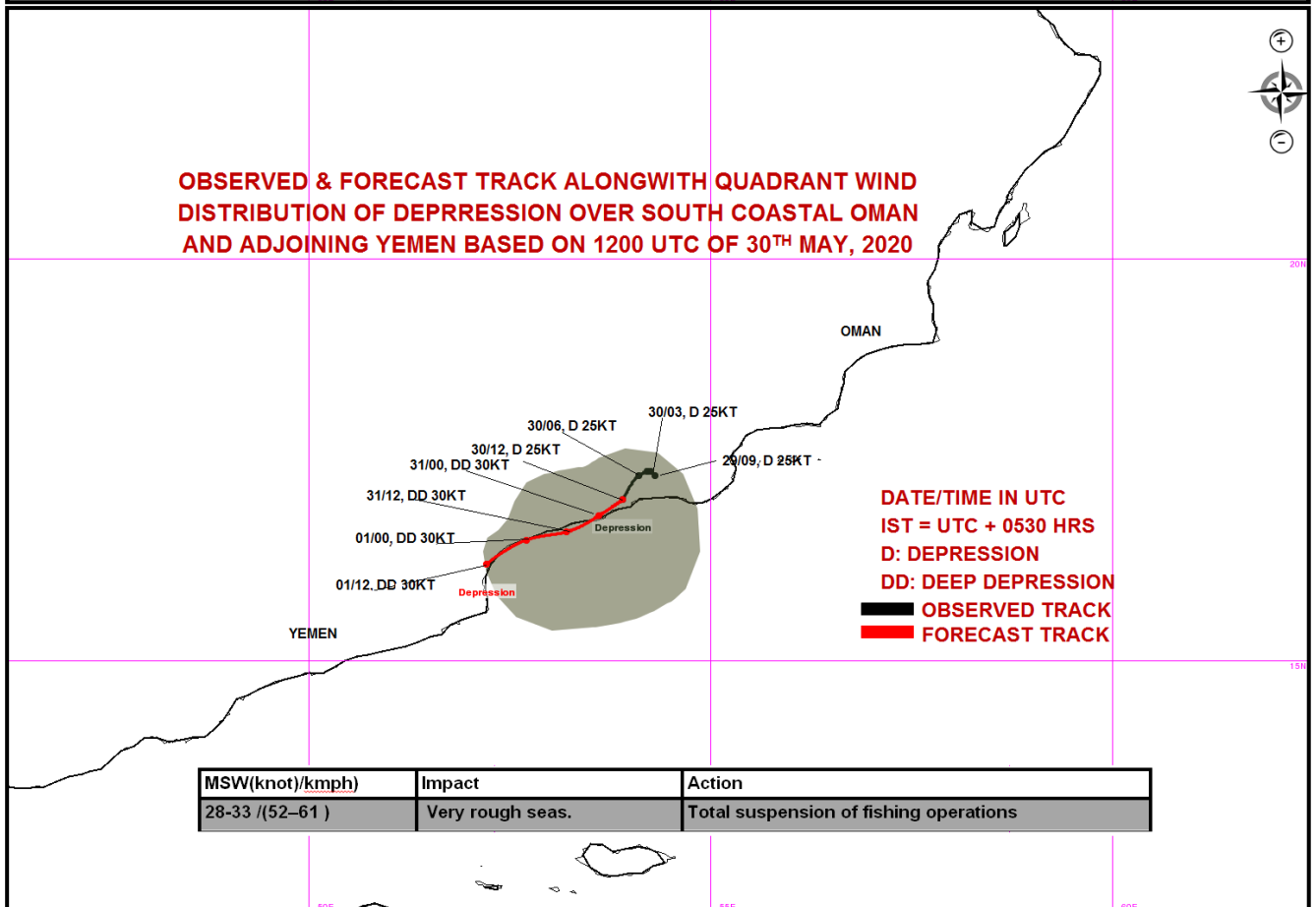
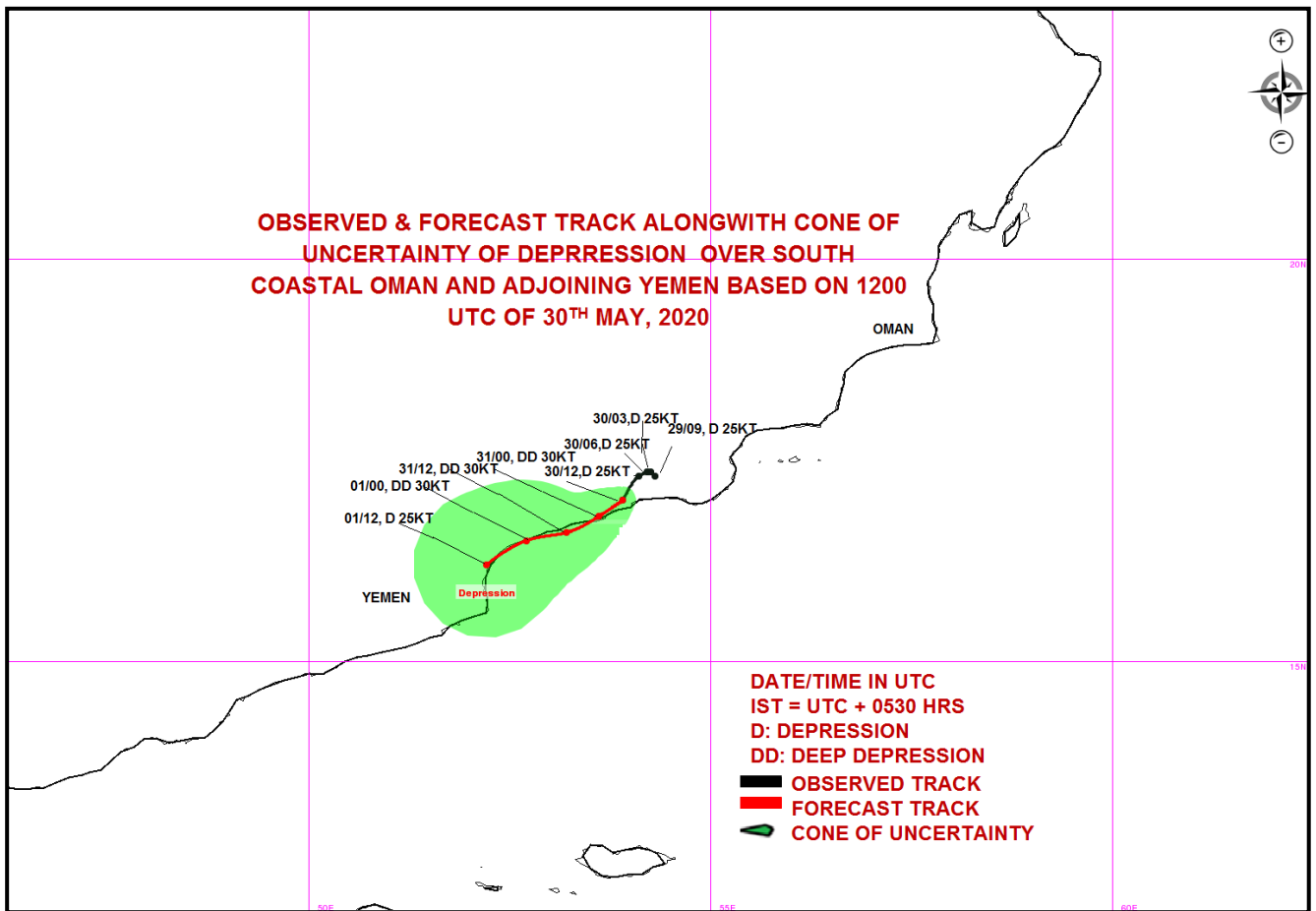
The next bulletin will be issued at 0830 hrs IST of tomorrow, the 31st May, 2020.

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

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



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



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



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

BULLETIN NO. : 07 (ARB/01/2020)

TIME OF ISSUE: 0855 HOURS IST

DATED: 31.05.2020

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)

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

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

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

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

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

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

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

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

**Sub: (1) A Low pressure area formed over Southeast and adjoining Eastcentral Arabian Sea and Lakshadweep area
(2) Depression over south coastal Oman and adjoining Yemen**

(1) A **low pressure area** has formed over Southeast & adjoining Eastcentral Arabian Sea and Lakshadweep area. It is very likely to concentrate into a Depression over Eastcentral and adjoining Southeast Arabian Sea during next 24 hours and likely to intensify further into a Cyclonic Storm during the subsequent 24 hours. It is very likely to move nearly northwards and reach near north Maharashtra and Gujarat coasts by 3rd June.

(2) The **Depression** over south coastal Oman and adjoining Yemen remained practically stationary during past 12 hours and lay centred at 0530 hrs IST of today, the 31st May, 2020 near latitude 17.0°N and longitude 53.9°E, about 20 km west of Salalah (Oman) and 200 km east-northeast of Al-Ghaydah (Yemen). It is very likely to maintain the intensity of Depression during next 12 hours and weaken gradually thereafter. It is very likely to move slowly west-southwestwards during the period.

Warnings:

(i) Rainfall:

Under the influence of the first system, widespread light to moderate rainfall with isolated heavy to very heavy falls very likely over Lakshadweep area on 31st May & 1st June. Widespread light to moderate rainfall with isolated heavy falls very likely over Kerala and coastal Karnataka on these two days. Enhanced rainfall activity with heavy to very heavy rainfall at a few places and extremely heavy falls at isolated places is likely over south coastal Maharashtra during 2nd -4th June, over north coastal Maharashtra during 3rd & 4th June and over to Gujarat, Daman, Diu, Dadra & Nagar Haveli during 3rd - 5th June.

No adverse weather is likely over the Indian land areas, with the second system, as it is located over south coastal Oman and is expected to dissipate there.

(ii) Wind warning

Squally wind, speed reaching 45-55 kmph gusting to 65 kmph, very likely to prevail over Southeast & adjoining Eastcentral Arabian Sea, Lakshadweep area and along & off Kerala coast during next 48 hours. It will gradually increase becoming Gale wind speed reaching 65-75 kmph gusting to 85 kmph over eastcentral Arabian Sea & along and off Karnataka- south Maharashtra coasts from 2nd 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.

morning and further becoming 90-100 kmph gusting 110 kmph over eastcentral Arabian Sea along & off Maharashtra & Gujarat coasts from 3rd morning.

Squally wind, speed reaching 45-55 kmph gusting to 65 kmph, very likely to prevail over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 24 hours.

(iii) Sea condition

The Sea condition is very likely to be rough to very rough over Southeast & adjoining Eastcentral Arabian Sea and Lakshadweep area during next 24 hours. It would become very rough to High over eastcentral & southeast Arabian Sea and along & off Karnataka- south Maharashtra coasts from 2nd June and High to very high over eastcentral Arabian Sea along & off Maharashtra coasts from 3rd June.

The sea condition is very likely to be rough to very rough over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 24 hours.

(iv) Fishermen Warning

- Fishermen are advised not to venture into southeast and eastcentral Arabian Sea, Lakshadweep area and along & off Kerala- Karnataka- Maharashtra coasts till 4th June and into northeast Arabian Sea along & off Gujarat coast during 3rd – 4th June. Fishermen out at Sea are advised to return to coasts by today, the 31st May.
- The fishermen are advised not to venture into Westcentral Arabian Sea along & off South Oman – Yemen coasts during next 24 hours.

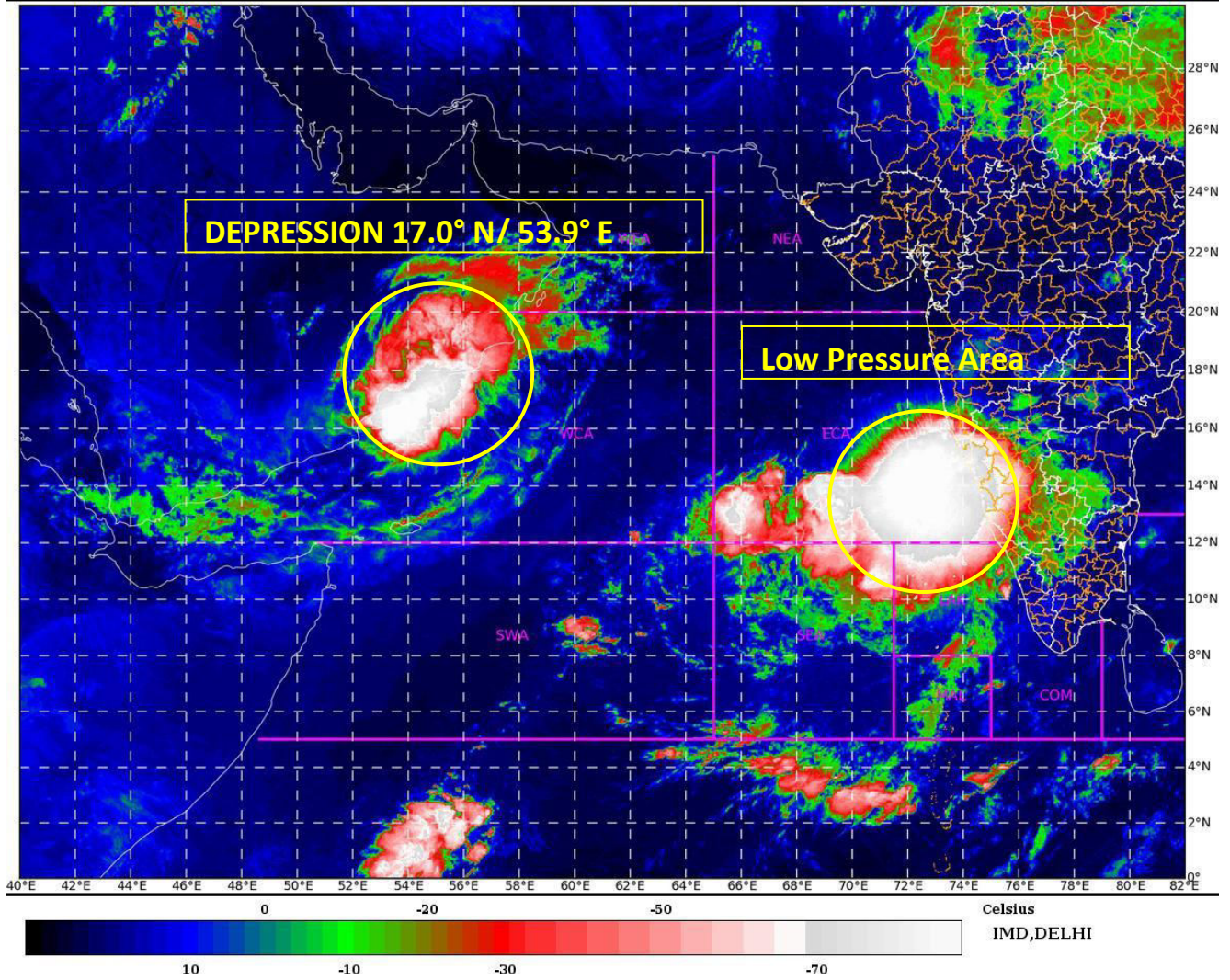
The next bulletin will be issued at 1130 hrs IST of 31st May, 2020.

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

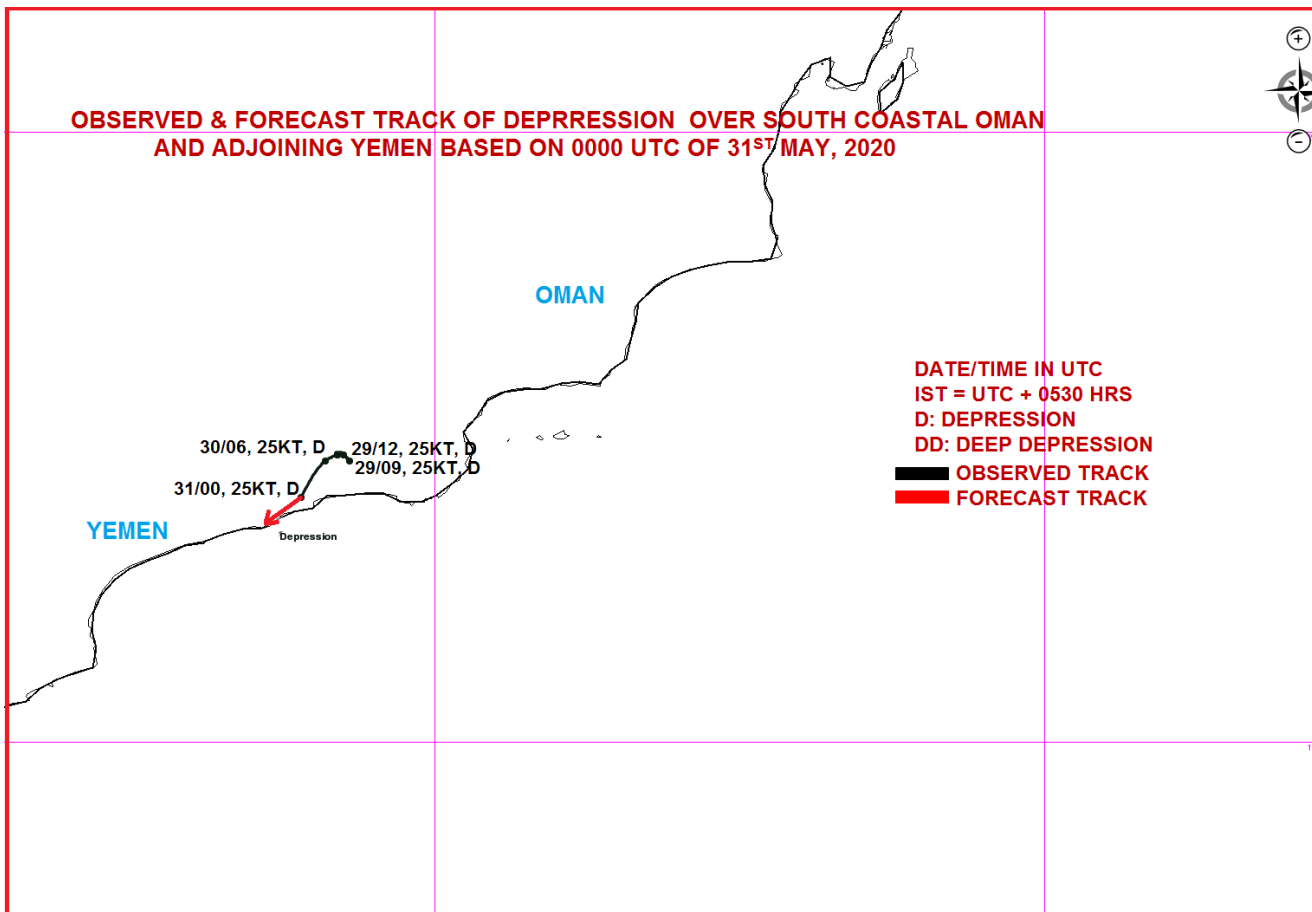
Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

SAT : INSAT-3DR IMG
IMG_TIR1_TEMP 10.8 um
ARABIAN_SEA

31-05-2020/(0045 to 0111) GMT
31-05-2020/(0615 to 0641) 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. : 08 (ARB/01/2020)

TIME OF ISSUE: 1210 HOURS IST

DATED: 31.05.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES, (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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

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

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

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

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

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: (1) Low pressure area over Southeast and adjoining Eastcentral Arabian Sea and Lakshadweep area

(2) Depression over south coastal Oman and adjoining Yemen

(1) The **low pressure area** over Southeast & adjoining Eastcentral Arabian Sea and Lakshadweep area persists. It is very likely to concentrate into a Depression over Eastcentral and adjoining Southeast Arabian Sea during next 24 hours and likely to intensify further into a Cyclonic Storm over Eastcentral Arabian Sea during the subsequent 24 hours. It is very likely to move nearly northwards and reach near north Maharashtra and Gujarat coasts by 3rd June.

(2) The **Depression** over south coastal Oman and adjoining Yemen remained practically stationary during past 12 hours and lay centred at 0830 hrs IST of today, the 31st May, 2020 near latitude 17.0°N and longitude 53.9°E, about 20 km west of Salalah (Oman) and 200 km east-northeast of Al-Ghaydah (Yemen). It is very likely to maintain the intensity of Depression during next 12 hours and weaken gradually thereafter. It is very likely to move slowly west-southwestwards during next 24 hours.

Warnings:

(i) Rainfall:

Under the influence of the first system, light to moderate rainfall at most places with isolated heavy to very heavy falls very likely over Lakshadweep area, Kerala and coastal Karnataka on 31st May & 1st June. Light to moderate rainfall at most places with isolated heavy falls very likely over south Konkan & Goa on 31st May and isolated heavy to very heavy falls on 01st June. Light to moderate rainfall at most places with isolated heavy to very heavy falls very likely over Konkan & Goa on 02nd June and over south Konkan & Goa on 03rd June.

Light to moderate rainfall at most places with heavy to very heavy falls at a few places and extremely heavy falls at isolated places over north Konkan and north Madhya Maharashtra on 03rd & 04th June.

Light to moderate rainfall at most places with isolated heavy to very heavy falls very likely over south Gujarat state, Daman, Diu, Dadra & Nagar Haveli on 03rd June and with heavy to very heavy falls at a

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

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

few places and extremely heavy falls at isolated places over south Gujarat state, Daman, Diu, Dadra & Nagar Haveli and on 04th June.

(ii) Wind warning

Squally wind, speed reaching 45-55 kmph gusting to 65 kmph, very likely to prevail over Southeast & adjoining Eastcentral Arabian Sea, Lakshadweep area and along & off Kerala coast during next 48 hours. It will gradually increase becoming Gale wind speed reaching 65-75 kmph gusting to 85 kmph over eastcentral Arabian Sea & along and off Karnataka- south Maharashtra coasts from 2nd June morning and further becoming 90-100 kmph gusting to 110 kmph over eastcentral and northeast Arabian Sea along & off Maharashtra & Gujarat coasts from 3rd morning.

Squally wind, speed reaching 45-55 kmph gusting to 65 kmph, very likely to prevail over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 24 hours.

(iii) Sea condition

The Sea condition is very likely to be rough to very rough over Southeast & adjoining Eastcentral Arabian Sea and Lakshadweep area during next 24 hours. It would become very rough to High over eastcentral & southeast Arabian Sea and along & off Karnataka- south Maharashtra coasts from 2nd June and High to very high over eastcentral and northeast Arabian Sea along & off Maharashtra & Gujarat coasts from 3rd June.

The sea condition is very likely to be rough to very rough over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 24 hours.

(iv) Fishermen Warning

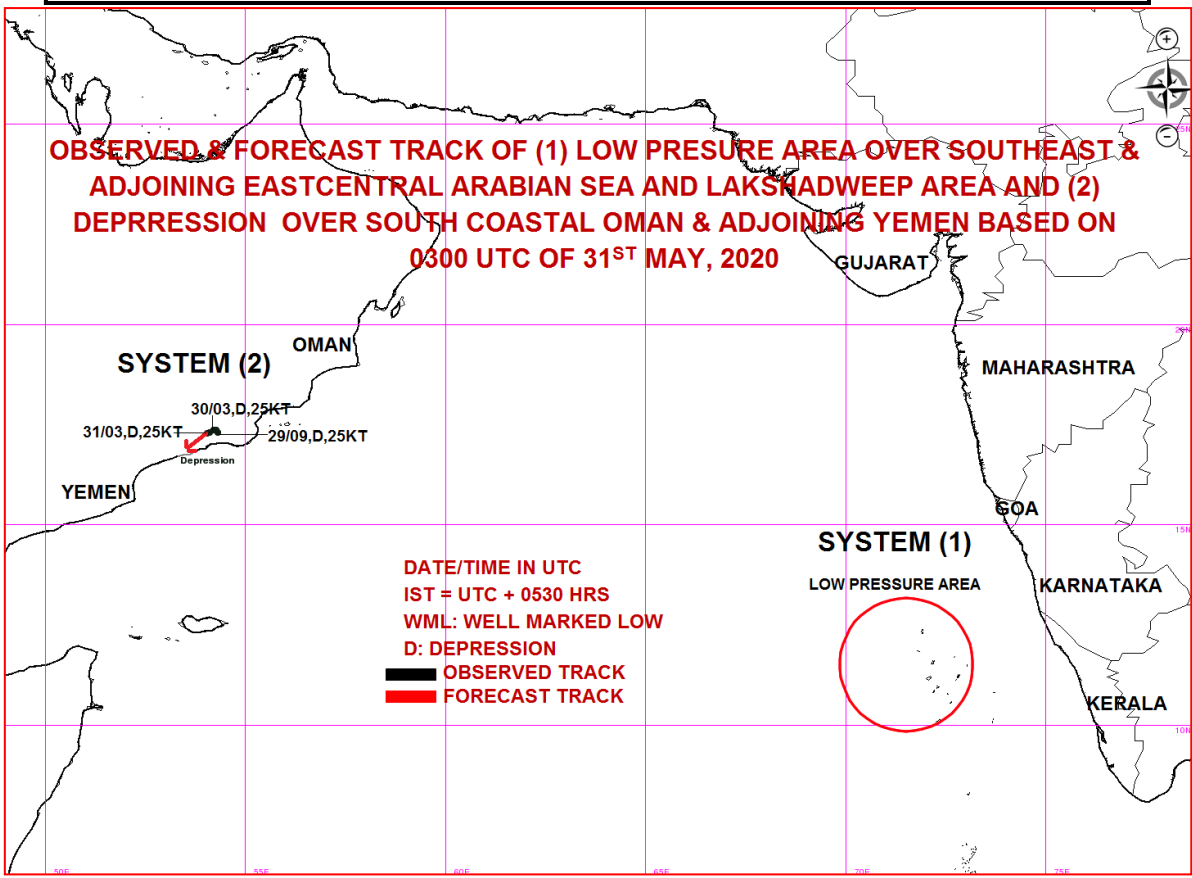
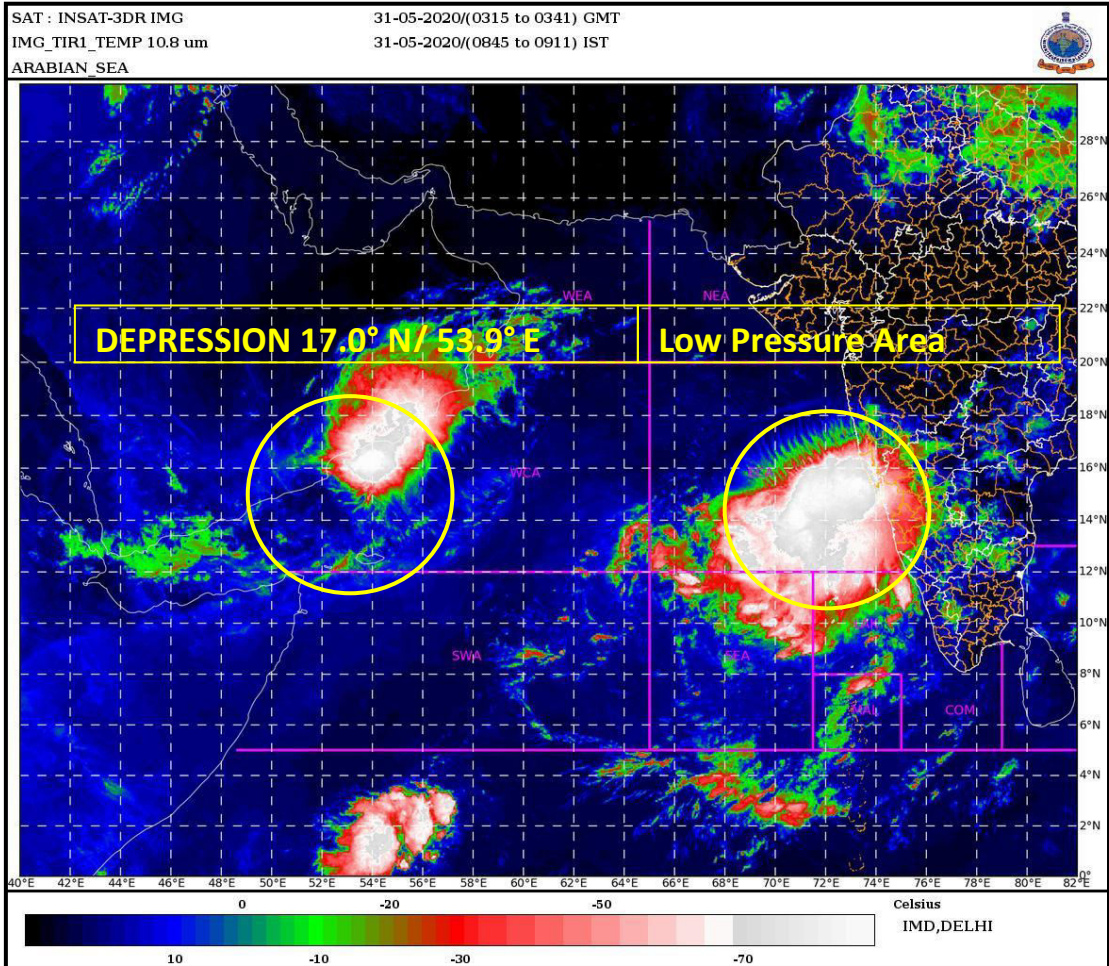
- Fishermen are advised not to venture into southeast Arabian Sea, Lakshadweep area and along & off Kerala coast till 2nd June; eastcentral Arabian Sea and along & off Karnataka coast till 3rd June ; eastcentral Arabian Sea along & off Maharashtra coast and northeast Arabian Sea along & off Gujarat coast during 3rd – 4th June. Fishermen out at Sea are advised to return to coasts by today, the 31st May.
- The fishermen are advised not to venture into Westcentral Arabian Sea along & off South Oman – Yemen coasts during next 24 hours.

The next bulletin will be issued at 1430 hrs IST of 31st May, 2020.

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

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

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



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



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

BULLETIN NO. : 09 (ARB/01/2020)

TIME OF ISSUE: 1400 HOURS IST

DATED: 31.05.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES, (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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

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

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

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

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

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: (1) Low pressure area over Southeast and adjoining Eastcentral Arabian Sea and Lakshadweep area: Pre-Cyclone Watch for south Gujarat-north Maharashtra coasts

(2) Depression over south coastal Oman and adjoining Yemen

(1) The **low pressure area** over Southeast & adjoining Eastcentral Arabian Sea and Lakshadweep area persists. It is very likely to concentrate into a Depression over Eastcentral and adjoining Southeast Arabian Sea during next 24 hours and **likely to intensify further into a Cyclonic Storm over Eastcentral Arabian Sea during the subsequent 24 hours**. It is very likely to move nearly northwards initially till 02nd June Morning and then recurve north-northeastwards and reach near north Maharashtra and south Gujarat coasts around 03rd June Morning.

(2) The **Depression** over south coastal Oman and adjoining Yemen moved westwards with a speed of 07 kmph during past 06 hours and lay centred at 1130 hrs IST of today, the 31st May, 2020 near latitude 17.0°N and longitude 53.5°E, about 60 km west of Salalah (Oman) and 160 km east-northeast of Al-Ghaydah (Yemen). It is very likely to maintain the intensity of Depression during next 12 hours and weaken gradually thereafter. It is very likely to move slowly west-southwestwards during next 24 hours.

Warnings:

(i) **Rainfall:**

Under the influence of the first system, light to moderate rainfall at most places with isolated heavy to very heavy falls very likely over Lakshadweep area, Kerala and coastal Karnataka on 31st May & 1st June. Light to moderate rainfall at most places with isolated heavy falls very likely over south Konkan & Goa on 31st May and isolated heavy to very heavy falls on 01st June. Light to moderate rainfall at most places with isolated heavy to very heavy falls very likely over Konkan & Goa on 02nd June and over south Konkan & Goa on 03rd June.

Light to moderate rainfall at most places with heavy to very heavy falls at a few places and extremely heavy falls at isolated places over north Konkan and north Madhya Maharashtra on 03rd & 04th 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.

Light to moderate rainfall at most places with isolated heavy to very heavy falls very likely over south Gujarat state, Daman, Diu, Dadra & Nagar Haveli on 03rd June and with heavy to very heavy falls at a few places and extremely heavy falls at isolated places over south Gujarat state, Daman, Diu, Dadra & Nagar Haveli and on 04th June.

(ii) Wind warning

Squally wind, speed reaching 45-55 kmph gusting to 65 kmph, very likely to prevail over Southeast & adjoining Eastcentral Arabian Sea, Lakshadweep area and along & off Kerala coast during next 48 hours. It will gradually increase becoming Gale wind speed reaching 65-75 kmph gusting to 85 kmph over eastcentral Arabian Sea & along and off Karnataka- south Maharashtra coasts from 2nd June morning and further becoming 90-100 kmph gusting 110 kmph over eastcentral and northeast Arabian Sea along & off Maharashtra & Gujarat coasts from 3rd morning.

Squally wind, speed reaching 45-55 kmph gusting to 65 kmph, very likely to prevail over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 24 hours.

(iii) Sea condition

The Sea condition is very likely to be rough to very rough over Southeast & adjoining Eastcentral Arabian Sea and Lakshadweep area during next 24 hours. It would become very rough to High over eastcentral & southeast Arabian Sea and along & off Karnataka- south Maharashtra coasts from 2nd June and High to very high over eastcentral and northeast Arabian Sea along & off Maharashtra & Gujarat coasts from 3rd June.

The sea condition is very likely to be rough to very rough over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 24 hours.

(iv) Fishermen Warning

- Fishermen are advised not to venture into southeast Arabian Sea, Lakshadweep area and along & off Kerala coast till 2nd June; eastcentral Arabian Sea and along & off Karnataka coast till 3rd June ; eastcentral Arabian Sea along & off Maharashtra coast and northeast Arabian Sea along & off Gujarat coast during 3rd – 4th June. Fishermen out at Sea are advised to return to coasts by today, the 31st May.
- The fishermen are advised not to venture into Westcentral Arabian Sea along & off South Oman – Yemen coasts during next 24 hours.

The next bulletin will be issued at 2030 hrs IST of today, the 31st May, 2020.

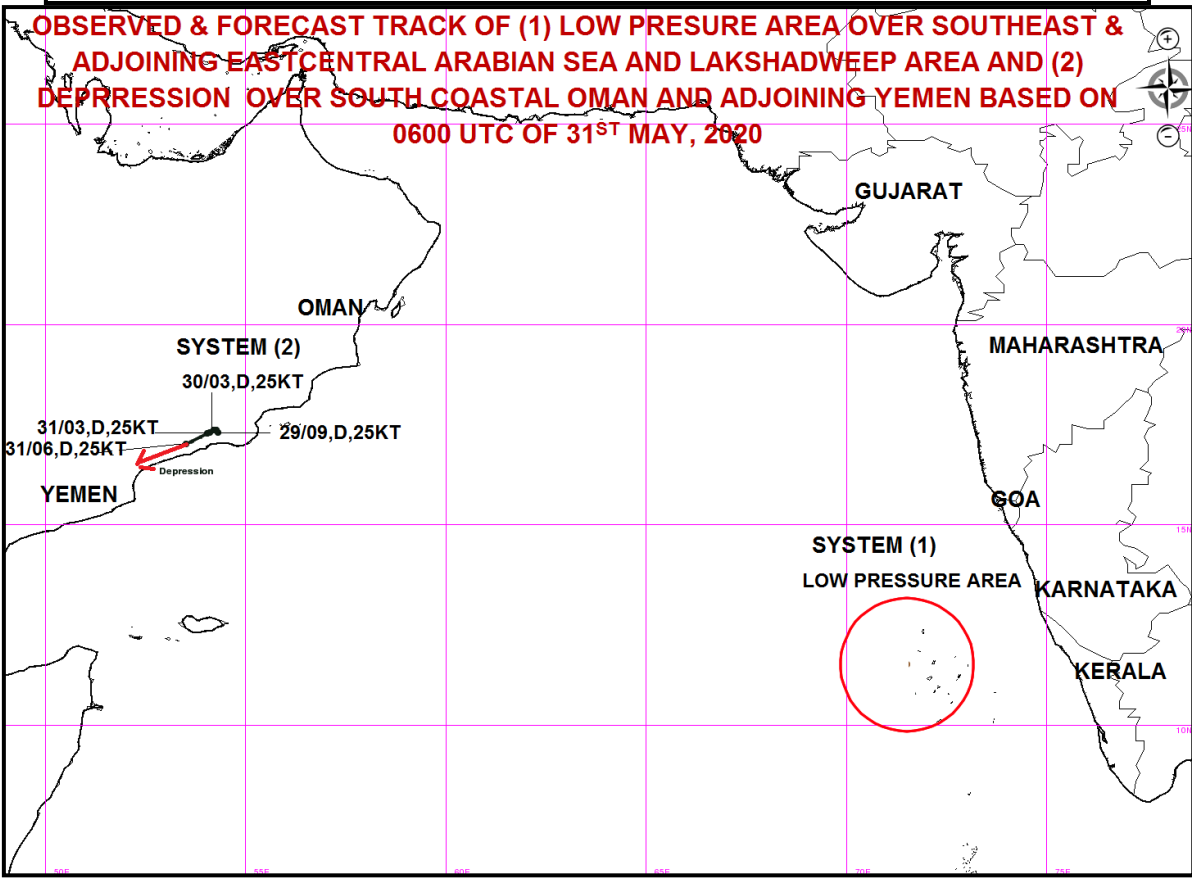
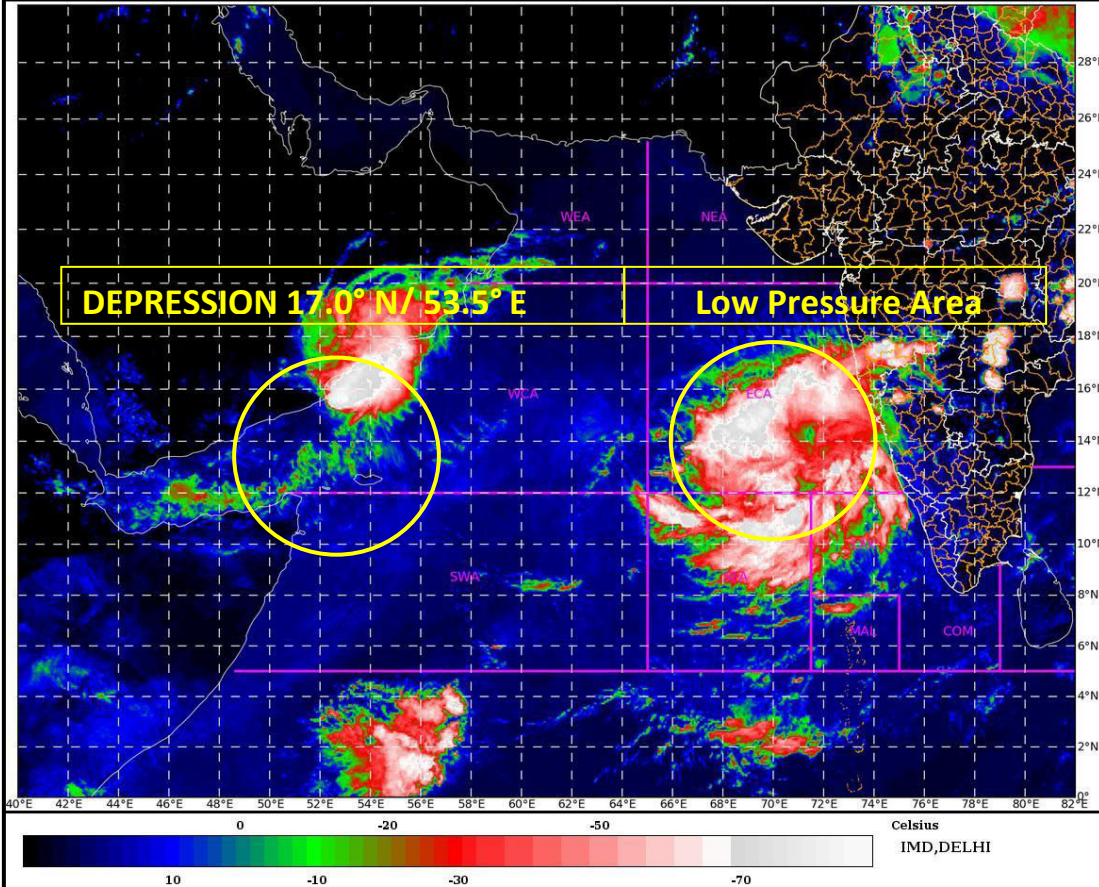
(Sunitha Devi. S)
Scientist-E, RSMC, New Delhi

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

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

SAT : INSAT-3D IMG
IMG_TIR1_TEMP 10.8 um
ARABIAN SEA

31-05-2020/(0730 to 0757) GMT
31-05-2020/(1300 to 1327) IST



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



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

BULLETIN NO. : 10 (ARB/01/2020)

TIME OF ISSUE: 2015 HOURS IST

DATED: 31.05.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES, (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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

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

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

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

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

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: (1) Well Marked Low pressure area over Southeast and adjoining Eastcentral Arabian Sea & Lakshadweep area: Pre-Cyclone Watch for south Gujarat-north Maharashtra coasts

(2) Depression over south coastal Oman & adjoining Yemen

(1) The low pressure area over Southeast and adjoining Eastcentral Arabian Sea & Lakshadweep area lay as **well marked low pressure area** over the same region at 1730 hours IST of today, the 31st May, 2020. It is very likely to concentrate into a Depression over Eastcentral and adjoining Southeast Arabian Sea during next 12 hours and **likely to intensify further into a Cyclonic Storm over Eastcentral Arabian Sea during the subsequent 24 hours**. It is very likely to move nearly northwards initially till 02nd June Morning and then recurve north-northeastwards and reach near north Maharashtra and south Gujarat coasts around 03rd June Morning.

(2) The **Depression** over south coastal Oman and adjoining Yemen moved westwards with a speed of 09 kmph during past 06 hours and lay centred at 1730 hrs IST of today, the 31st May, 2020 near latitude 17.0°N and longitude 53.0°E, about 110 km west of Salalah (Oman) and 120 km northeast of Al-Ghaydah (Yemen). It is very likely to maintain the intensity of Depression during next 12 hours and weaken gradually thereafter. It is very likely to move slowly west-southwestwards during next 24 hours.

Warnings:

(i) **Rainfall:**

Under the influence of the first system, light to moderate rainfall at most places with isolated heavy to very heavy falls very likely over Lakshadweep area, Kerala and coastal Karnataka till 1st June. Light to moderate rainfall at most places with isolated heavy falls very likely over south Konkan & Goa on 31st May and isolated heavy to very heavy falls on 01st June. Light to moderate rainfall at most places with isolated heavy to very heavy falls very likely over Konkan & Goa on 02nd June and over south Konkan & Goa on 03rd June.

Light to moderate rainfall at most places with heavy to very heavy falls at a few places and extremely heavy falls at isolated places over north Konkan and north Madhya Maharashtra on 03rd & 04th 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.

Light to moderate rainfall at most places with isolated heavy to very heavy falls very likely over south Gujarat state, Daman, Diu, Dadra & Nagar Haveli on 03rd June and with heavy to very heavy falls at a few places and extremely heavy falls at isolated places over south Gujarat state, Daman, Diu, Dadra & Nagar Haveli and on 04th June.

(ii) Wind warning

Squally wind, speed reaching 45-55 kmph gusting to 65 kmph, very likely to prevail over Southeast & adjoining Eastcentral Arabian Sea, Lakshadweep area and along & off Kerala coast during next 48 hours. It will gradually increase becoming Gale wind speed reaching 65-75 kmph gusting to 85 kmph over eastcentral Arabian Sea & along and off Karnataka- south Maharashtra coasts from 2nd June morning and further becoming 90-100 kmph gusting 110 kmph over eastcentral and northeast Arabian Sea along & off Maharashtra & Gujarat coasts from 3rd morning.

Squally wind, speed reaching 45-55 kmph gusting to 65 kmph, very likely to prevail over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 24 hours.

(iii) Sea condition

The Sea condition is very likely to be rough to very rough over Southeast & adjoining Eastcentral Arabian Sea and Lakshadweep area during next 24 hours. It would become very rough to High over eastcentral & southeast Arabian Sea and along & off Karnataka- south Maharashtra coasts from 2nd June and High to very high over eastcentral and northeast Arabian Sea along & off Maharashtra & Gujarat coasts from 3rd June.

The sea condition is very likely to be rough to very rough over westcentral Arabian Sea along & off South Oman – Yemen coasts during next 24 hours.

(iv) Fishermen Warning

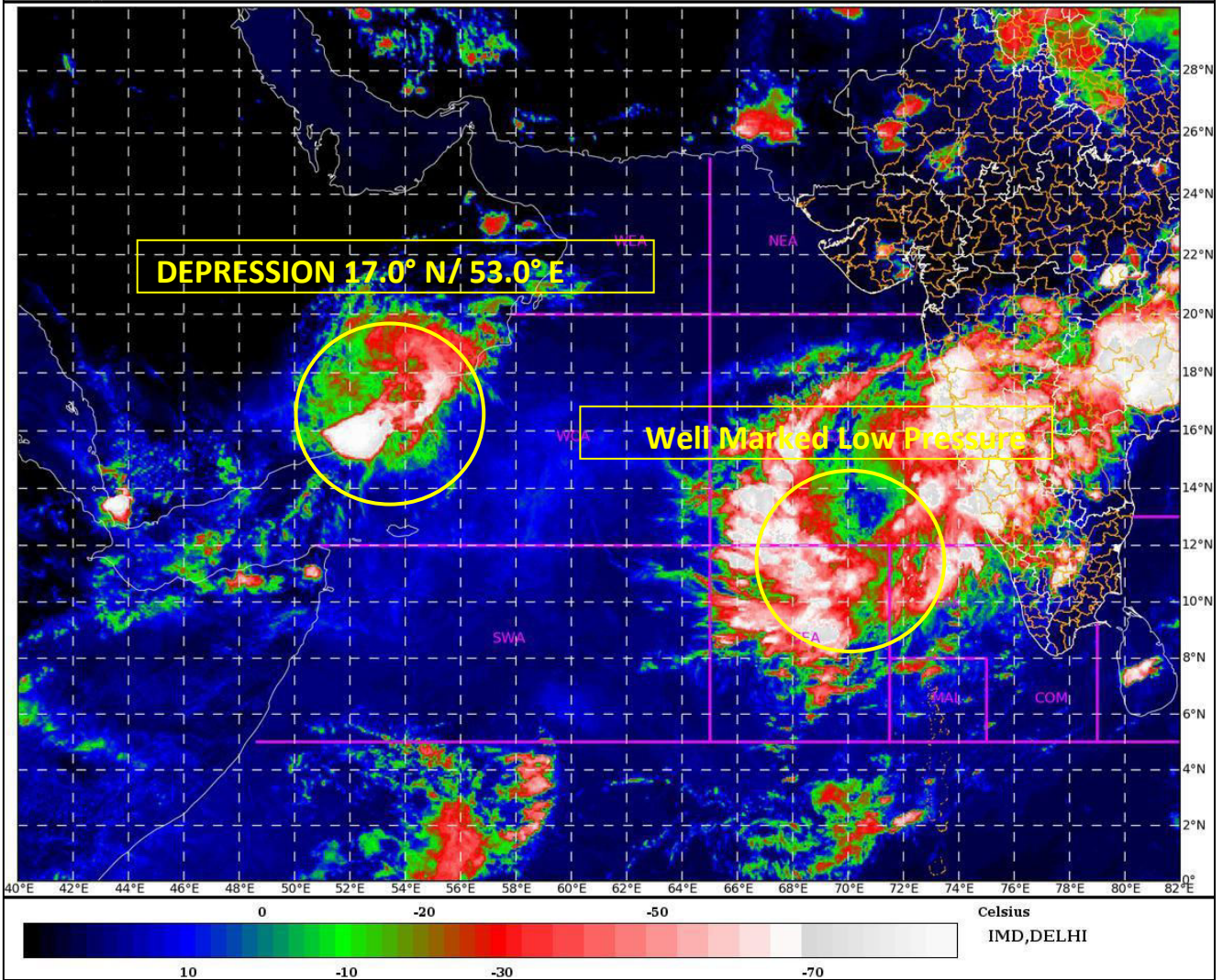
- Fishermen are advised not to venture into southeast Arabian Sea, Lakshadweep area and along & off Kerala coast till 2nd June; eastcentral Arabian Sea and along & off Karnataka coast till 3rd June ; eastcentral Arabian Sea along & off Maharashtra coast and northeast Arabian Sea along & off Gujarat coast during 3rd – 4th June. Fishermen out at Sea are advised to return to coasts by today, the 31st May.
- The fishermen are advised not to venture into Westcentral Arabian Sea along & off South Oman – Yemen coasts during next 24 hours.

The next bulletin will be issued at 0830 hrs IST of tomorrow, the 1st June, 2020.

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

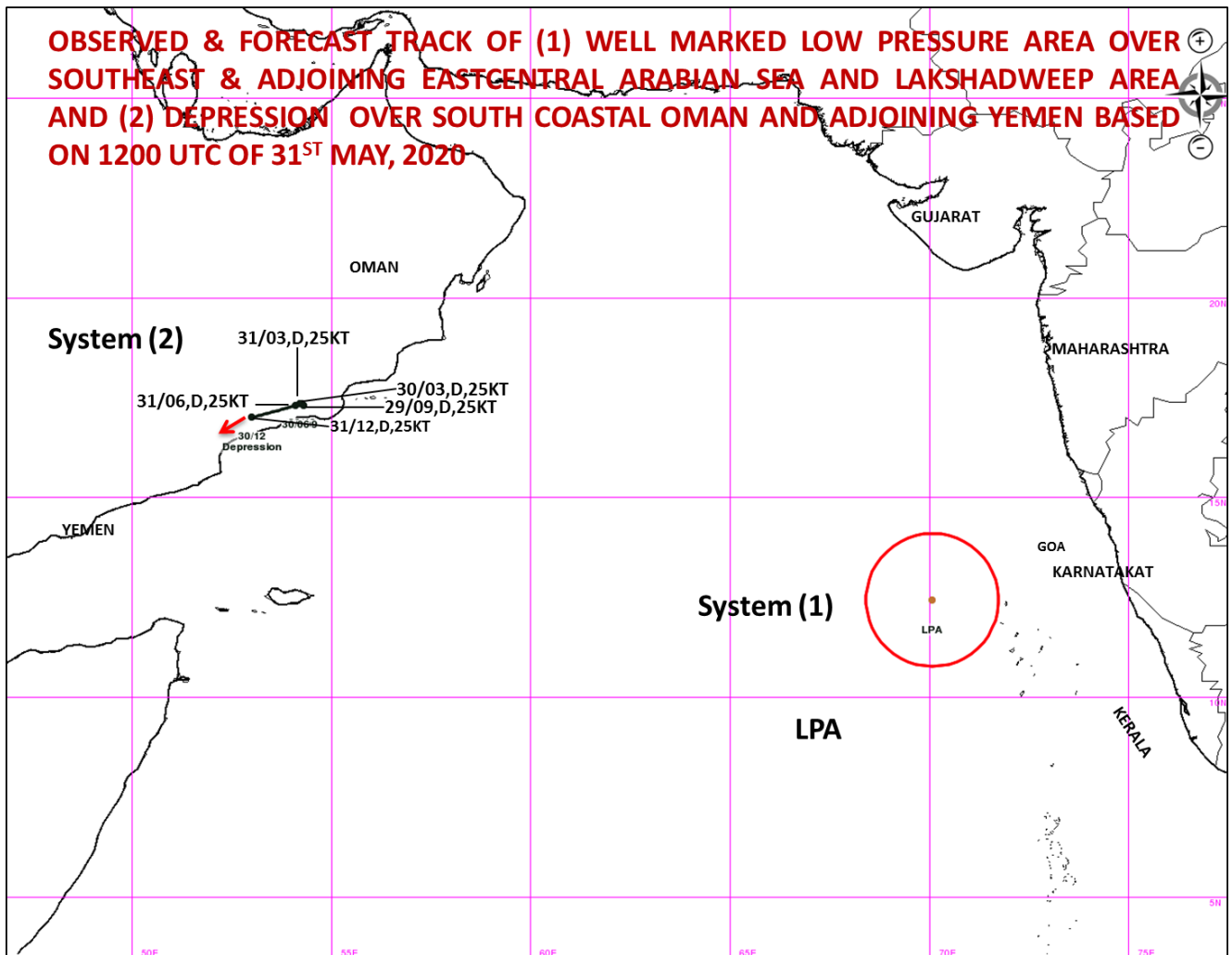
Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

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



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

OBSERVED & FORECAST TRACK OF (1) WELL MARKED LOW PRESSURE AREA OVER SOUTHEAST & ADJOINING EASTCENTRAL ARABIAN SEA AND LAKSHADWEEP AREA AND (2) DEPRESSION OVER SOUTH COASTAL OMAN AND ADJOINING YEMEN BASED ON 1200 UTC OF 31ST MAY, 2020



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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/02/2020)

TIME OF ISSUE: 0920 HOURS IST DATED: 01.06.2020
FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)
TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)
CONTROL ROOM NDMA (FAX.NO. 26701729)
CABINET SECRETARIAT (FAX.NO.23012284, 23018638)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)
DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)
ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0413-262184)
ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)
ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)
CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)
CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)
CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)
CHIEF SECRETARY, GUJARAT (FAX NO. 079-23250305)
CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)
CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: (1) Depression over Eastcentral and adjoining Southeast Arabian Sea: Pre-Cyclone Watch for north Maharashtra - south Gujarat coasts

(2) Well Marked Low over south coastal Oman and adjoining Yemen

(1) The well marked low pressure area over Southeast and adjoining Eastcentral Arabian Sea & Lakshadweep area concentrated into a **Depression** over Eastcentral and adjoining Southeast Arabian Sea and lay centred at 0530 hours IST of today the 1st June, 2020 near latitude 13.0°N and longitude 71.4°E about 370 km southwest of Panjim (Goa), 690km south-southwest of Mumbai (Maharashtra) and 920 km south-southwest of Surat (Gujarat). It is very likely to intensify into a Deep Depression over Eastcentral and adjoining Southeast Arabian Sea during next 12 hours and **intensify further into a Cyclonic Storm over Eastcentral Arabian Sea during the subsequent 24 hours**. It is very likely to move nearly northwards initially till 02nd June Morning and then recurve north-northeastwards and cross north Maharashtra and south Gujarat coasts between Harihareshwar (Raigad, Maharashtra) and Daman during evening/ night of 3rd June .

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
01.06.20/0530	13.0/71.4	40-50 gusting to 60	Depression
01.06.20/1130	13.3/71.2	45-55 gusting to 65	Depression
01.06.20/1730	13.7/71.0	50-60 gusting to 70	Deep Depression
01.06.20/2330	14.2/70.9	55-65 gusting to 75	Deep Depression
02.06.20/0530	14.9/70.8	60-70 gusting to 80	Cyclonic Storm
02.06.20/1730	15.7/70.9	80-90 gusting to 100	Cyclonic Storm
03.06.20/0530	17.0/71.4	90-100 gusting to 110	Severe Cyclonic Storm
03.06.20/1730	18.4/72.2	105-115 gusting to 125	Severe Cyclonic Storm
04.06.20/0530	19.6/72.9	95-105 gusting to 115	Severe Cyclonic Storm
04.06.20/1730	20.8/73.5	60-70 gusting to 80	Cyclonic Storm

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

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

(2) The **Depression** over south coastal Oman and adjoining Yemen remained practically stationary weakened into a well marked low pressure area and lay centred at 0530 hrs IST of today, the 1st June, 2020 over the same region. It is very likely to weaken further gradually into a low pressure area during next 24 hours.

Warnings:

(i) Rainfall:

Under the influence of the Depression, light to moderate rainfall at most places with isolated heavy falls very likely over Lakshadweep area, north Kerala and coastal Karnataka, today the 1st June. Light to moderate rainfall at most places with isolated heavy to very heavy falls at isolated places very likely over south Konkan & Goa on 01st June. Light to moderate rainfall at most places with isolated heavy to very heavy falls very likely over Konkan & Goa on 02nd June and over south Konkan & Goa on 03rd June.

Light to moderate rainfall at most places with heavy to very heavy falls at a few places and extremely heavy falls at isolated places over north Konkan and north Madhya Maharashtra on 03rd & 04th June.

Light to moderate rainfall at most places with isolated heavy to very heavy falls very likely over south Gujarat state, Daman, Diu, Dadra & Nagar Haveli on 03rd June and with heavy to very heavy falls at a few places and extremely heavy falls at isolated places over south Gujarat state, Daman, Diu, Dadra & Nagar Haveli and on 04th June.

(ii) Wind warning

Squally wind, speed reaching 40-50 kmph gusting to 60 kmph, is prevailing over Eastcentral and adjoining southeast Arabian Sea. It is very likely to become 50-60 kmph gusting to 70kmph over Eastcentral and adjoining southeast Arabian Sea during next 48 hours. It will gradually increase becoming Gale wind speed reaching 60-70 kmph gusting to 80 kmph over eastcentral Arabian Sea and along and off south Maharashtra coast from 2nd June morning and further becoming 105-115 kmph gusting to 125 kmph over eastcentral and northeast Arabian Sea along & off Maharashtra coast and 80-90 kmph gusting to 100 kmph along & off south Gujarat coast from 3rd June evening.

Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely prevail over eastcentral Arabian Sea along and off Karnataka-Goa coasts during next 48 hours.

Squally wind, speed reaching 40-50 kmph gusting to 60 kmph is likely to prevail over Lakshadweep area and along & off Kerala coast during next 48 hours.

(iii) Sea condition

The Sea condition is very likely to be rough to very rough over Eastcentral & adjoining Southeast Arabian Sea during next 48 hours. It would become very rough to High over eastcentral & southeast Arabian Sea and along & off Karnataka-Goa coasts during next 48 hours. It will be High to very High over Eastcentral Arabian Sea along and off Maharashtra coast from 2nd June.

The Sea condition is very likely to be very rough to High over northeast Arabian Sea along & off Gujarat coast from 3rd June.

