



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

BULLETIN NO. : 01 (BOB/10/2018)

TIME OF ISSUE: 0930 HOURS IST

DATED: 13.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: Depression over southeast Bay of Bengal: Pre-cyclone watch for Andhra Pradesh Coast

Latest satellite imageries and surface observations indicate that a depression has formed over southeast Bay of Bengal and lay centred at 0530 hrs IST of today, the 13th December, 2018 near latitude 6.5°N and longitude 88.7°E, about 850 km east-southeast of Trincomalee (Sri Lanka), 1170 km southeast of Chennai (Tamil Nadu) and 1350 km south-southeast of Machilipatnam (Andhra Pradesh). It is very likely to intensify further into a deep depression during next 12 hours and into a Cyclonic Storm during the subsequent 24 hours. It is very likely to move northwestwards towards Andhra Pradesh & adjoining north Tamil Nadu coast during next 72 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
13.12.18/0530	6.5/88.7	40-50 gusting to 65	Depression
13.12.18/1130	7.0/88.4	45-55 gusting to 65	Depression
13.12.18/1730	7.5/88.0	50-60 gusting to 70	Deep Depression
13.12.18/2330	8.0/87.5	55-65 gusting to 75	Deep Depression
14.12.18/0530	8.5/87.0	60-70 gusting to 80	Cyclonic Storm
14.12.18/1730	9.5/85.7	70-80 gusting to 90	Cyclonic Storm
15.12.18/0530	10.8/84.4	80-90 gusting to 100	Cyclonic Storm
15.12.18/1730	12.2/83.2	90-100 gusting to 110	Severe Cyclonic Storm
16.12.18/0530	13.6/82.2	100-110 gusting to 120	Severe Cyclonic Storm

Warnings:

(i) Heavy rainfall warning

- Rainfall at most places with heavy to very heavy falls at isolated places likely to commence over coastal Andhra Pradesh and north coastal Tamil Nadu on 15th December.

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

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

- Rainfall at most places with heavy to very heavy falls at a few places and extremely heavy falls (≥ 20 cm) at isolated places likely over coastal Andhra Pradesh on 16th December and isolated heavy falls on 17th.

(ii) Wind warning

- **13th December:** Squally wind speed reaching 45-55 kmph gusting to 65 kmph is very likely to prevail over central parts of south Bay of Bengal and adjoining Equatorial Indian Ocean.
- **14th December:** Gale wind speed reaching 65-75 kmph gusting to 85 kmph is very likely over southwest & adjoining southeast Bay of Bengal.
- **15th December:**
 - Squally wind speed reaching 45-55 kmph gusting to 65 kmph is likely to commence along & off Coastal Andhra Pradesh and north Tamilnadu & Puducherry coasts from morning.
 - Gale wind speed reaching 90-100 kmph gusting to 110 kmph is likely to prevail over southwest & adjoining westcentral Bay of Bengal.
- **16th December:**
 - Gale wind speed reaching 60-70 kmph gusting to 80 kmph is likely to prevail along & off coastal Andhra Pradesh from morning and will increase gradually thereafter. Squally wind speed reaching 45-55 kmph gusting to 65 kmph over north Tamil Nadu & Puducherry coast.
 - Gale wind speed reaching 100-110 kmph gusting to 120 kmph is likely to prevail over westcentral & adjoining southwest Bay of Bengal.

(iii) Sea condition

The sea condition is very likely to be rough to very rough over central parts of south Bay of Bengal and adjoining Equatorial Indian Ocean on 13th and high over southwest & adjoining southeast Bay of Bengal on 14th. The sea condition is very likely to be high to very high over southwest & adjoining westcentral Bay of Bengal on 15th and over westcentral & adjoining southwest Bay of Bengal on 16th.

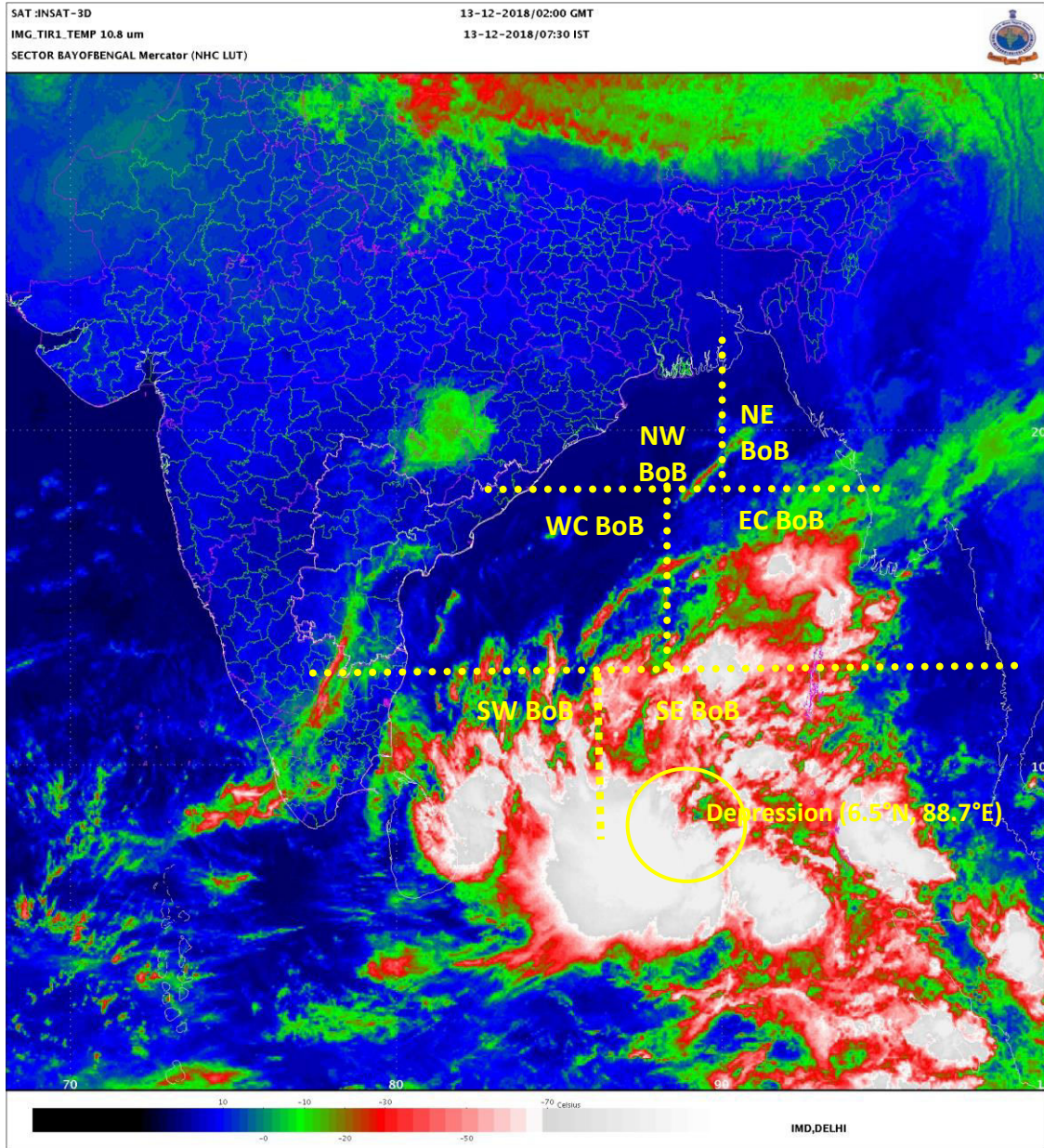
(iv) Fishermen Warning

- The fishermen are advised not to venture into central parts of south Bay of Bengal & adjoining Equatorial Indian Ocean on 13th, into southwest & adjoining southeast Bay of Bengal on 14th, into southwest & adjoining westcentral Bay of Bengal on 15th and westcentral & adjoining southwest Bay of Bengal on 16th December.
- Those, who are out in deep sea areas are advised return to the coast.

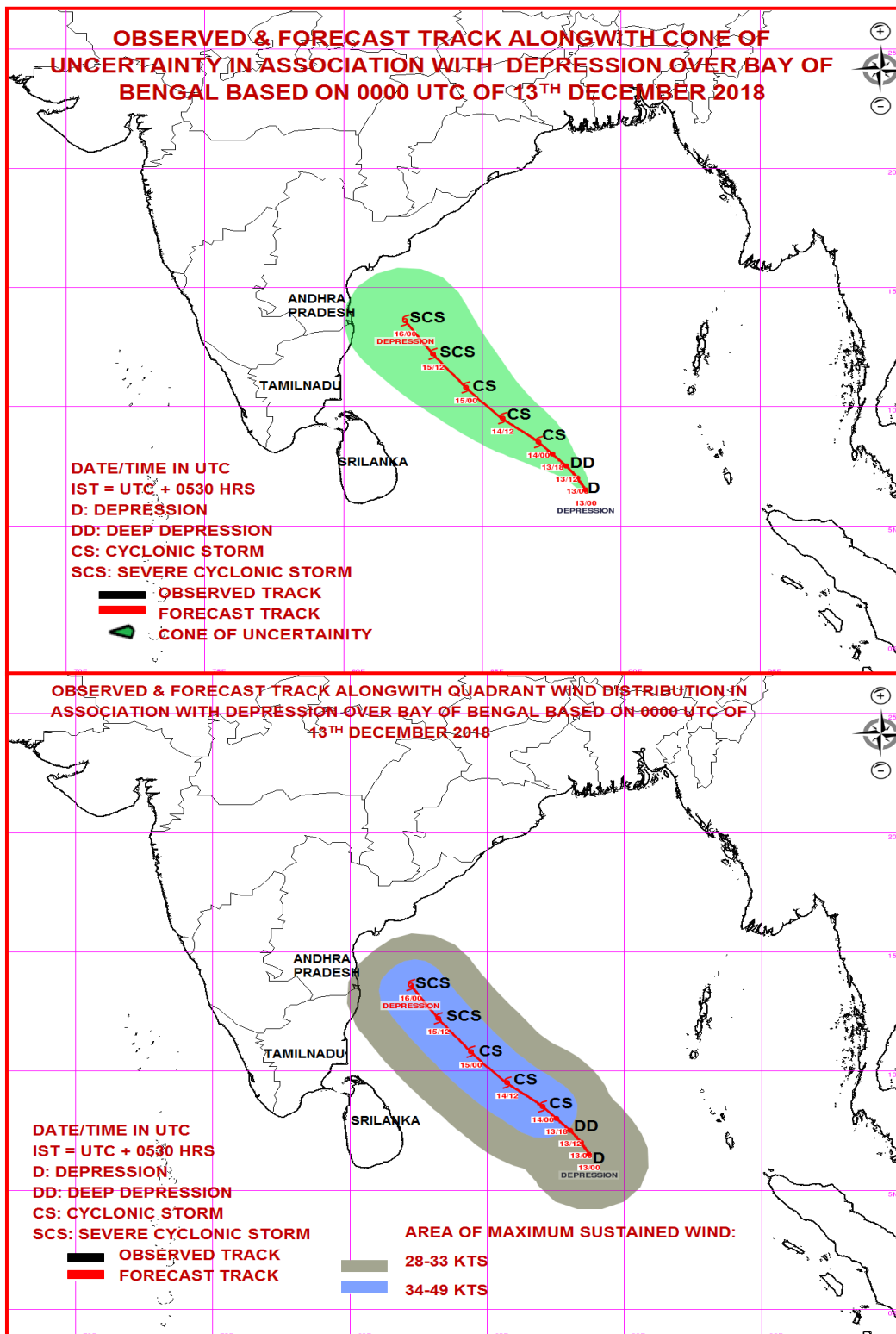
The next bulletin will be issued at 1130 hrs IST of 13th December, 2018.

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

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam



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



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

BULLETIN NO. : 02 (BOB/10/2018)

TIME OF ISSUE: 1200 HOURS IST

DATED: 13.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: Depression over southeast Bay of Bengal: Pre-cyclone watch for Andhra Pradesh Coast

The depression over southeast Bay of Bengal moved north-northwestwards with a speed of 08 kmph during past 03 hours and lay centred at 0830 hrs IST of today, the 13th December, 2018 over southeast Bay of Bengal near latitude 6.7°N and longitude 88.6°E, about 830 km east-southeast of Trincomalee (Sri Lanka), 1150 km southeast of Chennai (Tamil Nadu) and 1330 km south-southeast of Machilipatnam (Andhra Pradesh). It is very likely to intensify further into a deep depression during next 12 hours and into a Cyclonic Storm during the subsequent 24 hours. It is very likely to move northwestwards towards Andhra Pradesh & adjoining north Tamil Nadu coast during next 72 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
13.12.18/0830	6.7/88.6	40-50 gusting to 65	Depression
13.12.18/1130	7.0/88.4	45-55 gusting to 65	Depression
13.12.18/1730	7.5/88.0	50-60 gusting to 70	Deep Depression
13.12.18/2330	8.0/87.5	55-65 gusting to 75	Deep Depression
14.12.18/0530	8.5/87.0	60-70 gusting to 80	Cyclonic Storm
14.12.18/1730	9.5/85.7	70-80 gusting to 90	Cyclonic Storm
15.12.18/0530	10.8/84.4	80-90 gusting to 100	Cyclonic Storm
15.12.18/1730	12.2/83.2	90-100 gusting to 110	Severe Cyclonic Storm
16.12.18/0530	13.6/82.2	100-110 gusting to 120	Severe Cyclonic Storm

Warnings:

(i) Heavy rainfall warning

- Rainfall at most places with heavy to very heavy falls at isolated places likely to commence over coastal Andhra Pradesh and north coastal Tamil Nadu on 15th December.

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

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

- Rainfall at most places with heavy to very heavy falls at a few places and extremely heavy falls (≥ 20 cm) at isolated places likely over coastal Andhra Pradesh on 16th December and isolated heavy falls on 17th.

(ii) Wind warning

- **13th December:** Squally wind speed reaching 45-55 kmph gusting to 65 kmph is very likely to prevail over central parts of south Bay of Bengal and adjoining Equatorial Indian Ocean.
- **14th December:** Gale wind speed reaching 65-75 kmph gusting to 85 kmph is very likely over southwest & adjoining southeast Bay of Bengal.
- **15th December:**
 - Squally wind speed reaching 45-55 kmph gusting to 65 kmph is likely to commence along & off Coastal Andhra Pradesh and north Tamilnadu & Puducherry coasts from morning.
 - Gale wind speed reaching 90-100 kmph gusting to 110 kmph is likely to prevail over southwest & adjoining westcentral Bay of Bengal.
- **16th December:**
 - Gale wind speed reaching 60-70 kmph gusting to 80 kmph is likely to prevail along & off coastal Andhra Pradesh from morning and will increase gradually thereafter. Squally wind speed reaching 45-55 kmph gusting to 65 kmph over north Tamil Nadu & Puducherry coast.
 - Gale wind speed reaching 100-110 kmph gusting to 120 kmph is likely to prevail over westcentral & adjoining southwest Bay of Bengal.

(iii) Sea condition

The sea condition is very likely to be rough to very rough over central parts of south Bay of Bengal and adjoining Equatorial Indian Ocean on 13th and high over southwest & adjoining southeast Bay of Bengal on 14th. The sea condition is very likely to be high to very high over southwest & adjoining westcentral Bay of Bengal on 15th and over westcentral & adjoining southwest Bay of Bengal on 16th.

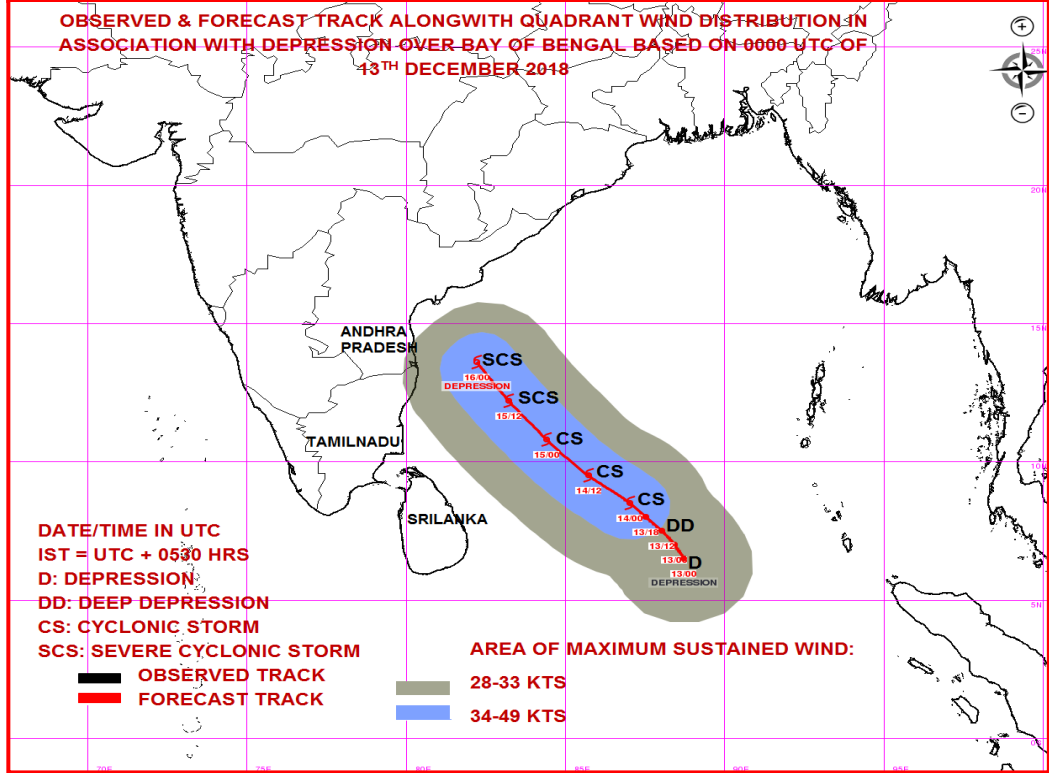
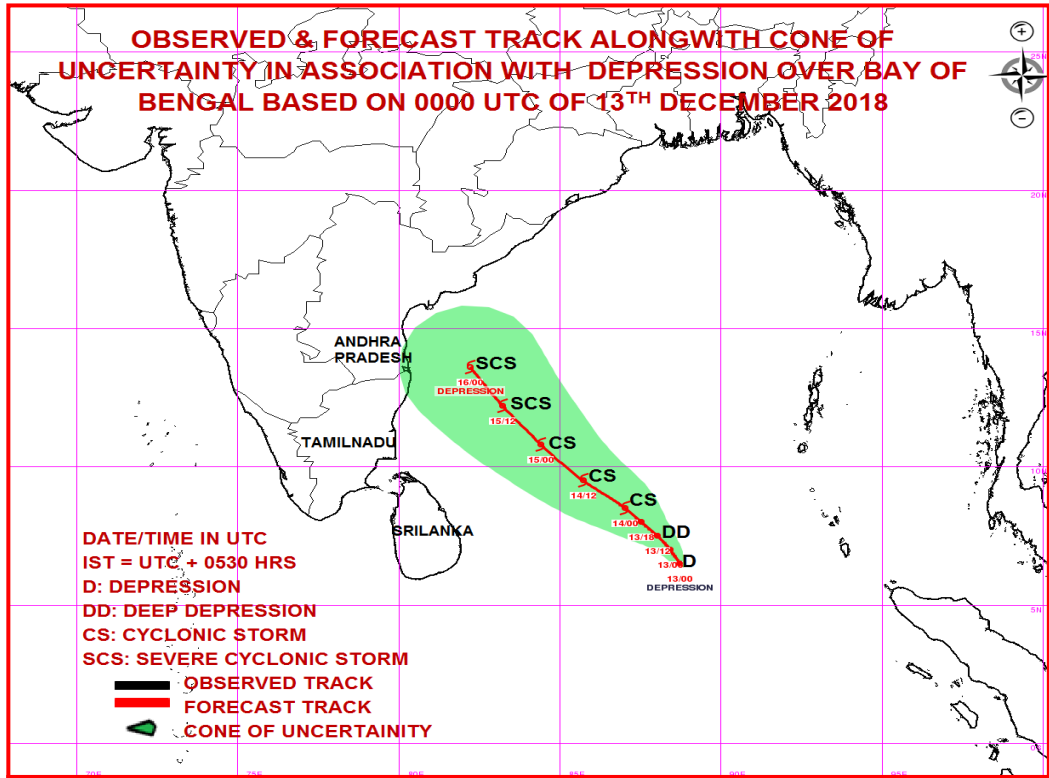
(iv) Fishermen Warning

- The fishermen are advised not to venture into central parts of south Bay of Bengal & adjoining Equatorial Indian Ocean on 13th, into southwest & adjoining southeast Bay of Bengal on 14th, into southwest & adjoining westcentral Bay of Bengal on 15th and westcentral & adjoining southwest Bay of Bengal on 16th December.
- Those, who are out in deep sea areas are advised return to the coast.

The next bulletin will be issued at 1430 hrs IST of 13th December, 2018.

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

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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 (BOB/10/2018)

TIME OF ISSUE: 1400 HOURS IST

DATED: 13.12.2018

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

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

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

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DIRECTOR GENERAL, DOORDARSHAN (23385843)

DIRECTOR GENERAL, AIR (23421105, 23421219)

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CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: Depression over southeast Bay of Bengal: Pre-cyclone watch for Andhra Pradesh Coast

The depression over southeast Bay of Bengal moved northwestwards with a speed of 07 kmph during past 06 hours and lay centred at 1130 hrs IST of today, the 13th December, 2018 over southeast Bay of Bengal near latitude 6.8°N and longitude 88.5°E, about 820 km east-southeast of Trincomalee (Sri Lanka), 1140 km southeast of Chennai (Tamil Nadu) and 1310 km south-southeast of Machilipatnam (Andhra Pradesh). It is very likely to intensify further into a deep depression during next 12 hours and into a Cyclonic Storm during the subsequent 24 hours. It is very likely to move northwestwards towards Andhra Pradesh coast during next 72 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
13.12.18/1130	6.8/88.5	45-55 gusting to 65	Depression
13.12.18/1730	7.2/88.1	50-60 gusting to 70	Deep Depression
13.12.18/2330	7.5/87.7	55-65 gusting to 75	Deep Depression
14.12.18/0530	8.0/87.0	60-70 gusting to 80	Cyclonic Storm
14.12.18/1130	8.5/86.2	65-75 gusting to 85	Cyclonic Storm
14.12.18/2330	9.5/85.1	75-85 gusting to 95	Cyclonic Storm
15.12.18/1130	10.7/84.0	80-90 gusting to 100	Cyclonic Storm
15.12.18/2330	12.2/83.1	90-100 gusting to 110	Severe Cyclonic Storm
16.12.18/1130	13.5/82.3	100-110 gusting to 120	Severe Cyclonic Storm

Warnings:

(i) Heavy rainfall warning

- Rainfall at most places with heavy to very heavy falls at isolated places likely to commence over coastal Andhra Pradesh and north coastal Tamil Nadu on 15th December.

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

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

- Rainfall at most places with heavy to very heavy falls at a few places and extremely heavy falls (≥ 20 cm) at isolated places likely over coastal Andhra Pradesh on 16th December and isolated heavy falls on 17th.

(ii) Wind warning

- **13th December:** Squally wind speed reaching 45-55 kmph gusting to 65 kmph is very likely to prevail over central parts of south Bay of Bengal and adjoining Equatorial Indian Ocean.
- **14th December:** Gale wind speed reaching 65-75 kmph gusting to 85 kmph is very likely over southwest & adjoining southeast Bay of Bengal.
- **15th December:**
 - Squally wind speed reaching 45-55 kmph gusting to 65 kmph is likely to commence along & off Coastal Andhra Pradesh and north Tamilnadu & Puducherry coasts from morning.
 - Gale wind speed reaching 90-100 kmph gusting to 110 kmph is likely to prevail over southwest & adjoining westcentral Bay of Bengal.
- **16th December:**
 - Gale wind speed reaching 60-70 kmph gusting to 80 kmph is likely to prevail along & off coastal Andhra Pradesh from morning and will increase gradually thereafter. Squally wind speed reaching 45-55 kmph gusting to 65 kmph over north Tamil Nadu & Puducherry coast.
 - Gale wind speed reaching 100-110 kmph gusting to 120 kmph is likely to prevail over westcentral & adjoining southwest Bay of Bengal.

(iii) Sea condition

The sea condition is very likely to be rough to very rough over central parts of south Bay of Bengal and adjoining Equatorial Indian Ocean on 13th and high over southwest & adjoining southeast Bay of Bengal on 14th. The sea condition is very likely to be high to very high over southwest & adjoining westcentral Bay of Bengal on 15th and over westcentral & adjoining southwest Bay of Bengal on 16th.

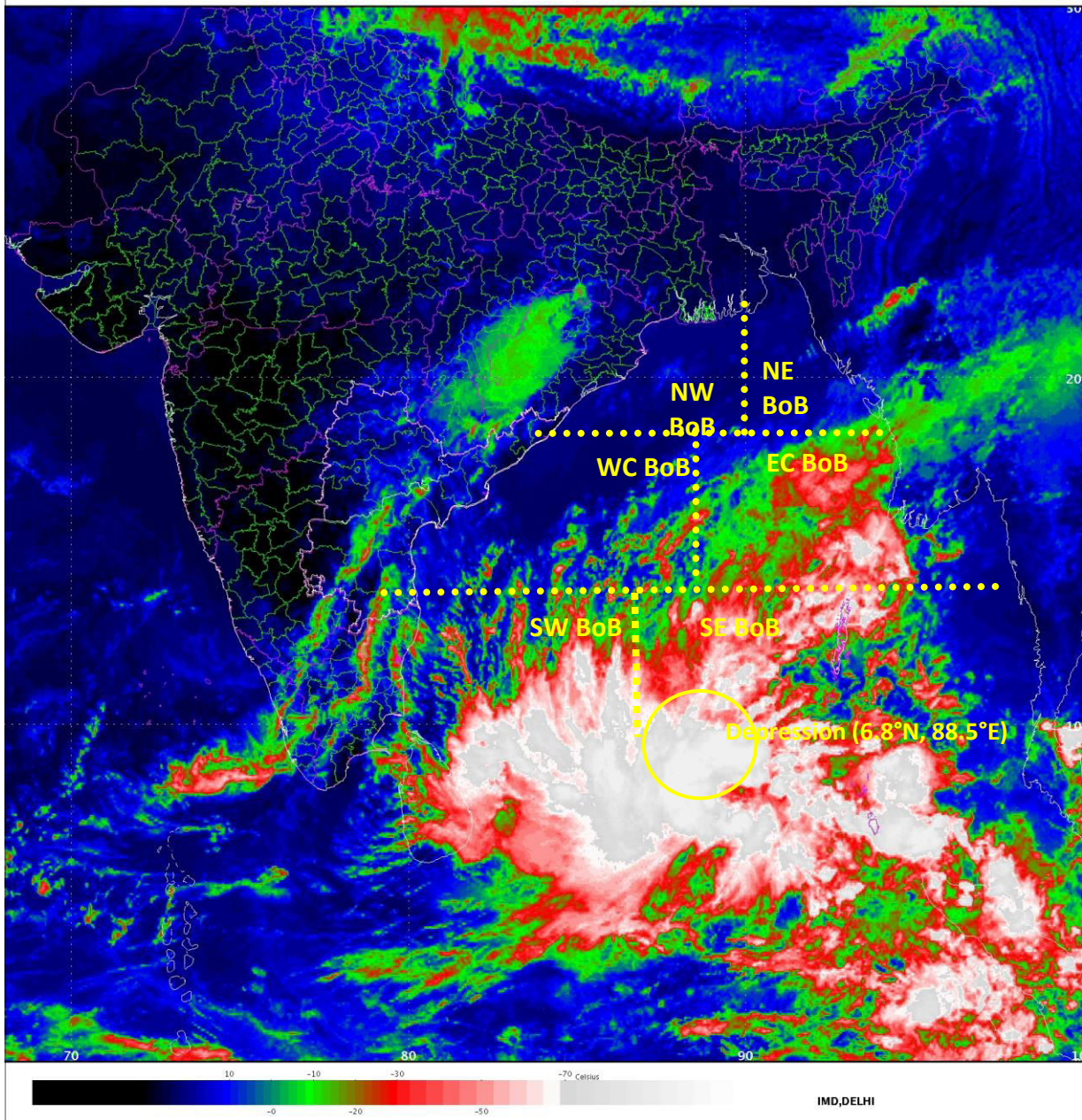
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- The fishermen are advised not to venture into central parts of south Bay of Bengal & adjoining Equatorial Indian Ocean on 13th, into southwest & adjoining southeast Bay of Bengal on 14th, into southwest & adjoining westcentral Bay of Bengal on 15th and westcentral & adjoining southwest Bay of Bengal on 16th December.
- Those, who are out in deep sea areas are advised return to the coast.

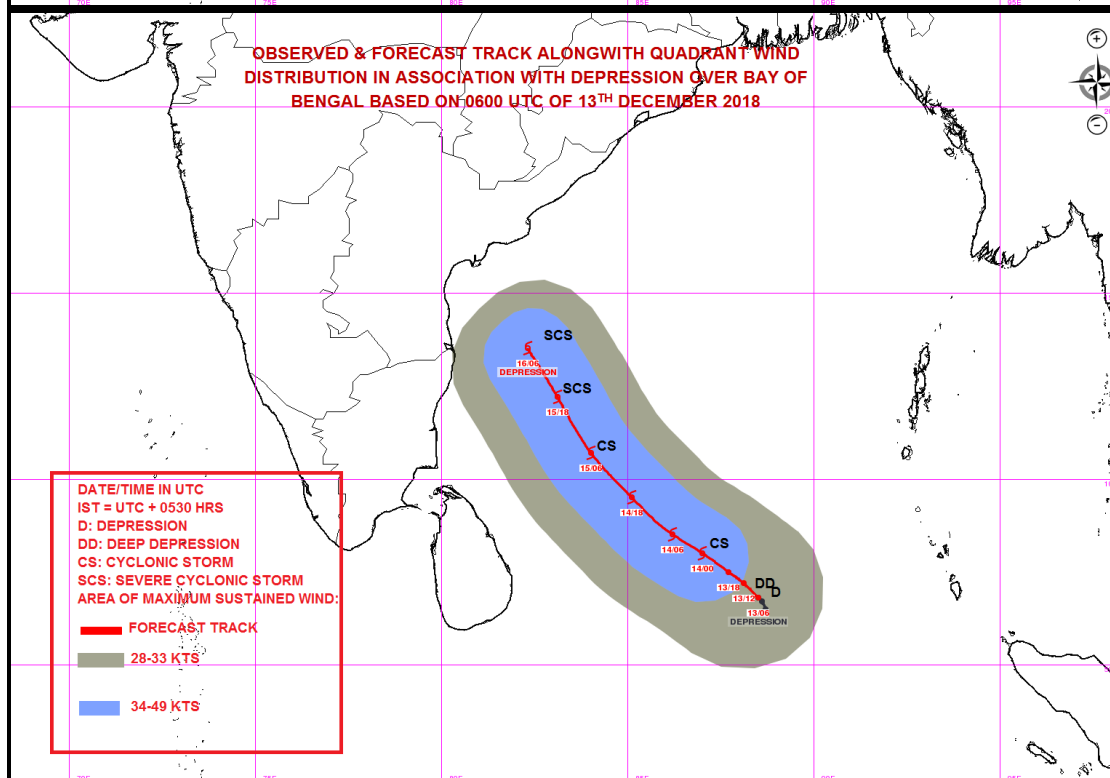
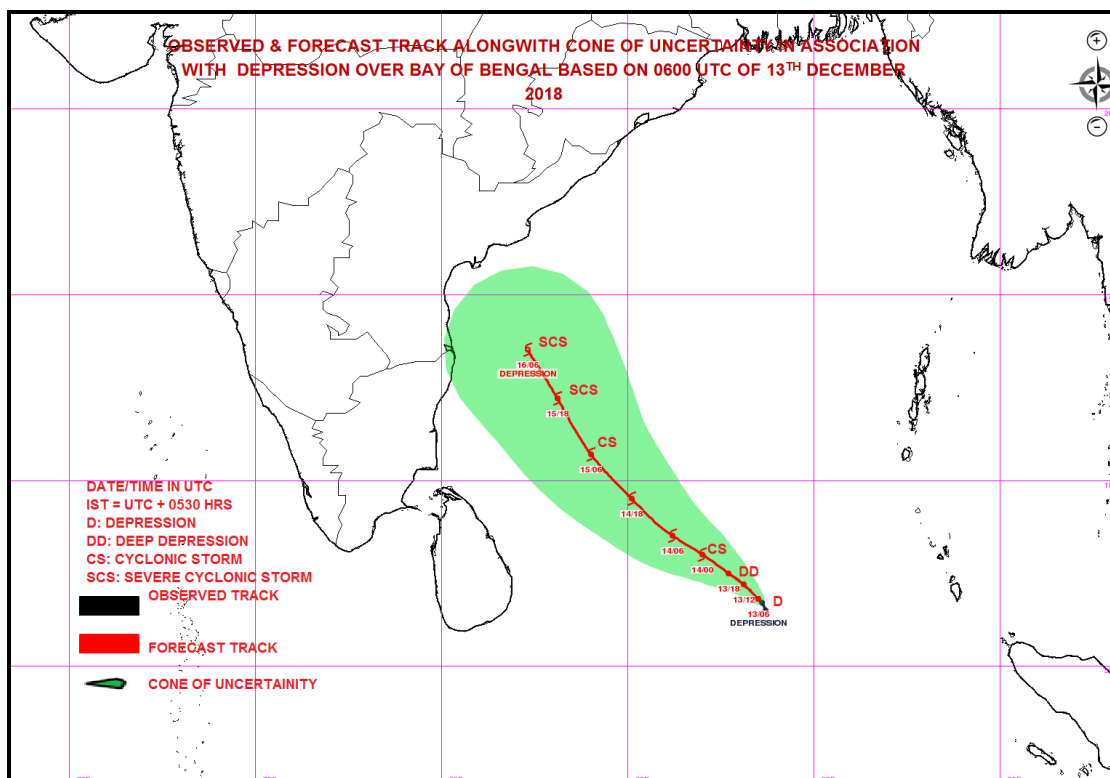
The next bulletin will be issued at 2030 hrs IST of 13th December, 2018.

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

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam



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



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

BULLETIN NO. : 04 (BOB/10/2018)

TIME OF ISSUE: 1930 HOURS IST

DATED: 13.12.2018

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

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

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CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: Depression over southeast Bay of Bengal: Pre-cyclone watch for Andhra Pradesh Coast

The depression over southeast Bay of Bengal moved north-northwestwards with a speed of 11 kmph during past 06 hours and lay centred at 1730 hrs IST of today, the 13th December, 2018 over southeast Bay of Bengal near latitude 7.3°N and longitude 88.2°E, about 780 km southeast of Trincomalee (Sri Lanka), 1080 km south-southeast of Chennai (Tamil Nadu) and 1250 km south-southeast of Machilipatnam (Andhra Pradesh). It is very likely to intensify further into a deep depression during next 12 hours and into a Cyclonic Storm during the subsequent 12 hours. It is very likely to move northwestwards towards Andhra Pradesh coast during next 72 hours.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
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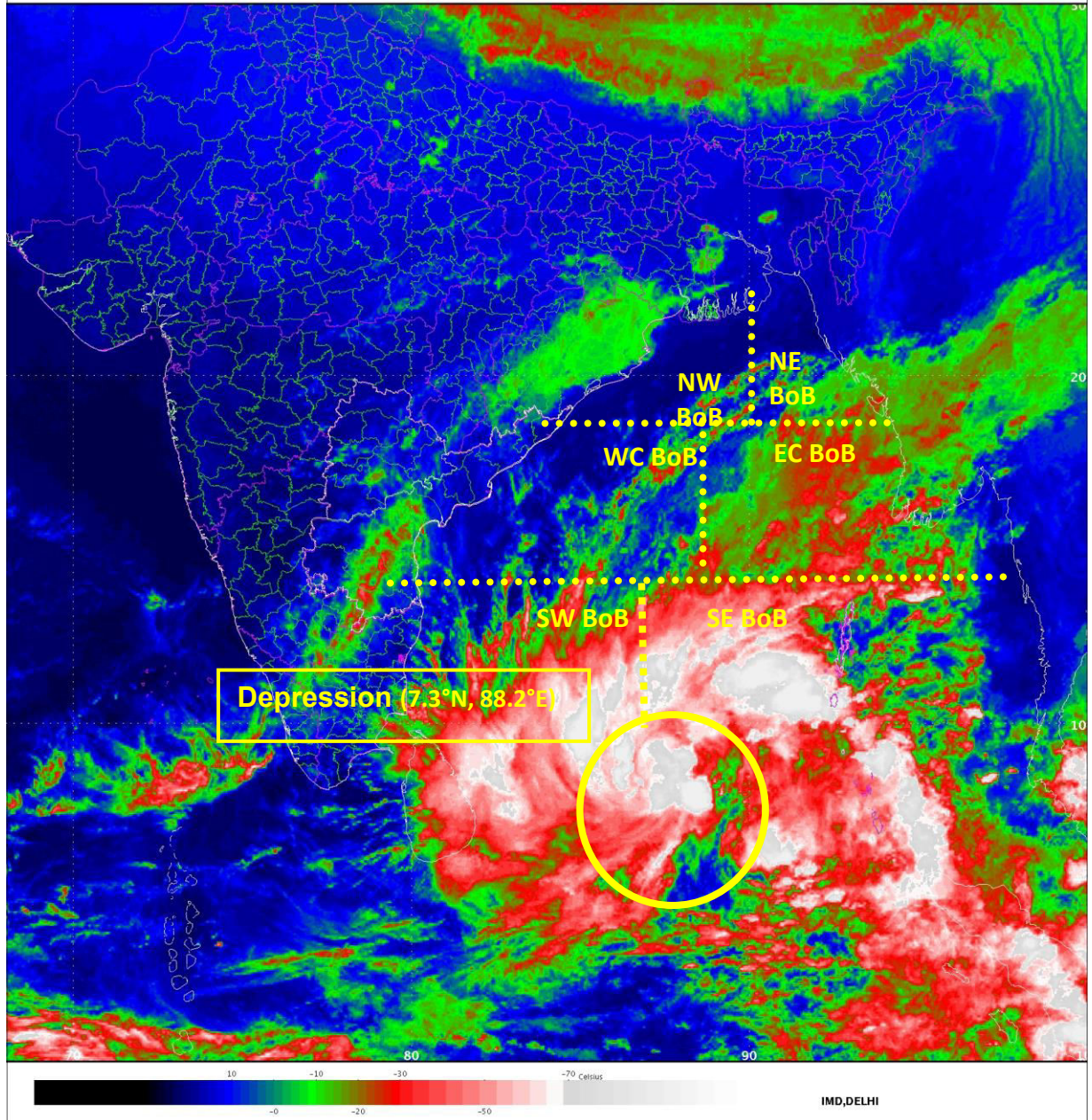
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- Those, who are out in deep sea areas are advised to return to the coast.

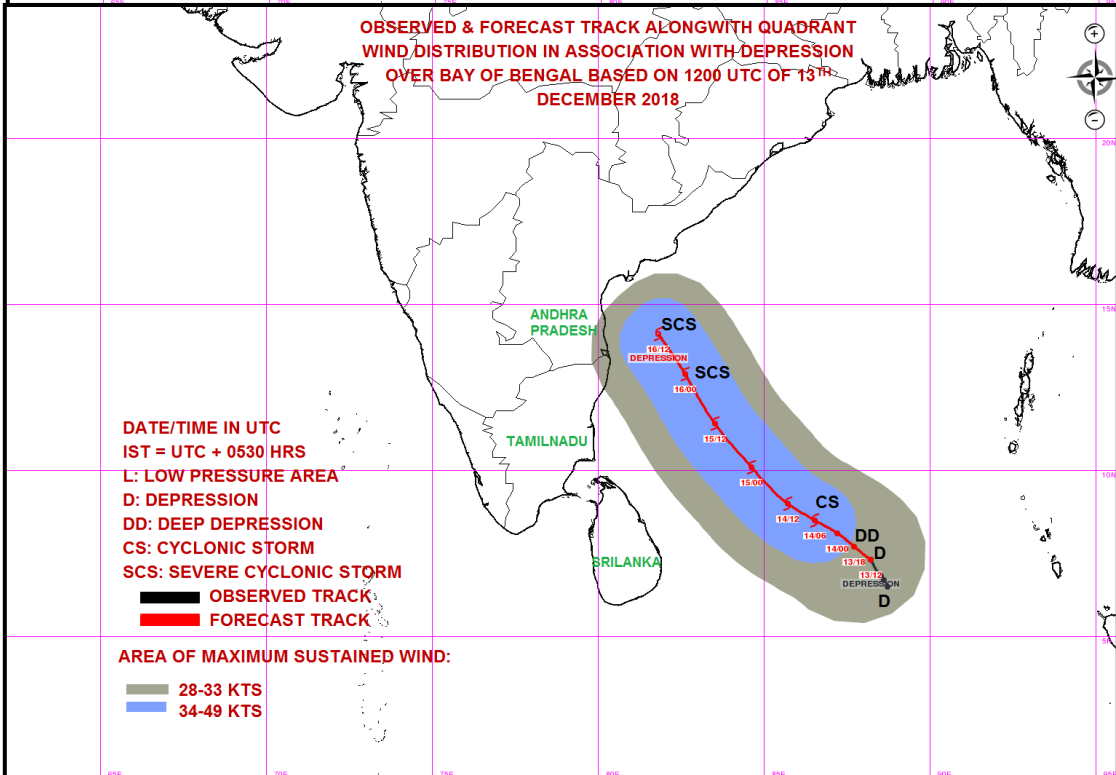
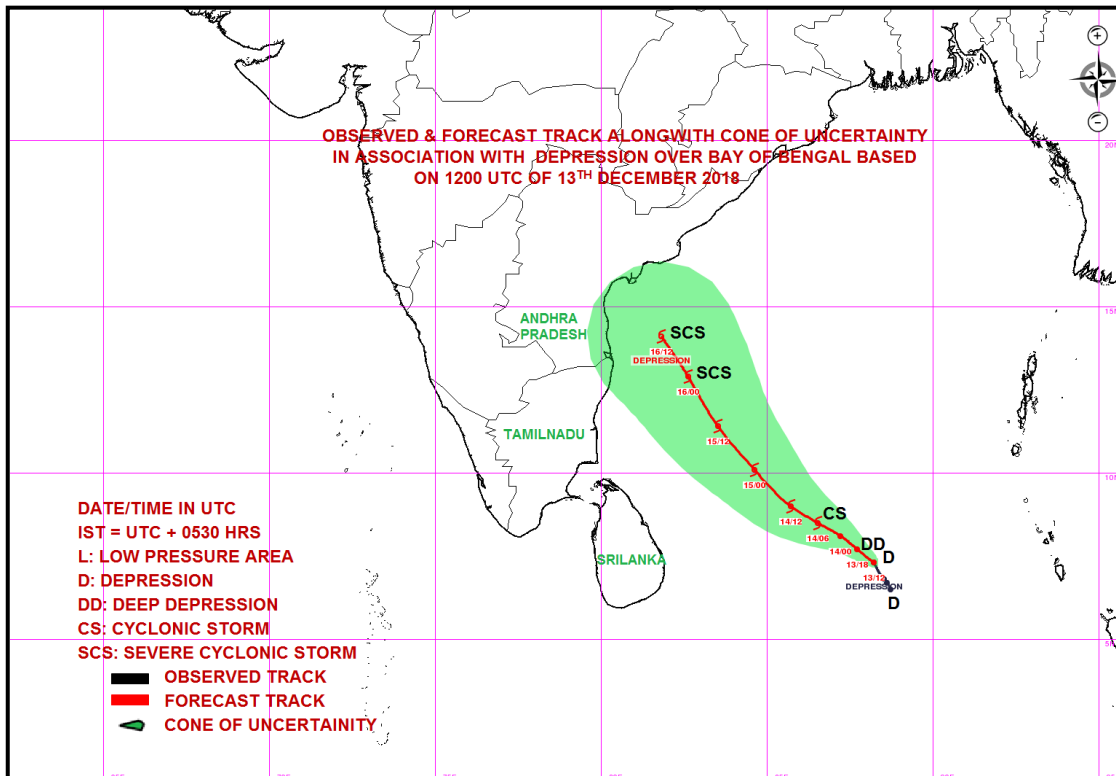
The next bulletin will be issued at 0230 hrs IST of 14th December, 2018.

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

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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. : 05 (BOB/10/2018)

TIME OF ISSUE: 0115 HOURS IST

DATED: 14.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: Depression intensified into Deep Depression over southeast Bay of Bengal: Pre-cyclone watch for Andhra Pradesh Coast

The depression over southeast Bay of Bengal moved north-northwestwards with a speed of 07 kmph during past 06 hours, intensified into a deep depression and lay centred at 2330 hrs IST of 13th December, 2018 over southeast Bay of Bengal near latitude 7.6°N and longitude 88.0°E, about 750 km east-southeast of Trincomalee (Sri Lanka), 1040 km south-southeast of Chennai (Tamil Nadu) and 1210 km south-southeast of Machilipatnam (Andhra Pradesh). It is very likely to intensify further into a Cyclonic Storm during next 24 hours and into a severe cyclonic storm in subsequent 24 hours. It is very likely to move northwestwards towards Andhra Pradesh coast during next 72 hours. Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
13.12.18/2330	7.6/88.0	50-60 gusting to 70	Deep Depression
14.12.18/0530	8.1/87.2	55-65 gusting to 75	Deep Depression
14.12.18/1130	8.5/86.5	60-70 gusting to 80	Cyclonic Storm
14.12.18/1730	9.0/85.7	65-75 gusting to 85	Cyclonic Storm
14.12.18/2330	9.5/85.0	70-80 gusting to 90	Cyclonic Storm
15.12.18/1130	10.7/84.1	75-85 gusting to 95	Cyclonic Storm
15.12.18/2330	12.1/83.1	90-100 gusting to 110	Severe Cyclonic Storm
16.12.18/1130	13.5/82.2	95-105 gusting to 115	Severe Cyclonic Storm
16.12.18/2330	14.9/81.3	90-100 gusting to 110	Severe Cyclonic Storm

Warnings:

(i) Heavy rainfall warning

- Rainfall at most places with heavy to very heavy falls at isolated places likely to commence over coastal Andhra Pradesh and north coastal Tamil Nadu on 15th December.

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

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

- Rainfall at most places with heavy to very heavy falls at a few places and extremely heavy falls (≥ 20 cm) at isolated places likely over coastal Andhra Pradesh on 16th December and isolated heavy falls on 17th.

(ii) Wind warning

- **14th December:** Gale wind speed reaching 65-75 kmph gusting to 85 kmph is very likely over southwest & adjoining southeast Bay of Bengal.
- **15th December:**
 - Squally wind speed reaching 45-55 kmph gusting to 65 kmph is likely to commence along & off Coastal Andhra Pradesh and north Tamilnadu & Puducherry coasts from morning.
 - Gale wind speed reaching 90-100 kmph gusting to 110 kmph is likely to prevail over southwest & adjoining westcentral Bay of Bengal.
- **16th December:**
 - Gale wind speed reaching 60-70 kmph gusting to 80 kmph is likely to prevail along & off Andhra Pradesh coast from morning and will increase gradually thereafter. Squally wind speed reaching 45-55 kmph gusting to 65 kmph over north Tamil Nadu & Puducherry coast.
 - Gale wind speed reaching 100-110 kmph gusting to 120 kmph is likely to prevail over westcentral & adjoining southwest Bay of Bengal.

(iii) Sea condition

The sea condition is very likely to be high over southwest & adjoining southeast Bay of Bengal on 14th. The sea condition is very likely to be high to very high over southwest & adjoining westcentral Bay of Bengal on 15th and over westcentral & adjoining southwest Bay of Bengal on 16th.

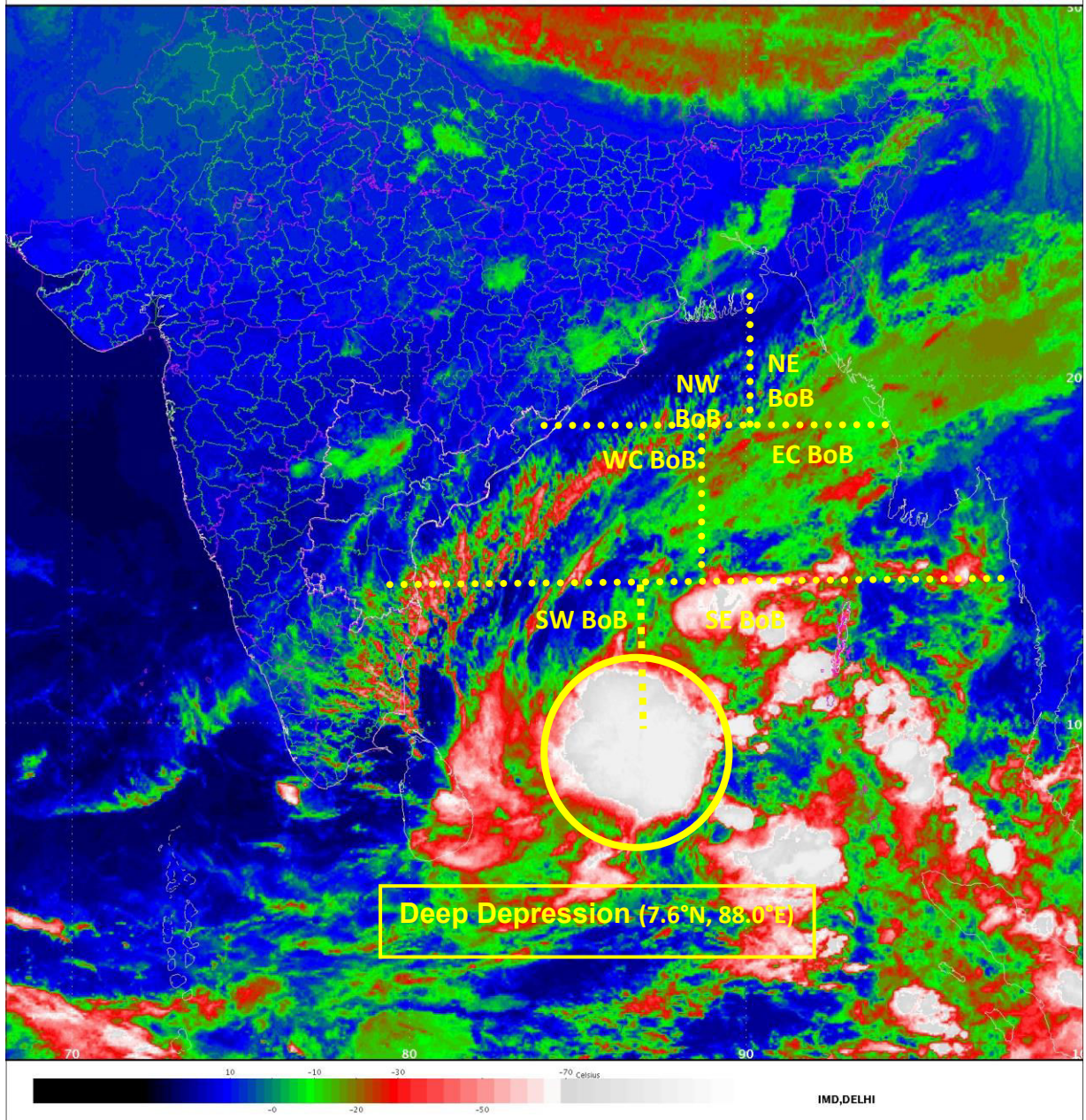
(iv) Fishermen Warning

- The fishermen are advised not to venture into southwest & adjoining southeast Bay of Bengal on 14th, into southwest & adjoining westcentral Bay of Bengal on 15th and westcentral & adjoining southwest Bay of Bengal on 16th December.
- Those, who are out in deep sea areas are advised to return to the coast.