(iv) Fishermen Warning

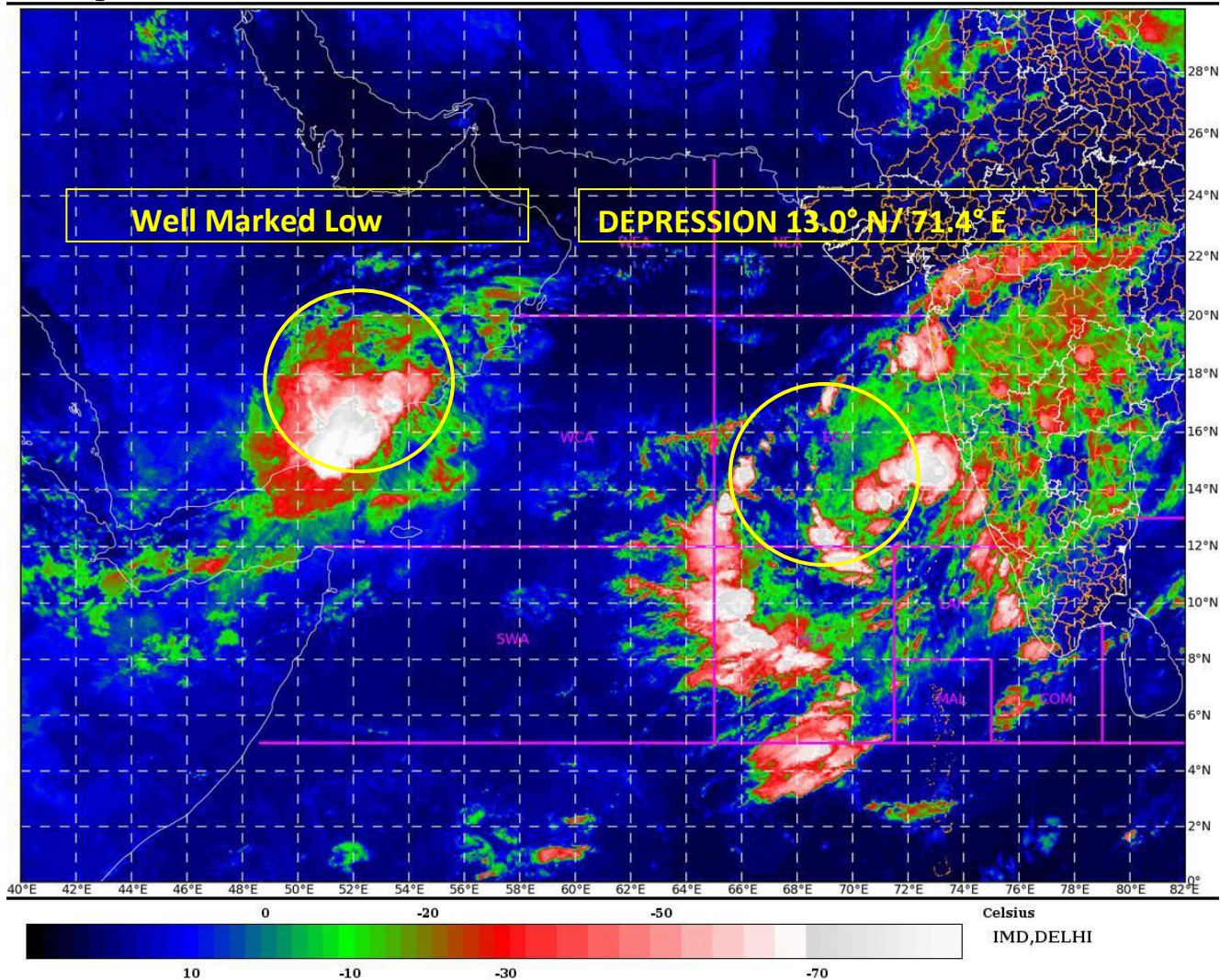
Fishermen are advised not to venture into southeast Arabian Sea, Lakshadweep area and along & off Kerala coast during next 48 hours; eastcentral Arabian Sea and along & off Karnataka-Goa coasts till 3rd June; eastcentral Arabian Sea along & off Maharashtra coast and northeast Arabian Sea along & off Gujarat coast during 3rd – 4th June.

The next bulletin will be issued at 1130 hrs IST of today, the 1st June, 2020.

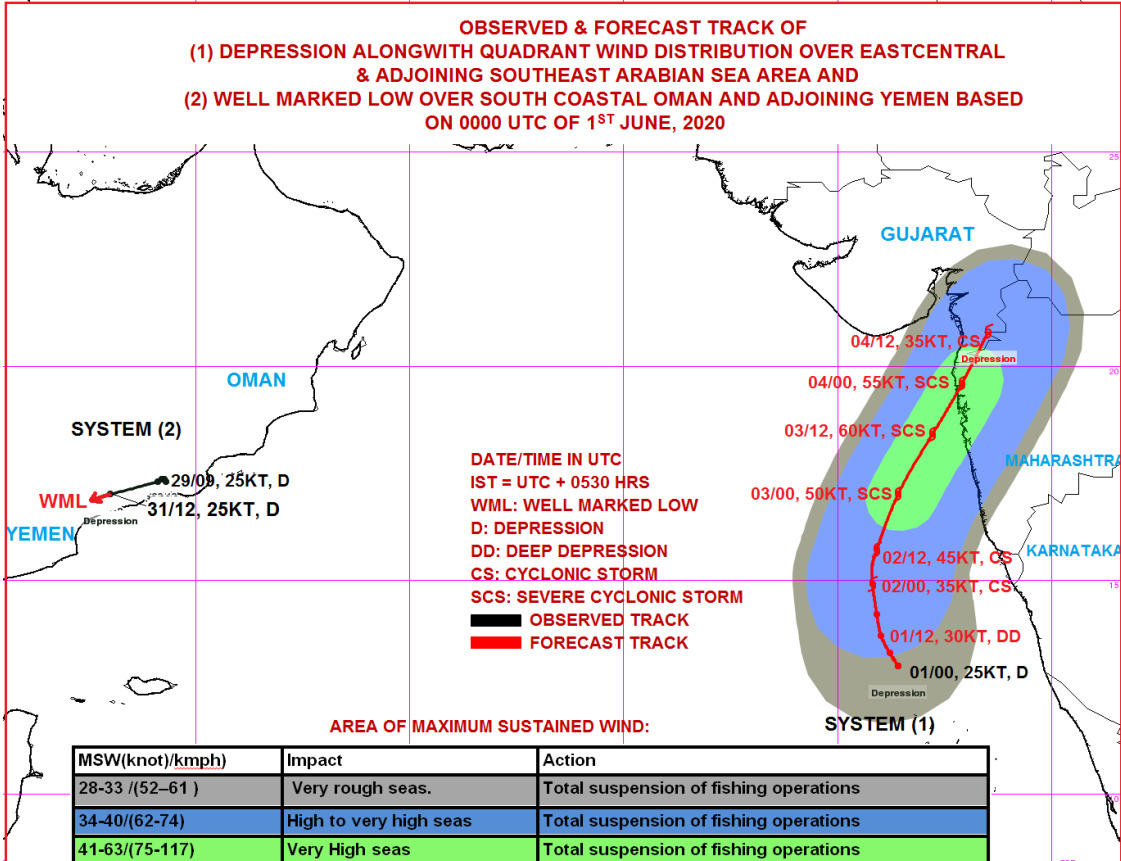
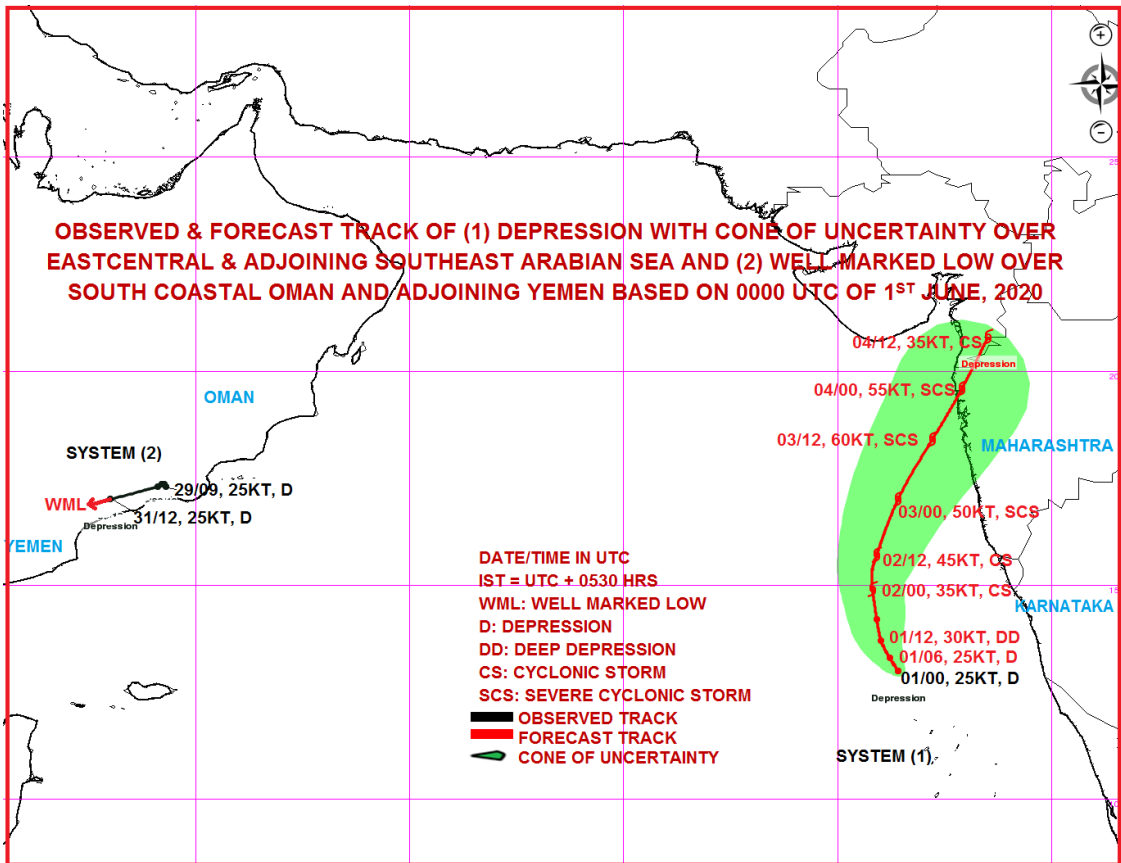
**(Ananda Kumar Das)
Scientist-E, RSMC, New Delhi**

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

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



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



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



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

BULLETIN NO. : 12 (ARB/02/2020)

TIME OF ISSUE: 1150 HOURS IST

DATED: 01.06.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES, (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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

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

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

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

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

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: Depression over Eastcentral and adjoining Southeast Arabian Sea: Cyclone Alert for north Maharashtra - south Gujarat coasts: Yellow message

The **depression** over Eastcentral and adjoining Southeast Arabian Sea moved nearly northward with a speed of 07 kmph during past 3 hours and lay centred at 0830 hours IST of today the 1st June, 2020 near latitude 13.2°N and longitude 71.4°E about 360 km southwest of Panjim (Goa), 670km south-southwest of Mumbai (Maharashtra) and 900 km south-southwest of Surat (Gujarat).

It is very likely to intensify into a Deep Depression over Eastcentral and adjoining Southeast Arabian Sea during next 12 hours and **intensify further into a Cyclonic Storm over Eastcentral Arabian Sea during the subsequent 24 hours**. It is very likely to move nearly northwards initially till 02nd June Morning and then recurve north-northeastwards and cross north Maharashtra and south Gujarat coasts between Harihareshwar (Raigad, Maharashtra) and Daman during evening/ night of 3rd June .

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
01.06.20/0830	13.2/71.4	40-50 gusting to 60	Depression
01.06.20/1130	13.3/71.2	45-55 gusting to 65	Depression
01.06.20/1730	13.7/71.0	50-60 gusting to 70	Deep Depression
01.06.20/2330	14.2/70.9	55-65 gusting to 75	Deep Depression
02.06.20/0530	14.9/70.8	60-70 gusting to 80	Cyclonic Storm
02.06.20/1730	15.7/70.9	80-90 gusting to 100	Cyclonic Storm
03.06.20/0530	17.0/71.4	90-100 gusting to 110	Severe Cyclonic Storm
03.06.20/1730	18.4/72.2	105-115 gusting to 125	Severe Cyclonic Storm
04.06.20/0530	19.6/72.9	95-105 gusting to 115	Severe Cyclonic Storm
04.06.20/1730	20.8/73.5	60-70 gusting to 80	Cyclonic Storm

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

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

Warnings:

(i) **Rainfall:**

Under the influence of the Depression, light to moderate rainfall at most places with isolated heavy falls very likely over Lakshadweep area, north Kerala and coastal Karnataka, today the 1st June. Light to moderate rainfall at most places with isolated heavy to very heavy falls at isolated places very likely over south Konkan & Goa on 01st June. Light to moderate rainfall at most places with isolated heavy to very heavy falls very likely over Konkan & Goa on 02nd June and over south Konkan & Goa on 03rd June.

Light to moderate rainfall at most places with heavy to very heavy falls at a few places and extremely heavy falls at isolated places over north Konkan and north Madhya Maharashtra on 03rd & 04th June.

Light to moderate rainfall at most places with isolated heavy to very heavy falls very likely over south Gujarat state, Daman, Diu, Dadra & Nagar Haveli on 03rd June and with heavy to very heavy falls at a few places and extremely heavy falls at isolated places over south Gujarat state, Daman, Diu, Dadra & Nagar Haveli and on 04th June.

(ii) **Wind warning**

Squally wind, speed reaching 40-50 kmph gusting to 60 kmph, is prevailing over Eastcentral and adjoining southeast Arabian Sea. It is very likely to become 50-60 kmph gusting to 70kmph over Eastcentral and adjoining southeast Arabian Sea during next 48 hours. It will gradually increase becoming Gale wind speed reaching 60-70 kmph gusting to 80 kmph over eastcentral Arabian Sea and along and off south Maharashtra coast from 2nd June morning and further becoming 105-115 kmph gusting to 125 kmph over eastcentral and northeast Arabian Sea along & off Maharashtra coast (Raigad, Mumbai, Palghar, Thane), 90-100 kmph gusting to 110 kmph along & off Valsad, Navsari districts of Gujarat, and 80-90 kmph gusting to 100 kmph along & off Ratnagiri, Sindhudurg districts of Maharashtra, 70-80 kmph gusting to 90 kmph along & off Surat & Bharuch districts of south Gujarat from 3rd June evening.

Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely prevail over eastcentral Arabian Sea along and off Karnataka-Goa coasts during next 48 hours.

Squally wind, speed reaching 40-50 kmph gusting to 60 kmph is likely to prevail over Lakshadweep area and along & off Kerala coast during next 48 hours.

(iii) **Sea condition**

The Sea condition is very likely to be rough to very rough over Eastcentral & adjoining Southeast Arabian Sea during next 48 hours. It would become very rough to High over eastcentral & southeast Arabian Sea and along & off Karnataka-Goa coasts during next 48 hours. It will be High to very High over Eastcentral Arabian Sea along and off Maharashtra coast from 2nd June.

The Sea condition is very likely to be very rough to High over northeast Arabian Sea along & off Gujarat coast from 3rd June.

(iv) **Fishermen Warning**

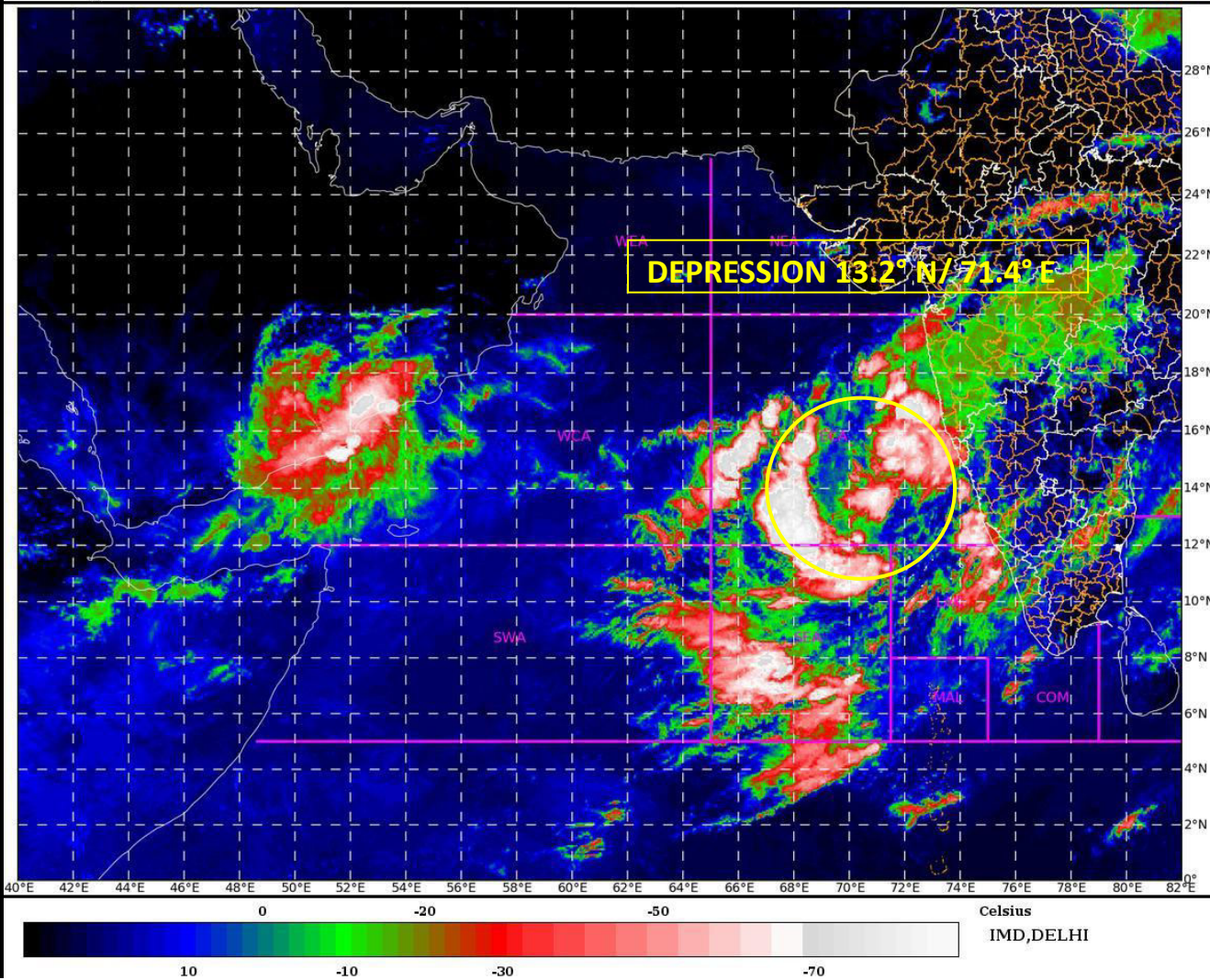
Fishermen are advised not to venture into southeast Arabian Sea, Lakshadweep area and along & off Kerala coast during next 48 hours; eastcentral Arabian Sea and along & off Karnataka-Goa coasts till 3rd June; eastcentral Arabian Sea along & off Maharashtra coast and northeast Arabian Sea along & off Gujarat coast during 3rd – 4th June.

The next bulletin will be issued at 1430 hrs IST of today, the 1st June, 2020.

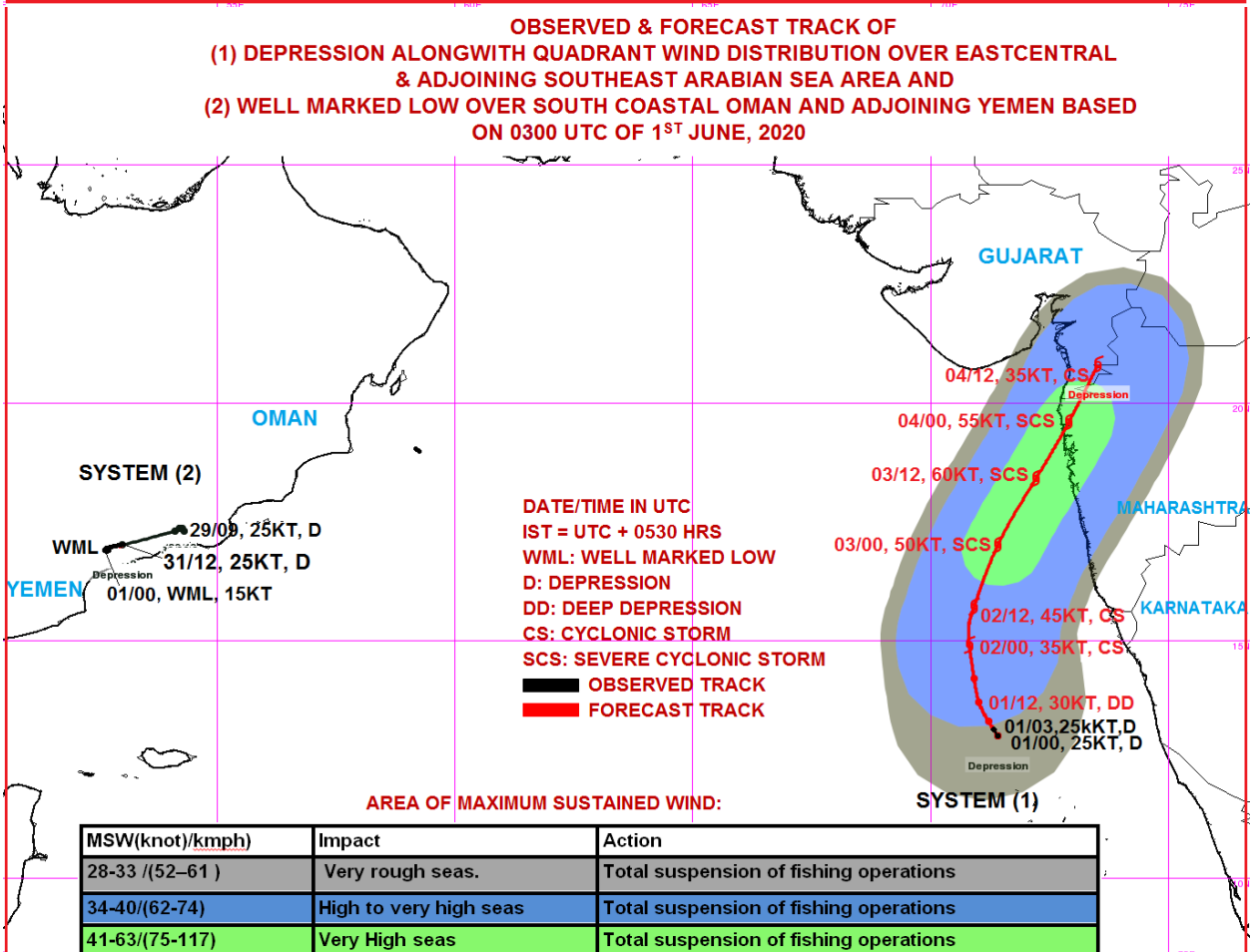
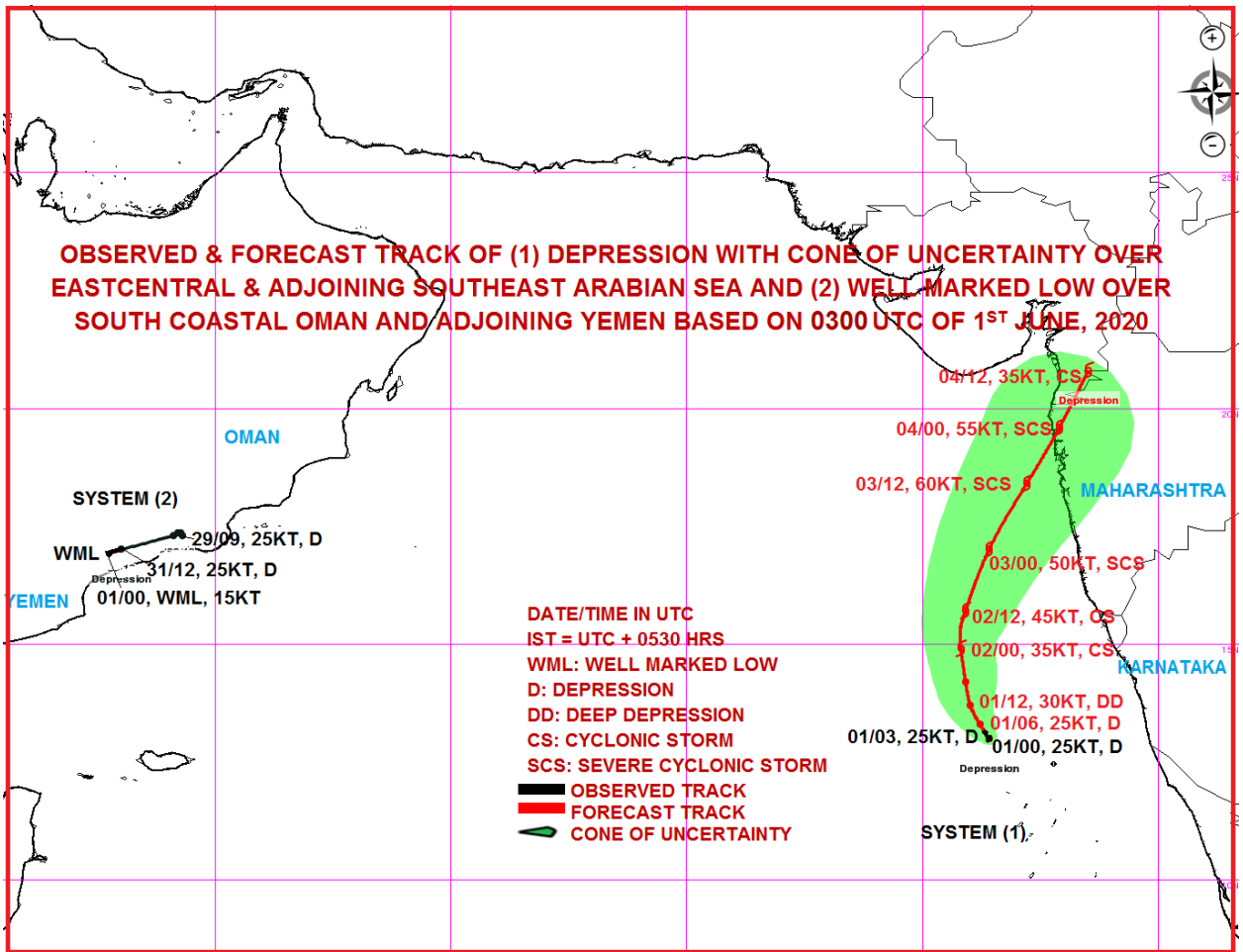
(Sunitha Devi)
Scientist-E, RSMC, New Delhi

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

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



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



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



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

BULLETIN NO. : 13 (ARB/02/2020)

TIME OF ISSUE: 1440 HOURS IST

DATED: 01.06.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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

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

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

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

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

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: Depression over Eastcentral and adjoining Southeast Arabian Sea: Cyclone Alert for north Maharashtra - south Gujarat coasts: Yellow message

The **depression** over Eastcentral and adjoining Southeast Arabian Sea moved north-northwestwards with a speed of 13 kmph during past 06 hours and lay centred at 1130 hours IST of today the 1st June, 2020 near latitude 13.7°N and longitude 71.2°E about 340 km southwest of Panjim (Goa), 630km south-southwest of Mumbai (Maharashtra) and 850 km south-southwest of Surat (Gujarat).

It is very likely to intensify into a Deep Depression over Eastcentral and adjoining Southeast Arabian Sea during next 06 hours and **intensify further into a Cyclonic Storm over Eastcentral Arabian Sea during the subsequent 24 hours**. It is very likely to move nearly northwards initially till 02nd June Morning and then recurve north-northeastwards and cross north Maharashtra and south Gujarat coasts between Harihareshwar (Raigad, Maharashtra) and Daman during the afternoon of 3rd June .

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
01.06.20/1130	13.7/71.2	45-55 gusting to 65	Depression
01.06.20/1730	14.2/71.0	50-60 gusting to 70	Deep Depression
01.06.20/2330	14.7/70.9	55-65 gusting to 75	Deep Depression
02.06.20/0530	15.1/70.9	60-70 gusting to 80	Cyclonic Storm
02.06.20/1130	15.6/71.0	80-90 gusting to 100	Cyclonic Storm
02.06.20/2330	16.8/71.5	90-100 gusting to 110	Severe Cyclonic Storm
03.06.20/1130	18.9/72.7	105-115 gusting to 125	Severe Cyclonic Storm
03.06.20/2330	20.5/74.3	70-80 gusting to 90	Cyclonic Storm
04.06.20/1130	22.0/76.0	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) Rainfall:

Under the influence of the system, light to moderate rainfall at most places with isolated heavy falls very likely over Lakshadweep area, north Kerala and coastal Karnataka, today the 1st June. Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over south Konkan & Goa on 01st June. Light to moderate rainfall at most places with isolated heavy to very heavy falls very likely over Konkan & Goa on 02nd June and over south Konkan & Goa on 03rd June.

Light to moderate rainfall at most places with heavy to very heavy falls at a few places and extremely heavy falls at isolated places over north Konkan and north Madhya Maharashtra on 03rd & 04th June.

Light to moderate rainfall at most places with isolated heavy to very heavy falls very likely over south Gujarat state, Daman, Dadra & Nagar Haveli on 03rd June and with heavy to very heavy falls at a few places and extremely heavy falls at isolated places over south Gujarat state, Daman, Dadra & Nagar Haveli and on 04th June.

(ii) Wind warning

Squally wind, speed reaching 45-55 kmph gusting to 65 kmph, is prevailing over Eastcentral and adjoining southeast Arabian Sea. It is very likely to become 50-60 kmph gusting to 70kmph over Eastcentral and adjoining southeast Arabian Sea during next 48 hours. It will gradually increase becoming Gale wind speed reaching 60-70 kmph gusting to 80 kmph over eastcentral Arabian Sea and along and off south Maharashtra coast from 2nd June morning and further becoming 105-115 kmph gusting to 125 kmph over eastcentral and northeast Arabian Sea along & off Maharashtra coast (Raigad, Mumbai, Palghar, Thane), 90-100 kmph gusting to 110 kmph along & off Valsad, Navsari districts of Gujarat, and 80-90 kmph gusting to 100 kmph along & off Ratnagiri, Sindhudurg districts of Maharashtra, 70-80 kmph gusting to 90 kmph along & off Surat & Bharuch districts of south Gujarat from 3rd June afternoon.

Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely prevail over eastcentral Arabian Sea along and off Karnataka-Goa coasts during next 48 hours.

Squally wind, speed reaching 40-50 kmph gusting to 60 kmph is likely to prevail over Lakshadweep area and along & off Kerala coast during next 48 hours.

(iii) Sea condition

The Sea condition is very likely to be rough to very rough over Eastcentral & adjoining Southeast Arabian Sea during next 48 hours. It would become very rough to High over eastcentral & southeast Arabian Sea and along & off Karnataka-Goa coasts during next 48 hours. It will be High to very High over Eastcentral Arabian Sea along and off Maharashtra coast from 2nd June.

The Sea condition is very likely to be very rough to High over northeast Arabian Sea along & off Gujarat coast from 3rd June.

(iv) Fishermen Warning

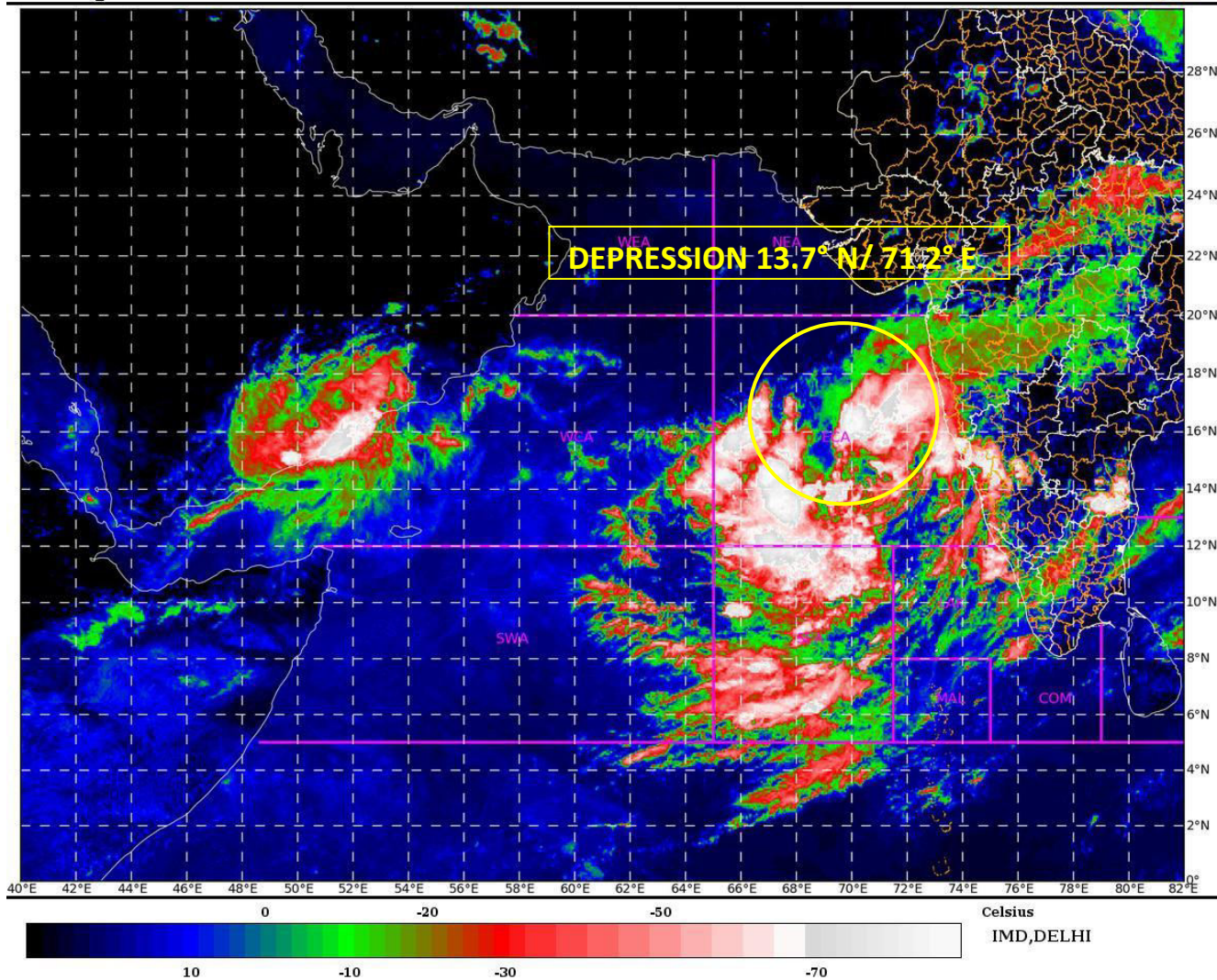
Fishermen are advised not to venture into southeast Arabian Sea, Lakshadweep area and along & off Kerala coast during next 48 hours; eastcentral Arabian Sea and along & off Karnataka-Goa coasts till 3rd June; eastcentral Arabian Sea along & off Maharashtra coast and northeast Arabian Sea along & off Gujarat coast during 3rd – 4th June.

The next bulletin will be issued at 2030 hrs IST of today, the 1st June, 2020.

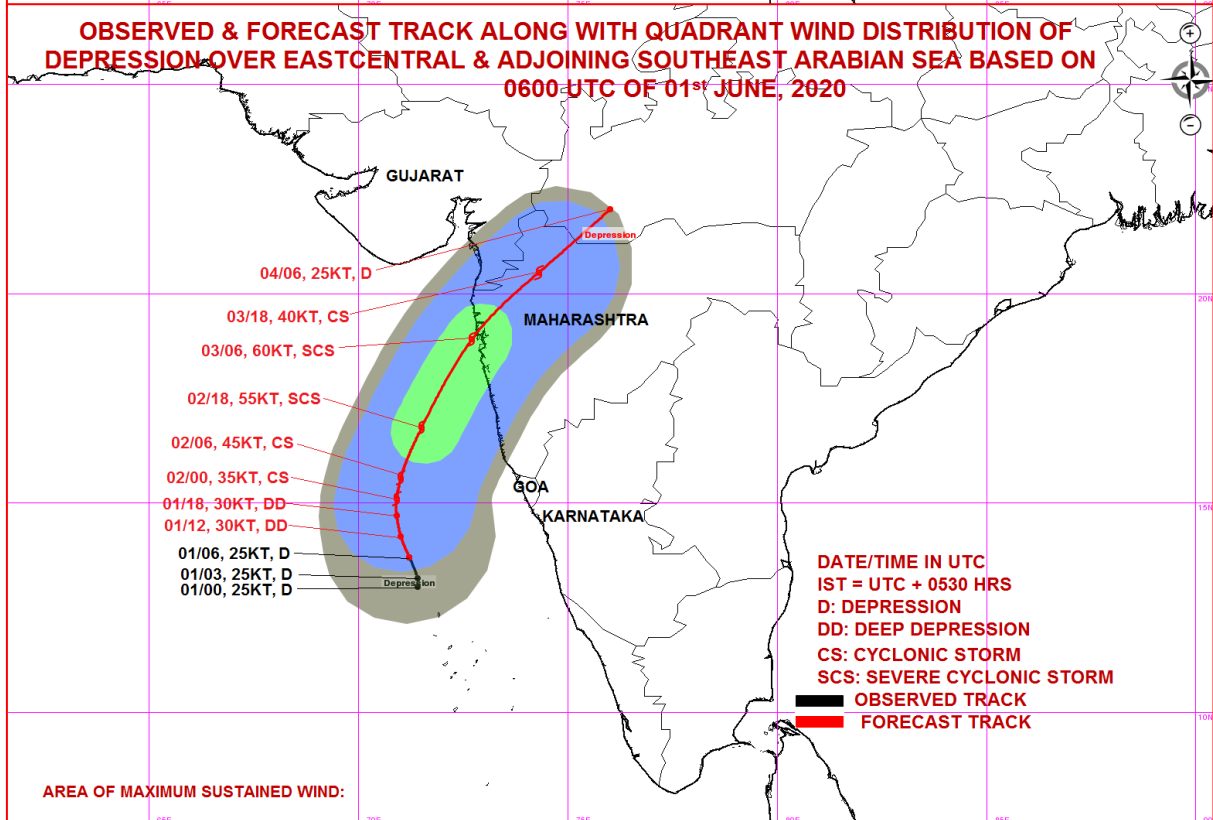
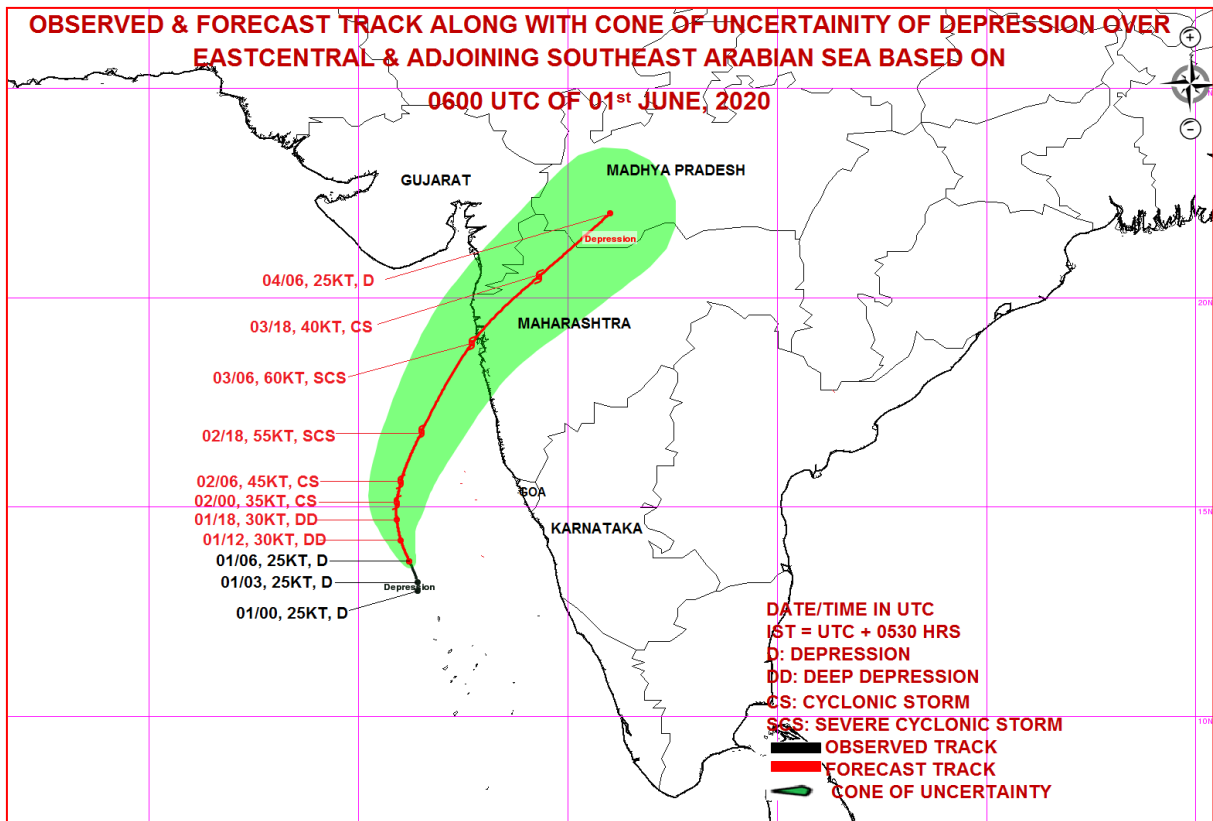
(Sunitha Devi)
Scientist-E, RSMC, New Delhi

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

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



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



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

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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/02/2020)

TIME OF ISSUE: 2100 HOURS IST

DATED: 01.06.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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

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

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

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

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

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: Depression over Eastcentral Arabian Sea: Cyclone Alert for north Maharashtra - south Gujarat coasts: Yellow message

The **Depression** over Eastcentral and adjoining Southeast Arabian Sea moved north-northwestwards with a speed of 09 kmph during past 06 hours and lay centred at 1730 hours IST of today the 01st June, 2020 over Eastcentral Arabian Sea near latitude 14.2°N and longitude 71.2°E about 310 km southwest of Panjim (Goa), 570km south-southwest of Mumbai (Maharashtra) and 800 km south-southwest of Surat (Gujarat).

It is very likely to intensify into a Deep Depression during next 12 hours and **intensify further into a Cyclonic Storm over Eastcentral Arabian Sea during the subsequent 24 hours**. It is very likely to move nearly northwards initially till 02nd June Noon and then recurve north-northeastwards and cross north Maharashtra and south Gujarat coasts between Harihareshwar (Raigad, Maharashtra) and Daman during the afternoon of 03rd June .

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
01.06.20/1730	14.2/71.2	45-55 gusting to 65	Depression
01.06.20/2330	14.7/71.2	45-55 gusting to 65	Depression
02.06.20/0530	15.1/71.2	55-65 gusting to 75	Deep Depression
02.06.20/1130	15.6/71.3	70-80 gusting to 90	Cyclonic Storm
02.06.20/1730	16.2/71.5	85-95 gusting to 105	Severe Cyclonic Storm
03.06.20/0530	17.5/72.1	95-105 gusting to 115	Severe Cyclonic Storm
03.06.20/1730	19.8/73.5	70-80 gusting to 90	Cyclonic Storm
04.06.20/0530	21.2/75.0	55-65 gusting to 75	Deep Depression
04.06.20/1730	22.5/76.7	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) Rainfall:

Light to moderate rainfall at most places with isolated heavy falls very likely over Lakshadweep area, north Kerala and coastal Karnataka during next 12 hours. Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over south Konkan & Goa during 01st – 03rd June.

Light to moderate rainfall at most places with isolated heavy falls on 02nd June; with heavy to very heavy falls at a few places and **extremely heavy falls** at isolated places on 03rd & 04th June very likely over north Konkan and north Madhya Maharashtra.

Light to moderate rainfall at most places with isolated heavy to very heavy falls very likely over south Gujarat state, Daman, Dadra & Nagar Haveli on 03rd June and with heavy to very heavy falls at a few places and **extremely heavy falls** at isolated places over south Gujarat region, Daman, Dadra & Nagar Haveli and on 04th June.

(ii) Wind warning

Squally wind, speed reaching 45-55 kmph gusting to 65 kmph, is prevailing over Eastcentral and adjoining southeast Arabian Sea. It is very likely to become 50-60 kmph gusting to 70kmph over Eastcentral Arabian Sea by 02nd June morning. It will gradually increase becoming Gale wind, speed reaching 60-70 kmph gusting to 80 kmph, over eastcentral Arabian Sea off south Maharashtra coast from 02nd June Noon and further becoming 95-105 kmph gusting to 115 kmph over eastcentral and adjoining northeast Arabian Sea along & off Maharashtra (Raigad, Mumbai, Palghar, Thane) coast from 03rd June afternoon. Gale wind speed reaching 80-90 kmph gusting to 100 kmph likely along & off Valsad, Navsari districts of Gujarat and Ratnagiri, Sindhudurg districts of Maharashtra, and 70-80 kmph gusting to 90 kmph along & off Surat & Bharuch districts of south Gujarat from 3rd June afternoon.

Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely prevail over eastcentral Arabian Sea along and off Karnataka-Goa coasts during next 48 hours.

Squally wind, speed reaching 40-50 kmph gusting to 60 kmph is likely to prevail over Lakshadweep area and along & off Kerala coast during next 24 hours.

(iii) Sea condition

The Sea condition is very likely to be rough to very rough over Eastcentral & adjoining Southeast Arabian Sea during next 18 hours. It would become very rough to High over eastcentral Arabian Sea from 02nd June Noon. It will become High to very High over Eastcentral Arabian Sea along & off Maharashtra coast from 02nd June Evening.

The Sea condition is very likely to be very rough to High over northeast Arabian Sea along & off south Gujarat coast on 03rd June.

(iv) Fishermen Warning

Fishermen are advised not to venture into southeast Arabian Sea, Lakshadweep area and along & off Kerala coast during next 24 hours; eastcentral and Northeast Arabian Sea and along & off Karnataka-Goa-Maharashtra-south Gujarat coasts till 03rd June.

The next bulletin will be issued at 0230 hrs IST of tomorrow, the 2nd June, 2020.

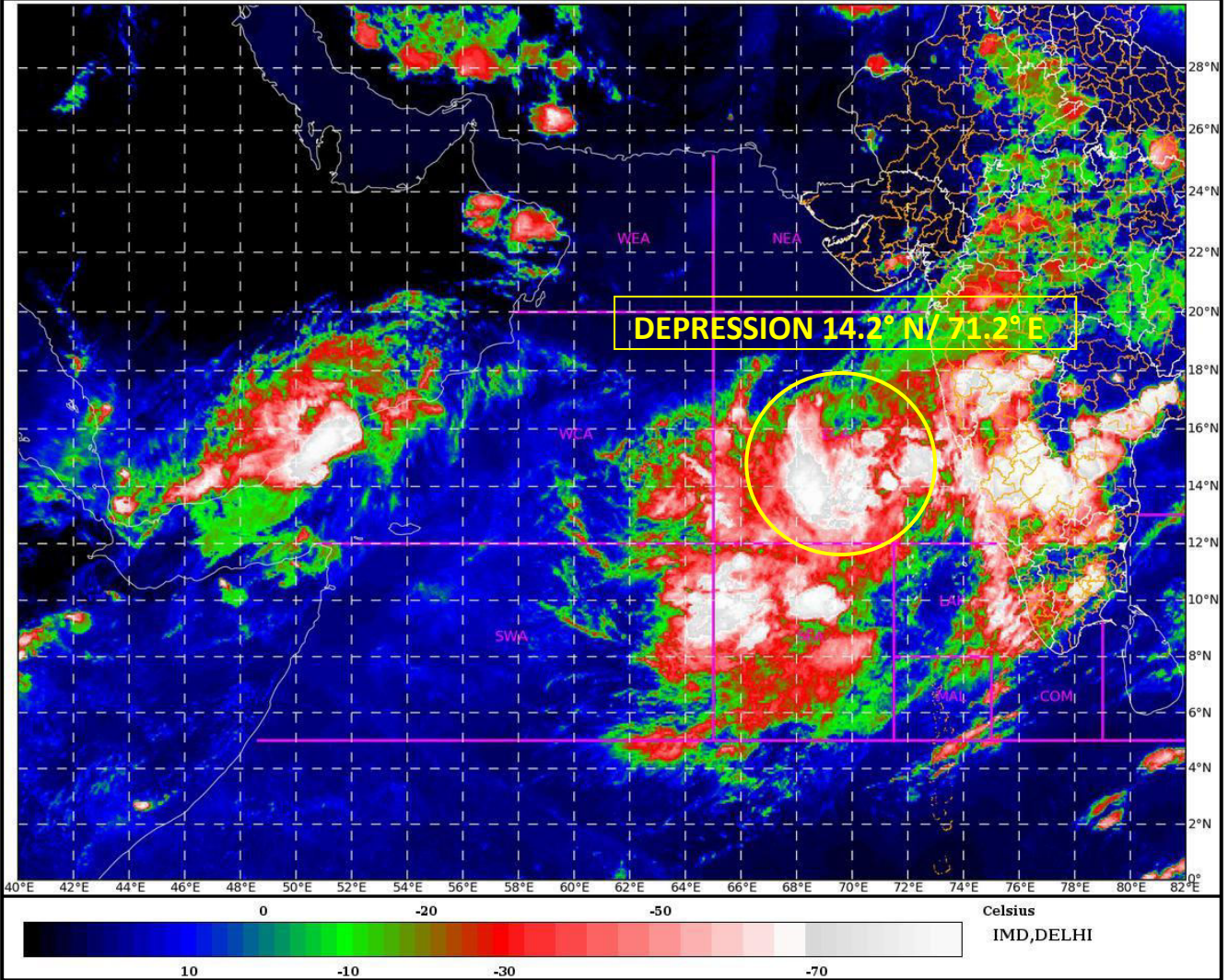
(Sunitha Devi)
Scientist-E, RSMC, New Delhi

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

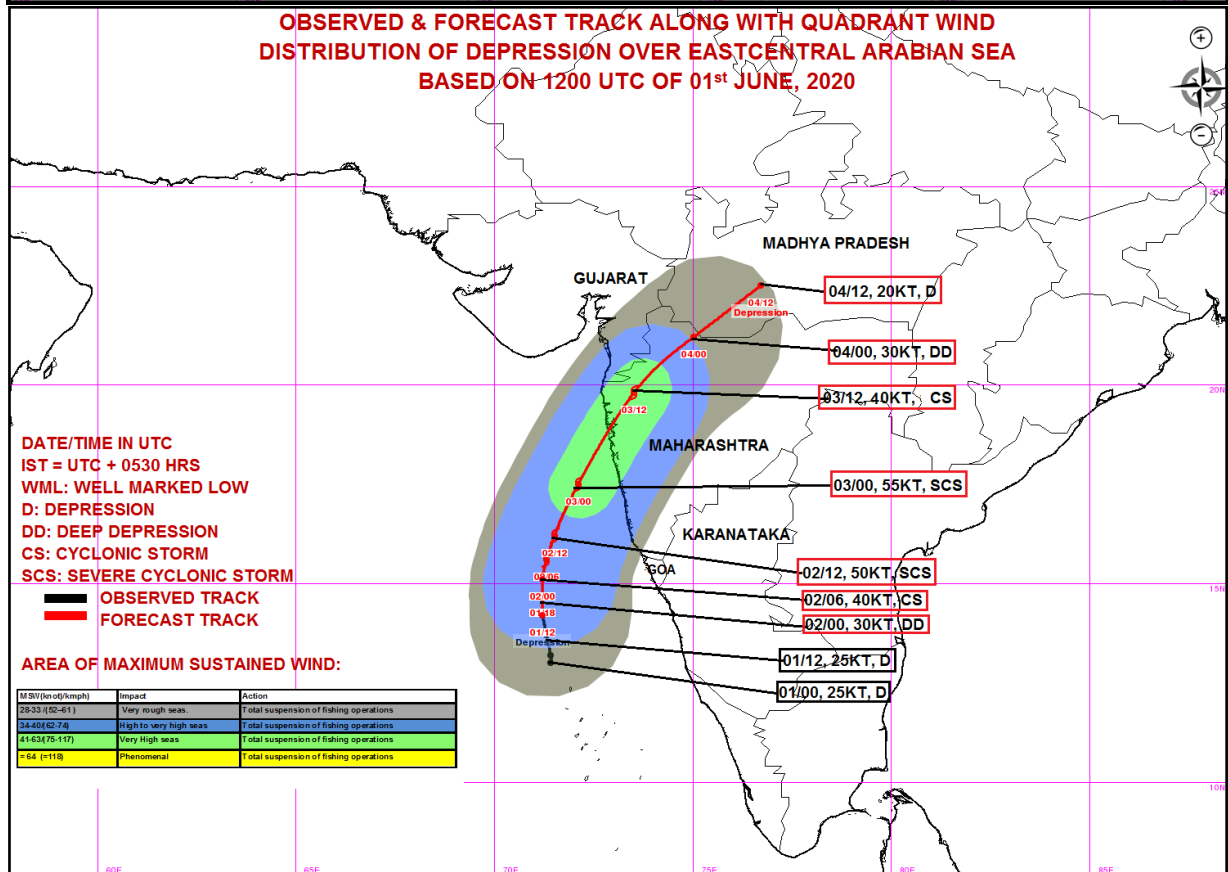
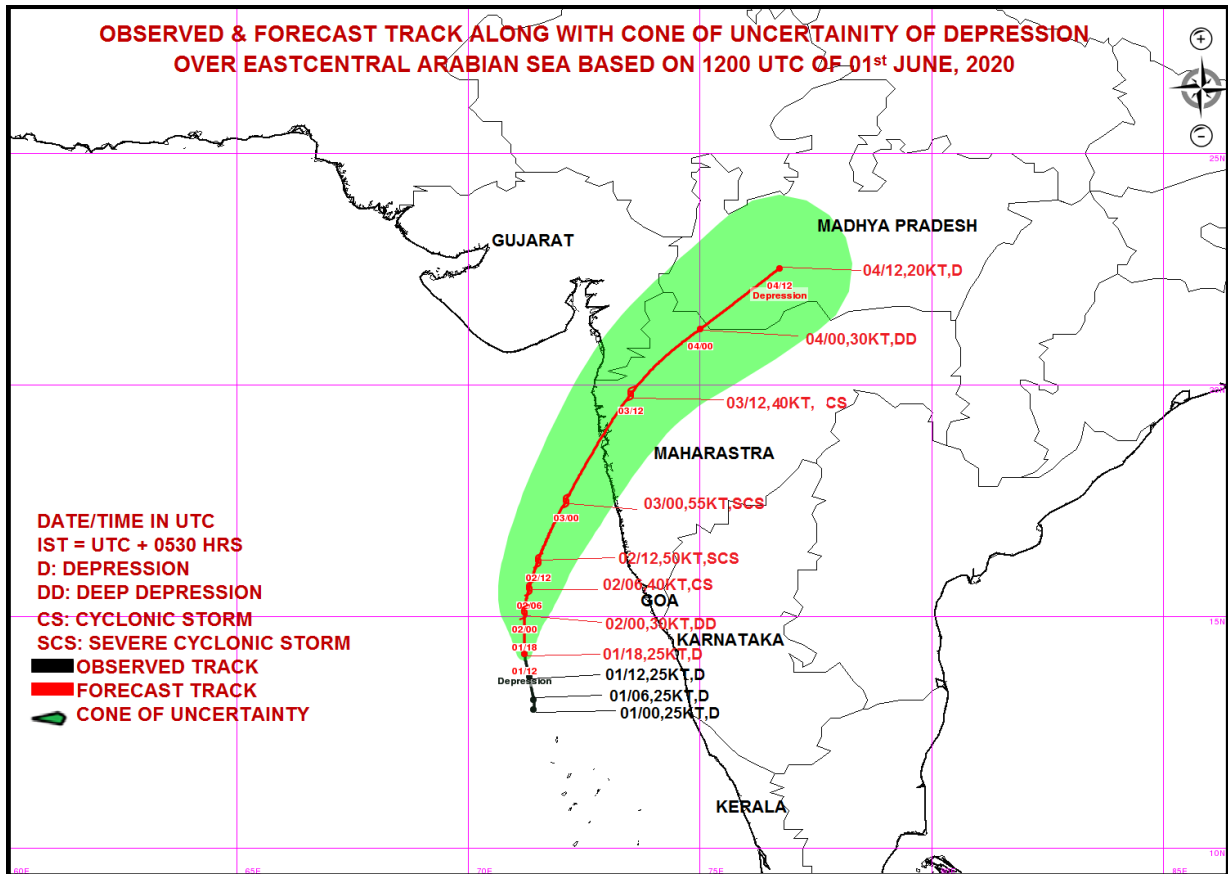
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

SAT : INSAT-3D IMG
IMG_TIR1_TEMP 10.8 um
ARABIAN_SEA

01-06-2020/(1400 to 1426) GMT
01-06-2020/(1930 to 1956) 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 (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

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 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/02/2020)

TIME OF ISSUE: 0230 HOURS IST

DATED: 02.06.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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

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

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

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

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

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: Depression over Eastcentral Arabian Sea: Cyclone Alert for north Maharashtra - south Gujarat coasts: Yellow message

The **Depression** over Eastcentral Arabian Sea moved northwards with a speed of 04 kmph during past 06 hours and lay centred at 2330 hours IST of yesterday, the 01st June, 2020 over Eastcentral Arabian Sea near latitude 14.4°N and longitude 71.2°E about 300 km west-southwest of Panjim (Goa), 550 km south-southwest of Mumbai (Maharashtra) and 770 km south-southwest of Surat (Gujarat).

It is very likely to intensify into a Deep Depression during next 12 hours and **intensify further into a Cyclonic Storm over Eastcentral Arabian Sea during subsequent 12 hours**. It is very likely to move nearly northwards initially till 02nd June Noon and then recurve north-northeastwards and cross north Maharashtra and south Gujarat coasts between Harihareshwar (Raigad, Maharashtra) and Daman during the afternoon of 03rd June .

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
01.06.20/2330	14.4/71.2	45-55 gusting to 65	Depression
02.06.20/0530	14.8/71.2	55-65 gusting to 75	Deep Depression
02.06.20/1130	15.3/71.3	65-75 gusting to 85	Cyclonic Storm
02.06.20/1730	15.9/71.5	80-90 gusting to 100	Cyclonic Storm
02.06.20/2330	16.7/71.7	95-105 gusting to 115	Severe Cyclonic Storm
03.06.20/1130	18.3/72.5	105-115 gusting to 125	Severe Cyclonic Storm
03.06.20/2330	20.1/73.9	60-70 gusting to 80	Cyclonic Storm
04.06.20/1130	21.9/75.8	35-45 gusting to 55	Depression

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

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

Warnings:

(i) Rainfall:

Light to moderate rainfall at most places with isolated heavy falls very likely over Lakshadweep area, north Kerala and coastal Karnataka during next 12 hours. Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over south Konkan & Goa during 02nd – 03rd June.

Light to moderate rainfall at most places with isolated heavy falls on 02nd June; with heavy to very heavy falls at a few places and **extremely heavy falls** at isolated places on 03rd & 04th June very likely over north Konkan and north Madhya Maharashtra.

Light to moderate rainfall at most places with isolated heavy to very heavy falls very likely over south Gujarat state, Daman, Dadra & Nagar Haveli on 03rd June and with heavy to very heavy falls at a few places and **extremely heavy falls** at isolated places over south Gujarat region, Daman, Dadra & Nagar Haveli on 04th June.

(ii) Wind warning

Squally wind, speed reaching 45-55 kmph gusting to 65 kmph, is prevailing over Eastcentral and adjoining southeast Arabian Sea. It is very likely to become 50-60 kmph gusting to 70kmph over Eastcentral Arabian Sea by 02nd June morning. It will gradually increase becoming Gale wind, speed reaching 60-70 kmph gusting to 80 kmph, over eastcentral Arabian Sea off south Maharashtra coast from 02nd June Noon and further becoming 95-105 kmph gusting to 115 kmph over eastcentral and adjoining northeast Arabian Sea along & off Maharashtra (Raigad, Mumbai, Palghar, Thane) coast from 03rd June morning. Gale wind speed reaching 80-90 kmph gusting to 100 kmph likely along & off Valsad, Navsari districts of Gujarat and Ratnagiri, Sindhudurg districts of Maharashtra, and 70-80 kmph gusting to 90 kmph along & off Surat & Bharuch districts of south Gujarat from 03rd June noon.

Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely prevail over eastcentral Arabian Sea along and off Karnataka-Goa coasts during next 36 hours.

Squally wind, speed reaching 40-50 kmph gusting to 60 kmph is likely to prevail over Lakshadweep area and along & off Kerala coast during next 24 hours.

(iii) Sea condition

The Sea condition is very likely to be rough to very rough over Eastcentral & adjoining Southeast Arabian Sea during next 12 hours. It would become very rough to High over eastcentral Arabian Sea from 02nd June Noon. It will become High to very High over Eastcentral Arabian Sea along & off Maharashtra coast from 02nd June Evening.

The Sea condition is very likely to be very rough to High over northeast Arabian Sea along & off south Gujarat coast on 03rd June.

(iv) Fishermen Warning

Fishermen are advised not to venture into southeast Arabian Sea, Lakshadweep area and along & off Kerala coast during next 24 hours; eastcentral and Northeast Arabian Sea and along & off Karnataka-Goa-Maharashtra-south Gujarat coasts till 03rd June.

The next bulletin will be issued at 0830 hrs IST of today, the 02nd June, 2020.

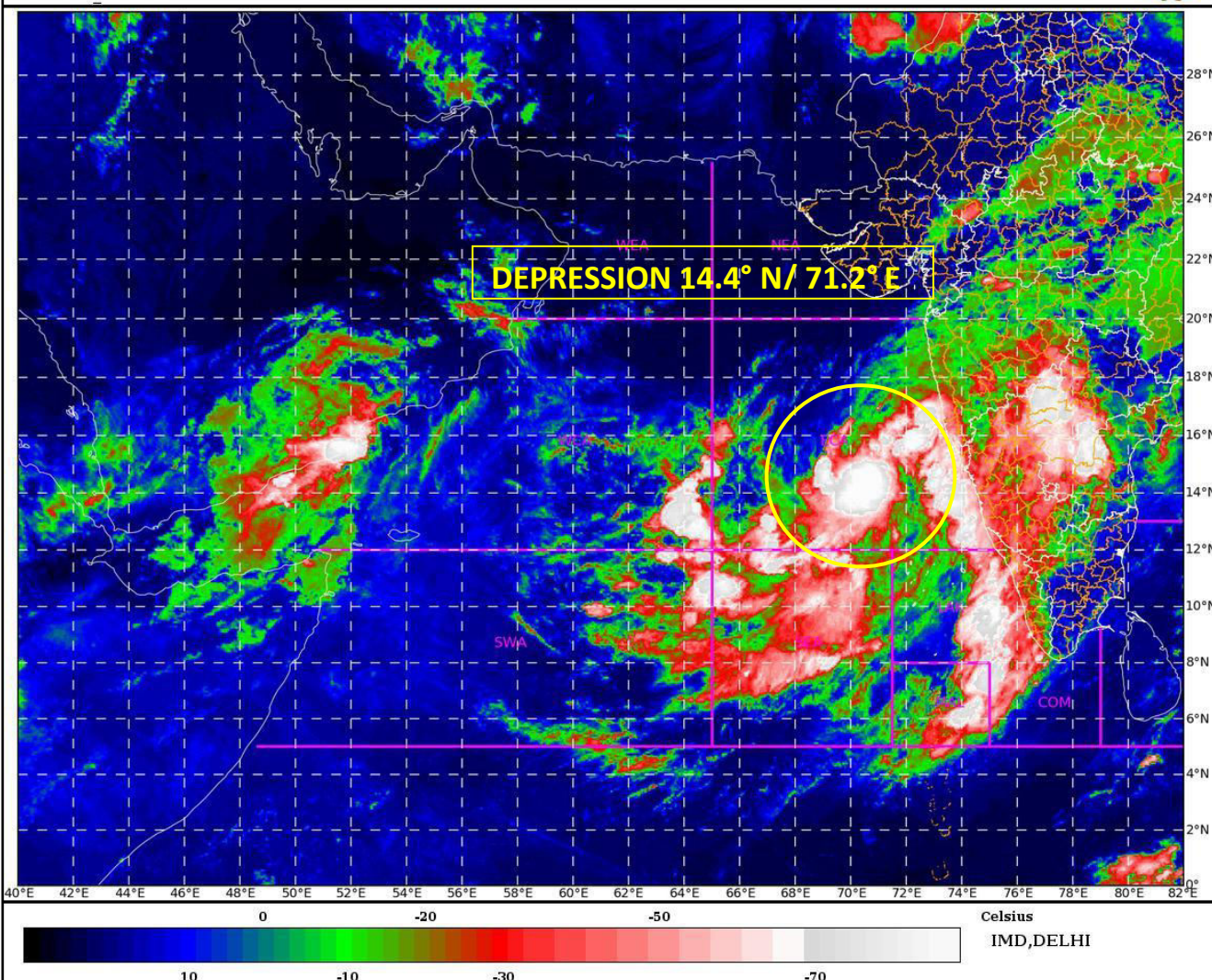
(DR Pattanaik)
Scientist-E, RSMC, New Delhi

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

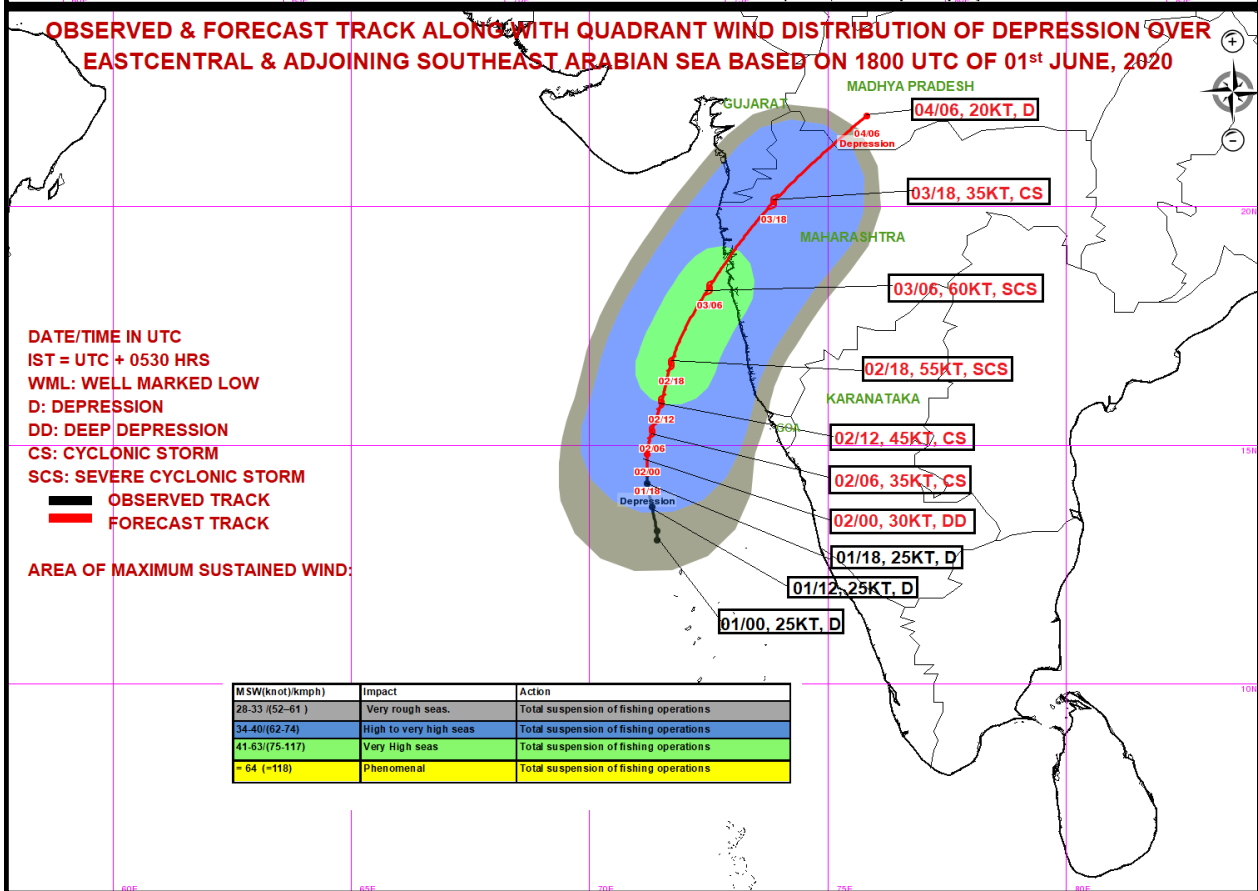
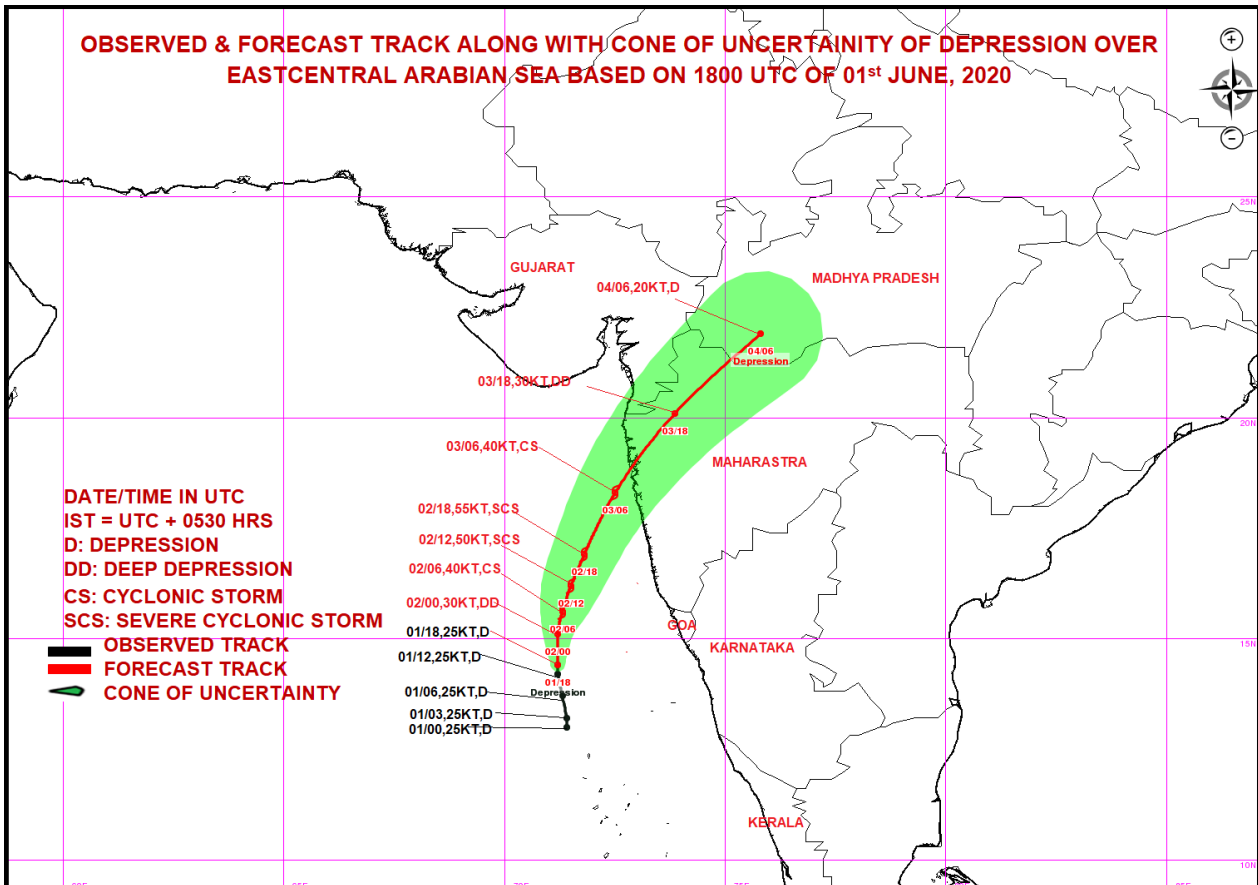
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

SAT : INSAT-3D IMG
IMG_TIR1_TEMP 10.8 um
ARABIAN_SEA

01-06-2020/(1930 to 1956) GMT
02-06-2020/(0100 to 0126) 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 (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

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

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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/02/2020)

TIME OF ISSUE: 0900 HOURS IST

DATED: 02.06.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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

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

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

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

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

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: Deep Depression over Eastcentral Arabian Sea: Cyclone Alert for north Maharashtra - south Gujarat coasts: Yellow message

The **Depression** over Eastcentral Arabian Sea moved northwards with a speed of 11 kmph during past 06 hours intensified into a **Deep Depression** and lay centred at 0530 hours IST of today, the 02nd June, 2020 over Eastcentral Arabian Sea near latitude 15.0°N and longitude 71.2°E about 280 km west-southwest of Panjim (Goa), 490 km south-southwest of Mumbai (Maharashtra) and 710 km south-southwest of Surat (Gujarat).

It is very likely to intensify into a Cyclonic Storm during next 12 hours and further into a Severe Cyclonic Storm during subsequent 12 hours. It is very likely to move nearly northwards during next 06 hours and recurve north-northeastwards thereafter and cross north Maharashtra and adjoining south Gujarat coast between Harihareshwar (Raigad, Maharashtra) and Daman during the afternoon of 03rd June.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum surface (Kmph)	sustained wind speed	Category of cyclonic disturbance
02.06.20/0530	15.0/71.2	55-65	gusting to 75	Deep Depression
02.06.20/1130	15.5/71.3	60-70	gusting to 80	Cyclonic Storm
02.06.20/1730	16.0/71.5	80-90	gusting to 100	Cyclonic Storm
02.06.20/2330	16.6/71.7	90-100	gusting to 110	Severe Cyclonic Storm
03.06.20/0530	17.4/72.1	100-110	gusting to 120	Severe Cyclonic Storm
03.06.20/1730	19.2/73.3	90-100	gusting to 110	Severe Cyclonic Storm
04.06.20/0530	20.6/74.6	50-60	gusting to 70	Deep Depression
04.06.20/1730	22.2/76.3	35-45	gusting to 55	Depression

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

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

Warnings:

(i) Rainfall:

Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over Konkan & Goa during next 24 hours. Light to moderate rainfall at most places with isolated heavy falls very likely over Coastal & North Interior Karnataka, Madhya Maharashtra and Marathwada during next 24 hours.

Light to moderate rainfall at most places with heavy to very heavy falls at a few places and **extremely heavy falls** at isolated places very likely over north Konkan, north Madhya Maharashtra and south Gujarat region, Daman, Dadra & Nagar Haveli on 03rd June.

Light to moderate rainfall at most places with heavy to very heavy falls very likely over Marathwada and southwest Madhya Pradesh on 03rd June. Light to moderate rainfall at most places with heavy falls very likely over west Vidarbha on 03rd June.

Light to moderate rainfall at most places with isolated heavy to very heavy falls very likely over Konkan & Goa, North Madhya Maharashtra, south Gujarat region and West Madhya Pradesh on 04th June.

(ii) Wind warning

Squally wind, speed reaching 55-65 kmph gusting to 75 kmph, is prevailing over Eastcentral Arabian Sea. It will gradually increase becoming Gale wind, speed reaching 60-70 kmph gusting to 80 kmph, over eastcentral Arabian Sea off south Maharashtra & Goa coasts during next 06 hours and further becoming 100-110 kmph gusting to 120 kmph over eastcentral and adjoining northeast Arabian Sea along & off Maharashtra (Raigad, Mumbai, Palghar, Thane) coast from 03rd June morning. Gale wind, speed reaching 80-90 kmph gusting to 100 kmph, likely along & off Valsad, Navsari districts of Gujarat, Daman, Ratnagiri, Sindhudurg districts of Maharashtra and 70-80 kmph gusting to 90 kmph along & off Surat & Bharuch districts of south Gujarat, Dadra & Nagar Haveli from 03rd June noon.

Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely prevail over northeast Arabian Sea along & off remaining districts of south Gujarat coast on 03rd June. Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely prevail over eastcentral Arabian Sea along and off Karnataka-Goa coasts during next 24 hours.

(iii) Sea condition

The Sea condition is rough to very rough over Eastcentral Arabian Sea. It would become very rough to High over eastcentral Arabian Sea during next 06 hours. It will become High to very High over Eastcentral Arabian Sea along & off Maharashtra & Goa coasts from today Evening. The Sea condition is very likely to be very rough to High over northeast Arabian Sea along & off south Gujarat coast on 03rd June.

(iv) Storm Surge Warning:

Storm surge of about 1-2 meters height above astronomical tide is very likely to inundate low lying areas of Mumbai, Thane and Raigad districts and 0.5-1 meter height above the astronomical tide likely to inundate low lying areas of Ratnagiri district during 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) Fishermen Warning

Fishermen are advised not to venture into Eastcentral and Northeast Arabian Sea and along & off Karnataka-Goa-Maharashtra-south Gujarat coasts till 03rd June.

(vi) Damage Expected:

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

(vii) Fishermen Warning & Action Suggested:

- Total suspension of fishing operations.
- Mobilise evacuation from low lying areas.
- Judicious regulation of rail and road traffic.
- People in affected areas to remain indoors.
- Movement in motor boats and small ships unsafe.

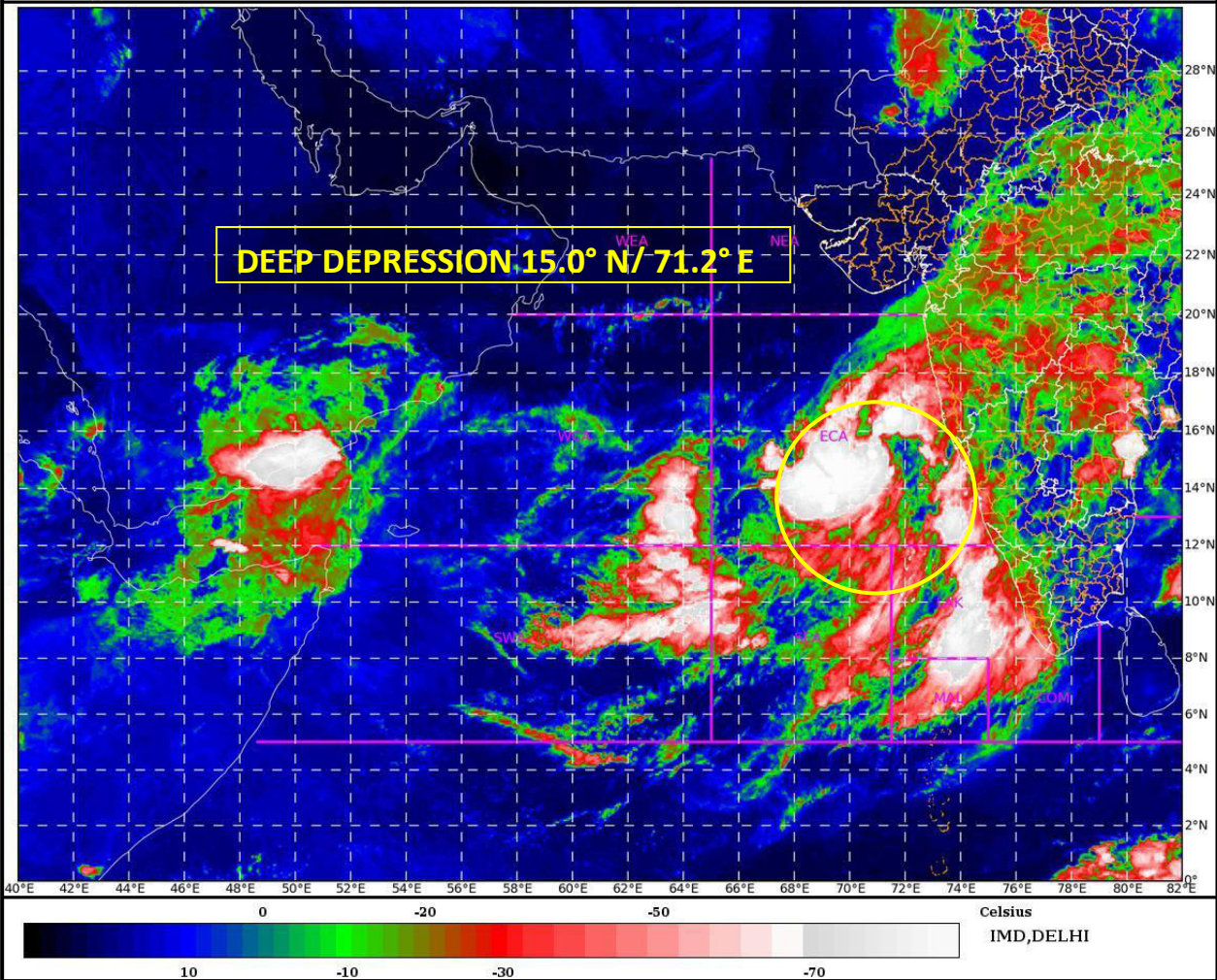
The next bulletin will be issued at 0830 hrs IST of today, the 02nd June, 2020.

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

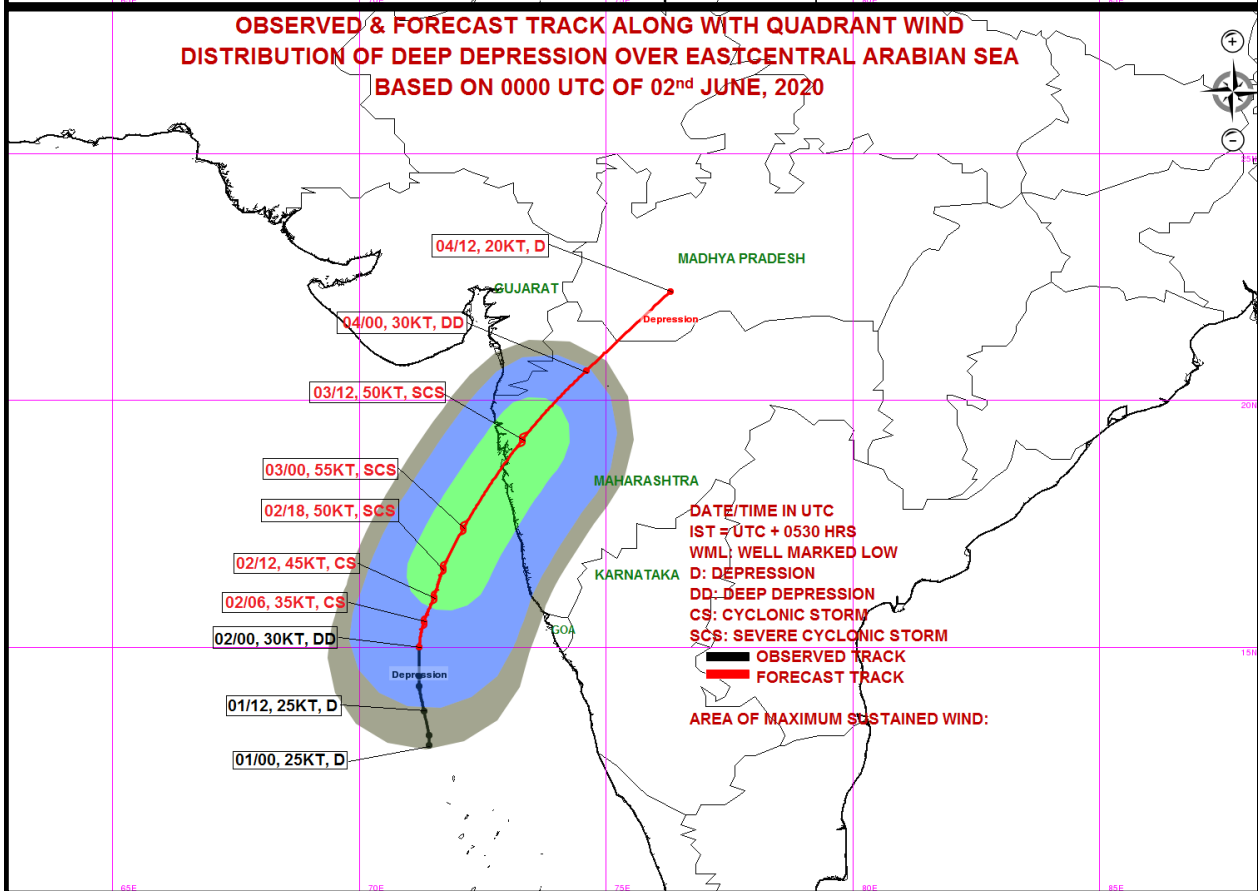
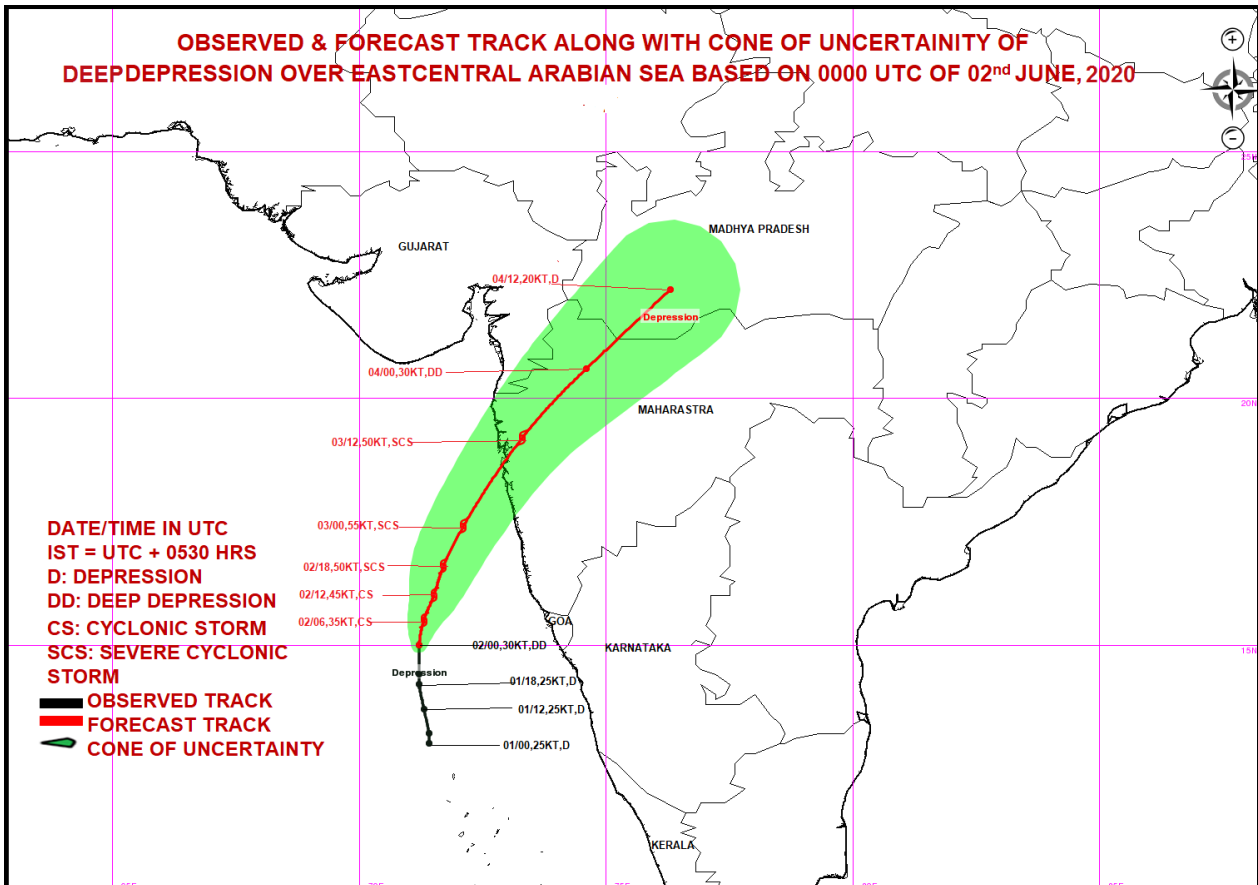
Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

SAT : INSAT-3D IMG
IMG_TIR1_TEMP 10.8 um
ARABIAN SEA

02-06-2020/(0030 to 0056) GMT
02-06-2020/(0600 to 0626) IST



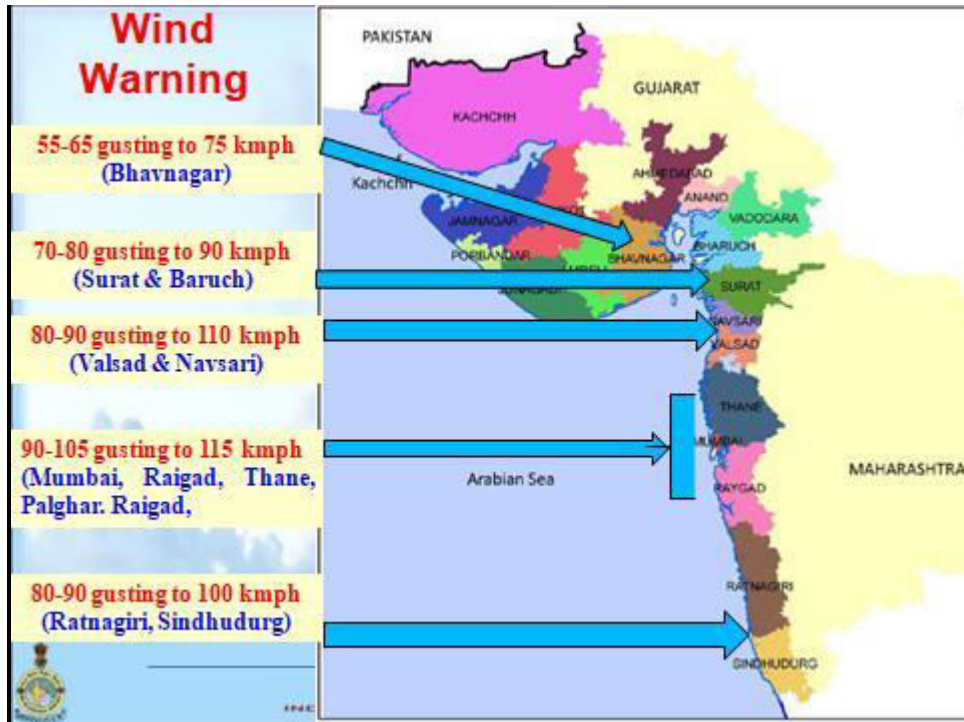
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



MSW(knot)/kmph	Impact	Action
28-33 / (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

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

District Level Wind Warning



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



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

BULLETIN NO. : 17 (ARB/02/2020)

TIME OF ISSUE: 1130 HOURS IST

DATED: 02.06.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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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)

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: Deep Depression over Eastcentral Arabian Sea: Cyclone Alert for north Maharashtra - south Gujarat coasts: Yellow message

The **Deep Depression** over Eastcentral Arabian Sea moved northwards with a speed of 11 kmph during past 06 hours and lay centred at 0830 hours IST of today, the 02nd June, 2020 over Eastcentral Arabian Sea near latitude 15.3°N and longitude 71.2°E, about 280 km west of Panjim (Goa), 450 km south-southwest of Mumbai (Maharashtra) and 670 km south-southwest of Surat (Gujarat).

It is very likely to intensify into a Cyclonic Storm during next 06 hours and further into a Severe Cyclonic Storm during subsequent 12 hours. It is very likely to move nearly northwards during next few hours, recurve north-northeastwards thereafter and cross north Maharashtra and adjoining south Gujarat coast between Harihareshwar and Daman, **close to Alibag (Raigad District, Maharashtra) during the afternoon of 03rd June as a Severe Cyclonic Storm with a maximum sustained wind speed of 100-110 kmph gusting to 120 kmph.**

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum surface (Kmph)	sustained wind speed	Category of cyclonic disturbance
02.06.20/0830	15.3/71.2	55-65	gusting to 75	Deep Depression
02.06.20/1130	15.5/71.3	60-70	gusting to 90	Cyclonic Storm
02.06.20/1730	16.0/71.5	70-80	gusting to 90	Cyclonic Storm
02.06.20/2330	16.6/71.7	90-100	gusting to 110	Severe Cyclonic Storm
03.06.20/0530	17.4/72.1	100-110	gusting to 120	Severe Cyclonic Storm
03.06.20/1730	19.2/73.3	90-100	gusting to 110	Severe Cyclonic Storm
04.06.20/0530	20.6/74.6	50-60	gusting to 70	Deep Depression
04.06.20/1730	22.2/76.3	35-45	gusting to 55	Depression

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

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

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over Konkan & Goa during next 24 hours. Light to moderate rainfall at most places with isolated heavy falls very likely over Coastal Karnataka, Madhya Maharashtra and Marathwada during next 24 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at a few places and **extremely heavy falls (≥ 20 cm in 24 hours)** at isolated places very likely over north Konkan (Mumbai, Palgar, Thane, Raigad districts) and north Madhya Maharashtra
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places over south Konkan (Ratnagiri & Sindhudurg districts) & Goa and south Gujarat region (Valsad, Navsari, Dang, Daman, Dadra & Nagar Haveli and Surat districts)
- Light to moderate rainfall at most places with heavy falls at isolated places over west Madhya Pradesh on 03rd June.

(ii) Wind warning

- Squally wind, speed reaching 55-65 kmph gusting to 75 kmph, is prevailing over Eastcentral Arabian Sea. It will gradually increase becoming Gale wind, speed reaching 60-70 kmph gusting to 80 kmph, over eastcentral Arabian Sea off south Maharashtra & Goa coasts from today afternoon and further becoming 100-110 kmph gusting to 120 kmph over eastcentral Arabian Sea along & off Maharashtra (Raigad, Mumbai, Palghar, Thane) coast from 03rd June morning. Gale wind, speed reaching 80-90 kmph gusting to 100 kmph, likely along & off Valsad, Navsari districts of Gujarat, Daman ad along & off northeast Arabian Sea, Ratnagiri, Sindhudurg districts of Maharashtra and 70-80 kmph gusting to 90 kmph along & off Surat & Bharuch districts of south Gujarat, Dadra & Nagar Haveli from 03rd June noon.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely to prevail over northeast Arabian Sea along & off remaining districts of south Gujarat coast on 03rd June.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely prevail over eastcentral Arabian Sea along and off Karnataka-Goa coasts during next 24 hours.

(iii) Sea condition

The Sea condition is rough to very rough over Eastcentral Arabian Sea. It would become very rough to High over eastcentral Arabian Sea from today afternoon. It will become High to very High over Eastcentral Arabian Sea along & off Maharashtra & Goa coasts from today. Evening. The Sea condition is very likely to be very rough to High over northeast Arabian Sea along & off south Gujarat coast on 03rd June.

(iv) Storm Surge Warning:

Storm surge of about 1-2 meters height above astronomical tide is very likely to inundate low lying areas of Mumbai up to about 1 to 1.5 km, Thane and Raigad districts and 0.5-1 meter height above the astronomical tide likely to inundate low lying areas of Ratnagiri district during 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) Fishermen Warning

Fishermen are advised not to venture into Eastcentral and Northeast Arabian Sea and along & off Karnataka-Goa-Maharashtra-south Gujarat coasts till 03rd June.

(vi) Damage Expected:

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

(vii) Fishermen Warning & Action Suggested:

- Total suspension of fishing operations.
- Mobilise evacuation from low lying areas.
- Judicious regulation of rail and road traffic.
- People in affected areas to remain indoors.
- Movement in motor boats and small ships unsafe.

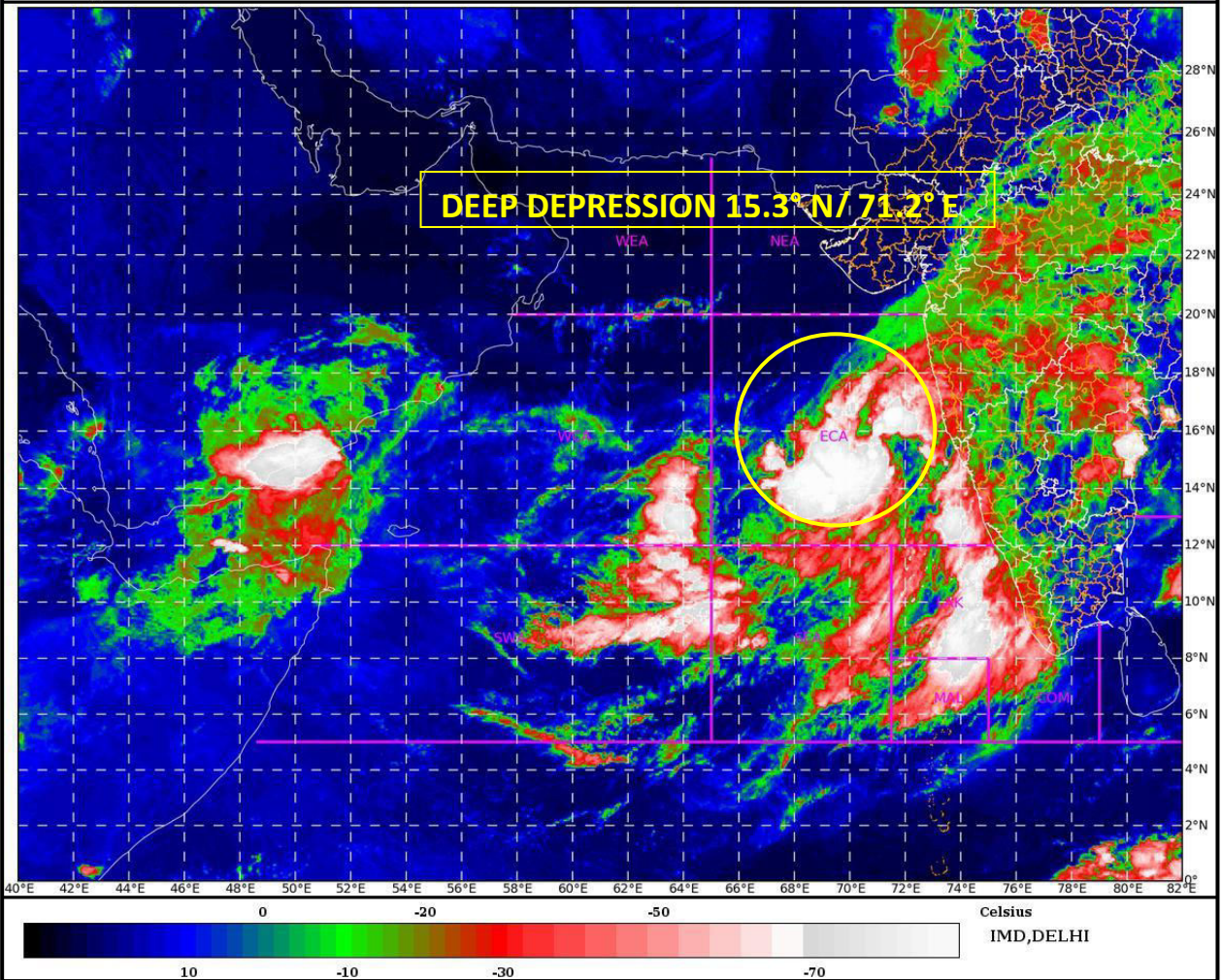
The next bulletin will be issued at 1430 hrs IST of today, the 02nd June, 2020.

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

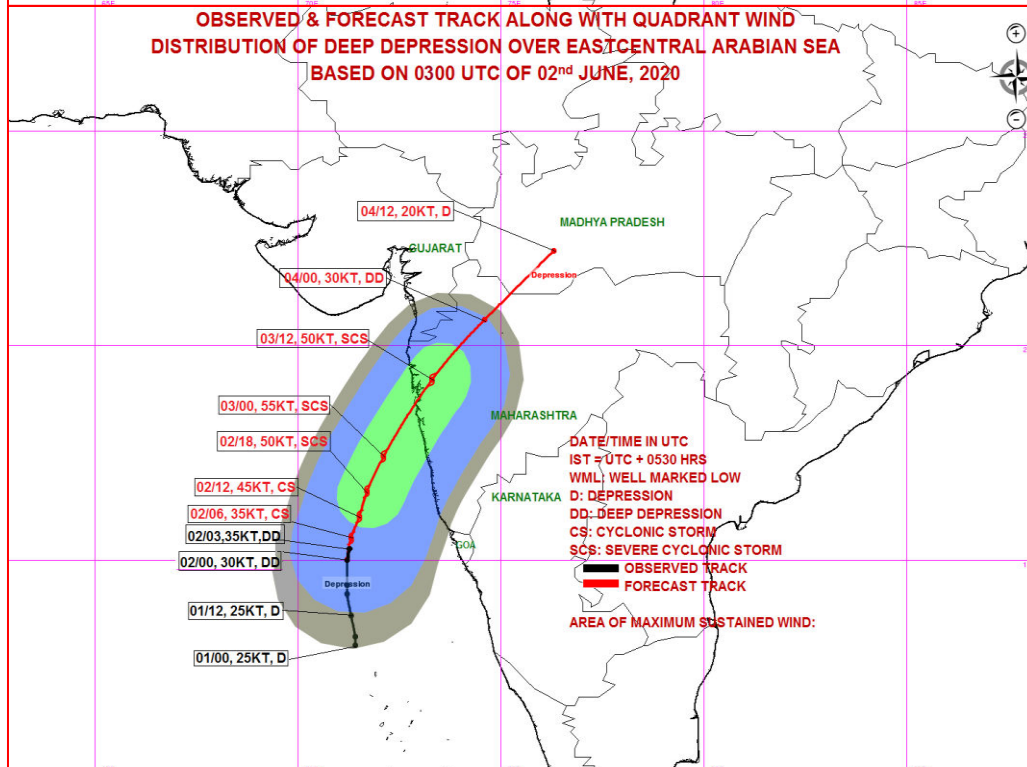
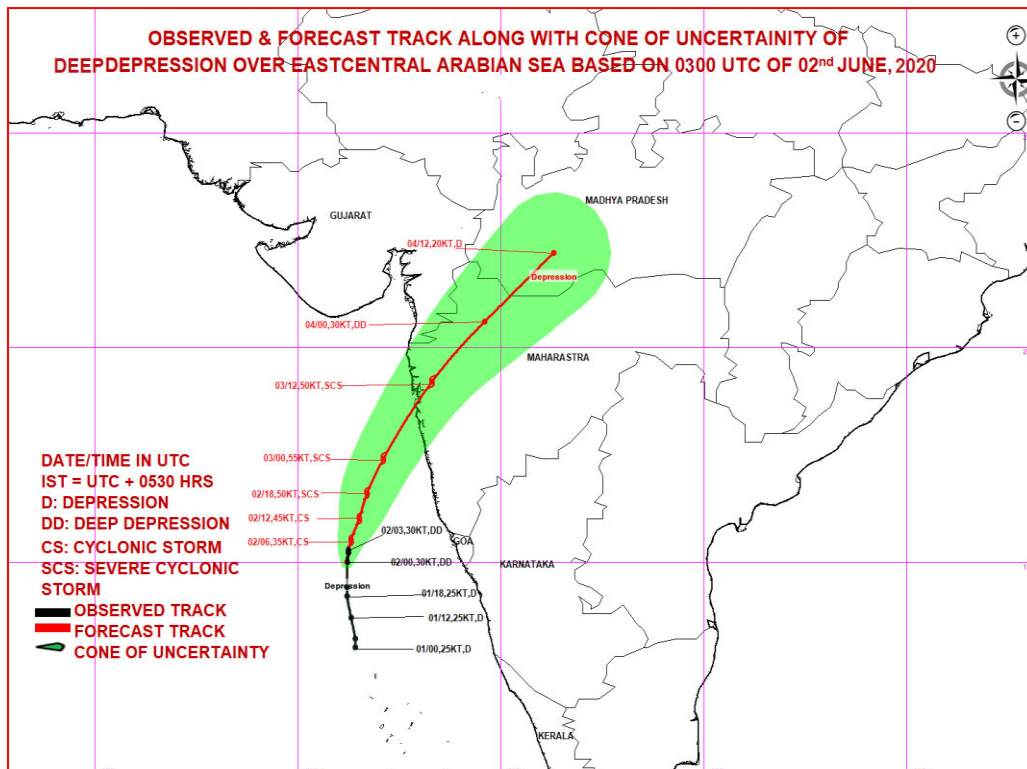
Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

SAT : INSAT-3D IMG
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ARABIAN SEA

02-06-2020/(0030 to 0056) GMT
02-06-2020/(0600 to 0626) IST



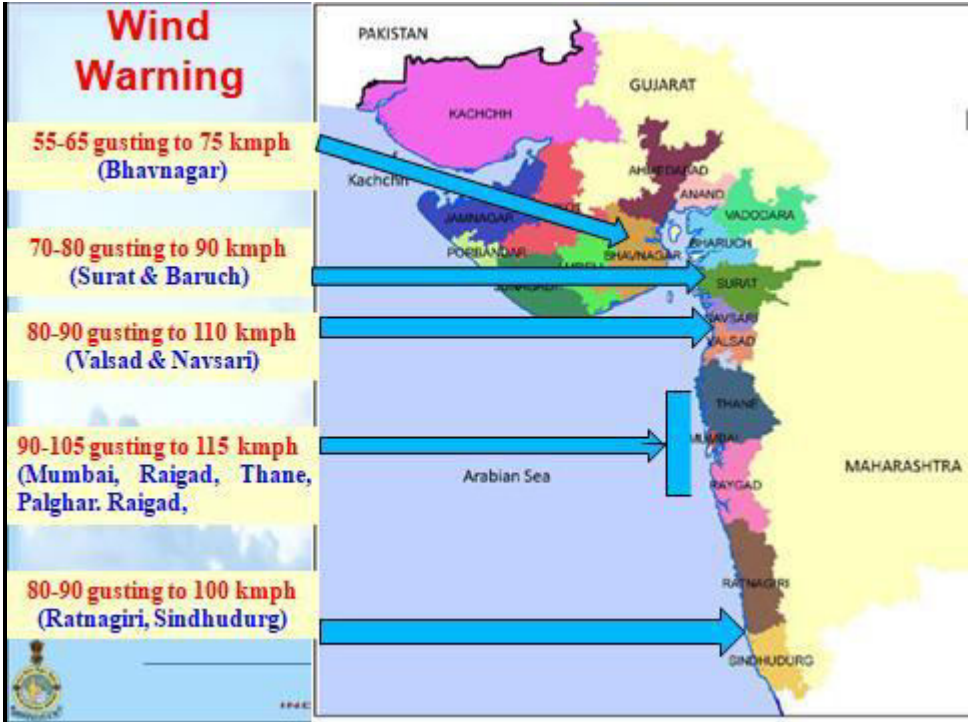
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



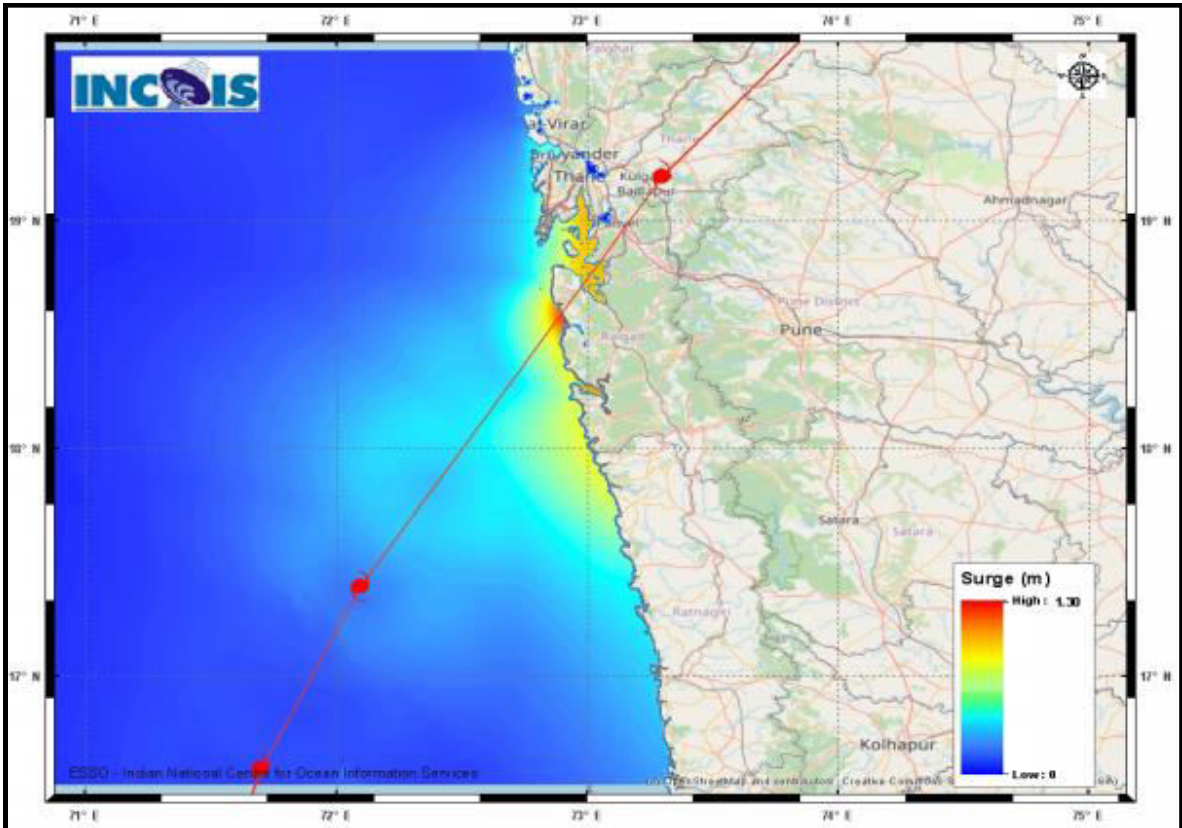
MSW(knot)/kmph)	Impact	Action
28-33 (52-61)	Very rough seas.	Total suspension of fishing operations
34-40 (62-74)	High to very high seas	Total suspension of fishing operations
41-63 (75-117)	Very High seas	Total suspension of fishing operations

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

District Level Wind Warning



Storm surge Warning



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

STORM SURGE HEIGHT INFORMATION:

* The below listed surge heights are over and above astronomical tide

MANDAL/TALUK	DISTRICT	STATE / UNION TERRITORY	N
ALIBAG	RAIGAD	MAHARASHTRA	AL
PEN	RAIGAD	MAHARASHTRA	PE
THANE	GREATER BOMBAY	MAHARASHTRA	TH
DAPOLI	RATNAGIRI	MAHARASHTRA	DA
VASAI	THANE	MAHARASHTRA	VA

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

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/02/2020)

TIME OF ISSUE: 1430 HOURS IST

DATED: 02.06.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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

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

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

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

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

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: Cyclonic Storm 'NISARGA' over Eastcentral Arabian Sea: Cyclone Warning for north Maharashtra - south Gujarat coasts: Orange message

The Deep Depression over Eastcentral Arabian Sea moved northwards with a speed of 11 kmph during past 06 hours, intensified into **Cyclonic Storm 'NISARGA'** and lay centred at 1130 hours IST of today, the 02nd June, 2020 over Eastcentral Arabian Sea near latitude 15.6°N and longitude 71.2°E, about 280 km west-northwest of Panjim (Goa), 430 km south-southwest of Mumbai (Maharashtra) and 640 km south-southwest of Surat (Gujarat).

It is very likely to intensify into a Severe Cyclonic Storm during next 12 hours. It is very likely to move nearly northwards during next few hours, recurve north-northeastwards thereafter and cross north Maharashtra and adjoining south Gujarat coast between Harihareshwar and Daman, **close to Alibag (Raigad District, Maharashtra) during the afternoon of 03rd June as a Severe Cyclonic Storm with a maximum sustained wind speed of 100-110 kmph gusting to 120 kmph.**

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum surface (Kmph)	sustained wind speed	Category of cyclonic disturbance
02.06.20/1130	15.6/71.2	60-70	gusting to 80	Cyclonic Storm
02.06.20/1730	16.3/71.3	80-90	gusting to 100	Cyclonic Storm
02.06.20/2330	17.0/71.5	90-100	gusting to 110	Severe Cyclonic Storm
03.06.20/0530	17.7/72.0	100-110	gusting to 120	Severe Cyclonic Storm
03.06.20/1130	18.5/72.7	100-110	gusting to 120	Severe Cyclonic Storm
03.06.20/2330	19.9/73.9	70-80	gusting to 90	Cyclonic Storm
04.06.20/1130	21.3/75.2	50-60	gusting to 70	Deep Depression

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

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

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over Konkan & Goa during next 24 hours. Light to moderate rainfall at most places with isolated heavy falls very likely over Coastal Karnataka, Madhya Maharashtra and Marathwada during next 24 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at a few places and **extremely heavy falls (≥ 20 cm in 24 hours)** at isolated places very likely over north Konkan (Mumbai, Palgar, Thane, Raigad districts) and north Madhya Maharashtra on 3rd June.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places over south Konkan (Ratnagiri & Sindhudurg districts) & Goa and south Gujarat region (Valsad, Navsari, Dang, Daman, Dadra & Nagar Haveli and Surat districts) on 3rd June.
- Light to moderate rainfall at most places with heavy falls at isolated places over west Madhya Pradesh on 03rd June.

(ii) Wind warning

- Squally wind, speed reaching 60-70 kmph gusting to 80 kmph, is prevailing over Eastcentral Arabian Sea. It will gradually increase becoming Gale wind, speed reaching 80-90 kmph gusting to 100 kmph, over eastcentral Arabian Sea off south Maharashtra & Goa coasts from today evening and further becoming 100-110 kmph gusting to 120 kmph over eastcentral Arabian Sea along & off Maharashtra (Raigad, Mumbai, Palghar, Thane) coast from 03rd June morning. Gale wind, speed reaching 80-90 kmph gusting to 100 kmph, likely along & off Valsad, Navsari districts of Gujarat, Daman and along & off northeast Arabian Sea, Ratnagiri, Sindhudurg districts of Maharashtra and 70-80 kmph gusting to 90 kmph along & off Surat & Bharuch districts of south Gujarat, Dadra & Nagar Haveli from 03rd June noon.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely to prevail over northeast Arabian Sea along & off remaining districts of south Gujarat coast on 03rd June.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely prevail over eastcentral Arabian Sea along and off Karnataka-Goa coasts during next 24 hours.

(iii) Sea condition

The Sea condition is rough to very rough over Eastcentral Arabian Sea. It would become very rough to High over eastcentral Arabian Sea from today afternoon. It will become High to very High over Eastcentral Arabian Sea along & off Maharashtra & Goa coasts from today Evening till tomorrow, the 3rd June evening. The Sea condition is very likely to be very rough to High over northeast Arabian Sea along & off south Gujarat coast on 03rd June.

(iv) Storm Surge Warning:

Storm surge of about 1-2 meters height above astronomical tide is very likely to inundate low lying areas of Mumbai, Thane and Raigad districts and 0.5-1 meter height above the astronomical tide likely to inundate low lying areas of Ratnagiri district during 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) Fishermen Warning

Fishermen are advised not to venture into Eastcentral and Northeast Arabian Sea and along & off Karnataka-Goa-Maharashtra-south Gujarat coasts till 03rd June.