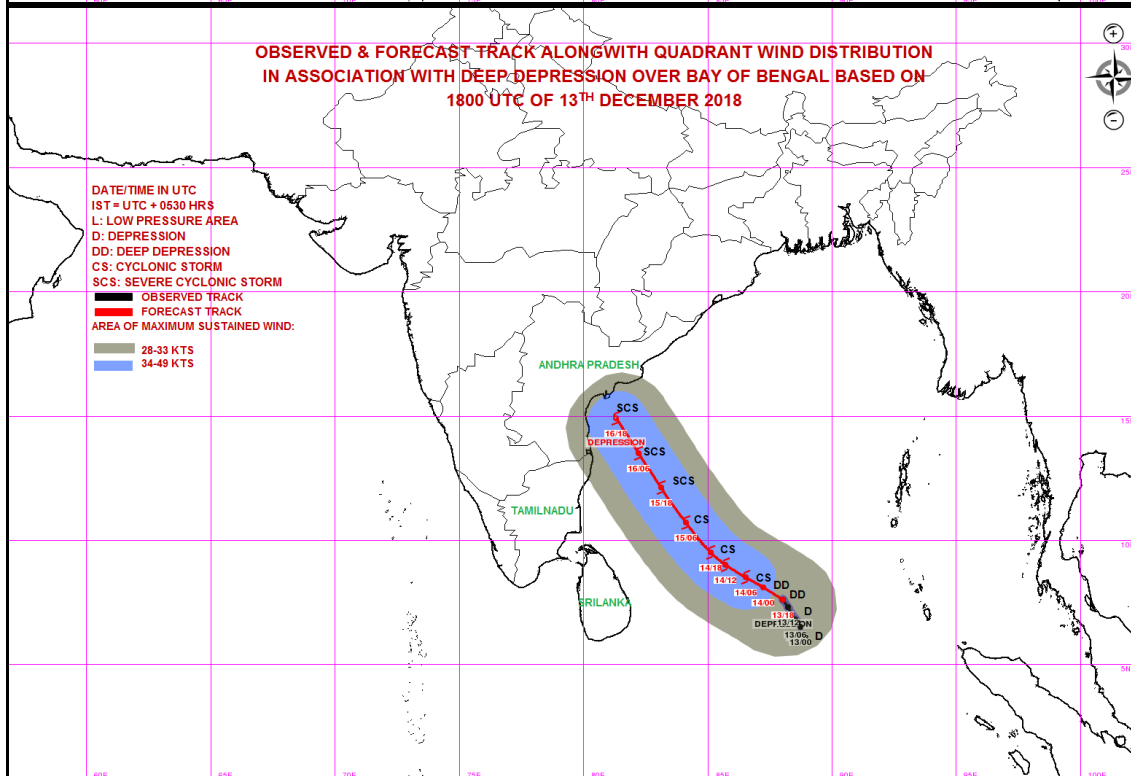
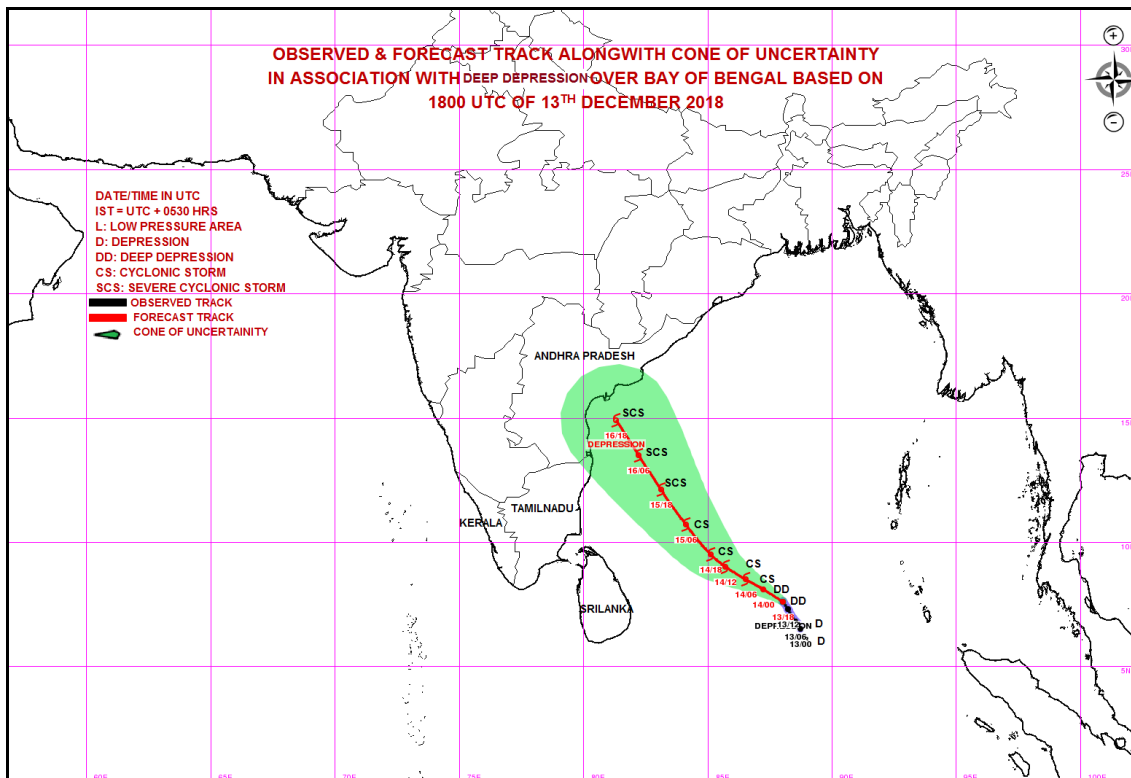
The next bulletin will be issued at 0830 hrs IST of 14th December, 2018.

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

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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 (BOB/10/2018)

TIME OF ISSUE: 0830 HOURS IST

DATED: 14.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: Deep Depression over southeast Bay of Bengal: Pre-cyclone watch for Andhra Pradesh Coast

The deep depression over southeast Bay of Bengal moved north-northwestwards with a speed of 13 kmph during past 06 hours and lay centred at 0530 hrs IST of 14th December, 2018 over southeast Bay of Bengal near latitude 8.2°N and longitude 87.6°E, about 700 km east-southeast of Trincomalee (Sri Lanka), 960 km east-southeast of Chennai (Tamil Nadu) and 1130 km south-southeast of Machilipatnam (Andhra Pradesh). It is very likely to intensify further into a Cyclonic Storm during next 12 hours and into a Severe Cyclonic Storm in subsequent 36 hours. It is very likely to move north-northwestwards and cross Andhra Pradesh coast between Ongole and Kakinada during 17th December afternoon.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
14.12.18/0530	8.2/87.6	50-60 gusting to 70	Deep Depression
14.12.18/1130	8.8/87.0	55-65 gusting to 75	Deep Depression
14.12.18/1730	9.4/86.2	60-70 gusting to 80	Cyclonic Storm
14.12.18/2330	10.0/85.6	65-75 gusting to 85	Cyclonic Storm
15.12.18/0530	10.6/85.1	70-80 gusting to 90	Cyclonic Storm
15.12.18/1730	11.8/84.2	80-90 gusting to 100	Cyclonic Storm
16.12.18/0530	13.0/83.2	85-95 gusting to 105	Severe Cyclonic Storm
16.12.18/1730	14.2/82.4	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/0530	15.4/82.0	85-95 gusting to 105	Severe Cyclonic Storm
17.12.18/1730	16.5/81.5	80-90 gusting to 100	Cyclonic Storm
18.12.18/0530	17.5/81.2	65-75 gusting to 85	Cyclonic Storm

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

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

Warnings:

(i) Heavy rainfall warning

- Rainfall at many places with heavy falls at isolated places likely to commence over coastal Andhra Pradesh and adjoining areas of north coastal Tamil Nadu from 15th December evening.
- Rainfall at most places with heavy to very heavy falls at a few places and extremely heavy falls (≥ 20 cm) at isolated places likely over coastal Andhra Pradesh on 16th & 17th December.

(ii) Wind warning for Andhra Pradesh, north Tamil Nadu and Puducherry coasts

Squally wind speed reaching 45-55 kmph gusting to 65 kmph is likely to commence along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts from 15th Dec. evening. It is very likely to increase gradually becoming gale wind speed of 80-90 kmph along and off Andhra Pradesh coast from 17th December forenoon.

(iii) Wind warning for Sea areas

- Squally wind speed reaching 55-65 kmph gusting to 75 kmph prevails over southeast & adjoining southwest Bay of Bengal. It is very likely to increase gradually and become gale wind speed reaching 65-75 kmph gusting to 85 kmph by 14th December evening and 80-90 kmph gusting to 100 kmph during 15th evening to 16th evening over southwest & adjoining westcentral Bay of Bengal and 80-100 kmph gusting to 110 kmph over westcentral and adjoining southwest Bay of Bengal during 16th evening to 17th evening.

(iv) Sea condition

The sea condition is very rough over southeast and adjoining southwest Bay of Bengal. It is likely to become high from 14th December evening. The sea condition is very likely to be high over southwest & adjoining westcentral Bay of Bengal on 15th and high to very high over westcentral & adjoining southwest Bay of Bengal on 16th & 17th December.

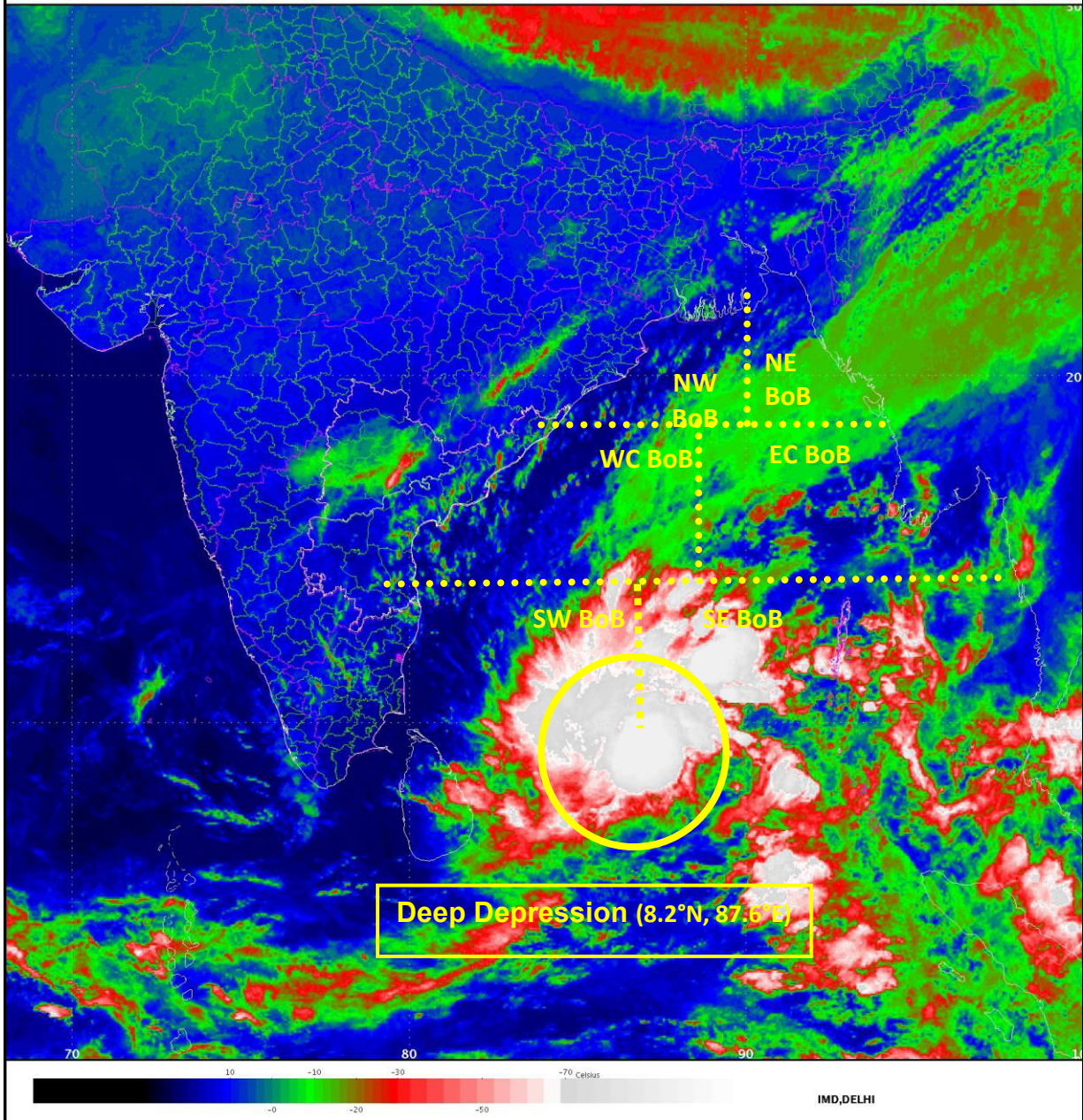
(v) Fishermen Warning

- The fishermen are advised not to venture into southwest & adjoining southeast Bay of Bengal on 14th, into southwest & adjoining westcentral Bay of Bengal on 15th and westcentral & adjoining southwest Bay of Bengal on 16th and 17th December.
- Those, who are out in deep sea areas are advised to return to the coast.

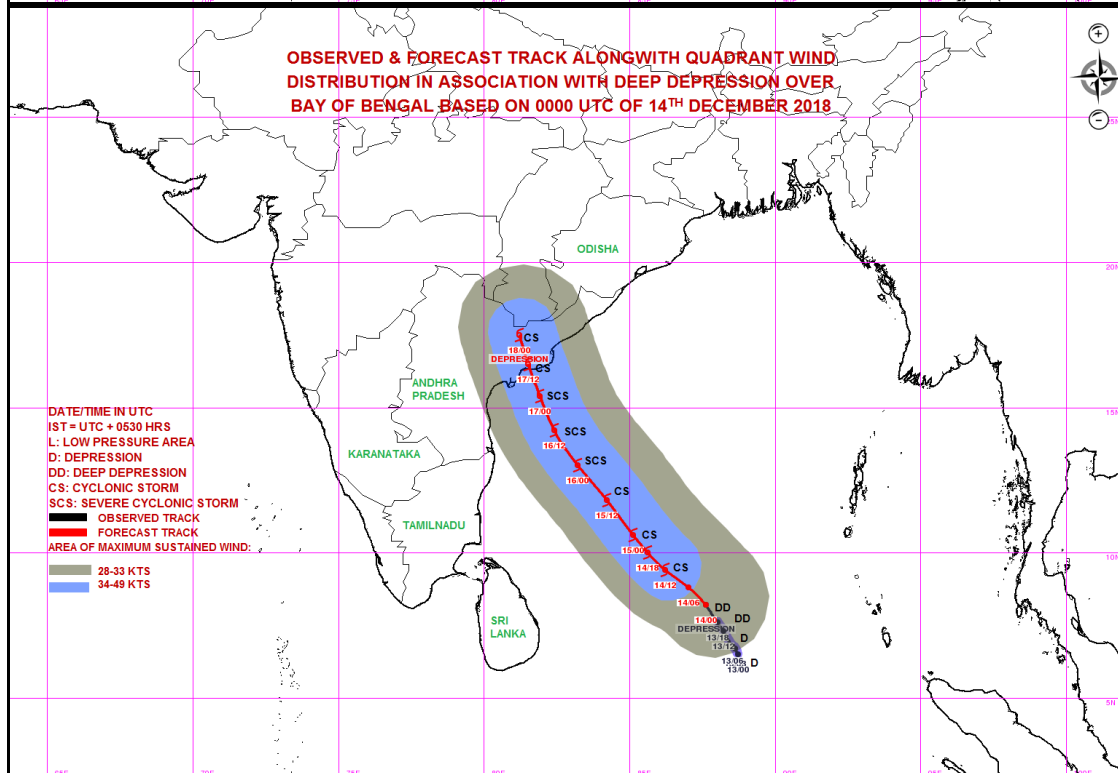
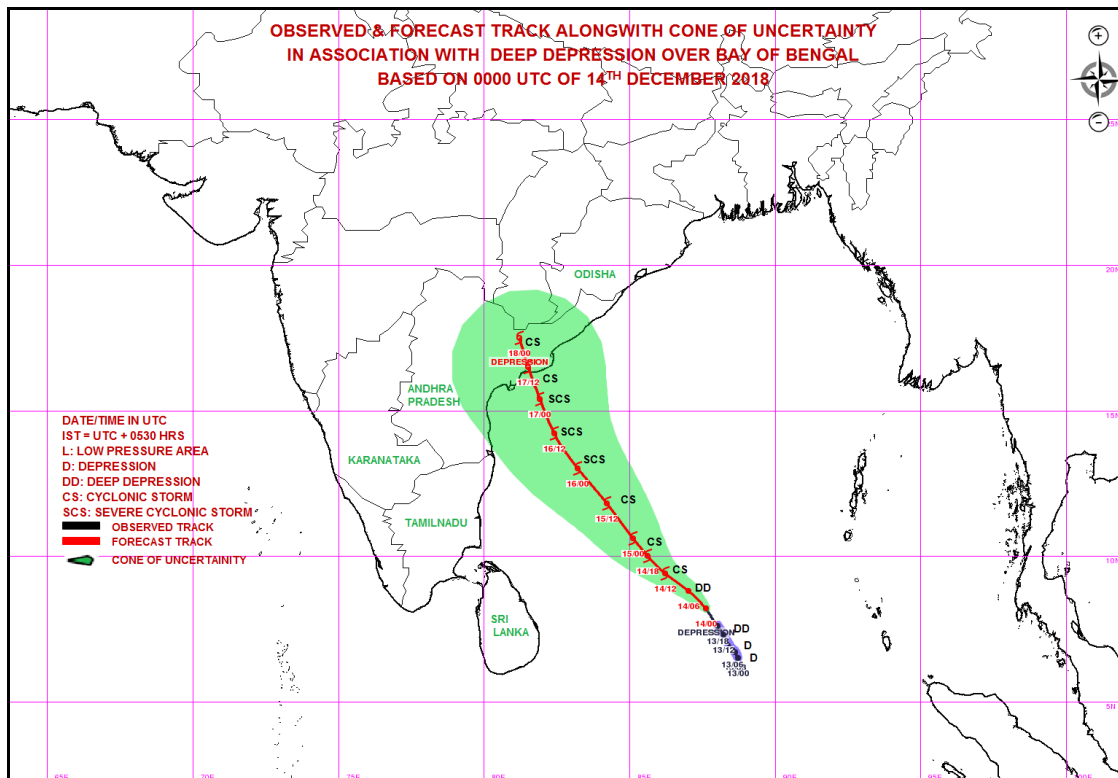
The next bulletin will be issued at 1430 hrs IST of 14th December, 2018.

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

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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 (BOB/10/2018)

TIME OF ISSUE: 1130 HOURS IST

DATED: 14.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: Deep Depression over southeast Bay of Bengal: Pre-cyclone watch for Andhra Pradesh Coast

The deep depression over southeast Bay of Bengal moved further north-northwestwards with a speed of 12 kmph during past 06 hours and lay centred at 0830 hrs IST of 14th December, 2018 over southeast Bay of Bengal near latitude 8.5°N and longitude 87.4°E, about 670 km east of Trincomalee (Sri Lanka), 930 km east-southeast of Chennai (Tamil Nadu) and 1090 km southeast of Machilipatnam (Andhra Pradesh). It is very likely to intensify further into a Cyclonic Storm during next 24 hours and into a Severe Cyclonic Storm in subsequent 36 hours. It is very likely to move north-northwestwards and cross Andhra Pradesh coast between Ongole and Kakinada during 17th December afternoon.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
14.12.18/0830	8.5/87.4	50-60 gusting to 70	Deep Depression
14.12.18/1130	8.8/87.1	50-60 gusting to 70	Deep Depression
14.12.18/1730	9.4/86.3	55-65 gusting to 75	Deep Depression
14.12.18/2330	10.0/85.6	55-65 gusting to 75	Deep Depression
15.12.18/0530	10.6/85.1	60-70 gusting to 80	Cyclonic Storm
15.12.18/1730	11.8/84.2	70-90 gusting to 100	Cyclonic Storm
16.12.18/0530	13.0/83.2	80-90 gusting to 100	Cyclonic Storm
16.12.18/1730	14.2/82.4	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/0530	15.4/82.0	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/1730	16.5/81.5	80-90 gusting to 100	Cyclonic Storm
18.12.18/0530	17.5/81.2	65-75 gusting to 85	Cyclonic Storm

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

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

Warnings:

(i) Heavy rainfall warning

- Rainfall at many places with heavy falls at isolated places likely to commence over coastal Andhra Pradesh from 15th December evening.
- Rainfall at most places with heavy to very heavy falls at a few places and extremely heavy falls (≥ 20 cm) at isolated places likely over coastal Andhra Pradesh on 16th & 17th December.
- Rainfall at many places with heavy falls at isolated places likely over south Chhattisgarh & Odisha on 17th December.

(ii) Wind warning for Andhra Pradesh, north Tamil Nadu and Puducherry coasts

Squally wind speed reaching 45-55 kmph gusting to 65 kmph is likely to commence along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts from 15th December evening. It is very likely to increase gradually becoming gale wind speed of 80-90 kmph gusting to 100 kmph along & off Andhra Pradesh coast from 17th December morning.

(iii) Wind warning for Sea areas

- Squally wind speed reaching 50-60 kmph gusting to 70 kmph prevails over southeast & adjoining southwest Bay of Bengal. It is very likely to increase gradually and become gale wind speed reaching 60-70 kmph gusting to 80 kmph by 15th December morning over southwest & adjoining westcentral Bay of Bengal and 80-90 kmph gusting to 100 kmph over westcentral & adjoining southwest Bay of Bengal on 16th & 17th.

(iv) Sea condition

The sea condition is very rough over southeast & adjoining southwest Bay of Bengal. It is likely to become high from 15th December morning. The sea condition is very likely to be high over southwest & adjoining westcentral Bay of Bengal on 15th December evening and high to very high over westcentral & adjoining southwest Bay of Bengal on 16th & 17th December.

(v) Fishermen Warning

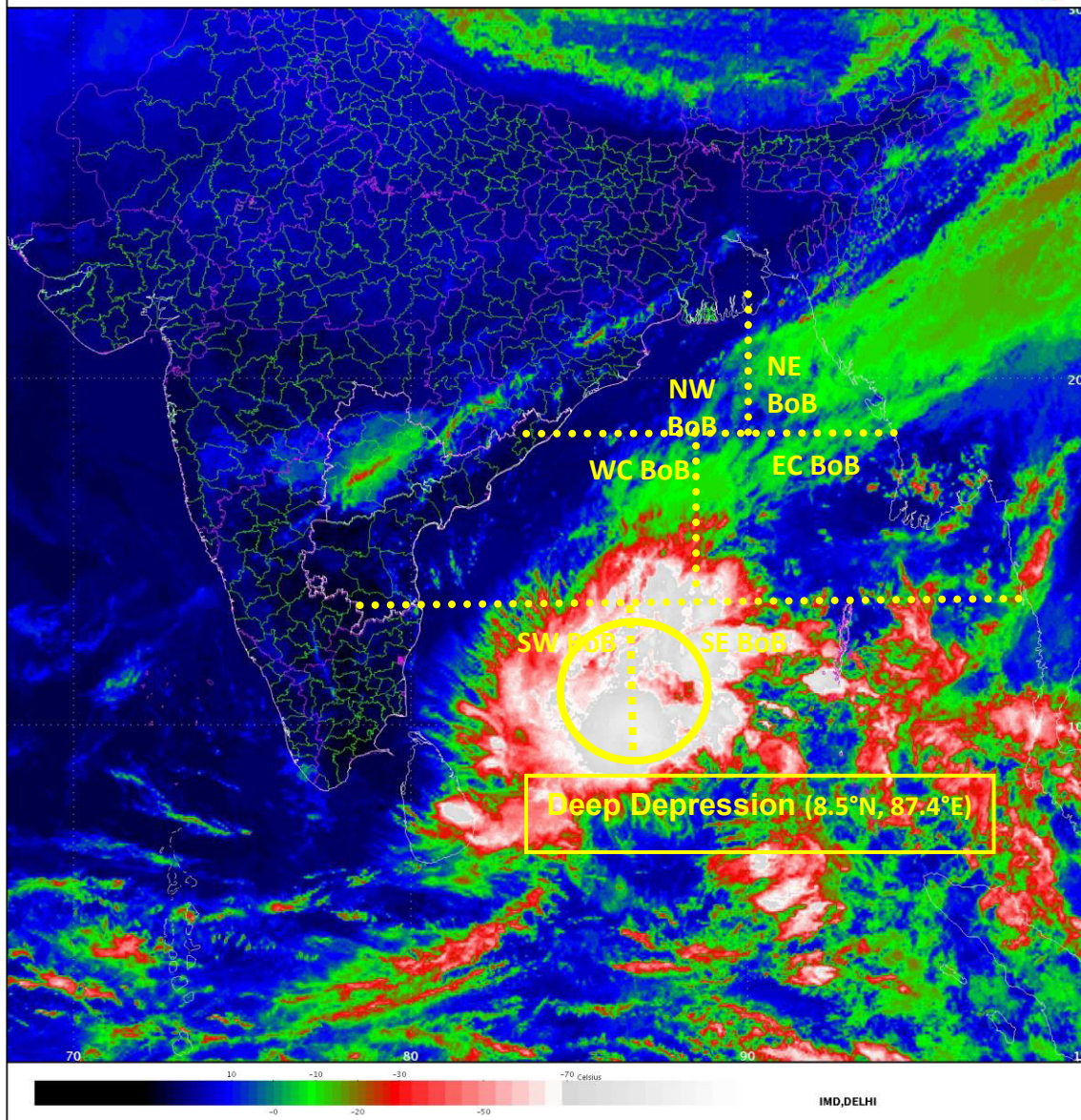
- The fishermen are advised not to venture into southwest & adjoining southeast Bay of Bengal on 14th, into southwest & adjoining westcentral Bay of Bengal on 15th and westcentral & adjoining southwest Bay of Bengal and along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts on 16th and 17th December.
- Those, who are out in deep sea areas are advised to return to the coast.

The next bulletin will be issued at 1430 hrs IST of 14th December, 2018.

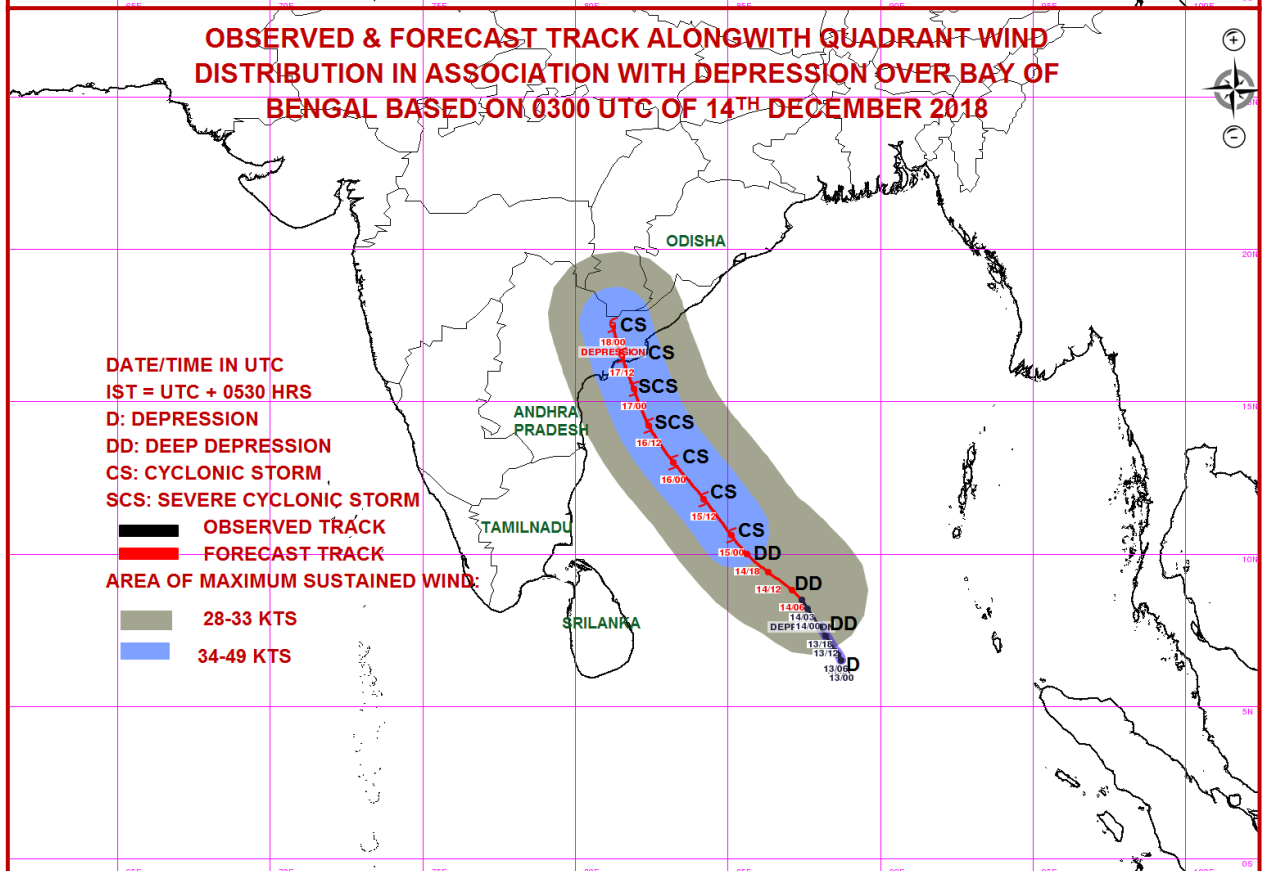
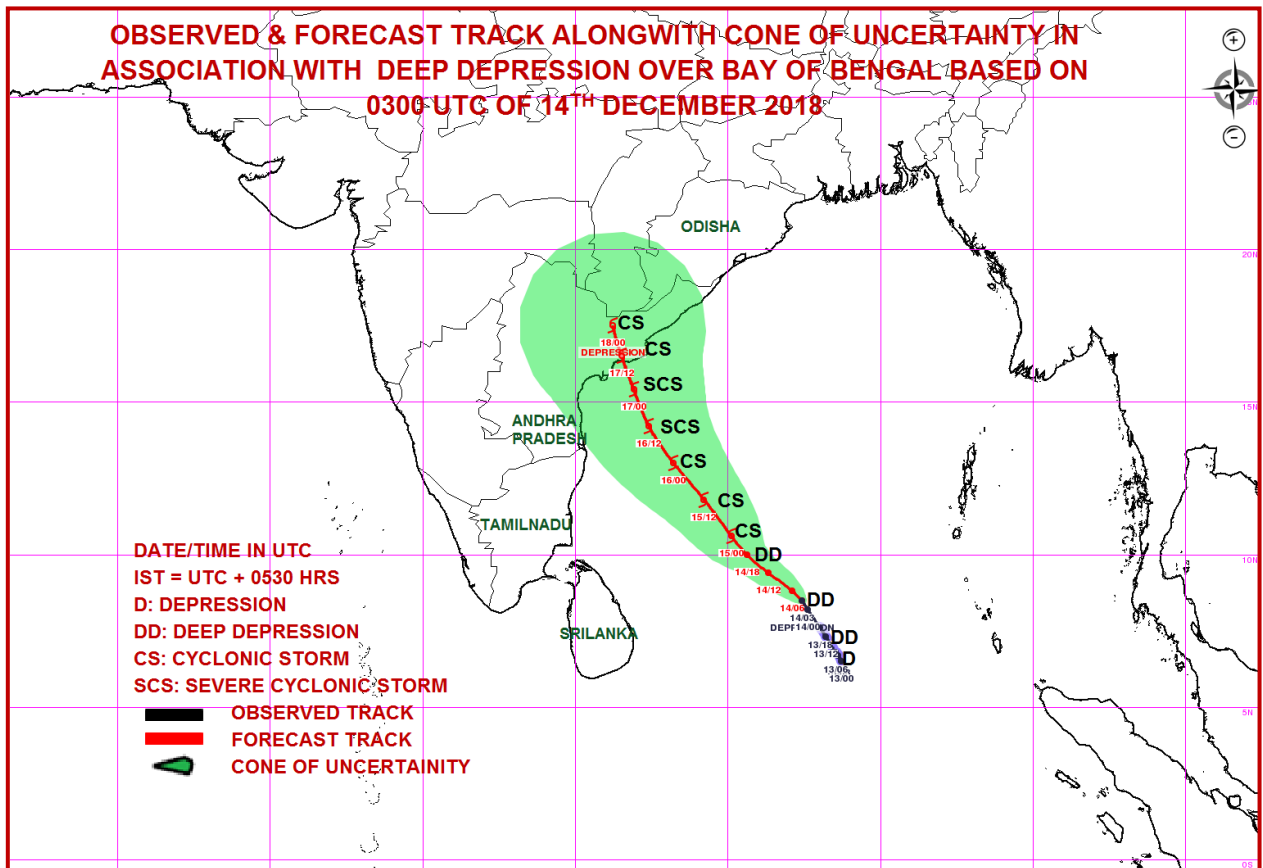
(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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. : 08 (BOB/10/2018)

TIME OF ISSUE: 1430 HOURS IST

DATED: 14.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: Deep Depression over southeast Bay of Bengal: Pre-cyclone watch for Andhra Pradesh Coast

The deep depression over southeast Bay of Bengal remained practically stationary and lay centred at 1130 hrs IST of 14th December, 2018 over southeast Bay of Bengal near latitude 8.5°N and longitude 87.4°E, about 670 km east of Trincomalee (Sri Lanka), 930 km east-southeast of Chennai (Tamil Nadu) and 1090 km southeast of Machilipatnam (Andhra Pradesh). It is very likely to intensify further into a Cyclonic Storm during next 24 hours and into a Severe Cyclonic Storm in subsequent 24 hours. It is very likely to move north-northwestwards and cross Andhra Pradesh coast between Ongole and Kakinada during 17th December afternoon.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
14.12.18/1130	8.5/87.4	50-60 gusting to 70	Deep Depression
14.12.18/1730	8.8/87.1	55-65 gusting to 75	Deep Depression
14.12.18/2330	9.4/86.4	55-65 gusting to 75	Deep Depression
15.12.18/0530	10.0/85.4	60-70 gusting to 80	Cyclonic Storm
15.12.18/1130	11.2/84.5	65-75 gusting to 85	Cyclonic Storm
15.12.18/2330	12.4/83.7	75-85 gusting to 95	Cyclonic Storm
16.12.18/1130	13.6/82.8	80-90 gusting to 100	Cyclonic Storm
16.12.18/2330	14.6/82.2	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/1130	15.9/81.7	80-90 gusting to 100	Cyclonic Storm
17.12.18/2330	17.0/82.0	65-75 gusting to 85	Cyclonic Storm

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

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

Warnings:

(i) Heavy rainfall warning

- Rainfall at many places with heavy falls at isolated places likely to commence over coastal Andhra Pradesh & adjoining areas of north coastal Tamil Nadu from 15th December evening.
- Rainfall at most places with heavy to very heavy falls at a few places and extremely heavy falls (≥ 20 cm) at isolated places likely over coastal Andhra Pradesh on 16th & 17th December.
- Rainfall at many places with heavy falls at isolated places likely over south Chhattisgarh & Odisha on 17th December.

(ii) Wind warning for Andhra Pradesh, north Tamil Nadu and Puducherry coasts

Squally wind speed reaching 45-55 kmph gusting to 65 kmph is likely to commence along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts from 15th December evening. It is very likely to increase gradually becoming gale wind speed of 80-90 kmph gusting to 100 kmph along & off Andhra Pradesh coast from 17th December morning.

(iii) Wind warning for Sea areas

- Squally wind speed reaching 50-60 kmph gusting to 70 kmph prevails over southeast & adjoining southwest Bay of Bengal. It is very likely to increase gradually and become gale wind speed reaching 60-70 kmph gusting to 80 kmph by 15th December morning over southwest & adjoining westcentral Bay of Bengal and 80-90 kmph gusting to 100 kmph over westcentral & adjoining southwest Bay of Bengal on 16th & 17th.

(iv) Sea condition

The sea condition is very rough over southeast & adjoining southwest Bay of Bengal. It is likely to become high from 15th December morning. The sea condition is very likely to be high over southwest & adjoining westcentral Bay of Bengal on 15th December evening and high to very high over westcentral & adjoining southwest Bay of Bengal on 16th & 17th December. It is very likely to become rough to very rough along & off south Andhra Pradesh and north Tamil Nadu coast on 15th and very rough to high on 16th & 17th.

(v) Fishermen Warning

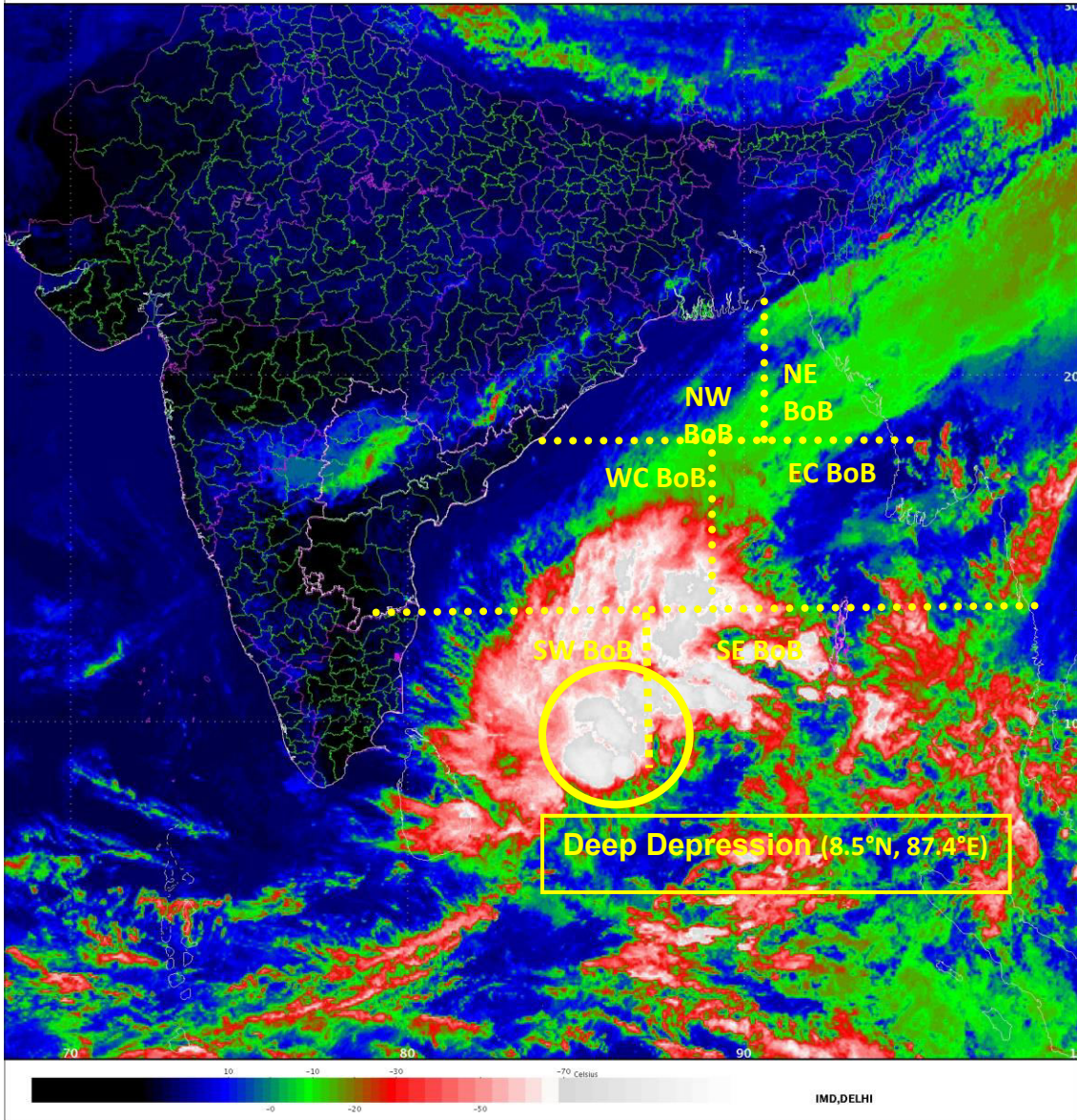
- The fishermen are advised not to venture into southwest & adjoining southeast Bay of Bengal on 14th, into southwest & adjoining westcentral Bay of Bengal on 15th and westcentral & adjoining southwest Bay of Bengal and along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts on 16th and 17th December.
- Those, who are out in deep sea areas are advised to return to the coast.

The next bulletin will be issued at 2030 hrs IST of 14th December, 2018.

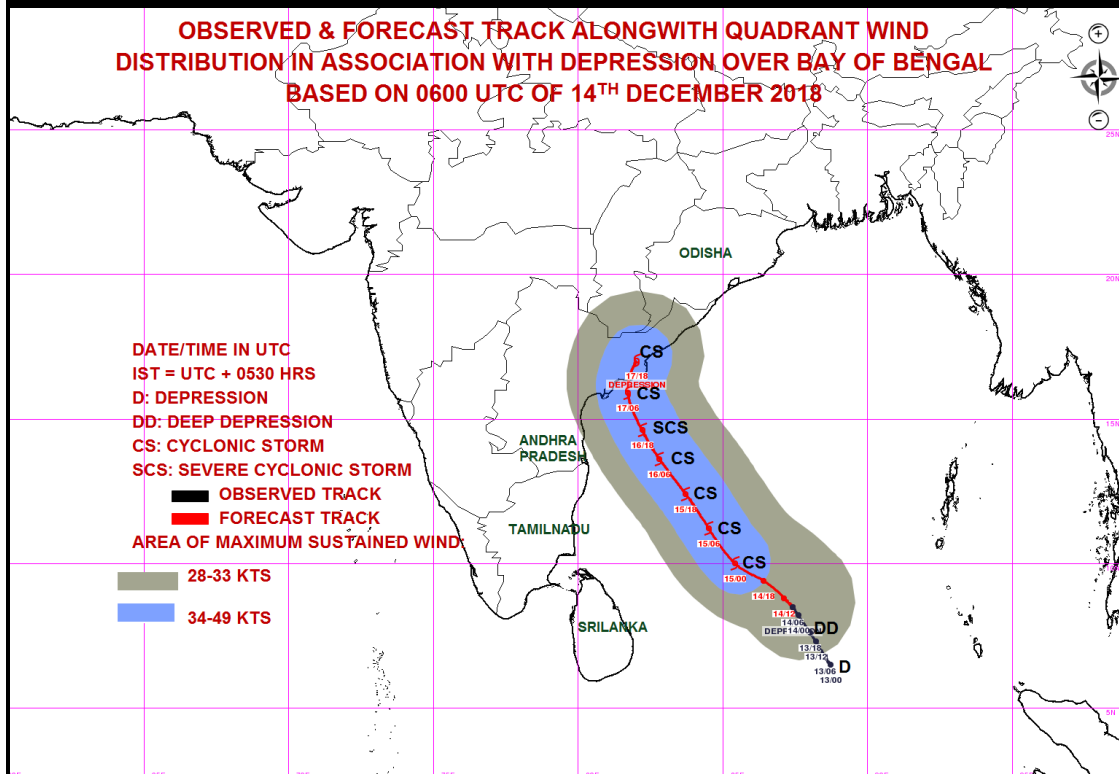
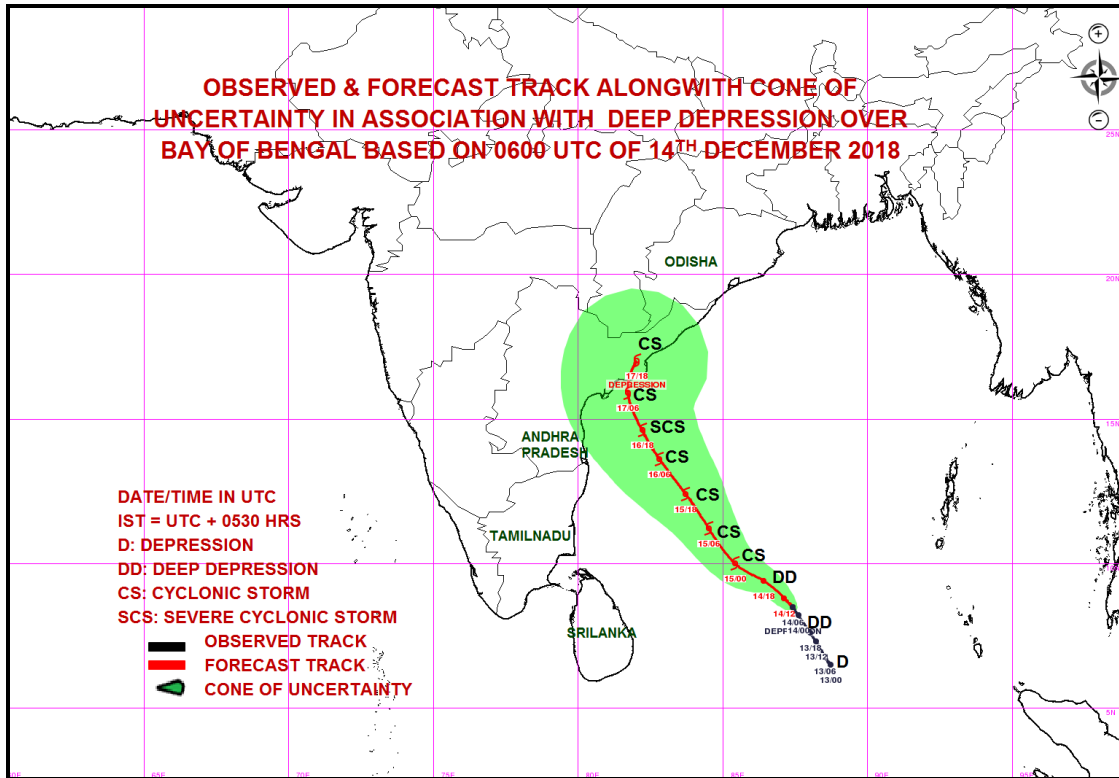
(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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. : 09 (BOB/10/2018)

TIME OF ISSUE: 2000 HOURS IST

DATED: 14.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: Deep Depression over southeast & adjoining southwest Bay of Bengal: Pre-cyclone watch for Andhra Pradesh Coast

The deep depression over southeast Bay of Bengal moved west-northwestwards with a speed of 11 kmph during past 06 hours and lay centred at 1730 hrs IST of 14th December, 2018 over southeast & adjoining southwest Bay of Bengal near latitude 8.6°N and longitude 86.8°E, about 610 km east of Trincomalee (Sri Lanka), 870 km east-southeast of Chennai (Tamil Nadu) and 1040 km south-southeast of Machilipatnam (Andhra Pradesh). It is very likely to intensify further into a Cyclonic Storm during next 12 hours and into a Severe Cyclonic Storm in subsequent 24 hours. It is very likely to move north-northwestwards and cross Andhra Pradesh coast between Ongole and Kakinada during 17th December afternoon.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat.°N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
14.12.18/1730	8.6/86.8	55-65 gusting to 75	Deep Depression
14.12.18/2330	8.9/86.3	55-65 gusting to 75	Deep Depression
15.12.18/0530	9.5/85.4	60-70 gusting to 80	Cyclonic Storm
15.12.18/1130	10.3/84.5	65-75 gusting to 85	Cyclonic Storm
15.12.18/1730	11.1/83.9	75-85 gusting to 95	Cyclonic Storm
16.12.18/0530	12.4/83.1	80-90 gusting to 100	Cyclonic Storm
16.12.18/1730	13.8/82.5	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/0530	15.2/81.9	80-90 gusting to 100	Cyclonic Storm
17.12.18/1730	16.4/81.8	65-75 gusting to 85	Cyclonic Storm
18.12.18/0530	17.0/82.0	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) Heavy rainfall warning

- Rainfall at many places with heavy falls at isolated places likely to commence over coastal Andhra Pradesh & adjoining areas of north coastal Tamil Nadu from 15th December evening.
- Rainfall at most places with heavy to very heavy falls at a few places & extremely heavy falls (≥ 20 cm) at isolated places likely over coastal Andhra Pradesh on 16th & 17th December.
- Rainfall at many places with heavy falls at isolated places likely over south Chhattisgarh & Odisha on 17th December.

(ii) Wind warning for Andhra Pradesh, north Tamil Nadu and Puducherry coasts

Squally wind speed reaching 45-55 kmph gusting to 65 kmph is likely to commence along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts from 15th December evening. It is very likely to increase gradually becoming gale wind speed of 80-90 kmph gusting to 100 kmph along & off Andhra Pradesh coast from 17th December morning.

(iii) Wind warning for Sea areas

Squally wind speed reaching 55-65 kmph gusting to 75 kmph prevails over southeast & adjoining southwest Bay of Bengal. It is very likely to increase gradually and become gale wind speed reaching 60-70 kmph gusting to 80 kmph by 15th December morning over southwest & adjoining westcentral Bay of Bengal and 80-100 kmph gusting to 110 kmph over westcentral & adjoining southwest Bay of Bengal on 16th & 17th.

(iv) Sea condition

The sea condition is very rough over southeast & adjoining southwest Bay of Bengal. It is likely to become high from 15th December morning. The sea condition is very likely to be high over southwest & adjoining westcentral Bay of Bengal on 15th December evening and high to very high over westcentral & adjoining southwest Bay of Bengal on 16th & 17th December. It is very likely to become rough to very rough along & off south Andhra Pradesh and north Tamil Nadu coast on 15th and very rough to high on 16th & 17th.

(v) Fishermen Warning

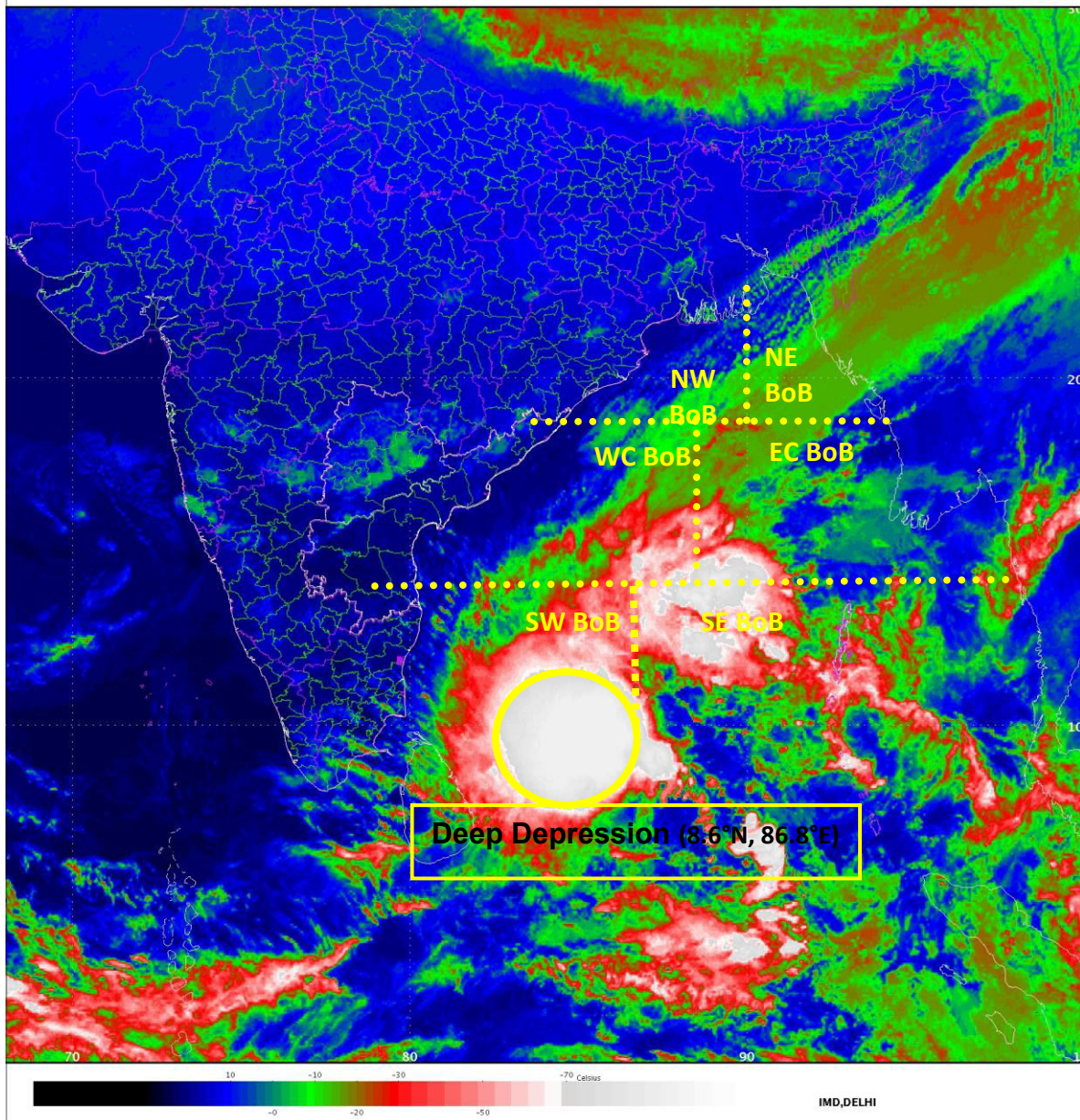
- The fishermen are advised not to venture into southeast & adjoining southwest Bay of Bengal on 14th, into southwest & adjoining westcentral Bay of Bengal on 15th and westcentral & adjoining southwest Bay of Bengal and along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts on 16th and 17th December.
- Those, who are out in deep sea areas are advised to return to the coast.

The next bulletin will be issued at 0230 hrs IST of 15th December, 2018.

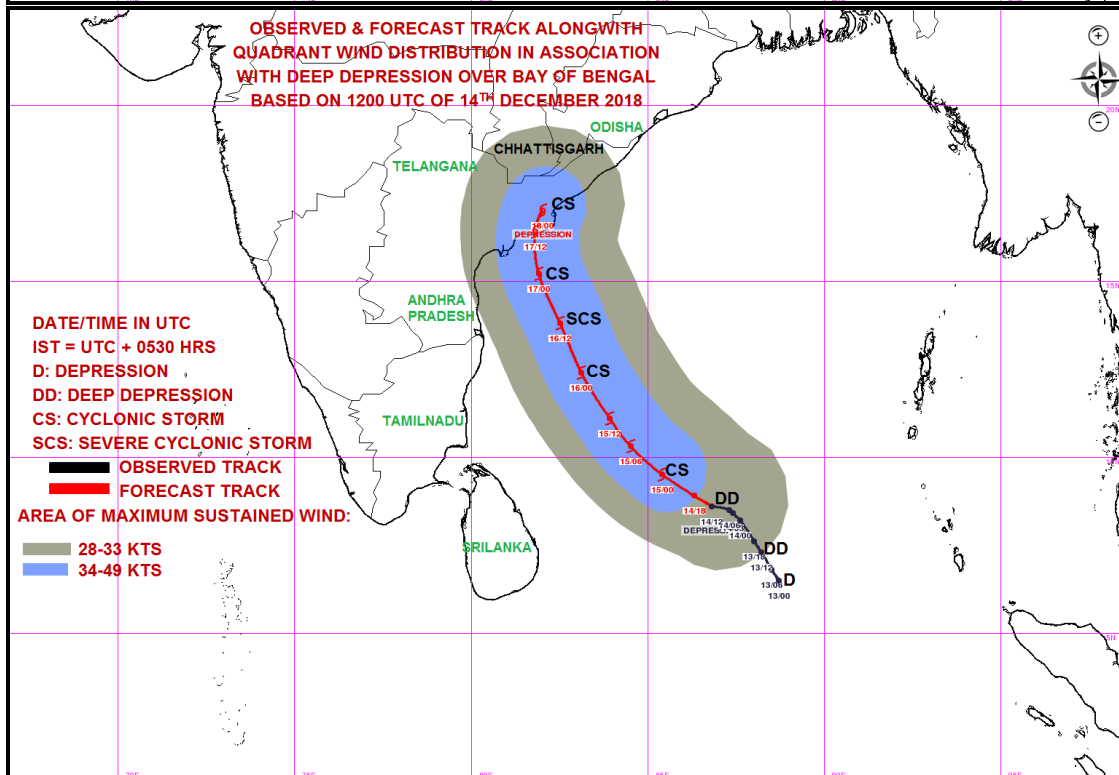
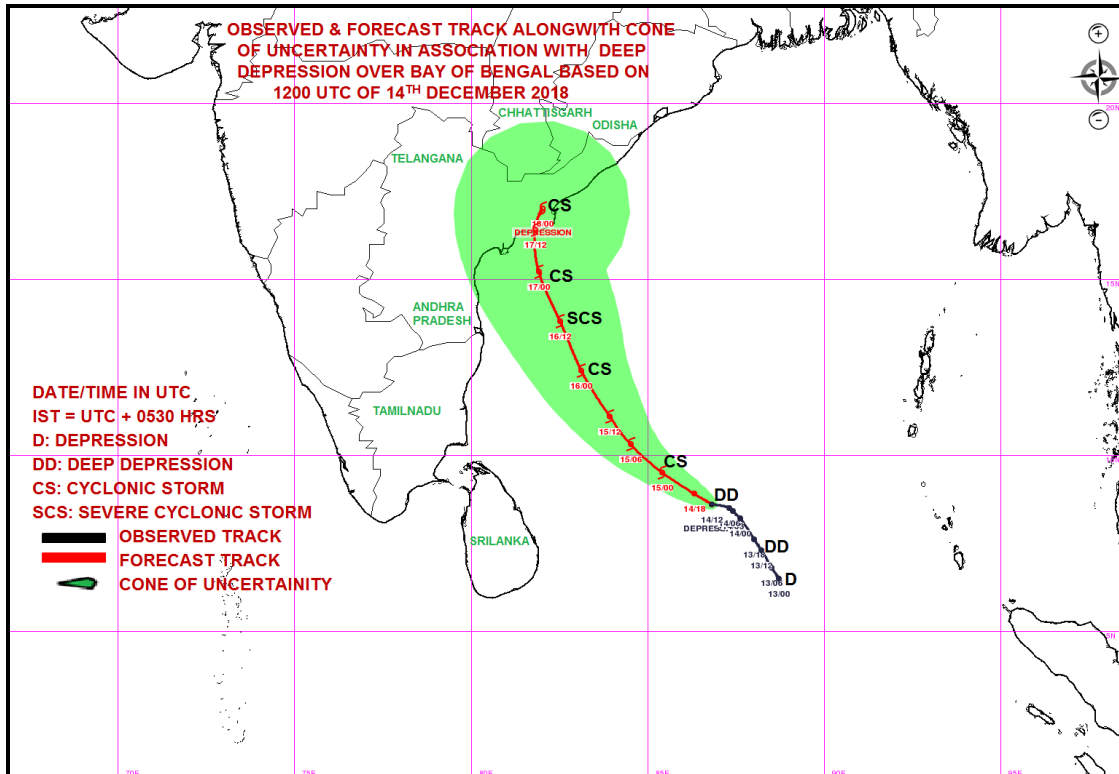
(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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. : 10 (BOB/10/2018)

TIME OF ISSUE: 0130 HOURS IST

DATED: 15.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: Deep Depression over southeast & adjoining southwest Bay of Bengal: Pre-cyclone watch for Andhra Pradesh Coast

The deep depression over southeast Bay of Bengal moved west-northwestwards with a speed of 11 kmph during past 06 hours and lay centred at 2330 hrs IST of 14th December, 2018 over southeast & adjoining southwest Bay of Bengal near latitude 8.8°N and longitude 86.2°E, about 540 km east of Trincomalee (Sri Lanka), 800 km east-southeast of Chennai (Tamil Nadu) and 990 km south-southeast of Machilipatnam (Andhra Pradesh). It is very likely to intensify further into a Cyclonic Storm during next 12 hours and into a Severe Cyclonic Storm in subsequent 24 hours. It is very likely to move north-northwestwards and cross Andhra Pradesh coast between Ongole and Kakinada during 17th December afternoon.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat.°N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
14.12.18/2330	8.8/86.2	55-65 gusting to 75	Deep Depression
15.12.18/0530	9.4/85.5	60-70 gusting to 80	Cyclonic Storm
15.12.18/1130	10.2/84.8	60-70 gusting to 80	Cyclonic Storm
15.12.18/1730	11.1/84.1	65-75 gusting to 85	Cyclonic Storm
15.12.18/2330	11.8/83.6	75-85 gusting to 95	Cyclonic Storm
16.12.18/1130	12.9/83.0	80-90 gusting to 100	Cyclonic Storm
16.12.18/2330	14.3/82.3	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/1130	15.8/81.8	80-90 gusting to 100	Cyclonic Storm
17.12.18/2330	17.0/82.0	60-70 gusting to 80	Cyclonic Storm
18.12.18/1130	17.5/82.5	55-65 gusting to 75	Deep Depression

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

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

Warnings:

(i) Heavy rainfall warning

- Rainfall at many places with heavy falls at isolated places likely to commence over coastal Andhra Pradesh & adjoining areas of north coastal Tamil Nadu from 15th December evening.
- Rainfall at most places with heavy to very heavy falls at a few places & extremely heavy falls (≥ 20 cm) at isolated places likely over coastal Andhra Pradesh on 16th & 17th December.
- Rainfall at many places with heavy falls at isolated places likely over south Chhattisgarh & Odisha on 17th December.

(ii) Wind warning for Andhra Pradesh, north Tamil Nadu and Puducherry coasts

Squally wind speed reaching 45-55 kmph gusting to 65 kmph is likely to commence along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts from 15th December evening. It is very likely to increase gradually becoming gale wind speed of 80-90 kmph gusting to 100 kmph along & off Andhra Pradesh coast from 17th December morning.

(iii) Wind warning for Sea areas

Squally wind speed reaching 55-65 kmph gusting to 75 kmph prevails over southeast & adjoining southwest Bay of Bengal. It is very likely to increase gradually and become gale wind speed reaching 60-70 kmph gusting to 80 kmph by 15th December morning over southwest & adjoining westcentral Bay of Bengal and 80-100 kmph gusting to 110 kmph over westcentral & adjoining southwest Bay of Bengal on 16th & 17th.

(iv) Sea condition

The sea condition is very rough over southeast & adjoining southwest Bay of Bengal. It is likely to become high from 15th December morning. The sea condition is very likely to be high over southwest & adjoining westcentral Bay of Bengal on 15th December evening and high to very high over westcentral & adjoining southwest Bay of Bengal on 16th & 17th December. It is very likely to become rough to very rough along & off south Andhra Pradesh and north Tamil Nadu coast on 15th and very rough to high on 16th & 17th.

(v) Fishermen Warning

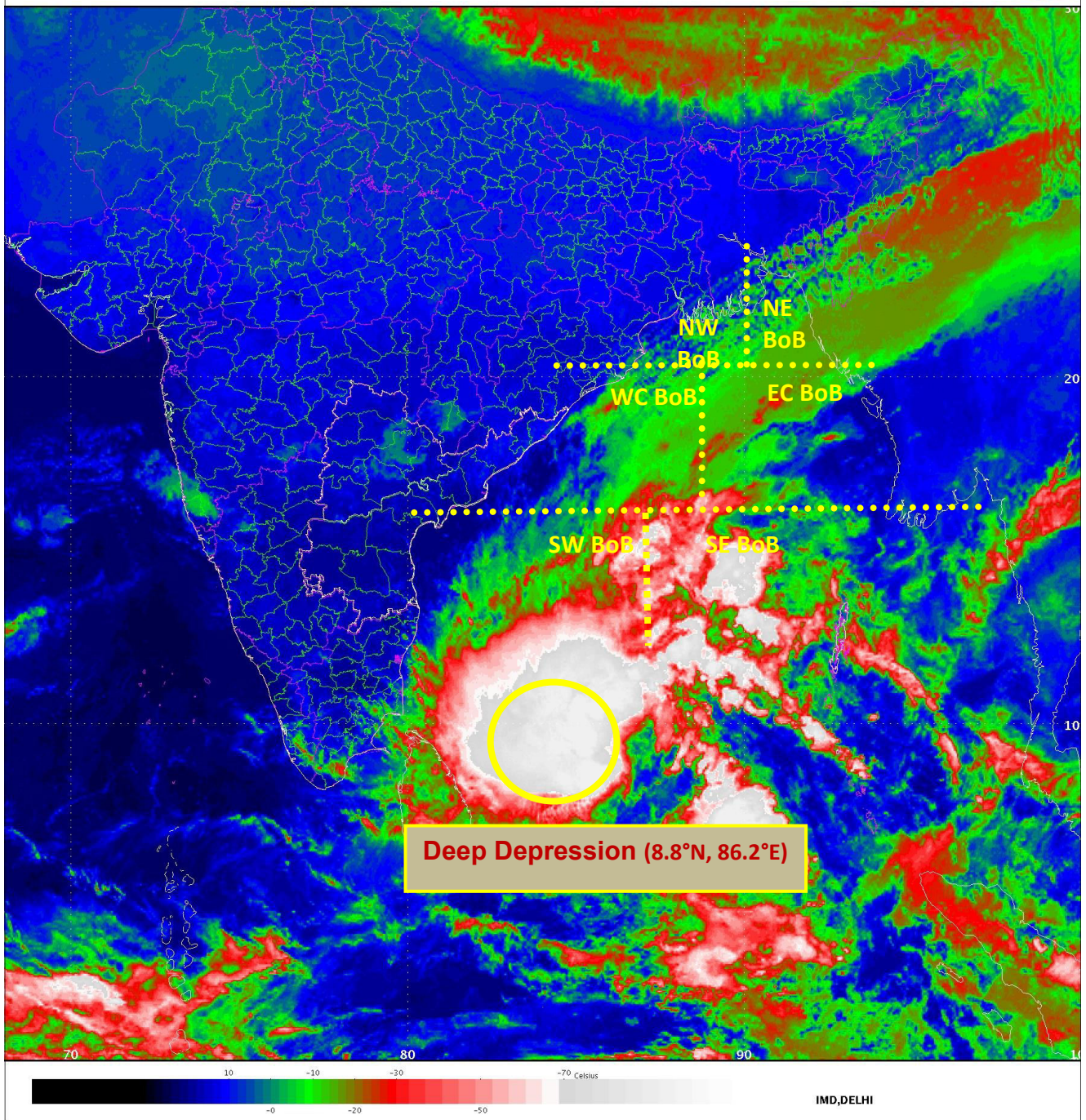
- The fishermen are advised not to venture into southwest & adjoining westcentral Bay of Bengal on 15th and westcentral & adjoining southwest Bay of Bengal and along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts on 16th and 17th December.
- Those, who are out in deep sea areas are advised to return to the coast.

The next bulletin will be issued at 0830 hrs IST of 15th December, 2018.

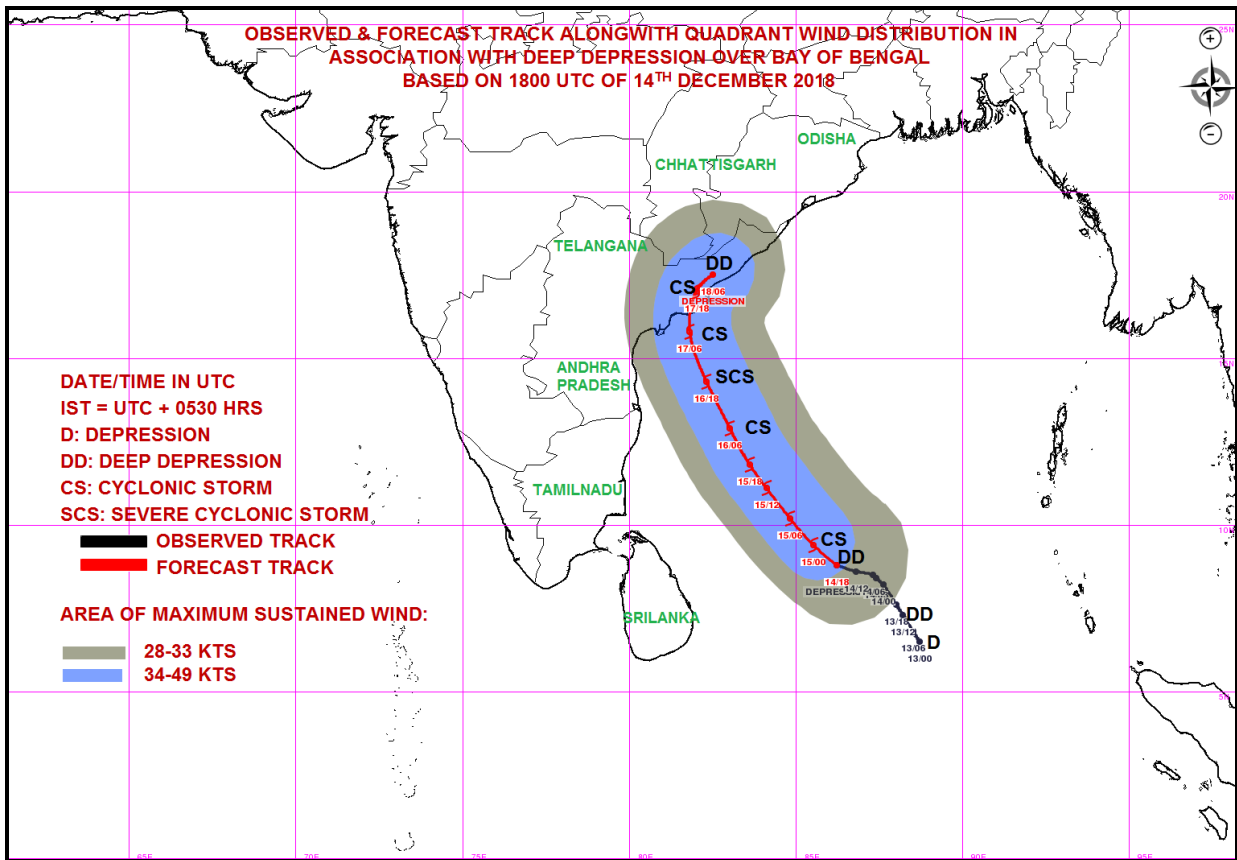
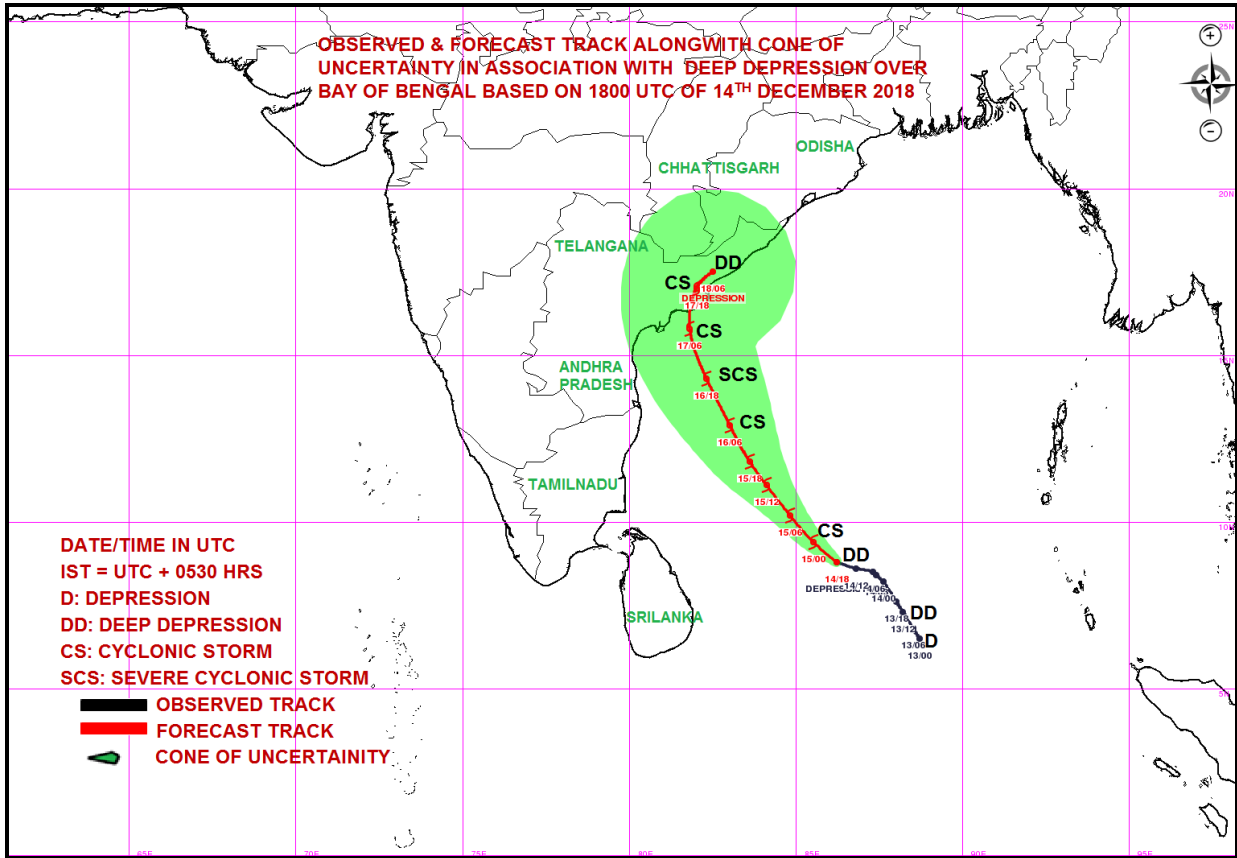
(S D Kotal)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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. : 11 (BOB/10/2018)

TIME OF ISSUE: 0815 HOURS IST

DATED: 15.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

**Sub: Deep Depression over southwest & adjoining southeast Bay of Bengal:
Cyclone alert for Andhra Pradesh Coast "YELLOW MESSAGE"**

The deep depression over southeast Bay of Bengal moved west-northwestwards with a speed of 11 kmph during past 06 hours and lay centred at 0530 hrs IST of 15th December, 2018 over southwest & adjoining southeast Bay of Bengal near latitude 9.0°N and longitude 85.5°E, about 470 km east-northeast of Trincomalee (Sri Lanka), 730 km east-southeast of Chennai (Tamil Nadu) and 930 km south-southeast of Machilipatnam (Andhra Pradesh). It is very likely to intensify further into a Cyclonic Storm during next 12 hours and into a Severe Cyclonic Storm in subsequent 24 hours. It is very likely to move north-northwestwards and cross Andhra Pradesh coast between Ongole and Kakinada during 17th December afternoon.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat.°N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
15.12.18/0530	9.0/85.5	55-65 gusting to 75	Deep Depression
15.12.18/1130	9.5/84.8	55-65 gusting to 75	Deep Depression
15.12.18/1730	10.2/84.2	60-70 gusting to 80	Cyclonic Storm
15.12.18/2330	11.1/83.5	70-80 gusting to 90	Cyclonic Storm
16.12.18/0530	12.3/82.9	80-90 gusting to 100	Cyclonic Storm
16.12.18/1730	13.6/82.4	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/0530	15.0/82.0	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/1730	16.4/81.9	80-90 gusting to 100	Cyclonic Storm
18.12.18/0530	17.2/82.2	60-70 gusting to 80	Cyclonic Storm
18.12.18/1730	17.8/82.8	45-55 gusting to 65	Depression

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

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

Warnings:

(i) Heavy rainfall warning

- Rainfall at many places with heavy falls at isolated places likely to commence over coastal Andhra Pradesh & adjoining areas of north coastal Tamil Nadu from 15th December evening.
- Rainfall at most places with heavy to very heavy falls at a few places & extremely heavy falls (≥ 20 cm) at isolated places likely over coastal Andhra Pradesh on 16th & 17th December.
- Rainfall at many places with heavy falls at isolated places likely over south Chhattisgarh & Odisha on 16th and 17th December.

(ii) Wind warning for Andhra Pradesh, north Tamil Nadu and Puducherry coasts

Squally wind speed reaching 45-55 kmph gusting to 65 kmph is likely to commence along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts from 15th December evening onwards. It is very likely to increase gradually becoming gale wind speed of 80-90 kmph gusting to 100 kmph along & off Andhra Pradesh coast from 17th December morning.

(iii) Wind warning for Sea areas

Squally wind speed reaching 55-65 kmph gusting to 75 kmph prevails over southeast & adjoining southwest Bay of Bengal. It is very likely to increase gradually and become gale wind speed reaching 60-70 kmph gusting to 80 kmph by 15th December morning over southwest & adjoining westcentral Bay of Bengal and 80-100 kmph gusting to 110 kmph over westcentral & adjoining southwest Bay of Bengal on 16th & 17th December.

(iv) Sea condition

The sea condition is very rough over southeast & adjoining southwest Bay of Bengal. It is likely to become high from 15th December morning. The sea condition is very likely to be high over southwest & adjoining westcentral Bay of Bengal on 15th December evening and high to very high over westcentral & adjoining southwest Bay of Bengal on 16th & 17th December. It is very likely to become rough to very rough along & off south Andhra Pradesh and north Tamil Nadu coast on 15th and very rough to high on 16th & 17th December.

(v) Fishermen Warning

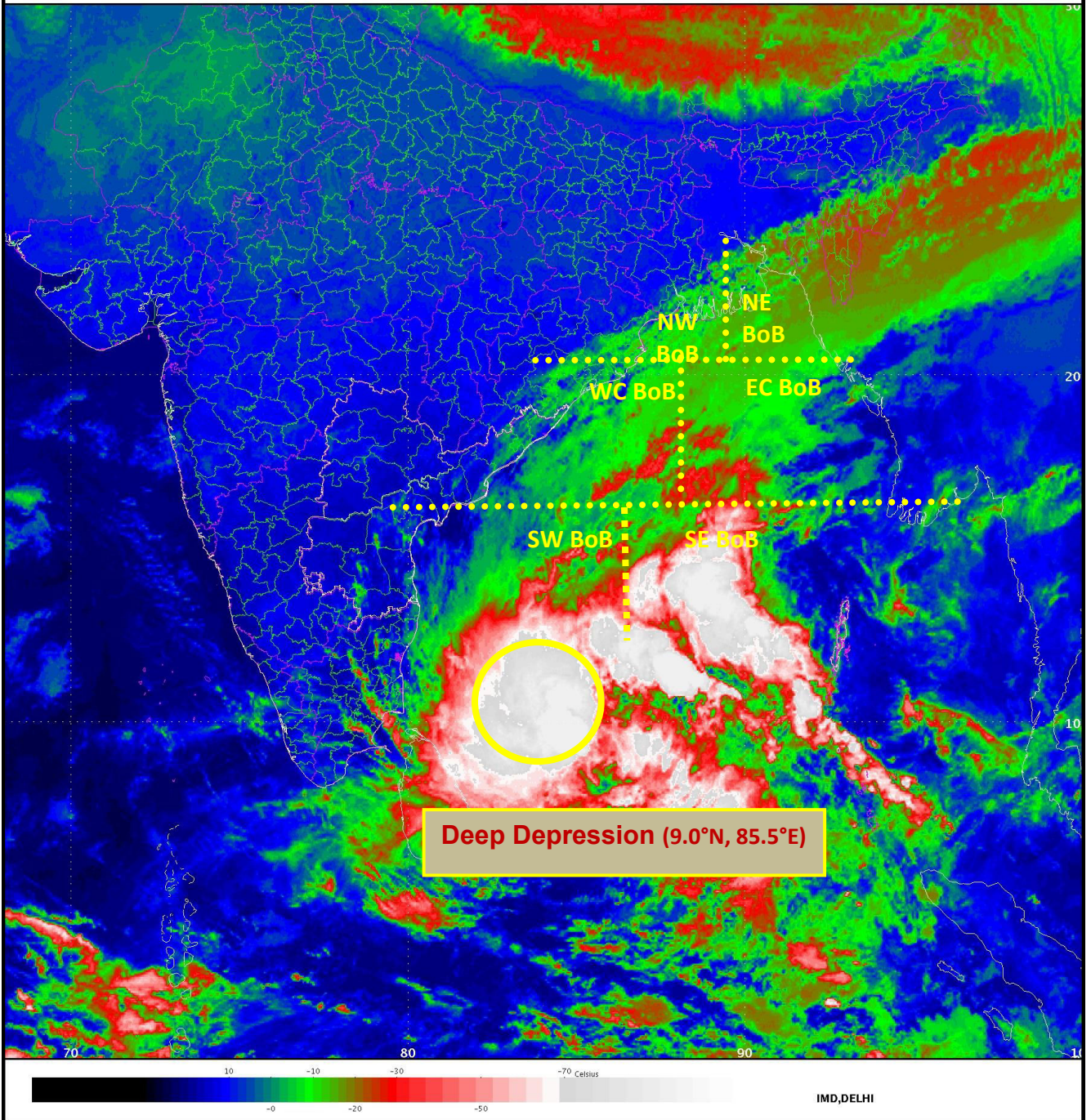
- The fishermen are advised not to venture into southwest & adjoining westcentral Bay of Bengal on 15th and westcentral & adjoining southwest Bay of Bengal and along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts on 16th and 17th December.
- Those, who are out in deep sea areas are advised to return to the coast.

The next bulletin will be issued at 1430 hrs IST of 15th December, 2018.

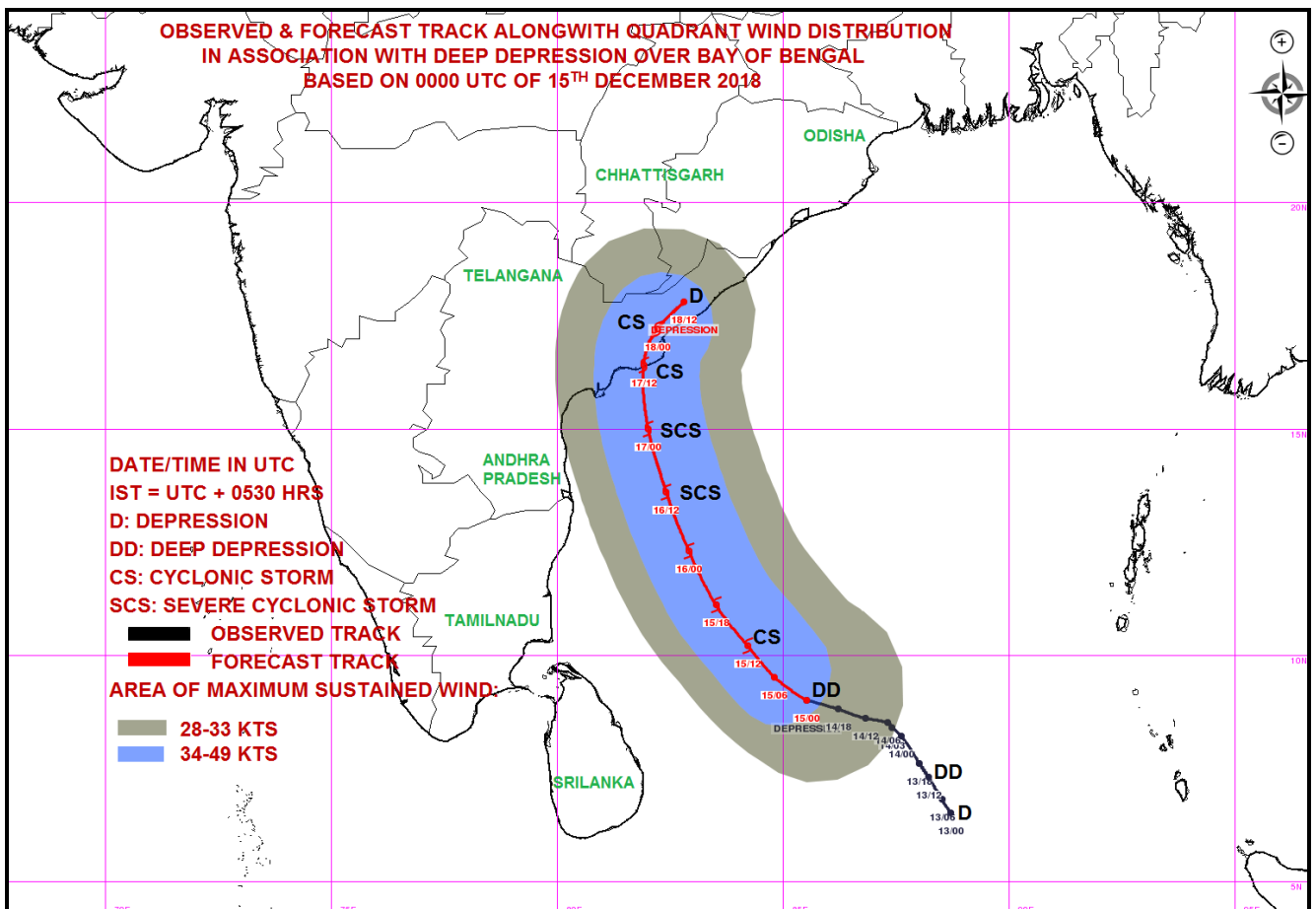
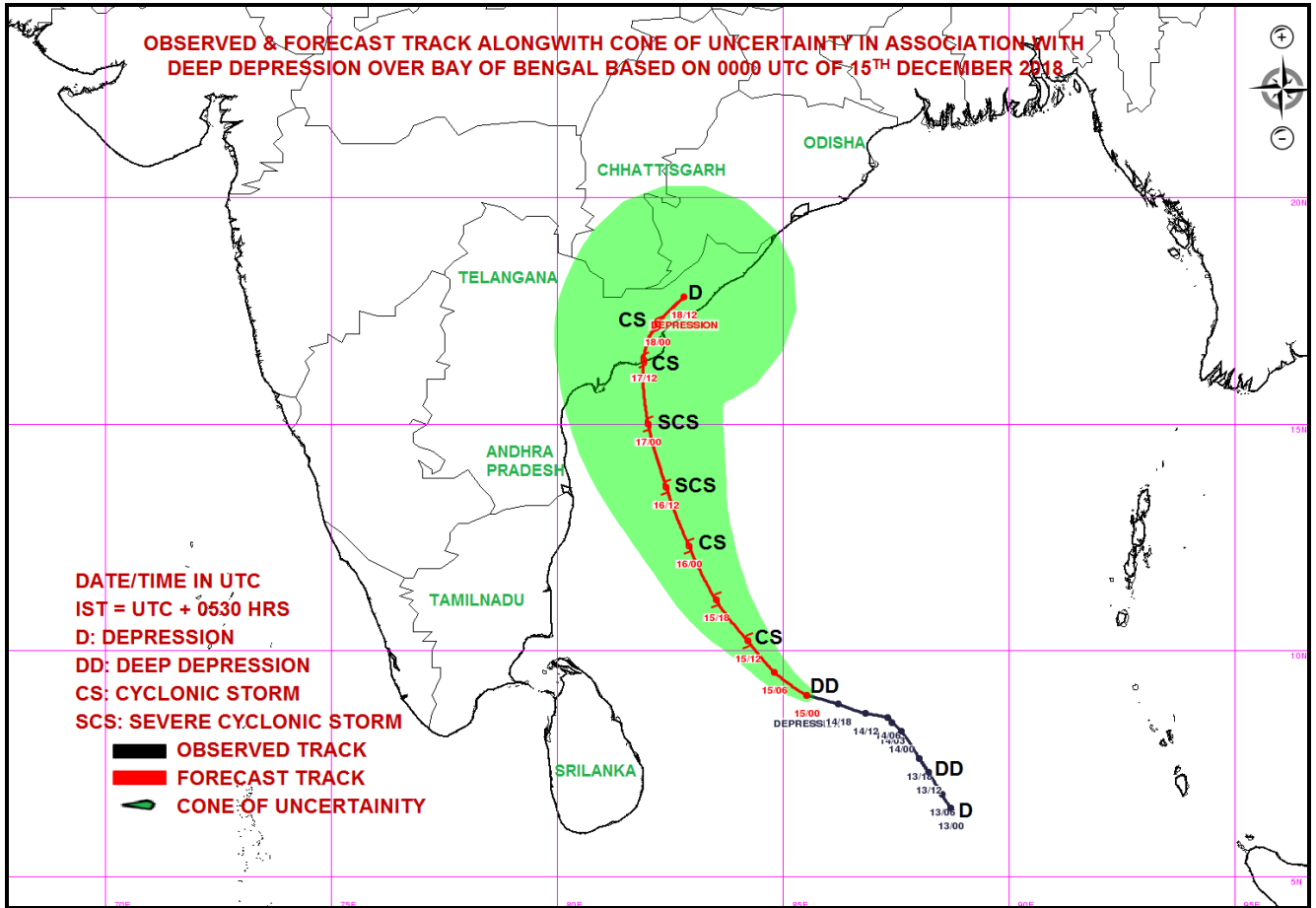
(S D Kotal)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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 (BOB/10/2018)

TIME OF ISSUE: 1200 HOURS IST

DATED: 15.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

**Sub: Deep Depression over southwest & adjoining southeast Bay of Bengal:
Cyclone alert for Andhra Pradesh Coast "YELLOW MESSAGE"**

The deep depression over southeast Bay of Bengal moved further west-northwestwards with a speed of 13 kmph during past 06 hours and lay centred at 0830 hrs IST of 15th December, 2018 over southwest & adjoining southeast Bay of Bengal near latitude 9.2°N and longitude 85.2°E, about 440 km east-northeast of Trincomalee (Sri Lanka), 690 km southeast of Chennai (Tamil Nadu) and 890 km south-southeast of Machilipatnam (Andhra Pradesh). It is very likely to intensify further into a Cyclonic Storm during next 24 hours and into a Severe Cyclonic Storm in subsequent 24 hours. It is very likely to move north-northwestwards and cross Andhra Pradesh coast between Ongole and Kakinada during 17th December afternoon.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat.°N/ long. E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
15.12.18/0830	9.2/85.2	55-65 gusting to 75	Deep Depression
15.12.18/1130	9.4/84.8	55-65 gusting to 75	Deep Depression
15.12.18/1730	9.9/84.1	60-70 gusting to 80	Cyclonic Storm
15.12.18/2330	10.9/83.4	70-80 gusting to 90	Cyclonic Storm
16.12.18/0530	12.1/82.7	80-90 gusting to 100	Cyclonic Storm
16.12.18/1730	13.6/82.2	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/0530	15.0/81.9	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/1730	16.4/82.0	80-90 gusting to 100	Cyclonic Storm
18.12.18/0530	17.2/82.3	60-70 gusting to 80	Cyclonic Storm
18.12.18/1730	17.8/82.9	45-55 gusting to 65	Depression

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

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

Warnings:

(i) Heavy rainfall warning

- Rainfall at most places with heavy to very heavy falls at a few places very likely over coastal Andhra Pradesh on 16th & 17th December. Extremely heavy falls (≥ 20 cm) at isolated places also likely over north coastal Andhra Pradesh on 17th December. Rainfall at many places with heavy falls at isolated places likely over adjoining districts of north Tamil Nadu on 16th December.
- Rainfall at most places with heavy to very heavy falls at isolated places likely over Odisha and with heavy falls at isolated places over south Chhattisgarh on 16th & 17th December. Rainfall at most places with heavy falls at isolated places also likely over adjoining districts of Jharkhand on 17th December.
- Rainfall at most places with heavy falls at isolated places likely over Gangetic West Bengal on 17th & 18th December.

(ii) Wind warning for Andhra Pradesh, north Tamil Nadu and Puducherry coasts

Squally wind speed reaching 45-55 kmph gusting to 65 kmph is likely to commence along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts from today, the 15th December evening. It is very likely to increase gradually becoming gale wind speed of 80-90 kmph gusting to 100 kmph along & off Andhra Pradesh coast from 17th December morning.

(iii) Wind warning for Sea areas

Squally wind speed reaching 55-65 kmph gusting to 75 kmph prevails over southwest & adjoining southeast Bay of Bengal. It is very likely to increase gradually and become gale wind speed reaching 60-70 kmph gusting to 80 kmph by 15th December evening over the same area and 80-100 kmph gusting to 110 kmph over westcentral & adjoining southwest Bay of Bengal on 16th & 17th December.

(iv) Sea condition

The sea condition is very rough over southwest & adjoining southeast Bay of Bengal. It is likely to become high from 15th December evening. The sea condition is very likely to be high over southwest & adjoining westcentral Bay of Bengal on 16th December morning and high to very high over westcentral & adjoining southwest Bay of Bengal from 16th evening to 17th December. It is very likely to become rough to very rough along & off south Andhra Pradesh and north Tamil Nadu coast on 15th evening and very rough to high on 16th & 17th December.

(v) Fishermen Warning

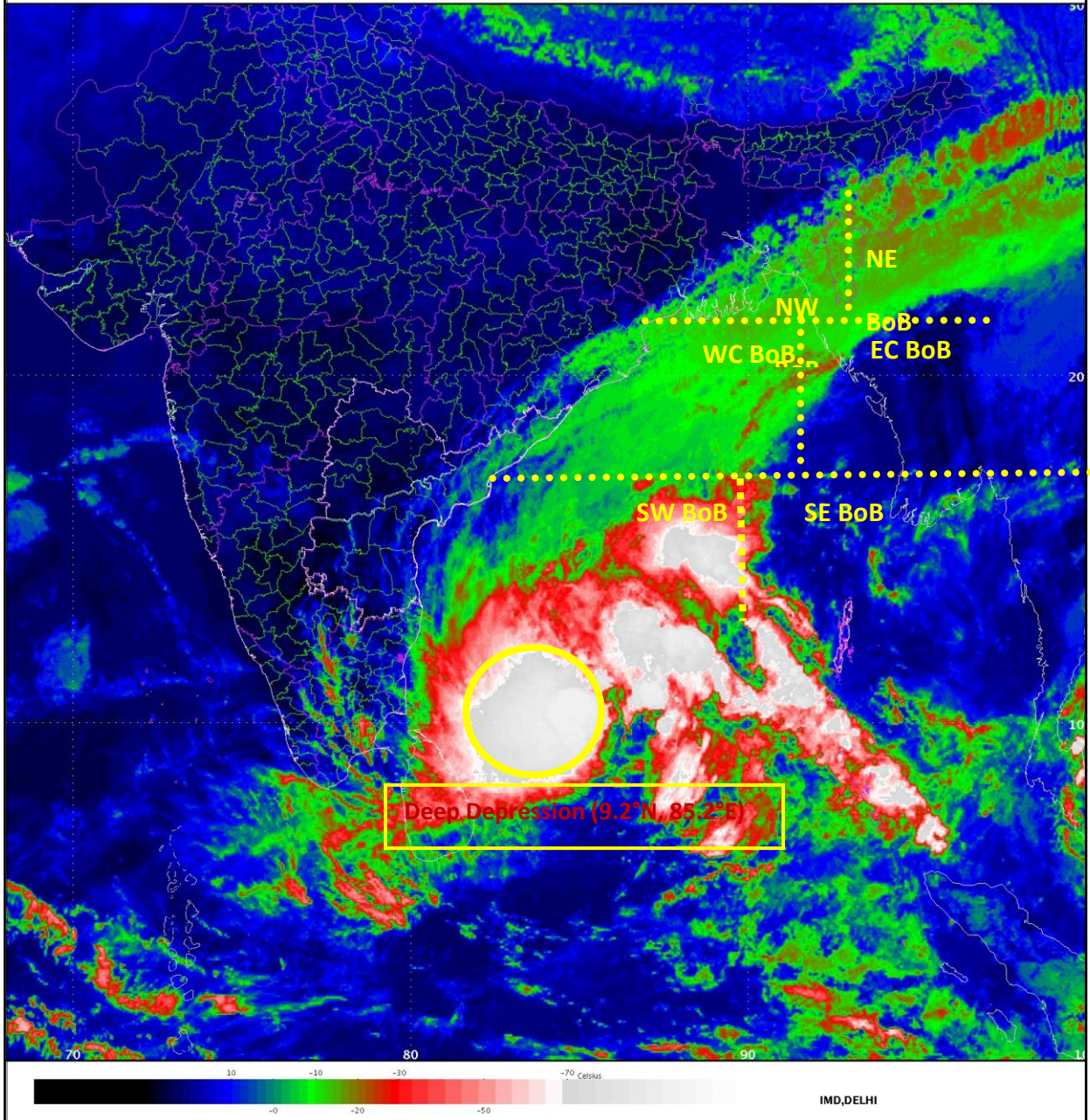
- The fishermen are advised not to venture into southwest & adjoining westcentral Bay of Bengal on today the 15th December and westcentral & adjoining southwest Bay of Bengal and along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts on 16th and 17th December.
- Those, who are out in deep sea areas are advised to return to the coast.

The next bulletin will be issued at 1430 hrs IST of 15th December, 2018.