(vi) Damage Expected:

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

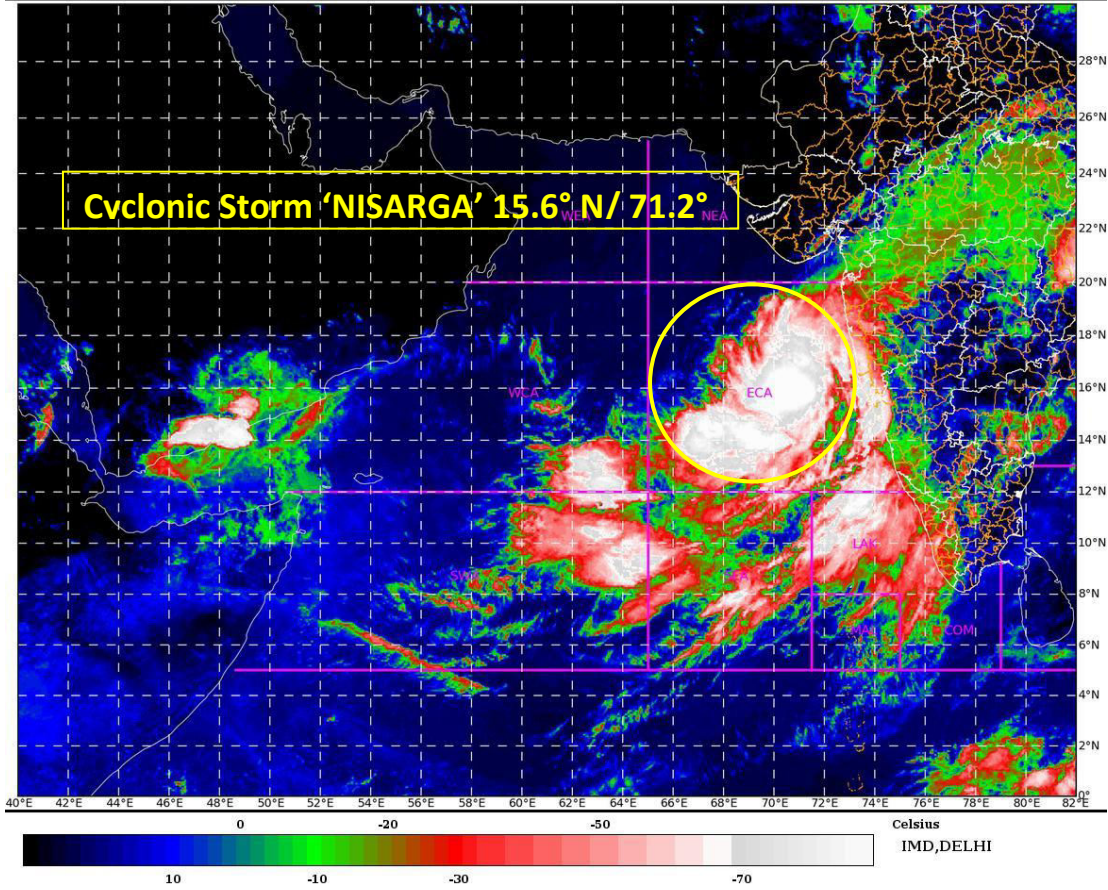
(vii) Fishermen Warning & Action Suggested:

- Total suspension of fishing operations.
- Mobilise evacuation from low lying areas.
- Judicious regulation of rail and road traffic.
- People in affected areas to remain indoors.
- Movement in motor boats and small ships unsafe.

The next bulletin will be issued at 1730 hrs IST of today, the 02nd June, 2020.

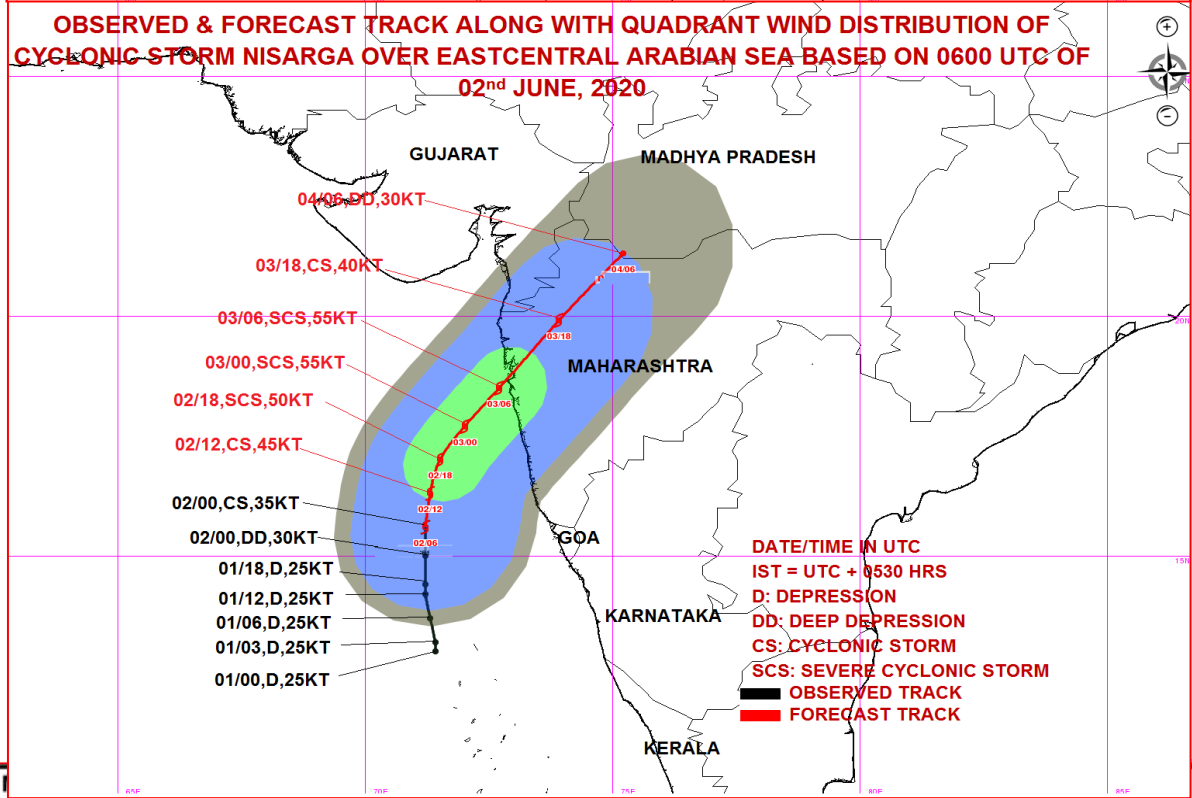
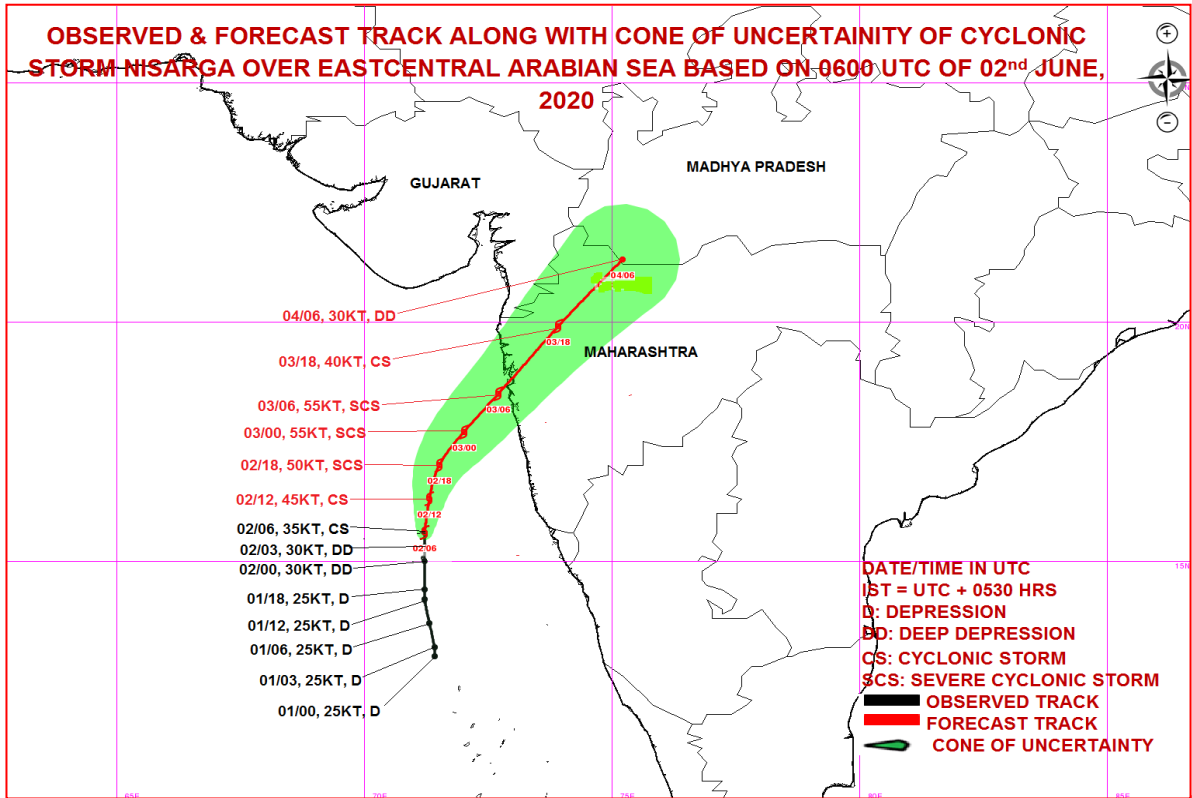
(Sunitha Devi. S)
Scientist-E, RSMC, New Delhi

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



Legend: ECA- east-Central Arabian Sea

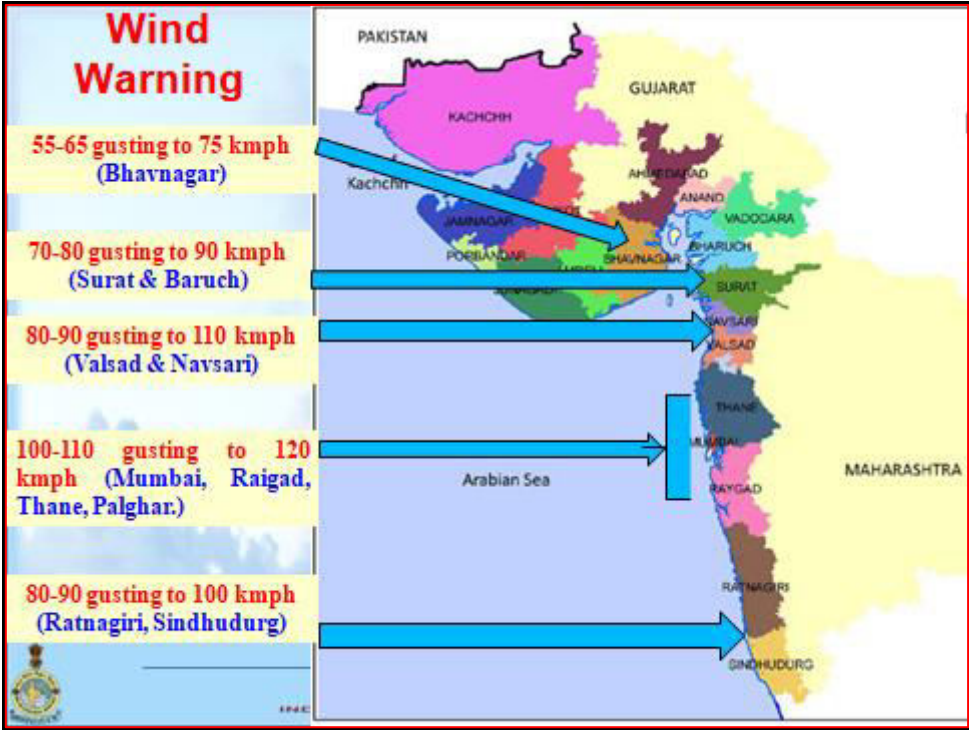
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



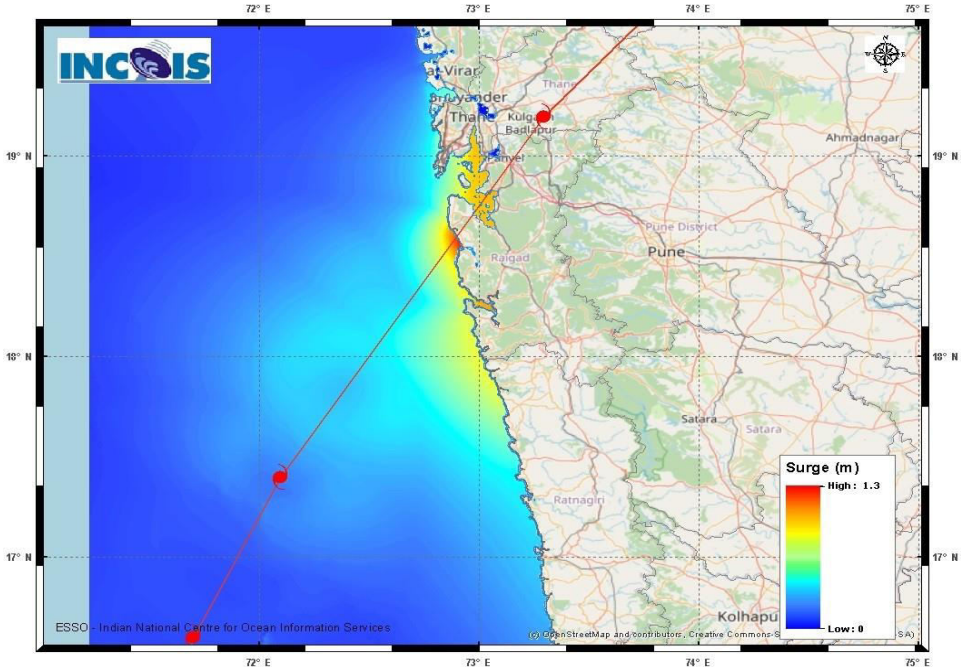
MSW(knot)/kmph	Impact	Action
28-33 / (52-61)	Very rough seas.	Total suspension of fishing operations
34-40 / (62-74)	High to very high seas	Total suspension of fishing operations
41-63 / (75-117)	Very High seas	Total suspension of fishing operations

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

District Level Wind Warning



Storm surge Warning



MANDAL/TALUK	DISTRICT	STATE / UNION TERRITORY	NEAREST PLACE OF HABITATION	* STORM SURGE (m)	* EXPECTED INUNDATION EXTENT (km)
ALIBAG	RAIGAD	MAHARASHTRA	ALIBAG	0.5-1.3	Upto 1.9
DAPOLI	RATNAGIRI	MAHARASHTRA	DAPOLI	0.6-0.8	Upto 0.1
PEN	RAIGAD	MAHARASHTRA	PEN	0.8-1.0	Upto 1.4
THANE	GREATER MUMBAI	MAHARASHTRA	THANE	0.8-1.0	Upto 0.2
VASAI	THANE	MAHARASHTRA	VASAI	0.5-0.7	Upto 1.1

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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/02/2020)

TIME OF ISSUE: 1600 HOURS IST

DATED: 02.06.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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

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

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

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

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

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: Cyclonic Storm 'NISARGA' over Eastcentral Arabian Sea: Cyclone Warning for north Maharashtra - south Gujarat coasts: Orange message

The **Cyclonic Storm 'NISARGA'** over Eastcentral Arabian Sea moved northwards with a speed of 13 kmph during past 06 hours, and lay centred at 1430 hours IST of today, the 02nd June, 2020 over Eastcentral Arabian Sea near latitude 16.0°N and longitude 71.2°E, about 290 km west-northwest of Panjim (Goa), 380 km south-southwest of Mumbai (Maharashtra) and 600 km south-southwest of Surat (Gujarat).

It is very likely to intensify into a Severe Cyclonic Storm during next 12 hours. It is very likely to move nearly northwards during next few hours, recurve north-northeastwards thereafter and cross north Maharashtra and adjoining south Gujarat coast between Harihareshwar and Daman, **close to Alibag (Raigad District, Maharashtra) during the afternoon of 03rd June as a Severe Cyclonic Storm with a maximum sustained wind speed of 100-110 kmph gusting to 120 kmph.**

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum surface (Kmph)	sustained wind speed	Category of cyclonic disturbance
02.06.20/1430	16.0/71.2	60-70	gusting to 80	Cyclonic Storm
02.06.20/1730	16.3/71.3	80-90	gusting to 100	Cyclonic Storm
02.06.20/2330	17.0/71.5	90-100	gusting to 110	Severe Cyclonic Storm
03.06.20/0530	17.7/72.0	100-110	gusting to 120	Severe Cyclonic Storm
03.06.20/1130	18.5/72.7	100-110	gusting to 120	Severe Cyclonic Storm
03.06.20/2330	19.9/73.9	70-80	gusting to 90	Cyclonic Storm
04.06.20/1130	21.3/75.2	50-60	gusting to 70	Deep Depression

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

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

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over Konkan & Goa during next 24 hours. Light to moderate rainfall at most places with isolated heavy falls very likely over Coastal Karnataka, Madhya Maharashtra and Marathwada during next 24 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at a few places and **extremely heavy falls (≥ 20 cm in 24 hours)** at isolated places very likely over north Konkan (Mumbai, Palgar, Thane, Raigad districts) and north Madhya Maharashtra on 3rd June.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places over south Konkan (Ratnagiri & Sindhudurg districts) & Goa and south Gujarat region (Valsad, Navsari, Dang, Daman, Dadra & Nagar Haveli and Surat districts) on 3rd June.
- Light to moderate rainfall at most places with heavy falls at isolated places over west Madhya Pradesh on 03rd June.

(ii) Wind warning

- Squally wind, speed reaching 60-70 kmph gusting to 80 kmph, is prevailing over Eastcentral Arabian Sea. It will gradually increase becoming Gale wind, speed reaching 80-90 kmph gusting to 100 kmph, over eastcentral Arabian Sea off south Maharashtra & Goa coasts from today evening and further becoming 100-110 kmph gusting to 120 kmph over eastcentral Arabian Sea along & off Maharashtra (Raigad, Mumbai, Palghar, Thane) coast from 03rd June morning. Gale wind, speed reaching 80-90 kmph gusting to 100 kmph, likely along & off Valsad, Navsari districts of Gujarat, Daman and along & off northeast Arabian Sea, Ratnagiri, Sindhudurg districts of Maharashtra and 70-80 kmph gusting to 90 kmph along & off Surat & Bharuch districts of south Gujarat, Dadra & Nagar Haveli from 03rd June noon.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely to prevail over northeast Arabian Sea along & off remaining districts of south Gujarat coast on 03rd June.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely prevail over eastcentral Arabian Sea along and off Karnataka-Goa coasts during next 24 hours.

(iii) Sea condition

The Sea condition is very rough to High over eastcentral Arabian Sea. It will become High to very High over Eastcentral Arabian Sea along & off Maharashtra & Goa coasts from today Evening till tomorrow, the 3rd June evening. The Sea condition is very likely to be very rough to High over northeast Arabian Sea along & off south Gujarat coast on 03rd June.

(iv) Storm Surge Warning:

Storm surge of about 1-2 meters height above astronomical tide is very likely to inundate low lying areas of Mumbai, Thane and Raigad districts and 0.5-1 meter height above the astronomical tide likely to inundate low lying areas of Ratnagiri district during 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) Fishermen Warning

Fishermen are advised not to venture into Eastcentral and Northeast Arabian Sea and along & off Karnataka-Goa-Maharashtra-south Gujarat coasts till 03rd June.

(vi) Damage Expected:

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

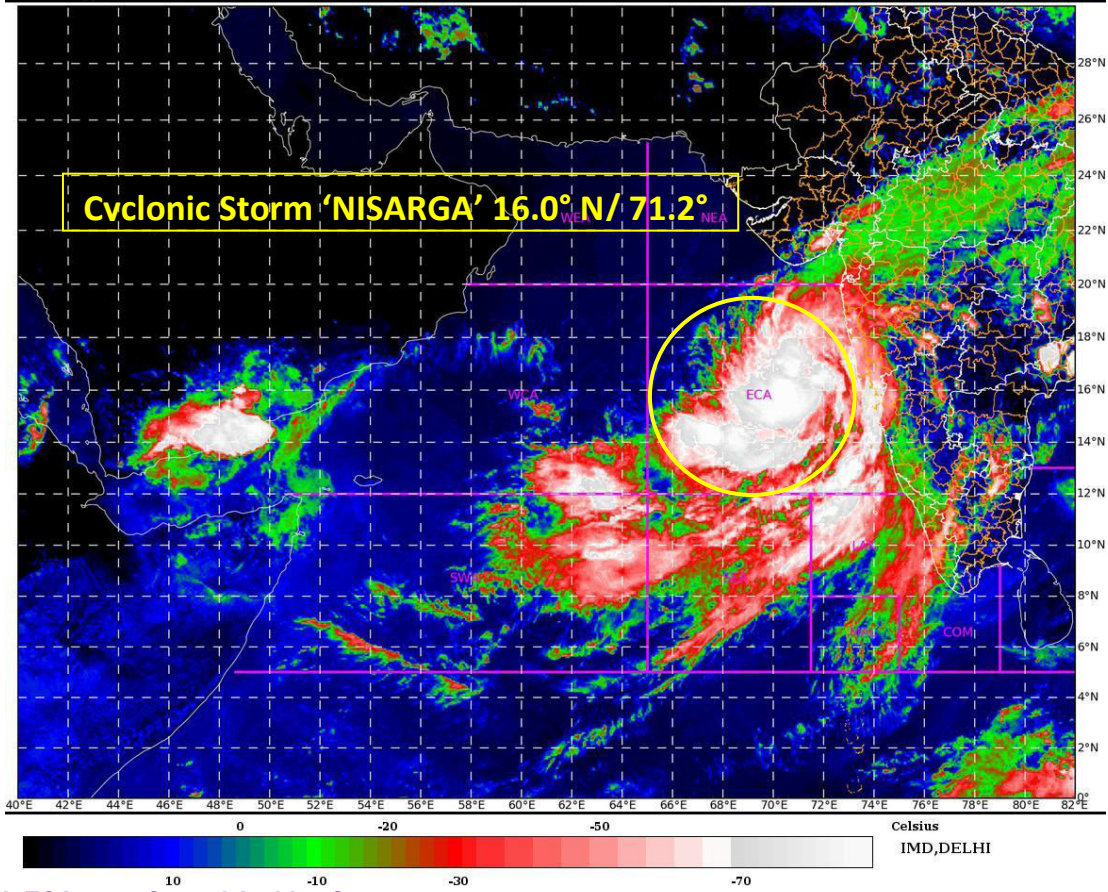
(vii) Fishermen Warning & Action Suggested:

- Total suspension of fishing operations.
- Mobilise evacuation from low lying areas.
- Judicious regulation of rail and road traffic.
- People in affected areas to remain indoors.
- Movement in motor boats and small ships unsafe.

The next bulletin will be issued at 2030 hrs IST of today, the 02nd June, 2020.

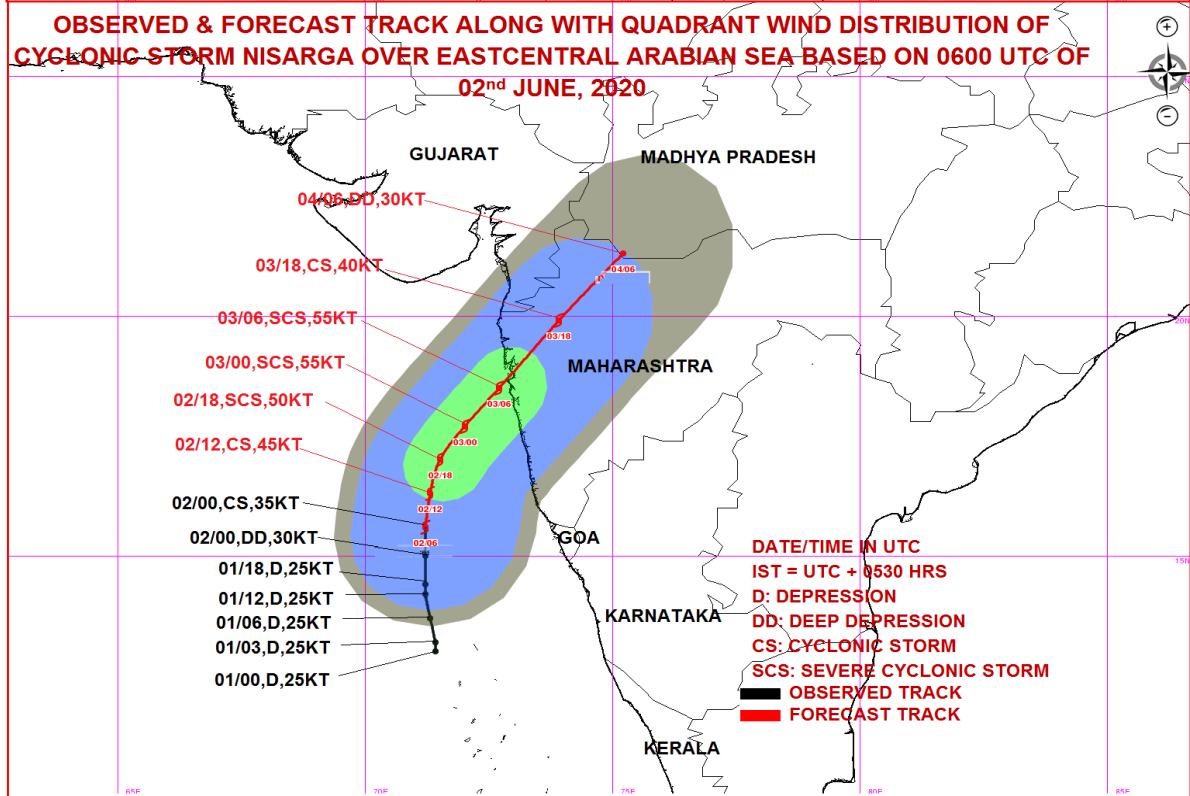
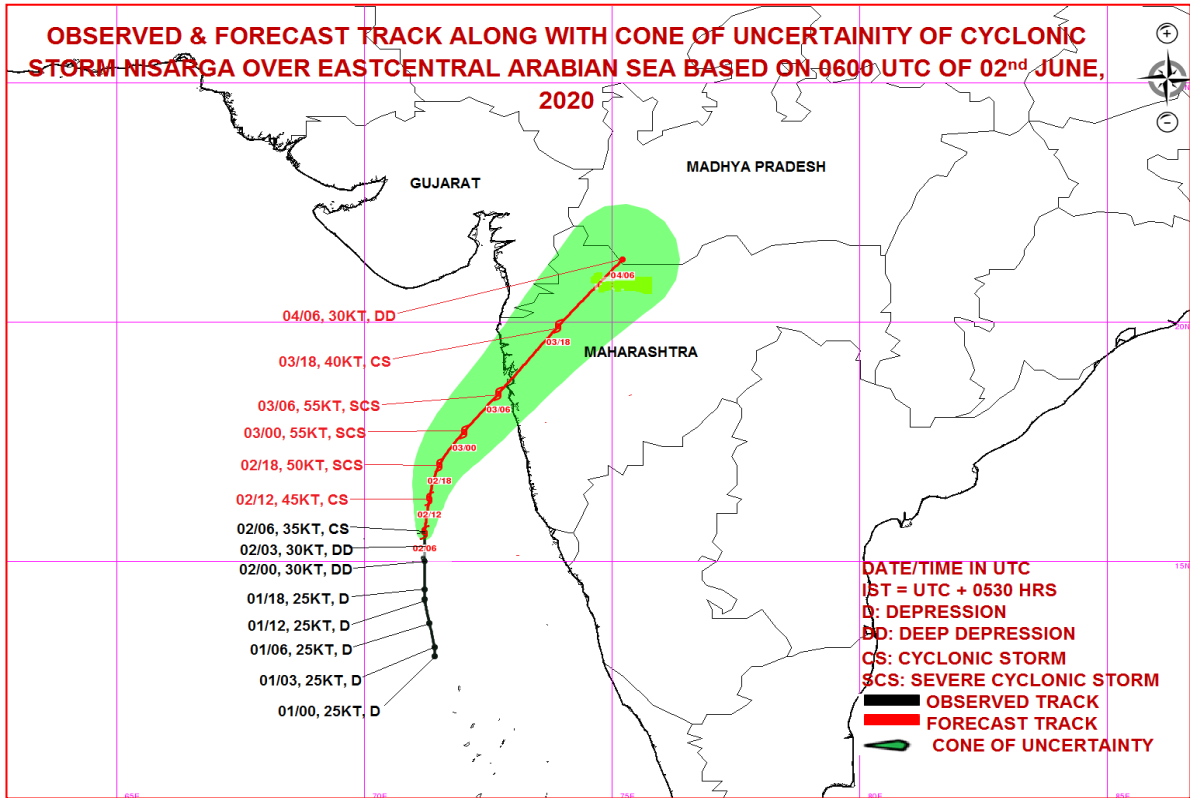
(Sunitha Devi. S)
Scientist-E, RSMC, New Delhi

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



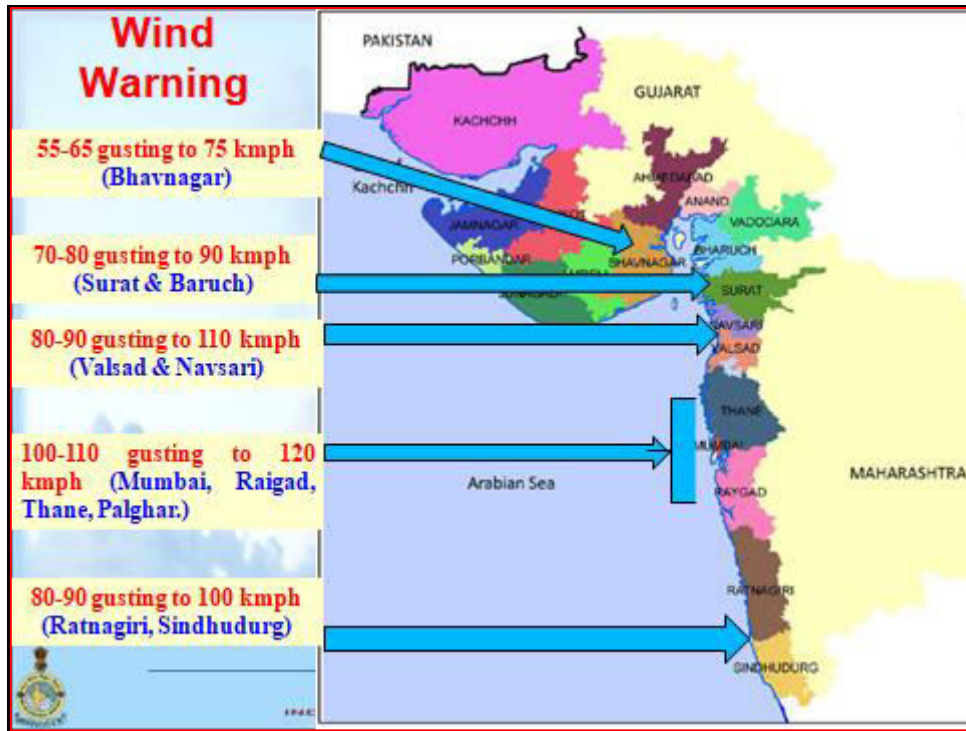
Legend: ECA- east-Central Arabian Sea

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.

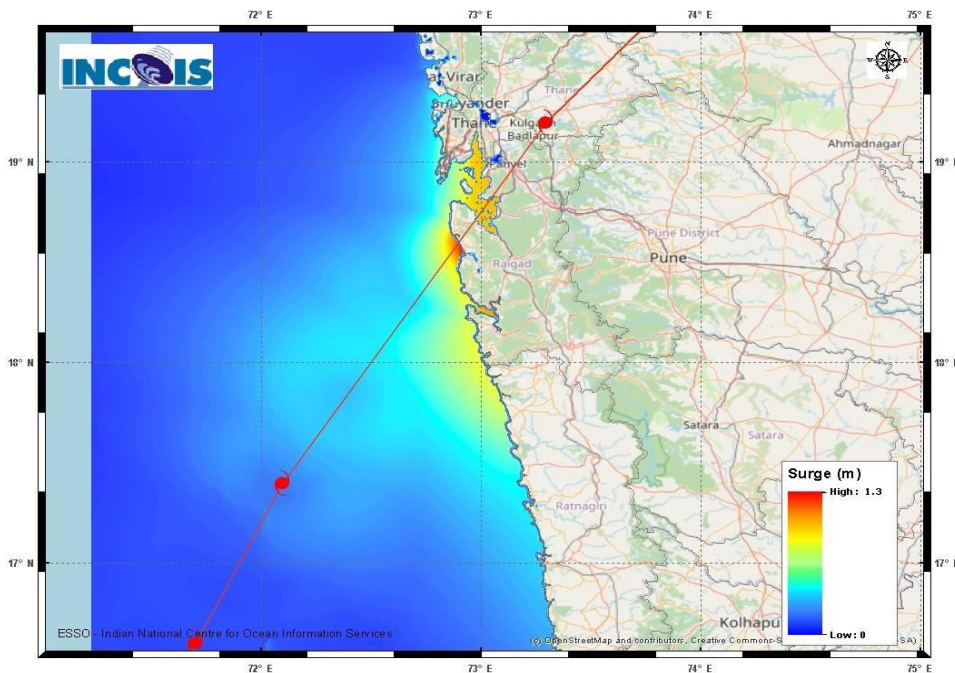


MSW(knot)/kmph	Impact	Action
28-33 / (52-61)	Very rough seas.	Total suspension of fishing operations
34-40 / (62-74)	High to very high seas	Total suspension of fishing operations
41-63 / (75-117)	Very High seas	Total suspension of fishing operations

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



Storm surge Warning



MANDAL/TALUK	DISTRICT	STATE / UNION TERRITORY	NEAREST PLACE OF HABITATION	* STORM SURGE (m)	* EXPECTED INUNDATION EXTENT (km)
ALIBAG	RAIGAD	MAHARASHTRA	ALIBAG	0.5-1.3	Upto 1.9
DAPOLI	RATNAGIRI	MAHARASHTRA	DAPOLI	0.6-0.8	Upto 0.1
PEN	RAIGAD	MAHARASHTRA	PEN	0.8-1.0	Upto 1.4
THANE	GREATER MUMBAI	MAHARASHTRA	THANE	0.8-1.0	Upto 0.2
VASAI	THANE	MAHARASHTRA	VASAI	0.5-0.7	Upto 1.1

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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/02/2020)

TIME OF ISSUE: 2020 HOURS IST

DATED: 02.06.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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

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

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

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

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

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: Cyclonic Storm 'NISARGA' over Eastcentral Arabian Sea: Cyclone Warning for north Maharashtra - south Gujarat coasts: Orange message

The **Cyclonic Storm 'NISARGA'** over Eastcentral Arabian Sea moved north-northeastwards with a speed of 13 kmph during past 06 hours, and lay centred at 1730 hours IST of today, the 02nd June, 2020 over Eastcentral Arabian Sea near latitude 16.3°N and longitude 71.3°E, about 280 km west-northwest of Panjim (Goa), 350 km south-southwest of Mumbai (Maharashtra), 300 km south-southwest of Alibagh (Maharashtra) and 560 km south-southwest of Surat (Gujarat).

It is very likely to intensify into a Severe Cyclonic Storm during next 12 hours. It is very likely to move north-northeastwards and cross north Maharashtra and adjoining south Gujarat coast between Harihareshwar and Daman, **close to Alibagh (Raigad District, Maharashtra) during the afternoon of 03rd June as a Severe Cyclonic Storm with a maximum sustained wind speed of 100-110 kmph gusting to 120 kmph.**

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum surface (Kmph)	sustained wind speed	Category of cyclonic disturbance
02.06.20/1730	16.3/71.3	70-80	gusting to 90	Cyclonic Storm
02.06.20/2330	17.0/71.5	80-90	gusting to 100	Cyclonic Storm
03.06.20/0530	17.7/72.0	90-100	gusting to 110	Severe Cyclonic Storm
03.06.20/1130	18.5/72.7	100-110	gusting to 120	Severe Cyclonic Storm
03.06.20/1730	19.2/73.3	90-100	gusting to 110	Severe Cyclonic Storm
04.06.20/0530	20.6/74.5	50-60	gusting to 70	Deep Depression
04.06.20/1730	22.0/75.7	30-40	gusting to 50	Depression

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

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

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over Konkan & Goa during next 12 hours. Light to moderate rainfall at most places with isolated heavy falls very likely over Coastal Karnataka, Madhya Maharashtra and Marathwada during next 12 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at a few places and **extremely heavy falls (≥ 20 cm in 24 hours)** at isolated places very likely over north Konkan (Mumbai, Palghar, Thane, Raigad districts) and north Madhya Maharashtra on 3rd June.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places over south Konkan (Ratnagiri & Sindhudurg districts) & Goa and south Gujarat region (Valsad, Navsari, Dang, Daman, Dadra & Nagar Haveli and Surat districts) on 3rd June.
- Light to moderate rainfall at most places with heavy falls at isolated places over west Madhya Pradesh on 03rd June.

(ii) Wind warning

- Gale wind, speed reaching 70-80 kmph gusting to 90 kmph, is prevailing over Eastcentral Arabian Sea. It will gradually increase becoming Gale wind, speed reaching 80-90 kmph gusting to 100 kmph, over eastcentral Arabian Sea off south Maharashtra & Goa coasts by tonight and further becoming 100-110 kmph gusting to 120 kmph over eastcentral Arabian Sea along & off Maharashtra (Raigad, Mumbai, Palghar, Thane) coast from 03rd June morning. Gale wind, speed reaching 80-90 kmph gusting to 100 kmph, likely along & off Valsad, Navsari districts of Gujarat, Daman, Dadra & Nagar Haveli and along & off northeast Arabian Sea, Ratnagiri, Sindhudurg districts of Maharashtra and 70-80 kmph gusting to 90 kmph along & off Surat & Bharuch districts of south Gujarat from 03rd June noon.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely to prevail over northeast Arabian Sea along & off remaining districts of south Gujarat coast on 03rd June.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely prevail over eastcentral Arabian Sea along and off Karnataka-Goa coasts during next 24 hours.

(iii) Sea condition

The Sea condition will be High to Very High over eastcentral Arabian Sea and along & off Maharashtra & Goa coasts till tomorrow, the 3rd June evening. The Sea condition is very likely to be very rough to High over northeast Arabian Sea along & off south Gujarat coast on 03rd June.

(iv) Storm Surge Warning:

Storm surge of about 1-2 meters height above astronomical tide is very likely to inundate low lying areas of Mumbai, Thane and Raigad districts and 0.5-1 meter height above the astronomical tide likely to inundate low lying areas of Ratnagiri district during 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) Fishermen Warning

Fishermen are advised not to venture into Eastcentral and Northeast Arabian Sea and along & off Karnataka-Goa-Maharashtra-south Gujarat coasts till 03rd June.

(vi) Damage Expected:

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

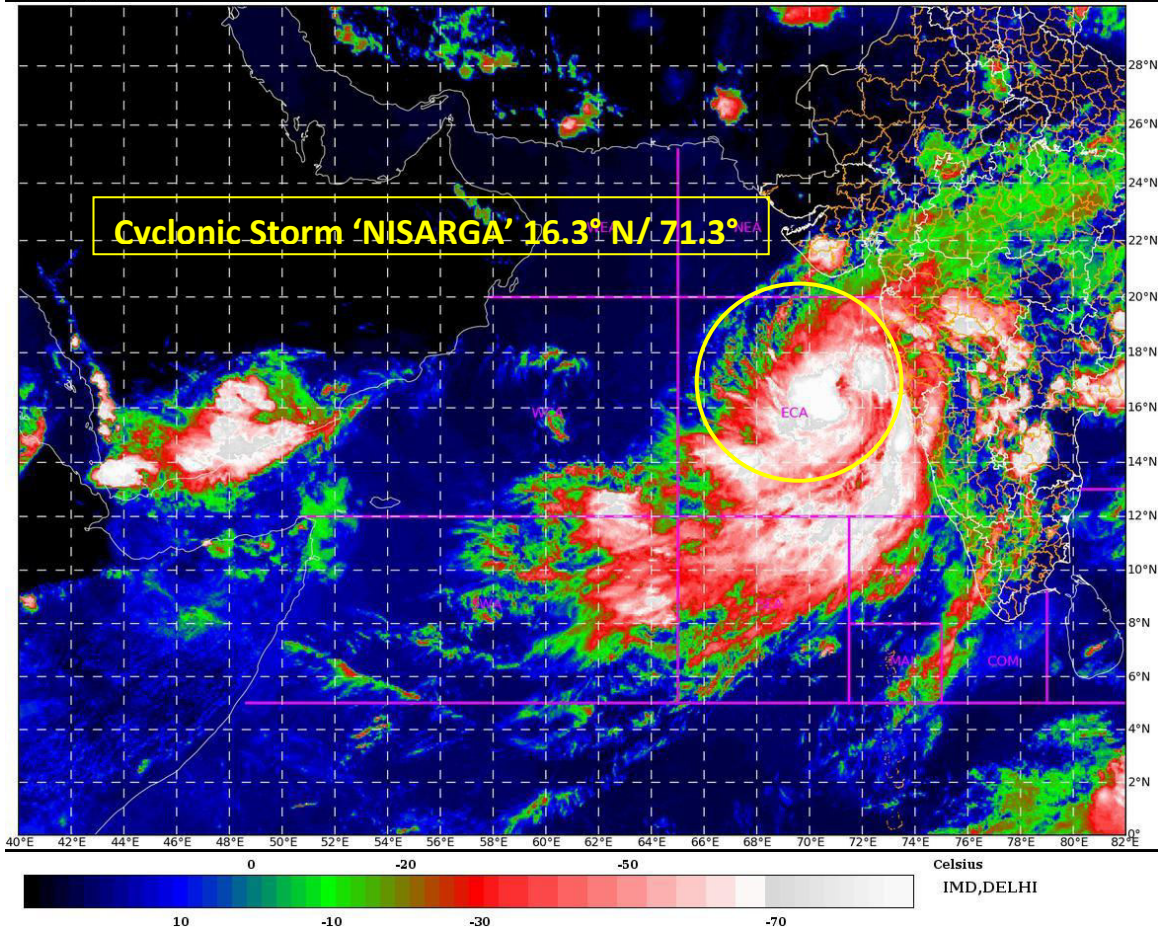
(vii) Fishermen Warning & Action Suggested:

- Total suspension of fishing operations.
- Mobilise evacuation from low lying areas.
- Judicious regulation of rail and road traffic.
- People in affected areas to remain indoors.
- Movement in motor boats and small ships unsafe.

The next bulletin will be issued at 2330 hrs IST of today, the 02nd June, 2020.

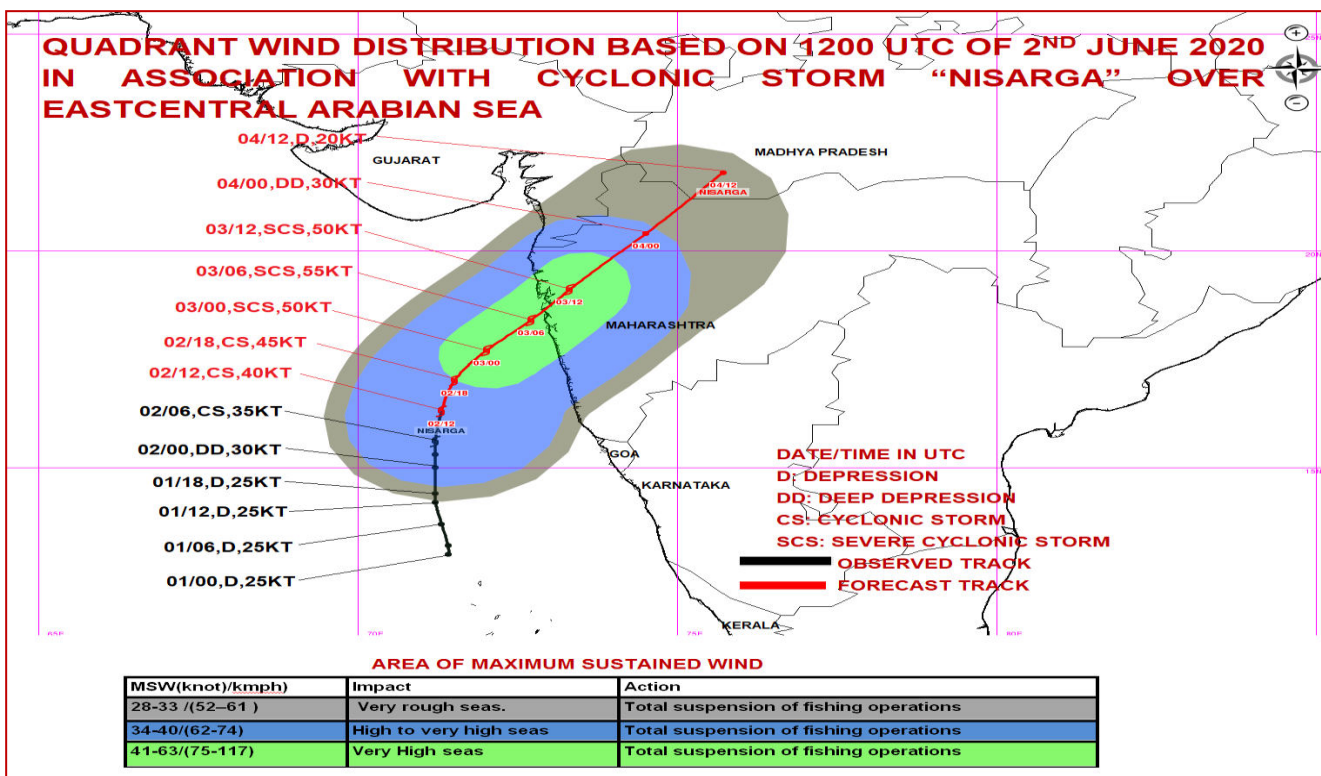
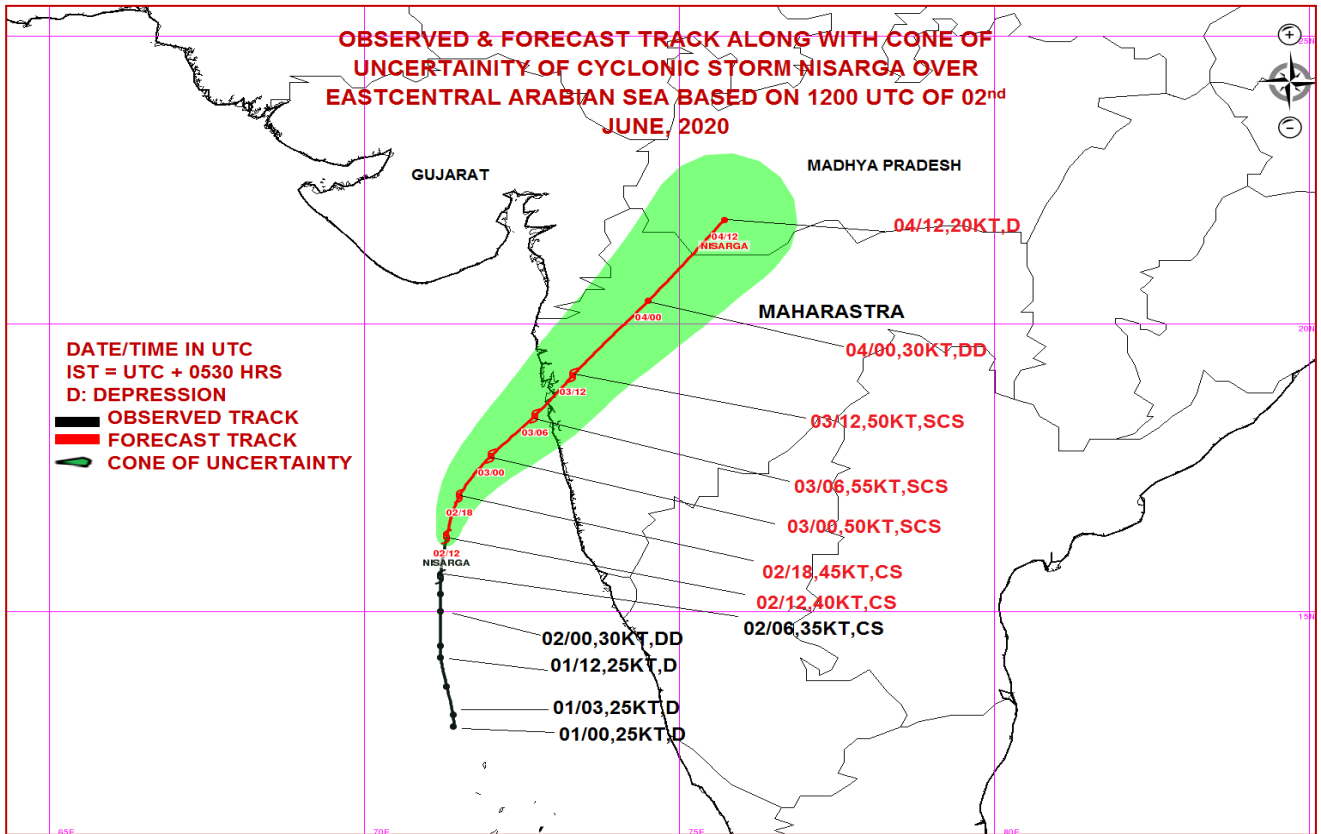
(Sunitha Devi. S)
Scientist-E, RSMC, New Delhi

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



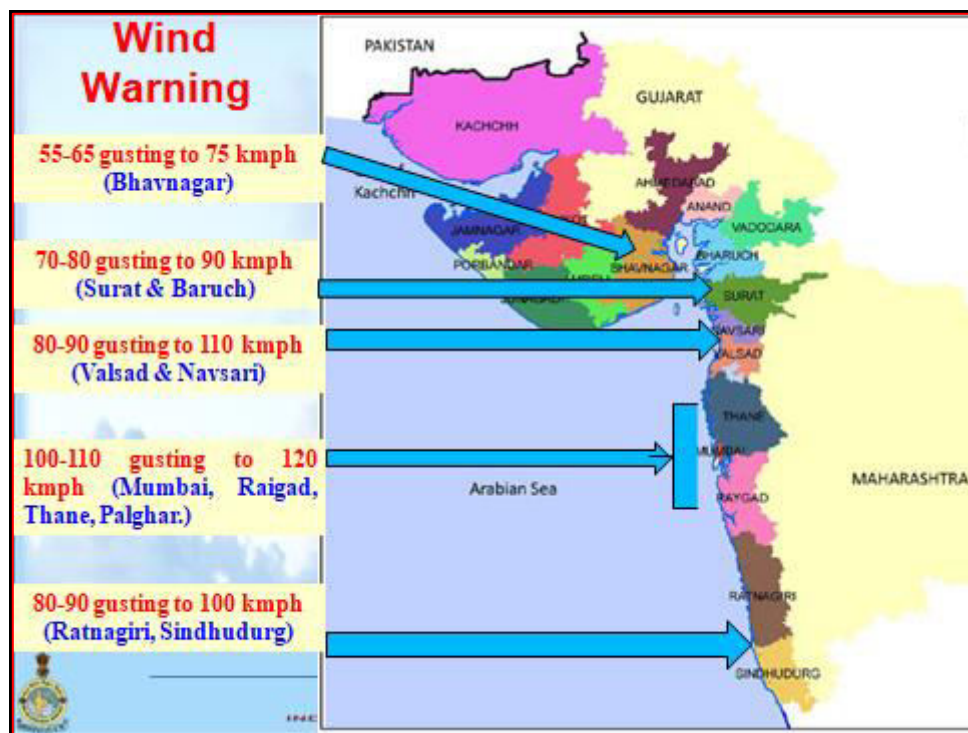
Legend: ECA- east-Central Arabian Sea

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



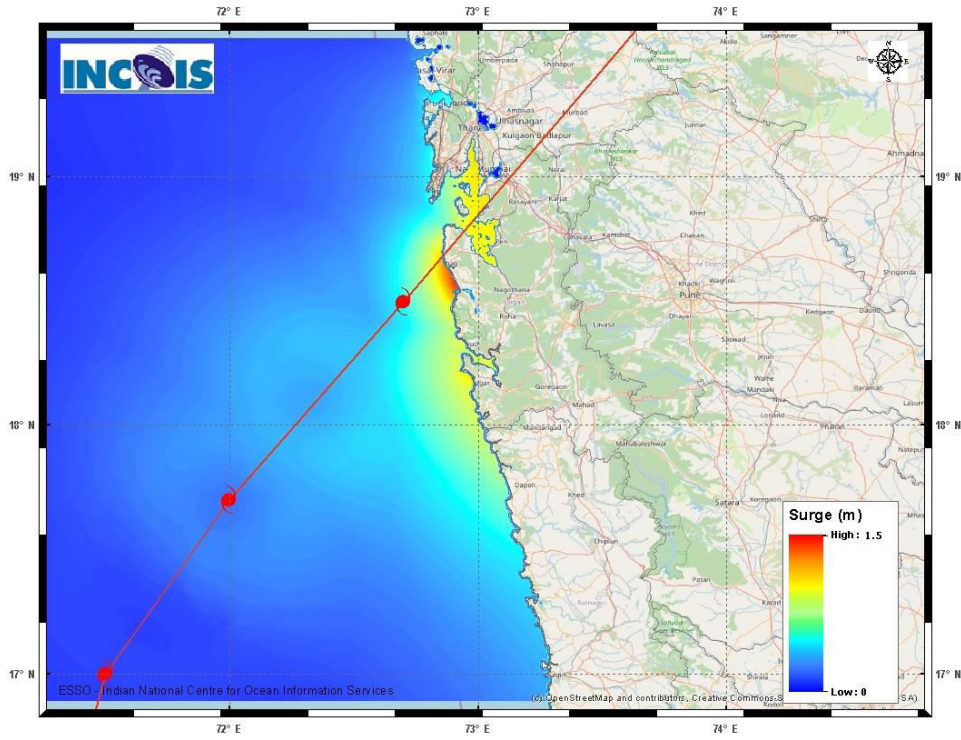
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

District Level Wind Warning



Storm surge Warning

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



The below listed surge heights over and above astronomical tide.

MANDAL/TALUK	DISTRICT	STATE / UNION TERRITORY	NEAREST PLACE OF HABITATION	* STORM SURGE (m)	* EXPECTED INUNDATION EXTENT (km)
ALIBAG	RAIGARH	MAHARASHTRA	ALIBAG	0.5-1.5	Upto 1.4
PEN	RAIGARH	MAHARASHTRA	PEN	0.8-1.1	Upto 2.2
THANE	GREATER MUMBAI	MAHARASHTRA	THANE	0.5-1.1	Upto 0.34
DAPOLI	RATNAGIRI	MAHARASHTRA	DAPOLI	0.5-0.8	Upto 0.1
GUHAGAR	RATNAGIRI	MAHARASHTRA	GUHAGAR	0.5-0.6	Upto 0.22
VASAI	THANE	MAHARASHTRA	VASAI	0.5-0.6	Upto 1.11

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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/02/2020)

TIME OF ISSUE: 2150 HOURS IST

DATED: 02.06.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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

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

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

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

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

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: **Cyclonic Storm 'NISARGA' over Eastcentral Arabian Sea: Cyclone Warning for north Maharashtra - south Gujarat coasts: Red message**

The **Cyclonic Storm 'NISARGA'** over Eastcentral Arabian Sea moved north-northeastwards with a speed of 11 kmph during past 06 hours, and lay centred at 2030 hours IST of today, the 02nd June, 2020 over Eastcentral Arabian Sea near latitude 16.6°N and longitude 71.4°E, about 290 km west-northwest of Panjim (Goa), 310 km south-southwest of Mumbai (Maharashtra), 270 km south-southwest of Alibagh (Maharashtra) and 530 km south-southwest of Surat (Gujarat).

It is very likely to intensify into a Severe Cyclonic Storm during next 12 hours. It is very likely to move north-northeastwards and cross north Maharashtra and adjoining south Gujarat coast between Harihareshwar and Daman, **close to Alibagh (Raigad District, Maharashtra) during the afternoon of 03rd June as a Severe Cyclonic Storm with a maximum sustained wind speed of 100-110 kmph gusting to 120 kmph.**

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum surface (Kmph)	sustained wind speed	Category of cyclonic disturbance
02.06.20/2030	16.6/71.4	75-85	gusting to 95	Cyclonic Storm
02.06.20/2330	17.0/71.5	80-90	gusting to 100	Cyclonic Storm
03.06.20/0530	17.7/72.0	90-100	gusting to 110	Severe Cyclonic Storm
03.06.20/1130	18.5/72.7	100-110	gusting to 120	Severe Cyclonic Storm
03.06.20/1730	19.2/73.3	90-100	gusting to 110	Severe Cyclonic Storm
04.06.20/0530	20.6/74.5	50-60	gusting to 70	Deep Depression
04.06.20/1730	22.0/75.7	30-40	gusting to 50	Depression

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

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

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over Konkan & Goa during next 12 hours. Light to moderate rainfall at most places with isolated heavy falls very likely over Coastal Karnataka, Madhya Maharashtra and Marathawada during next 12 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at a few places and **extremely heavy falls (≥ 20 cm in 24 hours)** at isolated places very likely over north Konkan (Mumbai, Palghar, Thane, Raigad districts) and north Madhya Maharashtra on 3rd June.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places over south Konkan (Ratnagiri & Sindhudurg districts) & Goa and south Gujarat region (Valsad, Navsari, Dang, Daman, Dadra & Nagar Haveli and Surat districts) on 3rd June.
- Light to moderate rainfall at most places with heavy falls at isolated places over west Madhya Pradesh on 03rd June.

(ii) Wind warning

- Gale wind, speed reaching 75-85 kmph gusting to 95 kmph, is prevailing over Eastcentral Arabian Sea. It will gradually increase becoming Gale wind, speed reaching 80-90 kmph gusting to 100 kmph, over eastcentral Arabian Sea off south Maharashtra & Goa coasts by tonight and further becoming 100-110 kmph gusting to 120 kmph over eastcentral Arabian Sea along & off Maharashtra (Raigad, Mumbai, Palghar, Thane) coast from 03rd June morning. Gale wind, speed reaching 80-90 kmph gusting to 100 kmph, likely along & off Valsad, Navsari districts of Gujarat, Daman, Dadra & Nagar Haveli and along & off northeast Arabian Sea, Ratnagiri, Sindhudurg districts of Maharashtra and 70-80 kmph gusting to 90 kmph along & off Surat & Bharuch districts of south Gujarat from 03rd June noon.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely to prevail over northeast Arabian Sea along & off remaining districts of south Gujarat coast on 03rd June.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely prevail over eastcentral Arabian Sea along and off Karnataka-Goa coasts during next 24 hours.