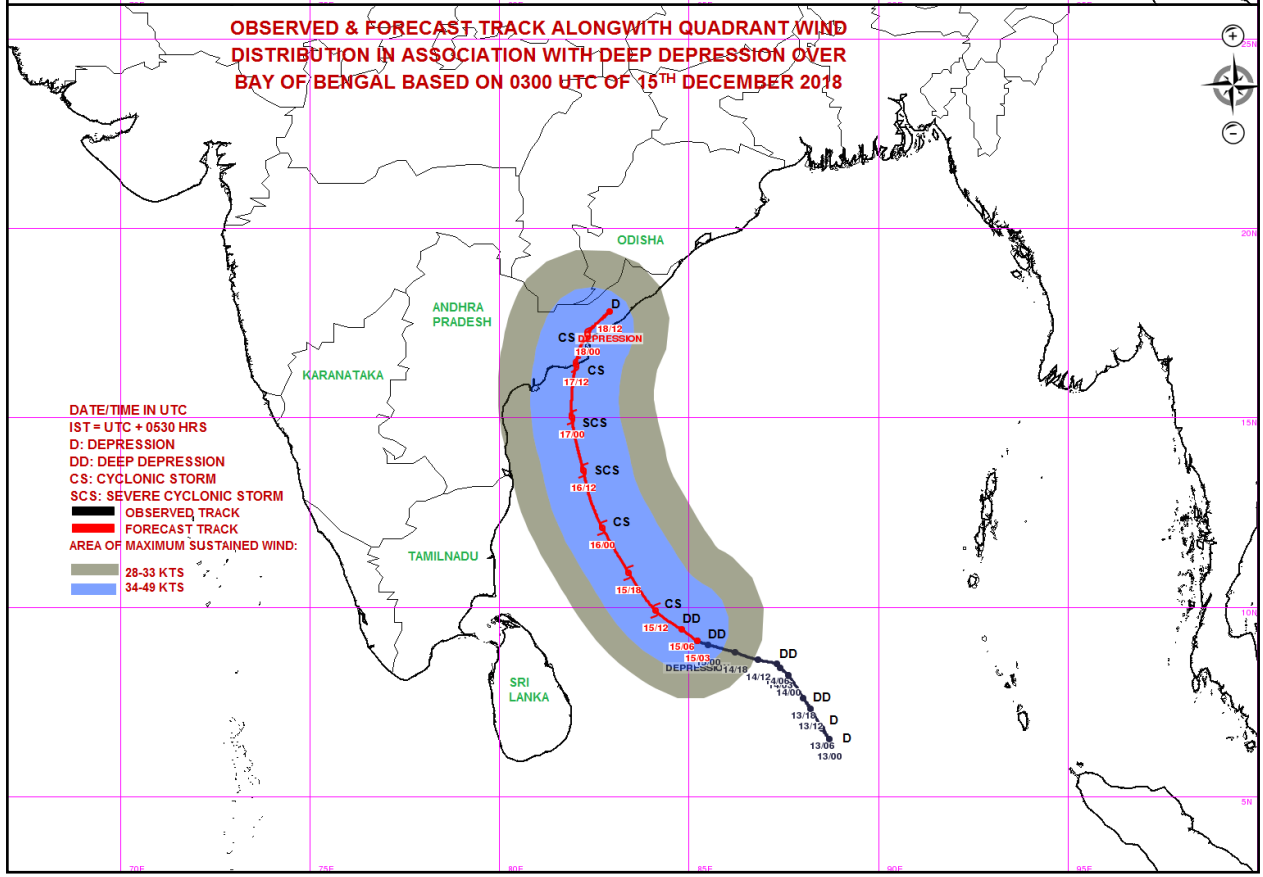
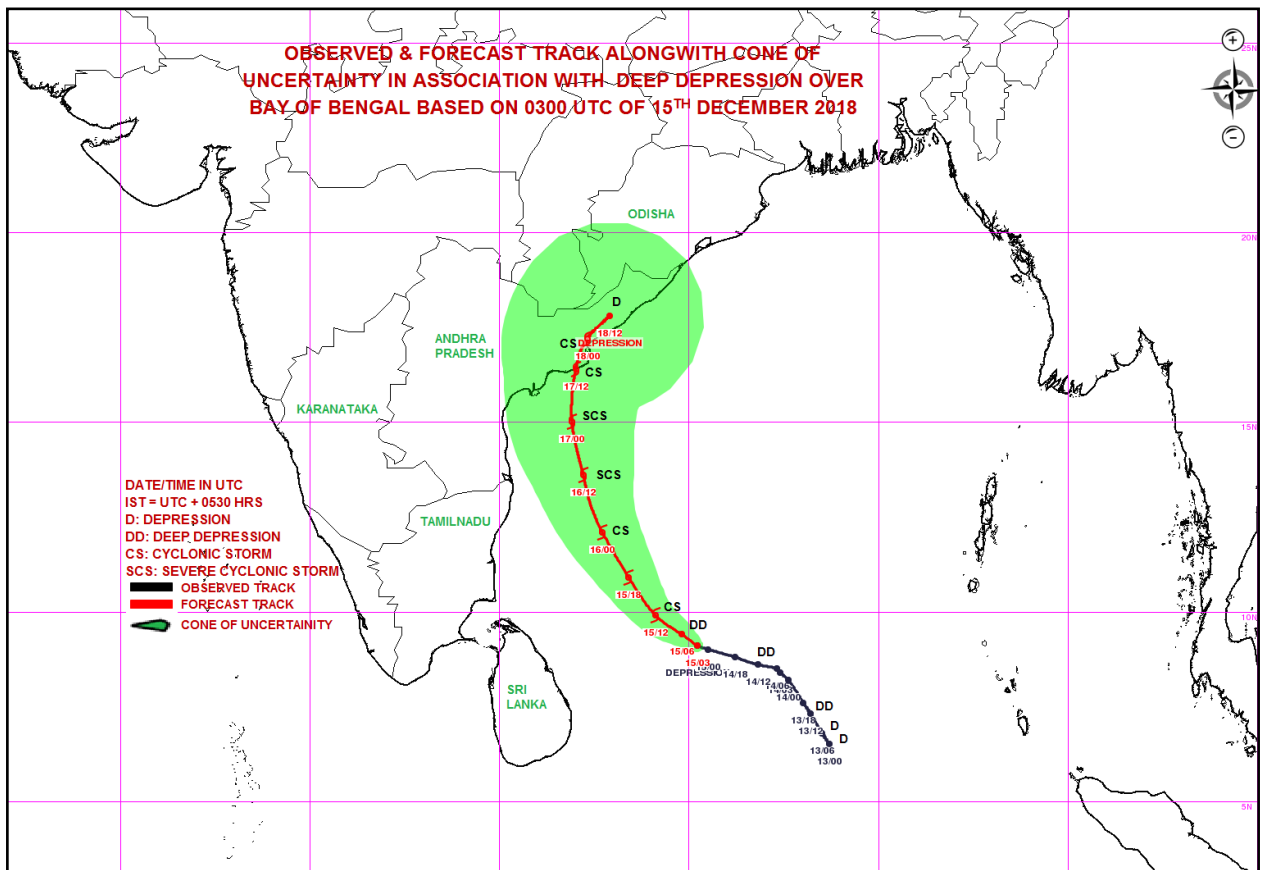
(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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 (BOB/10/2018)

TIME OF ISSUE: 1430 HOURS IST

DATED: 15.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

**Sub: Deep Depression over southwest & adjoining southeast Bay of Bengal:
Cyclone alert for Andhra Pradesh Coast "YELLOW MESSAGE"**

The deep depression over southeast Bay of Bengal moved northwestwards with a speed of 10 kmph during past 06 hours and lay centred at 1130 hrs IST of 15th December, 2018 over southwest & adjoining southeast Bay of Bengal near latitude 9.4°N and longitude 85.1°E, about 430 km east-northeast of Trincomalee (Sri Lanka), 670 km east-southeast of Chennai (Tamil Nadu) and 870 km south-southeast of Machilipatnam (Andhra Pradesh). It is very likely to intensify further into a Cyclonic Storm during next 24 hours and into a Severe Cyclonic Storm in subsequent 24 hours. It is very likely to move north-northwestwards and cross Andhra Pradesh coast between Ongole and Kakinada during 17th December afternoon.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat.°N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
15.12.18/1130	9.4/85.1	55-65 gusting to 75	Deep Depression
15.12.18/1730	9.9/84.6	60-70 gusting to 80	Cyclonic Storm
15.12.18/2330	10.7/84.1	70-80 gusting to 90	Cyclonic Storm
16.12.18/0530	11.5/83.6	80-90 gusting to 100	Cyclonic Storm
16.12.18/1130	12.4/83.0	90-100 gusting to 110	Severe Cyclonic Storm
16.12.18/2330	14.2/82.2	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/1130	15.8/82.0	80-90 gusting to 100	Cyclonic Storm
17.12.18/2330	16.9/82.2	60-70 gusting to 80	Cyclonic Storm
18.12.18/1130	18.1/83.0	55-65 gusting to 75	Deep Depression

Warnings:

(i) Heavy rainfall warning

- Rainfall at most places with heavy to very heavy falls at a few places very likely over coastal Andhra Pradesh on 16th & 17th December. Extremely heavy falls (≥ 20 cm) at

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

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

isolated places also likely over north coastal Andhra Pradesh on 17th December. Rainfall at many places with heavy falls at isolated places likely over adjoining districts of north Tamil Nadu on 16th December.

- Rainfall at most places with heavy to very heavy falls at isolated places likely over Odisha and with heavy falls at isolated places over south Chhattisgarh on 16th & 17th December. Rainfall at most places with heavy falls at isolated places also likely over adjoining districts of Jharkhand on 17th December.
- Rainfall at most places with heavy falls at isolated places likely over Gangetic West Bengal on 17th & 18th December.

(ii) Wind warning for Andhra Pradesh, north Tamil Nadu and Puducherry coasts

Squally wind speed reaching 45-55 kmph gusting to 65 kmph is likely to commence along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts from today, the 15th December evening. It is very likely to increase gradually becoming gale wind speed of 80-90 kmph gusting to 100 kmph along & off Andhra Pradesh coast from 17th December morning.

(iii) Wind warning for Sea areas

Squally wind speed reaching 55-65 kmph gusting to 75 kmph prevails over southwest & adjoining southeast Bay of Bengal. It is very likely to increase gradually and become gale wind speed reaching 60-70 kmph gusting to 80 kmph by 15th December evening over the same area and 80-100 kmph gusting to 110 kmph over westcentral & adjoining southwest Bay of Bengal on 16th & 17th December.

(iv) Sea condition

The sea condition is very rough over southwest & adjoining southeast Bay of Bengal. It is likely to become high from 15th December evening. The sea condition is very likely to be high over southwest & adjoining westcentral Bay of Bengal on 16th December morning and high to very high over westcentral & adjoining southwest Bay of Bengal from 16th evening to 17th December. It is very likely to become rough to very rough along & off south Andhra Pradesh and north Tamil Nadu coast on 15th evening and very rough to high on 16th & 17th December.

(v) Damage Expected over Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna, Guntur and Ongole Districts):

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

(vi) Action suggested

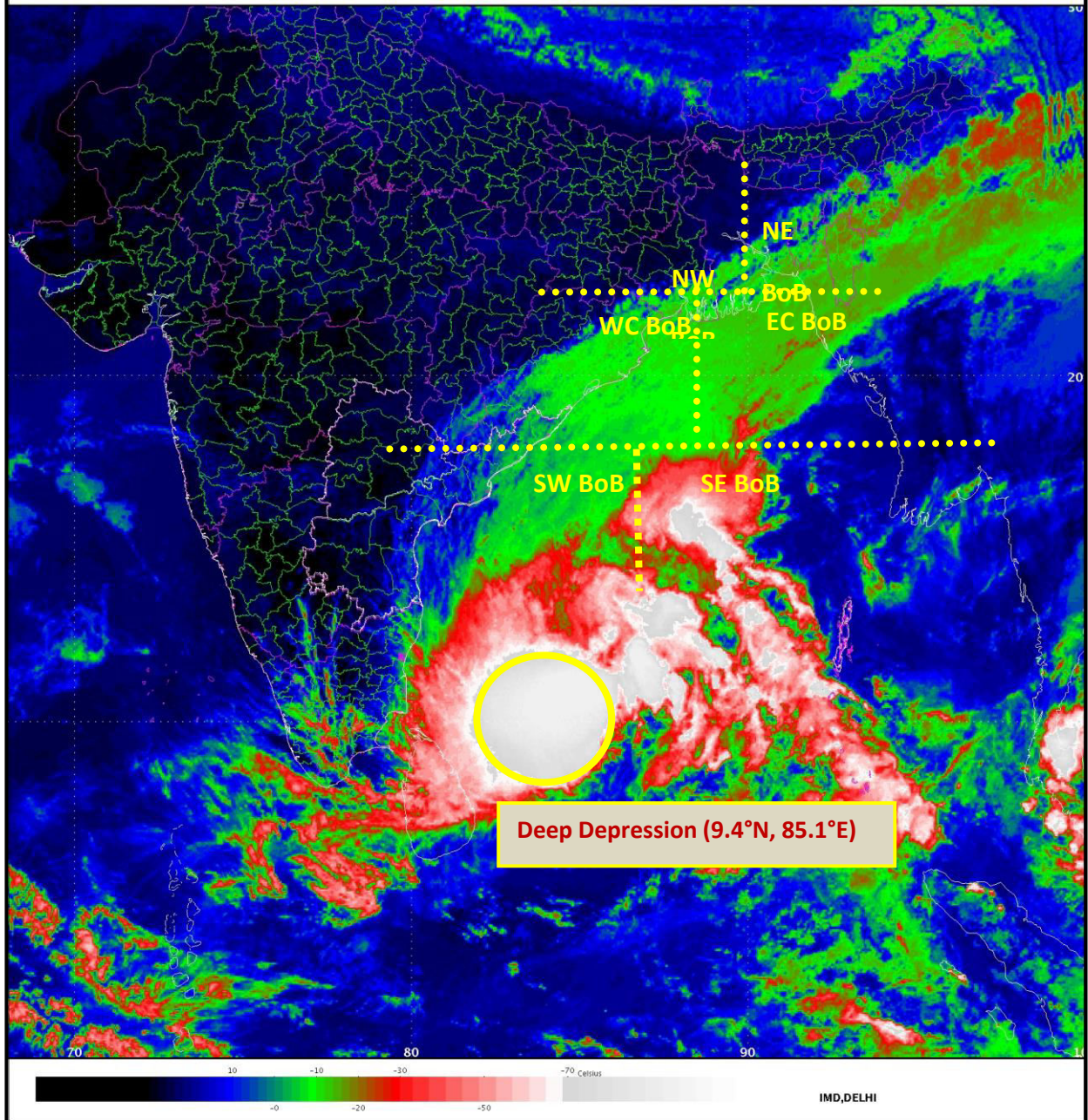
- Total suspension of fishing operations along & off Andhra Pradesh coast on 16th & 17th December.
- The fishermen are advised not to venture into southwest & adjoining westcentral Bay of Bengal on today the 15th December and westcentral & adjoining southwest Bay of Bengal and along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts on 16th and 17th December.
- Those, who are out in deep sea areas are advised to return to the coast.

The next bulletin will be issued at 2030 hrs IST of 15th December, 2018.

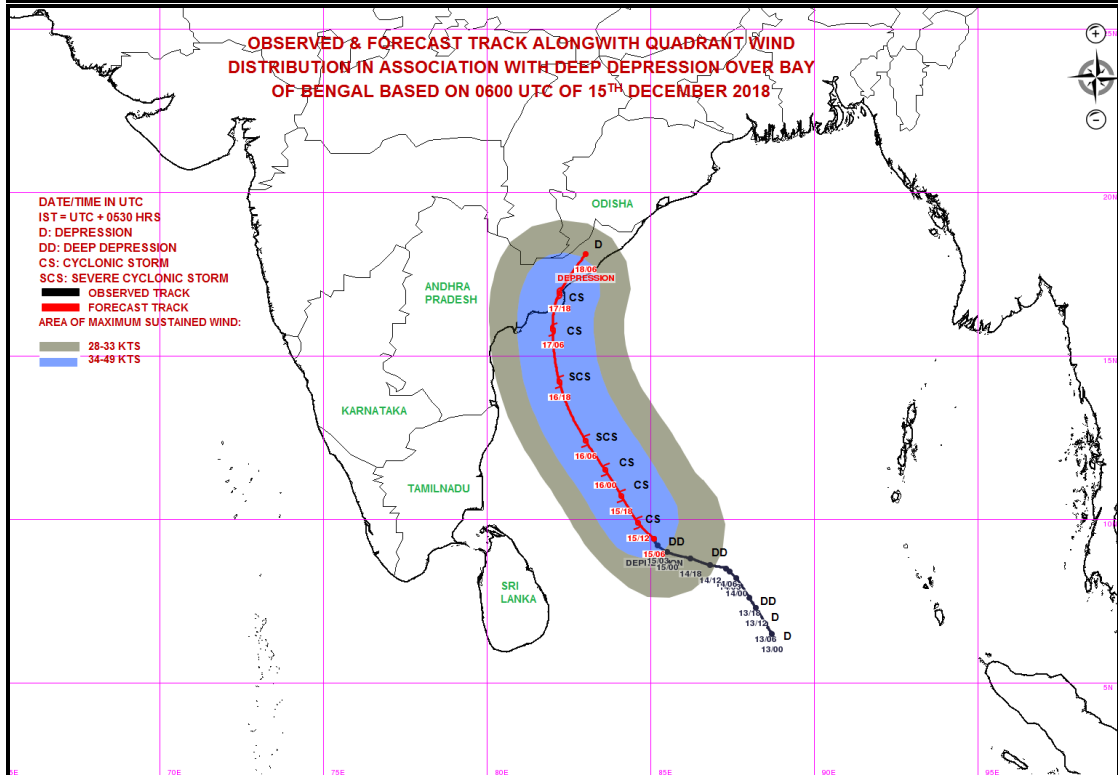
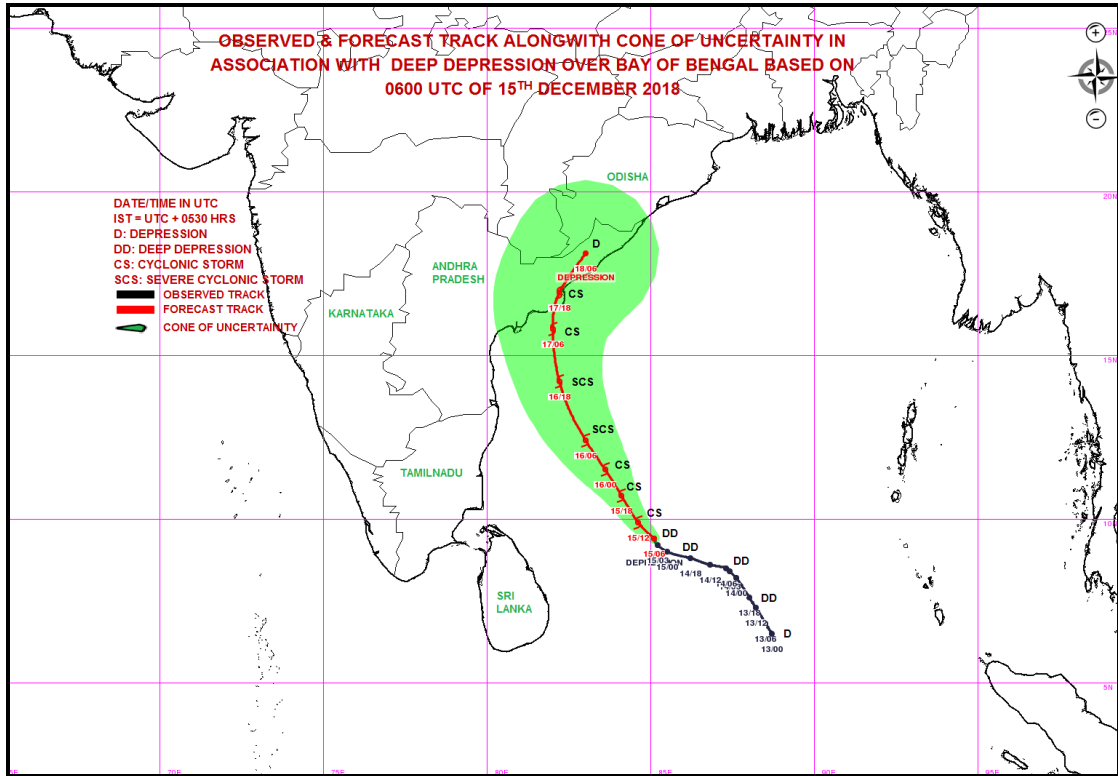
**(Naresh Kumar)
Scientist-E, RSMC, New Delhi**

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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. : 14 (BOB/10/2018)

TIME OF ISSUE: 2030 HOURS IST

DATED: 15.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: Deep Depression over southwest & adjoining southeast Bay of Bengal intensified into a Cyclonic storm 'PHETHAI' over southwest Bay of Bengal:

Cyclone warning for Andhra Pradesh & Puducherry (Yanam) Coasts "ORANGE MESSAGE"

The deep depression over southwest & adjoining southeast Bay of Bengal moved north-northwestwards with a speed of 17 kmph during past 06 hours, intensified into a Cyclonic storm 'PHETHAI (pronounced as Pay-ti)' and lay centred at 1730 hrs IST of 15th December, 2018 over southwest Bay of Bengal near latitude 10.3°N and longitude 84.9°E, about 440 km east-northeast of Trincomalee (Sri Lanka), 590 km east-southeast of Chennai (Tamil Nadu) and 770 km south-southeast of Machilipatnam (Andhra Pradesh). It is very likely to intensify further into a Severe Cyclonic Storm during next 24 hours. It is very likely to move north-northwestwards and cross Andhra Pradesh coast between Machilipatnam and Kakinada during 17th December afternoon.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat.°N/ long. E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
15.12.18/1730	10.3/84.9	60-70 gusting to 80	Cyclonic Storm
15.12.18/2330	11.0/84.4	65-75 gusting to 85	Cyclonic Storm
16.12.18/0530	11.8/83.7	75-85 gusting to 95	Cyclonic Storm
16.12.18/1130	12.4/83.2	80-90 gusting to 100	Cyclonic Storm
16.12.18/1730	13.3/82.7	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/0530	15.0/82.1	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/1730	16.4/82.1	75-85 gusting to 95	Cyclonic Storm
18.12.18/0530	17.5/82.6	60-70 gusting to 80	Cyclonic Storm
18.12.18/1730	18.3/83.4	45-55 gusting to 65	Depression

Warnings:

(i) Heavy rainfall warning

- Rainfall at most places with heavy to very heavy falls at a few places very likely over coastal Andhra Pradesh on 16th & 17th December. Extremely heavy falls (≥ 20 cm) at isolated places also likely over north coastal Andhra Pradesh on 17th December. Rainfall at many places with heavy falls at isolated places likely over adjoining districts of north Tamil Nadu on 16th December.

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

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

- Rainfall at most places with heavy to very heavy falls at isolated places likely over Odisha and with heavy falls at isolated places over south Chhattisgarh on 16th & 17th December. Rainfall at most places with heavy falls at isolated places also likely over adjoining districts of Jharkhand on 17th December.
- Rainfall at most places with heavy falls at isolated places likely over Gangetic West Bengal on 17th & 18th December.

(ii) Wind warning for Andhra Pradesh, north Tamil Nadu and Puducherry coasts

- Squally wind speed reaching 45-55 kmph gusting to 65 kmph is very likely to commence along & off South Andhra Pradesh, north Tamilnadu & Puducherry coasts from 16th December morning. It is very likely to increase gradually becoming gale wind speed of 80-90 kmph gusting to 100 kmph along & off central Andhra Pradesh coast and Yanam district of Puducherry on 17th December.
- Gale wind speed reaching 60-70 kmph gusting to 80 kmph is likely to prevail along & off remaining parts of Andhra Pradesh coast and squally wind speed 40-50 kmph gusting to 60 kmph is likely to prevail along & off north Tamilnadu & Puducherry coasts on 17th December.

(iii) Wind warning for Sea areas

Gale wind speed reaching 60-70 kmph gusting to 80 kmph prevails over southwest & adjoining southeast Bay of Bengal. It is very likely to increase gradually and become gale wind speed reaching 80-100 kmph gusting to 110 kmph over westcentral & adjoining southwest Bay of Bengal on 17th December.

(iv) Sea condition

The sea condition is high over southwest & adjoining southeast Bay of Bengal. The sea condition is very likely to be high to very high over southwest & adjoining westcentral Bay of Bengal from 16th December morning and over westcentral & adjoining southwest Bay of Bengal from 16th evening to 17th December evening. It is very likely to become rough to very rough along & off south Andhra Pradesh, north Tamil Nadu & Puducherry coasts from 16th morning and very rough to high along & off central Andhra Pradesh coast and Yanam district of Puducherry from 16th evening to 17th December evening.

(v) Storm Surge Warning

Storm surge of height of about 0.5 m to 1.0 m above the astronomical tides likely to inundate the low lying areas of Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry at the time of landfall.

(vi) Damage Expected over Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry:

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

(vii) Action suggested

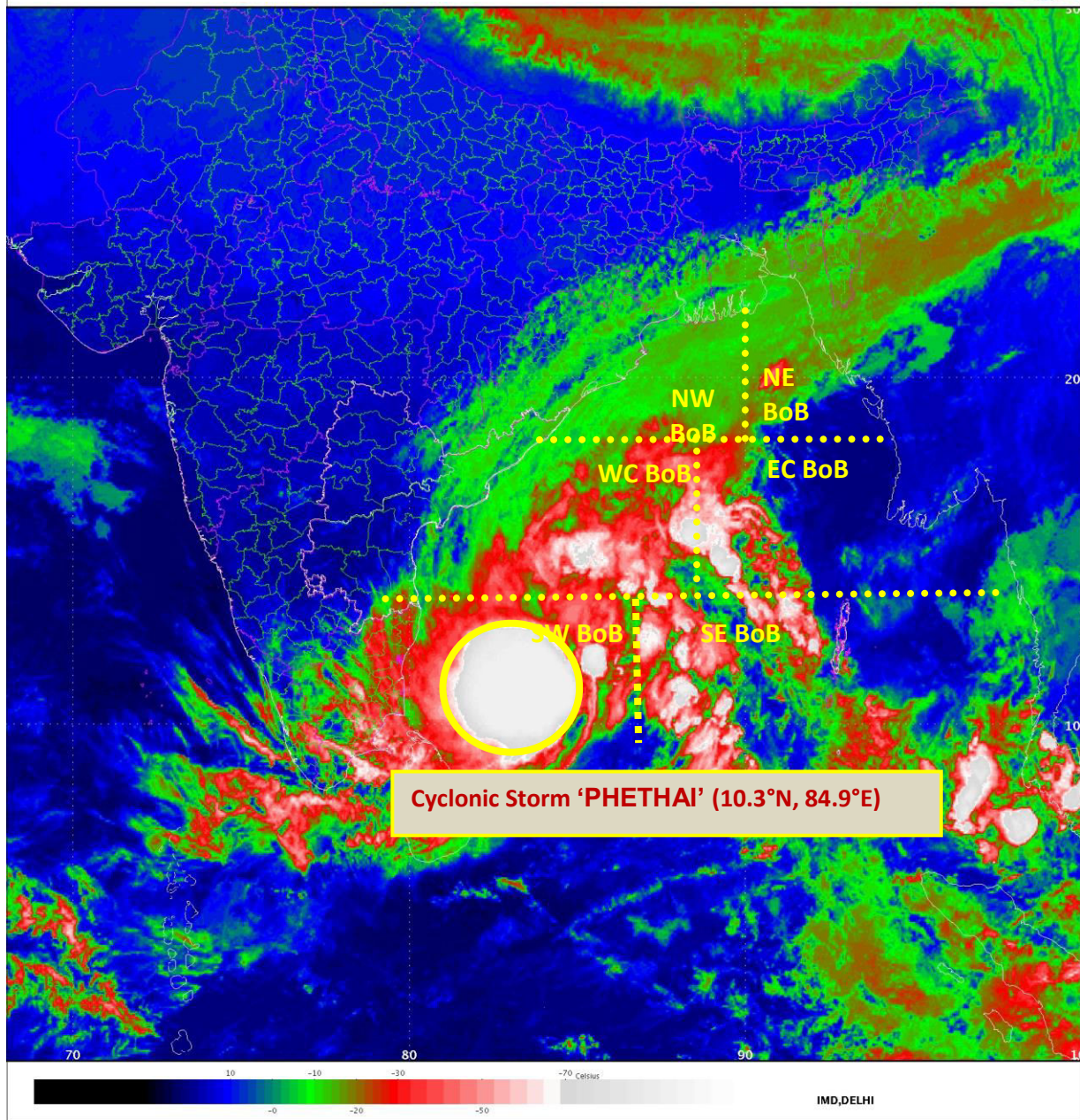
- Total suspension of fishing operations along & off Andhra Pradesh coast on 16th & 17th December.
- The fishermen are advised not to venture into southwest & westcentral Bay of Bengal and along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts till 17th December.
- Those, who are out in deep sea areas are advised to return to the coast.

The next bulletin will be issued at 2330 hrs IST of 15th December, 2018.

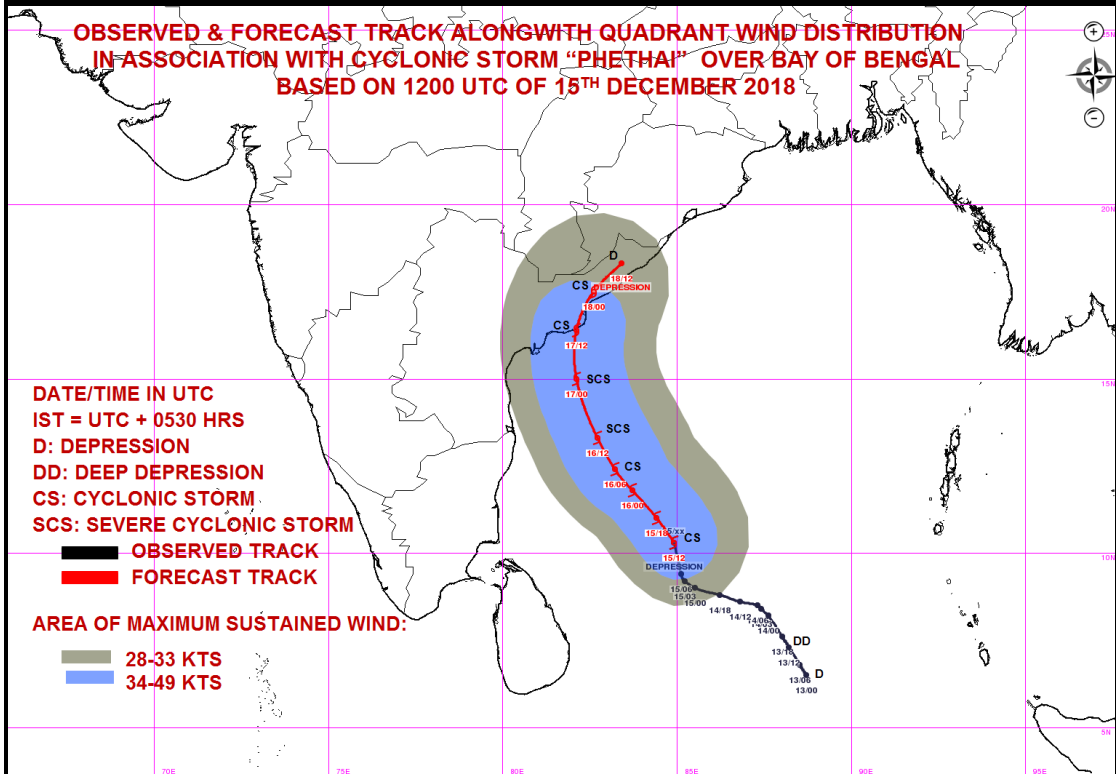
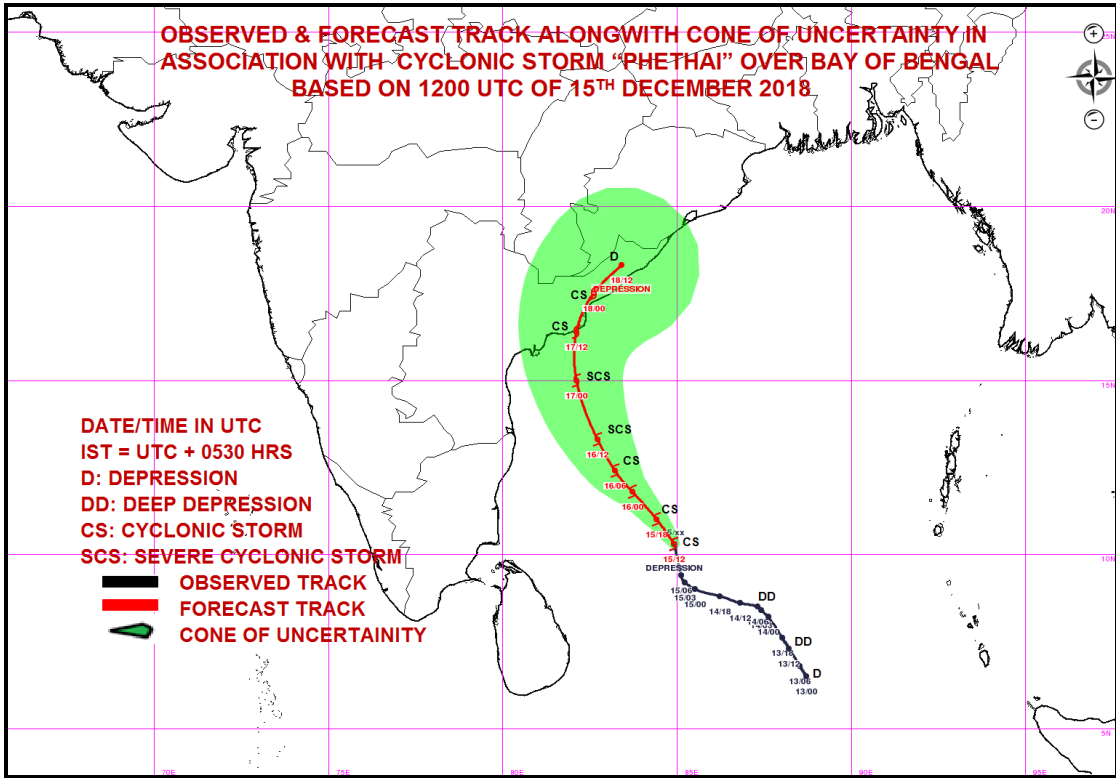
(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam

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



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



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



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

BULLETIN NO. : 15 (BOB/10/2018)

TIME OF ISSUE: 2200 HOURS IST

DATED: 15.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: Cyclonic storm 'PHETHAI' over southwest Bay of Bengal:

Cyclone warning for Andhra Pradesh & Puducherry (Yanam) Coasts "ORANGE MESSAGE"

The Cyclonic storm 'PHETHAI (pronounced as PAY-TI)' over southwest Bay of Bengal moved further north-northwestwards with a speed of 17 kmph during past 06 hours and lay centred at 2030 hrs IST of 15th December, 2018 over southwest Bay of Bengal near latitude 10.7°N and longitude 84.7°E, about 440 km east-northeast of Trincomalee (Sri Lanka), 550 km southeast of Chennai (Tamil Nadu) and 720 km south-southeast of Machilipatnam (Andhra Pradesh). It is very likely to intensify further into a Severe Cyclonic Storm during next 24 hours. It is very likely to move north-northwestwards and cross Andhra Pradesh coast between Machilipatnam and Kakinada during 17th December afternoon.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat.°N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
15.12.18/2030	10.7/84.7	60-70 gusting to 80	Cyclonic Storm
15.12.18/2330	11.0/84.4	65-75 gusting to 85	Cyclonic Storm
16.12.18/0530	11.8/83.7	75-85 gusting to 95	Cyclonic Storm
16.12.18/1130	12.4/83.2	80-90 gusting to 100	Cyclonic Storm
16.12.18/1730	13.3/82.7	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/0530	15.0/82.1	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/1730	16.4/82.1	75-85 gusting to 95	Cyclonic Storm
18.12.18/0530	17.5/82.6	60-70 gusting to 80	Cyclonic Storm
18.12.18/1730	18.3/83.4	45-55 gusting to 65	Depression

Warnings:

(i) Heavy rainfall warning

- Rainfall at most places with heavy to very heavy falls at a few places very likely over coastal Andhra Pradesh on 16th & 17th December. Extremely heavy falls (≥ 20 cm) at isolated places also likely over north coastal Andhra Pradesh on 17th December. Rainfall at many places with heavy falls at isolated places likely over adjoining districts of north Tamil Nadu on 16th December.
- Rainfall at most places with heavy to very heavy falls at isolated places likely over Odisha and with heavy falls at isolated places over south Chhattisgarh on 16th & 17th December. Rainfall at

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

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

most places with heavy falls at isolated places also likely over adjoining districts of Jharkhand on 17th December.

- Rainfall at most places with heavy falls at isolated places likely over Gangetic West Bengal on 17th & 18th December.

(ii) Wind warning for Andhra Pradesh, north Tamil Nadu and Puducherry coasts

- Squally wind speed reaching 45-55 kmph gusting to 65 kmph is very likely to commence along & off South Andhra Pradesh, north Tamilnadu & Puducherry coasts from 16th December morning. It is very likely to increase gradually becoming gale wind speed of 80-90 kmph gusting to 100 kmph along & off central Andhra Pradesh coast and Yanam district of Puducherry on 17th December.
- Gale wind speed reaching 60-70 kmph gusting to 80 kmph is likely to prevail along & off remaining parts of Andhra Pradesh coast and squally wind speed 40-50 kmph gusting to 60 kmph is likely to prevail along & off north Tamilnadu & Puducherry coasts on 17th December.

(iii) Wind warning for Sea areas

Gale wind speed reaching 60-70 kmph gusting to 80 kmph prevails over southwest & adjoining southeast Bay of Bengal. It is very likely to increase gradually and become gale wind speed reaching 80-100 kmph gusting to 110 kmph over westcentral & adjoining southwest Bay of Bengal on 17th December.

(iv) Sea condition

The sea condition is high over southwest & adjoining southeast Bay of Bengal. The sea condition is very likely to be high to very high over southwest & adjoining westcentral Bay of Bengal from 16th December morning and over westcentral & adjoining southwest Bay of Bengal from 16th evening to 17th December evening. It is very likely to become rough to very rough along & off south Andhra Pradesh, north Tamil Nadu & Puducherry coasts from 16th morning and very rough to high along & off central Andhra Pradesh coast and Yanam district of Puducherry from 16th evening to 17th December evening.

(v) Storm Surge Warning

Storm surge of height of about 0.5 m to 1.0 m above the astronomical tides likely to inundate the low lying areas of Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry at the time of landfall.

(vi) Damage Expected over Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry:

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

(vii) Action suggested

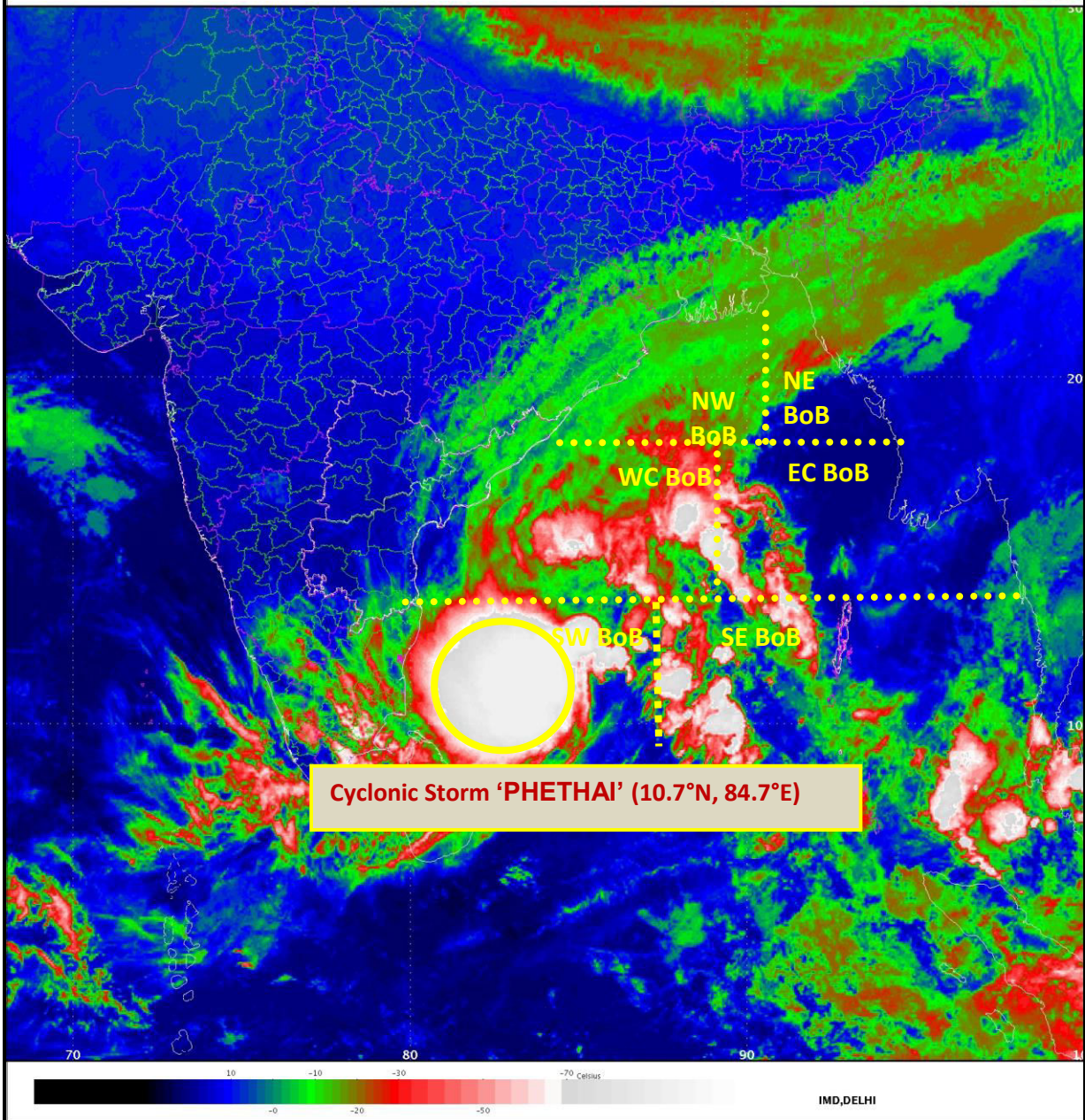
- Total suspension of fishing operations along & off Andhra Pradesh coast on 16th & 17th December.
- The fishermen are advised not to venture into southwest & westcentral Bay of Bengal and along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts till 17th December.
- Those, who are out in deep sea areas are advised to return to the coast.

The next bulletin will be issued at 0230 hrs IST of 16th December, 2018.

(V R Durai)
Scientist-E, RSMC, New Delhi

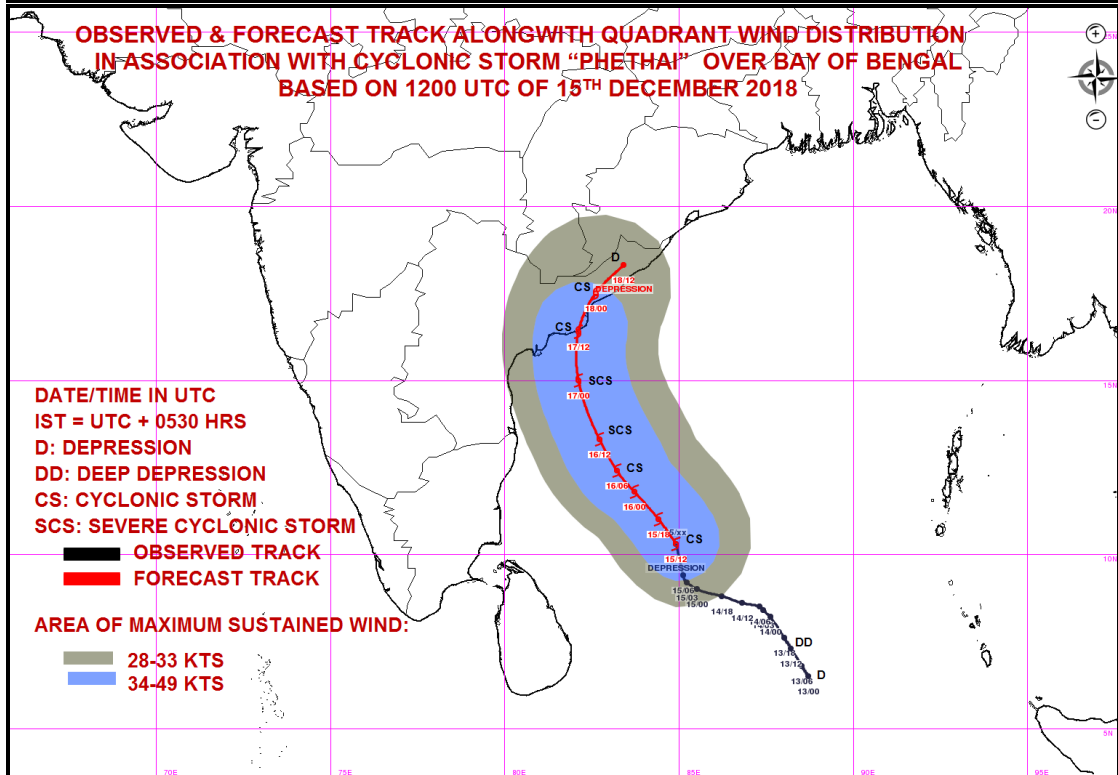
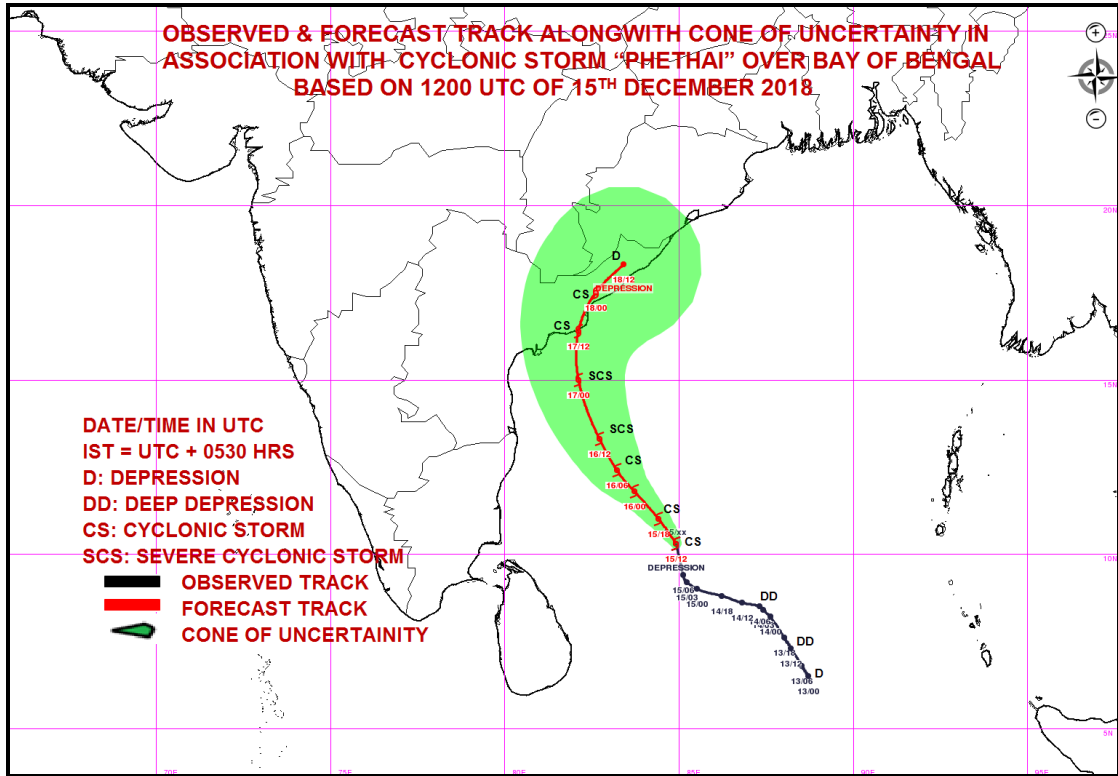
Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam

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



Cyclonic Storm 'PHETHAI' (10.7°N, 84.7°E)

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



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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 (BOB/10/2018)

TIME OF ISSUE: 0130 HOURS IST

DATED: 16.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: Cyclonic storm 'PHETHAI' over southwest Bay of Bengal:

Cyclone warning for Andhra Pradesh & Puducherry (Yanam) Coasts "ORANGE MESSAGE"

The Cyclonic storm 'PHETHAI (pronounced as PAY-TI)' over southwest Bay of Bengal moved further north-northwestwards with a speed of 13 kmph during past 06 hours and lay centred at 2330 hrs IST of 15th December, 2018 over southwest Bay of Bengal near latitude 11.0°N and longitude 84.7°E, about 460 km east-northeast of Trincomalee (Sri Lanka), 530 km southeast of Chennai (Tamil Nadu) and 690 km south-southeast of Machilipatnam (Andhra Pradesh). It is very likely to intensify further into a Severe Cyclonic Storm during next 24 hours. It is very likely to move north-northwestwards and cross Andhra Pradesh coast between Machilipatnam and Kakinada during 17th December afternoon.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat.°N/ long. E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
15.12.18/2330	11.0/84.7	65-75 gusting to 85	Cyclonic Storm
16.12.18/0530	11.8/83.7	75-85 gusting to 95	Cyclonic Storm
16.12.18/1130	12.4/83.2	80-90 gusting to 100	Cyclonic Storm
16.12.18/1730	13.3/82.7	90-100 gusting to 110	Severe Cyclonic Storm
16.12.18/2330	14.1/82.4	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/1130	15.7/82.0	80-90 gusting to 100	Cyclonic Storm
17.12.18/2330	16.9/82.2	70-80 gusting to 90	Cyclonic Storm
18.12.18/1130	17.8/82.8	55-65 gusting to 75	Deep Depression
18.12.18/2330	18.6/83.6	45-55 gusting to 65	Depression

Warnings:

(i) Heavy rainfall warning

- Rainfall at most places with heavy to very heavy falls at a few places very likely over coastal Andhra Pradesh on 16th & 17th December. Extremely heavy falls (≥ 20 cm) at isolated places also likely over north coastal Andhra Pradesh on 17th December. Rainfall at many places with heavy falls at isolated places likely over adjoining districts of north Tamil Nadu on 16th December.
- Rainfall at most places with heavy to very heavy falls at isolated places likely over Odisha and with heavy falls at isolated places over south Chhattisgarh on 16th & 17th December. Rainfall at

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

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

most places with heavy falls at isolated places also likely over adjoining districts of Jharkhand on 17th December.

- Rainfall at most places with heavy falls at isolated places likely over Gangetic West Bengal on 17th & 18th December.

(ii) Wind warning for Andhra Pradesh, north Tamil Nadu and Puducherry coasts

- Squally wind speed reaching 45-55 kmph gusting to 65 kmph is very likely to commence along & off South Andhra Pradesh, north Tamilnadu & Puducherry coasts from 16th December morning. It is very likely to increase gradually becoming gale wind speed of 80-90 kmph gusting to 100 kmph along & off central Andhra Pradesh coast and Yanam district of Puducherry on 17th December.
- Gale wind speed reaching 60-70 kmph gusting to 80 kmph is likely to prevail along & off remaining parts of Andhra Pradesh coast and squally wind speed 40-50 kmph gusting to 60 kmph is likely to prevail along & off north Tamilnadu & Puducherry coasts on 17th December.

(iii) Wind warning for Sea areas

Gale wind speed reaching 60-70 kmph gusting to 80 kmph prevails over southwest & adjoining southeast Bay of Bengal. It is very likely to increase gradually and become gale wind speed reaching 80-100 kmph gusting to 110 kmph over westcentral & adjoining southwest Bay of Bengal on 17th December.

(iv) Sea condition

The sea condition is high over southwest & adjoining southeast Bay of Bengal. The sea condition is very likely to be high to very high over southwest & adjoining westcentral Bay of Bengal from 16th December morning and over westcentral & adjoining southwest Bay of Bengal from 16th evening to 17th December evening. It is very likely to become rough to very rough along & off south Andhra Pradesh, north Tamil Nadu & Puducherry coasts from 16th morning and very rough to high along & off central Andhra Pradesh coast and Yanam district of Puducherry from 16th evening to 17th December evening.

(v) Storm Surge Warning

Storm surge of height of about 0.5 m to 1.0 m above the astronomical tides likely to inundate the low lying areas of Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry at the time of landfall.

(vi) Damage Expected over Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry:

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

(vii) Action suggested

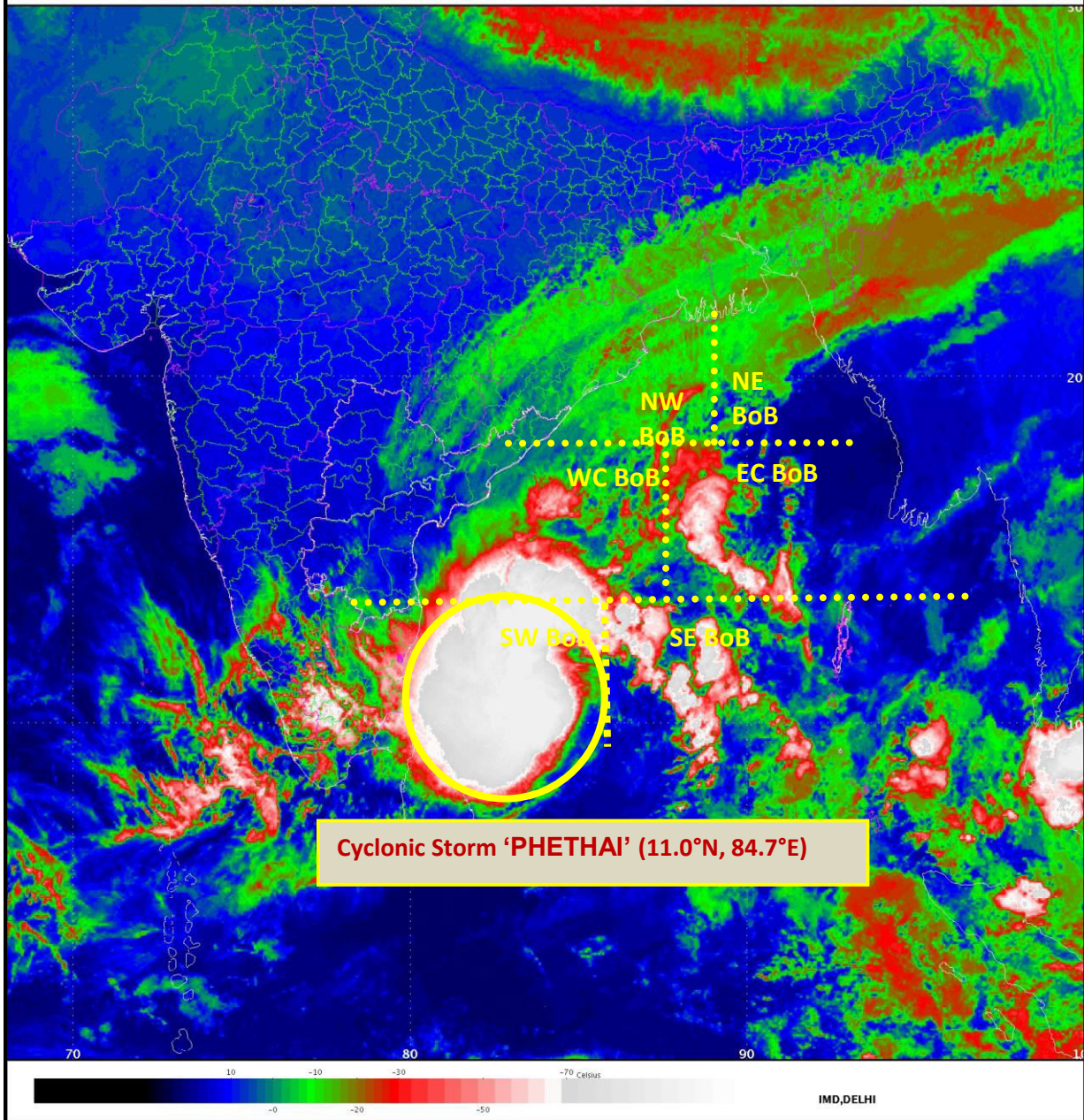
- Total suspension of fishing operations along & off Andhra Pradesh coast on 16th & 17th December.
- The fishermen are advised not to venture into southwest & westcentral Bay of Bengal and along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts till 17th December.
- Those, who are out in deep sea areas are advised to return to the coast.

The next bulletin will be issued at 0530 hrs IST of 16th December, 2018.

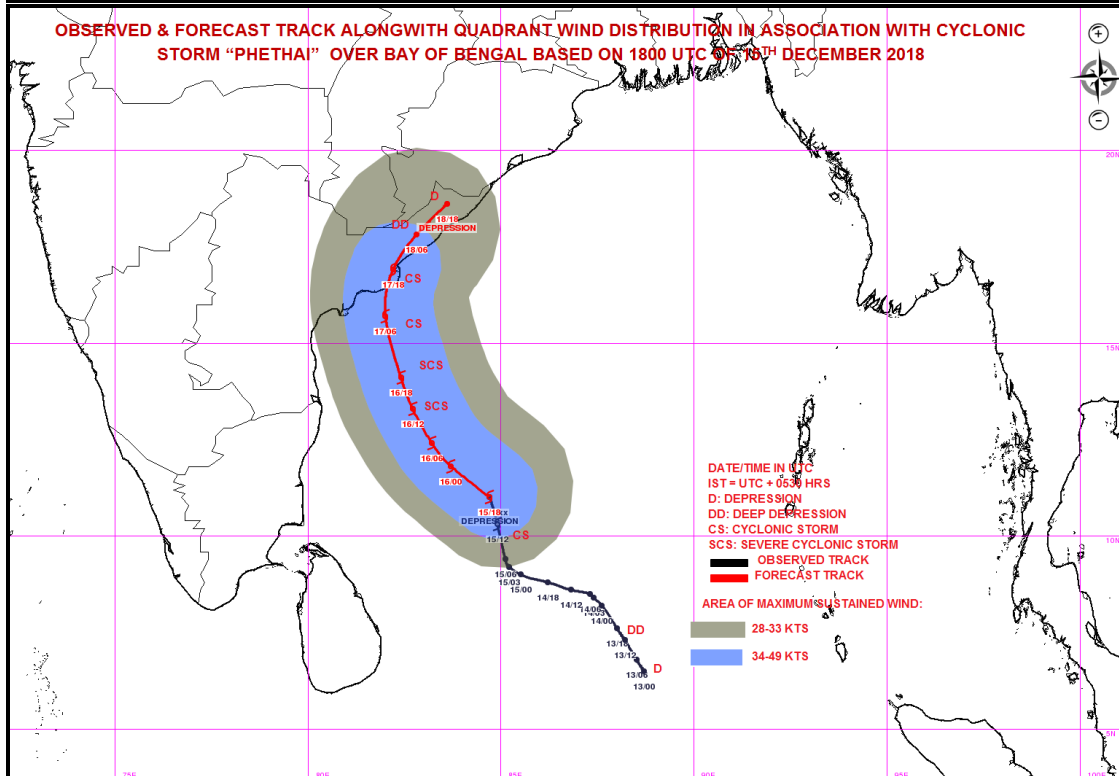
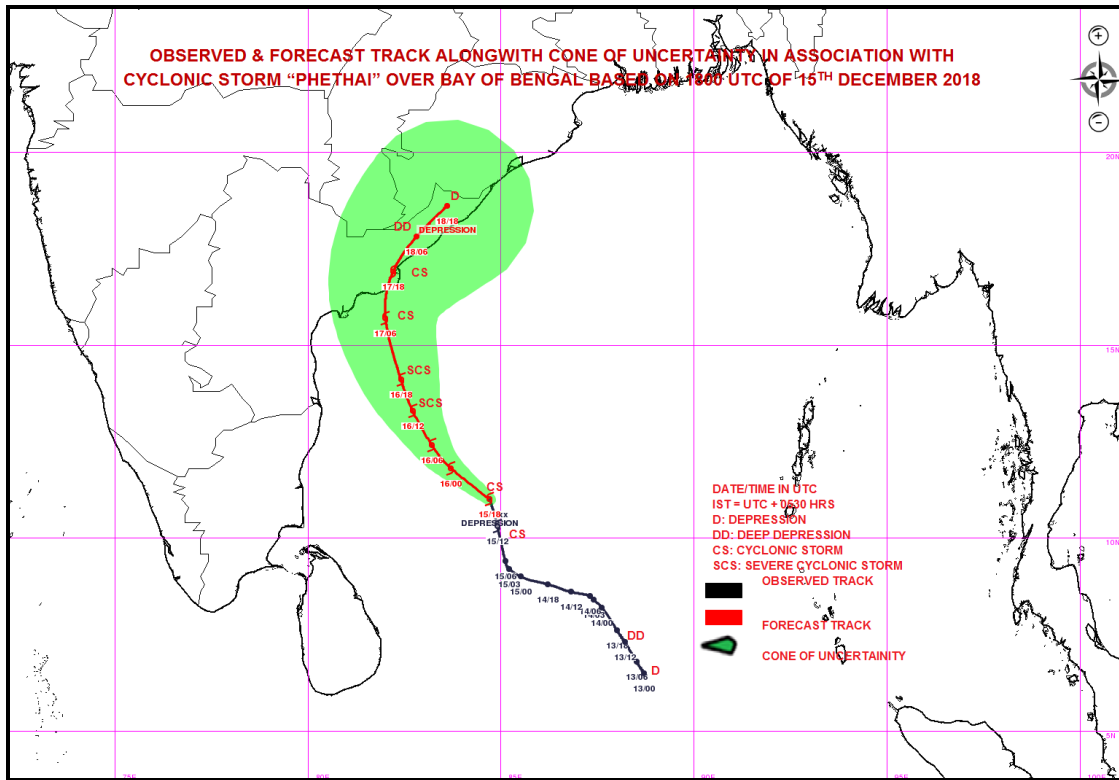
(V R Durai)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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%
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**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 17 (BOB/10/2018)

TIME OF ISSUE: 0530 HOURS IST

DATED: 16.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: Cyclonic storm 'PHETHAI' over southwest Bay of Bengal:

Cyclone warning for Andhra Pradesh & Puducherry (Yanam) Coasts "ORANGE MESSAGE"

The Cyclonic storm 'PHETHAI (pronounced as PAY-TI)' over southwest Bay of Bengal moved further north-northwestwards with a speed of 17 kmph during past 06 hours and lay centred at 0230 hrs IST of 16th December, 2018 over southwest Bay of Bengal near latitude 11.1°N and longitude 84.5°E, about 450 km east-northeast of Trincomalee (Sri Lanka), 510 km southeast of Chennai (Tamil Nadu) and 670 km south-southeast of Machilipatnam (Andhra Pradesh). It is very likely to intensify further into a Severe Cyclonic Storm during next 24 hours. It is very likely to move north-northwestwards and cross Andhra Pradesh coast between Machilipatnam and Kakinada during 17th December afternoon.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat.°N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
16.12.18/0230	11.1/84.5	65-75 gusting to 85	Cyclonic Storm
16.12.18/0530	11.8/83.7	75-85 gusting to 95	Cyclonic Storm
16.12.18/1130	12.4/83.2	80-90 gusting to 100	Cyclonic Storm
16.12.18/1730	13.3/82.7	90-100 gusting to 110	Severe Cyclonic Storm
16.12.18/2330	14.1/82.4	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/1130	15.7/82.0	80-90 gusting to 100	Cyclonic Storm
17.12.18/2330	16.9/82.2	70-80 gusting to 90	Cyclonic Storm
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18.12.18/2330	18.6/83.6	45-55 gusting to 65	Depression

Warnings:

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

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

most places with heavy falls at isolated places also likely over adjoining districts of Jharkhand on 17th December.

- Rainfall at most places with heavy falls at isolated places likely over Gangetic West Bengal on 17th & 18th December.

(ii) Wind warning for Andhra Pradesh, north Tamil Nadu and Puducherry coasts

- Squally wind speed reaching 45-55 kmph gusting to 65 kmph is very likely to commence along & off South Andhra Pradesh, north Tamilnadu & Puducherry coasts from 16th December morning. It is very likely to increase gradually becoming gale wind speed of 80-90 kmph gusting to 100 kmph along & off central Andhra Pradesh coast and Yanam district of Puducherry on 17th December.
- Gale wind speed reaching 60-70 kmph gusting to 80 kmph is likely to prevail along & off remaining parts of Andhra Pradesh coast and squally wind speed 40-50 kmph gusting to 60 kmph is likely to prevail along & off north Tamilnadu & Puducherry coasts on 17th December.

(iii) Wind warning for Sea areas

Gale wind speed reaching 60-70 kmph gusting to 80 kmph prevails over southwest & adjoining southeast Bay of Bengal. It is very likely to increase gradually and become gale wind speed reaching 80-100 kmph gusting to 110 kmph over westcentral & adjoining southwest Bay of Bengal on 17th December.

(iv) Sea condition

The sea condition is high over southwest & adjoining southeast Bay of Bengal. The sea condition is very likely to be high to very high over southwest & adjoining westcentral Bay of Bengal from 16th December morning and over westcentral & adjoining southwest Bay of Bengal from 16th evening to 17th December evening. It is very likely to become rough to very rough along & off south Andhra Pradesh, north Tamil Nadu & Puducherry coasts from 16th morning and very rough to high along & off central Andhra Pradesh coast and Yanam district of Puducherry from 16th evening to 17th December evening.

(v) Storm Surge Warning

Storm surge of height of about 0.5 m to 1.0 m above the astronomical tides likely to inundate the low lying areas of Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry at the time of landfall.

(vi) Damage Expected over Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry:

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

(vii) Action suggested

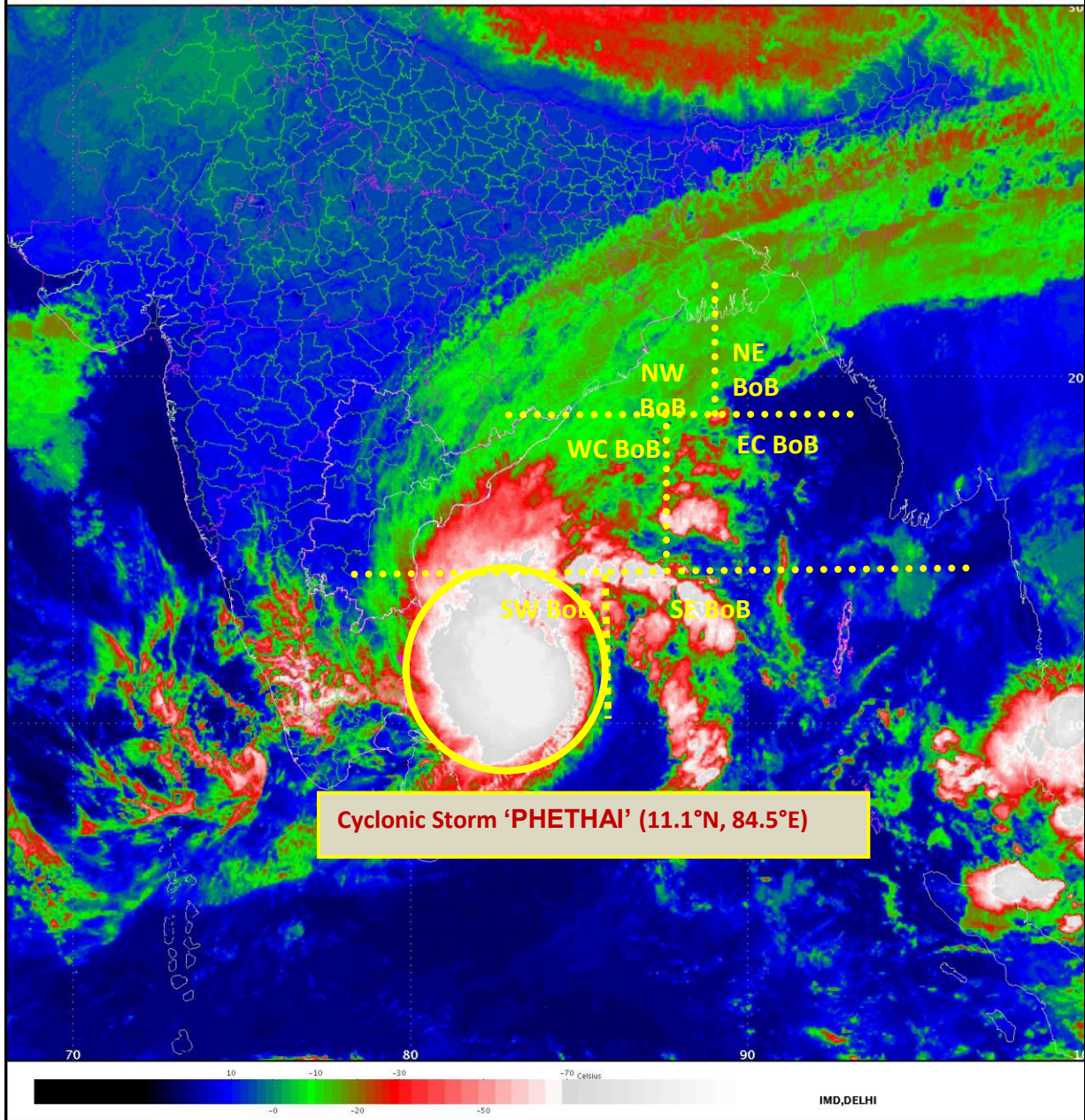
- Total suspension of fishing operations along & off Andhra Pradesh coast on 16th & 17th December.
- The fishermen are advised not to venture into southwest & westcentral Bay of Bengal and along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts till 17th December.
- Those, who are out in deep sea areas are advised to return to the coast.

The next bulletin will be issued at 0830 hrs IST of 16th December, 2018.

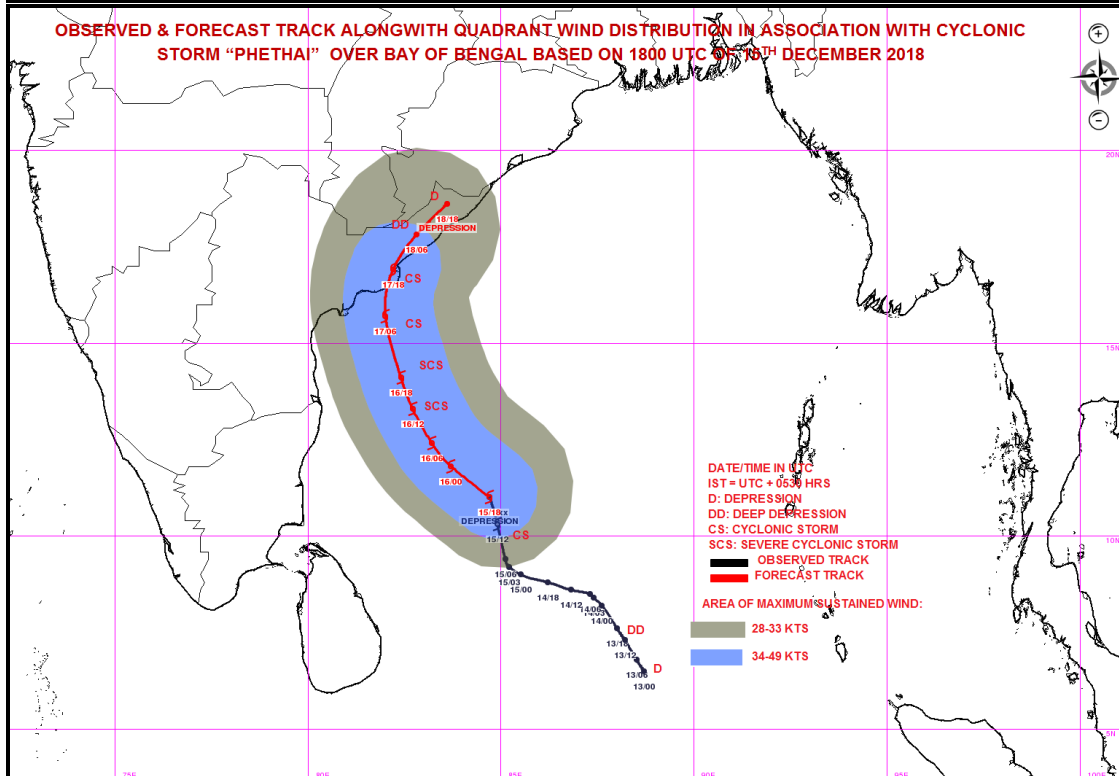
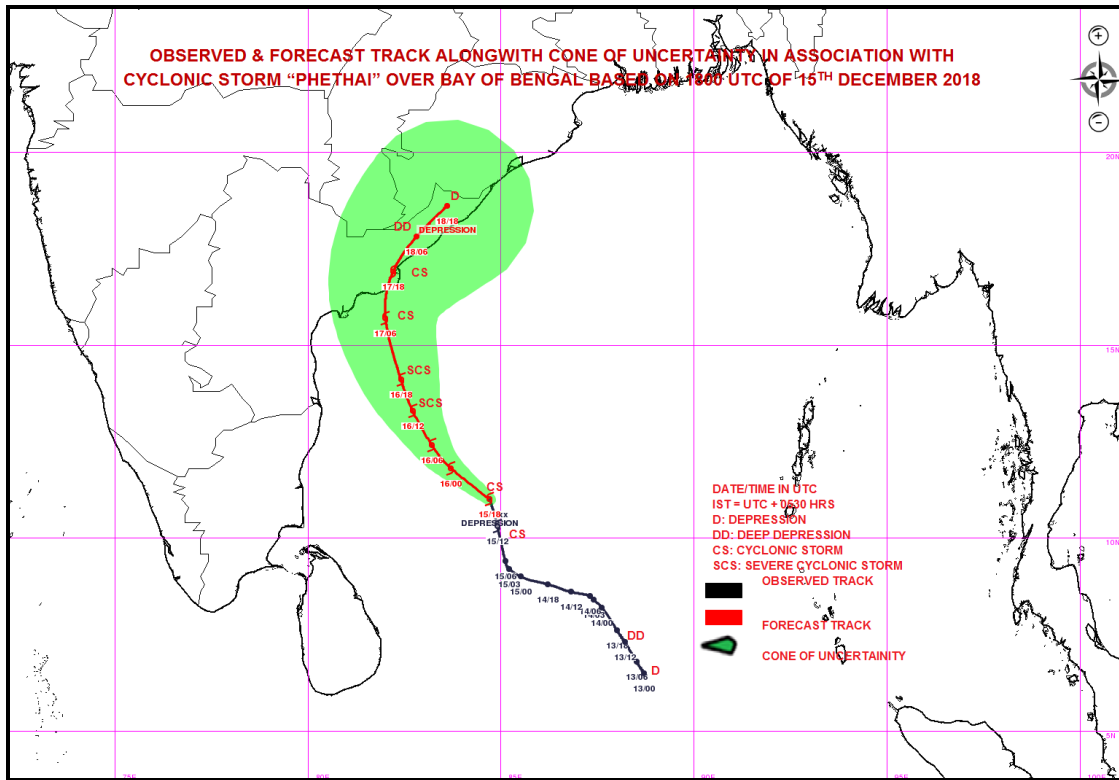
(V R Durai)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam

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



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Rainfall amount (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 (BOB/10/2018)

TIME OF ISSUE: 0900 HOURS IST

DATED: 16.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

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

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

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: Cyclonic storm 'PHETHAI' over southwest Bay of Bengal:

Cyclone warning for Andhra Pradesh & Puducherry (Yanam) Coasts "ORANGE MESSAGE"

The Cyclonic storm 'PHETHAI' over southwest Bay of Bengal moved further north-northwestwards with a speed of 07 kmph during past 06 hours and lay centred at 0530 hrs IST of 16th December, 2018 over southwest Bay of Bengal near latitude 11.3°N and longitude 84.4°E, about 460 km east-northeast of Trincomalee (Sri Lanka), 490 km east-southeast of Chennai (Tamil Nadu), 640 km south-southeast of Machilipatnam (Andhra Pradesh) and 670 km south-southeast Kakinada (Andhra Pradesh). It is very likely to move north-northwestwards and cross Andhra Pradesh coast between Machilipatnam and Kakinada during 17th December afternoon. It is very likely to intensify further into a Severe Cyclonic Storm during next 24 hours. However due to unfavourable environmental conditions, it is likely to weaken slightly before landfall.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat.°N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
16.12.18/0530	11.3/84.4	80-90 gusting to 100	Cyclonic Storm
16.12.18/1130	12.1/83.7	85-95 gusting to 105	Cyclonic Storm
16.12.18/1730	13.0/83.0	90-100 gusting to 110	Severe Cyclonic Storm
16.12.18/2330	13.9/82.6	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/0530	14.9/82.4	80-90 gusting to 100	Cyclonic Storm
17.12.18/1730	16.4/82.3	70-80 gusting to 90	Cyclonic Storm
18.12.18/0530	17.8/82.8	55-65 gusting to 75	Deep Depression
18.12.18/1730	18.6/83.5	40-50 gusting to 60	Depression

Warnings:

(i) Heavy rainfall warning

- Rainfall at most places with heavy to very heavy falls at a few places very likely over coastal Andhra Pradesh on 16th & 17th December. Extremely heavy falls (≥ 20 cm) at isolated places also likely over north coastal Andhra Pradesh on 17th December. Rainfall at many places with heavy falls at isolated places likely over adjoining districts of north Tamil Nadu on 16th December.

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

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

- Rainfall at many places with heavy falls at isolated places on 16th and rainfall at most places with isolated heavy to very heavy falls likely over Odisha on 17th and heavy falls at isolated places over south Chhattisgarh on 16th & 17th December. Rainfall at many places with heavy falls at isolated places also likely over adjoining districts of Jharkhand on 17th December.
- Rainfall at most places with heavy falls at isolated places likely over Gangetic West Bengal on 17th & 18th December.

(ii) Wind warning for Andhra Pradesh, north Tamil Nadu, Puducherry and south Odisha coasts

- Squally wind speed reaching 45-55 kmph gusting to 65 kmph prevails along & off South Andhra Pradesh, north Tamilnadu & Puducherry coasts. It is very likely to increase gradually becoming gale wind speed of 80-90 kmph gusting to 100 kmph along & off central Andhra Pradesh coast and Yanam district of Puducherry on 17th December.
- Gale wind speed reaching 60-70 kmph gusting to 80 kmph is likely to prevail along & off remaining parts of Andhra Pradesh coast and squally wind speed 40-50 kmph gusting to 60 kmph is likely to prevail along & off north Tamilnadu & Puducherry coasts on 17th December.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely along & off South Odisha coast on 17th December.

(iii) Wind warning for Sea areas

Gale wind speed reaching 80-90 kmph gusting to 90 kmph prevails over southwest Bay of Bengal. It is very likely to become gale wind speed reaching 80-100 kmph gusting to 110 kmph over westcentral Bay of Bengal on 17th December.

- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely over northwest Bay of Bengal on 17th December.

(iv) Sea condition

The sea condition is high over southwest Bay of Bengal around system center. The sea condition is very likely to be high to very high over southwest & adjoining westcentral Bay of Bengal on 16th December and over westcentral & adjoining southwest Bay of Bengal from 16th evening to 17th December. It is rough to very rough along & off south Andhra Pradesh, north Tamil Nadu & Puducherry coasts and will become very rough to high along & off central Andhra Pradesh coast and Yanam district of Puducherry from 16th evening to 17th December evening.

(v) Storm Surge Warning

Storm surge of height of about 0.5 m to 1.0 m above the astronomical tides likely to inundate the low lying areas of Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry at the time of landfall.

(vi) Damage Expected over Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry:

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

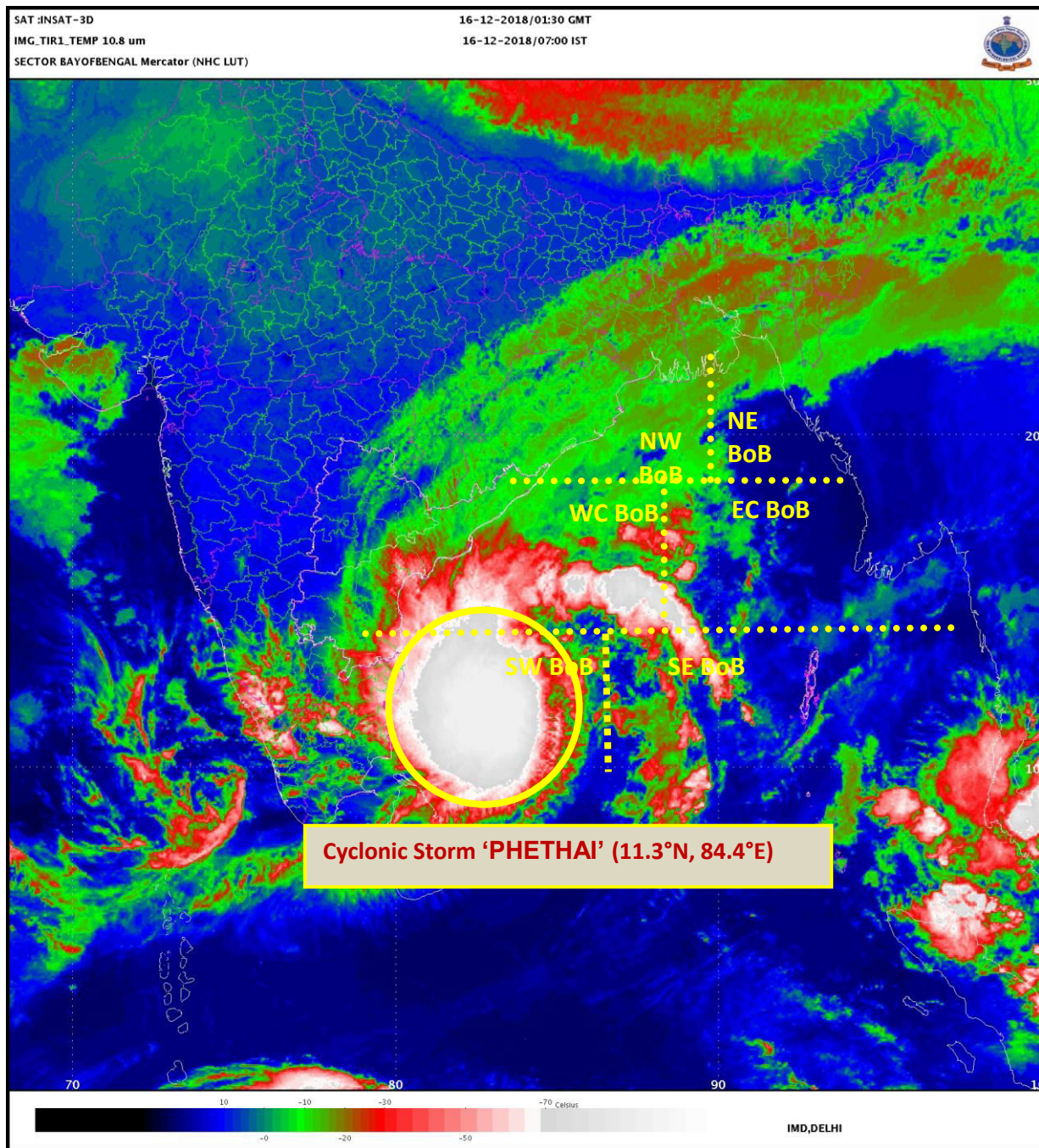
(vii) Action suggested

- Total suspension of fishing operations along & off Andhra Pradesh coast on 16th & 17th December.
- The fishermen are advised not to venture into southwest & westcentral Bay of Bengal and along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts till 17th December.
- Those, who are out in deep sea areas are advised to return to the coast.

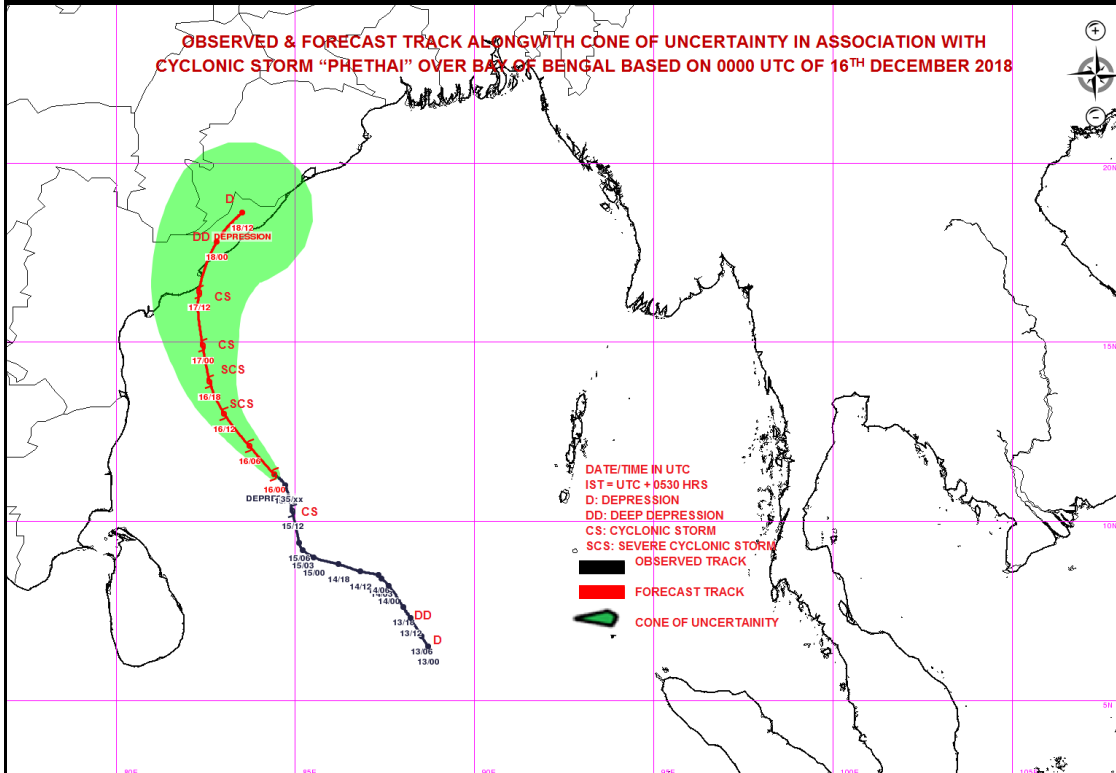
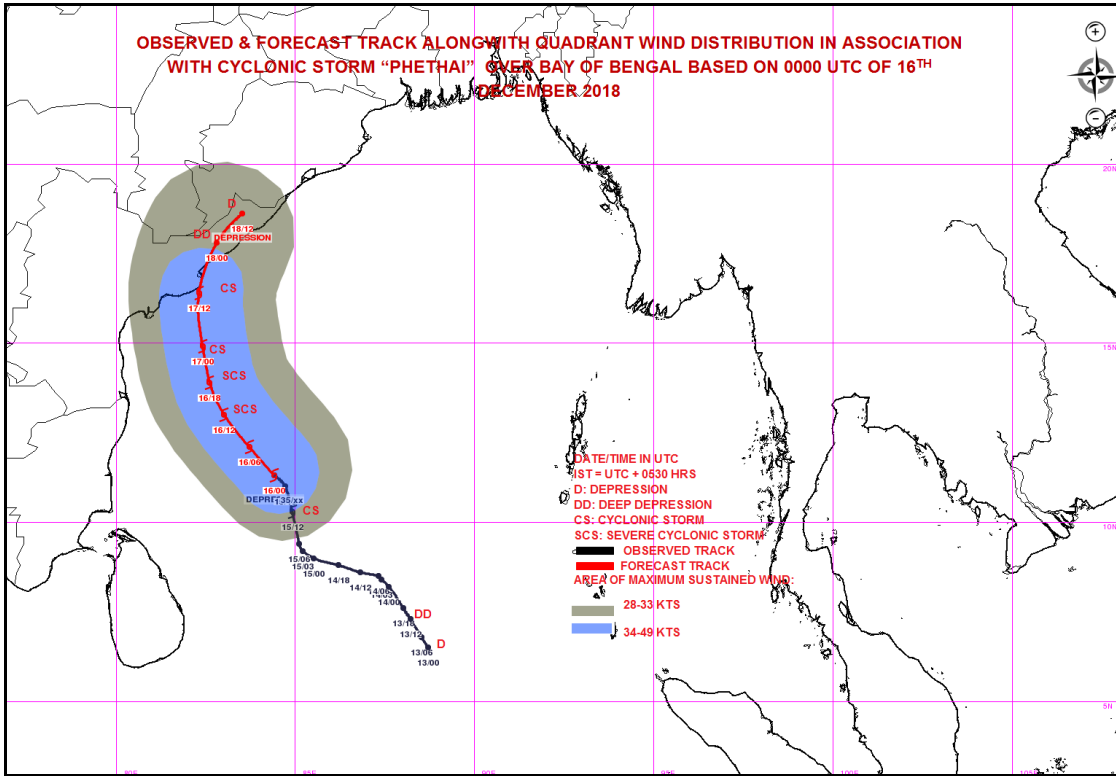
The next bulletin will be issued at 1130 hrs IST of 16th December, 2018.

(V R Durai)
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.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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. : 19 (BOB/10/2018) (MODIFIED)

TIME OF ISSUE: 1150 HOURS IST

DATED: 16.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (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, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029, 08645-246600)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: Cyclonic storm 'PHETHAI' over southwest & adjoining Westcentral Bay of Bengal:

Cyclone warning for Andhra Pradesh & Yanam (Puducherry) Coasts "ORANGE MESSAGE"

The Cyclonic storm 'PHETHAI' over southwest Bay of Bengal moved further north-northwestwards with a speed of 16 kmph during past 06 hours and lay centred at 0830 hrs IST of 16th December, 2018 over southwest & adjoining Westcentral Bay of Bengal near latitude 11.8°N and longitude 84.0°E, about 460 km northeast of Trincomalee (Sri Lanka), 430 km east-southeast of Chennai (Tamil Nadu), 560 km south-southeast of Machilipatnam (Andhra Pradesh) and 600 km south-southeast Kakinada (Andhra Pradesh). It is very likely to intensify further into a Severe Cyclonic Storm during next 24 hours. It is very likely to move north-northwestwards and cross Andhra Pradesh coast between Machilipatnam and Kakinada during 17th December afternoon. However, due to unfavourable environmental conditions, it is likely to weaken slightly before landfall and cross coast as a cyclonic storm.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat.°N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
16.12.18/0830	11.8/84.0	80-90 gusting to 100	Cyclonic Storm
16.12.18/1130	12.1/83.7	85-95 gusting to 105	Cyclonic Storm
16.12.18/1730	13.0/83.0	90-100 gusting to 110	Severe Cyclonic Storm
16.12.18/2330	13.9/82.6	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/0530	14.9/82.4	80-90 gusting to 100	Cyclonic Storm
17.12.18/1730	16.4/82.3	70-80 gusting to 90	Cyclonic Storm
18.12.18/0530	17.8/82.8	55-65 gusting to 75	Deep Depression
18.12.18/1730	18.6/83.5	40-50 gusting to 60	Depression

Warnings:

(i) Heavy rainfall warning

- Rainfall at most places with heavy to very heavy falls at a few places very likely over coastal Andhra Pradesh on 16th & 17th December. Extremely heavy falls (≥ 20 cm) at isolated places also likely over north coastal Andhra Pradesh (**East & west Godavari, Vishakhapatnam, Krishna, Guntur, Vizianagaram and Srikakulam Districts**) and Yanam district of

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

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

Puducherry on 17th December. Rainfall at many places with heavy falls at isolated places likely over adjoining districts of north Tamil Nadu on 16th December.

- Rainfall at many places with heavy falls at isolated places on 16th and rainfall at most places with isolated heavy to very heavy falls likely over Odisha on 17th and heavy falls at isolated places over south Chhattisgarh on 16th & 17th December. Rainfall at many places with heavy falls at isolated places also likely over Jharkhand on 17th December.
- Rainfall at most places with heavy falls at isolated places likely over Gangetic West Bengal on 17th December.

(ii) Wind warning for Andhra Pradesh, north Tamil Nadu, Puducherry and south Odisha coasts

- Squally wind speed reaching 45-55 kmph gusting to 65 kmph prevails along & off South Andhra Pradesh, north Tamilnadu & Puducherry coasts. It is very likely to increase gradually becoming gale wind speed of 80-90 kmph gusting to 100 kmph along & off central Andhra Pradesh coast (**East & west Godavari, Vishakhapatnam, Krishna, Guntur, Vizianagaram and Srikakulam Districts and Yanam district of Puducherry**) on 17th December. Gale wind speed reaching 60-70 kmph gusting to 80 kmph is likely to prevail along & off remaining parts of Andhra Pradesh coast and squally wind speed 40-50 kmph gusting to 60 kmph is likely to prevail along & off north Tamilnadu & Puducherry coasts on 17th December.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely along & off South Odisha coast on 17th December.

(iii) Wind warning for Sea areas

- Gale wind speed reaching 80-90 kmph gusting to 100 kmph prevails over southwest & adjoining westcentral Bay of Bengal. It is very likely to become gale wind speed reaching 80-100 kmph gusting to 110 kmph over westcentral Bay of Bengal on 17th December.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely over northwest Bay of Bengal on 17th December.

(iv) Sea condition

The sea condition is high over southwest & adjoining westcentral Bay of Bengal around system center. The sea condition is very likely to be high to very high over westcentral & adjoining southwest Bay of Bengal from 16th evening to 17th December. It is rough to very rough along & off south Andhra Pradesh, north Tamil Nadu & Puducherry coasts and will become very rough to high along & off central Andhra Pradesh coast and Yanam district of Puducherry from 16th evening to 17th December evening.

(v) Storm Surge Warning

Storm surge of height of about 0.5 m to 1.0 m above the astronomical tides likely to inundate the low lying areas of Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry at the time of landfall.

(vi) Damage Expected over Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry:

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

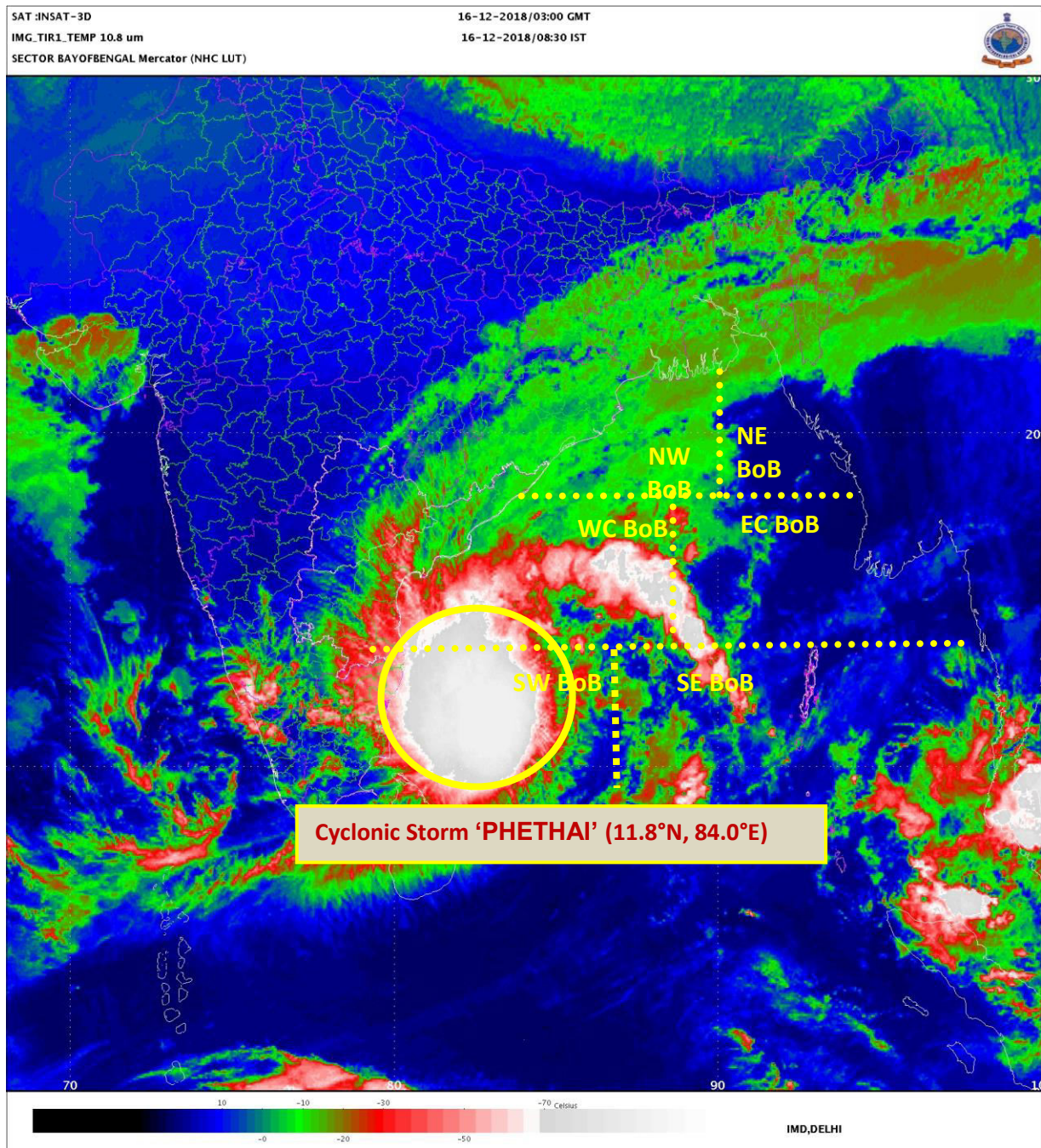
(vii) Action suggested

- Total suspension of fishing operations along & off Andhra Pradesh coast on 16th & 17th December.
- The fishermen are advised not to venture into southwest & westcentral Bay of Bengal and along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts till 17th December.
- The fishermen are advised not to venture along & off south Odisha coast on 17th December.
- Those, who are out in deep sea areas are advised to return to the coasts.

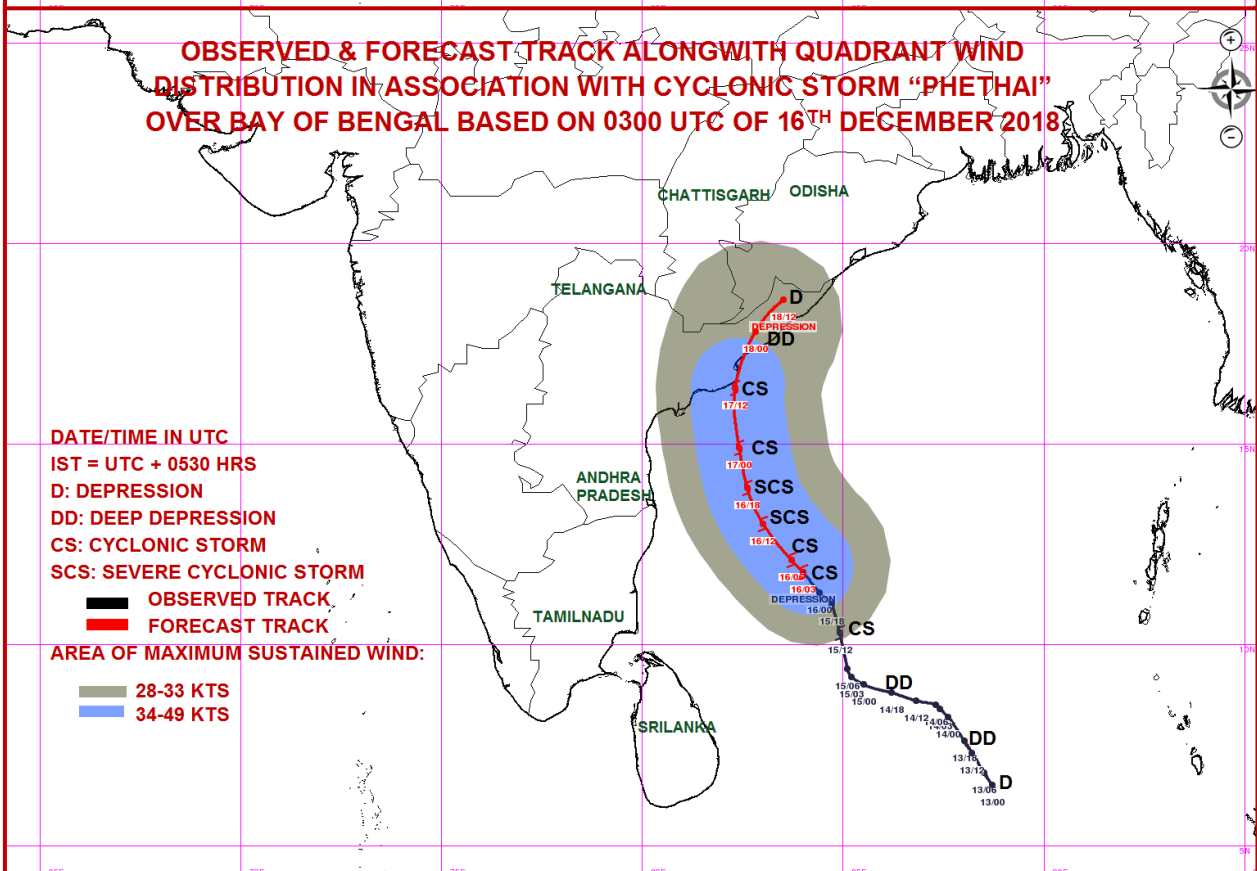
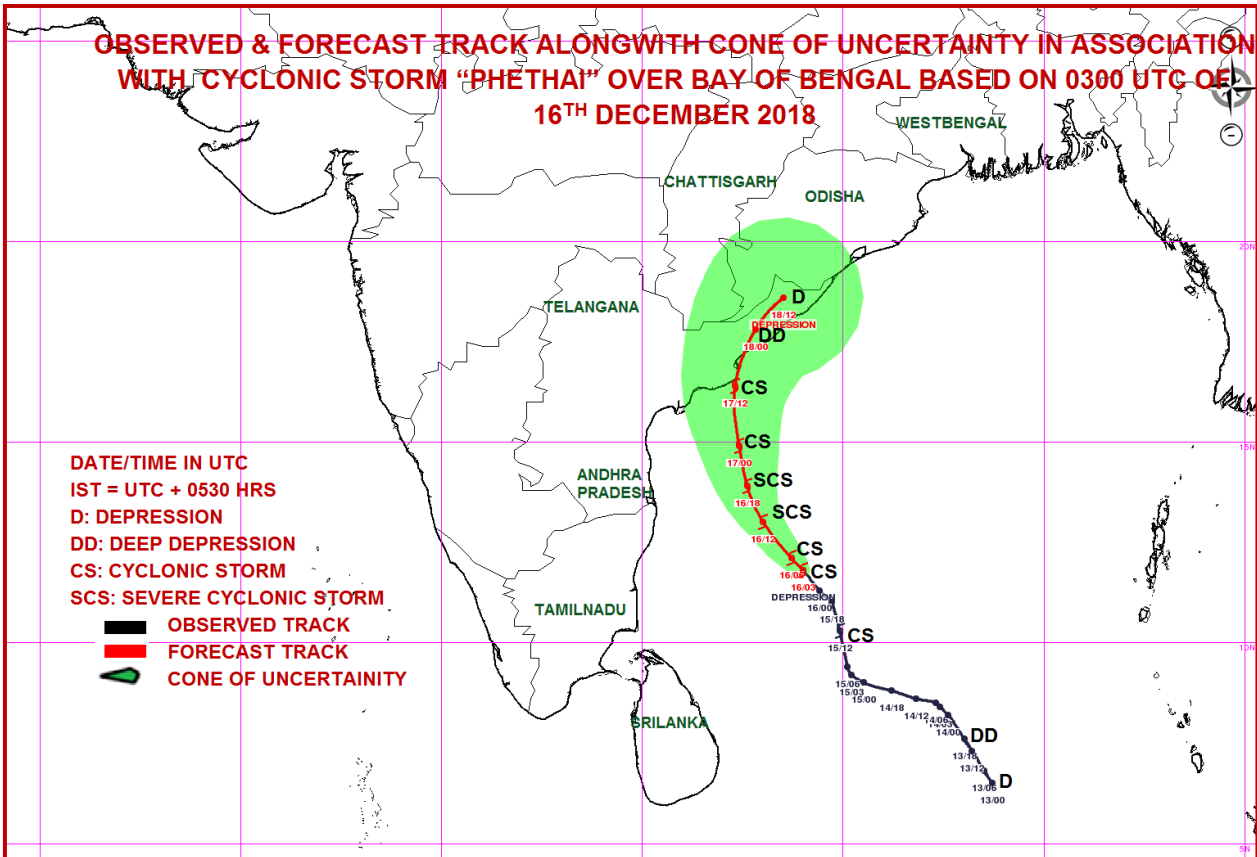
The next bulletin will be issued at 1430 hrs IST of 16th December, 2018.