(iii) Sea condition

The Sea condition will be High to Very High over eastcentral Arabian Sea and along & off Maharashtra & Goa coasts till tomorrow, the 3rd June evening. The Sea condition is very likely to be very rough to High over northeast Arabian Sea along & off south Gujarat coast on 03rd June.

(iv) Storm Surge Warning:

Storm surge of about 1-2 meters height above astronomical tide is very likely to inundate low lying areas of Mumbai, Thane and Raigad districts and 0.5-1 meter height above the astronomical tide likely to inundate low lying areas of Ratnagiri district during 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) Fishermen Warning

Fishermen are advised not to venture into Eastcentral and Northeast Arabian Sea and along & off Karnataka-Goa-Maharashtra-south Gujarat coasts till 03rd June.

(vi) Damage Expected:

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

(vii) Fishermen Warning & Action Suggested:

- Total suspension of fishing operations.
- Mobilise evacuation from low lying areas.
- Judicious regulation of rail and road traffic.
- People in affected areas to remain indoors.
- Movement in motor boats and small ships unsafe.

Post Landfall Outlook:

After the landfall the Severe Cyclonic Storm is very likely to maintain its Cyclonic Storm intensity for about 06 hours, while moving north-northeast wards across north Madhya Maharashtra. Under its influence Gale wind reaching 60-70 kmph gusting to 80 kmph very likely to prevail over Pune, Ahmadnagar and 55-65 kmph gusting to 75 kmph adjoining Beed, Nashik & Aurangabad districts of Maharashtra. Light to moderate rainfall at most places with heavy to very heavy falls at isolated places are also very likely over these districts on 3rd June, 2020.

Damage Expected and Action suggested for interior districts of Maharashtra (Pune, Ahmadnagar, Nashik, Aurangabad and adjoining Beed).

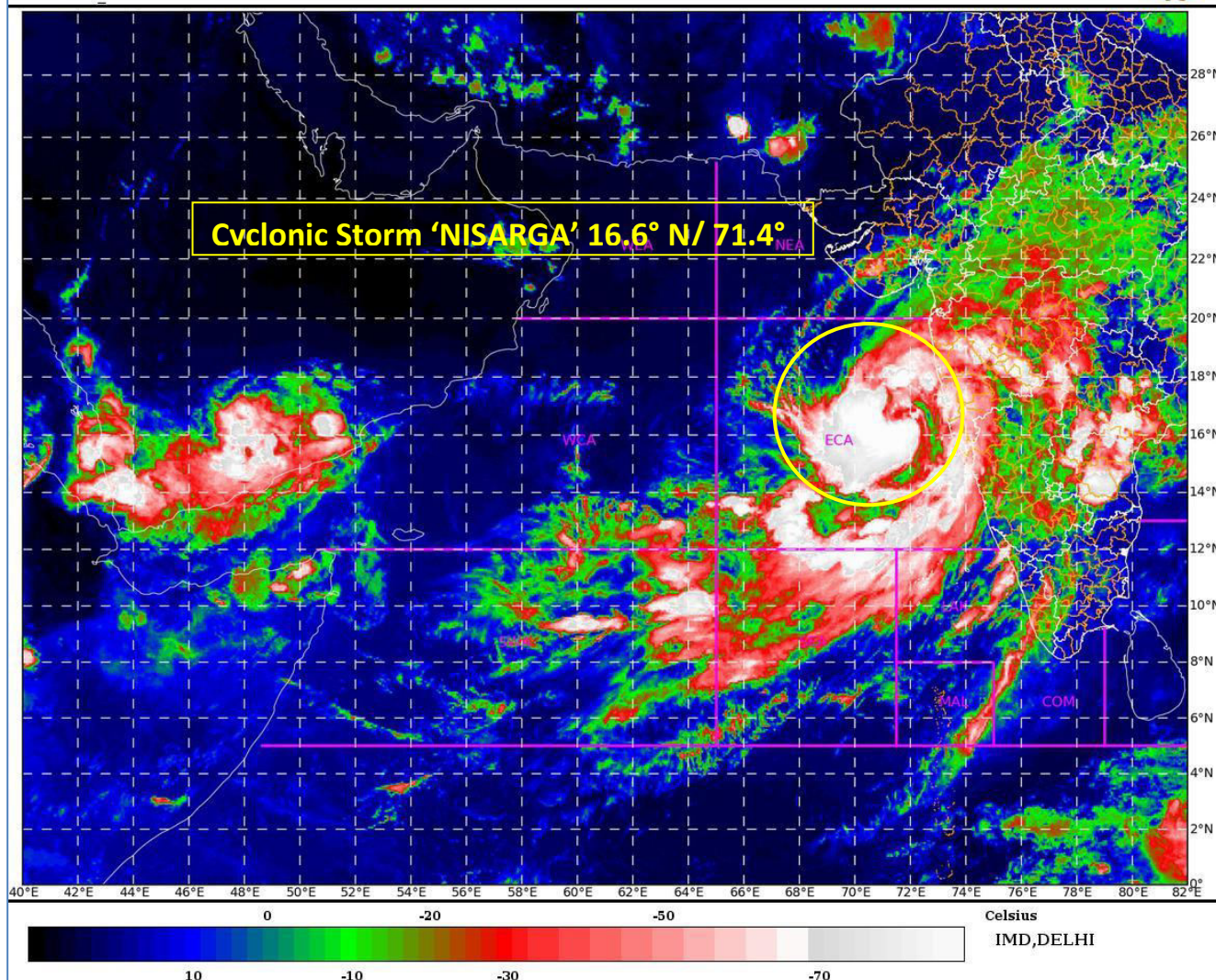
(i) Minor damage to power and communication lines. (ii) Damage to Kutcha and some damage to Pucca roads. (iii) Breaking of tree branches, uprooting of small trees. (iv) Damage to banana and papaya trees. (v) People in affected areas to remain indoors.

The next bulletin will be issued at 0230 hrs IST of today, the 03rd June, 2020.

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

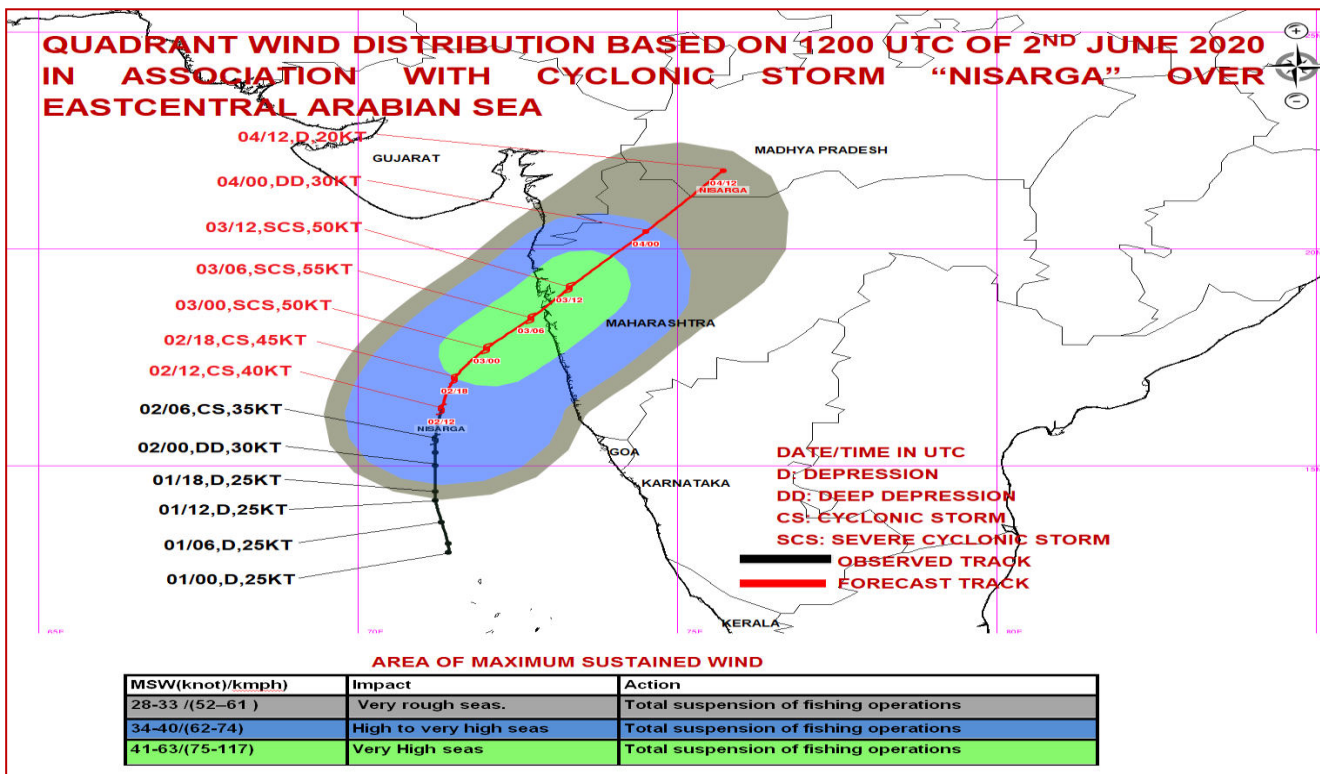
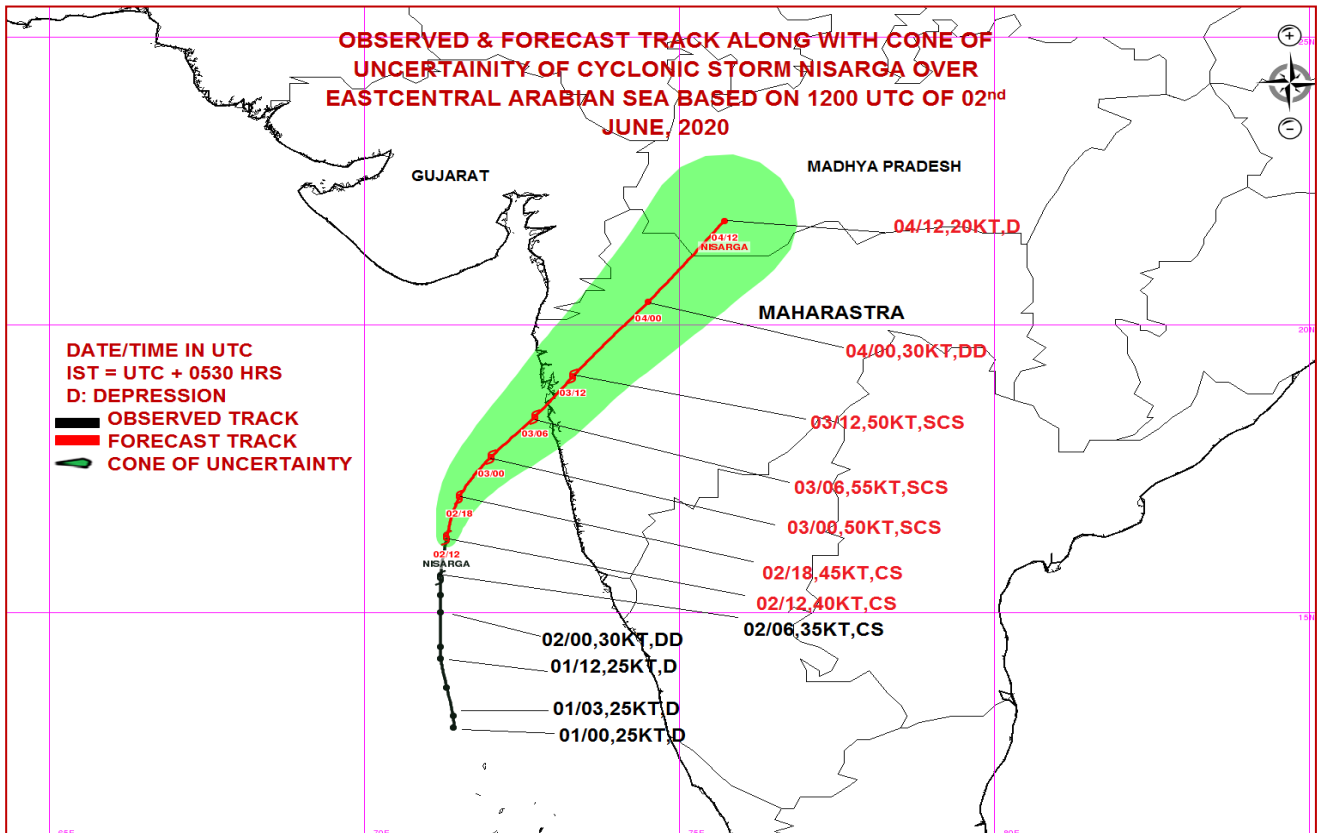
Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

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



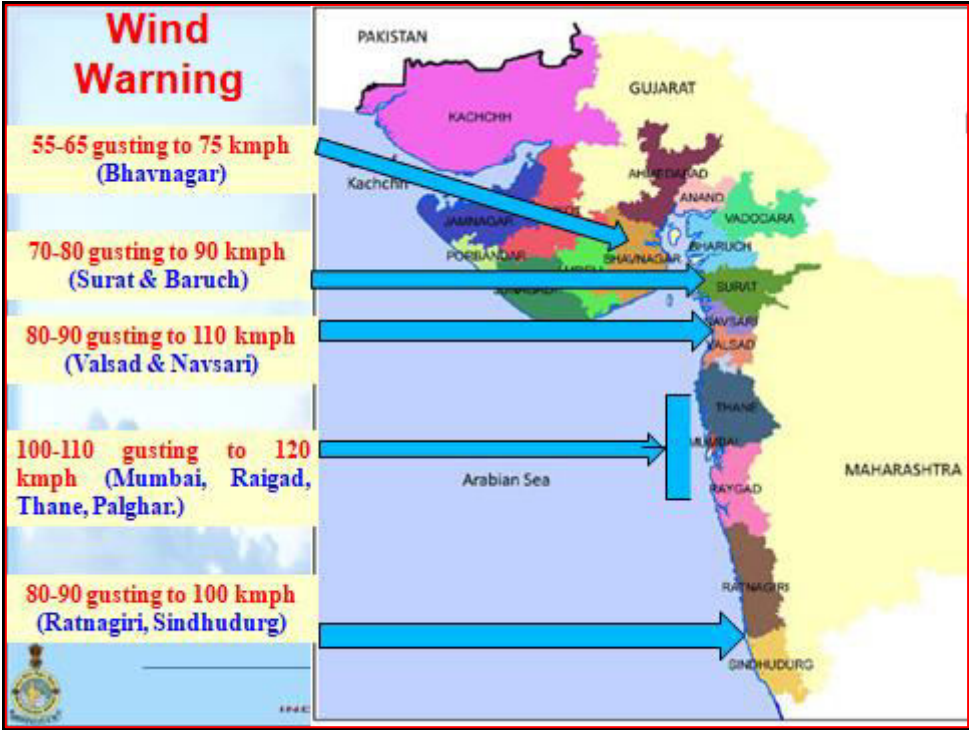
Legend: ECA- east-Central Arabian Sea

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

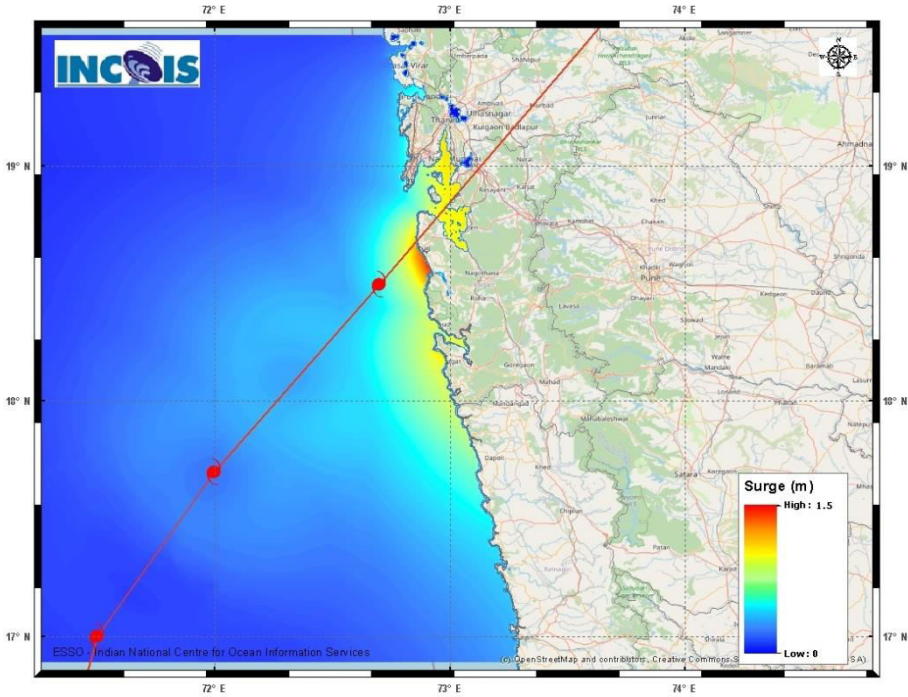


Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

District Level Wind Warning



Storm surge Warning



The below listed surge heights over and above astronomical tide.

MANDAL/TALUK	DISTRICT	STATE / UNION TERRITORY	NEAREST PLACE OF HABITATION	* STORM SURGE (m)	* EXPECTED INUNDATION EXTENT (km)
ALIBAG	RAIGARH	MAHARASHTRA	ALIBAG	0.5-1.5	Upto 1.4
PEN	RAIGARH	MAHARASHTRA	PEN	0.8-1.1	Upto 2.2
THANE	GREATER MUMBAI	MAHARASHTRA	THANE	0.5-1.1	Upto 0.34
DAPOLI	RATNAGIRI	MAHARASHTRA	DAPOLI	0.5-0.8	Upto 0.1
GUHAGAR	RATNAGIRI	MAHARASHTRA	GUHAGAR	0.5-0.6	Upto 0.22
VASAI	THANE	MAHARASHTRA	VASAI	0.5-0.6	Upto 1.11

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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/02/2020)

TIME OF ISSUE: 0215 HOURS IST

DATED: 03.06.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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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)

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: **Cyclonic Storm 'NISARGA' over Eastcentral Arabian Sea: Cyclone Warning for north Maharashtra - south Gujarat coasts: Red message**

The **Cyclonic Storm 'NISARGA'** over Eastcentral Arabian Sea moved north-northeastwards with a speed of about 11 kmph during past 06 hours, and lay centred at 2330 hours IST of 02nd June, 2020 over Eastcentral Arabian Sea near latitude 16.8°N and longitude 71.5°E, about 290 km west-northwest of Panjim (Goa), 290 km south-southwest of Mumbai (Maharashtra), 250 km south-southwest of Alibagh (Maharashtra) and 500 km south-southwest of Surat (Gujarat).

It is very likely to intensify into a Severe Cyclonic Storm during next 06 hours. It is very likely to move north-northeastwards and cross north Maharashtra and adjoining south Gujarat coast between Harihareshwar and Daman, **close to Alibagh (Raigad District, Maharashtra) during the afternoon of today the 03rd June as a Severe Cyclonic Storm with a maximum sustained wind speed of 100-110 kmph gusting to 120 kmph.**

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum surface (Kmph)	sustained wind speed	Category of cyclonic disturbance
02.06.20/2330	16.8/71.5	75-85	gusting to 95	Cyclonic Storm
03.06.20/0530	17.6/72.0	90-100	gusting to 110	Severe Cyclonic Storm
03.06.20/1130	18.4/72.7	100-110	gusting to 120	Severe Cyclonic Storm
03.06.20/1730	19.1/73.3	80-90	gusting to 100	Cyclonic Storm
03.06.20/2330	19.7/73.8	50-60	gusting to 70	Deep Depression
04.06.20/0530	20.4/74.4	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) Rainfall:

- Light to moderate rainfall at most places with isolated heavy falls very likely over Coastal Karnataka and Marathwada during next 06 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at a few places and **extremely heavy falls (≥ 20 cm in 24 hours)** at isolated places very likely over north Konkan (Mumbai, Palghar, Thane, Raigad districts) and north Madhya Maharashtra on 3rd June.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places over south Konkan (Ratnagiri & Sindhudurg districts) & Goa and south Gujarat region (Valsad, Navsari, Dang, Daman, Dadra & Nagar Haveli and Surat districts) on 3rd June.
- Light to moderate rainfall at most places with heavy falls at isolated places over west Madhya Pradesh on 03rd June.

(ii) Wind warning

- Gale wind, speed reaching 75-85 kmph gusting to 95 kmph, is prevailing over Eastcentral Arabian Sea. It will gradually increase becoming Gale wind, speed reaching 80-90 kmph gusting to 100 kmph, over eastcentral Arabian Sea off south Maharashtra & Goa coasts by today morning and further becoming 100-110 kmph gusting to 120 kmph over eastcentral Arabian Sea along & off Maharashtra (Raigad, Mumbai, Palghar, Thane) coast from today the 03rd June noon. Gale wind, speed reaching 80-90 kmph gusting to 100 kmph, likely along & off Valsad, Navsari districts of Gujarat, Daman, Dadra & Nagar Haveli and along & off northeast Arabian Sea, Ratnagiri, Sindhudurg districts of Maharashtra and 70-80 kmph gusting to 90 kmph along & off Surat & Bharuch districts of south Gujarat from today the 03rd June noon.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely to prevail over northeast Arabian Sea along & off remaining districts of south Gujarat coast on 03rd June.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely prevail over eastcentral Arabian Sea along and off Karnataka-Goa coasts during next 24 hours.

(iii) Sea condition

The Sea condition will be High to Very High over eastcentral Arabian Sea and along & off Maharashtra & Goa coasts till today, the 3rd June evening. The Sea condition is very likely to be very rough to High over northeast Arabian Sea along & off south Gujarat coast on 03rd June.

(iv) Storm Surge Warning:

Storm surge of about 1-2 meters height above astronomical tide is very likely to inundate low lying areas of Mumbai, Thane and Raigad districts and 0.5-1 meter height above the astronomical tide likely to inundate low lying areas of Ratnagiri district during the time of landfall.

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(vi) Damage Expected:

- Major damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly.
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- Major damage to coastal crops.
- Damage to embankments/ salt pans.

(vii) Fishermen Warning & Action Suggested:

- Total suspension of fishing operations.
- Mobilise evacuation from low lying areas.
- Judicious regulation of rail and road traffic.
- People in affected areas to remain indoors.
- Movement in motor boats and small ships unsafe.

Post Landfall Outlook:

After the landfall the Severe Cyclonic Storm is very likely to maintain its Cyclonic Storm intensity for about 06 hours, while moving north-northeast wards across north Madhya Maharashtra. Under its influence Gale wind reaching 60-70 kmph gusting to 80 kmph very likely to prevail over Pune, Ahmadnagar and 55-65 kmph gusting to 75 kmph adjoining Beed, Nashik & Aurangabad districts of Maharashtra. Light to moderate rainfall at most places with heavy to very heavy falls at isolated places are also very likely over these districts on 3rd June, 2020.

Damage Expected and Action suggested for interior districts of Maharashtra (Pune, Ahmadnagar, Nashik, Aurangabad and adjoining Beed).

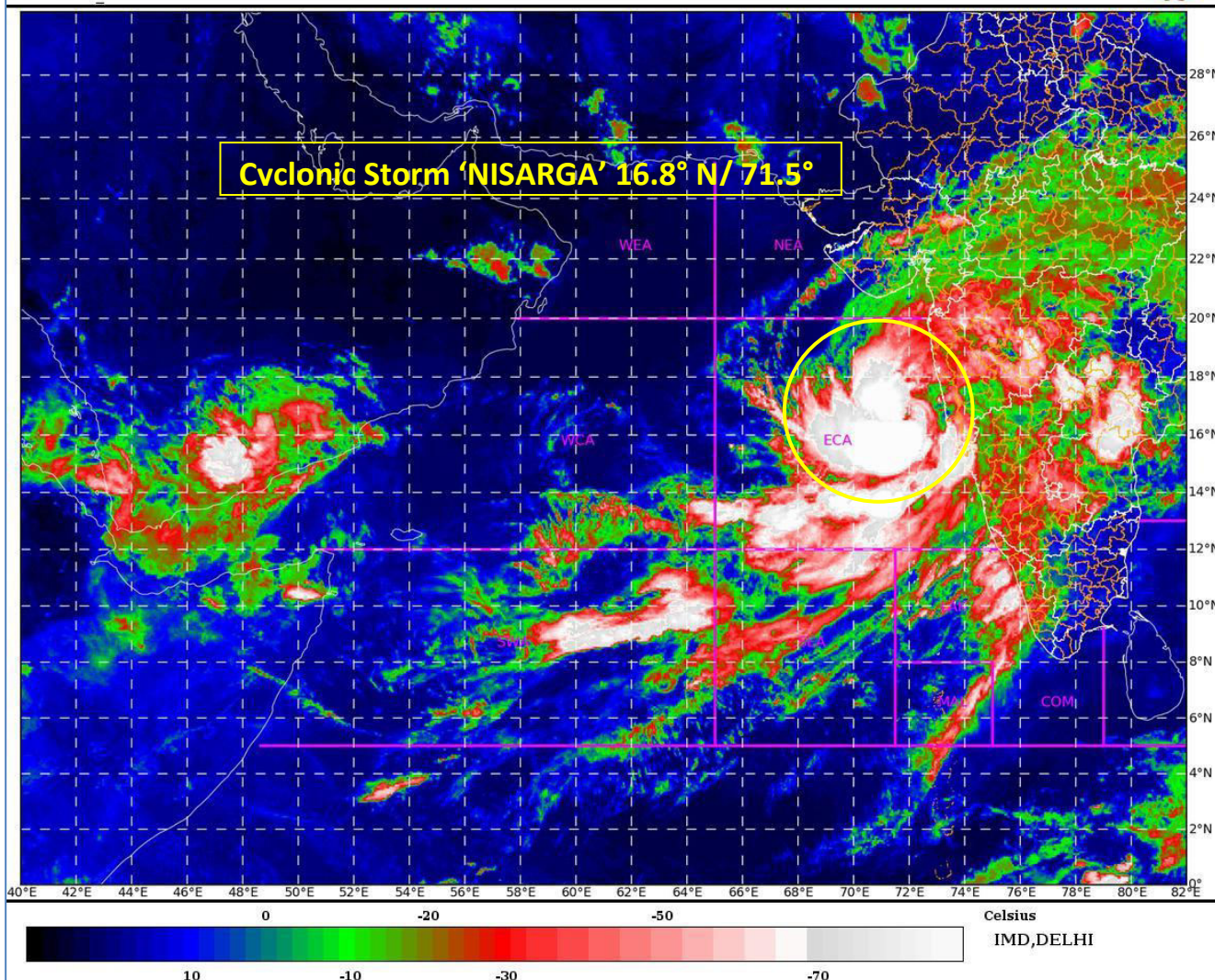
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The next bulletin will be issued at 0530 hrs IST of today, the 03rd June, 2020.

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

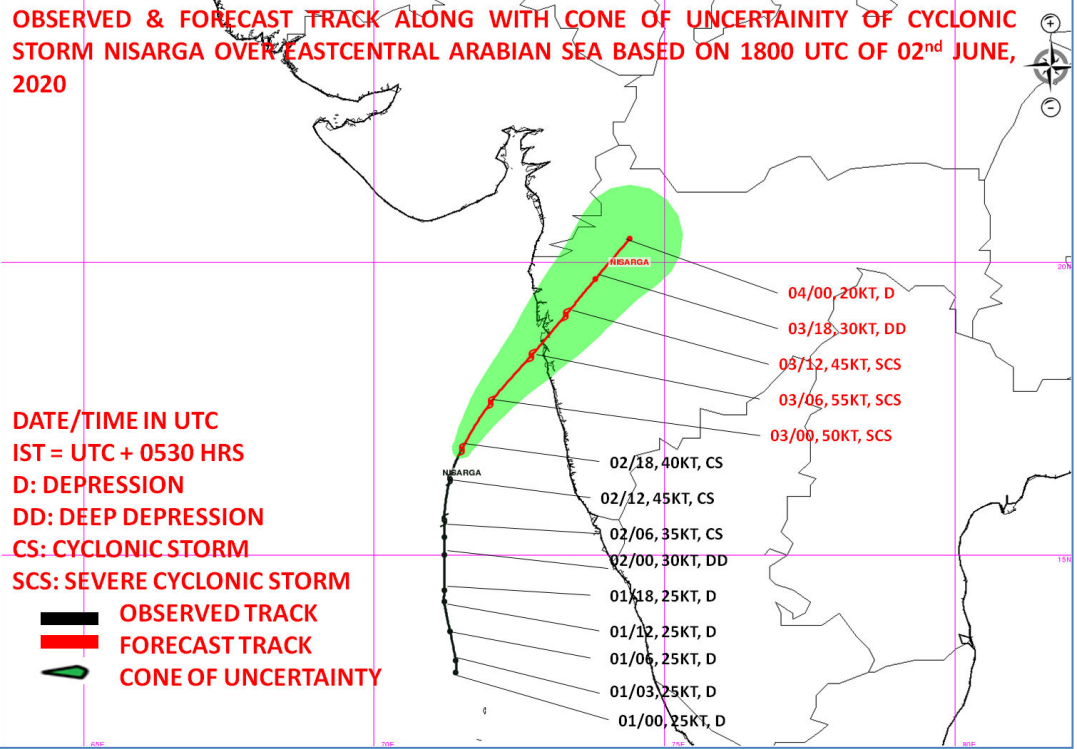
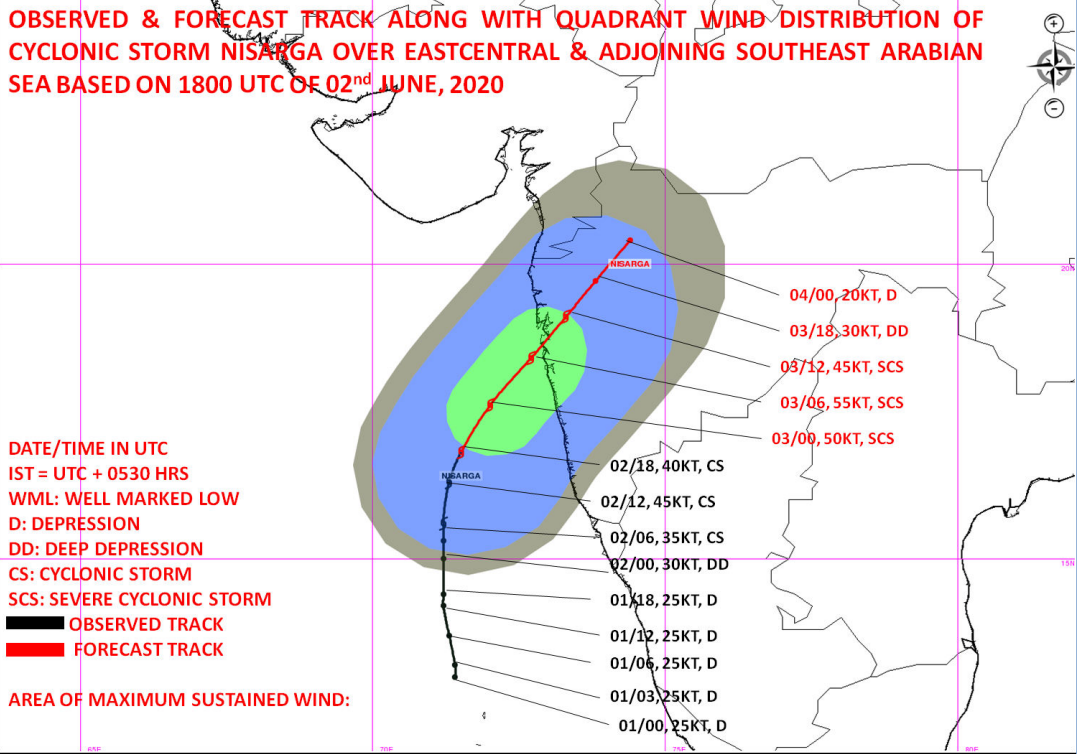
Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

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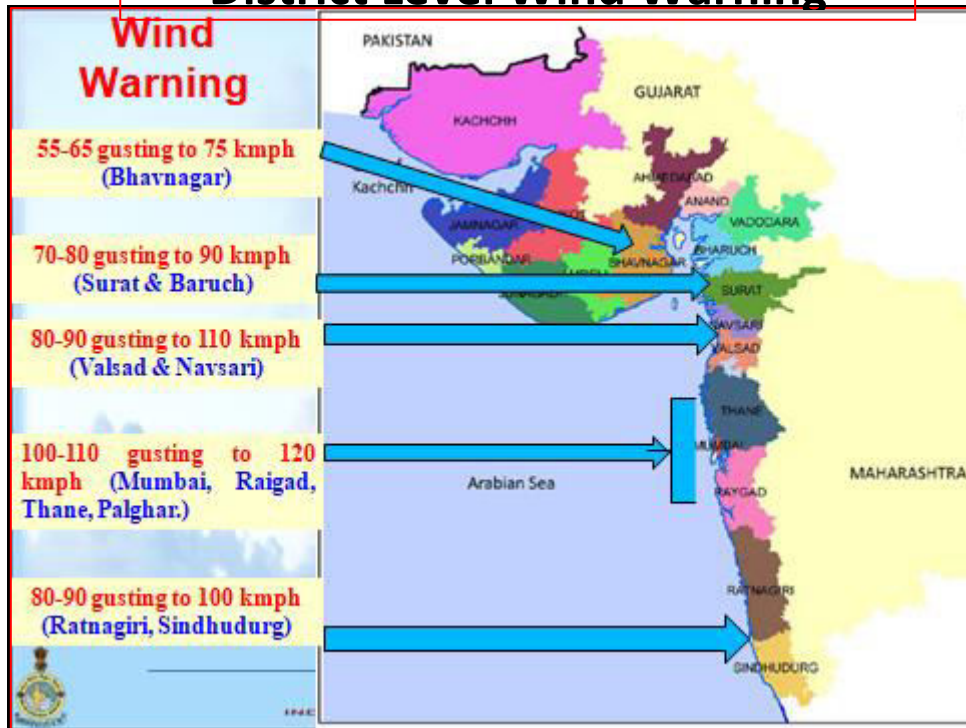
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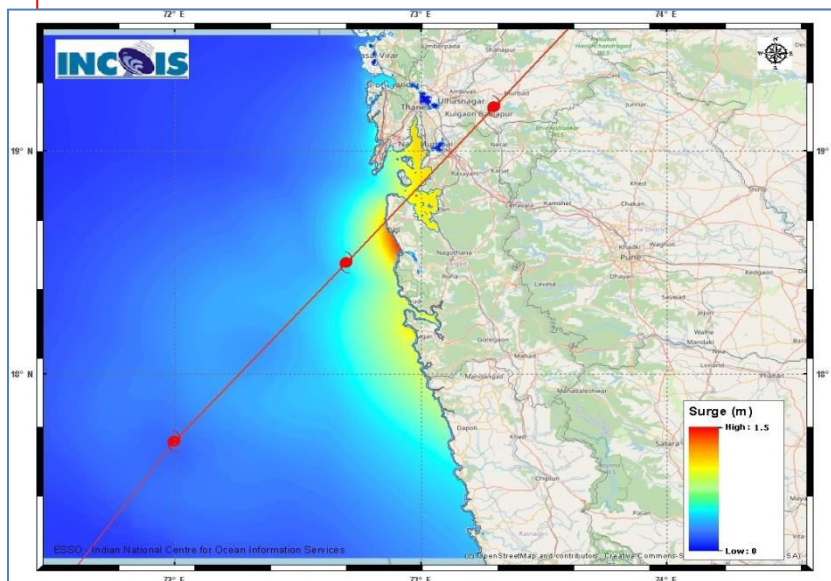


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District Level Wind Warning



Storm surge Warning



The below listed surge heights over and above astronomical tide.

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PEN	RAIGARH	MAHARASHTRA	PEN	0.8-1.1	Upto 2.8
THANE	GREATER BOMBAY	MAHARASHTRA	THANE	0.5-1.1	Upto 0.34
DAPOLI	RATNAGIRI	MAHARASHTRA	DAPOLI	0.5-0.8	Upto 0.1
GUHAGAR	RATNAGIRI	MAHARASHTRA	GUHAGAR	0.5-0.6	Upto 0.22
VASAI	THANE	MAHARASHTRA	VASAI	0.5-0.6	Upto 1.11

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 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/02/2020)

TIME OF ISSUE: 0500 HOURS IST

DATED: 03.06.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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

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

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

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

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

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: **Cyclonic Storm 'NISARGA' over Eastcentral Arabian Sea: Cyclone Warning for north Maharashtra - south Gujarat coasts: Red message**

The **Cyclonic Storm 'NISARGA'** over Eastcentral Arabian Sea moved north-northeastwards with a speed of about 11 kmph during past 06 hours, and lay centred at 0230 hours IST of 03rd June, 2020 over Eastcentral Arabian Sea near latitude 17.1°N and longitude 71.8°E, about 280 km west-northwest of Panjim (Goa), 250 km south-southwest of Mumbai (Maharashtra), 200 km south-southwest of Alibagh (Maharashtra) and 460 km south-southwest of Surat (Gujarat).

It is very likely to intensify into a Severe Cyclonic Storm during next 06 hours. It is very likely to move north-northeastwards and cross north Maharashtra and adjoining south Gujarat coast between Harihareshwar and Daman, **close to Alibagh (Raigad District, Maharashtra) during the afternoon of today the 03rd June as a Severe Cyclonic Storm with a maximum sustained wind speed of 100-110 kmph gusting to 120 kmph.**

The system is now being continuously tracked by the Doppler Weather Radars (DWRs) at Mumbai (Maharashtra) and Goa.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum surface (Kmph)	sustained wind speed	Category of cyclonic disturbance
03.06.20/0230	17.1/71.8	80-90	gusting to 100	Cyclonic Storm
03.06.20/0530	17.6/72.0	90-100	gusting to 110	Severe Cyclonic Storm
03.06.20/1130	18.4/72.7	100-110	gusting to 120	Severe Cyclonic Storm
03.06.20/1730	19.1/73.3	80-90	gusting to 100	Cyclonic Storm
03.06.20/2330	19.7/73.8	50-60	gusting to 70	Deep Depression
04.06.20/0530	20.4/74.4	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) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at a few places and **extremely heavy falls (≥ 20 cm in 24 hours)** at isolated places very likely over north Konkan (Mumbai, Palghar, Thane, Raigad districts) and north Madhya Maharashtra on 3rd June.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places over south Konkan (Ratnagiri & Sindhudurg districts) & Goa and south Gujarat region (Valsad, Navsari, Dang, Daman, Dadra & Nagar Haveli and Surat districts) on 3rd June.
- Light to moderate rainfall at most places with heavy falls at isolated places over west Madhya Pradesh on 03rd June.

(ii) Wind warning

- Gale wind, speed reaching 80-90 kmph gusting to 100 kmph, is prevailing over Eastcentral Arabian Sea. It will gradually increase becoming Gale wind, speed reaching 80-90 kmph gusting to 100 kmph, over eastcentral Arabian Sea off south Maharashtra & Goa coasts by today morning and further becoming 100-110 kmph gusting to 120 kmph over eastcentral Arabian Sea along & off Maharashtra (Raigad, Mumbai, Palghar, Thane) coast from today the 03rd June noon. Gale wind, speed reaching 80-90 kmph gusting to 100 kmph, likely along & off Valsad, Navsari districts of Gujarat, Daman, Dadra & Nagar Haveli and along & off northeast Arabian Sea, Ratnagiri, Sindhudurg districts of Maharashtra and 70-80 kmph gusting to 90 kmph along & off Surat & Bharuch districts of south Gujarat from today the 03rd June noon.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely to prevail over northeast Arabian Sea along & off remaining districts of south Gujarat coast on 03rd June.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely prevail over eastcentral Arabian Sea along and off Karnataka-Goa coasts during next 12 hours.

(iii) Sea condition

The Sea condition will be High to Very High over eastcentral Arabian Sea and along & off Maharashtra & Goa coasts till today, the 3rd June evening. The Sea condition is very likely to be very rough to High over northeast Arabian Sea along & off south Gujarat coast on 03rd June.

(iv) Storm Surge Warning:

Storm surge of about 1-2 meters height above astronomical tide is very likely to inundate low lying areas of Mumbai, Thane and Raigad districts and 0.5-1 meter height above the astronomical tide likely to inundate low lying areas of Ratnagiri district during the time of landfall.

(v) Fishermen Warning

Fishermen are advised not to venture into Eastcentral and Northeast Arabian Sea and along & off Karnataka-Goa-Maharashtra-south Gujarat coasts till 03rd June.

(vi) Damage Expected:

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

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

(vii) Fishermen Warning & Action Suggested:

- Total suspension of fishing operations.
- Mobilise evacuation from low lying areas.
- Judicious regulation of rail and road traffic.
- People in affected areas to remain indoors.
- Movement in motor boats and small ships unsafe.

Post Landfall Outlook:

After the landfall the Severe Cyclonic Storm is very likely to maintain its Cyclonic Storm intensity for about 06 hours, while moving north-northeast wards across north Madhya Maharashtra. Under its influence Gale wind reaching 60-70 kmph gusting to 80 kmph very likely to prevail over Pune, Ahmadnagar and 55-65 kmph gusting to 75 kmph adjoining Beed, Nashik & Aurangabad districts of Maharashtra. Light to moderate rainfall at most places with heavy to very heavy falls at isolated places are also very likely over these districts on 3rd June, 2020.

Damage Expected and Action suggested for interior districts of Maharashtra (Pune, Ahmadnagar, Nashik, Aurangabad and adjoining Beed).

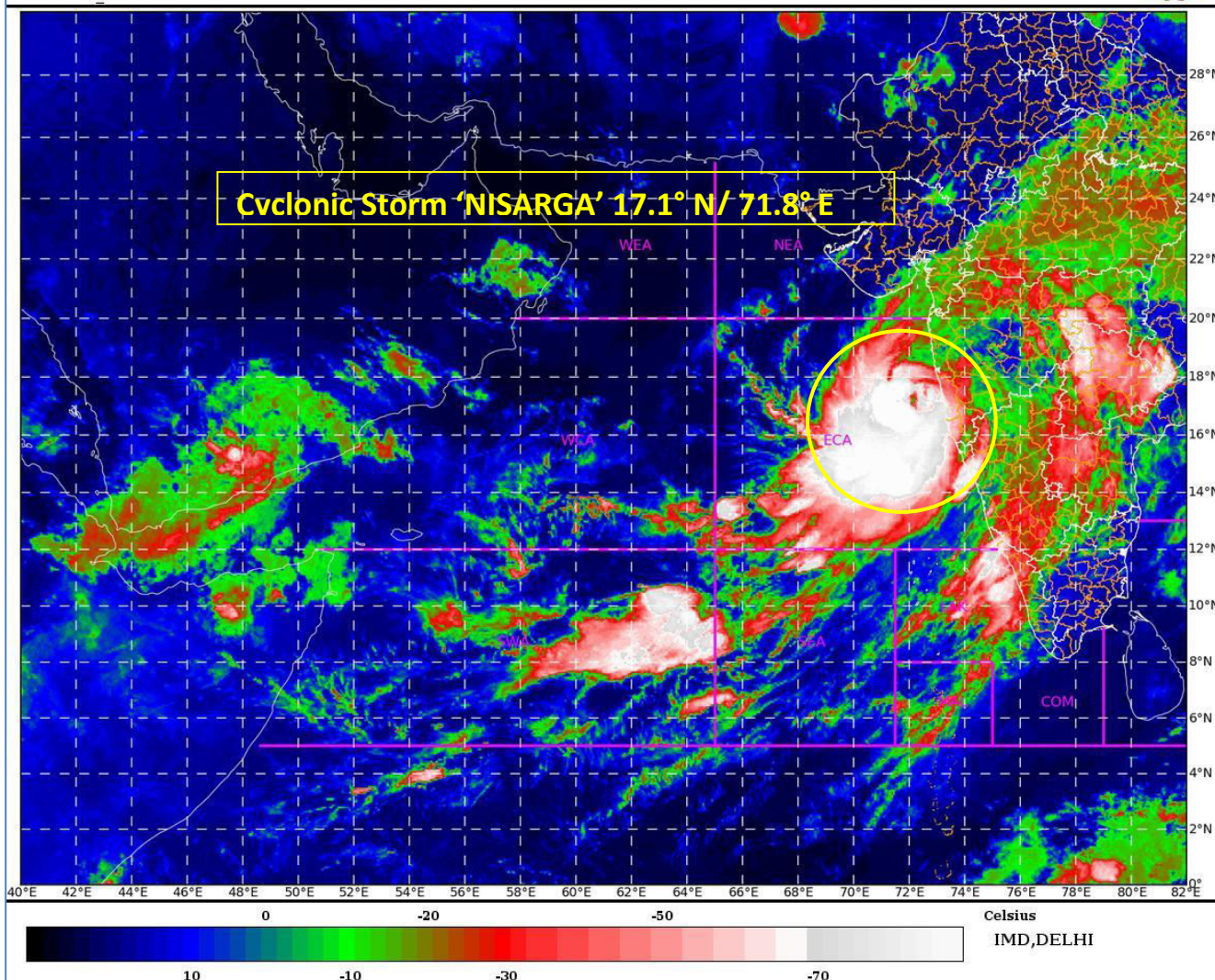
(i) Minor damage to power and communication lines. (ii) Damage to Kutcha and some damage to Pucca roads. (iii) Breaking of tree branches, uprooting of small trees. (iv) Damage to banana and papaya trees. (v) People in affected areas to remain indoors.

The next bulletin will be issued at 0830 hrs IST of today, the 03rd June, 2020.

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

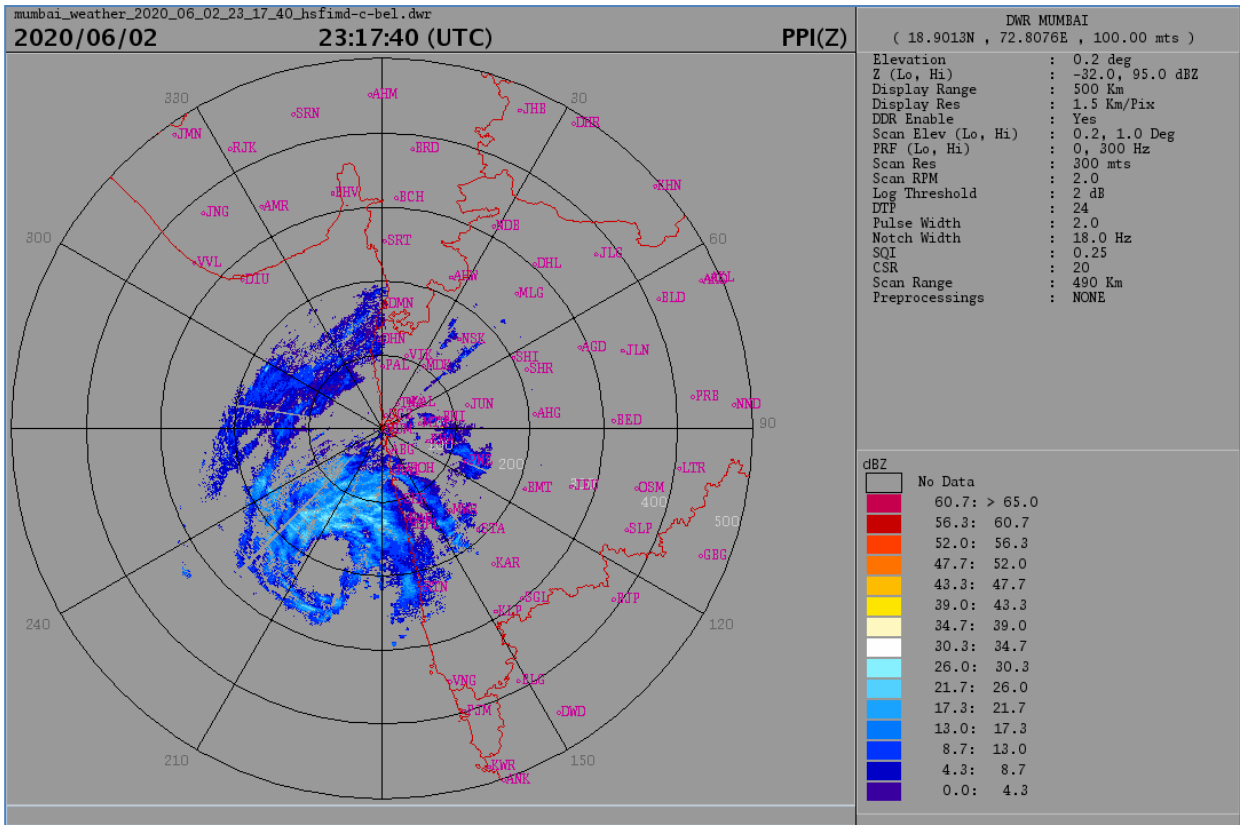
Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

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

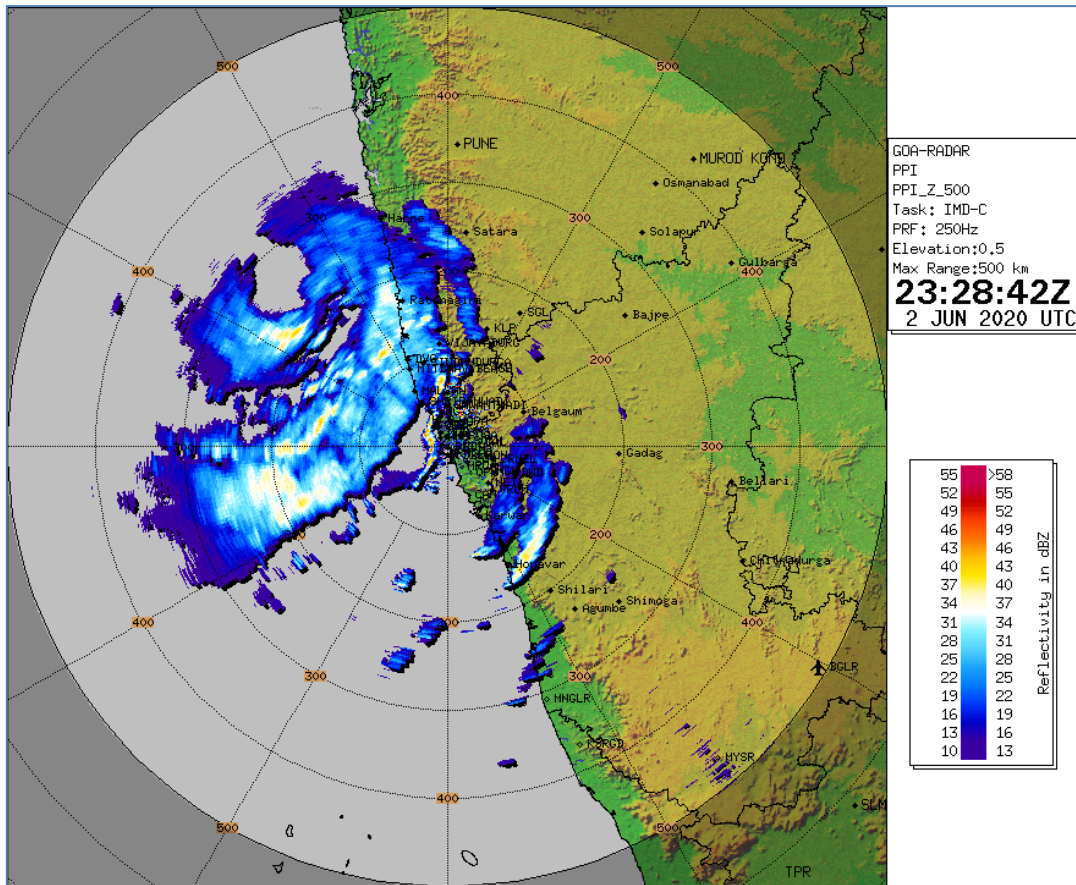


Legend: ECA- east-Central Arabian Sea

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.

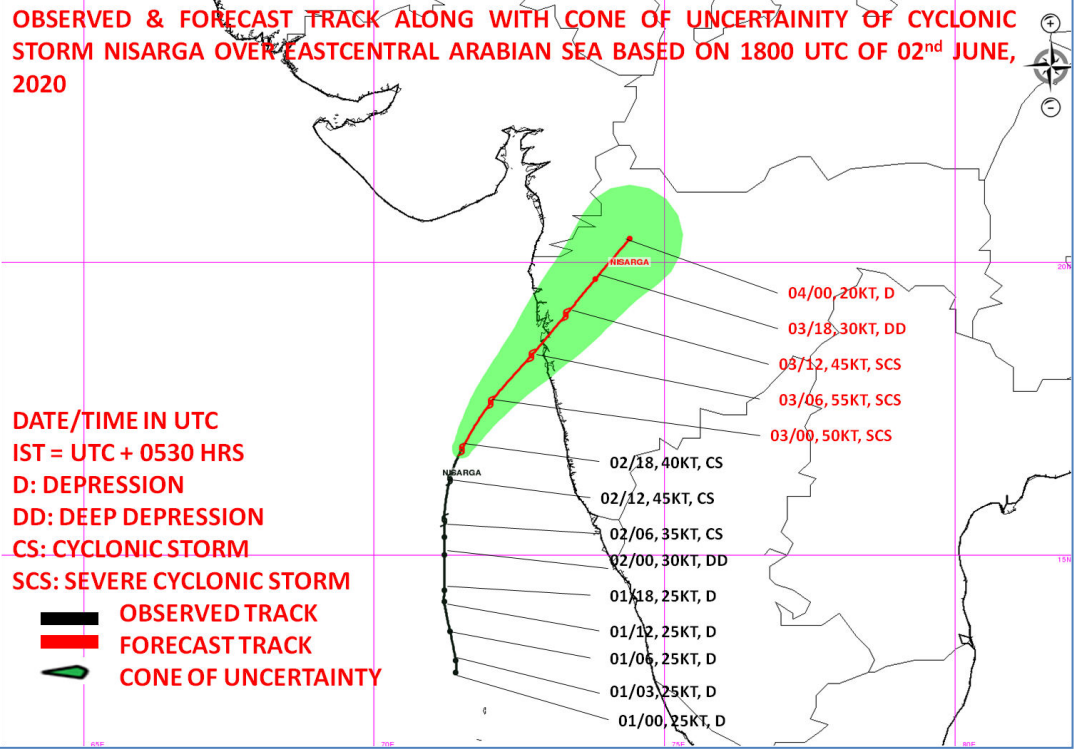
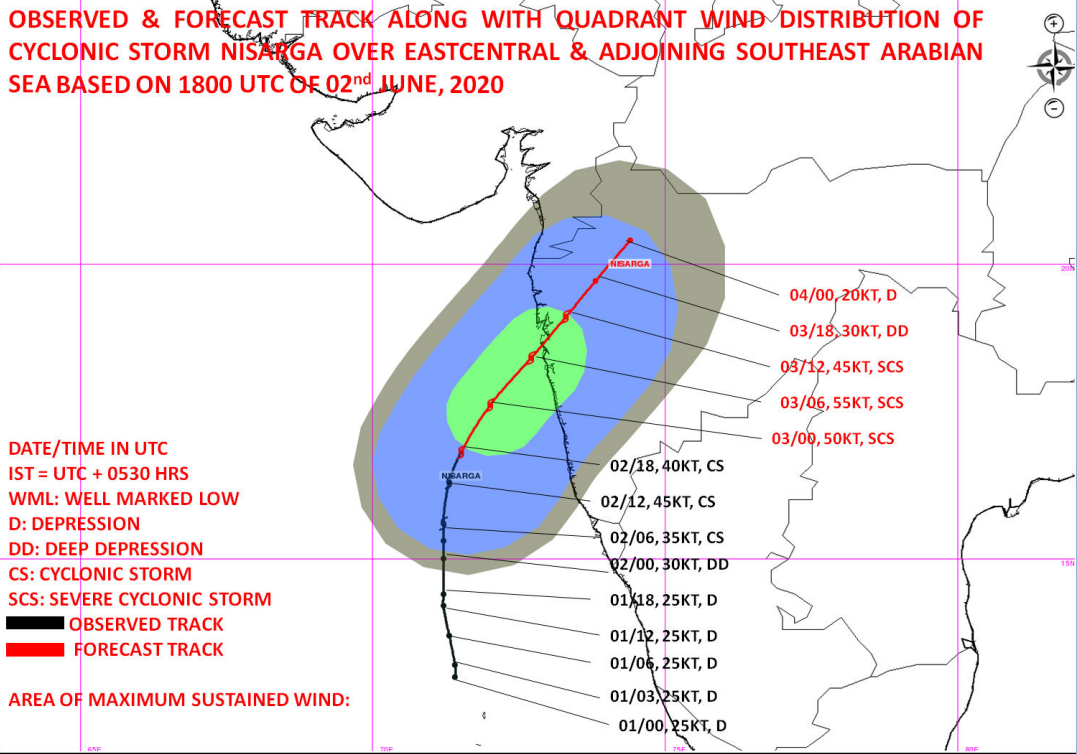


DOPLER WEATHER RADAR MUMBAI AT 04:47 HOURS IST OF 03.06.2020



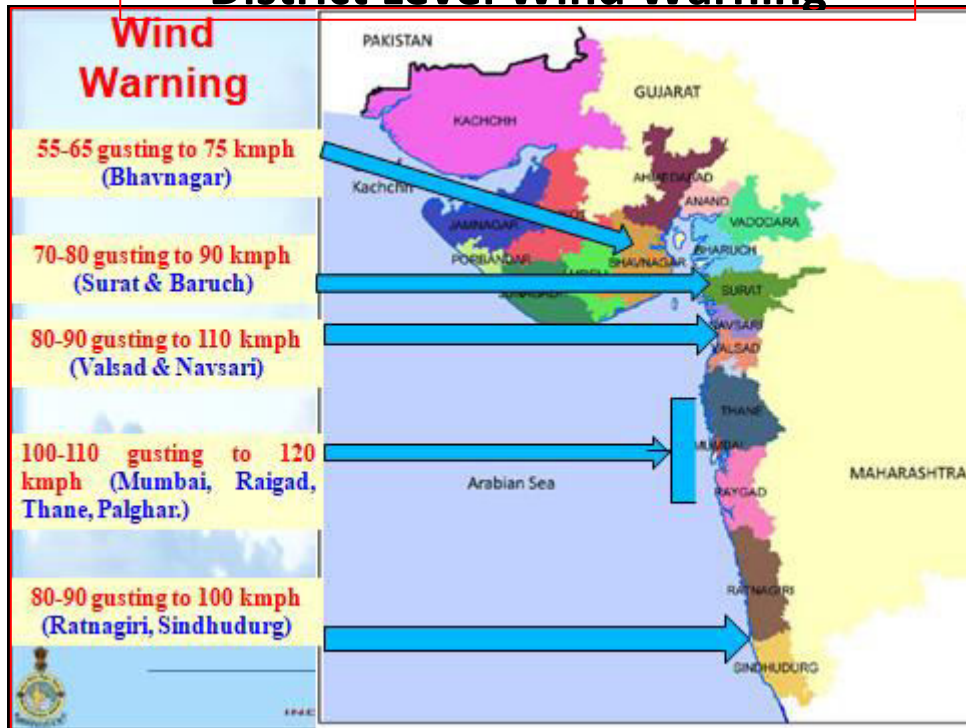
DOPLER WEATHER RADAR GOA AT 04:58 HOURS IST OF 03.06.2020

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

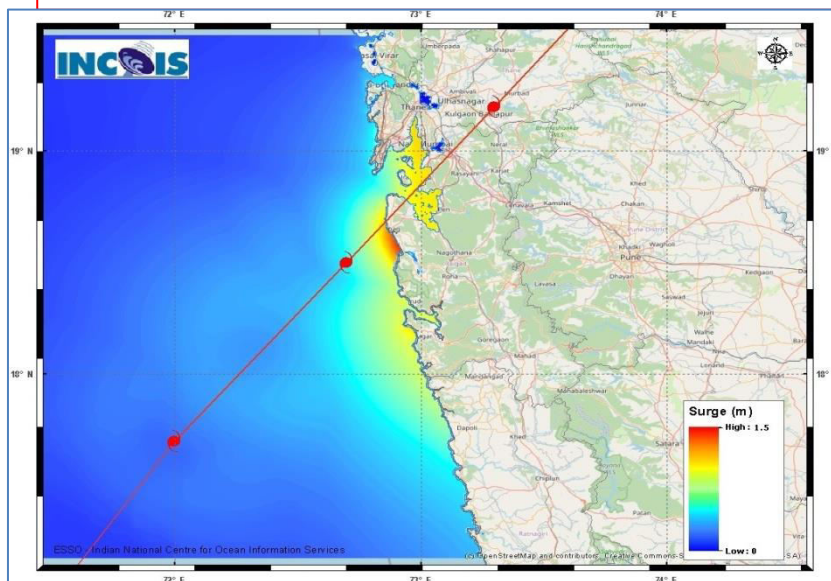


Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

District Level Wind Warning



Storm surge Warning



The below listed surge heights over and above astronomical tide.