**(Naresh Kumar)
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.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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. : 20 (BOB/10/2018)

TIME OF ISSUE: 1430 HOURS IST

DATED: 16.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (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, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029, 08645-246600)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

**Sub: Cyclonic storm 'PHETHAI' over southwest & adjoining westcentral Bay of Bengal:
Cyclone warning for Andhra Pradesh & Yanam (Puducherry) Coasts "ORANGE MESSAGE"**

The Cyclonic storm 'PHETHAI' over southwest & adjoining westcentral moved further north-northwestwards with a speed of 19 kmph during past 06 hours and lay centred at 1130 hrs IST of 16th December, 2018 over southwest & adjoining westcentral Bay of Bengal near latitude 12.2°N and longitude 83.9°E, about 490 km north-northeast of Trincomalee (Sri Lanka), 410 km east-southeast of Chennai (Tamil Nadu), 530 km south-southeast of Machilipatnam (Andhra Pradesh) and 560 km south-southeast Kakinada (Andhra Pradesh). It is very likely to intensify further into a Severe Cyclonic Storm during next 06 hours. It is very likely to move north-northwestwards and cross Andhra Pradesh coast around Kakinada during 17th December afternoon. However, due to unfavourable environmental conditions, it is likely to weaken slightly before landfall and cross coast as a cyclonic storm.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat.°N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
16.12.18/1130	12.2/83.9	80-90 gusting to 100	Cyclonic Storm
16.12.18/1730	13.0/83.4	90-100 gusting to 110	Severe Cyclonic Storm
16.12.18/2330	13.9/82.9	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/0530	14.9/82.6	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/1130	15.8/82.4	80-90 gusting to 100	Cyclonic Storm
17.12.18/1730	17.0/82.4	70-80 gusting to 90	Cyclonic Storm
17.12.18/2330	17.6/82.9	55-65 gusting to 75	Deep Depression
18.12.18/0530	18.3/83.8	40-50 gusting to 60	Depression

Warnings:

(i) Heavy rainfall warning

Region	16 December 2018*	17 December 2018*
coastal Andhra Pradesh and Yanam district of Puducherry	Rainfall at most places with heavy to very heavy falls at a few places	Rainfall at most places with heavy to very heavy falls at a few places over coastal Andhra Pradesh & extremely heavy falls (≥ 20 cm) at isolated places over north coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna, Guntur, Vizianagaram & Srikakulam Districts) and

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

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

		Yanam district of Puducherry
North Tamilnadu	Rainfall at many places with heavy falls at isolated places likely over Tiruvallur, Kanchipuram & Chennai Districts	Nil
Odisha	Rainfall at many places with heavy falls at isolated places	Rainfall most places with isolated heavy to very heavy falls likely over Odisha
Jharkhand	Nil	Rainfall at many places with isolated heavy falls
South Chhattisgarh	Rainfall at most places with isolated heavy falls	Rainfall at most places with isolated heavy falls
Gangetic West Bengal	Nil	Rainfall at most places with isolated heavy falls

Legends: **Red-Take Action; Orange- Be prepared; Yellow- be updated; Green: No warning**

Note 1: * Rainfall till 0830 IST of next day.

Note 2: Red colour warning means take action. It does not mean red alert.

(ii) **Wind warning for Andhra Pradesh, north Tamil Nadu, Puducherry and south Odisha coasts**

- Squally wind speed reaching 45-55 kmph gusting to 65 kmph prevails along & off South Andhra Pradesh, north Tamilnadu & Puducherry coasts. It is very likely to increase gradually becoming gale wind speed of 80-90 kmph gusting to 100 kmph along & off central Andhra Pradesh coast (**East & west Godavari, Vishakhapatnam, Krishna, Guntur, Vizianagaram and Srikakulam Districts and Yanam district of Puducherry**) on 17th December. Gale wind speed reaching 60-70 kmph gusting to 80 kmph is likely to prevail along & off remaining parts of Andhra Pradesh coast and squally wind speed 40-50 kmph gusting to 60 kmph is likely to prevail along & off north Tamilnadu & Puducherry coasts on 17th December.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely along & off South Odisha coast on 17th.

(iii) **Wind warning for Sea areas**

- Gale wind speed reaching 80-90 kmph gusting to 100 kmph prevails over southwest & adjoining westcentral Bay of Bengal. It is very likely to become gale wind speed reaching 80-100 kmph gusting to 110 kmph over westcentral Bay of Bengal on 16th December evening.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely over northwest Bay of Bengal on 17th December.

(iv) **Sea condition**

The sea condition is high over southwest & adjoining westcentral Bay of Bengal around system center. The sea condition is very likely to be high to very high over westcentral & adjoining southwest Bay of Bengal from 16th evening to 17th December. It is rough to very rough along & off south Andhra Pradesh, north Tamil Nadu & Puducherry coasts and will become very rough to high along & off central Andhra Pradesh coast and Yanam district of Puducherry from 16th evening to 17th December evening.

(v) **Storm Surge Warning**

Storm surge of height of about 0.5 m to 1.0 m above the astronomical tides likely to inundate the low lying areas of Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry at the time of landfall.

(vi) **Damage Expected over Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry:**

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

(vii) **Action suggested**

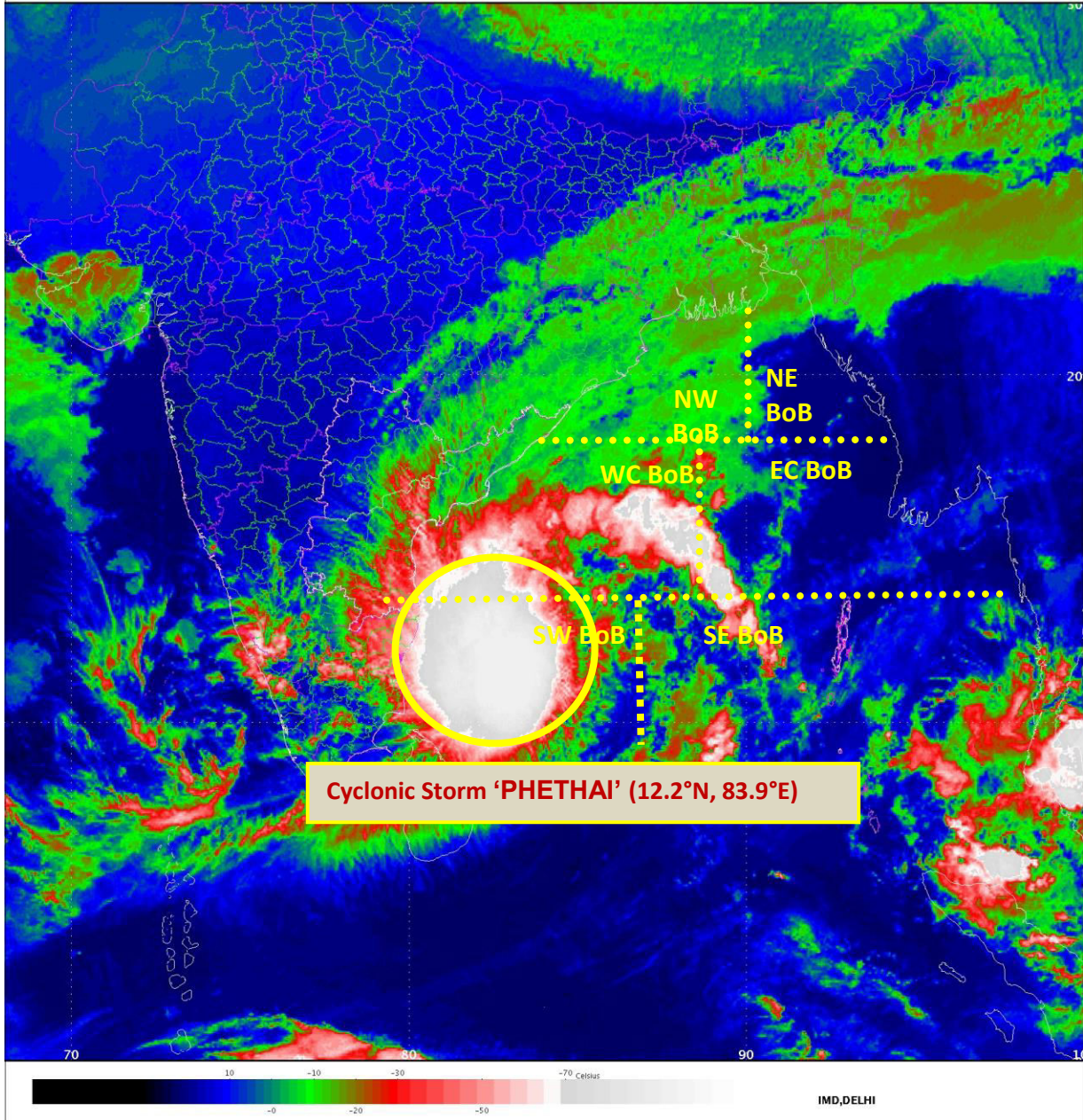
- Total suspension of fishing operations along & off Andhra Pradesh coast on 16th & 17th December.
- The fishermen are advised not to venture into southwest & westcentral Bay of Bengal and along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts till 17th December.
- The fishermen are advised not to venture along & off south Odisha coast on 17th December.
- Those, who are out in deep sea areas are advised to return to the coasts.

The next bulletin will be issued at 1730 hrs IST of 16th December, 2018.

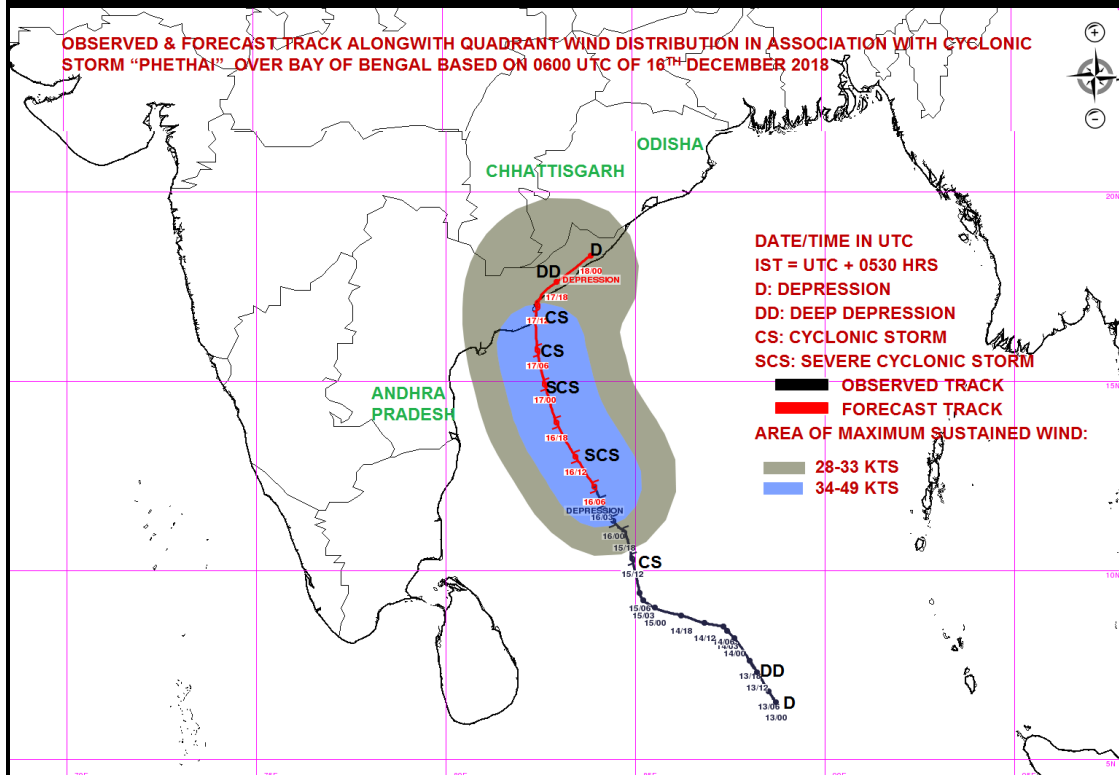
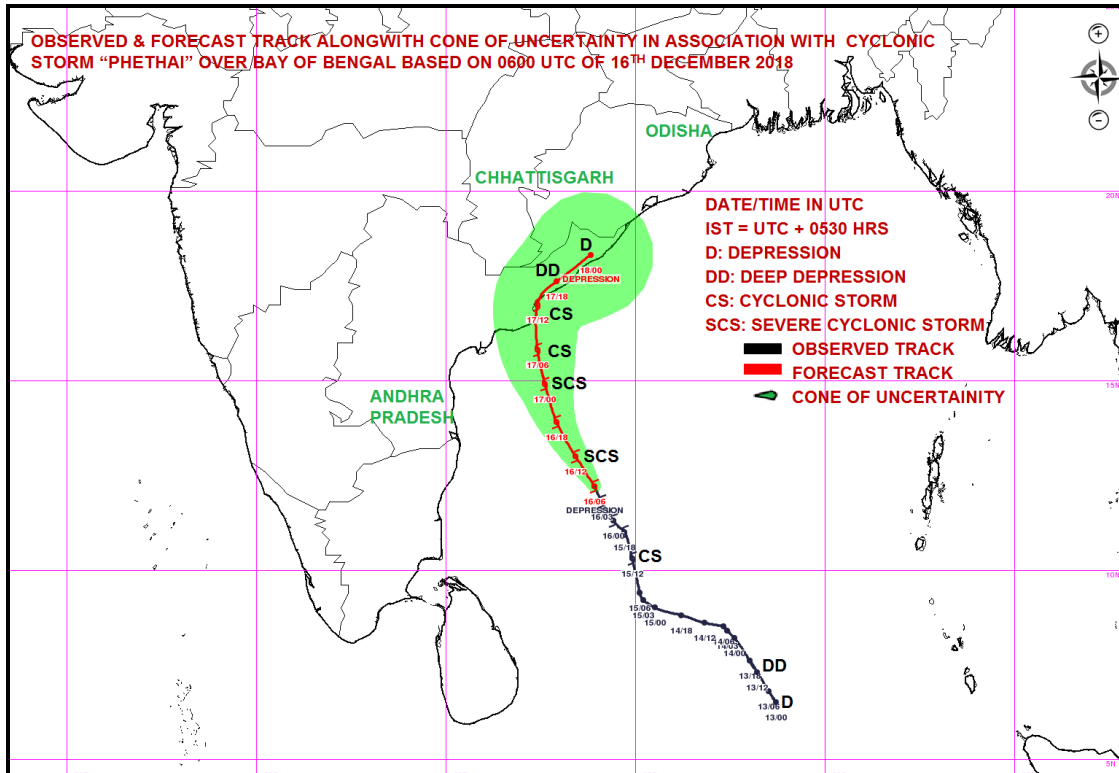
(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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. : 21 (BOB/10/2018)

TIME OF ISSUE: 1630 HOURS IST

DATED: 16.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (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, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029, 08645-246600)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

**Sub: Cyclonic storm 'PHETHAI' over southwest & adjoining westcentral Bay of Bengal:
Cyclone warning for Andhra Pradesh & Yanam (Puducherry) Coasts "ORANGE MESSAGE"**

The Cyclonic storm 'PHETHAI' over southwest & adjoining westcentral moved further north-northwestwards with a speed of 16 kmph during past 06 hours and lay centred at 1430 hrs IST of 16th December, 2018 over southwest & adjoining westcentral Bay of Bengal near latitude 12.6°N and longitude 83.7°E, about 520 km north-northeast of Trincomalee (Sri Lanka), 380 km east-southeast of Chennai (Tamil Nadu), 480 km south-southeast of Machilipatnam (Andhra Pradesh) and 510 km south-southeast Kakinada (Andhra Pradesh). It is very likely to intensify further into a Severe Cyclonic Storm during next 06 hours. It is very likely to move north-northwestwards and cross Andhra Pradesh coast around Kakinada during 17th December afternoon. However, due to unfavourable environmental conditions, it is likely to weaken slightly before landfall and cross coast as a cyclonic storm.

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat.°N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
16.12.18/1430	12.6/83.7	80-90 gusting to 100	Cyclonic Storm
16.12.18/1730	13.0/83.4	90-100 gusting to 110	Severe Cyclonic Storm
16.12.18/2330	13.9/82.9	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/0530	14.9/82.6	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/1130	15.8/82.4	80-90 gusting to 100	Cyclonic Storm
17.12.18/1730	17.0/82.4	70-80 gusting to 90	Cyclonic Storm
17.12.18/2330	17.6/82.9	55-65 gusting to 75	Deep Depression
18.12.18/0530	18.3/83.8	40-50 gusting to 60	Depression

Warnings:

(i) Heavy rainfall warning

Region	16 December 2018*	17 December 2018*
coastal Andhra Pradesh and Yanam district of Puducherry	Rainfall at most places with heavy to very heavy falls at a few places	Rainfall at most places with heavy to very heavy falls at a few places over coastal Andhra Pradesh & extremely heavy falls (≥ 20 cm) at isolated places over north coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna, Guntur, Vizianagaram & Srikakulam Districts) and

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

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

		Yanam district of Puducherry
North Tamilnadu	Rainfall at many places with heavy falls at isolated places likely over Tiruvallur, Kanchipuram & Chennai Districts	Nil
Odisha	Rainfall at many places with heavy falls at isolated places	Rainfall most places with isolated heavy to very heavy falls likely over Odisha
Jharkhand	Nil	Rainfall at many places with isolated heavy falls
South Chhattisgarh	Rainfall at most places with isolated heavy falls	Rainfall at most places with isolated heavy falls
Gangetic West Bengal	Nil	Rainfall at most places with isolated heavy falls

Legends: **Red-Take Action; Orange- Be prepared; Yellow- be updated; Green: No warning**

Note 1: * Rainfall till 0830 IST of next day.

Note 2: Red colour warning means take action. It does not mean red alert.

(ii) **Wind warning for Andhra Pradesh, north Tamil Nadu, Puducherry and south Odisha coasts**

- Squally wind speed reaching 45-55 kmph gusting to 65 kmph prevails along & off South Andhra Pradesh, north Tamilnadu & Puducherry coasts. It is very likely to increase gradually becoming gale wind speed of 80-90 kmph gusting to 100 kmph along & off central Andhra Pradesh coast (**East & west Godavari, Vishakhapatnam, Krishna, Guntur, Vizianagaram and Srikakulam Districts and Yanam district of Puducherry**) on 17th December. Gale wind speed reaching 60-70 kmph gusting to 80 kmph is likely to prevail along & off remaining parts of Andhra Pradesh coast and squally wind speed 40-50 kmph gusting to 60 kmph is likely to prevail along & off north Tamilnadu & Puducherry coasts on 17th December.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely along & off South Odisha coast on 17th.

(iii) **Wind warning for Sea areas**

- Gale wind speed reaching 80-90 kmph gusting to 100 kmph prevails over southwest & adjoining westcentral Bay of Bengal. It is very likely to become gale wind speed reaching 80-100 kmph gusting to 110 kmph over westcentral Bay of Bengal on 16th December evening.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely over northwest Bay of Bengal on 17th December.

(iv) **Sea condition**

The sea condition is high over southwest & adjoining westcentral Bay of Bengal around system center. The sea condition is very likely to be high to very high over westcentral & adjoining southwest Bay of Bengal from 16th evening to 17th December. It is rough to very rough along & off south Andhra Pradesh, north Tamil Nadu & Puducherry coasts and will become very rough to high along & off central Andhra Pradesh coast and Yanam district of Puducherry from 16th evening to 17th December evening.

(v) **Storm Surge Warning**

Storm surge of height of about 0.5 m to 1.0 m above the astronomical tides likely to inundate the low lying areas of Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry at the time of landfall.

(vi) **Damage Expected over Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry:**

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

(vii) **Action suggested**

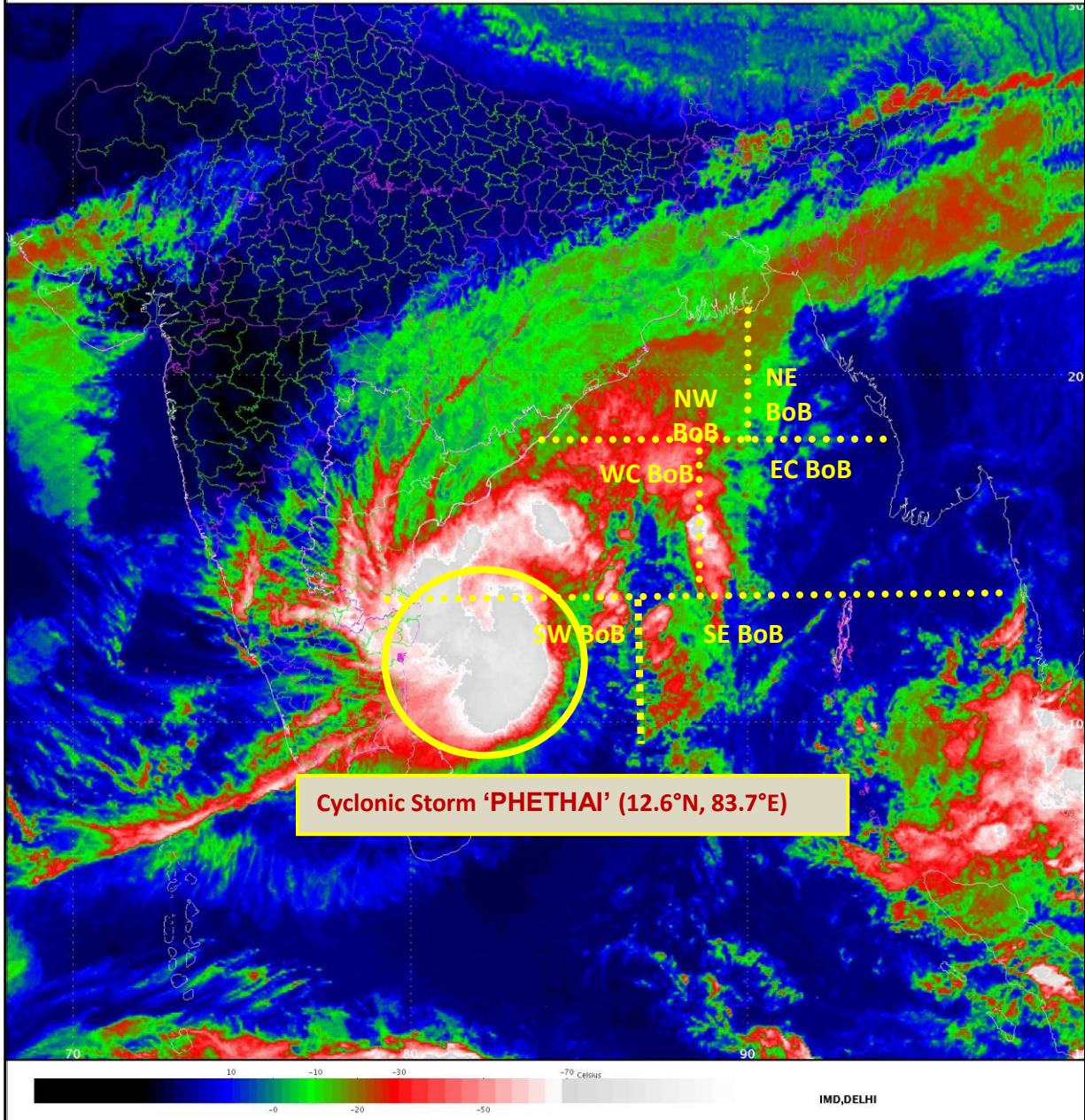
- Total suspension of fishing operations along & off Andhra Pradesh coast on 16th & 17th December.
- The fishermen are advised not to venture into southwest & westcentral Bay of Bengal and along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts till 17th December.
- The fishermen are advised not to venture along & off south Odisha coast on 17th December.
- Those, who are out in deep sea areas are advised to return to the coasts.

The next bulletin will be issued at 2030 hrs IST of 16th December, 2018.

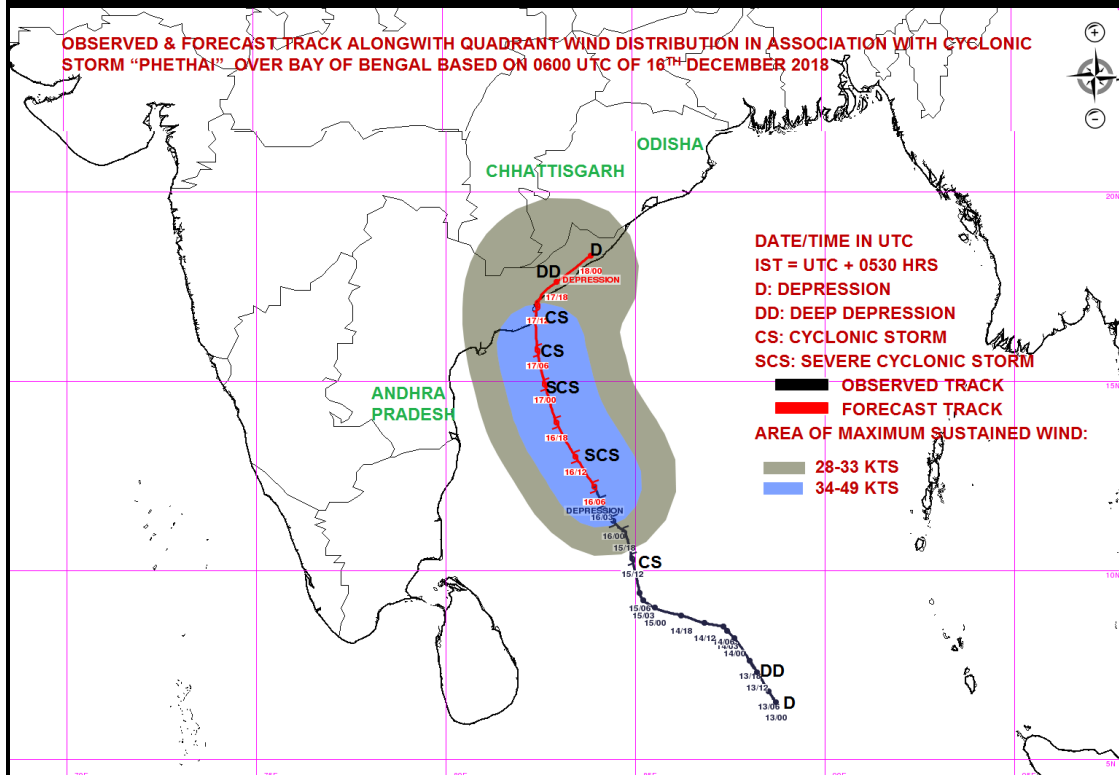
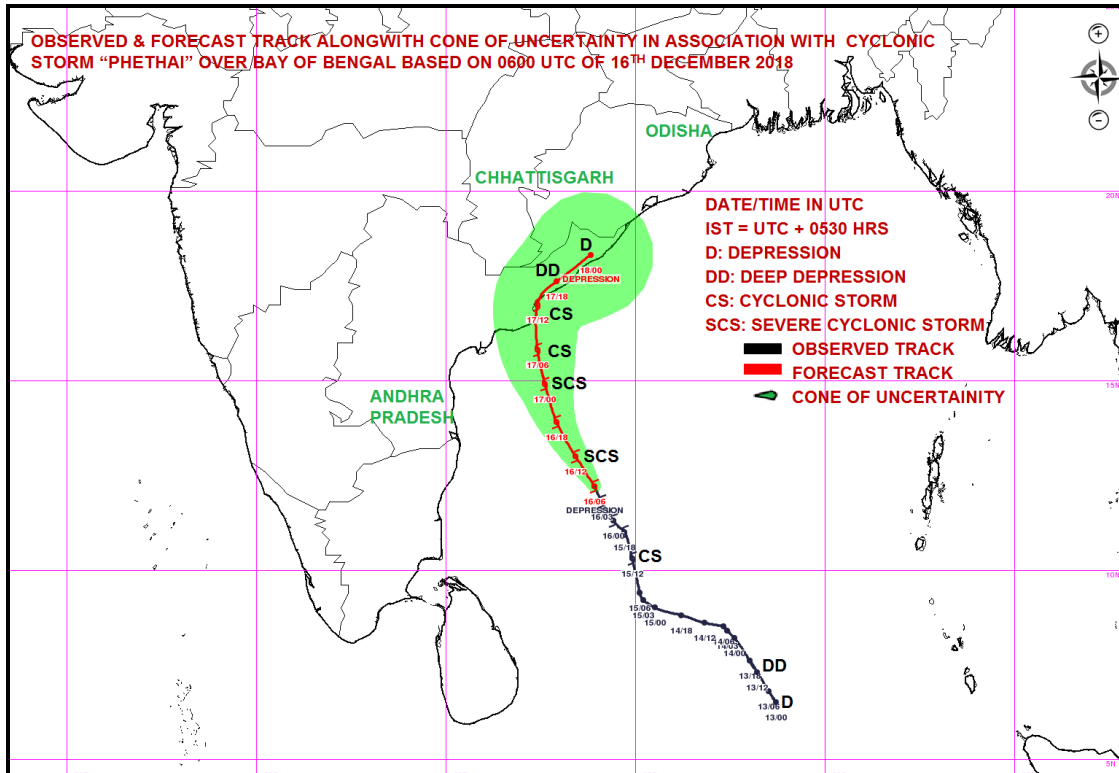
(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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. : 22 (BOB/10/2018)

TIME OF ISSUE: 2030 HOURS IST

DATED: 16.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (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, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029, 08645-246600)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

**Sub: Cyclonic Storm 'PHETHAI' over southwest & adjoining westcentral Bay of Bengal intensified into a severe cyclonic storm over westcentral & adjoining southwest Bay of Bengal:
Cyclone warning for Andhra Pradesh & Yanam (Puducherry) Coasts "ORANGE MESSAGE"**

The Cyclonic storm 'PHETHAI' over southwest & adjoining westcentral Bay of Bengal moved further north-northwestwards with a speed of 26 kmph during past 06 hours, intensified into a severe cyclonic storm and lay centred at 1730 hrs IST of 16th December, 2018 over westcentral & adjoining southwest Bay of Bengal near latitude 13.3°N and longitude 83.0°E, about 560 km north-northeast of Trincomalee (Sri Lanka), 300 km east-northeast of Chennai (Tamil Nadu), 380 km south-southeast of Machilipatnam (Andhra Pradesh) and 410 km south-southeast Kakinada (Andhra Pradesh). It is very likely to move north-northwestwards and cross Andhra Pradesh coast around Kakinada during 17th December afternoon. However, due to unfavourable environmental conditions, it is likely to weaken slightly before landfall and cross coast as a cyclonic storm with a wind speed of 70-90 kmph gusting to 100 kmph.

Cyclone 'PHETHAI' is also being tracked by DWR Chennai and Machilipatnam apart from Satellite and other observations. Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat.°N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
16.12.18/1730	13.3/83.0	95-105 gusting to 110	Severe Cyclonic Storm
16.12.18/2330	14.0/82.4	95-105 gusting to 110	Severe Cyclonic Storm
17.12.18/0530	14.9/82.0	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/1130	16.0/82.0	80-90 gusting to 100	Cyclonic Storm
17.12.18/1730	16.9/82.3	70-80 gusting to 90	Cyclonic Storm
17.12.18/2330	17.7/82.8	55-65 gusting to 75	Deep Depression
18.12.18/0530	18.4/83.5	40-50 gusting to 60	Depression

Warnings:

(i) Heavy rainfall warning

Region	16 December 2018*	17 December 2018*
Coastal Andhra Pradesh and Yanam district of Puducherry	Rainfall at most places with heavy to very heavy falls at a few places	Rainfall at most places with heavy to very heavy falls at a few places over coastal Andhra Pradesh & extremely heavy falls (≥ 20 cm) at isolated places over north coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna, Guntur, Vizianagaram & Srikakulam Districts) and Yanam district of Puducherry.

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

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

North Tamilnadu	Rainfall at many places with heavy falls at isolated places likely over Tiruvallur, Kanchipuram & Chennai Districts	Nil
Odisha	Rainfall at many places with heavy falls at isolated places	Rainfall most places with isolated heavy to very heavy falls likely over Odisha
Jharkhand	Nil	Rainfall at many places with isolated heavy falls
South Chhattisgarh	Rainfall at most places with isolated heavy falls	Rainfall at most places with isolated heavy falls
Gangetic West Bengal	Nil	Rainfall at most places with isolated heavy falls

Legends: Red-Take Action; Orange- Be prepared; Yellow- be updated; Green: No warning

Note 1: * Rainfall till 0830 IST of next day.

Note 2: Red colour warning means take action. It does not mean red alert.

(ii) Wind warning for Andhra Pradesh, north Tamil Nadu, Puducherry and south Odisha coasts

- Squally wind speed reaching 50-60 kmph gusting to 70 kmph prevails along & off South Andhra Pradesh, north Tamilnadu & Puducherry coasts. It is very likely to increase gradually becoming gale wind speed of 80-90 kmph gusting to 100 kmph along & off central Andhra Pradesh coast (**East & west Godavari, Vishakhapatnam, Krishna, Guntur, Vizianagaram and Srikakulam Districts and Yanam district of Puducherry**) on 17th December. Gale wind speed reaching 60-70 kmph gusting to 80 kmph is likely to prevail along & off remaining parts of Andhra Pradesh coast and squally wind speed 40-50 kmph gusting to 60 kmph is likely to prevail along & off north Tamilnadu & Puducherry coasts on 17th December.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely along & off South Odisha coast on 17th.

(iii) Wind warning for Sea areas

- Gale wind speed reaching 95-105 gusting to 115 prevails over westcentral & adjoining southwest Bay of Bengal around the system centre. It is very likely to become 80-100 kmph gusting to 110 kmph over westcentral Bay of Bengal from morning to night of 17th December.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely over northwest Bay of Bengal on 17th December.

(iv) Sea condition

The sea condition is very high over westcentral & adjoining southwest Bay of Bengal around system center. The sea condition is very likely to be high to very high over westcentral & adjoining southwest Bay of Bengal till 17th December. It is very rough along & off south Andhra Pradesh, north Tamil Nadu & Puducherry coasts and will become high along & off central Andhra Pradesh coast and Yanam district of Puducherry till 17th December evening.

(v) Storm Surge Warning

Storm surge of height of about 0.5 m to 1.0 m above the astronomical tides likely to inundate the low lying areas of Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry at the time of landfall.

(vi) Damage Expected over Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry:

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

(vii) Action suggested

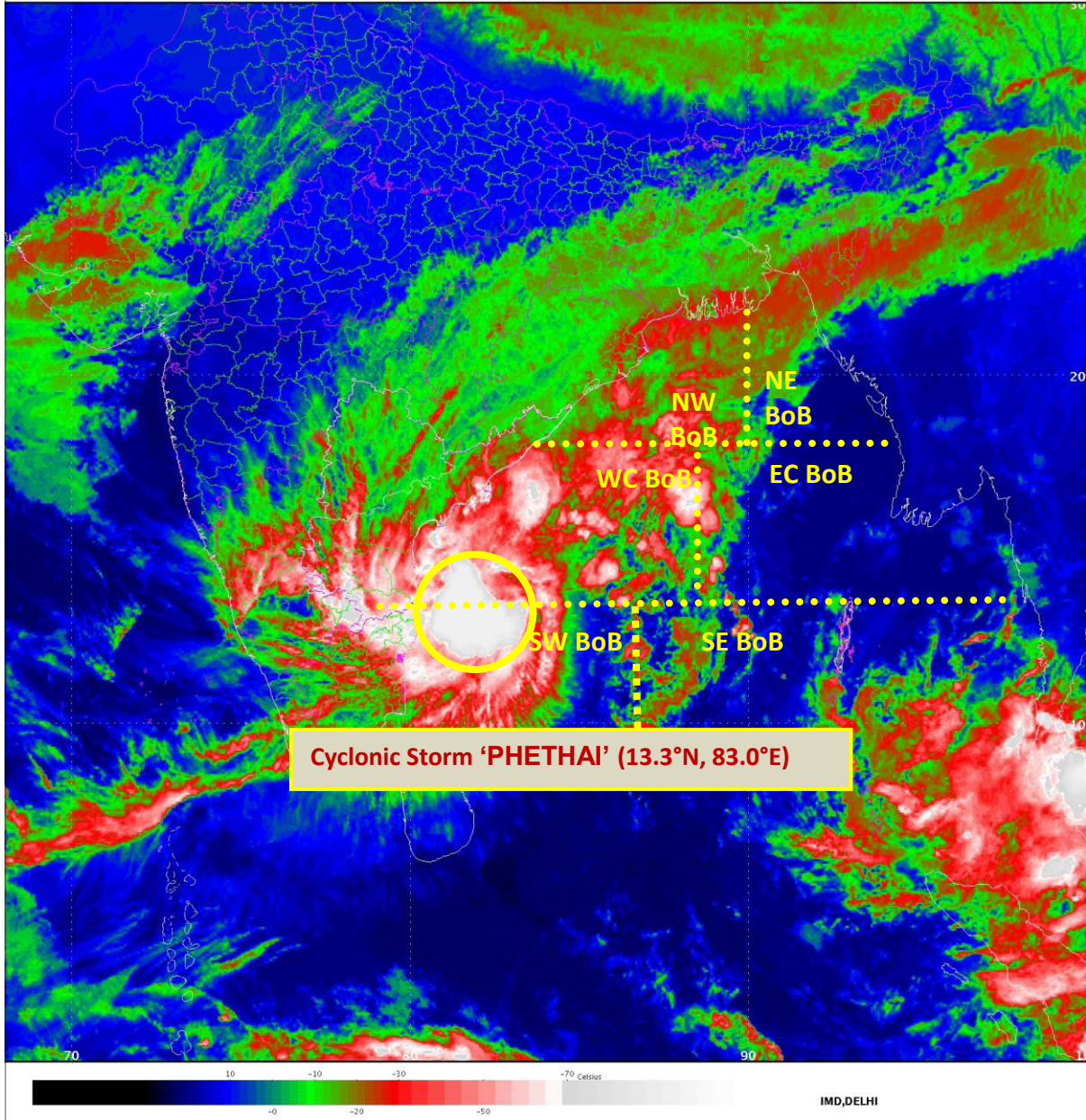
- Total suspension of fishing operations along & off Andhra Pradesh coast on 16th & 17th December.
- The fishermen are advised not to venture into southwest & westcentral Bay of Bengal and along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts till 17th December.
- The fishermen are advised not to venture along & off south Odisha coast on 17th December.
- Those, who are out in deep sea areas are advised to return to the coasts.

The next bulletin will be issued at 2330 hrs IST of 16th December, 2018.

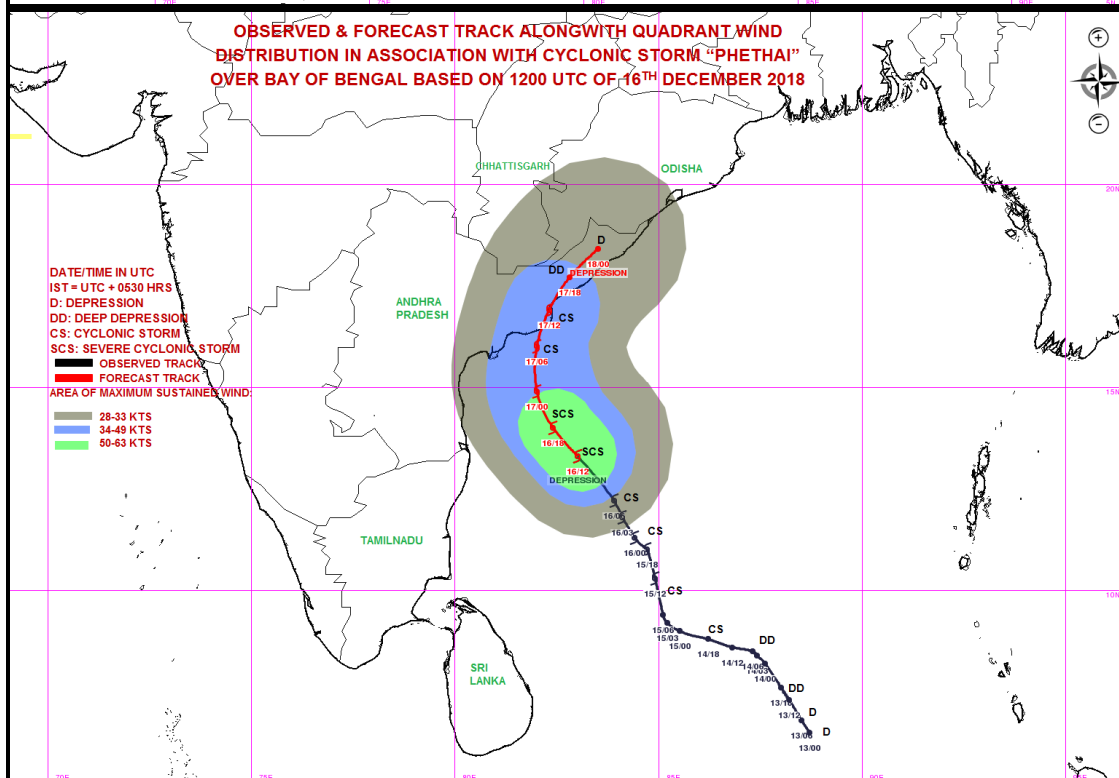
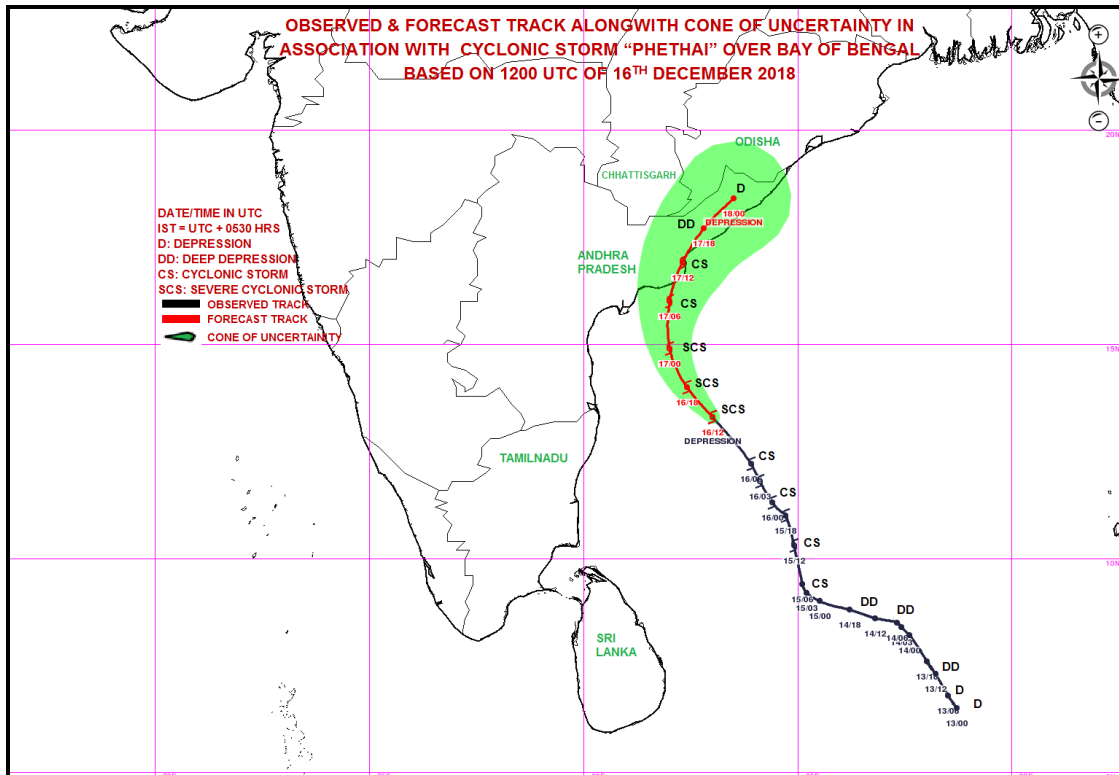
(Naresh Kumar)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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. : 23 (BOB/10/2018)

TIME OF ISSUE: 2300 HOURS IST

DATED: 16.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (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, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029, 08645-246600)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

**Sub: Severe Cyclonic Storm 'PHETHAI' over westcentral & adjoining southwest Bay of Bengal:
Cyclone warning for Andhra Pradesh & Yanam (Puducherry) Coasts "ORANGE MESSAGE"**

The Severe Cyclonic Storm 'PHETHAI' over westcentral & adjoining southwest Bay of Bengal moved northwestwards with a speed of 28 kmph during past 06 hours and lay centred at 2030 hrs IST of 16th December, 2018 over westcentral & adjoining southwest Bay of Bengal near latitude 13.8°N and longitude 82.7°E, about 600 km north-northeast of Trincomalee (Sri Lanka), 280 km east-northeast of Chennai (Tamil Nadu), 310 km south-southeast of Machilipatnam (Andhra Pradesh) and 350 km south-southeast of Kakinada (Andhra Pradesh). It is very likely to move north-northwestwards and cross Andhra Pradesh coast around Kakinada during 17th December afternoon. However, due to unfavourable environmental conditions, it is likely to weaken slightly before landfall and cross coast as a cyclonic storm with a wind speed of 70-90 kmph gusting to 100 kmph.

Cyclone 'PHETHAI' is also being tracked by DWR Chennai and Machilipatnam apart from Satellite and other observations. Forecast track and intensity are given in the following table:

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17.12.18/0530	14.9/82.0	90-100 gusting to 110	Severe Cyclonic Storm
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18.12.18/0530	18.4/83.5	40-50 gusting to 60	Depression

Warnings:

(i) Heavy rainfall warning

Region	16 December 2018*	17 December 2018*
Coastal Andhra Pradesh and Yanam district of Puducherry	Rainfall at most places with heavy to very heavy falls at a few places	Rainfall at most places with heavy to very heavy falls at a few places over coastal Andhra Pradesh & extremely heavy falls (≥ 20 cm) at isolated places over north coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna, Guntur, Vizianagaram & Srikulam Districts) and Yanam district of Puducherry.

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

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

North Tamilnadu	Rainfall at many places with heavy falls at isolated places likely over Tiruvallur, Kanchipuram & Chennai Districts	Nil
Odisha	Rainfall at many places with heavy falls at isolated places	Rainfall most places with isolated heavy to very heavy falls likely over Odisha
Jharkhand	Nil	Rainfall at many places with isolated heavy falls
South Chhattisgarh	Rainfall at most places with isolated heavy falls	Rainfall at most places with isolated heavy falls
Gangetic West Bengal	Nil	Rainfall at most places with isolated heavy falls

Legends: Red-Take Action; Orange- Be prepared; Yellow- be updated; Green: No warning

Note 1: * Rainfall till 0830 IST of next day.

Note 2: Red colour warning means take action. It does not mean red alert.