MANDAL/TALUK	DISTRICT	STATE / UNION TERRITORY	NEAREST PLACE OF HABITATION	* STORM SURGE (m)	* EXPECTED INUNDATION EXTENT (km)
ALIBAG	RAIGARH	MAHARASHTRA	ALIBAG	0.5-1.5	Upto 1.4
PEN	RAIGARH	MAHARASHTRA	PEN	0.8-1.1	Upto 2.8
THANE	GREATER BOMBAY	MAHARASHTRA	THANE	0.5-1.1	Upto 0.34
DAPOLI	RATNAGIRI	MAHARASHTRA	DAPOLI	0.5-0.8	Upto 0.1
GUHAGAR	RATNAGIRI	MAHARASHTRA	GUHAGAR	0.5-0.6	Upto 0.22
VASAI	THANE	MAHARASHTRA	VASAI	0.5-0.6	Upto 1.11

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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/02/2020)

TIME OF ISSUE: 0800 HOURS IST

DATED: 03.06.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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

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

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

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

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

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: **Severe Cyclonic Storm 'NISARGA' over Eastcentral Arabian Sea: Cyclone Warning for north Maharashtra - south Gujarat coasts: Red message**

The **Cyclonic Storm 'NISARGA'** over Eastcentral Arabian Sea moved north-northeastwards with a speed of about 14 kmph during past 06 hours and intensified into a **Severe Cyclonic Storm** and lay centred at 0530 hours IST of today the 03rd June, 2020 over Eastcentral Arabian Sea near latitude 17.3°N and longitude 72.1°E, about 165 km south-southwest of Alibagh (Maharashtra), 215 km south-southwest of Mumbai (Maharashtra) and 440 km south-southwest of Surat (Gujarat).

It is very likely to move north-northeastwards and cross north Maharashtra coast **close to south of Alibagh (Raigad District, Maharashtra) during the afternoon of today the 03rd June as a Severe Cyclonic Storm with a maximum sustained wind speed of 100-110 kmph gusting to 120 kmph.**

The system is now being continuously tracked by the Doppler Weather Radars (DWRs) at Mumbai (Maharashtra) and Goa.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum surface (Kmph)	sustained wind speed	Category of cyclonic disturbance
03.06.20/0530	17.3/72.1	85-95	gusting to 105	Severe Cyclonic Storm
03.06.20/1130	18.1/72.7	100-110	gusting to 120	Severe Cyclonic Storm
03.06.20/1730	18.7/73.3	80-90	gusting to 100	Cyclonic Storm
03.06.20/2330	19.4/73.9	50-60	gusting to 70	Deep Depression
04.06.20/0530	20.2/74.6	40-50	gusting to 60	Depression

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

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

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at a few places and **extremely heavy falls (≥ 20 cm in 24 hours)** at isolated places very likely over north Konkan (Mumbai, Palghar, Thane, Raigad districts) and north Madhya Maharashtra during next 24 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places over south Konkan (Ratnagiri & Sindhudurg districts) & Goa and south Gujarat region (Valsad, Navsari, Dang, Daman, Dadra & Nagar Haveli and Surat districts) during next 24 hours.
- Light to moderate rainfall at most places with heavy falls at isolated places over west Madhya Pradesh and Vidarbha during next 24 hours.

(ii) Wind warning

- Gale wind, speed reaching 85-95 kmph gusting to 105 kmph, is prevailing over Eastcentral Arabian Sea. It will gradually increase becoming Gale wind, speed reaching 100-110 kmph gusting to 120 kmph over eastcentral Arabian Sea along & off north Maharashtra coast (Raigad, Mumbai and adjoining Thane) 85-95 kmph gusting to 105 kmph along & off Ratnagiri, Sindhudurg, Palghar and remaining areas of Thane from today the 03rd June noon. Gale wind, speed reaching 60-80 kmph gusting to 90 kmph, likely along & off Valsad, Navsari districts of Gujarat, Daman, Dadra & Nagar Haveli and along & off northeast Arabian Sea and 60-70 kmph gusting to 80 kmph along & off Surat & Bharuch districts of south Gujarat from today the 03rd June noon.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely to prevail over northeast Arabian Sea along & off remaining districts of south Gujarat coast on 03rd June.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely prevail over eastcentral Arabian Sea along and off Karnataka-Goa coasts during next 12 hours.

(iii) Sea condition

The Sea condition will be High to Very High over eastcentral Arabian Sea and along & off Maharashtra & Goa coasts till today, the 3rd June evening. The Sea condition is very likely to be very rough to High over northeast Arabian Sea along & off south Gujarat coast on 03rd June.

(iv) Storm Surge Warning:

Storm surge of about 1-2 meters height above astronomical tide is very likely to inundate low lying areas of Mumbai, Thane and Raigad districts and 0.5-1 meter height above the astronomical tide likely to inundate low lying areas of Ratnagiri district during the time of landfall.

(v) Fishermen Warning

Fishermen are advised not to venture into Eastcentral and Northeast Arabian Sea and along & off Karnataka-Goa-Maharashtra-south Gujarat coasts till 03rd June.

(vi) Damage Expected:

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

(vii) Fishermen Warning & Action Suggested:

- Total suspension of fishing operations.
- Mobilise evacuation from low lying areas.
- Judicious regulation of rail and road traffic.
- People in affected areas to remain indoors.
- Movement in motor boats and small ships unsafe.

Post Landfall Outlook:

After the landfall the Severe Cyclonic Storm is very likely to maintain its Cyclonic Storm intensity for about 06 hours, while moving north-northeastwards across north Madhya Maharashtra. Under its influence Gale wind reaching 60-70 kmph gusting to 80 kmph very likely to prevail over Pune, Ahmadnagar and 55-65 kmph gusting to 75 kmph adjoining Beed, Nashik & Aurangabad districts of Maharashtra. Light to moderate rainfall at most places with heavy to very heavy falls at isolated places are also very likely over these districts on 3rd June, 2020.

Damage Expected and Action suggested for interior districts of Maharashtra (Pune, Ahmadnagar, Nashik, Aurangabad and adjoining Beed).

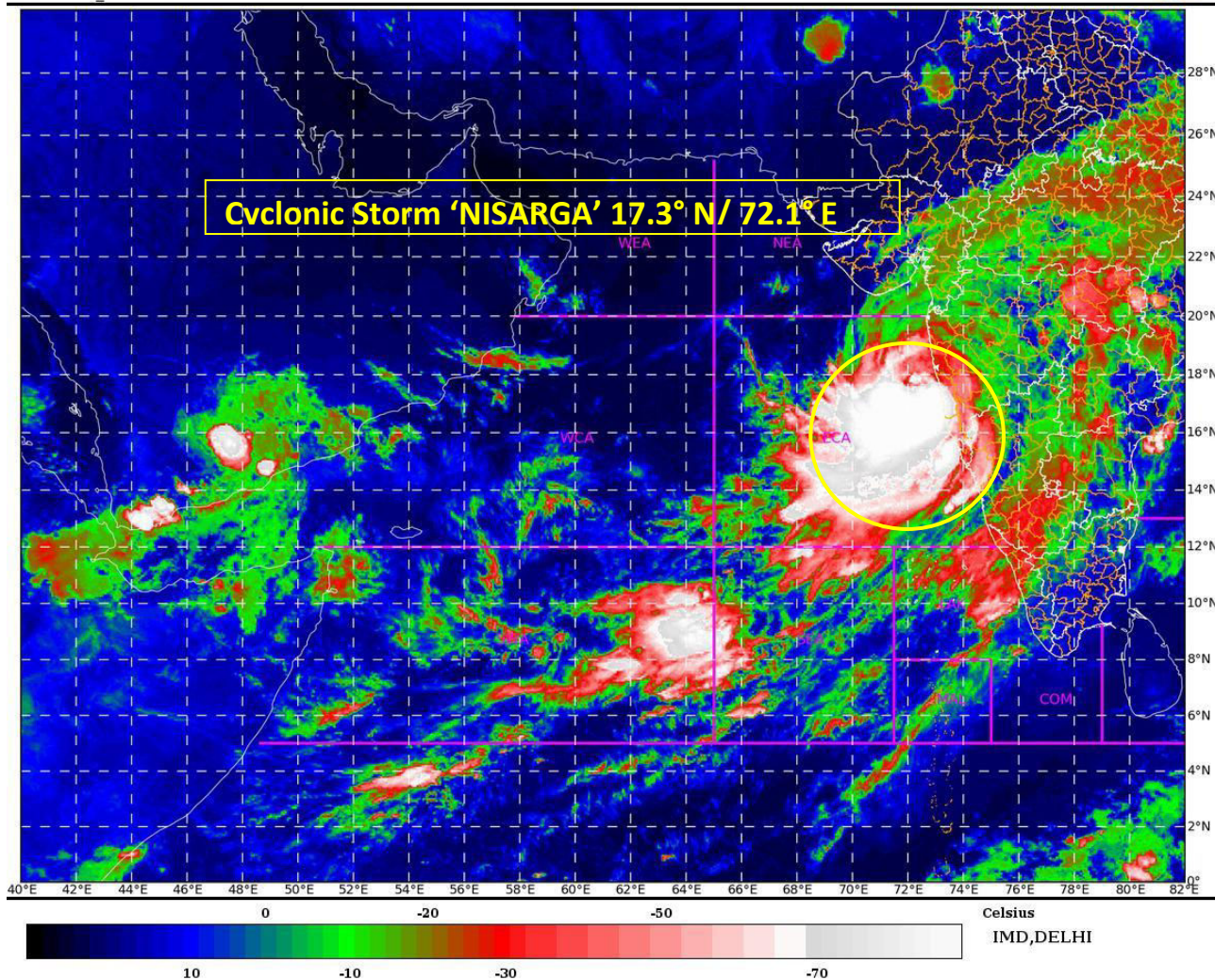
(i) Minor damage to power and communication lines. (ii) Damage to Kutcha and some damage to Pucca roads. (iii) Breaking of tree branches, uprooting of small trees. (iv) Damage to banana and papaya trees. (v) People in affected areas to remain indoors.

The next bulletin will be issued at 1130 hrs IST of today, the 03rd June, 2020.

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

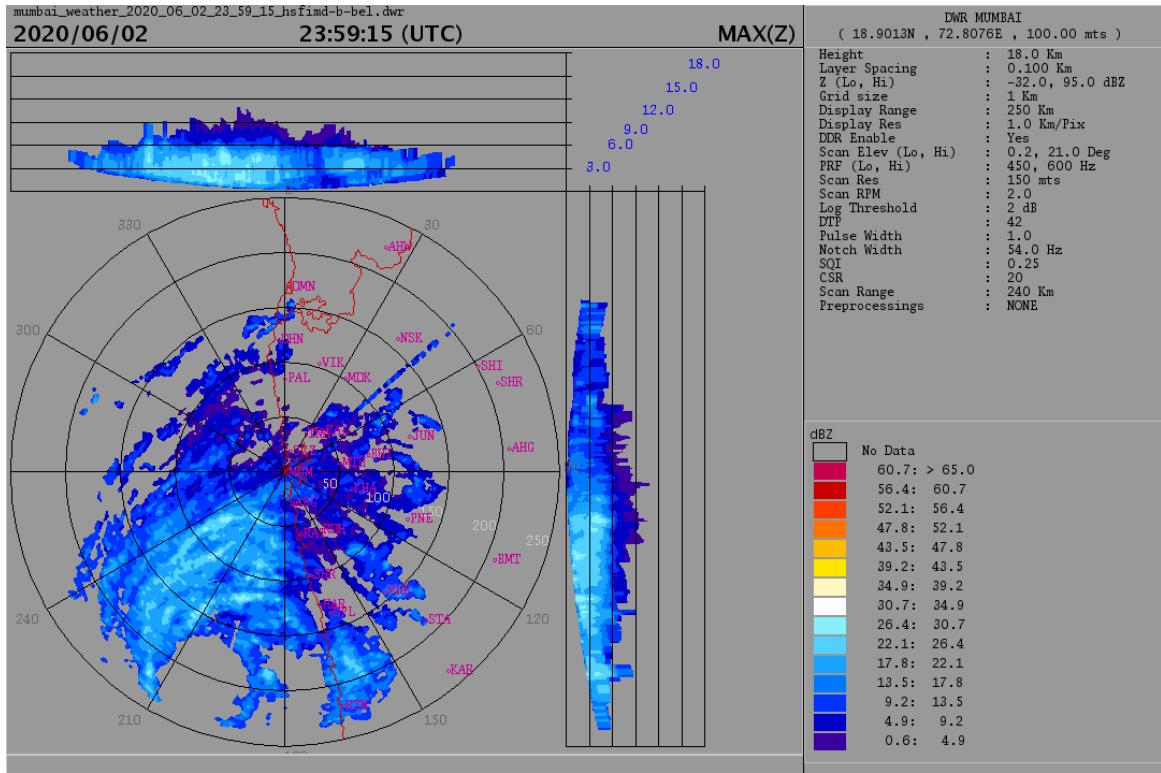
Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

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

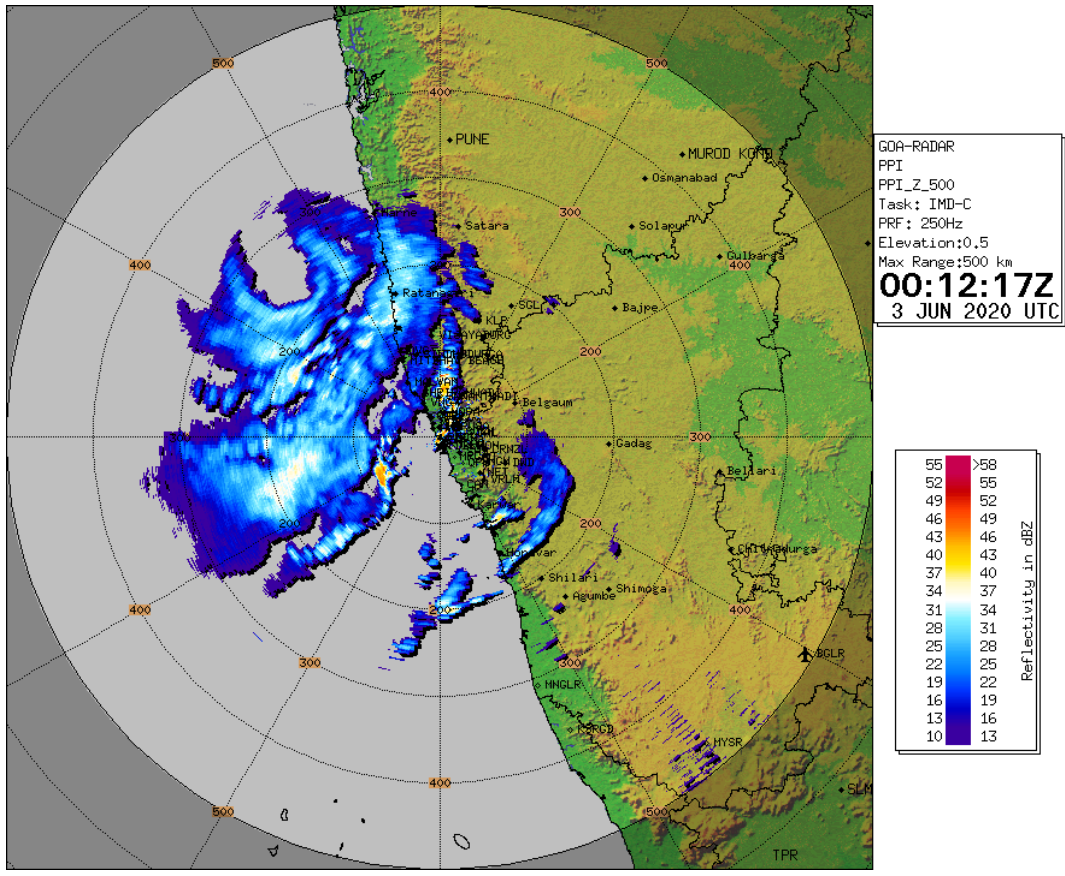


Legend: ECA- east-Central Arabian Sea

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.

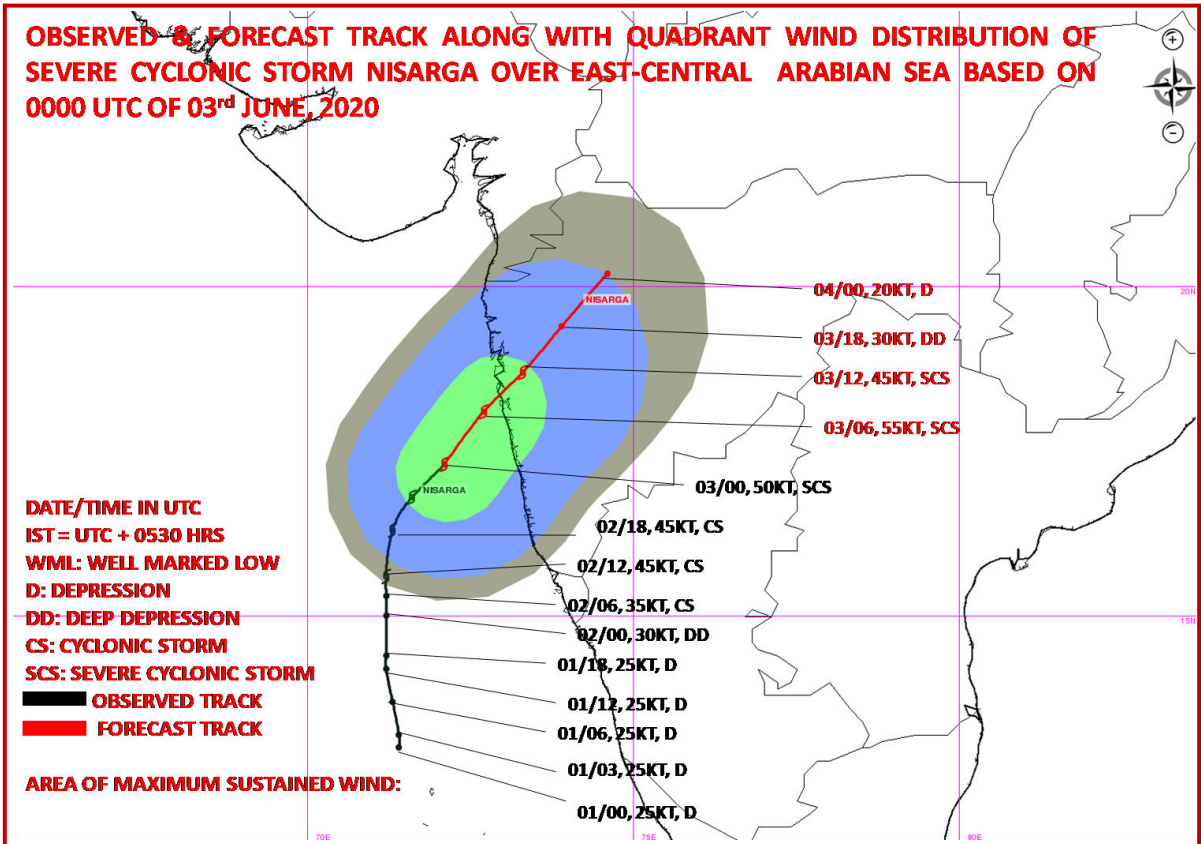
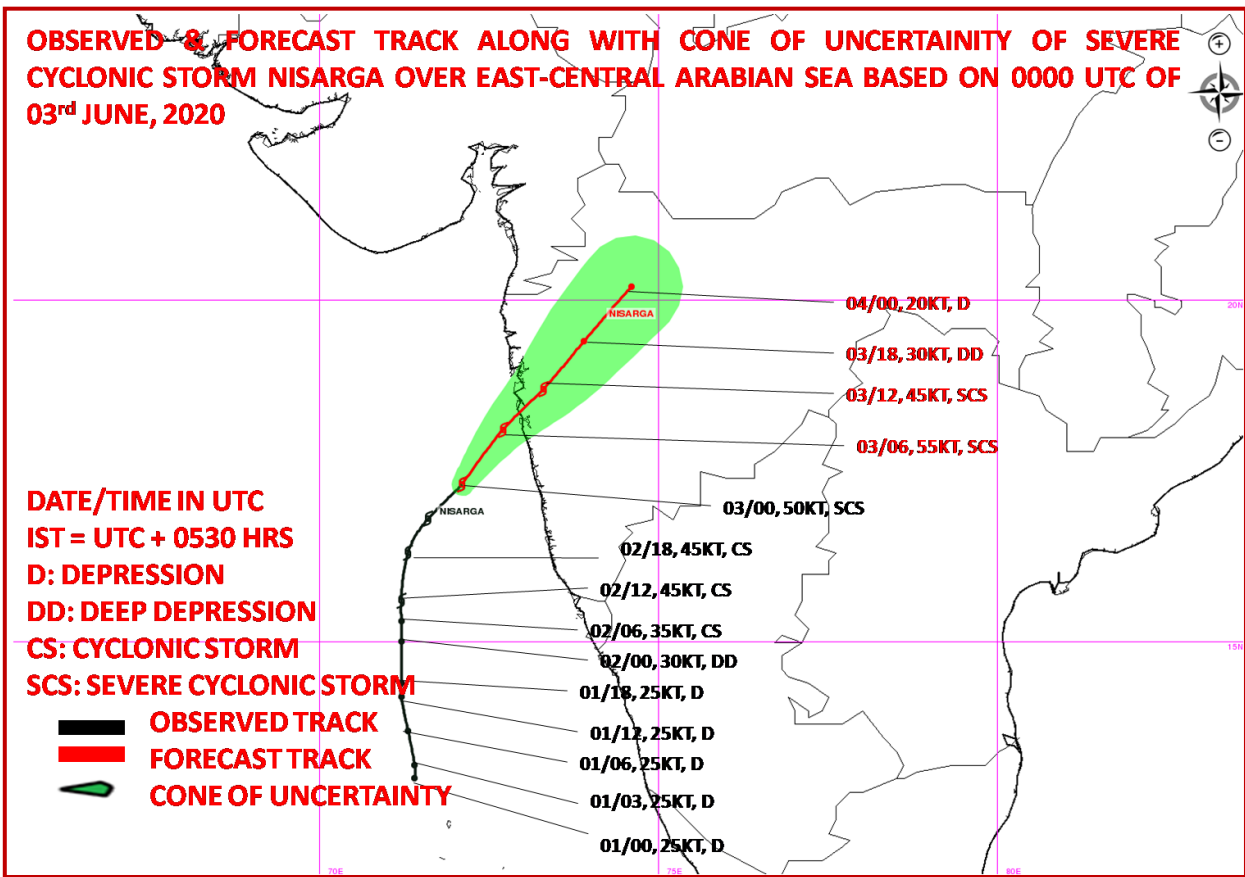


DOPLER WEATHER RADAR MUMBAI AT 05:29 HOURS IST OF 03.06.2020



DOPLER WEATHER RADAR GOA AT 05:30 HOURS IST OF 03.06.2020

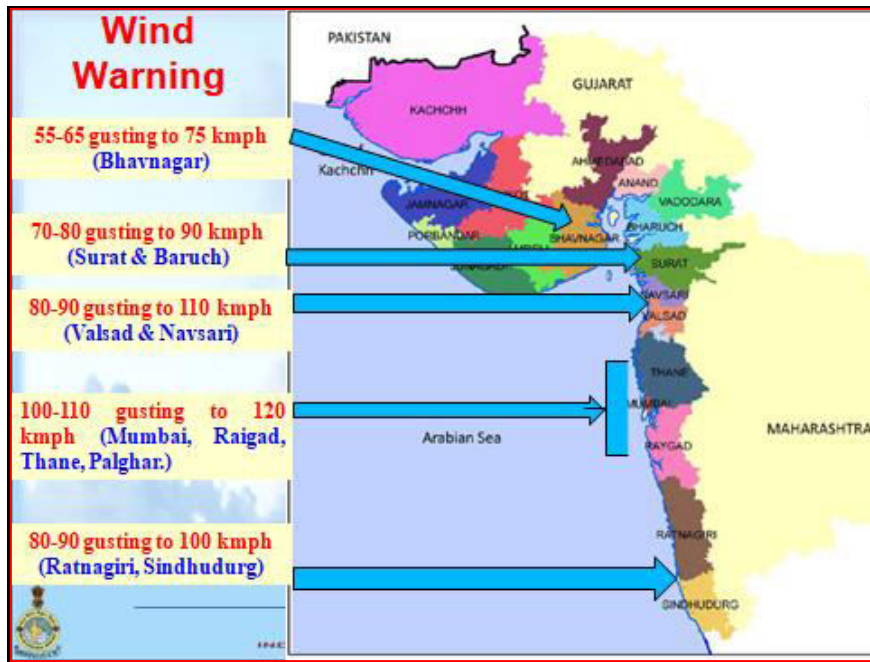
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



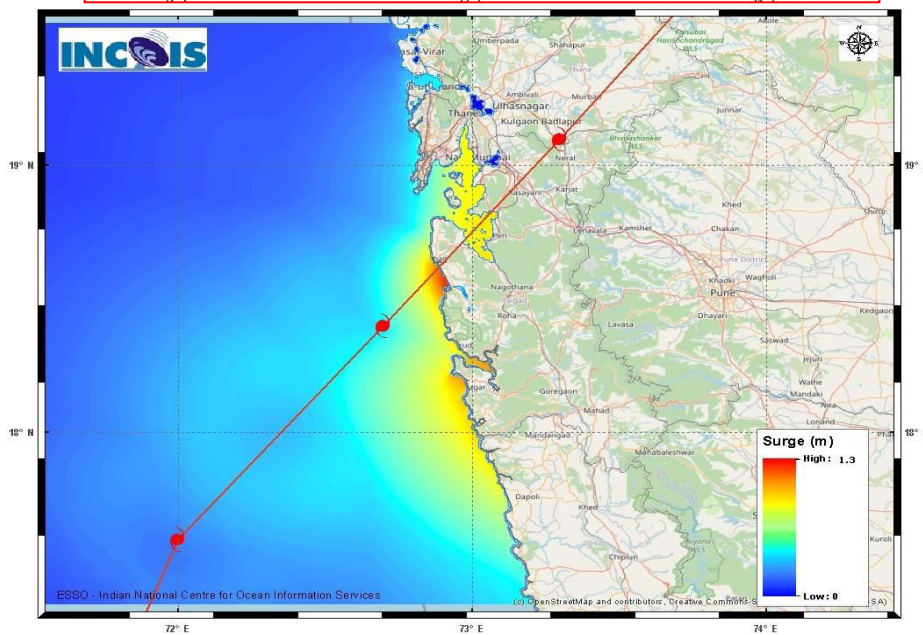
MSW(knot)/kmph)	Impact	Action
28-33 / (52-61)	Very rough seas.	Total suspension of fishing operations
34-40 / (62-74)	High to very high seas	Total suspension of fishing operations
41-63 / (75-117)	Very High seas	Total suspension of fishing operations

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

District Level Wind Warning



Storm surge Warning



The below listed surge heights over and above astronomical tide.

MANDAL/TAL UK	DISTRICT	STATE / UNION TERRITORY	NEAREST PLACE OF HABITATION	* STORM OF SURGE (m)	* EXPECTED INUNDATION EXTENT (km)
ALIBAG	RAIGAD	MAHARASHTRA	ALIBAG	0.5-1.3	Around 1.4
DAPOLI	RATNAGIRI	MAHARASHTRA	DAPOLI	0.6-0.9	Around 0.3
PEN	RAIGAD	MAHARASHTRA	PEN	0.7-0.9	Around 2.2
THANE	GREATER BOMBAY	MAHARASHTRA	THANE	0.7-0.9	Around 0.3

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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/02/2020)

TIME OF ISSUE: 1000 HOURS IST

DATED: 03.06.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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

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

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

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

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

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: **Severe Cyclonic Storm 'NISARGA' over Eastcentral Arabian Sea: Cyclone Warning for north Maharashtra & adjoining south Gujarat coasts: Red message**

The **Severe Cyclonic Storm 'NISARGA'** over Eastcentral Arabian Sea moved northeastwards with a speed of about 13 kmph during past 06 hours and lay centred at 0830 hours IST of today the 03rd June, 2020 over Eastcentral Arabian Sea near latitude 17.6°N and longitude 72.3°E, about 130 km south-southwest of Alibagh (Maharashtra), 170 km south-southwest of Mumbai (Maharashtra) and 400 km south-southwest of Surat (Gujarat).

It is very likely to move north-northeastwards and cross north Maharashtra coast **close to south of Alibagh (Raigad District, Maharashtra) during the afternoon of today the 03rd June as a Severe Cyclonic Storm with maximum sustained wind speed of 100-110 kmph gusting to 120 kmph.**

The system is now being continuously tracked by the Doppler Weather Radars (DWRs) at Mumbai (Maharashtra) and Goa.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum surface (Kmph)	sustained wind speed	Category of cyclonic disturbance
03.06.20/0830	17.6/72.3	100-110	gusting to 120	Severe Cyclonic Storm
03.06.20/1130	18.1/72.7	100-110	gusting to 120	Severe Cyclonic Storm
03.06.20/1730	18.7/73.3	80-90	gusting to 100	Cyclonic Storm
03.06.20/2330	19.4/73.9	50-60	gusting to 70	Deep Depression
04.06.20/0530	20.2/74.6	40-50	gusting to 60	Depression

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

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

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at a few places and **extremely heavy falls (≥ 20 cm in 24 hours)** at isolated places very likely over north Konkan (Mumbai, Palghar, Thane, Raigad districts) and north Madhya Maharashtra during next 24 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places over south Konkan (Ratnagiri & Sindhudurg districts) & Goa and south Gujarat region (Valsad, Navsari, Dang, Daman, Dadra & Nagar Haveli and Surat districts) during next 24 hours.
- Light to moderate rainfall at most places with heavy falls at isolated places over west Madhya Pradesh and Vidarbha during next 24 hours.

(ii) Wind warning

- Gale wind, speed reaching 100-110 kmph gusting to 120 kmph, is prevailing over Eastcentral Arabian Sea. From the Noon of today, the 3rd June, it will become Gale wind, speed reaching 100-110 kmph gusting to 120 kmph over eastcentral Arabian Sea along & off north Maharashtra coast (Raigad, Mumbai and adjoining Thane), 85-95 kmph gusting to 105 kmph along & off Ratnagiri, Sindhudurg, Palghar and remaining areas of Thane. Gale wind, speed reaching 60-80 kmph gusting to 90 kmph, likely along & off Valsad, Navsari districts of Gujarat, Daman, Dadra & Nagar Haveli and along & off northeast Arabian Sea and 60-70 kmph gusting to 80 kmph along & off Surat & Bharuch districts of south Gujarat from today the 03rd June noon.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely to prevail over northeast Arabian Sea along & off remaining districts of south Gujarat coast on 03rd June.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely prevail over eastcentral Arabian Sea along and off Karnataka-Goa coasts during next 12 hours.

(iii) Sea condition

The Sea condition will be High to Very High over eastcentral Arabian Sea and along & off Maharashtra & Goa coasts till today, the 3rd June evening. The Sea condition is very likely to be very rough to High over northeast Arabian Sea along & off south Gujarat coast till today, the 3rd June evening

(iv) Storm Surge Warning:

Storm surge of about 1-2 meters height above astronomical tide is very likely to inundate low lying areas of Mumbai, Thane and Raigad districts and 0.5-1 meter height above the astronomical tide likely to inundate low lying areas of Ratnagiri district during the time of landfall.

(v) Fishermen Warning

Fishermen are advised not to venture into Eastcentral and Northeast Arabian Sea and along & off Karnataka-Goa-Maharashtra-south Gujarat coasts during next 24 hours.

(vi) Damage Expected:

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

(vii) Fishermen Warning & Action Suggested:

- Total suspension of fishing operations.
- Mobilise evacuation from low lying areas.
- Judicious regulation of rail and road traffic.
- People in affected areas to remain indoors.
- Movement in motor boats and small ships unsafe.

Post Landfall Outlook:

After the landfall the Severe Cyclonic Storm is very likely to maintain its Cyclonic Storm intensity for about 06 hours, while moving north-northeastwards across north Madhya Maharashtra. Under its influence Gale wind reaching 60-70 kmph gusting to 80 kmph very likely to prevail over Pune, Ahmadnagar and 55-65 kmph gusting to 75 kmph adjoining Beed, Nashik & Aurangabad districts of Maharashtra. Light to moderate rainfall at most places with heavy to very heavy falls at isolated places are also very likely over these districts on 3rd June, 2020.

Damage Expected and Action suggested for interior districts of Maharashtra (Pune, Ahmadnagar, Nashik, Aurangabad and adjoining Beed).

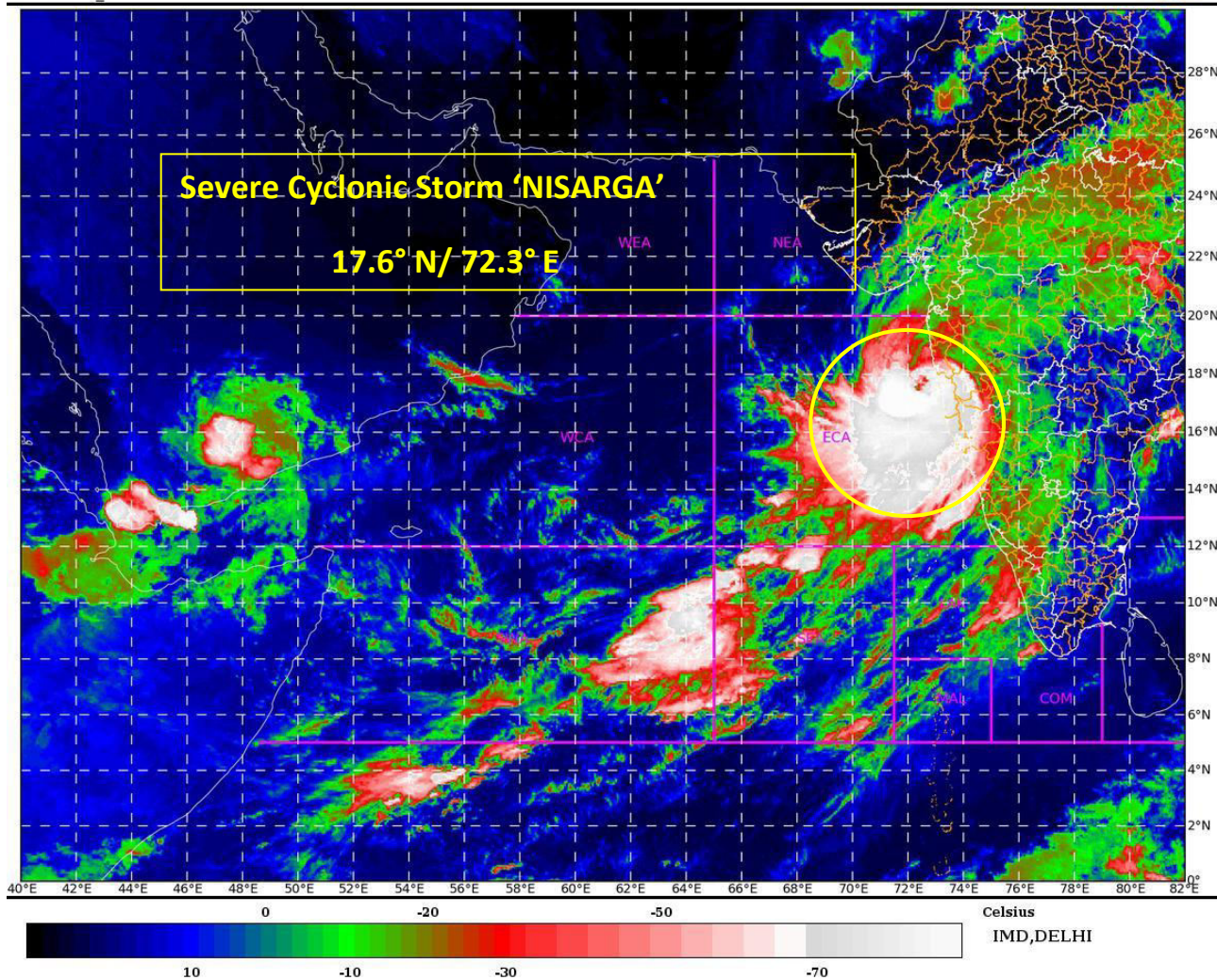
(i) Minor damage to power and communication lines. (ii) Damage to Kutcha and some damage to Pucca roads. (iii) Breaking of tree branches, uprooting of small trees. (iv) Damage to banana and papaya trees. (v) People in affected areas to remain indoors.

The next bulletin will be issued at 1130 hrs IST of today, the 03rd June, 2020.

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

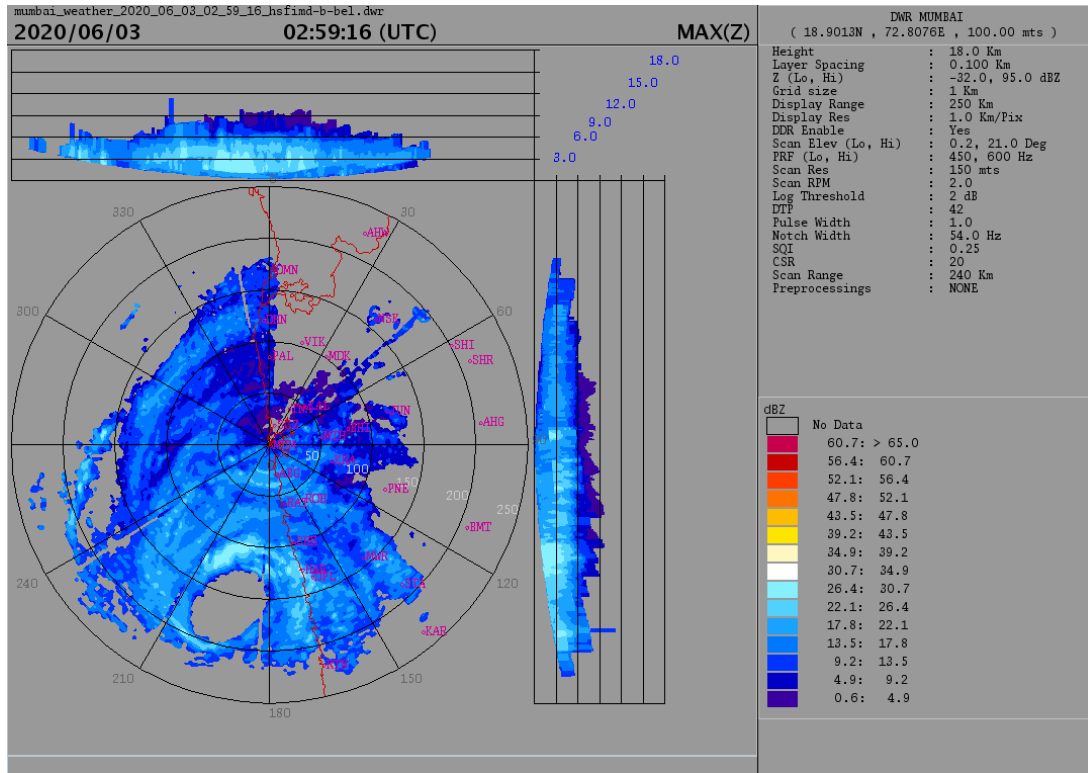
Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

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

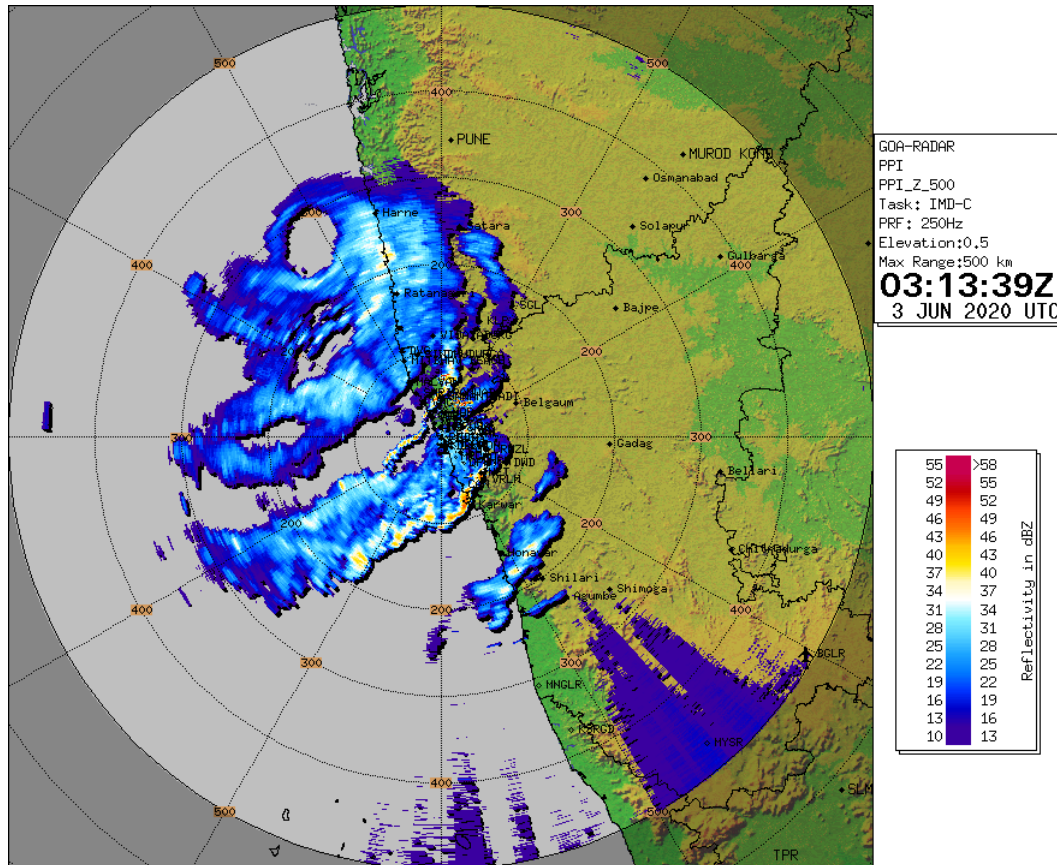


Legend: ECA- east-Central Arabian Sea

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.

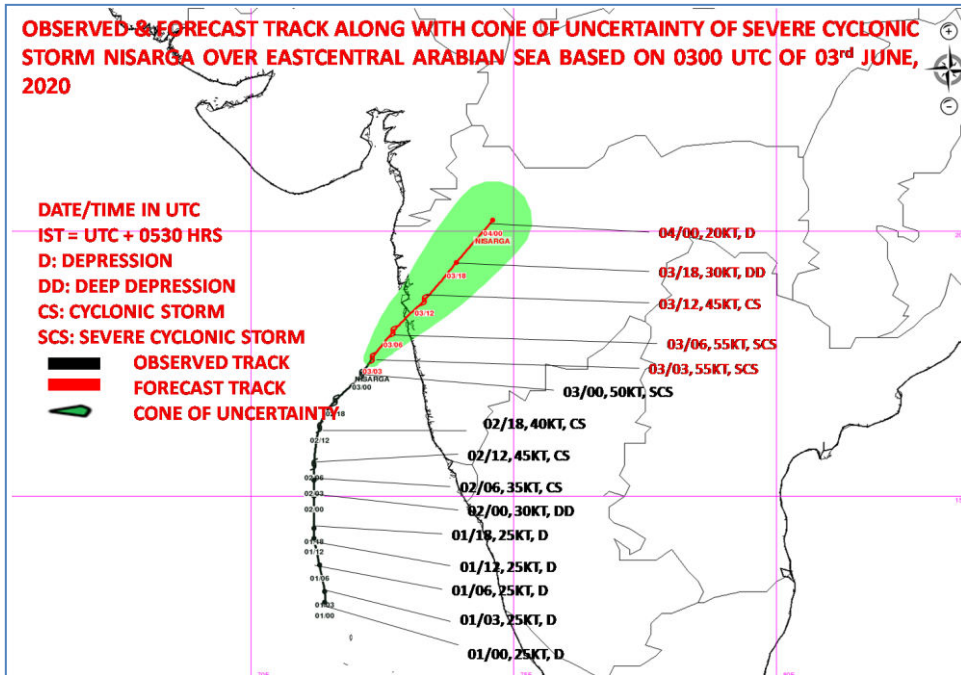
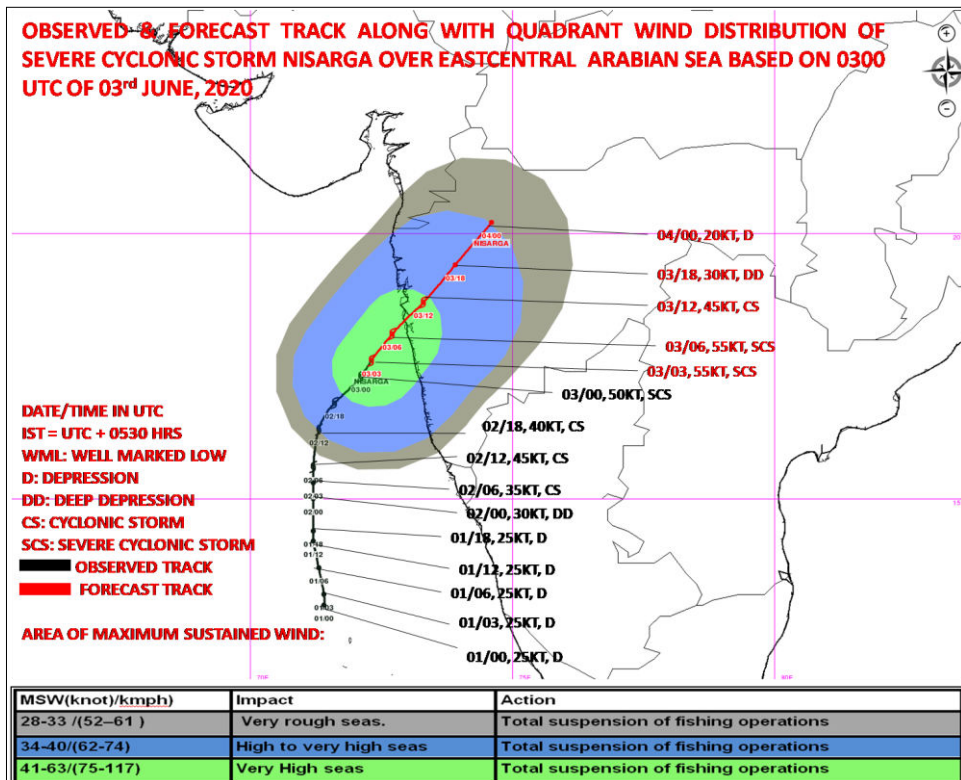


DOPLER WEATHER RADAR MUMBAI AT 08:29 HOURS IST OF 03.06.2020



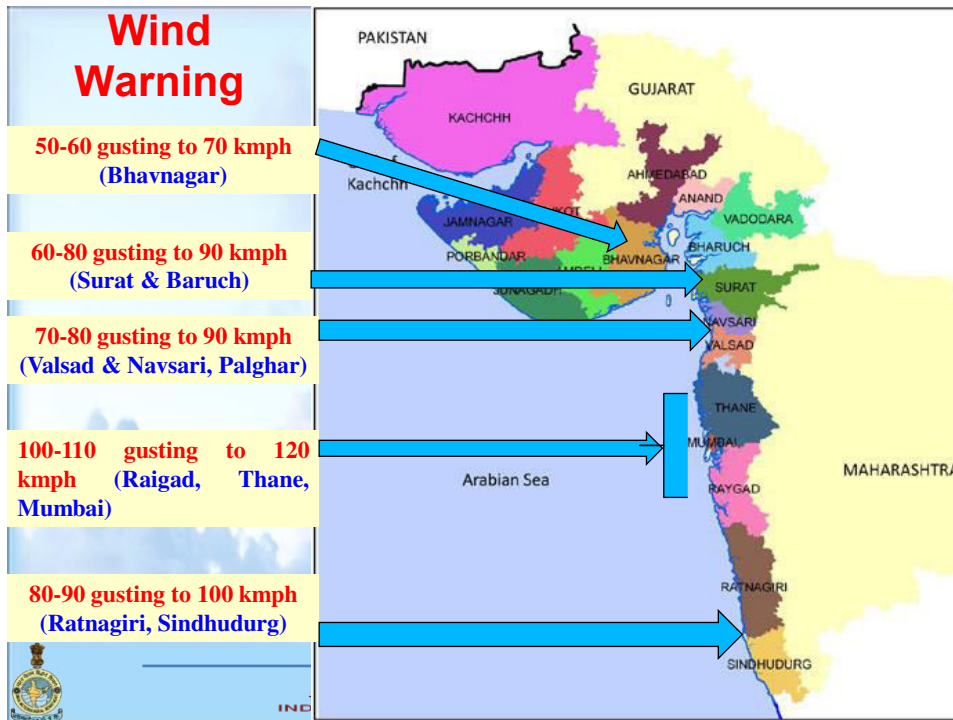
DOPLER WEATHER RADAR GOA AT 08:43 HOURS IST OF 03.06.2020

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

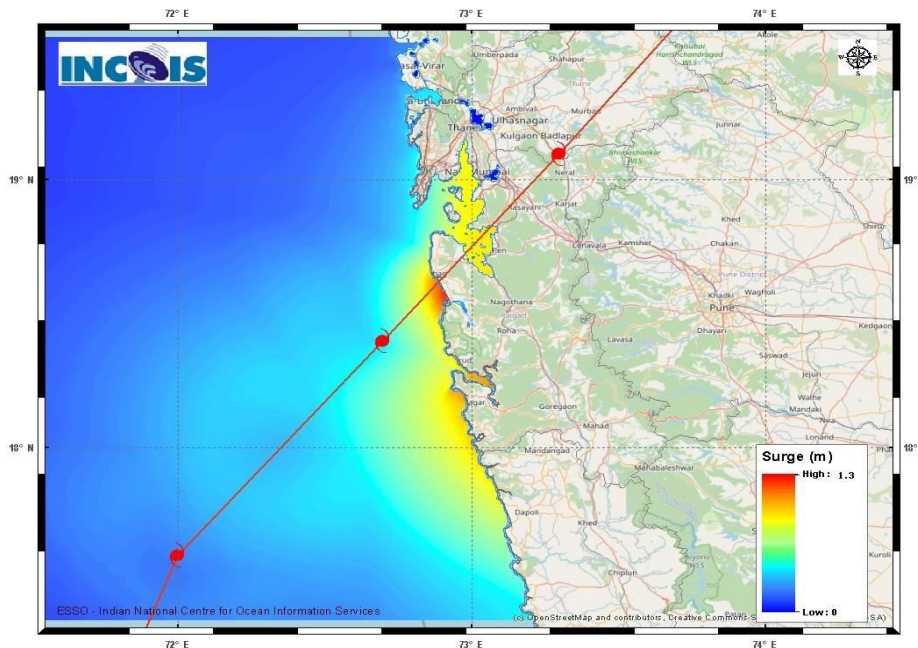


Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

District Level Wind Warning



Storm surge Warning



MANDAL/TALUK	DISTRICT	STATE / UNION TERRITORY	NEAREST PLACE OF HABITATION	* STORM SURGE (m)	* EXPECTED INUNDATION EXTENT (km)
ALIBAG	RAIGAD	MAHARASHTRA	ALIBAG	0.5-1.3	Around 1.4
DAPOLI	RATNAGIRI	MAHARASHTRA	DAPOLI	0.6-0.9	Around 0.3
PEN	RAIGAD	MAHARASHTRA	PEN	0.7-0.9	Around 2.2
THANE	GREATER BOMBAY	MAHARASHTRA	THANE	0.7-0.9	Around 0.3

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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/02/2020)

TIME OF ISSUE: 1230 HOURS IST

DATED: 03.06.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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

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

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

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

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

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: Severe Cyclonic Storm 'NISARGA' over Eastcentral Arabian Sea: To cross Maharashtra coast close to south of Alibagh during next 3 hours - Cyclone Warning for north Maharashtra & adjoining south Gujarat coasts: Red message

The **Severe Cyclonic Storm 'NISARGA'** over Eastcentral Arabian Sea moved northeastwards with a speed of about 19 kmph during past 06 hours and lay centred at 1130 hours IST of today the 03rd June, 2020 over Eastcentral Arabian Sea, close to Maharashtra (Raigad District) coast near latitude 18.1°N and longitude 72.8°E, about 60 km south of Alibagh (Maharashtra), 110 km south of Mumbai (Maharashtra) and 340 km south of Surat (Gujarat).

It is very likely to move northeastwards very close to coast and cross north Maharashtra coast **close to south of Alibagh (Raigad District, Maharashtra) during the afternoon (1300 -1600 Hours IST) of today the 03rd June as a Severe Cyclonic Storm with maximum sustained wind speed of 100-110 kmph gusting to 120 kmph.**

The system is now being continuously tracked by the Doppler Weather Radars (DWRs) at Mumbai (Maharashtra) and Goa.

As per the latest satellite and Radar observations at 1230 hrs IST of today the **Landfall process has started and will be completed during next 03 hours.**

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum surface (Kmph)	sustained wind speed	Category of cyclonic disturbance
03.06.20/1130	18.1/72.8	100-110 gusting to 120		Severe Cyclonic Storm
03.06.20/1730	18.7/73.3	80-90 gusting to 100		Cyclonic Storm
03.06.20/2330	19.4/73.9	50-60 gusting to 70		Deep Depression
04.06.20/0530	20.2/74.6	40-50 gusting to 60		Depression
04.06.20/1130	20.8/75.1	30-40 gusting to 50		Depression

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

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

Warnings:

(i) **Rainfall:**

- Light to moderate rainfall at most places with heavy to very heavy falls at a few places and **extremely heavy falls (≥ 20 cm in 24 hours)** at isolated places very likely over north Konkan (Mumbai, Palghar, Thane, Raigad districts) and north Madhya Maharashtra during next 24 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places over south Konkan (Ratnagiri & Sindhudurg districts) & Goa and south Gujarat region (Valsad, Navsari, Dang, Daman, Dadra & Nagar Haveli and Surat districts) during next 24 hours.
- Light to moderate rainfall at most places with heavy falls at isolated places over west Madhya Pradesh and Vidarbha during next 24 hours.

(ii) **Wind warning**

- Gale wind, speed reaching 100-110 kmph gusting to 120 kmph, is prevailing over Eastcentral Arabian Sea along & off north Maharashtra coast (Raigad, Mumbai and adjoining Thane), 85-95 kmph gusting to 105 kmph along & off Ratnagiri, Sindhudurg, Palghar and remaining areas of Thane. Gale wind, speed reaching 60-80 kmph gusting to 90 kmph, likely along & off Valsad, Navsari districts of Gujarat, Daman, Dadra & Nagar Haveli and along & off northeast Arabian Sea and 60-70 kmph gusting to 80 kmph along & off Surat & Bharuch districts of south Gujarat during next 06 hours and will reduce gradually thereafter.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely to prevail over northeast Arabian Sea along & off remaining districts of south Gujarat coast during next 06 hours and will reduce gradually thereafter.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely prevail over eastcentral Arabian Sea along and off Karnataka-Goa coasts during next 06 hours and will reduce gradually thereafter.