(ii) Wind warning for Andhra Pradesh, north Tamil Nadu, Puducherry and south Odisha coasts

- Squally wind speed reaching 50-60 kmph gusting to 70 kmph prevails along & off South Andhra Pradesh, north Tamilnadu & Puducherry coasts. It is very likely to increase gradually becoming gale wind speed of 80-90 kmph gusting to 100 kmph along & off central Andhra Pradesh coast (**East & west Godavari, Vishakhapatnam, Krishna, Guntur, Vizianagaram and Srikakulam Districts and Yanam district of Puducherry**) on 17th December. Gale wind speed reaching 60-70 kmph gusting to 80 kmph is likely to prevail along & off remaining parts of Andhra Pradesh coast and squally wind speed 40-50 kmph gusting to 60 kmph is likely to prevail along & off north Tamilnadu & Puducherry coasts on 17th December.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely along & off South Odisha coast on 17th.

(iii) Wind warning for Sea areas

- Gale wind speed reaching 95-105 gusting to 115 prevails over westcentral & adjoining southwest Bay of Bengal around the system centre. It is very likely to become 80-100 kmph gusting to 110 kmph over westcentral Bay of Bengal from morning to night of 17th December.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely over northwest Bay of Bengal on 17th December.

(iv) Sea condition

The sea condition is very high over westcentral & adjoining southwest Bay of Bengal around system centre. The sea condition is very likely to be high to very high over westcentral & adjoining southwest Bay of Bengal till 17th December. It is very rough along & off south Andhra Pradesh, north Tamil Nadu & Puducherry coasts and will become high along & off central Andhra Pradesh coast and Yanam district of Puducherry till 17th December evening.

(v) Storm Surge Warning

Storm surge of height of about 0.5 m to 1.0 m above the astronomical tides likely to inundate the low lying areas of Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry at the time of landfall.

(vi) Damage Expected over Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry:

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

(vii) Action suggested

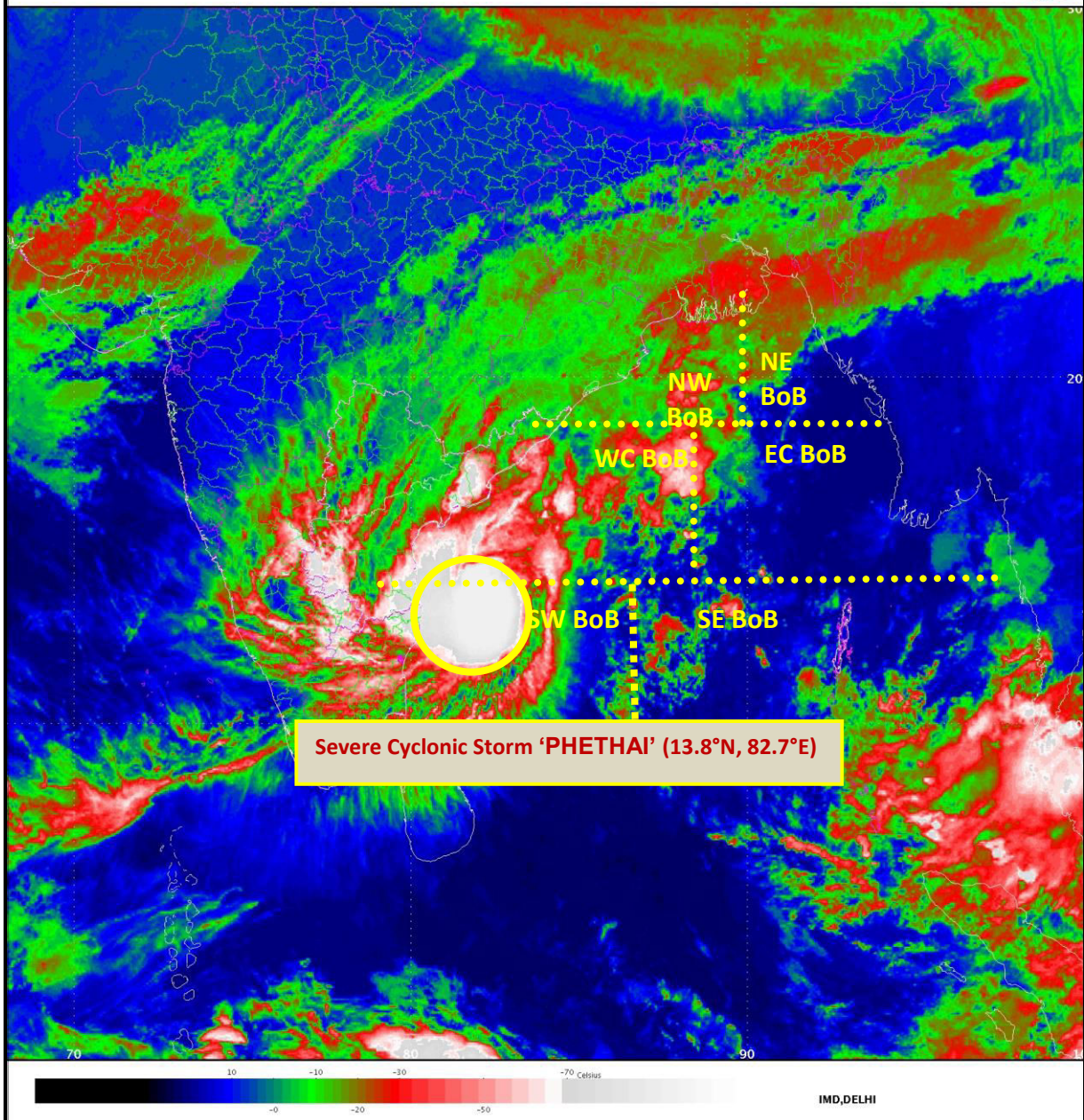
- Total suspension of fishing operations along & off Andhra Pradesh coast on 16th & 17th December.
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- The fishermen are advised not to venture along & off south Odisha coast on 17th December.
- Those, who are out in deep sea areas are advised to return to the coasts.

The next bulletin will be issued at 0230 hrs IST of 17th December, 2018.

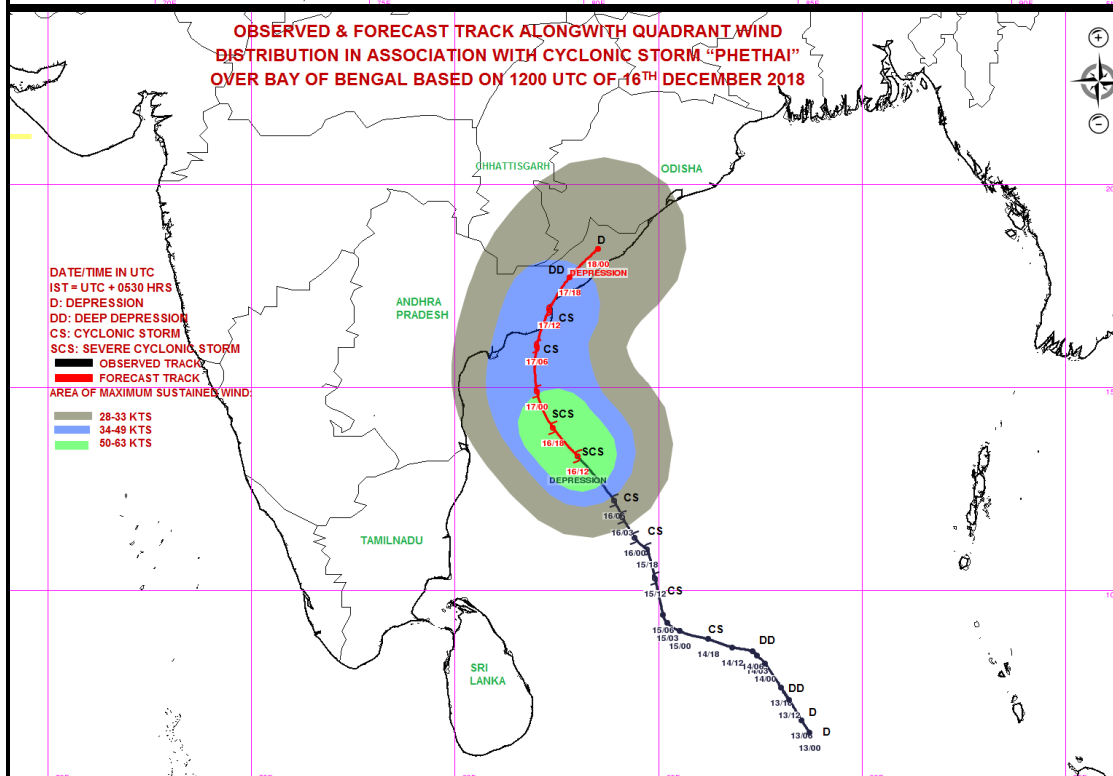
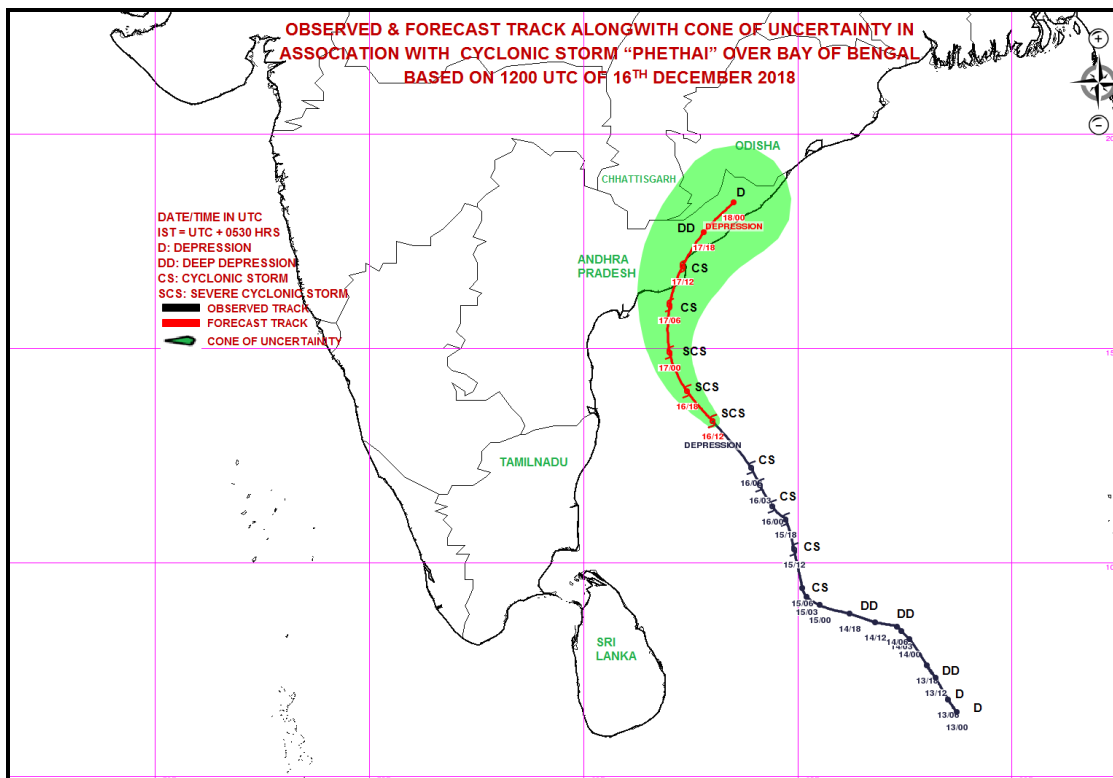
(Ananda K. Das)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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. : 24 (BOB/10/2018)

TIME OF ISSUE: 0130 HOURS IST

DATED: 17.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (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, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029, 08645-246600)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

**Sub: Severe Cyclonic Storm 'PHETHAI' over westcentral & adjoining southwest Bay of Bengal:
Cyclone warning for Andhra Pradesh & Yanam (Puducherry) Coasts "ORANGE MESSAGE"**

The Severe Cyclonic Storm 'PHETHAI' over westcentral & adjoining southwest Bay of Bengal moved north-northwestwards with a speed of 16 kmph during past 06 hours and lay centred at 2330 hrs IST of 16th December, 2018 over westcentral & adjoining southwest Bay of Bengal near latitude 14.0°N and longitude 82.5°E, about 620 km north-northeast of Trincomalee (Sri Lanka), 260 km east-northeast of Chennai (Tamil Nadu), 280 km south-southeast of Machilipatnam (Andhra Pradesh) and 330 km south-southeast of Kakinada (Andhra Pradesh). It is very likely to move north-northwestwards and cross Andhra Pradesh coast around Kakinada during 17th December afternoon. However, due to unfavourable environmental conditions, it is likely to weaken slightly before landfall and cross coast as a cyclonic storm with a wind speed of 70-90 kmph gusting to 100 kmph.

Cyclone 'PHETHAI' is also being tracked by DWR Chennai and Machilipatnam apart from Satellite and other observations. Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat.°N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
16.12.18/2330	14.0/82.5	95-105 gusting to 110	Severe Cyclonic Storm
17.12.18/0530	14.9/82.0	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/1130	16.0/82.0	80-90 gusting to 100	Cyclonic Storm
17.12.18/1730	16.9/82.3	70-80 gusting to 90	Cyclonic Storm
17.12.18/2330	17.7/82.8	55-65 gusting to 75	Deep Depression
18.12.18/0530	18.4/83.5	40-50 gusting to 60	Depression
18.12.18/1130	19.1/84.3	30-40 gusting to 50	Depression

Warnings:

(i) Heavy rainfall warning

Region	16 December 2018*	17 December 2018*
Coastal Andhra Pradesh and Yanam district of Puducherry	Rainfall at most places with heavy to very heavy falls at a few places	Rainfall at most places with heavy to very heavy falls at a few places over coastal Andhra Pradesh & extremely heavy falls (≥ 20 cm) at isolated places over north coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna, Guntur, Vizianagaram & Srikulam Districts) and Yanam district of Puducherry.

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

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

North Tamilnadu	Rainfall at many places with heavy falls at isolated places likely over Tiruvallur, Kanchipuram & Chennai Districts	Nil
Odisha	Rainfall at many places with heavy falls at isolated places	Rainfall most places with isolated heavy to very heavy falls likely over Odisha
Jharkhand	Nil	Rainfall at many places with isolated heavy falls
South Chhattisgarh	Rainfall at most places with isolated heavy falls	Rainfall at most places with isolated heavy falls
Gangetic West Bengal	Nil	Rainfall at most places with isolated heavy falls

Legends: Red-Take Action; Orange- Be prepared; Yellow- be updated; Green: No warning

Note 1: * Rainfall till 0830 IST of next day.

Note 2: Red colour warning means take action. It does not mean red alert.

(ii) Wind warning for Andhra Pradesh, north Tamil Nadu, Puducherry and south Odisha coasts

- Squally wind speed reaching 50-60 kmph gusting to 70 kmph prevails along & off South Andhra Pradesh, north Tamilnadu & Puducherry coasts. It is very likely to increase gradually becoming gale wind speed of 80-90 kmph gusting to 100 kmph along & off central Andhra Pradesh coast (**East & west Godavari, Vishakhapatnam, Krishna, Guntur, Vizianagaram and Srikakulam Districts and Yanam district of Puducherry**) on 17th December. Gale wind speed reaching 60-70 kmph gusting to 80 kmph is likely to prevail along & off remaining parts of Andhra Pradesh coast and squally wind speed 40-50 kmph gusting to 60 kmph is likely to prevail along & off north Tamilnadu & Puducherry coasts on 17th December.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely along & off South Odisha coast on 17th.

(iii) Wind warning for Sea areas

- Gale wind speed reaching 95-105 gusting to 115 prevails over westcentral & adjoining southwest Bay of Bengal around the system centre. It is very likely to become 80-100 kmph gusting to 110 kmph over westcentral Bay of Bengal from morning to night of 17th December.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely over northwest Bay of Bengal on 17th December.

(iv) Sea condition

The sea condition is very high over westcentral & adjoining southwest Bay of Bengal around system centre. The sea condition is very likely to be high to very high over westcentral & adjoining southwest Bay of Bengal till 17th December. It is very rough along & off south Andhra Pradesh, north Tamil Nadu & Puducherry coasts and will become high along & off central Andhra Pradesh coast and Yanam district of Puducherry till 17th December evening.

(v) Storm Surge Warning

Storm surge of height of about 0.5 m to 1.0 m above the astronomical tides likely to inundate the low lying areas of Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry at the time of landfall.

(vi) Damage Expected over Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry:

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

(vii) Action suggested

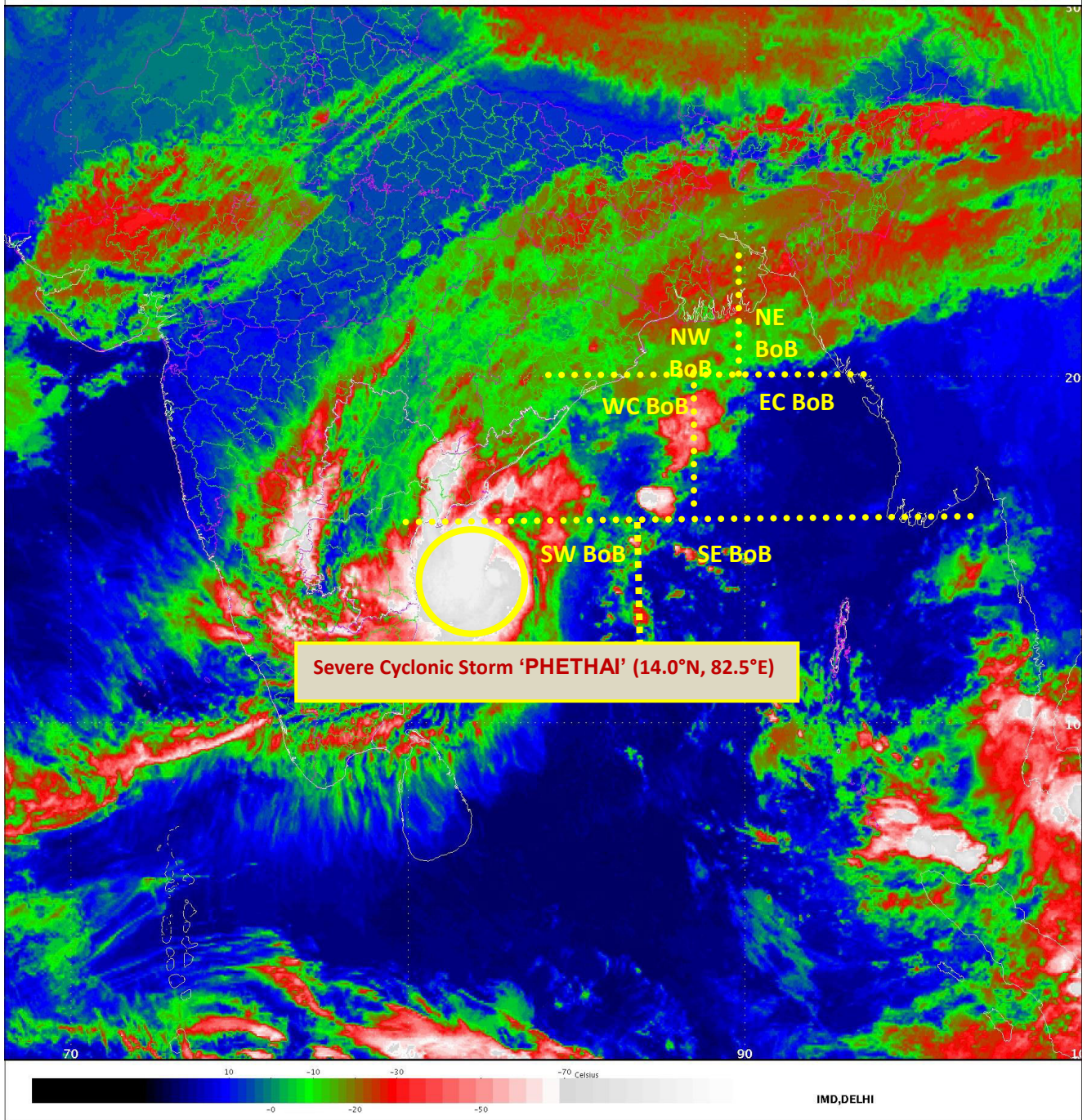
- Total suspension of fishing operations along & off Andhra Pradesh coast on 17th December.
- The fishermen are advised not to venture into southwest & westcentral Bay of Bengal and along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts till 17th December.
- The fishermen are advised not to venture along & off south Odisha coast on 17th December.
- Those, who are out in deep sea areas are advised to return to the coasts.

The next bulletin will be issued at 0530 hrs IST of 17th December, 2018.

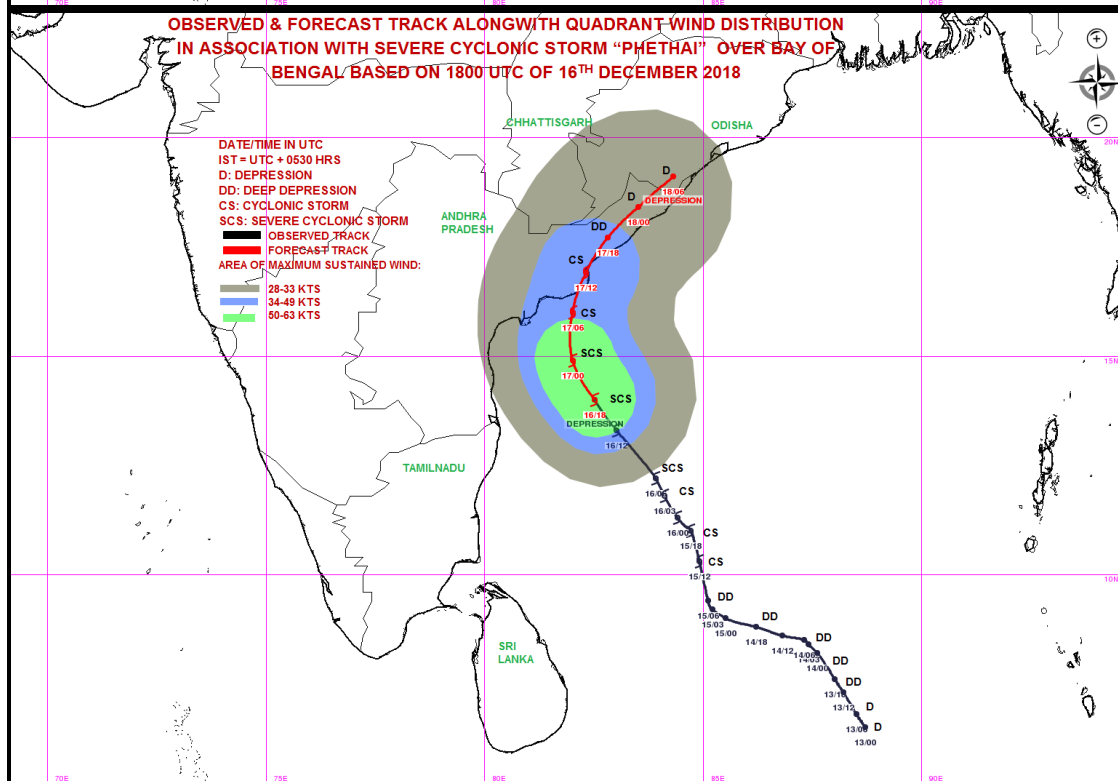
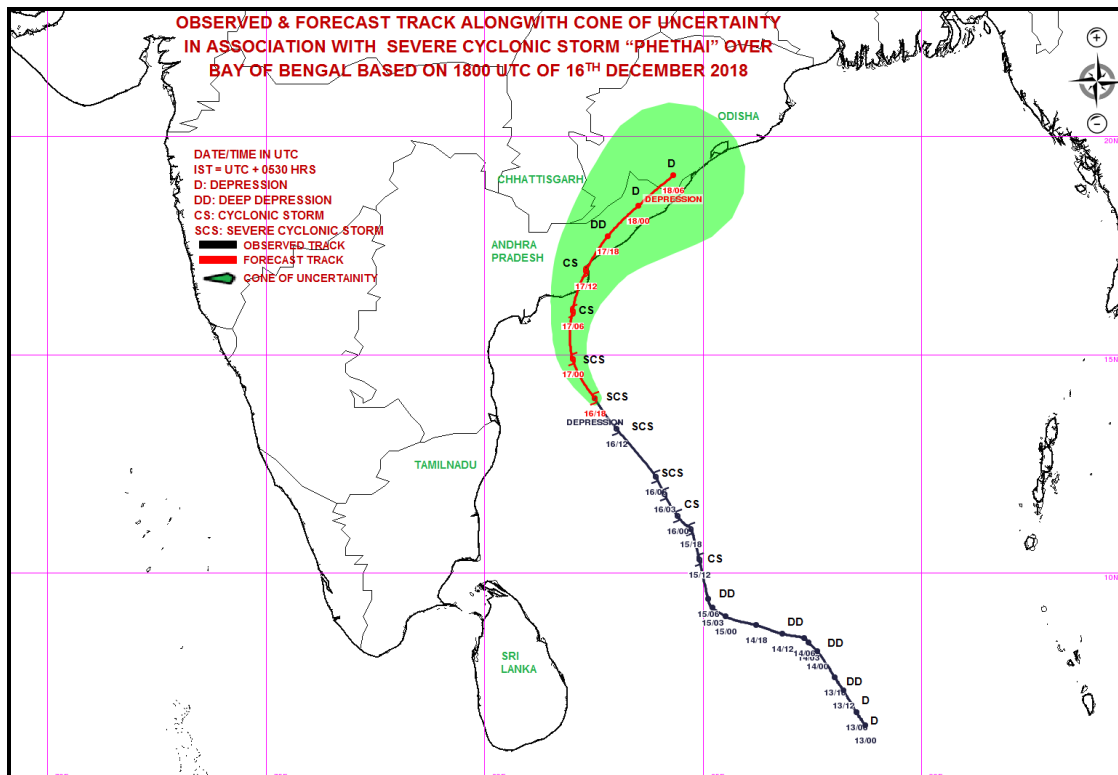
(Ananda K. Das)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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. : 25 (BOB/10/2018)

TIME OF ISSUE: 0530 HOURS IST

DATED: 17.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (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, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029, 08645-246600)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

**Sub: Severe Cyclonic Storm 'PHETHAI' over westcentral & adjoining southwest Bay of Bengal:
Cyclone warning for Andhra Pradesh & Yanam (Puducherry) Coasts "ORANGE MESSAGE"**

The Severe Cyclonic Storm 'PHETHAI' over westcentral & adjoining southwest Bay of Bengal moved north-northwestwards with a speed of 16 kmph during past 06 hours and lay centred at 0230 hrs IST of 17th December, 2018 over westcentral & adjoining southwest Bay of Bengal near latitude 14.5°N and longitude 82.2°E, about 660 km north-northeast of Trincomalee (Sri Lanka), 260 km east-northeast of Chennai (Tamil Nadu), 220 km south-southeast of Machilipatnam (Andhra Pradesh) and 270 km south-southeast of Kakinada (Andhra Pradesh). It is very likely to move north-northwestwards and cross Andhra Pradesh coast around Kakinada during 17th December afternoon. However, due to unfavourable environmental conditions, it is likely to weaken slightly before landfall and cross coast as a cyclonic storm with a wind speed of 70-90 kmph gusting to 100 kmph.

Cyclone 'PHETHAI' is also being tracked by DWR Chennai and Machilipatnam apart from Satellite and other observations. Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat.°N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
17.12.18/0230	14.5/82.2	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/0530	14.9/82.0	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/1130	16.0/82.0	80-90 gusting to 100	Cyclonic Storm
17.12.18/1730	16.9/82.3	70-80 gusting to 90	Cyclonic Storm
17.12.18/2330	17.7/82.8	55-65 gusting to 75	Deep Depression
18.12.18/0530	18.4/83.5	40-50 gusting to 60	Depression
18.12.18/1130	19.1/84.3	30-40 gusting to 50	Depression

Warnings:

(i) Heavy rainfall warning

Region	16 December 2018*	17 December 2018*
Coastal Andhra Pradesh and Yanam district of Puducherry	Rainfall at most places with heavy to very heavy falls at a few places	Rainfall at most places with heavy to very heavy falls at a few places over coastal Andhra Pradesh & extremely heavy falls (≥ 20 cm) at isolated places over north coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna, Guntur, Vizianagaram & Srikulam Districts) and Yanam district of Puducherry.

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

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

North Tamilnadu	Rainfall at many places with heavy falls at isolated places likely over Tiruvallur, Kanchipuram & Chennai Districts	Nil
Odisha	Rainfall at many places with heavy falls at isolated places	Rainfall most places with isolated heavy to very heavy falls likely over Odisha
Jharkhand	Nil	Rainfall at many places with isolated heavy falls
South Chhattisgarh	Rainfall at most places with isolated heavy falls	Rainfall at most places with isolated heavy falls
Gangetic West Bengal	Nil	Rainfall at most places with isolated heavy falls

Legends: Red-Take Action; Orange- Be prepared; Yellow- be updated; Green: No warning

Note 1: * Rainfall till 0830 IST of next day.

Note 2: Red colour warning means take action. It does not mean red alert.

(ii) Wind warning for Andhra Pradesh, north Tamil Nadu, Puducherry and south Odisha coasts

- Squally wind speed reaching 50-60 kmph gusting to 70 kmph prevails along & off South Andhra Pradesh, north Tamilnadu & Puducherry coasts. It is very likely to increase gradually becoming gale wind speed of 80-90 kmph gusting to 100 kmph along & off central Andhra Pradesh coast (**East & west Godavari, Vishakhapatnam, Krishna, Guntur, Vizianagaram and Srikakulam Districts and Yanam district of Puducherry**) on 17th December. Gale wind speed reaching 60-70 kmph gusting to 80 kmph is likely to prevail along & off remaining parts of Andhra Pradesh coast and squally wind speed 40-50 kmph gusting to 60 kmph is likely to prevail along & off north Tamilnadu & Puducherry coasts on 17th December.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely along & off South Odisha coast on 17th.

(iii) Wind warning for Sea areas

- Gale wind speed reaching 95-105 gusting to 115 prevails over westcentral & adjoining southwest Bay of Bengal around the system centre. It is very likely to become 80-100 kmph gusting to 110 kmph over westcentral Bay of Bengal from morning to night of 17th December.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely over northwest Bay of Bengal on 17th December.

(iv) Sea condition

The sea condition is very high over westcentral & adjoining southwest Bay of Bengal around system centre. The sea condition is very likely to be high to very high over westcentral & adjoining southwest Bay of Bengal till 17th December. It is very rough along & off south Andhra Pradesh, north Tamil Nadu & Puducherry coasts and will become high along & off central Andhra Pradesh coast and Yanam district of Puducherry till 17th December evening.

(v) Storm Surge Warning

Storm surge of height of about 0.5 m to 1.0 m above the astronomical tides likely to inundate the low lying areas of Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry at the time of landfall.

(vi) Damage Expected over Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry:

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

(vii) Action suggested

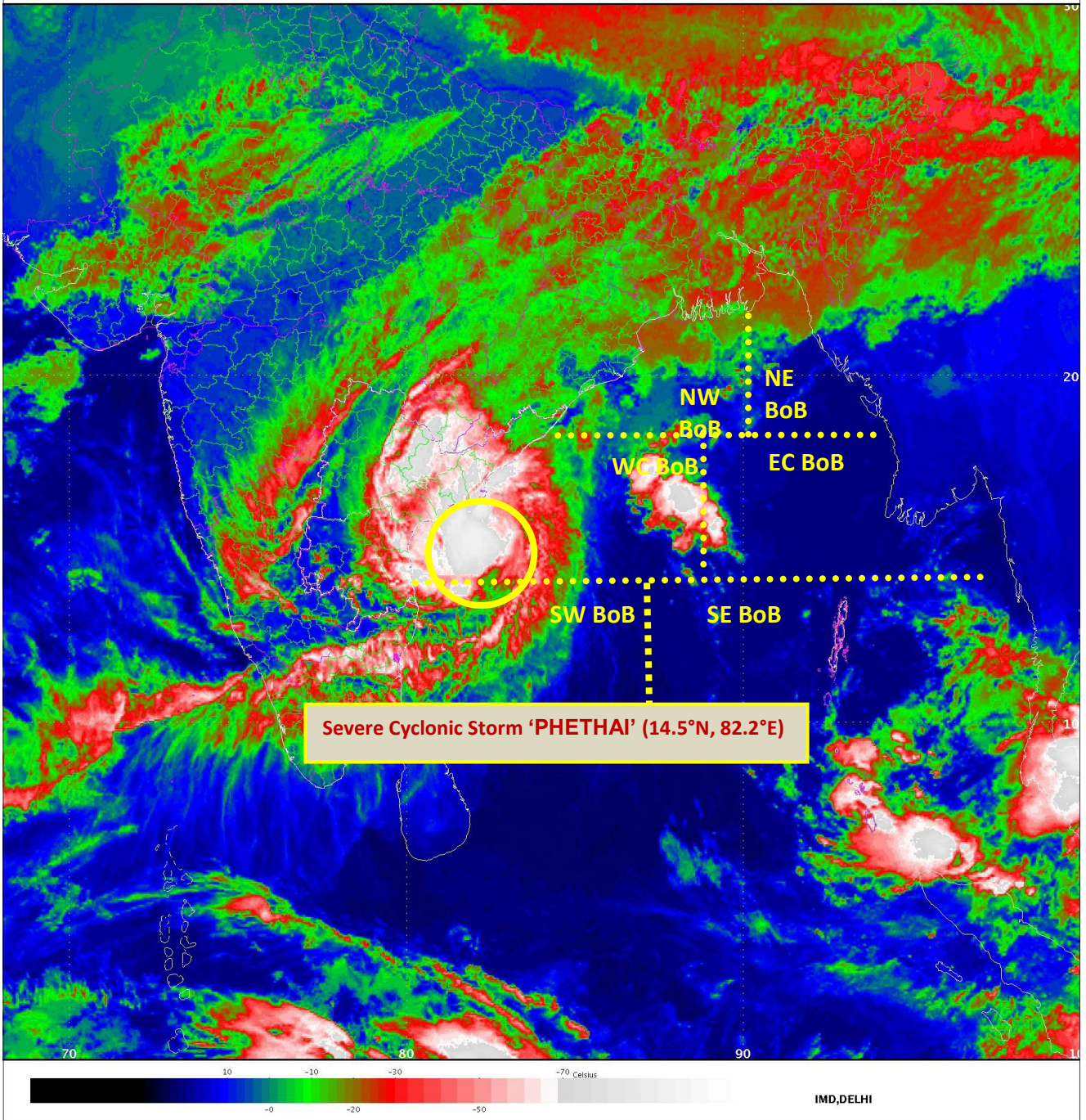
- Total suspension of fishing operations along & off Andhra Pradesh coast on 17th December.
- The fishermen are advised not to venture into southwest & westcentral Bay of Bengal and along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts till 17th December.
- The fishermen are advised not to venture along & off south Odisha coast on 17th December.
- Those, who are out in deep sea areas are advised to return to the coasts.

The next bulletin will be issued at 0830 hrs IST of 17th December, 2018.

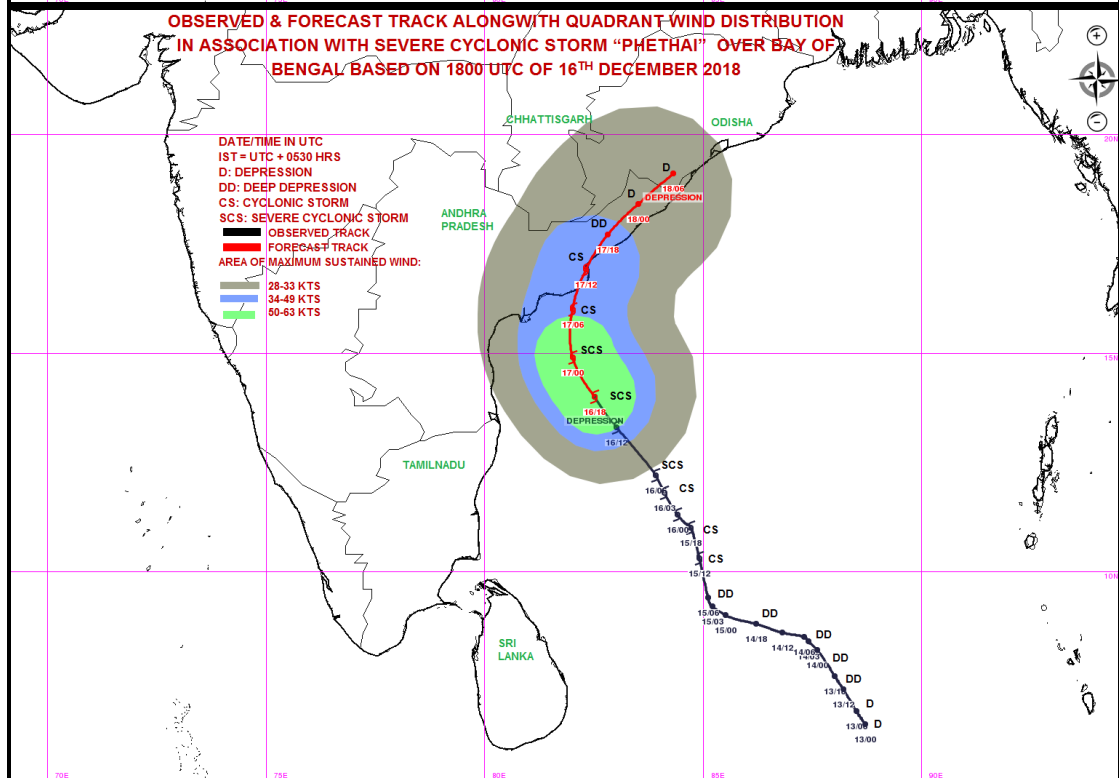
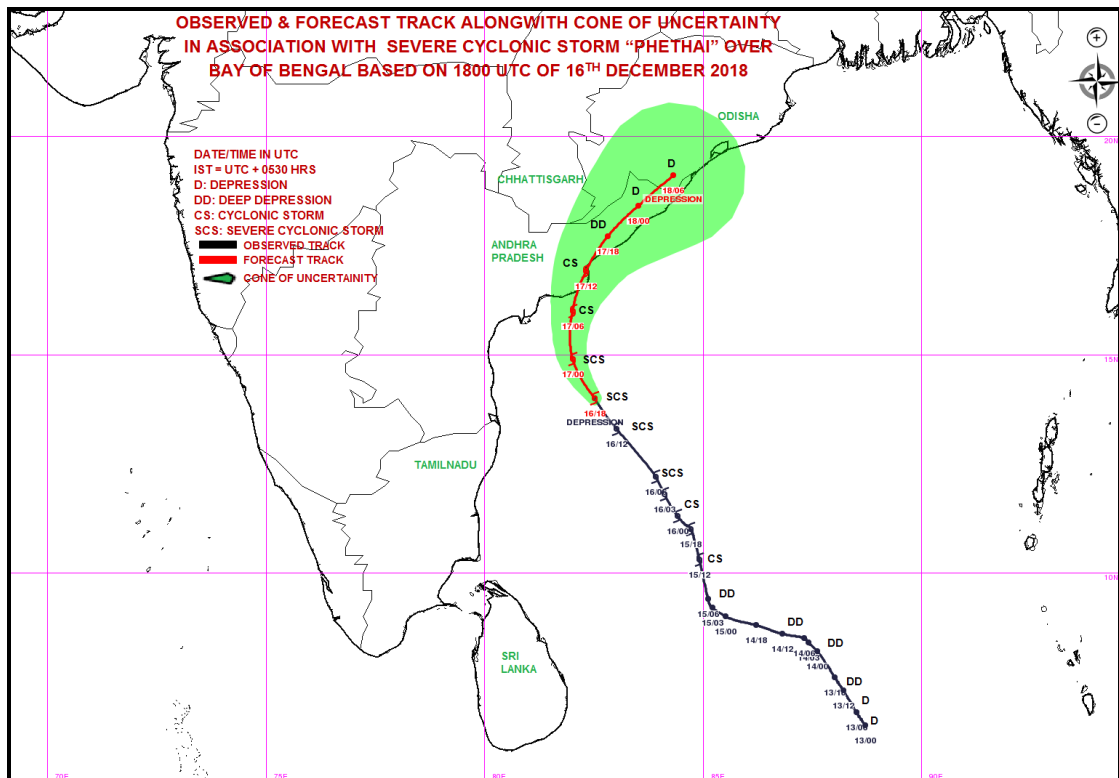
(Ananda K. Das)
Scientist-E, RSMC, New Delhi

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam

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



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



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



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

BULLETIN NO. : 26 (BOB/10/2018)

TIME OF ISSUE: 0830 HOURS IST

DATED: 17.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (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, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029, 08645246600)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

**Sub: Severe Cyclonic Storm 'PHETHAI' over westcentral Bay of Bengal:
Cyclone warning for Andhra Pradesh & Yanam (Puducherry) Coasts "RED MESSAGE"**

The Severe Cyclonic Storm 'PHETHAI' over westcentral & adjoining southwest Bay of Bengal moved northwards with a speed of 23 kmph during past 06 hours, weakened slightly and lay centred at 0530 hrs IST of 17th December, 2018 over westcentral Bay of Bengal near latitude 15.2°N and longitude 82.2°E, 320 km east-northeast of Chennai (Tamil Nadu), 160 km southeast of Machilipatnam (Andhra Pradesh) and 190 km south of Kakinada (Andhra Pradesh). It is very likely to move nearly northwards and cross Andhra Pradesh coast around Kakinada during 17th December afternoon. However, due to unfavourable environmental conditions, it is likely to weaken before landfall and cross coast as a cyclonic storm with a wind speed of 70-90 kmph gusting to 100 kmph.

Cyclone 'PHETHAI' is also being tracked by DWR Chennai, Machilipatnam and Vishakhapatnam apart from Satellite and other observations. Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat.°N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
17.12.18/0530	15.2/82.2	90-100 gusting to 110	Severe Cyclonic Storm
17.12.18/1130	16.2/82.2	80-90 gusting to 100	Cyclonic Storm
17.12.18/1730	17.0/82.5	70-80 gusting to 90	Cyclonic Storm
17.12.18/2330	17.8/83.0	50-60 gusting to 70	Deep Depression
18.12.18/0530	18.4/83.5	30-40 gusting to 50	Depression

Warnings:

(i) Heavy rainfall warning

Region	17 December 2018*
Coastal Andhra Pradesh and Yanam district	Rainfall at most places with heavy to very heavy falls at a few places over coastal Andhra Pradesh & extremely heavy falls (≥ 20 cm) at isolated places over north coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna, Guntur, Vizianagaram & Srikakulam Districts) and Yanam district of Puducherry.
Odisha	Rainfall most places with isolated heavy to very heavy falls likely over Odisha
Jharkhand	Rainfall at many places with isolated heavy falls
Chhattisgarh	Rainfall at most places with isolated heavy falls over south Chhattisgarh
Gangetic West Bengal	Rainfall at most places with isolated heavy falls

Legends: **Red-Take Action**; **Orange- Be prepared**; **Yellow- be updated**; **Green: No warning**

Note 1: * Rainfall till 0830 IST of next day. **Note 2: Red colour warning means take action. It does not mean red alert.**

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

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 for Andhra Pradesh, north Tamil Nadu, Puducherry and south Odisha coasts

- Squally wind speed reaching 55-65 kmph gusting to 70 kmph prevails along & off Andhra Pradesh. It is very likely to increase gradually becoming gale wind speed of 70-90 kmph gusting to 100 kmph along & off central Andhra Pradesh coast (**East & west Godavari, Vishakhapatnam, Krishna, Guntur, Vizianagaram and Srikakulam Districts and Yanam district of Puducherry**) during next 12 hours. Gale wind speed reaching 60-70 kmph gusting to 80 kmph is likely to prevail along & off remaining parts of Andhra Pradesh coast and squally wind speed 40-50 kmph gusting to 60 kmph is likely to prevail along & off north Tamilnadu & Puducherry coasts during same period.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely along & off South Odisha coast on 17th.

(iii) Wind warning for Sea areas

- Gale wind speed reaching 90-100 gusting to 110 prevails over westcentral Bay of Bengal around the system centre. It is very likely to become 70-90 kmph gusting to 100 kmph over westcentral Bay of Bengal during next 12 hours.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely over northwest Bay of Bengal on 17th December.

(iv) Sea condition

The sea condition is very high to high over westcentral Bay of Bengal around system centre. The sea condition is very likely to be high over westcentral Bay of Bengal and along & off central Andhra Pradesh coast and Yanam district of Puducherry during next 12 hours. It will be very rough along and off remaining parts of Andhra Pradesh coast and rough to very rough along and off north Tamilnadu and Puducherry coasts during same period.

(v) Storm Surge Warning

Storm surge of height of about 0.5 m to 1.0 m above the astronomical tides likely to inundate the low lying areas of Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam and Krishna Districts) and Yanam district of Puducherry at the time of landfall.

(vi) Damage Expected over Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry:

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

(vii) Action suggested

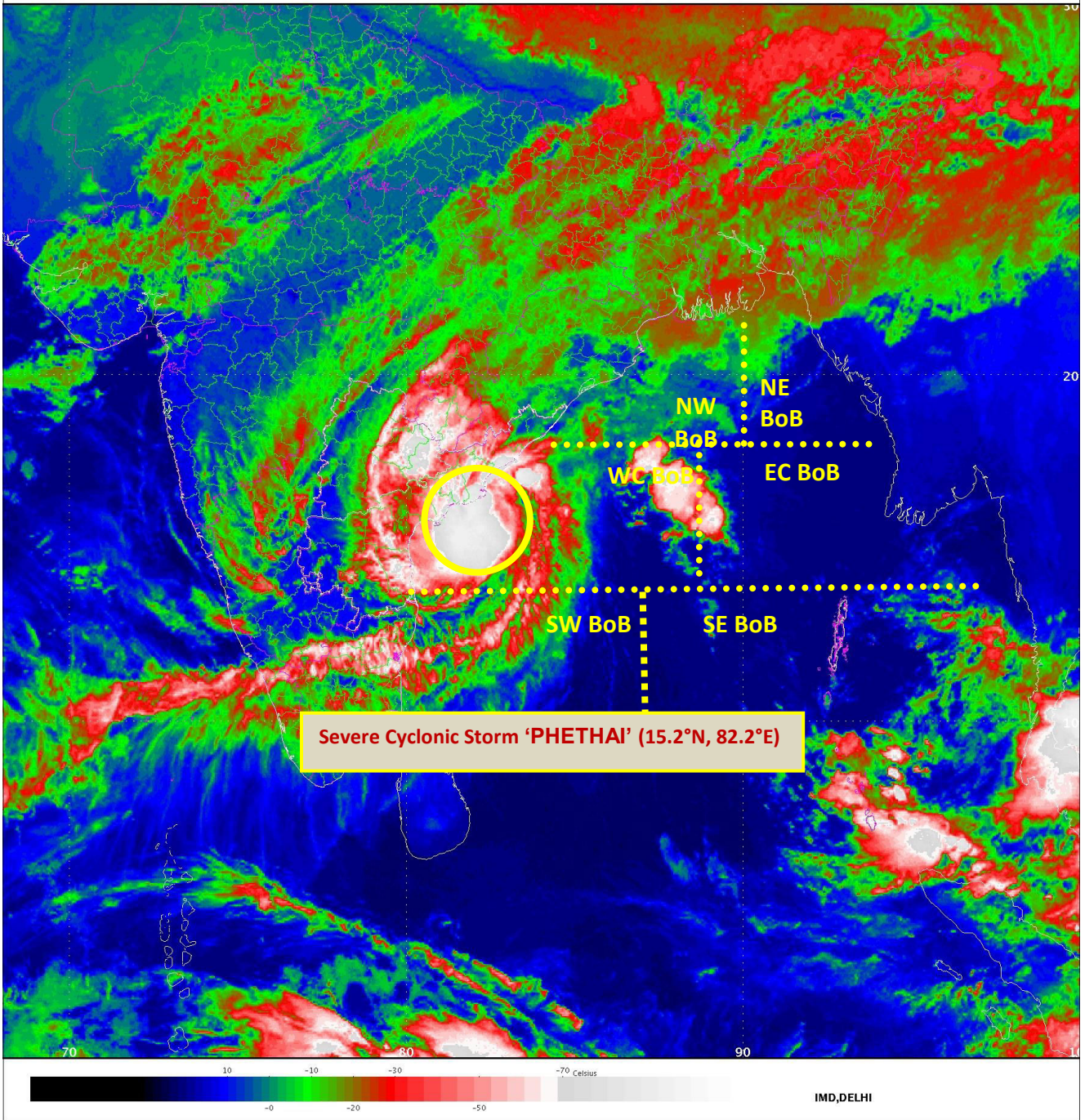
- Total suspension of fishing operations along & off Andhra Pradesh coast on 17th December.
- The fishermen are advised not to venture into southwest & westcentral Bay of Bengal and along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts till 17th December.
- The fishermen are advised not to venture along & off south Odisha coast on 17th December.
- Those, who are out in deep sea areas are advised to return to the coasts.

The next bulletin will be issued at 1130 hrs IST of 17th December, 2018.