(iii) **Sea condition**

The Sea condition will be High to Very High over eastcentral Arabian Sea and along & off Maharashtra & Goa coasts till today, the 3rd June evening. The Sea condition is very likely to be very rough to High over northeast Arabian Sea along & off south Gujarat coast till today, the 3rd June evening

(iv) **Storm Surge Warning:**

Storm surge of about 1-2 meters height above astronomical tide is very likely to inundate low lying areas of Mumbai, Thane and Raigad districts and 0.5-1 meter height above the astronomical tide likely to inundate low lying areas of Ratnagiri district during the time of landfall.

(v) **Fishermen Warning**

Fishermen are advised not to venture into Eastcentral and Northeast Arabian Sea and along & off Karnataka-Goa-Maharashtra-south Gujarat coasts during next 12 hours.

(vi) **Damage Expected:**

- Major damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly.

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

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

(vii) Fishermen Warning & Action Suggested:

- Total suspension of fishing operations.
- Mobilise evacuation from low lying areas.
- Judicious regulation of rail and road traffic.
- People in affected areas to remain indoors.
- Movement in motor boats and small ships unsafe.

Post Landfall Outlook:

After the landfall the Severe Cyclonic Storm is very likely to maintain its Cyclonic Storm intensity for about 06 hours, while moving north-northeastwards across north Madhya Maharashtra. Under its influence Gale wind reaching 60-70 kmph gusting to 80 kmph very likely to prevail over Pune, Ahmadnagar and 55-65 kmph gusting to 75 kmph adjoining Beed, Nashik & Aurangabad districts of Maharashtra. Light to moderate rainfall at most places with heavy to very heavy falls at isolated places are also very likely over these districts on 3rd June, 2020.

Damage Expected and Action suggested for interior districts of Maharashtra (Pune, Ahmadnagar, Nashik, Aurangabad and adjoining Beed).

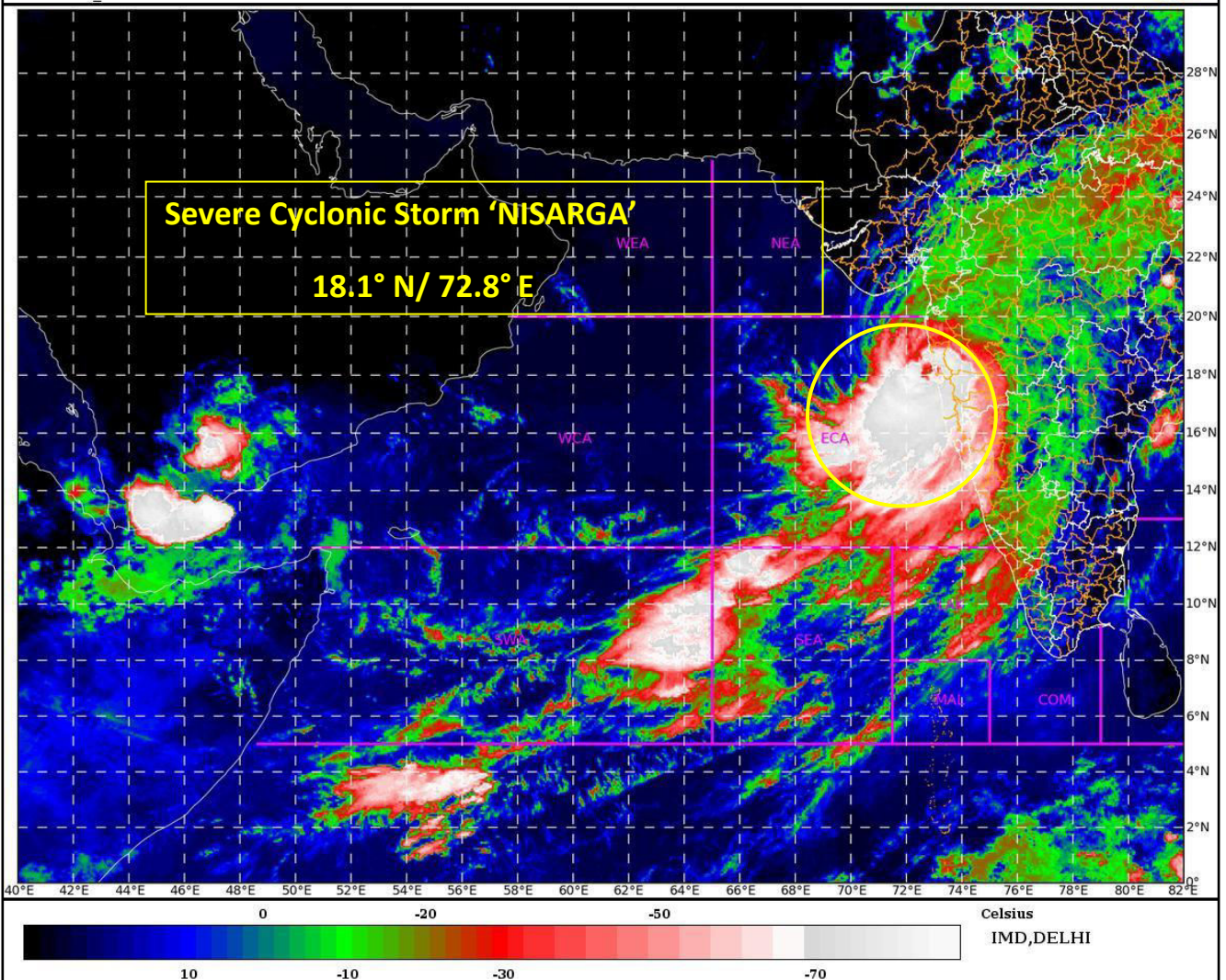
(i) Minor damage to power and communication lines. (ii) Damage to Kutcha and some damage to Pucca roads. (iii) Breaking of tree branches, uprooting of small trees. (iv) Damage to banana and papaya trees. (v) People in affected areas to remain indoors.

The next bulletin will be issued at 1730 hrs IST of today, the 03rd June, 2020.

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

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

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



Legend: ECA- east-Central 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.

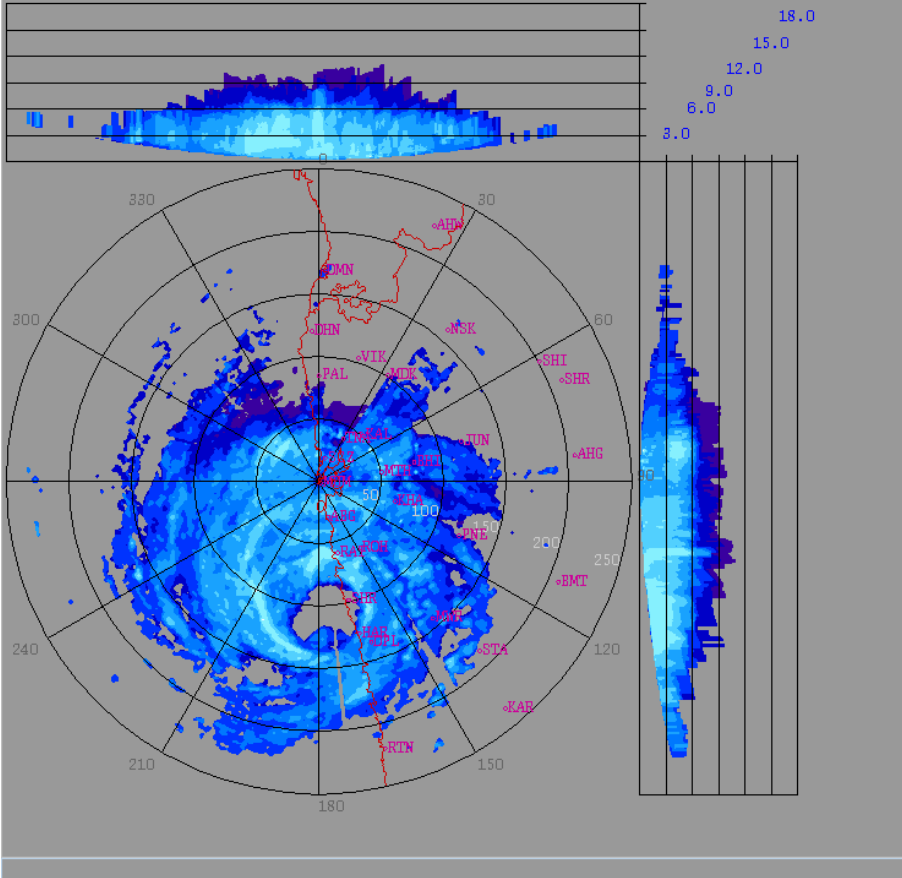
2020/06/03

05:49:12 (UTC)

MAX(Z)

DWR MUMBAI

(18.9013N , 72.8076E , 100.00 mts)

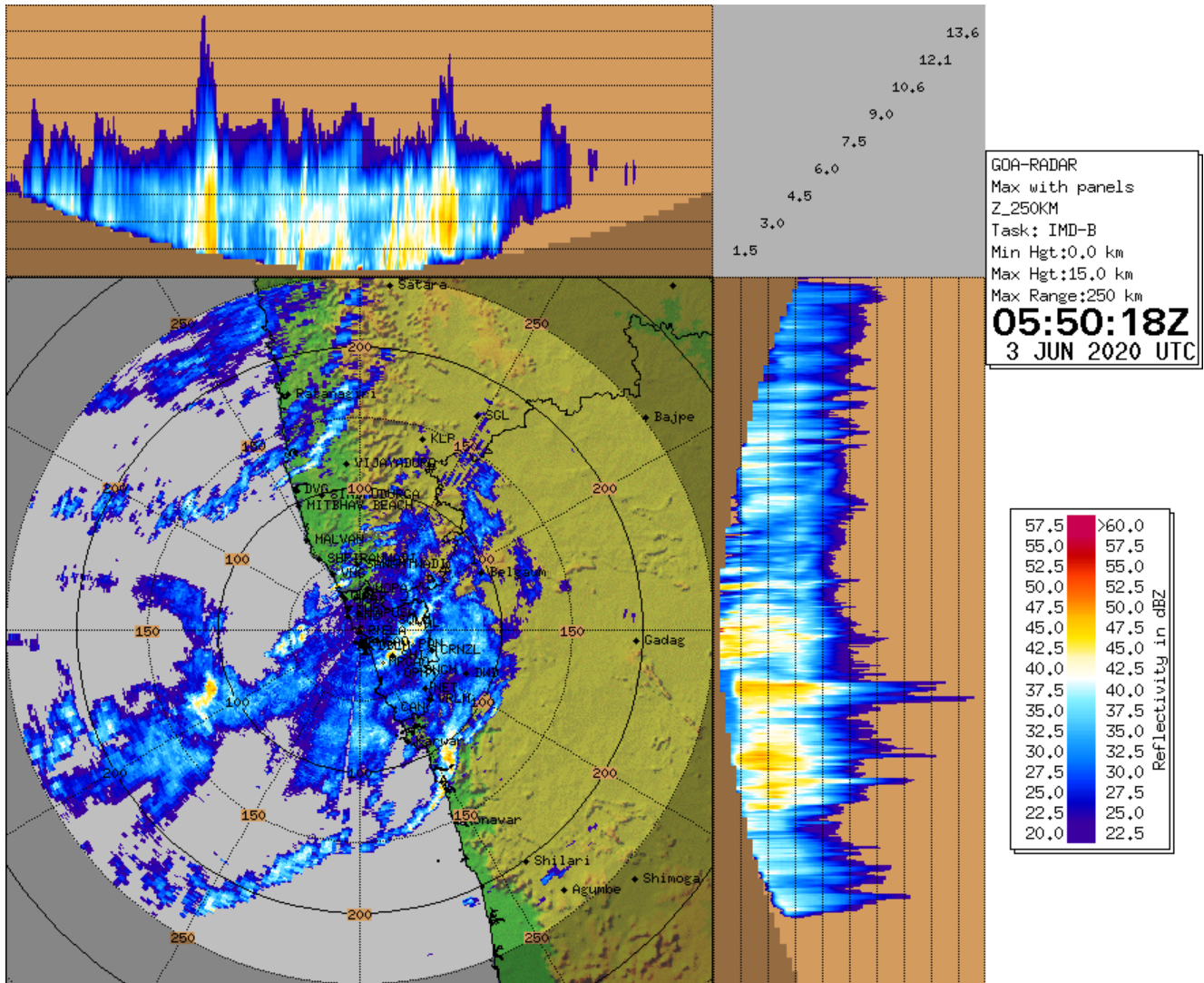


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 Grid size : 1 Km
 Display Range : 250 Km
 Display Res : 1.0 Km/Pix
 DDR Enable : Yes
 Scan Elev (Lo, Hi) : 0.2, 21.0 Deg
 PRF (Lo, Hi) : 450, 600 Hz
 Scan Res : 150 mts
 Scan RPM : 2.0
 Log Threshold : 2 dB
 DTP : 42
 Pulse Width : 1.0
 Notch Width : 54.0 Hz
 SQI : 0.25
 CSR : 20
 Scan Range : 240 Km
 Preprocessings : NONE

dBZ	
No Data	
60.7: > 65.0	
56.4: 60.7	
52.1: 56.4	
47.8: 52.1	
43.5: 47.8	
39.2: 43.5	
34.9: 39.2	
30.7: 34.9	
26.4: 30.7	
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9.2: 13.5	
4.9: 9.2	
0.6: 4.9	

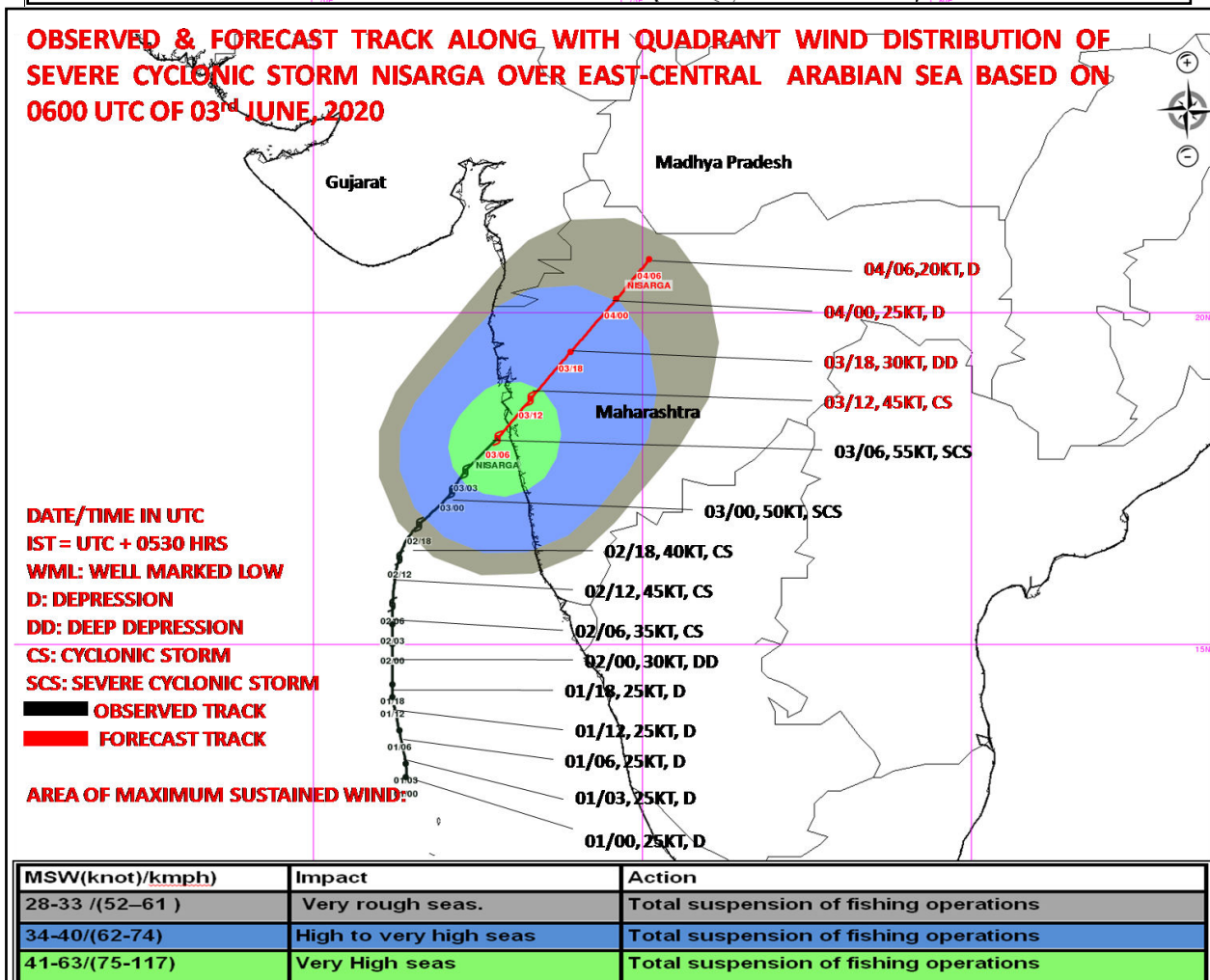
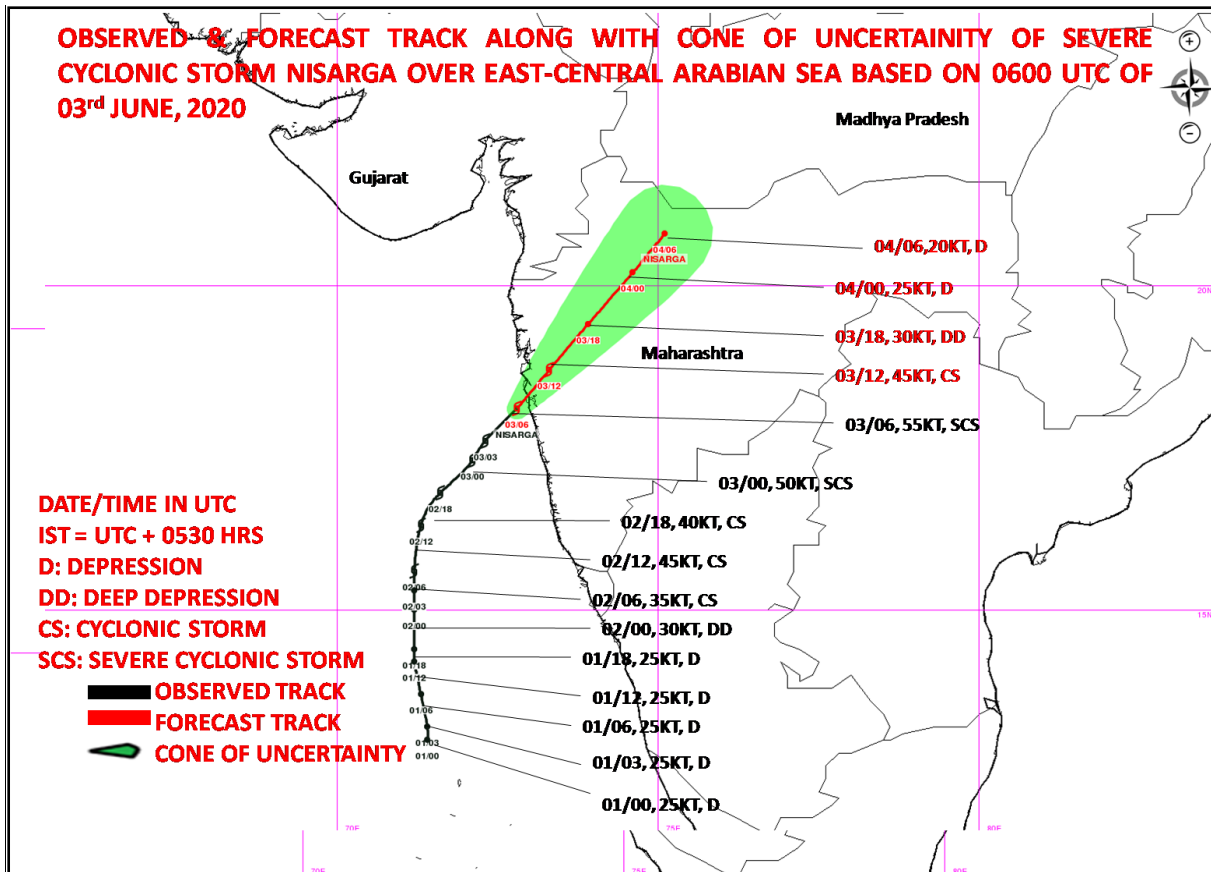
DOPPLER WEATHER RADAR MUMBAI AT 11:30 HOURS IST OF 03.06.2020

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



DOPLER WEATHER RADAR GOA AT 11:30 HOURS IST OF 03.06.2020

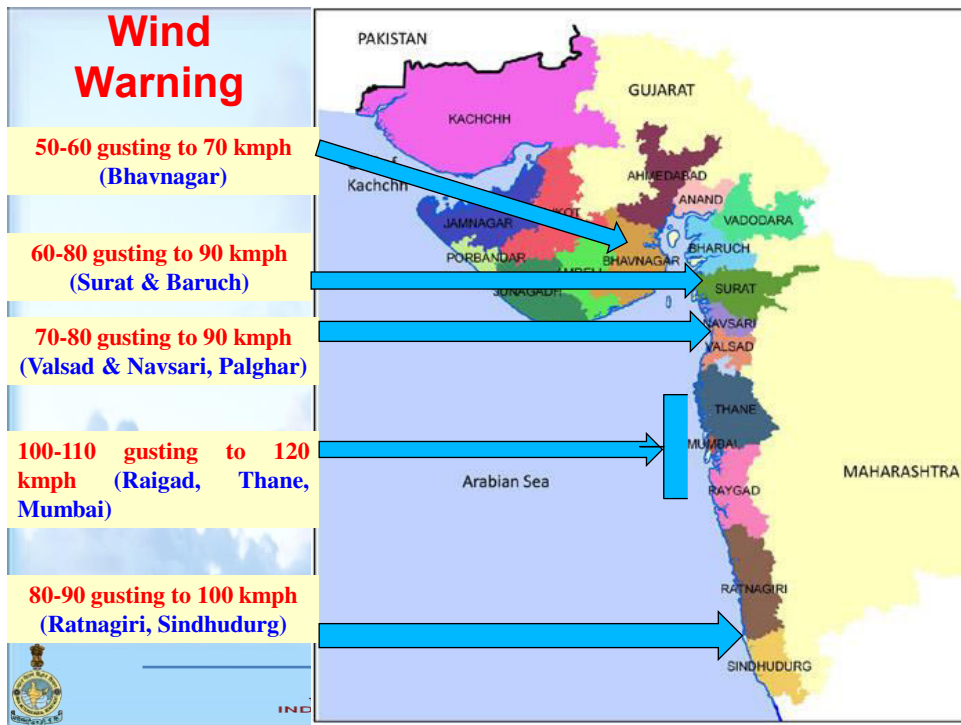
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



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

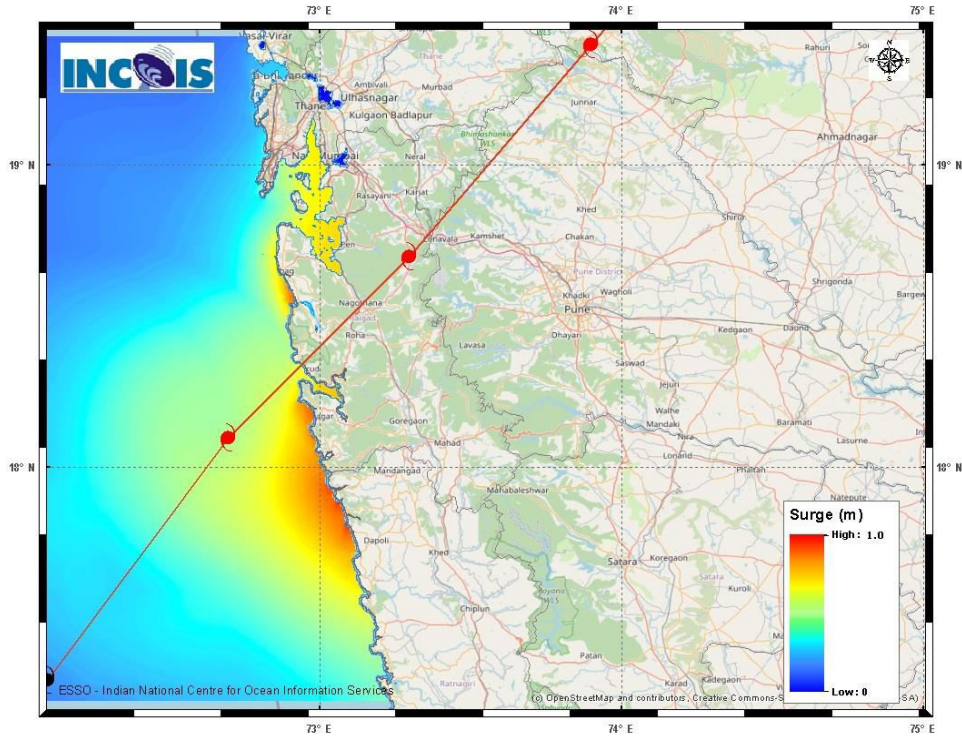
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

District Level Wind Warning



Storm surge Warning

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



The below listed surge heights over and above astronomical tide.

MANDAL/TALUK	DISTRICT	STATE / UNION TERRITORY	NEAREST PLACE OF HABITATION	* STORM SURGE (m)	* EXPECTED INUNDATION EXTENT (km)
ALIBAG	RAIGAD	MAHARASHTRA	ALIBAG	0.5-1.3	Around 1.4
DAPOLI	RATNAGIRI	MAHARASHTRA	DAPOLI	0.6-0.9	Around 0.3
PEN	RAIGAD	MAHARASHTRA	PEN	0.7-0.9	Around 2.2
THANE	GREATER MUMBAI	MAHARASHTRA	THANE	0.7-0.9	Around 0.3

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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/02/2020)

TIME OF ISSUE: 1600 HOURS IST

DATED: 03.06.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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

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

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

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

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

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: Severe Cyclonic Storm 'NISARGA' over coastal Maharashtra- **Cyclone Warning for north Maharashtra & adjoining south Gujarat coasts: Red message**

The Severe Cyclonic Storm 'NISARGA' over Eastcentral Arabian Sea moved northeastwards with a speed of about 23 kmph during past 06 hours, crossed Maharashtra coast close to south of Alibagh with a maximum sustained wind speed of 100-110 kmph gusting to 120 kmph between 1230-1430 hrs IST of today, the 03rd June. It lay centred at 1430 hours IST of today the 03rd June, 2020 over coastal Maharashtra, near latitude 18.5°N and longitude 73.2°E, close to east-southeast of Alibagh (Maharashtra), 75 km southeast of Mumbai (Maharashtra) and 65 km west of Pune (Maharashtra).

It is very likely to move northeastwards and weaken gradually into a Cyclonic Storm during next 06 hours.

The system is being continuously tracked by the Doppler Weather Radars (DWRs) at Mumbai (Maharashtra).

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum surface (Kmph)	sustained wind speed	Category of cyclonic disturbance
03.06.20/1430	18.5/73.2	90-100	gusting to 110	Severe Cyclonic Storm
03.06.20/1730	18.8/73.4	80-90	gusting to 100	Cyclonic Storm
03.06.20/2330	19.4/73.9	50-60	gusting to 70	Deep Depression
04.06.20/0530	20.2/74.6	40-50	gusting to 60	Depression
04.06.20/1130	20.8/75.1	30-40	gusting to 50	Depression

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

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

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at a few places and **extremely heavy falls (≥ 20 cm in 24 hours)** at isolated places very likely over north Konkan (Mumbai, Palghar, Thane, Raigad districts) and north Madhya Maharashtra during next 24 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places over south Konkan (Ratnagiri & Sindhudurg districts) & Goa and south Gujarat region (Valsad, Navsari, Dang, Daman, Dadra & Nagar Haveli and Surat districts) during next 24 hours.
- Light to moderate rainfall at most places with heavy falls at isolated places over west Madhya Pradesh and Vidarbha during next 24 hours.

(ii) Wind warning

- Gale wind, speed reaching 90-100 kmph gusting to 110 kmph, is prevailing over Eastcentral Arabian Sea along & off north Maharashtra coast (Raigad, Mumbai and adjoining Thane), 60-80 kmph gusting to 90 kmph along & off Ratnagiri, Sindhudurg, Palghar and remaining areas of Thane. Gale wind, speed reaching 60-70 kmph gusting to 80 kmph, likely along & off Valsad, Navsari districts of Gujarat, Daman, Dadra & Nagar Haveli and along & off northeast Arabian Sea, Surat & Bharuch districts of south Gujarat during next 03 hours and will reduce gradually thereafter.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely to prevail over northeast Arabian Sea along & off remaining districts of south Gujarat coast during next 03 hours and will reduce gradually thereafter.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely prevail over eastcentral Arabian Sea along and off Karnataka-Goa coasts during next 06 hours and will reduce gradually thereafter.

(iii) Sea condition

The Sea condition will be High to Very High over eastcentral Arabian Sea and along & off Maharashtra & Goa coasts till today, the 3rd June evening. The Sea condition is very likely to be very rough to High over northeast Arabian Sea along & off south Gujarat coast till today, the 3rd June evening

(iv) Storm Surge Warning:

Storm surge of about 0.5 to 1 meter height above astronomical tide is very likely to inundate low lying areas of Mumbai, Thane and Raigad districts during next 3 hours.

(v) Fishermen Warning

Fishermen are advised not to venture into Eastcentral and Northeast Arabian Sea and along & off Karnataka-Goa-Maharashtra-south Gujarat coasts during next 12 hours.

(vi) Damage Expected:

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

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

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

(vii) Fishermen Warning & Action Suggested:

- Total suspension of fishing operations.
- Mobilise evacuation from low lying areas.
- Judicious regulation of rail and road traffic.
- People in affected areas to remain indoors.
- Movement in motor boats and small ships unsafe.

Post Landfall Outlook:

The Severe Cyclonic Storm is very likely to weaken gradually into a Cyclonic Storm during next 06 hours, while moving north-northeastwards across north Madhya Maharashtra. Under its influence, Gale wind reaching 60-70 kmph gusting to 80 kmph very likely to prevail over Pune, Ahmadnagar and 55-65 kmph gusting to 75 kmph adjoining Beed, Nashik & Aurangabad districts of Maharashtra. Light to moderate rainfall at most places with heavy to very heavy falls at isolated places are also very likely over these districts on 3rd June, 2020.

Damage Expected and Action suggested for interior districts of Maharashtra (Pune, Ahmadnagar, Nashik, Aurangabad and adjoining Beed).

(i) Minor damage to power and communication lines. (ii) Damage to Kutcha and some damage to Pucca roads. (iii) Breaking of tree branches, uprooting of small trees. (iv) Damage to banana and papaya trees. (v) People in affected areas to remain indoors.

The next bulletin will be issued at 2030 hrs IST of today, the 03rd June, 2020.

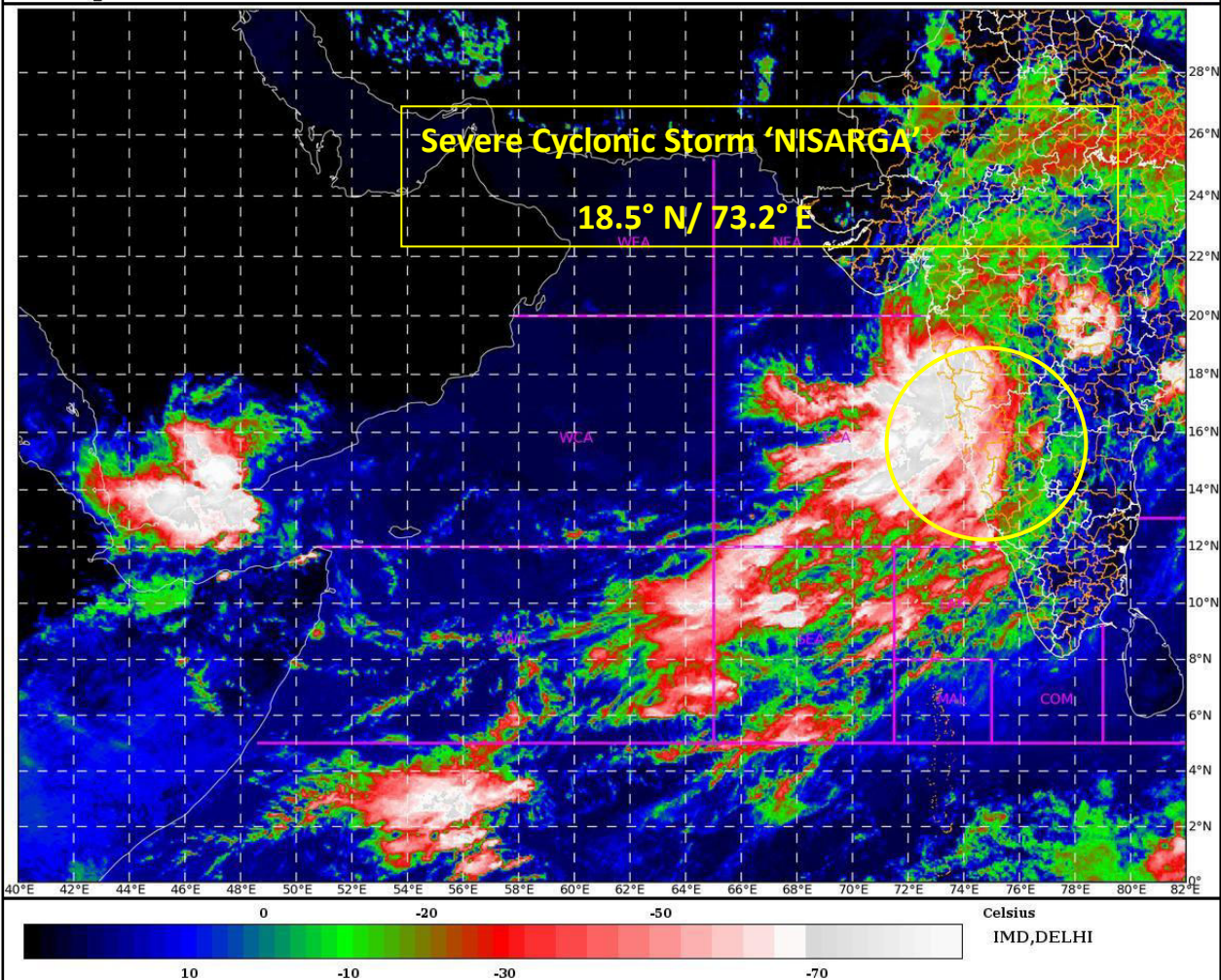
(Sunitha Devi)
Scientist-E, RSMC, New Delhi

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

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

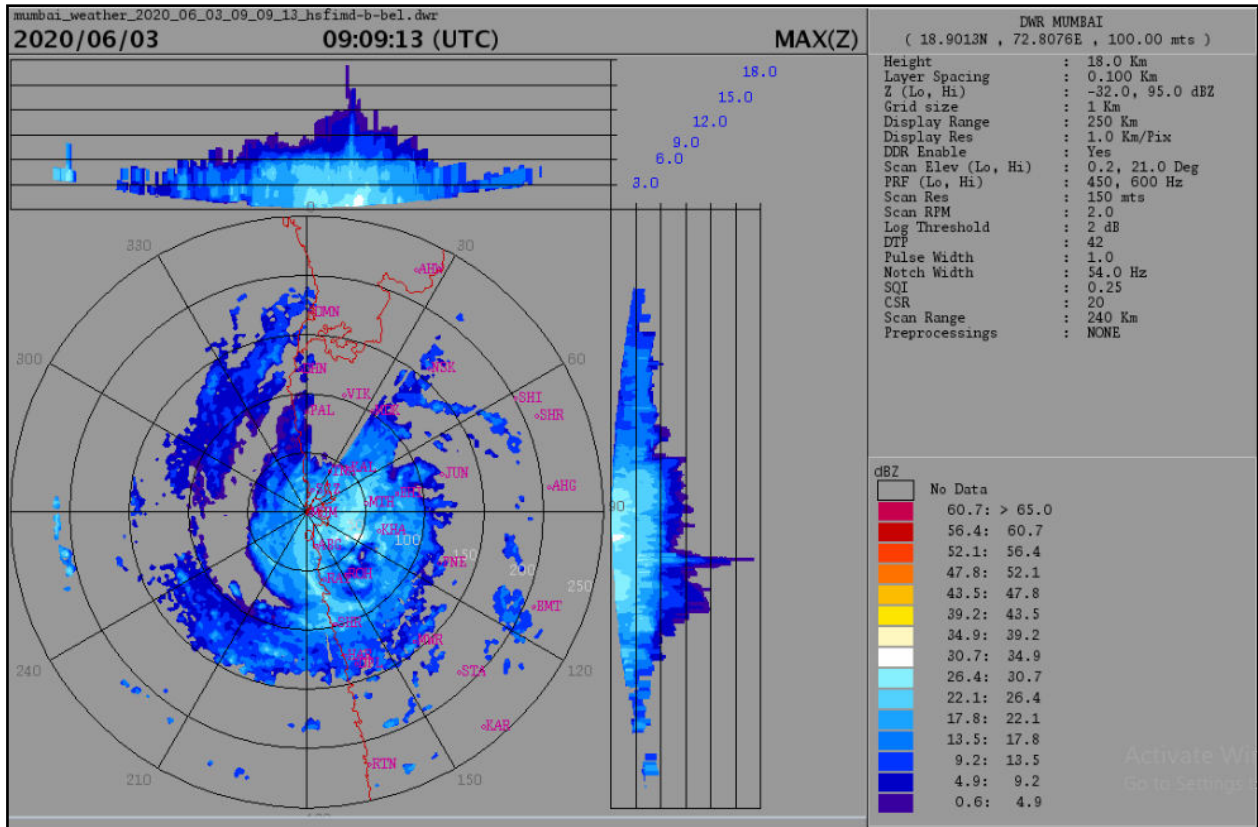
SAT : INSAT-3D IMG
IMG_TIR1_TEMP 10.8 um
ARABIAN_SEA

03-06-2020/(0930 to 0956) GMT
03-06-2020/(1500 to 1526) IST



Legend: ECA- east-Central 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.






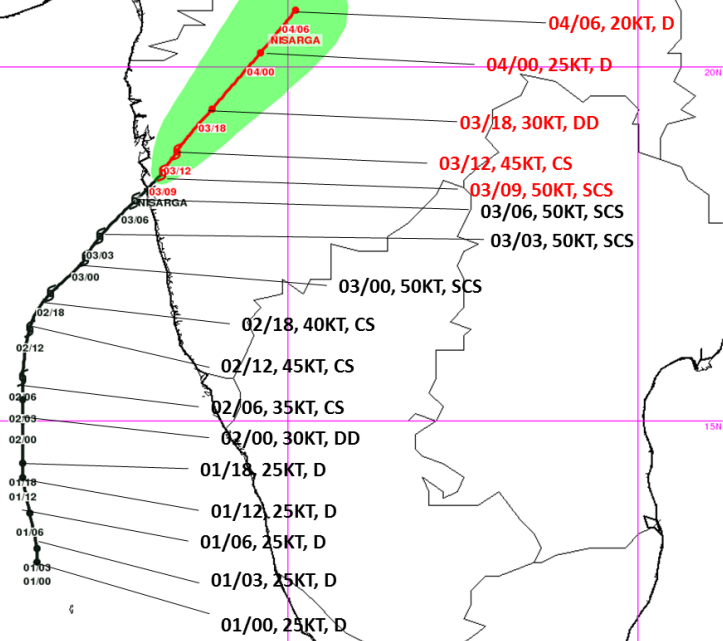
DOPLER WEATHER RADAR MUMBAI AT 14:39:13 HOURS IST OF 03.06.2020

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

OBSERVED & FORECAST TRACK ALONG WITH CONE OF UNCERTAINTY OF SEVERE CYCLONIC STORM NISARGA OVER COASTAL MAHARASHTRA BASED ON 0900 UTC OF 03rd JUNE, 2020



DATE/TIME IN UTC
IST = UTC + 0530 HRS
D: DEPRESSION
DD: DEEP DEPRESSION
CS: CYCLONIC STORM
SCS: SEVERE CYCLONIC STORM

 **OBSERVED TRACK**
 **FORECAST TRACK**
 **CONE OF UNCERTAINTY**

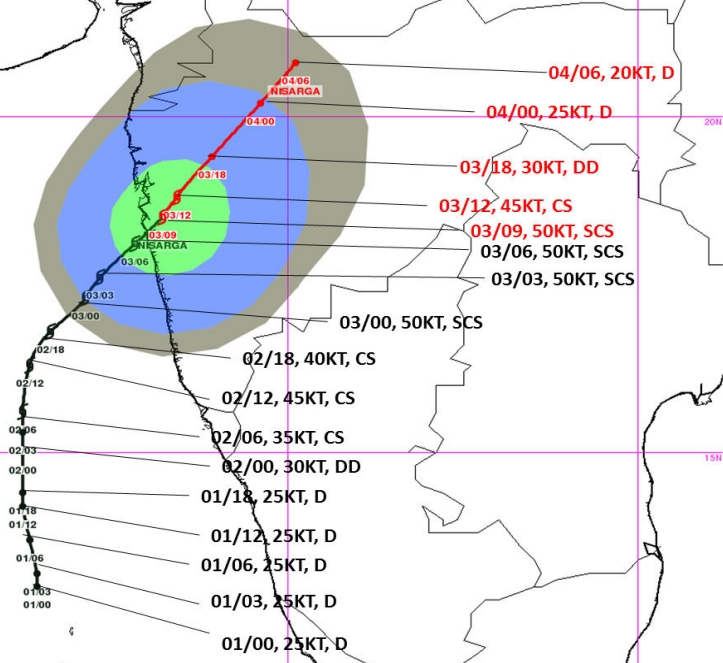


OBSERVED & FORECAST TRACK ALONG WITH QUADRANT WIND DISTRIBUTION OF SEVERE CYCLONIC STORM NISARGA COASTAL MAHARASHTRA BASED ON 0900 UTC OF 03rd JUNE, 2020

DATE/TIME IN UTC
IST = UTC + 0530 HRS
WML: WELL MARKED LOW
D: DEPRESSION
DD: DEEP DEPRESSION
CS: CYCLONIC STORM
SCS: SEVERE CYCLONIC STORM

 **OBSERVED TRACK**
 **FORECAST TRACK**

AREA OF MAXIMUM SUSTAINED WIND:

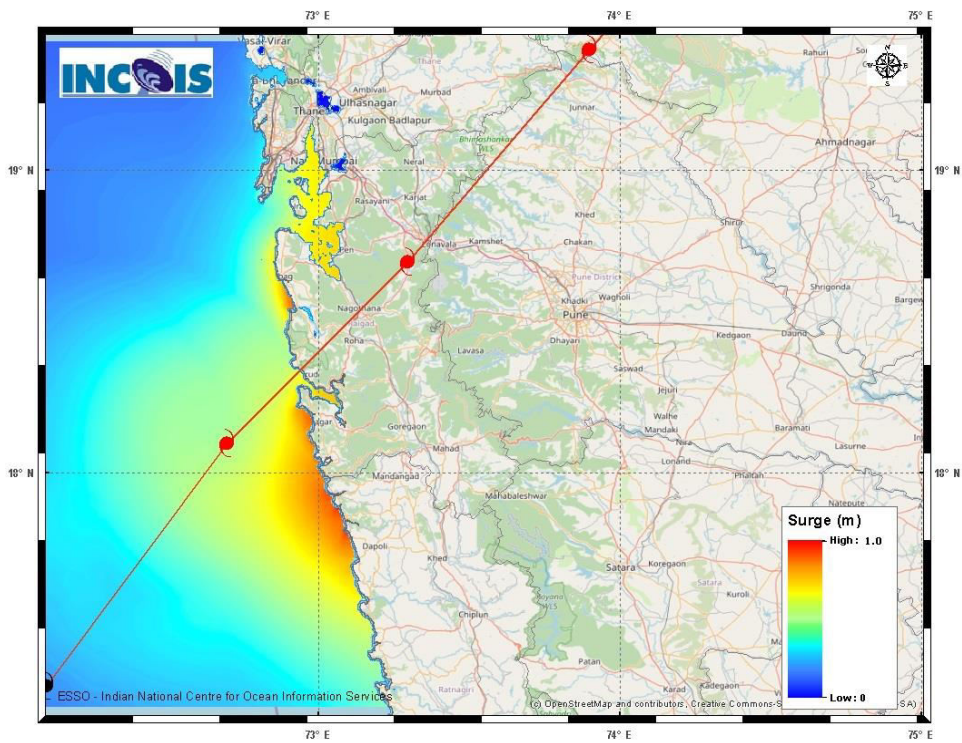


MSW(knot)/kmph)	Impact	Action
28-33 /(52-61)	Very rough seas.	Total suspension of fishing operations
34-40/(62-74)	High to very high seas	Total suspension of fishing operations
41-63/(75-117)	Very High seas	Total suspension of fishing operations

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

The below listed surge heights over and above astronomical tide.

MANDAL/TALUK	DISTRICT	STATE / UNION TERRITORY	NEAREST PLACE OF HABITATION	* STORM SURGE (m)	* EXPECTED INUNDATION EXTENT (km)
ALIBAG	RAIGAD	MAHARASHTRA	ALIBAG	0.5-1.3	Around 1.4
DAPOLI	RATNAGIRI	MAHARASHTRA	DAPOLI	0.6-0.9	Around 0.3
PEN	RAIGAD	MAHARASHTRA	PEN	0.7-0.9	Around 2.2
THANE	GREATER MUMBAI	MAHARASHTRA	THANE	0.7-0.9	Around 0.3



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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/02/2020)

TIME OF ISSUE: 1930 HOURS IST

DATED: 03.06.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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

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

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

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

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

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: Cyclonic Storm 'NISARGA' over interior Maharashtra

The Severe Cyclonic Storm '**NISARGA**' over coastal Maharashtra moved northeastwards with a speed of about 23 kmph during past 06 hours, weakened into a **Cyclonic Storm** and lay centred at 1730 hours IST of today the 03rd June, 2020 over interior Maharashtra, near latitude 19.0°N and longitude 73.7°E, 90 km east of Mumbai (Maharashtra) and 50 km north-northwest of Pune (Maharashtra).

It is very likely to move northeastwards and weaken into a Deep Depression during next 03 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum surface (Kmph)	sustained wind speed	Category of cyclonic disturbance
03.06.20/1730	19.0/73.7	60-70	gusting to 80	Cyclonic Storm
03.06.20/2330	19.7/74.3	50-60	gusting to 70	Deep Depression
04.06.20/0530	20.5/75.0	40-50	gusting to 60	Depression
04.06.20/1130	21.1/75.5	30-40	gusting to 50	Depression

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over north Madhya Maharashtra, Marathawada, Vidarbha and south Madhya Pradesh during next 24 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places over south Konkan & Goa and south Gujarat region during next 12 hours.

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

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

(ii) Wind warning

- Gale wind, speed reaching 60-70 kmph gusting to 80 kmph, is prevailing over Madhya Maharashtra (Pune, Ahmednagar, Satara, Aurangabad, Beed, Solapur, Osmanabad Districts). It is likely continue for next 06 hours and reduce gradually thereafter. Squally wind speed reaching 40-50 kmph gusting to 60 kmph is prevailing along & off Ratnagiri, Sindhudurg, Mumbai, Thane, Raigad Districts of Maharashtra during next 06 hours and will reduce gradually thereafter.
- Squally wind, speed reaching 40-50 kmph gusting to 60 kmph prevailing over northeast Arabian Sea along & off remaining districts of south Gujarat coast. It is likely to reduce during next 03 hours.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is prevail over eastcentral Arabian Sea along and off Karnataka-Goa coasts during next 06 hours and will reduce gradually thereafter.

(iii) Sea condition

The Sea condition will be rough to very rough Eastcentral and adjoining Northeast Arabian Sea and along & off Karnataka-Goa-Maharashtra-south Gujarat coasts during next 12 hours.

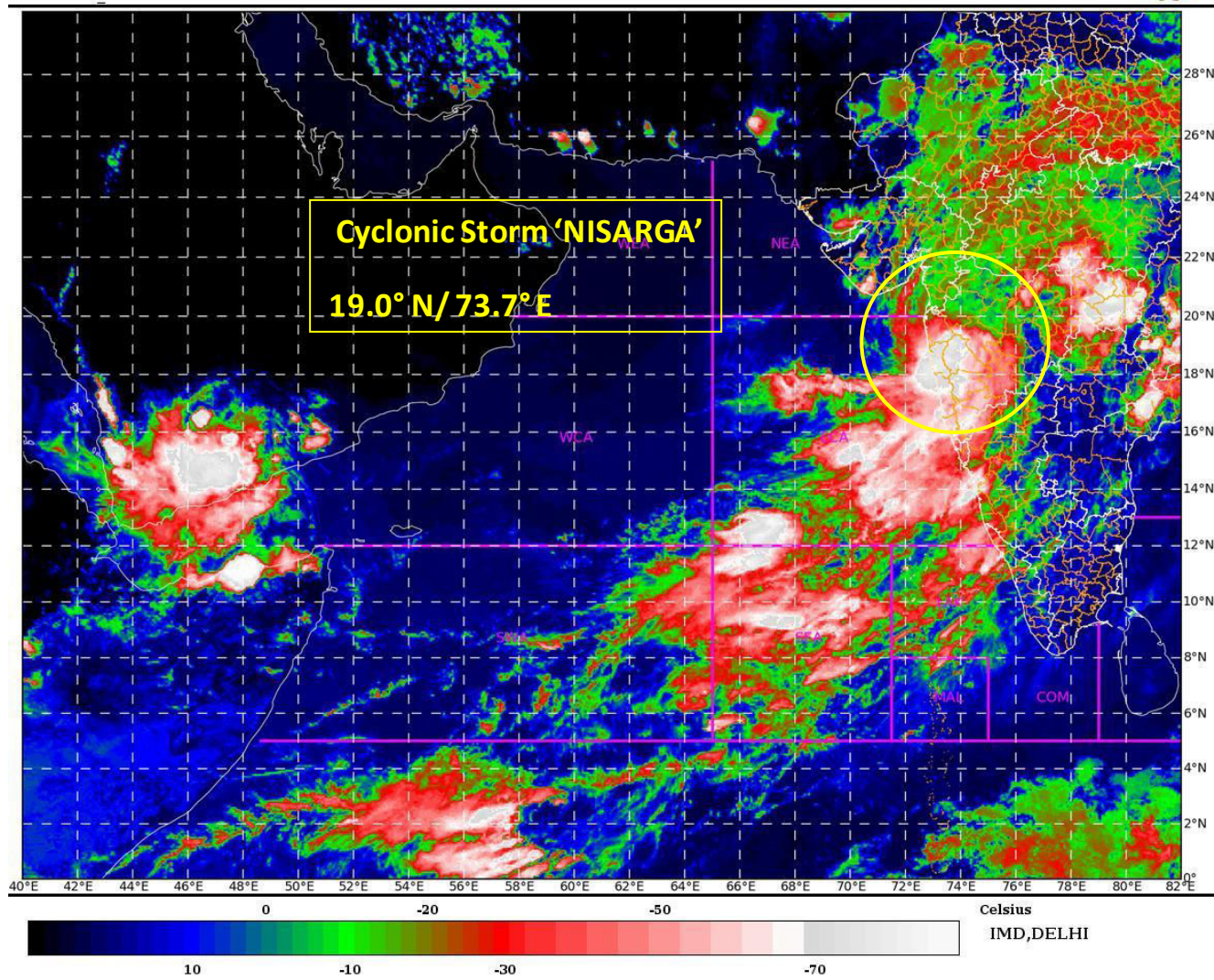
(iv) Fishermen Warning

Fishermen are advised not to venture into Eastcentral and Northeast Arabian Sea and along & off Karnataka-Goa-Maharashtra-south Gujarat coasts during next 12 hours.

The next bulletin will be issued at 2330 hrs IST of today, the 03rd June, 2020.

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

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



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

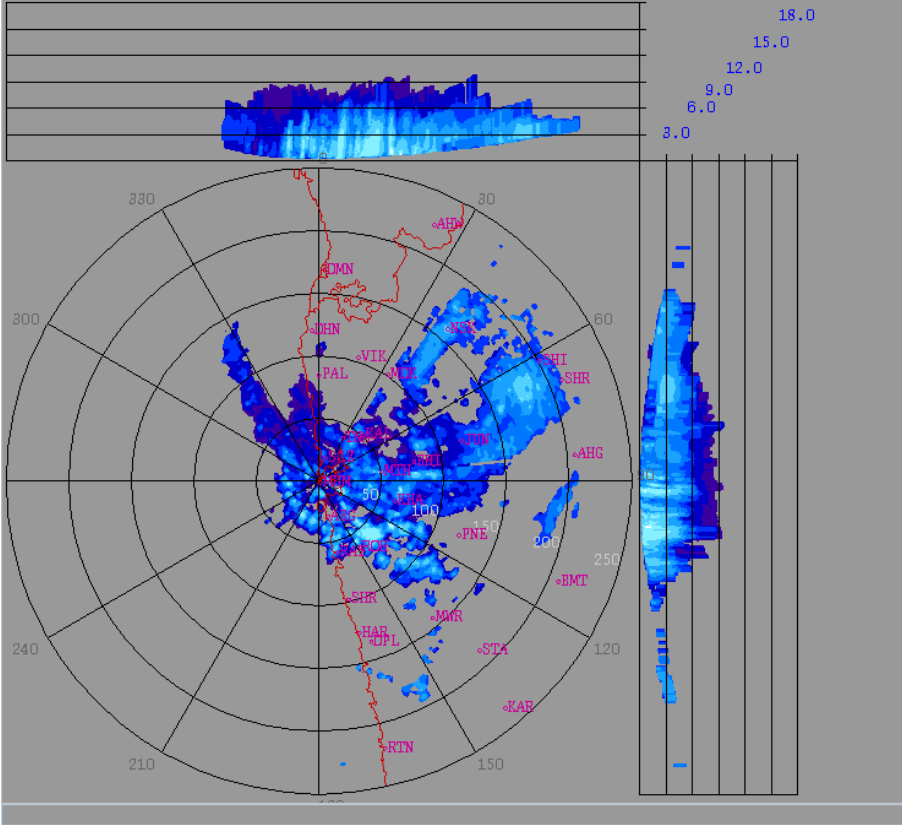
2020/06/03

13:49:14 (UTC)

MAX(Z)

DWR MUMBAI

(18.9013N , 72.8076E , 100.00 mts)



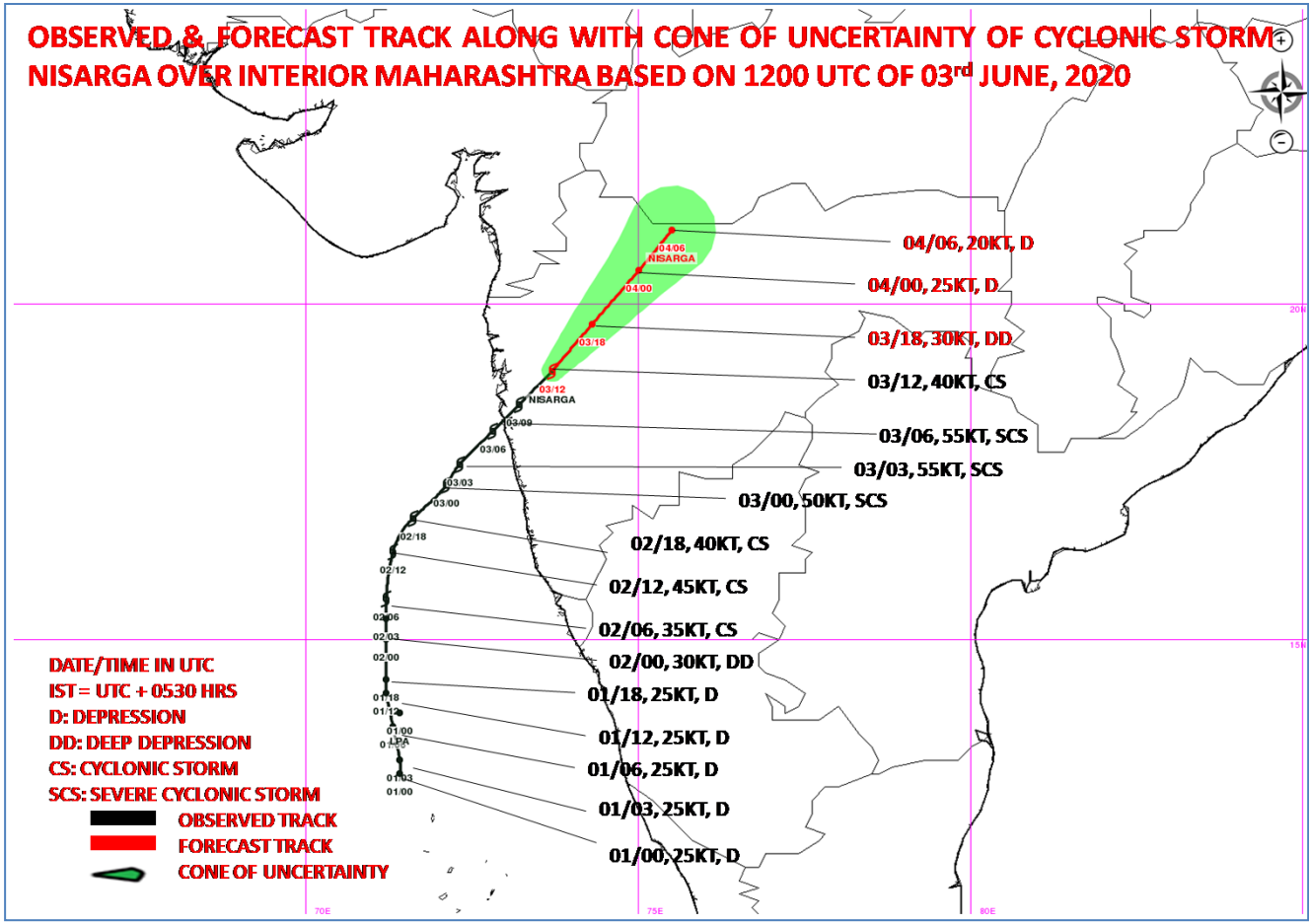
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 Scan Res : 150 mts
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 Log Threshold : 2 dB
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dBZ

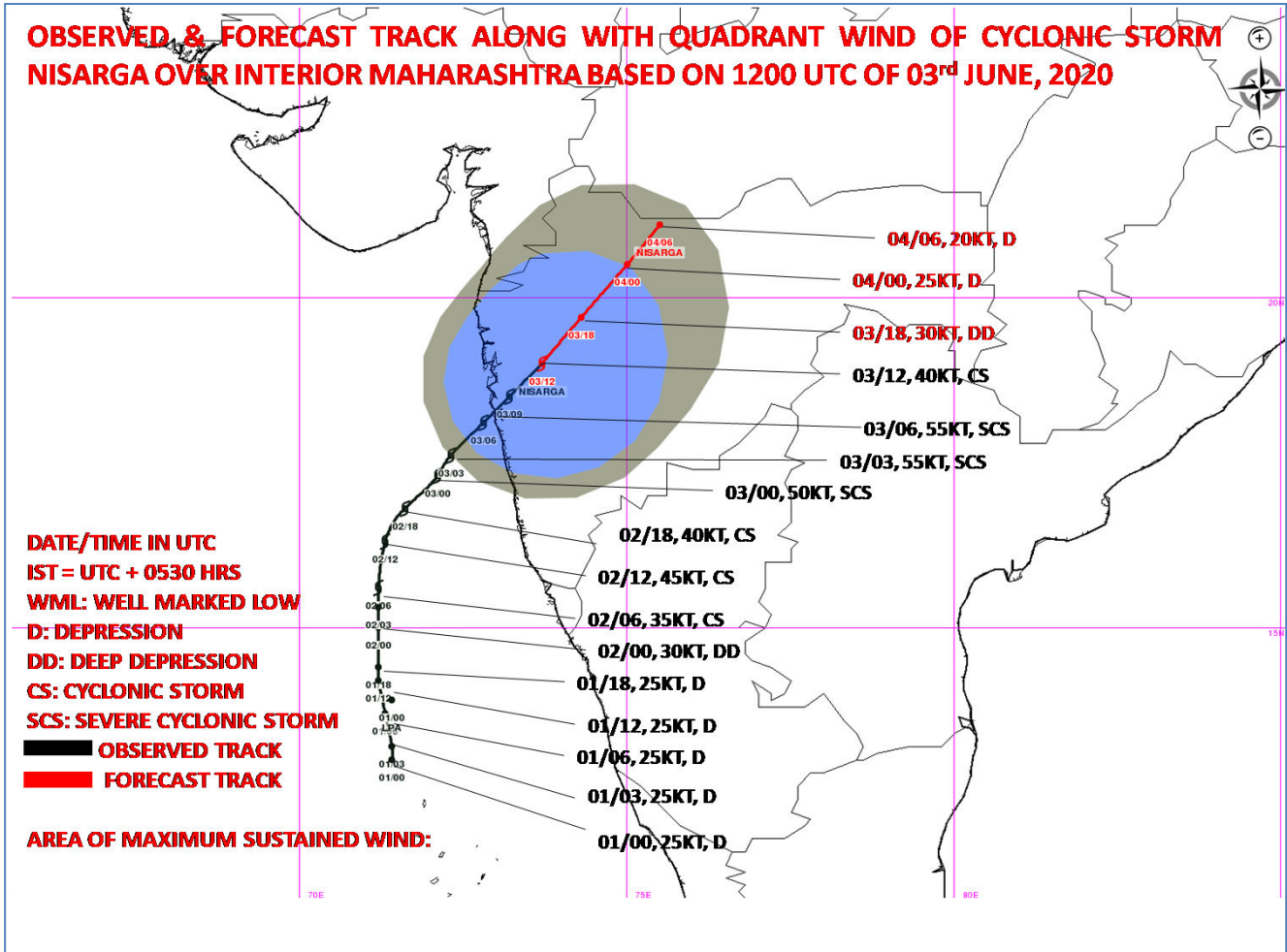
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56.4: 60.7
52.1: 56.4
47.8: 52.1
43.5: 47.8
39.2: 43.5
34.9: 39.2
30.7: 34.9
26.4: 30.7
22.1: 26.4
17.8: 22.1
13.5: 17.8
9.2: 13.5
4.9: 9.2
0.6: 4.9

DOPPLER WEATHER RADAR MUMBAI AT 14:39:13 HOURS IST OF 03.06.2020

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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/02/2020)

TIME OF ISSUE: 2200 HOURS IST

DATED: 03.06.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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

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

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

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

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

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: Deep Depression 'NISARGA' over interior Maharashtra

The Cyclonic Storm '**NISARGA**' over interior Maharashtra moved north-northeastwards with a speed of about 25 kmph during past 06 hours, weakened into a **Deep Depression** and lay centred at 2030 hours IST of today the 03rd June, 2020 over Madhya Maharashtra, near latitude 19.6°N and longitude 74.0°E, 40 km south of Nasik, 140 Km west-southwest of Aurangabad and 120 km north-northeast of Pune.

It is very likely to move northeastwards and weaken into a Depression during next 12 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum surface (Kmph)	sustained wind speed	Category of cyclonic disturbance
03.06.20/2030	19.6/74.0	55-65	gusting to 75	Deep Depression
03.06.20/2330	19.7/74.3	50-60	gusting to 70	Deep Depression
04.06.20/0530	20.5/75.0	40-50	gusting to 60	Depression
04.06.20/1130	21.1/75.5	30-40	gusting to 50	Depression

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over north Madhya Maharashtra, Marathawada, Vidarbha and south Madhya Pradesh during next 24 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places over south Konkan & Goa and south Gujarat region during next 12 hours.

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

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

(ii) Wind warning

- Gale wind, speed reaching 55-65 kmph gusting to 75 kmph, is prevailing over Madhya Maharashtra (North Pune, Nasik and Aurangabad Districts). It is likely continue for next 06 hours and gradually decrease becoming 35-45 gusting 55 by early morning of 4th June.
- Squally wind, speed reaching 40-50 kmph gusting to 60 kmph likely along and off Maharashtra coast during next 06 hours and gradually improve thereafter.

(iii) Sea condition

- The Sea condition will be rough to very rough along & off Maharashtra coasts during next 06 hours and gradually improve thereafter.

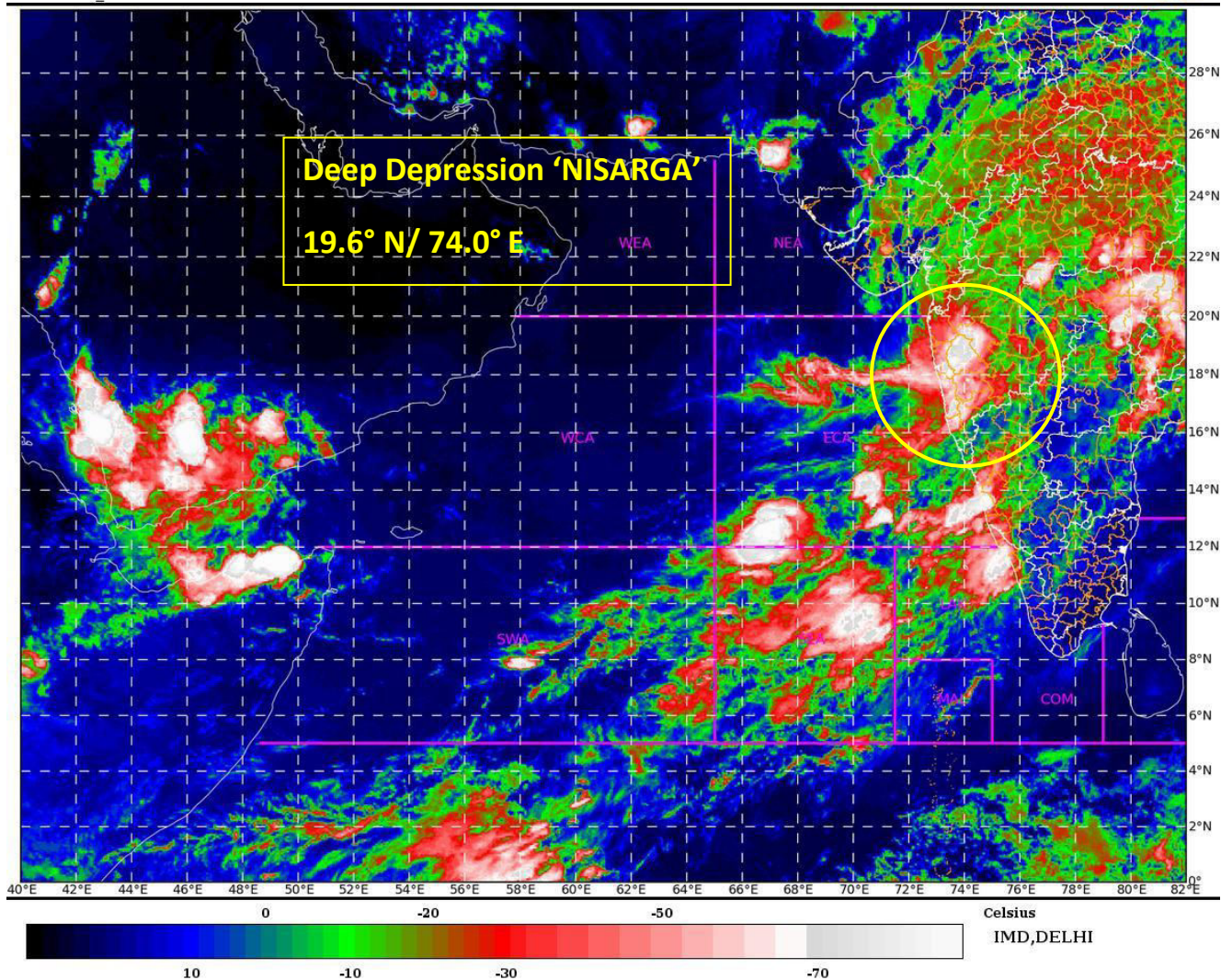
(iv) Fishermen Warning

Fishermen are advised not to venture into Northeast Arabian Sea and along & off Goa-Maharashtra-south Gujarat coasts during next 12 hours.

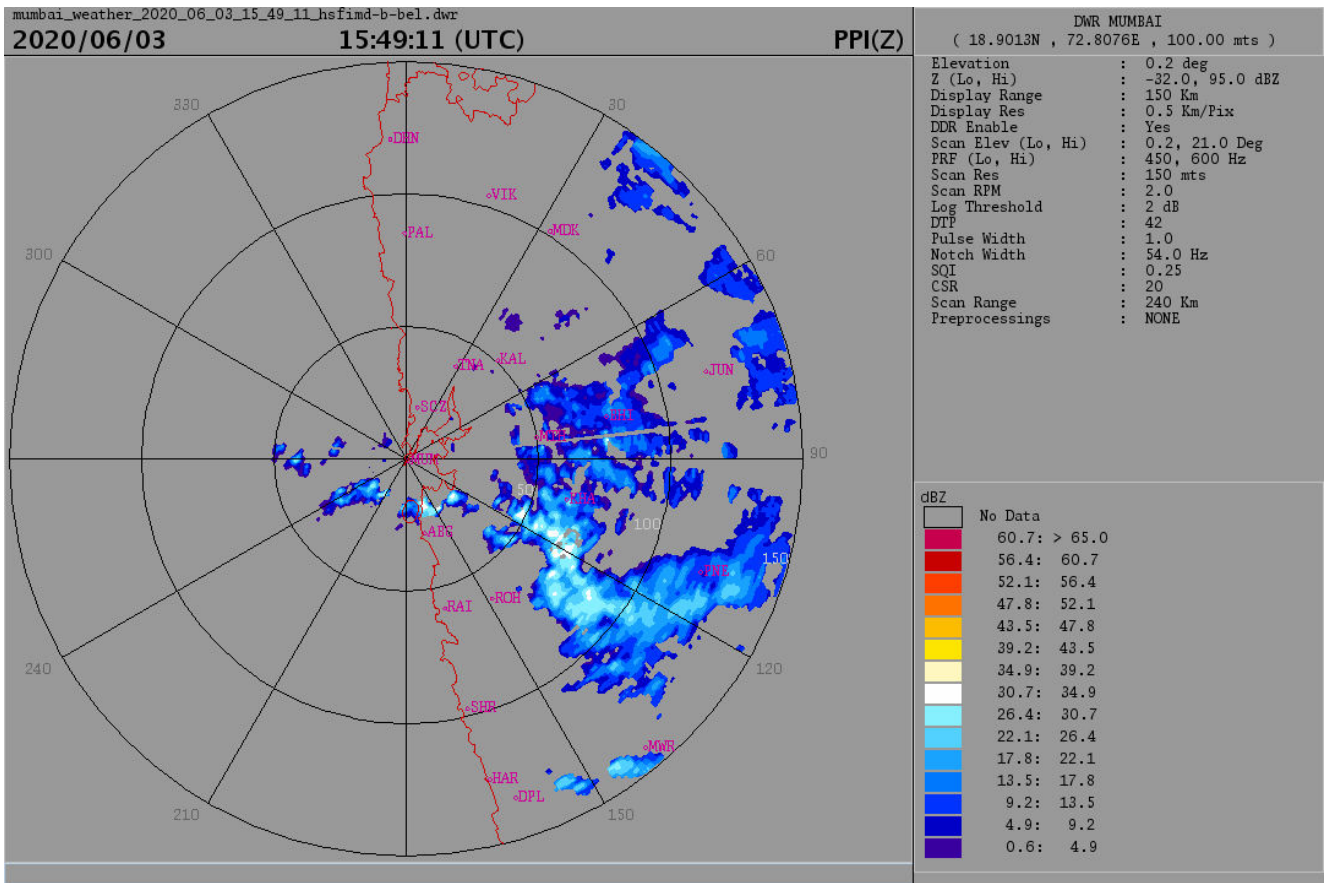
The next bulletin will be issued at 0230 hrs IST of the 04th June, 2020.

(V R Durai)
Scientist-E, RSMC, New Delhi

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

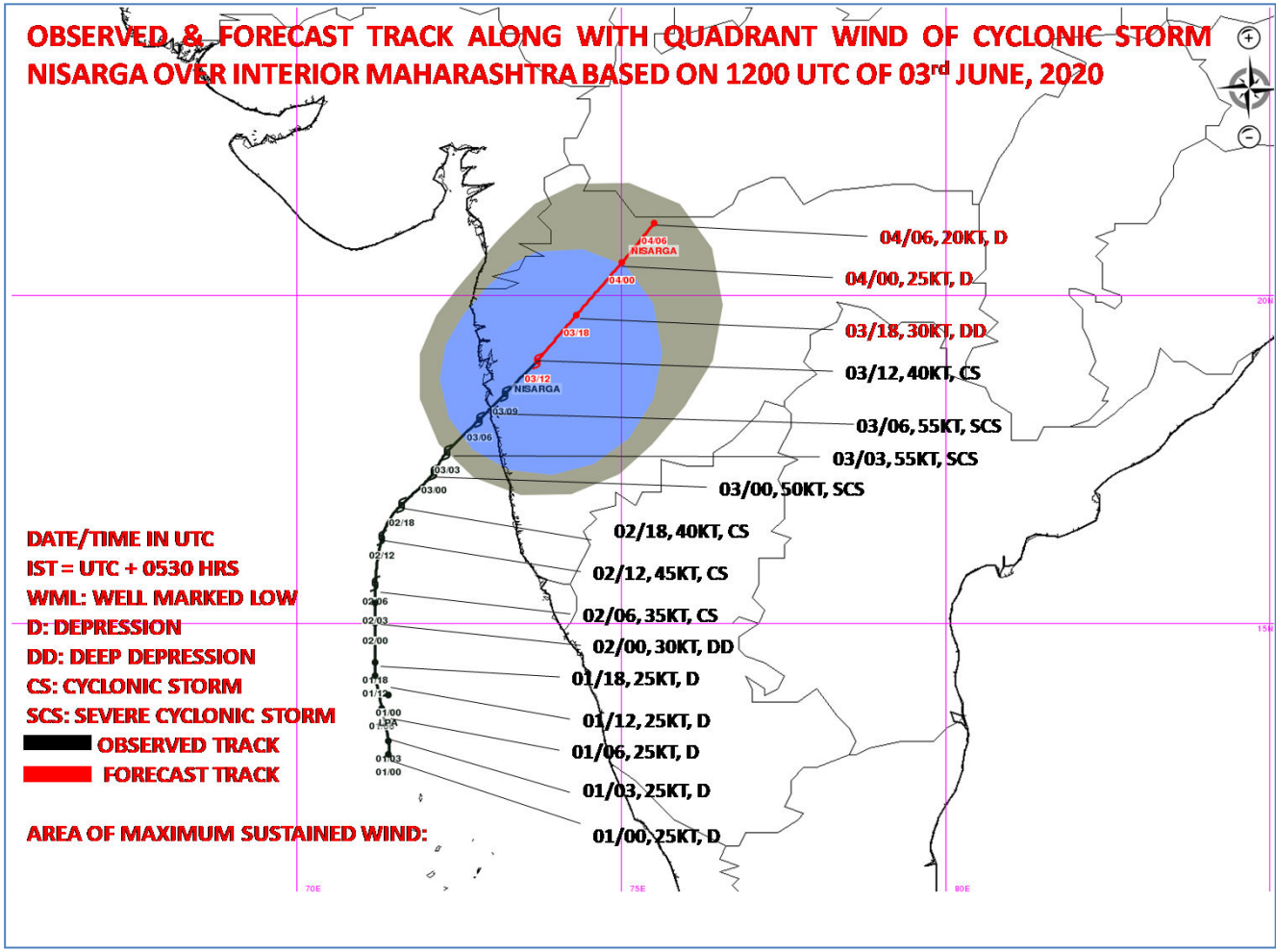
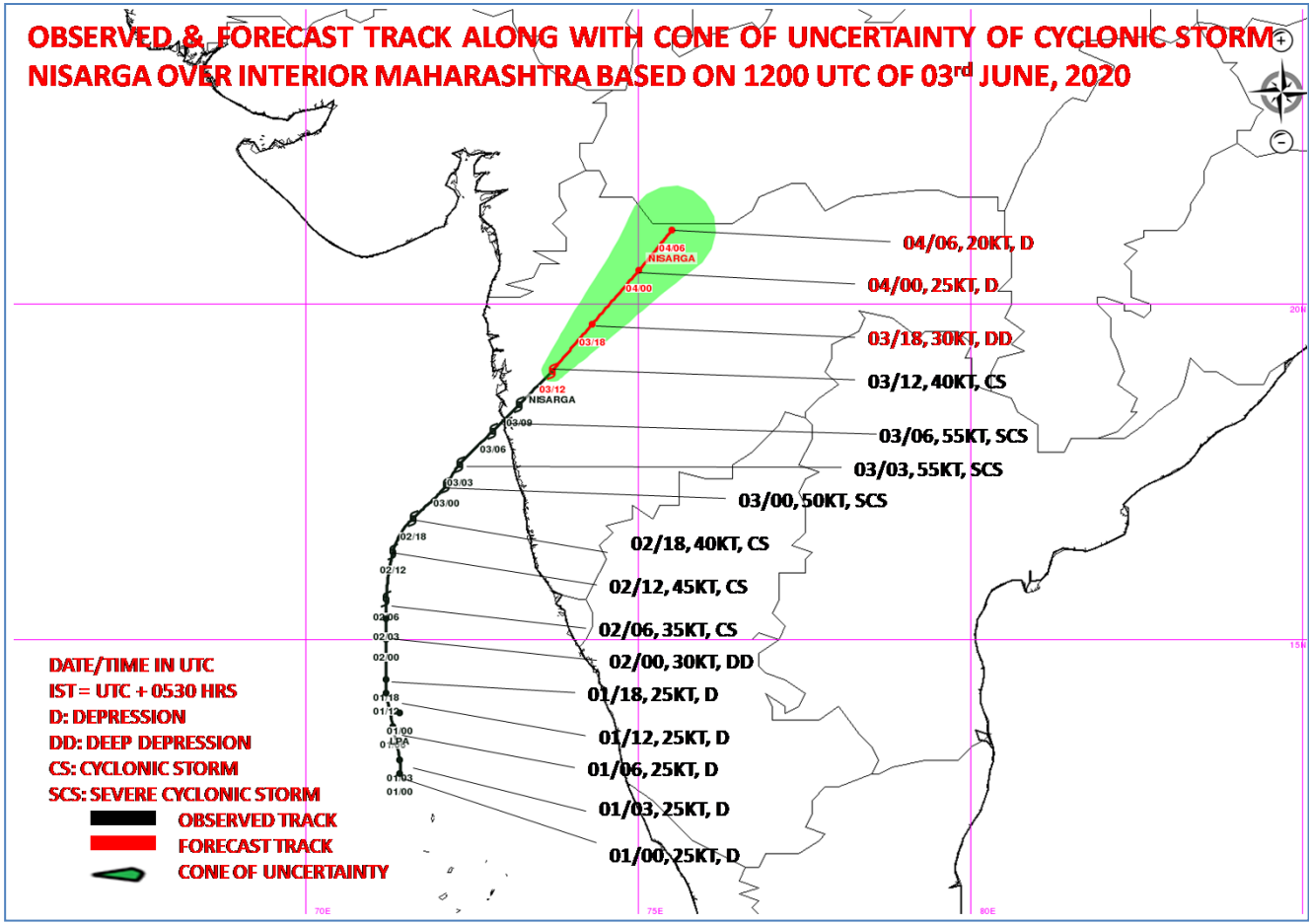


Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



DOPLER WEATHER RADAR MUMBAI AT 15:49:13 HOURS IST OF 03.06.2020

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



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



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

BULLETIN NO. : 30 (ARB/02/2020)

TIME OF ISSUE: 0145 HOURS IST

DATED: 04.06.2020

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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

SECRETARY, MOES (FAX NO. 24629777)

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

DIRECTOR GENERAL, DOORDARSHAN (23385843) DIRECTOR GENERAL, AIR (23421101, 23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

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

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

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

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

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

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

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

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

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: **Deep Depression over Madhya Maharashtra**

The **Deep Depression** [remnant of the Severe Cyclonic Storm '**NISARGA**'] over Madhya Maharashtra moved northeastwards with a speed of about 27 kmph during past 06 hours, and lay centred at 2330 hours IST of 03rd June, 2020, near latitude 20.0°N and longitude 74.5°E, 70 km east of Nasik, 90 Km north-northwest of Aurangabad and 180 km northeast of Pune.

It is very likely to move northeastwards and weaken into a Depression during next 06 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum surface (Kmph)	sustained wind speed	Category of cyclonic disturbance
03.06.20/2330	20.0/74.5	50-60	gusting to 70	Deep Depression
04.06.20/0530	20.7/75.2	40-50	gusting to 60	Depression
04.06.20/1130	21.3/75.7	30-40	gusting to 50	Depression

Warnings:

(i) **Rainfall:**

- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over north Madhya Maharashtra, Marathawada, Vidarbha and south Madhya Pradesh during next 24 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places over south Konkan & Goa and south Gujarat region during next 12 hours.

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

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

(ii) Wind warning

- Gale wind, speed reaching 50-60 kmph gusting to 70 kmph, is prevailing over Madhya Maharashtra (North Pune, Nasik and Aurangabad Districts). It is likely continue for next 06 hours and gradually decrease becoming 35-45 gusting 55 by early morning of 4th June.
- Squally wind, speed reaching 40-50 kmph gusting to 60 kmph likely along and off Maharashtra coast during next 06 hours and gradually improve thereafter.

(iii) Sea condition

- The Sea condition will be rough to very rough along & off Maharashtra coasts during next 06 hours and gradually improve thereafter.

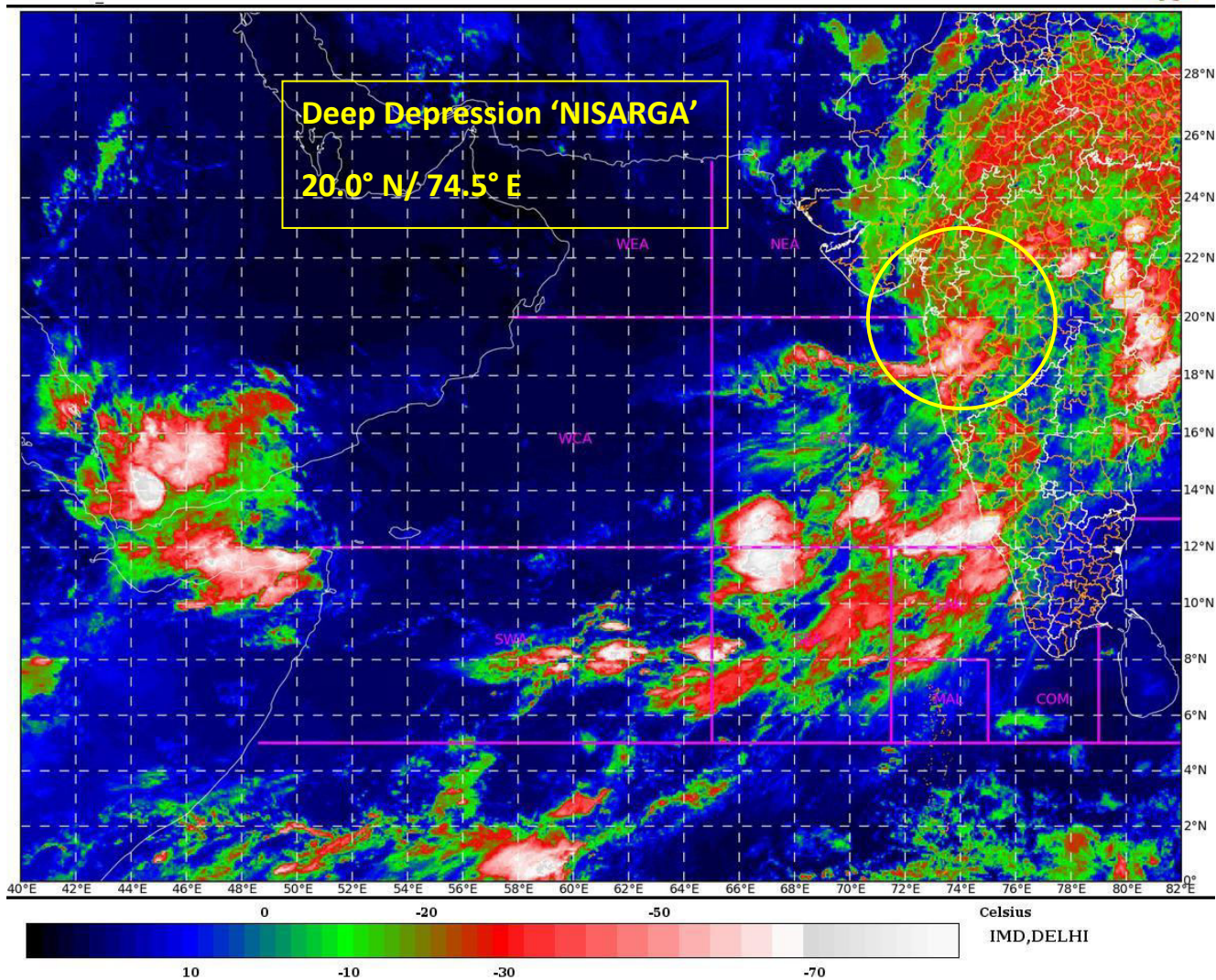
(iv) Fishermen Warning

Fishermen are advised not to venture into Northeast Arabian Sea and along & off Goa-Maharashtra-south Gujarat coasts during next 12 hours.

The next bulletin will be issued at 0830 hrs IST of the 04th June, 2020.

(V R Durai)
Scientist-E, RSMC, New Delhi

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



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

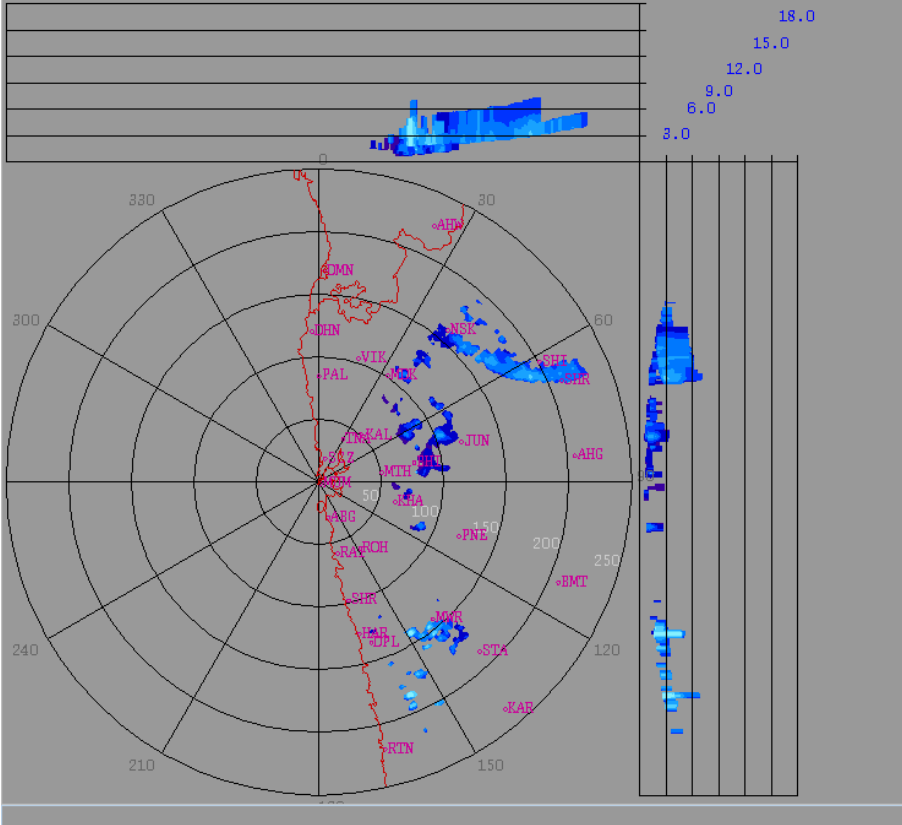
2020/06/03

19:39:11 (UTC)

MAX(Z)

DWR MUMBAI

(18.9013N , 72.8076E , 100.00 mts)



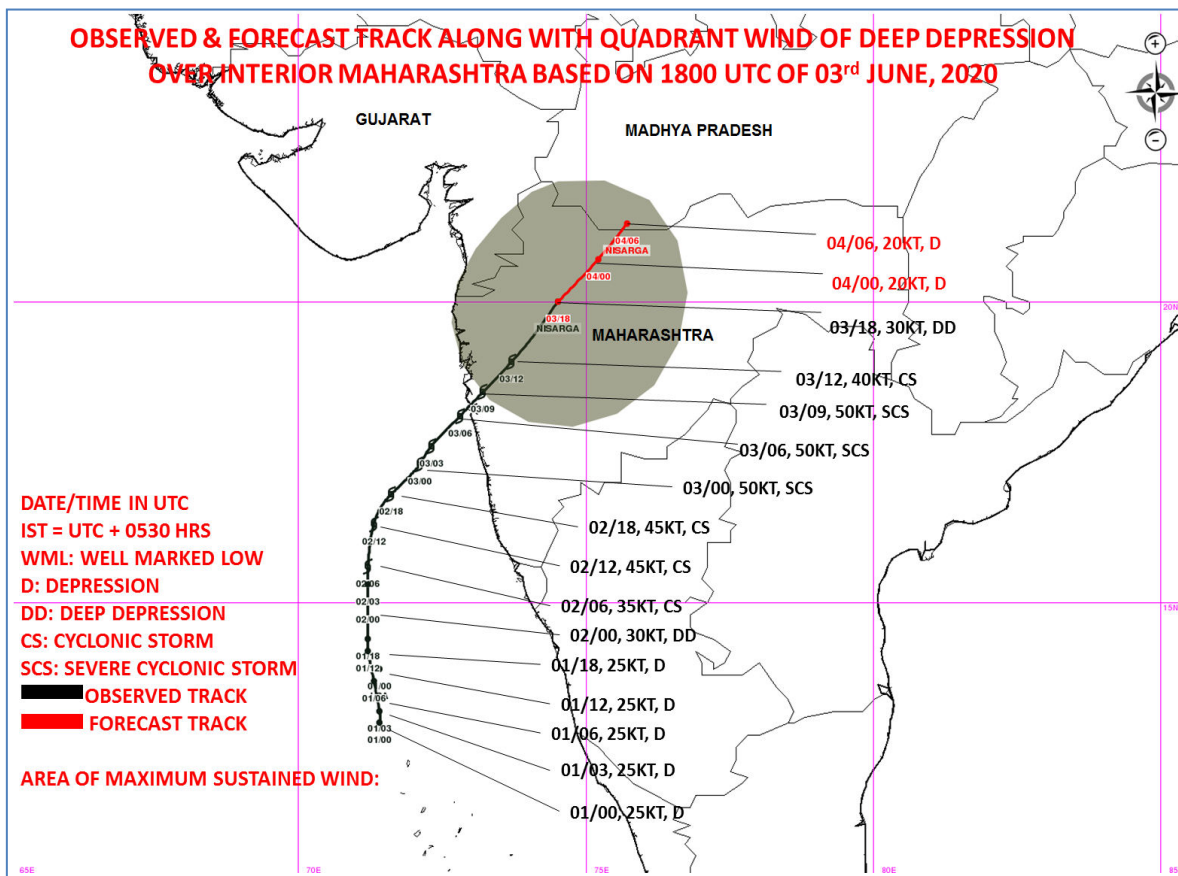
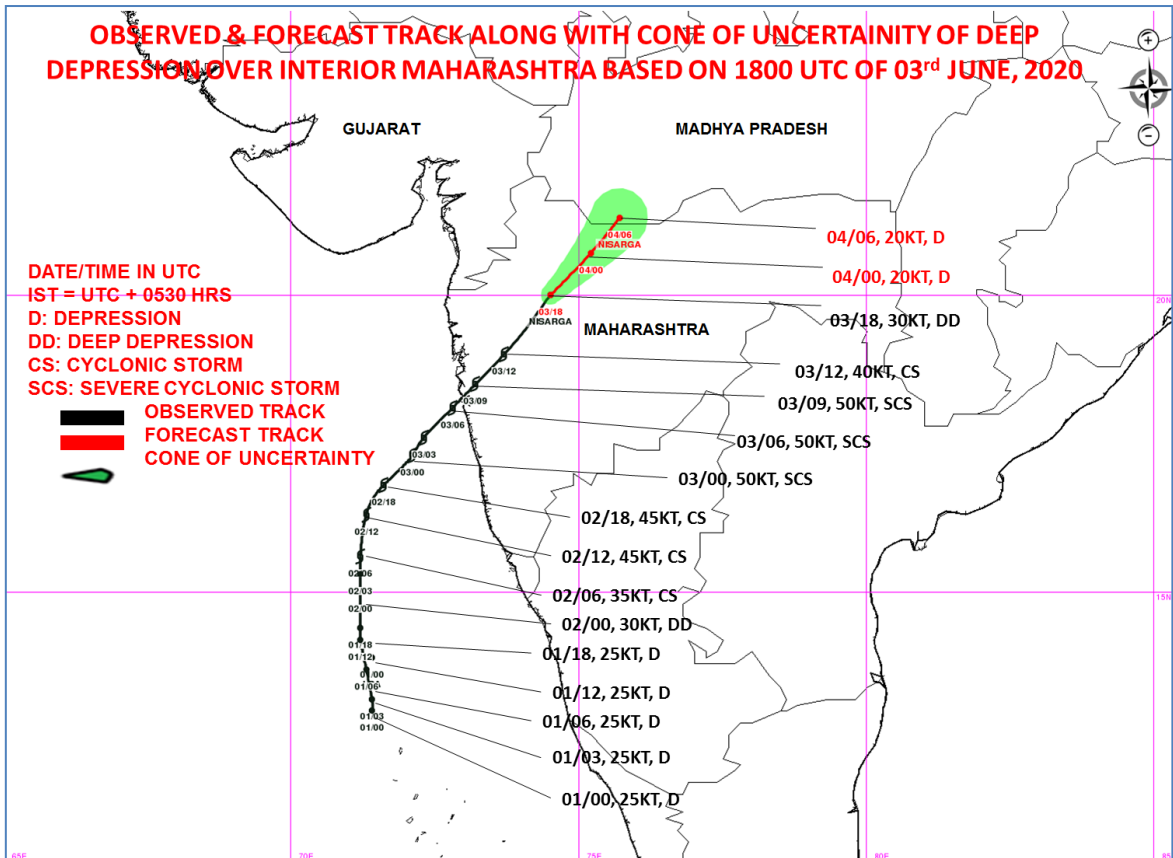
Height : 18.0 Km
 Layer Spacing : 0.100 Km
 Z (Lo, Hi) : -32.0, 95.0 dBZ
 Grid size : 1 Km
 Display Range : 250 Km
 Display Res : 1.0 Km/Pix
 DDR Enable : Yes
 Scan Elev (Lo, Hi) : 0.2, 21.0 Deg
 PRF (Lo, Hi) : 450, 600 Hz
 Scan Res : 150 mts
 Scan RPM : 2.0
 Log Threshold : 2 dB
 DTP : 42
 Pulse Width : 1.0
 Notch Width : 54.0 Hz
 SQI : 0.25
 CSR : 20
 Scan Range : 240 Km
 Preprocessings : NONE

dBZ

No Data
60.7: > 65.0
56.4: 60.7
52.1: 56.4
47.8: 52.1
43.5: 47.8
39.2: 43.5
34.9: 39.2
30.7: 34.9
26.4: 30.7
22.1: 26.4
17.8: 22.1
13.5: 17.8
9.2: 13.5
4.9: 9.2
0.6: 4.9

DOPLER WEATHER RADAR MUMBAI AT 19:39:11 UTC OF 03.06.2020

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



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



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

BULLETIN NO. : 31 (ARB/02/2020)

TIME OF ISSUE: 0815 HOURS IST

DATED: 04.06.2020

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, MAHARASHTRA (FAX NO. 022-22028594)

CHIEF SECRETARY, CHHATTISGARH (FAX NO. 0771-2221206)

CHIEF SECRETARY, MADHYA PRADESH (FAX NO. 0755-2551521)

Sub: **Depression over western parts of Vidarbha** [remnant of the Severe Cyclonic Storm '**NISARGA**']

The Deep Depression [remnant of the Severe Cyclonic Storm '**NISARGA**'] over Madhya Maharashtra moved east-northeastwards with a speed of about 23 kmph during past 06 hours, weakened into a **Depression** and lay centred at 0530 hours IST of today, the 04th June, 2020, near latitude 20.5°N and longitude 76.0°E, over western parts of Vidarbha, about 110 km west-southwest of Akola, 320 Km west-southwest of Nagpur and 100 km northeast of Aurangabad.

It is very likely to move east-northeastwards and weaken into a well marked Low pressure area during next 12 hours.

Warnings:

(i) Rainfall:

Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over east Madhya Pradesh and Chhattisgarh. Light to moderate rainfall at most places with heavy falls at isolated places very likely over Vidarbha and west Madhya Pradesh during next 24 hours.

(ii) Wind warning

Squally wind, speed reaching 35-45 kmph gusting to 55 kmph, is prevailing over western Districts of Vidarbha. It is likely reduce gradually during next 12 hours.

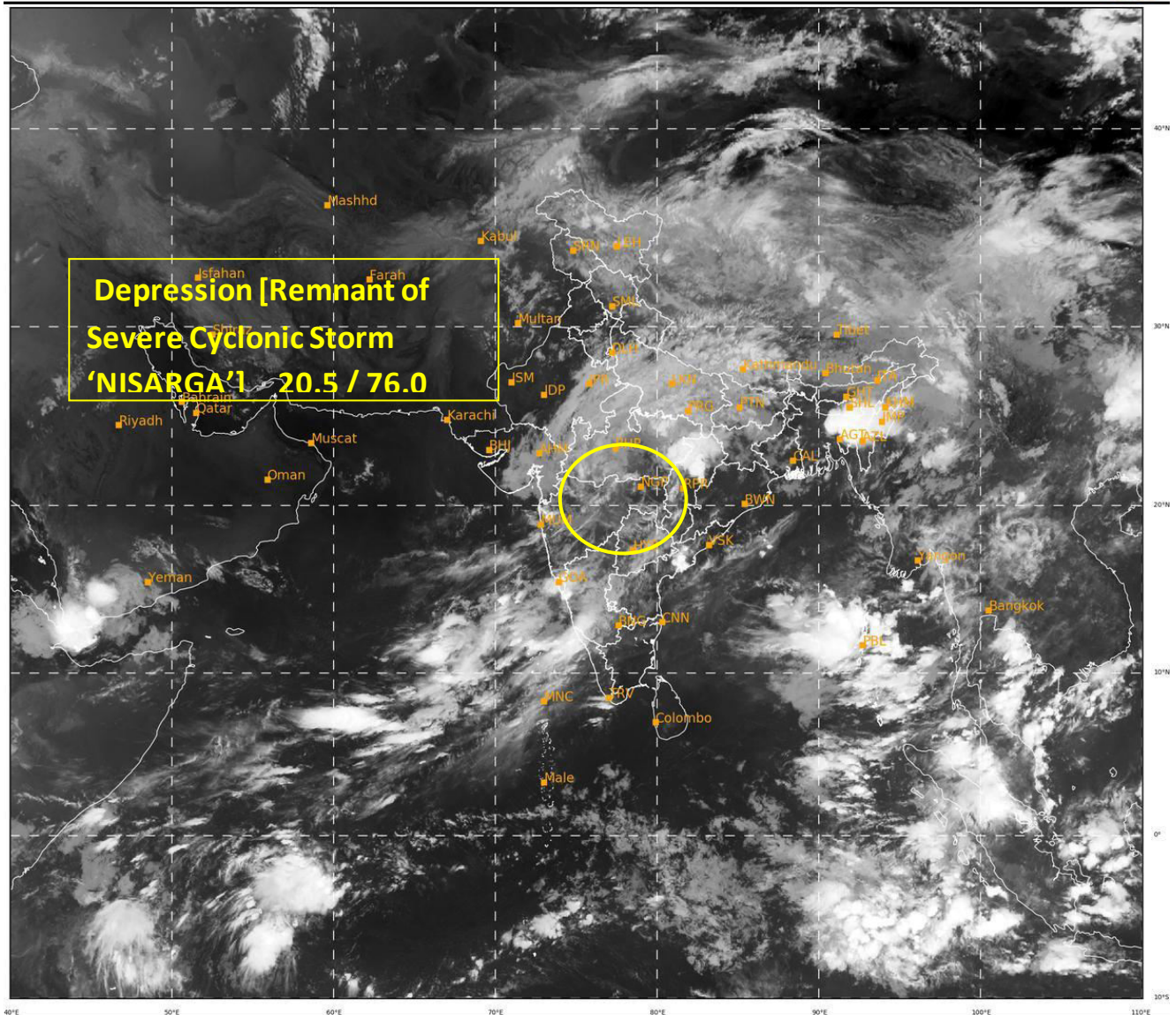
The next bulletin will be issued at 1130 hrs IST of today, the 04th June, 2020.

(Sunitha Devi.S)

Scientist-E, RSMC, New Delhi

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

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



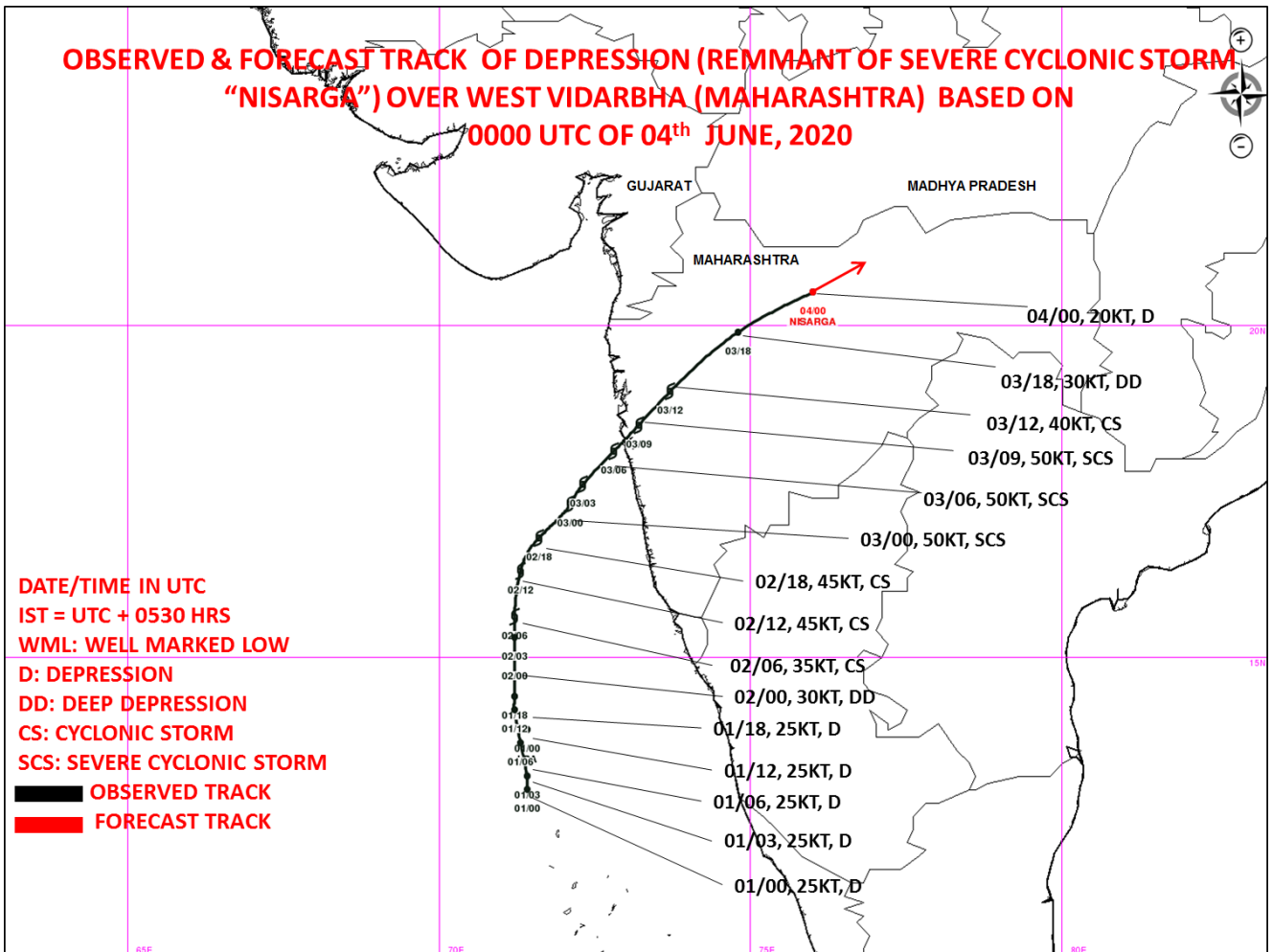
412

935

IMD, 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.

OBSERVED & FORECAST TRACK OF DEPRESSION (REMMANT OF SEVERE CYCLONIC STORM "NISARGA") OVER WEST VIDARBHA (MAHARASHTRA) BASED ON 0000 UTC OF 04th JUNE, 2020



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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/02/2020)

TIME OF ISSUE: 1130 HOURS IST

DATED: 04.06.2020

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, MAHARASHTRA (FAX NO. 022- 22028594)

CHIEF SECRETARY, CHHATTISGARH (FAX NO. 0771-2221206)

CHIEF SECRETARY, MADHYA PRADESH (FAX NO. 0755-2551521)

Sub: Depression [remnant of the Severe Cyclonic Storm 'NISARGA'] over north-western parts of Vidarbha and adjoining Madhya Pradesh

The **Depression** [remnant of the Severe Cyclonic Storm 'NISARGA'] over western parts of Vidarbha moved northeastwards with a speed of about 27 kmph during past 06 hours and lay centred at 0830 hours IST of today, the 04th June, 2020, over **north-western parts of Vidarbha and adjoining Madhya Pradesh** near latitude 21.2°N and longitude 76.9°E, about 60 km northwest of Akola (Maharashtra), 220 Km west-northwest of Nagpur (Maharashtra) and 230 km south-southeast of Bhopal (Madhya Pradesh).

It is very likely to move east-northeastwards and weaken into a well marked Low pressure area by today evening.

Realised rainfall in cm (≥ 5 cm) during past 24 hours ending at 0830 hrs IST of today: Nasik-14.4, Lanja-13.1, Dapoli-12.5, Igatpuri & Bhusawal-10.6, Chiplun-10.2, Harnai, Rajapur & Baglan-8.7, Guhagar-7.7, Sakri-7.2, Jawahar, Malegaon & Dindori-7.0, Surgana-6.5, Shirpur-6.3, Jamner-6.2, Ratnagiri & Yeola-5.3, Colaba-5.0.

Warnings:

(i) Rainfall:

Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over east Madhya Pradesh and Chhattisgarh. Light to moderate rainfall at most places with heavy falls at isolated places very likely over Vidarbha and west Madhya Pradesh during next 24 hours.

(ii) Wind warning

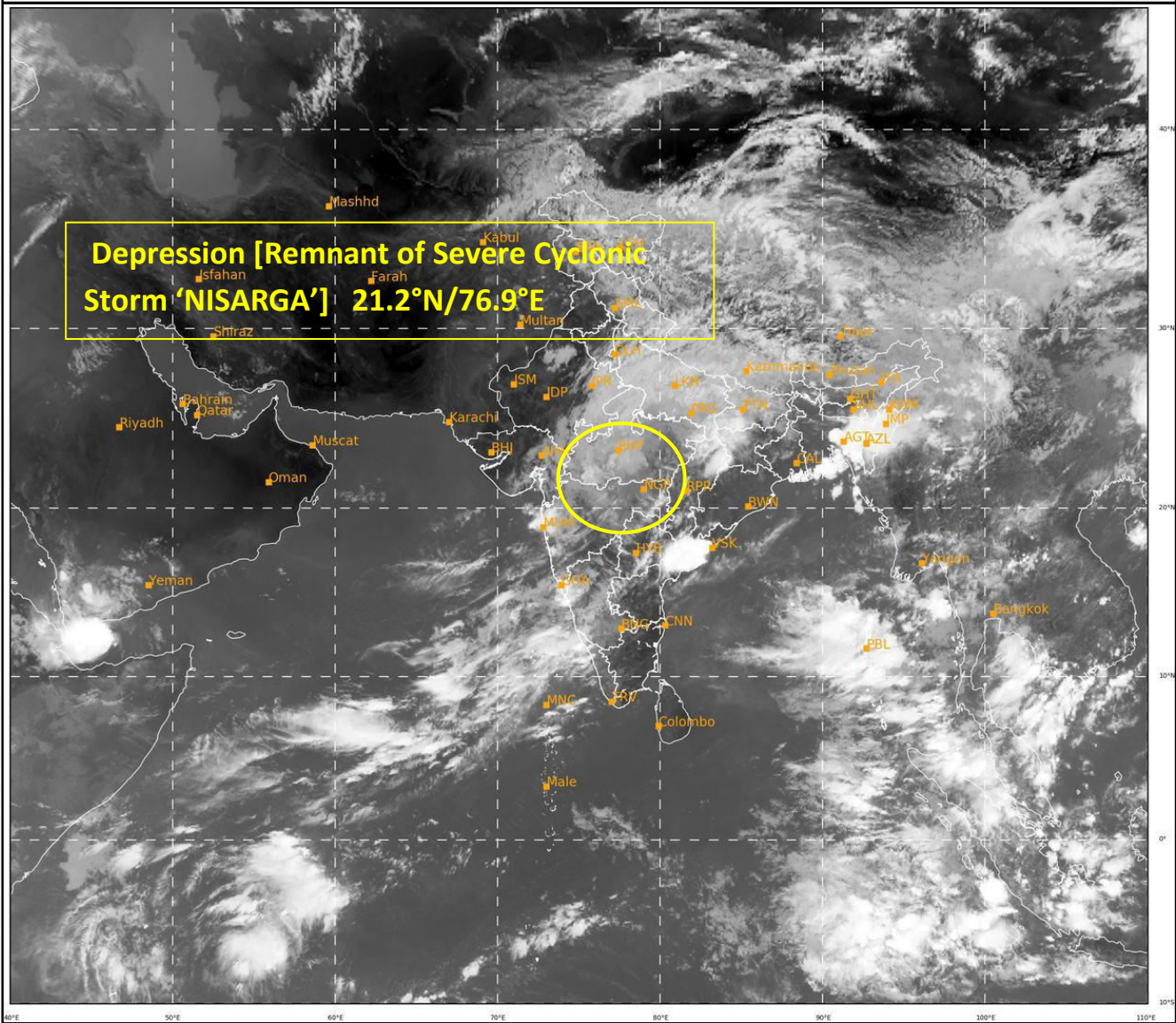
Squally wind, speed reaching 35-45 kmph gusting to 55 kmph, is prevailing over western Districts of Vidarbha and adjoining Madhya Pradesh. It is likely reduce gradually during next 12 hours.

The next bulletin will be issued at 1430 hrs IST of today, the 04th June, 2020.

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

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

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



286

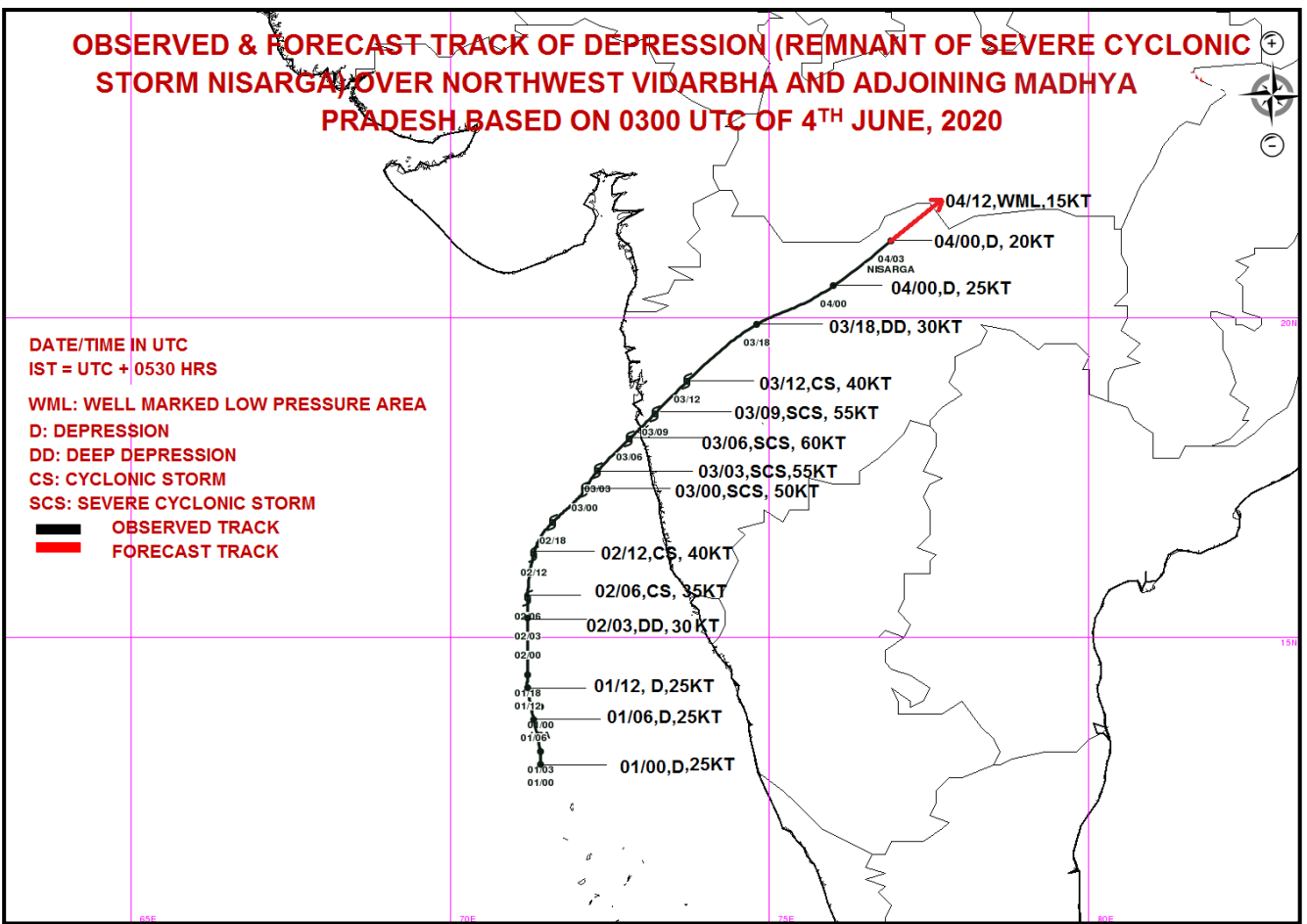
934

IMD, 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.

OBSERVED & FORECAST TRACK OF DEPRESSION (REMNANT OF SEVERE CYCLONIC STORM NISARGA) OVER NORTHWEST VIDARBHA AND ADJOINING MADHYA PRADESH BASED ON 0300 UTC OF 4TH JUNE, 2020

DATE/TIME IN UTC
 IST = UTC + 0530 HRS
 WML: WELL MARKED LOW PRESSURE AREA
 D: DEPRESSION
 DD: DEEP DEPRESSION
 CS: CYCLONIC STORM
 SCS: SEVERE CYCLONIC STORM
 — OBSERVED TRACK
 — FORECAST TRACK



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