(Ananda K. Das)
Scientist-E, RSMC, New Delhi

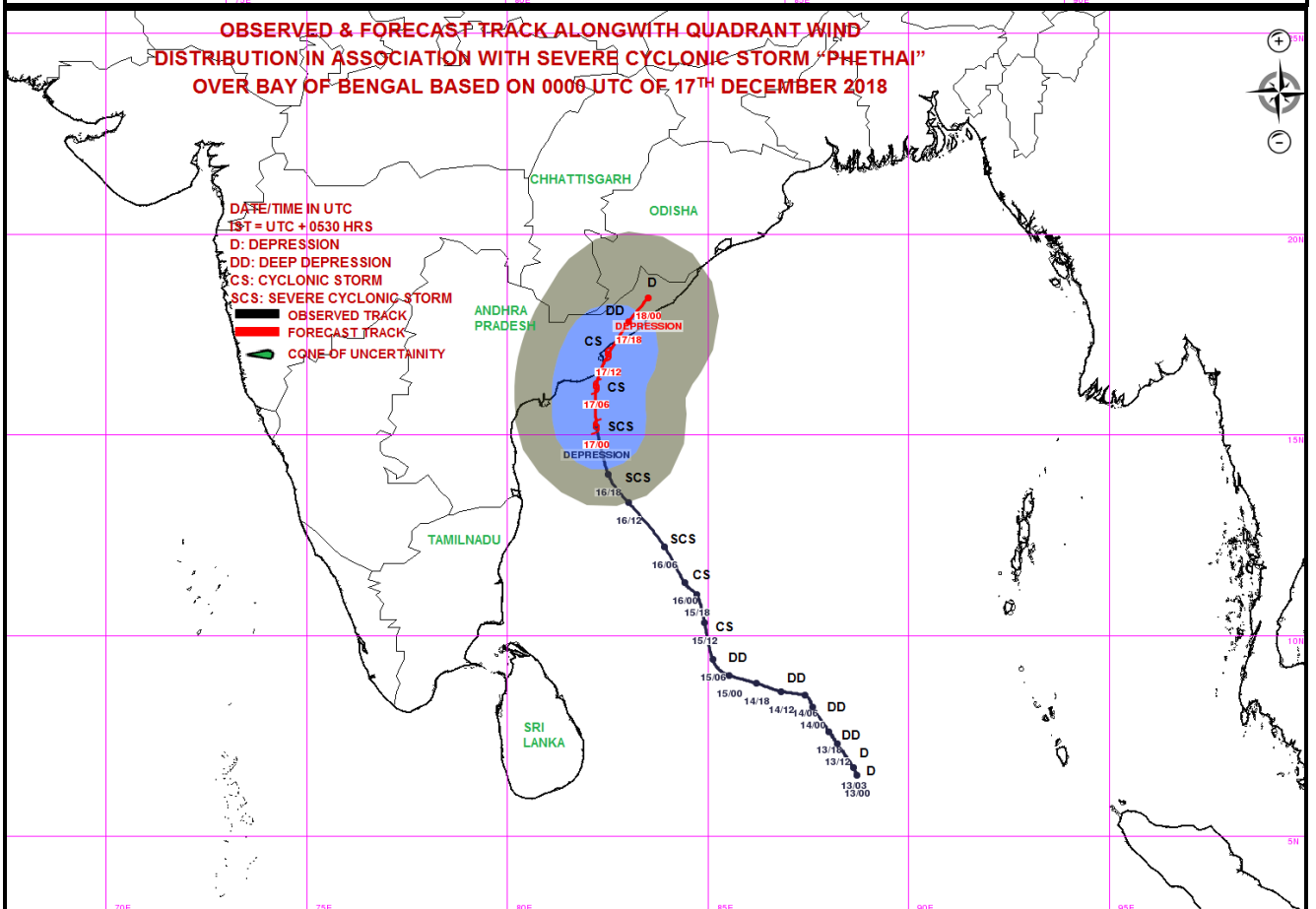
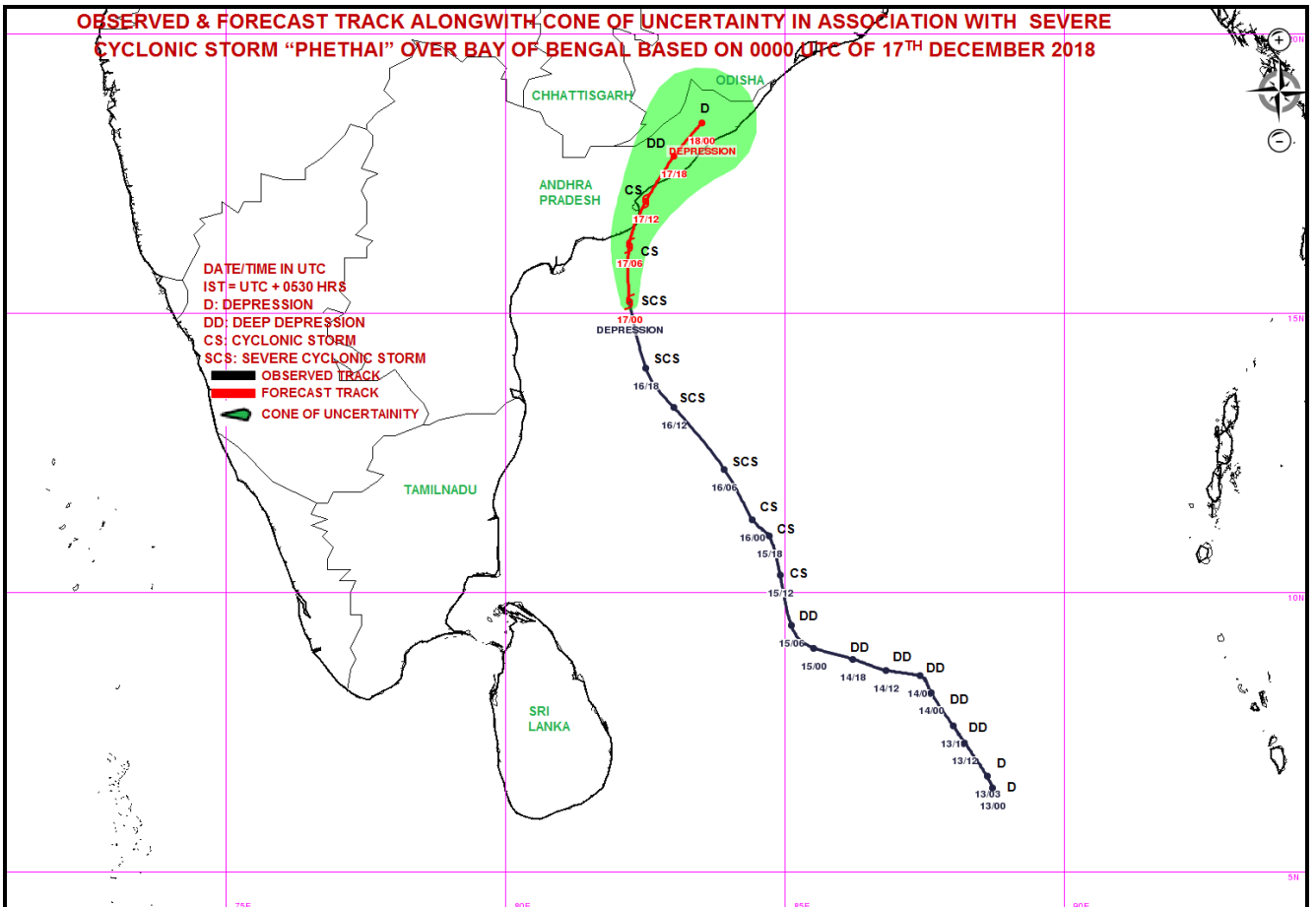
Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam

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



Severe Cyclonic Storm 'PHETHAI' (15.2°N, 82.2°E)

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



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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 (BOB/10/2018)

TIME OF ISSUE: 1100 HOURS IST

DATED: 17.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (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, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029, 08645246600)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: Severe Cyclonic Storm 'PHETHAI' over westcentral Bay of Bengal weakened into a cyclonic storm over westcentral Bay of Bengal:

Cyclone warning for Andhra Pradesh & Yanam (Puducherry) Coasts "RED MESSAGE"

The Severe Cyclonic Storm 'PHETHAI' over westcentral Bay of Bengal moved further northwards with a speed of 24 kmph during past 06 hours, weakened **into a cyclonic storm** and lay centred at 0830 hrs IST of 17th December, 2018 over westcentral Bay of Bengal near latitude 15.8°N and longitude 82.2°E, 370 km north-northeast of Chennai (Tamil Nadu), 120 km east-southeast of Machilipatnam (Andhra Pradesh) and 130 km south of Kakinada (Andhra Pradesh). It is very likely to move nearly northwards and cross Andhra Pradesh coast around Kakinada during 17th December afternoon. However, due to unfavourable environmental conditions, it is likely to slightly weaken further before landfall and cross coast as a cyclonic storm with a wind speed of 70-90 kmph gusting to 100 kmph.

Cyclone 'PHETHAI' is also being tracked by DWR Chennai, Machilipatnam and Vishakhapatnam apart from Satellite and other observations. Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat.°N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
17.12.18/0830	15.8/82.2	80-90 gusting to 100	Cyclonic Storm
17.12.18/1130	16.2/82.2	80-90 gusting to 100	Cyclonic Storm
17.12.18/1730	17.0/82.5	70-80 gusting to 90	Cyclonic Storm
17.12.18/2330	17.8/83.0	50-60 gusting to 70	Deep Depression
18.12.18/0530	18.4/83.5	30-40 gusting to 50	Depression

Warnings:

(i) Heavy rainfall warning

Region	17 December 2018*
Coastal Andhra Pradesh and Yanam district	Rainfall at most places with heavy to very heavy falls at a few places over coastal Andhra Pradesh & extremely heavy falls (≥ 20 cm) at isolated places over north coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna, Guntur, Vizianagaram & Srikakulam Districts) and Yanam district of Puducherry.
Odisha	Rainfall most places with isolated heavy to very heavy falls
Jharkhand	Rainfall at many places with isolated heavy falls
Chhattisgarh	Rainfall at most places with isolated heavy falls over south Chhattisgarh

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

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

Legends: Red-Take Action; Orange- Be prepared; Yellow- be updated; Green: No warning**Note 1: * Rainfall till 0830 IST of next day. Note 2: Red colour warning means take action. It does not mean red alert.****(ii) Wind warning for Andhra Pradesh, north Tamil Nadu, Puducherry and south Odisha coasts**

- Squally wind speed reaching 55-65 kmph gusting to 75 kmph prevails along & off Andhra Pradesh. It is very likely to increase gradually becoming gale wind speed of 70-90 kmph gusting to 100 kmph along & off central Andhra Pradesh coast (**East & west Godavari, Vishakhapatnam, Krishna, Guntur, Vizianagaram and Srikakulam Districts and Yanam district of Puducherry**) during next 12 hours. Gale wind speed reaching 60-70 kmph gusting to 80 kmph is likely to prevail along & off remaining parts of Andhra Pradesh coast.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely along & off South Odisha coast on 17th.

(iii) Wind warning for Sea areas

- Gale wind speed reaching 80-90 gusting to 100 prevails over westcentral Bay of Bengal around the system centre and is very likely to become 70-80 kmph gusting to 90 kmph during next 12 hours.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely over northwest Bay of Bengal on 17th December.

(iv) Sea condition

The sea condition is very high to high over westcentral Bay of Bengal around system centre. The sea condition is very likely to be high over westcentral Bay of Bengal and along & off central Andhra Pradesh coast and Yanam district of Puducherry during next 12 hours. It will be very rough along & off remaining parts of Andhra Pradesh coast and rough to very rough along & off north Tamilnadu and Puducherry coasts during same period.

(v) Storm Surge Warning

Storm surge of height of about 0.5 m to 1.0 m above the astronomical tides likely to inundate the low lying areas of Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam and Krishna Districts) and Yanam district of Puducherry at the time of landfall.

(vi) Damage Expected over Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry:

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

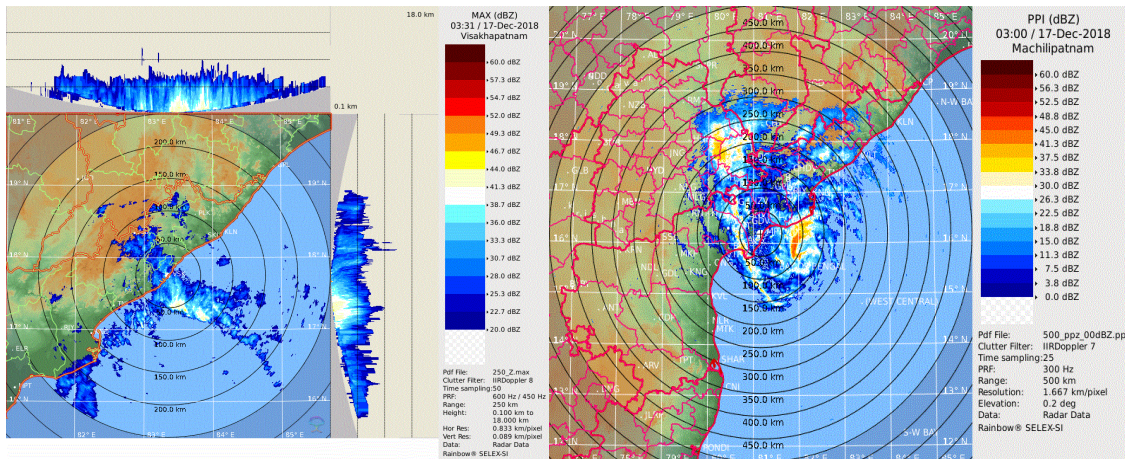
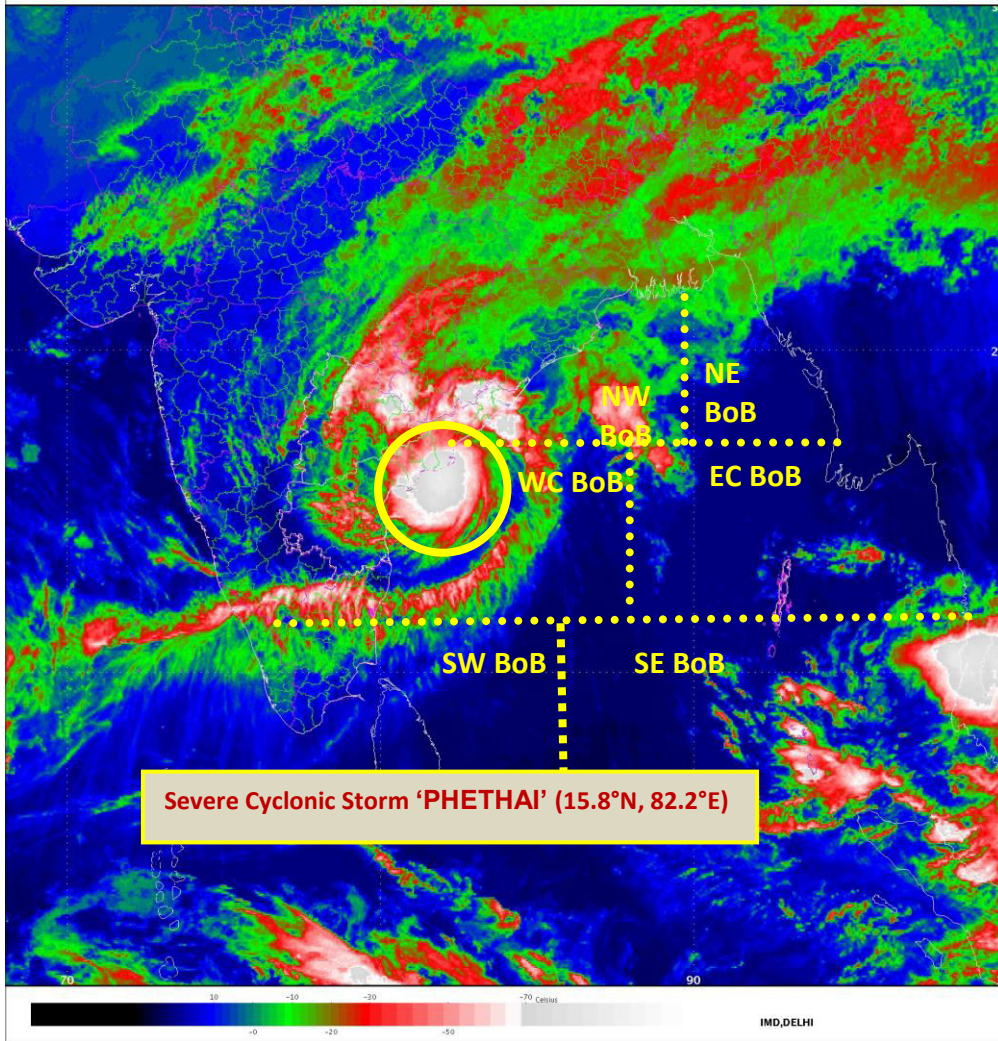
(vii) Action suggested

- Total suspension of fishing operations along & off Andhra Pradesh coast on 17th December.
- The fishermen are advised not to venture into southwest & westcentral Bay of Bengal and along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts till 17th December.
- The fishermen are advised not to venture along & off south Odisha coast on 17th December.
- Those, who are out in deep sea areas are advised to return to the coasts.

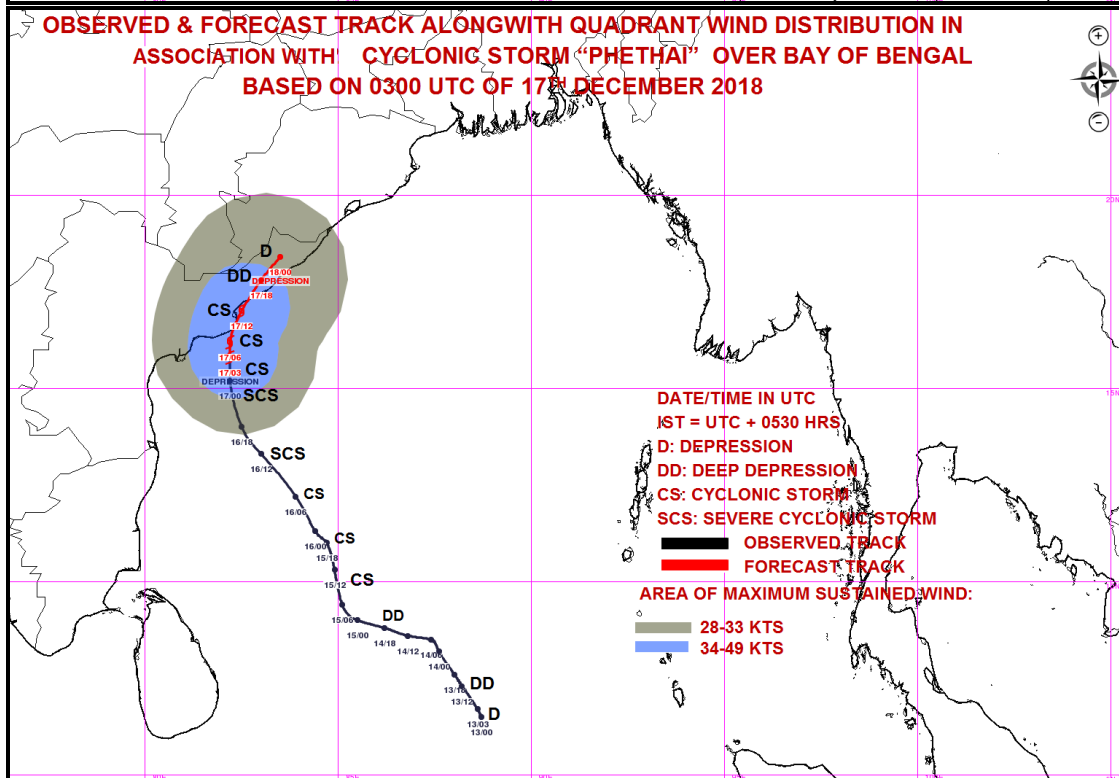
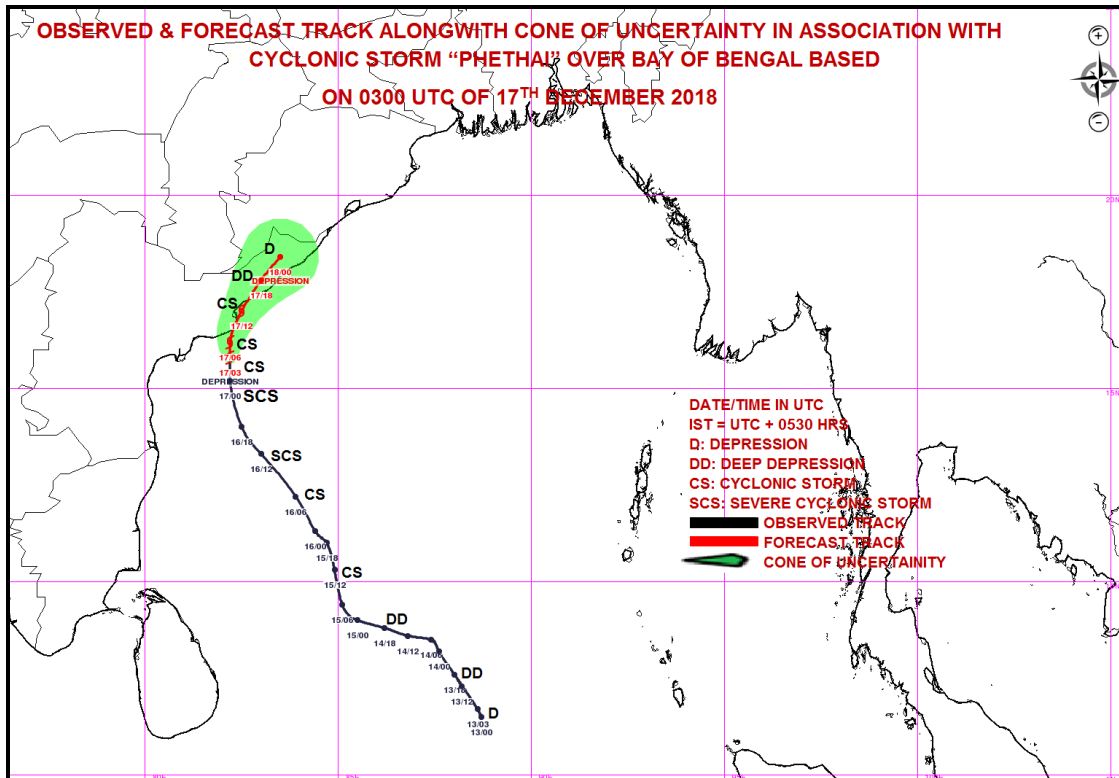
The next bulletin will be issued at 1430 hrs IST of 17th December, 2018.

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

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam



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



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



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

BULLETIN NO. : 28 (BOB/10/2018)

TIME OF ISSUE: 1300 HOURS IST

DATED: 17.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (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, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029, 08645246600)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: Cyclonic Storm 'PHETHAI' over westcentral Bay of Bengal:

Cyclone warning for Andhra Pradesh & Yanam (Puducherry) Coasts "RED MESSAGE"

The Cyclonic Storm 'PHETHAI' over westcentral Bay of Bengal moved further northwards with a speed of 19 kmph during past 06 hours and lay centred at 1130 hrs IST of 17th December, 2018 over westcentral Bay of Bengal near latitude 16.2°N and longitude 82.2°E, 85 km south-southwest of Kakinada (Andhra Pradesh) and 60 km east-southeast of Narsapur (Andhra Pradesh). It is very likely to move nearly northwards and cross Andhra Pradesh coast around Kakinada during 17th December afternoon (1500 To 1700 Hours IST). However, due to unfavourable environmental conditions, it is likely to cross coast as a cyclonic storm with a wind speed of 70-90 kmph gusting to 100 kmph. Thereafter, it is very likely to move north-northeastwards and weaken gradually.

Cyclone 'PHETHAI' is also being tracked by DWR Chennai, Machilipatnam and Vishakhapatnam apart from Satellite and other observations. Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat.°N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
17.12.18/1130	16.2/82.2	80-90 gusting to 100	Cyclonic Storm
17.12.18/1730	17.0/82.5	70-80 gusting to 90	Cyclonic Storm
17.12.18/2330	17.8/83.0	50-60 gusting to 70	Deep Depression
18.12.18/0530	18.4/83.5	30-40 gusting to 50	Depression

Warnings:

(i) Heavy rainfall warning

Region	17 December 2018*
Coastal Andhra Pradesh and Yanam district	Rainfall at most places with heavy to very heavy falls at a few places over coastal Andhra Pradesh & extremely heavy falls (≥ 20 cm) at isolated places over north coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna, Guntur, Vizianagaram & Srikakulam Districts) and Yanam district of Puducherry.
Odisha	Rainfall most places with isolated heavy to very heavy falls
Jharkhand	Rainfall at many places with isolated heavy falls
Chhattisgarh	Rainfall at most places with isolated heavy falls over south Chhattisgarh
Gangetic West Bengal	Rainfall at most places with isolated heavy falls

Legends: Red-Take Action; Orange- Be prepared; Yellow- be updated; Green: No warning

Note 1: * Rainfall till 0830 IST of next day. Note 2: Red colour warning means take action. It does not mean red alert.

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

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 for Andhra Pradesh, north Tamil Nadu, Puducherry and south Odisha coasts

- Gale wind speed reaching 70-90 kmph gusting to 100 kmph very likely along & off central Andhra Pradesh coast (**East & west Godavari, Vishakhapatnam, Krishna, Guntur, Vizianagaram and Srikakulam Districts and Yanam district of Puducherry**) during next 9 hours. Gale wind speed reaching 60-70 kmph gusting to 80 kmph is likely to prevail along & off remaining parts of Andhra Pradesh coast.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely along & off South Odisha coast on 17th.

(iii) Wind warning for Sea areas

- Gale wind speed reaching 80-90 gusting to 100 prevails over westcentral Bay of Bengal around the system centre and is very likely to become 70-80 kmph gusting to 90 kmph during next 9 hours.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely over northwest Bay of Bengal on today, the 17th December.

(iv) Sea condition

The sea condition is very high to high over westcentral Bay of Bengal around system centre. The sea condition is very likely to be very high to high over westcentral Bay of Bengal and along & off central Andhra Pradesh coast and Yanam district of Puducherry during next 9 hours. It will be very rough along & off remaining parts of Andhra Pradesh coast during same period.

(v) Storm Surge Warning

Storm surge of height of about 0.5 m to 1.0 m above the astronomical tides likely to inundate the low lying areas of Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam and Krishna Districts) and Yanam district of Puducherry at the time of landfall.

(vi) Damage Expected over Coastal Andhra Pradesh (East & west Godavari, Vishakhapatnam, Krishna and Guntur Districts) and Yanam district of Puducherry:

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

(vii) Action suggested

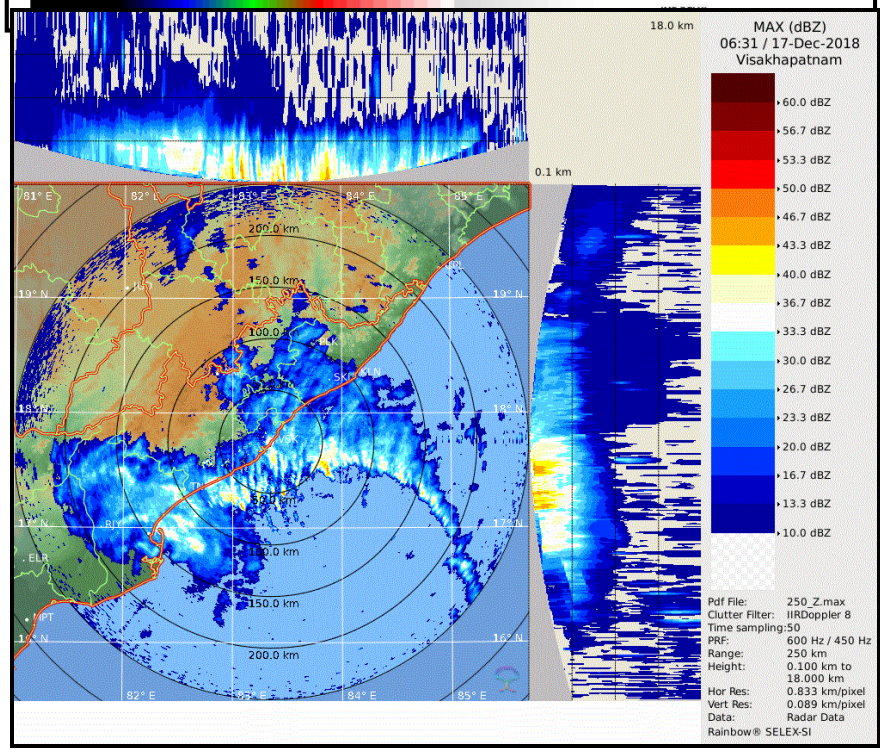
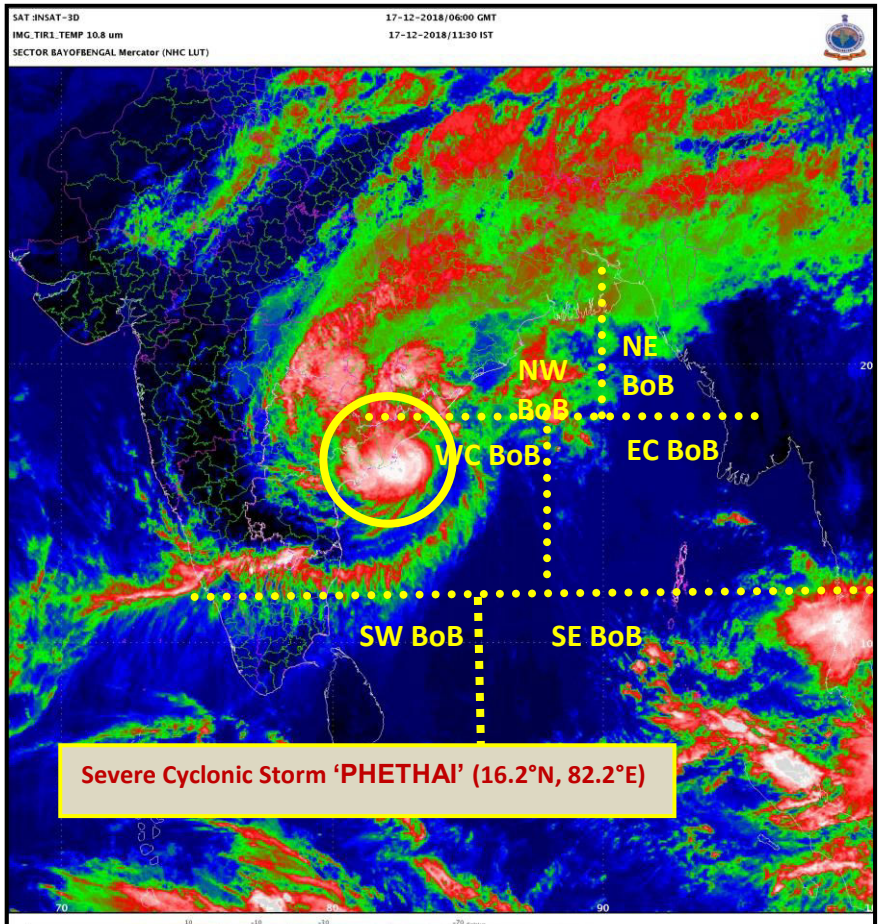
- Total suspension of fishing operations along & off Andhra Pradesh coast on today, the 17th December.
- The fishermen are advised not to venture into southwest & westcentral Bay of Bengal and along & off Andhra Pradesh, north Tamilnadu & Puducherry coasts till today, the 17th December.
- The fishermen are advised not to venture along & off south Odisha coast on today, the 17th December.
- Those, who are out in deep sea areas are advised to return to the coasts.

The next bulletin will be issued at 1430 hrs IST of today, the 17th December, 2018.

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

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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 (BOB/10/2018)

TIME OF ISSUE: 1600 HOURS IST

DATED: 17.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (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, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029, 08645246600)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

**Sub: Cyclonic Storm 'PHETHAI' crossed Andhra Pradesh coast close to south of Yanam:
Cyclone warning for Andhra Pradesh & Yanam (Puducherry) Coasts "RED MESSAGE"**

The Cyclonic Storm 'PHETHAI' over westcentral Bay of Bengal moved further nearly northwards with a speed of 17 kmph during past 06 hours, crossed Andhra Pradesh coast near 16.55°N /82.25°E, 25 km south of Yanam and 40 km south of Kakinada between 1330 to 1430 hours IST of today, the 17th December, 2018. It lay centred at 1430 hrs IST of 17th December, 2018 over Coastal Andhra Pradesh, near latitude 16.7°N and longitude 82.3°E, close to Yanam and 25 km south of Kakinada. It is very likely to move northeastwards and emerge into westcentral Bay of Bengal off Kakinada coast during next 3 hours. Thereafter, it is very likely to continue to move northeastwards, weaken further and again cross Andhra Pradesh coast close to Tuni during late evening of today, the 17th December, 2018 as a Deep Depression with a wind speed of 55-65 kmph gusting 75 kmph.

Cyclone 'PHETHAI' is also being tracked by DWR Machilipatnam and Vishakhapatnam apart from Satellite and other observations. Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat.°N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
17.12.18/1430	16.7/82.3	70-80 gusting to 90	Cyclonic Storm
17.12.18/1730	17.0/82.5	55-65 gusting to 75	Deep Depression
17.12.18/2330	17.8/83.0	40-60 gusting to 70	Depression
18.12.18/0530	18.4/83.5	20-30 gusting to 40	Low

Warnings:

(i) Heavy rainfall warning

Region	17 December 2018*
Coastal Andhra Pradesh and Yanam district	Rainfall at most places with heavy to very heavy falls at isolated places
Odisha	Rainfall most places with isolated heavy falls
Jharkhand	Rainfall at many places with isolated heavy falls
Chhattisgarh	Rainfall at most places with isolated heavy falls over south Chhattisgarh
Gangetic West Bengal	Rainfall at most places with isolated heavy falls

Legends: Red-Take Action; Orange- Be prepared; Yellow- be updated; Green: No 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.

Note 1: * Rainfall till 0830 IST of next day. Note 2: Red colour warning means take action. It does not mean red alert.

(ii) Wind warning for Andhra Pradesh and south Odisha coasts

- Gale wind speed reaching 65-75 kmph gusting to 85 kmph very likely along & off central Andhra Pradesh coast (**East & west Godavari, Vishakhapatnam, Krishna Districts**) and **Yanam district of Puducherry** during next 03 hours. Strong wind speed reaching 50-60 kmph gusting to 70 kmph is likely to prevail during subsequent 09 hours.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely along & off South Odisha coast on 17th.

(iii) Wind warning for Sea areas

- Gale wind speed reaching 65-75 kmph gusting to 85 kmph prevails over westcentral Bay of Bengal off north Andhra Pradesh Coast during next 03 hours and 50-60 kmph gusting to 70 kmph is likely to prevail during subsequent 09 hours.
- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely over northwest Bay of Bengal on today, the 17th December.

(iv) Sea condition

The sea condition is high over westcentral Bay of Bengal near system centre. The sea condition is very likely to be rough to very rough over westcentral Bay of Bengal and along & off north coastal Andhra Pradesh and Yanam district of Puducherry during subsequent 09 hours.

(v) Damage Expected over Coastal Andhra Pradesh (East & west Godavari and Vishakhapatnam Districts) and Yanam district of Puducherry during next 3 hours:

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

(vi) Action suggested

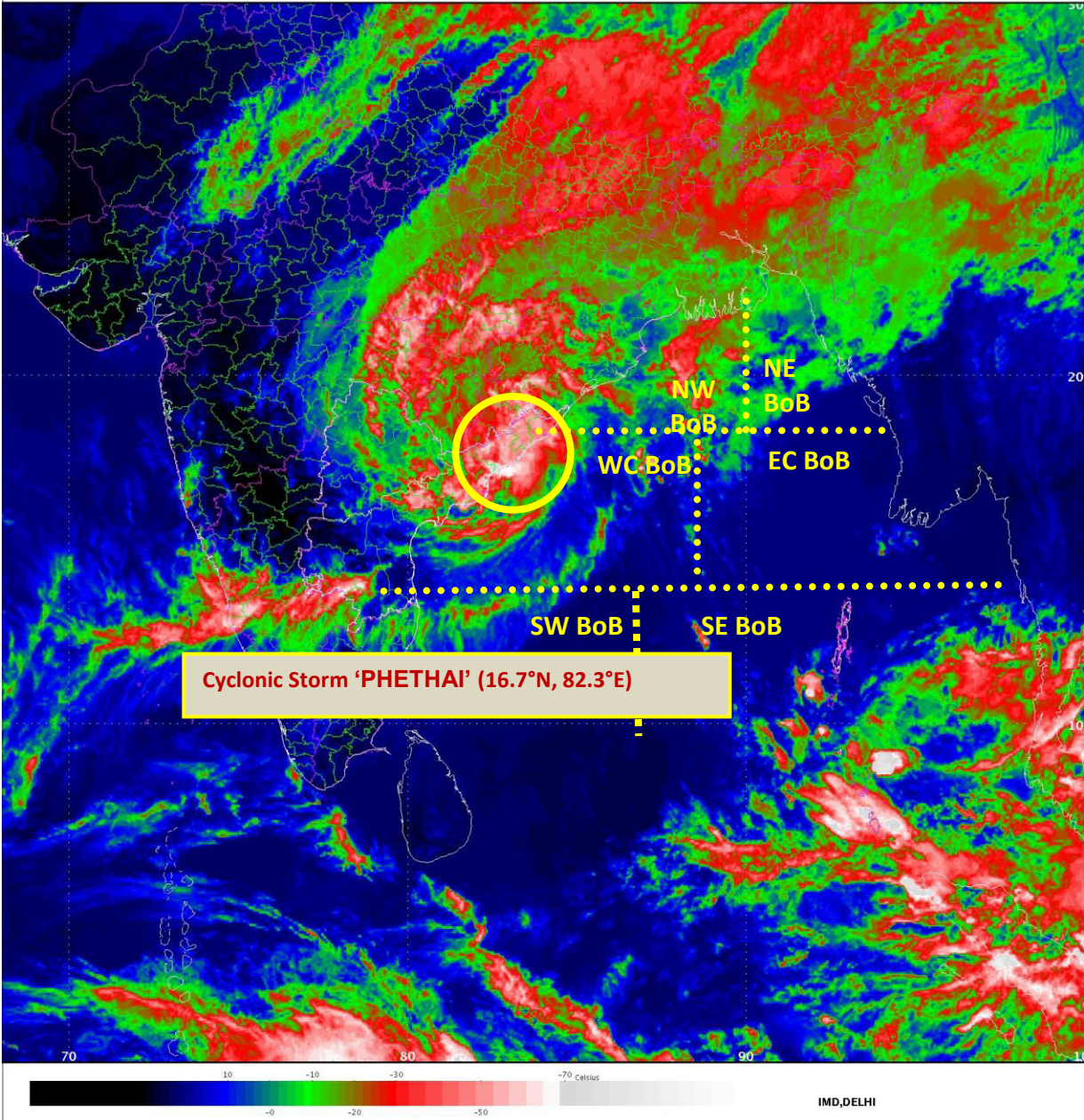
- Total suspension of fishing operations along & off Andhra Pradesh coast on today, the 17th December.
- The fishermen are advised not to venture into westcentral Bay of Bengal and along & off north Andhra Pradesh during next 12 hours.

The next bulletin will be issued at 2030 hrs IST of today, the 17th December, 2018.

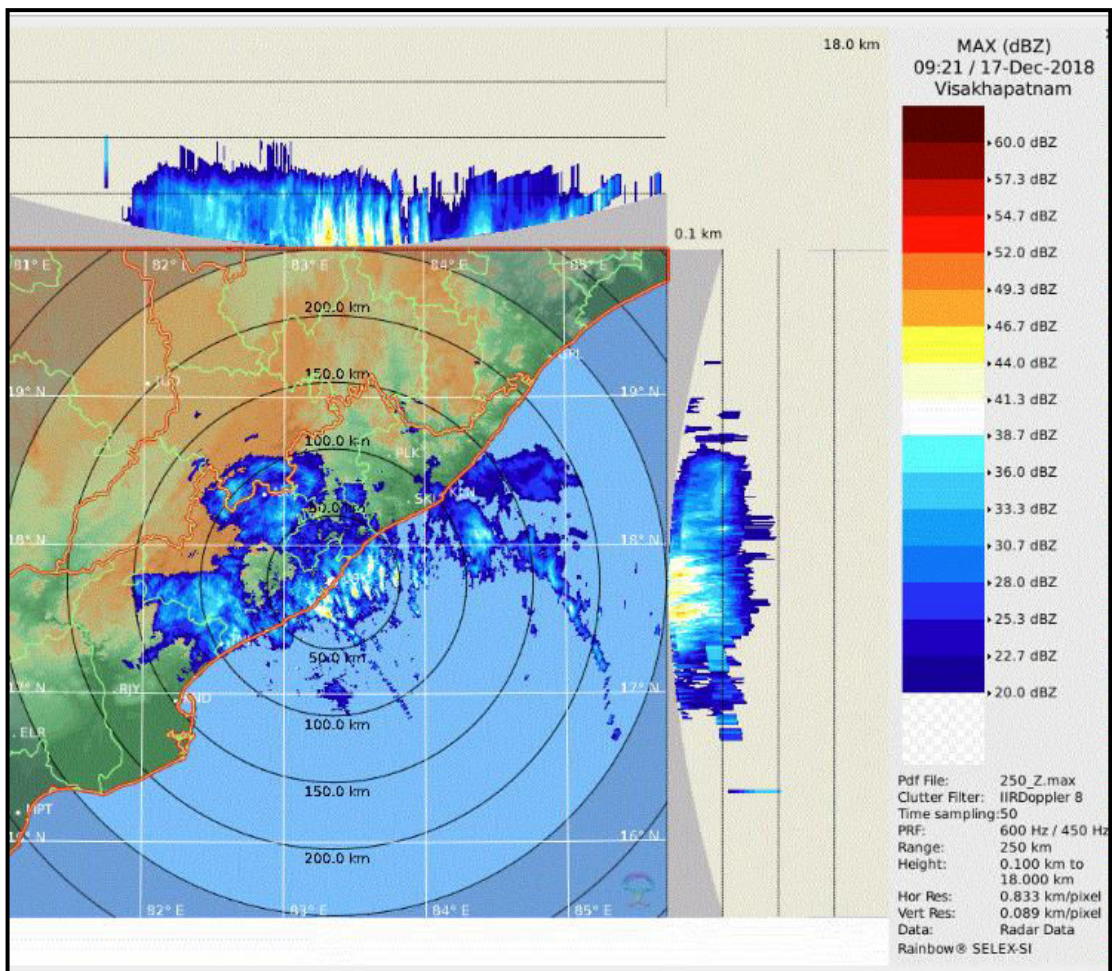
**(Naresh Kumar)
Scientist-E, RSMC, New Delhi**

Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam

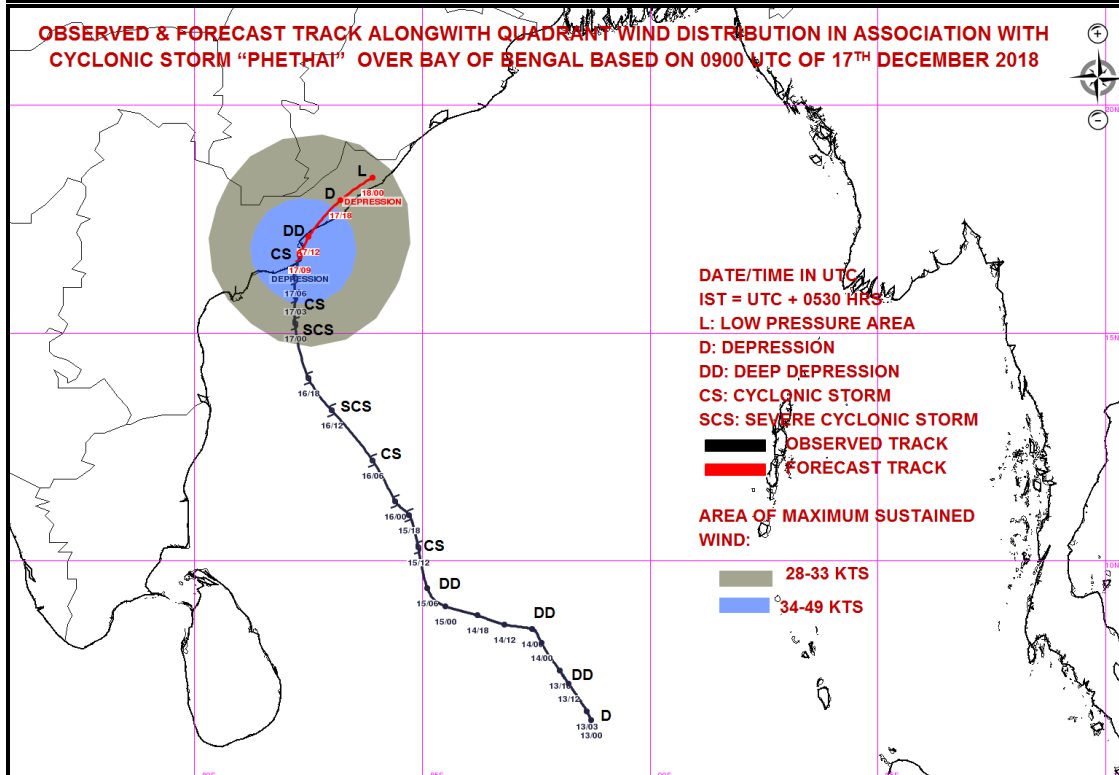
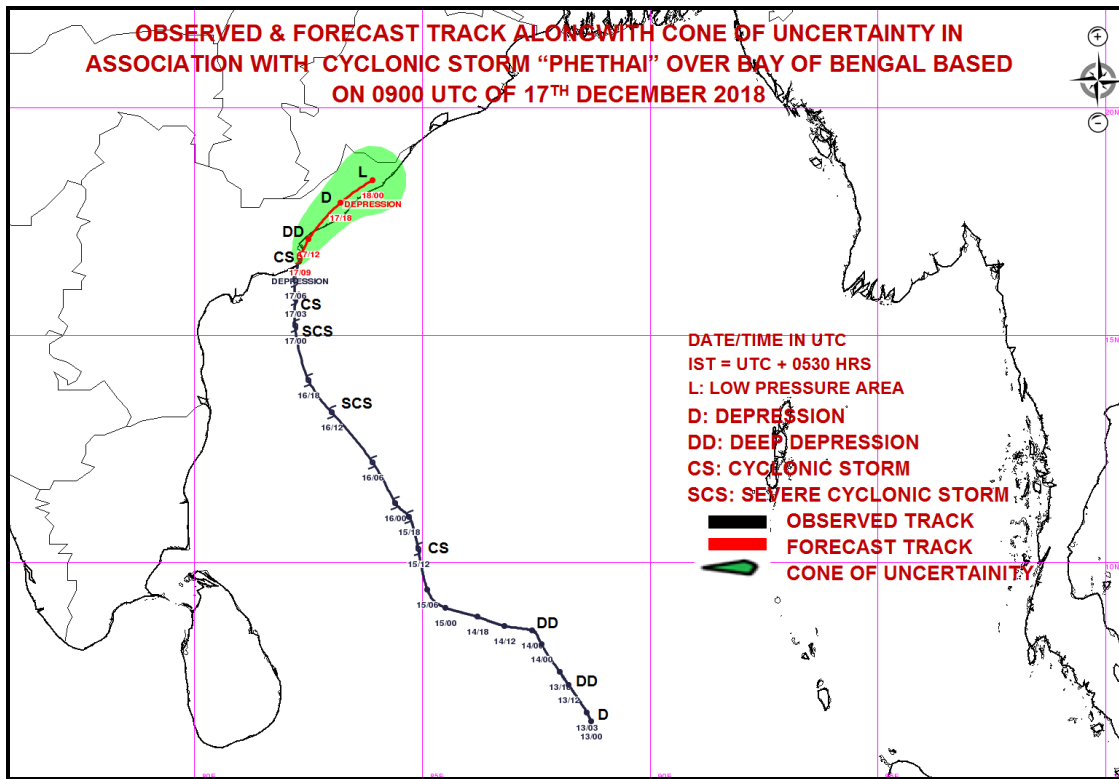
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



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



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



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



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

BULLETIN NO. : 30 (BOB/10/2018)

TIME OF ISSUE:2000 HOURS IST

DATED: 17.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (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, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029, 08645246600)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: CYCLONIC STORM 'PHETHAI' OVER COASTAL ANDHRA PRADESH WEAKENED INTO DEEP DEPRESSION

The Cyclonic Storm 'PHETHAI' over Coastal Andhra Pradesh moved north-northeastwards with a speed of 13 kmph during past 06 hours, weakened into a Deep Depression and lay centred at 1730 hrs IST of 17th December, 2018 over westcentral Bay of Bengal, near latitude 16.9°N and longitude 82.4°E, close to Kakinada coast. It is very likely to move north-northeastwards and cross Andhra Pradesh coast close to Tuni during night of today, the 17th December 2018. It will gradually weaken further into a Depression during next six hours and into a well marked low pressure area during subsequent six hours.

Date/Time(IST)	Position (Lat.°N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
17.12.18/1730	16.9/82.4	55-65 gusting to 75	Deep Depression
17.12.18/2330	17.7/82.9	40-50 gusting to 60	Depression
18.12.18/0530	18.5/83.6	25-35 gusting to 45	Well marked low pressure area

Warnings:

(i) Heavy rainfall warning

Region	17-18 December 2018*
North Coastal Andhra Pradesh and Yanam district	Rainfall at most places with heavy to very heavy falls at isolated places during next 12 hours
Odisha	Rainfall most places with isolated heavy falls during next 12 hours
Jharkhand	Rainfall at many places with isolated heavy falls during next 24 hours
Chhattisgarh	Rainfall at most places with isolated heavy falls over south Chhattisgarh during next 12 hours
Gangetic West Bengal	Rainfall at most places with isolated heavy falls during next 24 hours

Legends: Red-Take Action; Orange- Be prepared; Yellow- be updated; Green: No warning

Note 1: * Rainfall till 0830 IST of next day. Note 2: Red colour warning means take action. It does not mean red alert.

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

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 for Andhra Pradesh and south Odisha coasts

- Squally wind speed reaching 55-65 kmph gusting to 75 kmph very likely along & off north Andhra Pradesh coast (**East & west Godavari, Vishakhapatnam, Vizianagaram, Srikakulam, Krishna Districts**) and Yanam district of Puducherry during next 06 hours and 40-50 kmph gusting to 60 kmph during subsequent 06 hours.
- Squally wind speed reaching 30-40 kmph gusting to 50 kmph likely along & off South Odisha coast during next 12 hours.

(iii) Wind warning for Sea areas

- Squally wind speed reaching 55-65 kmph gusting to 75 kmph prevails over westcentral Bay of Bengal off north Andhra Pradesh Coast during next 06 hours and 40-50 kmph gusting to 60 kmph during subsequent 06 hours.
- Squally wind speed reaching 30-40 kmph gusting to 50 kmph likely over northwest Bay of Bengal during next 12 hours.

(iv) Sea condition

The sea condition is rough to very rough over westcentral Bay of Bengal. The sea condition is very likely to be rough to very rough over westcentral Bay of Bengal and along & off north Andhra Pradesh coast and Yanam district of Puducherry during next 12 hours.

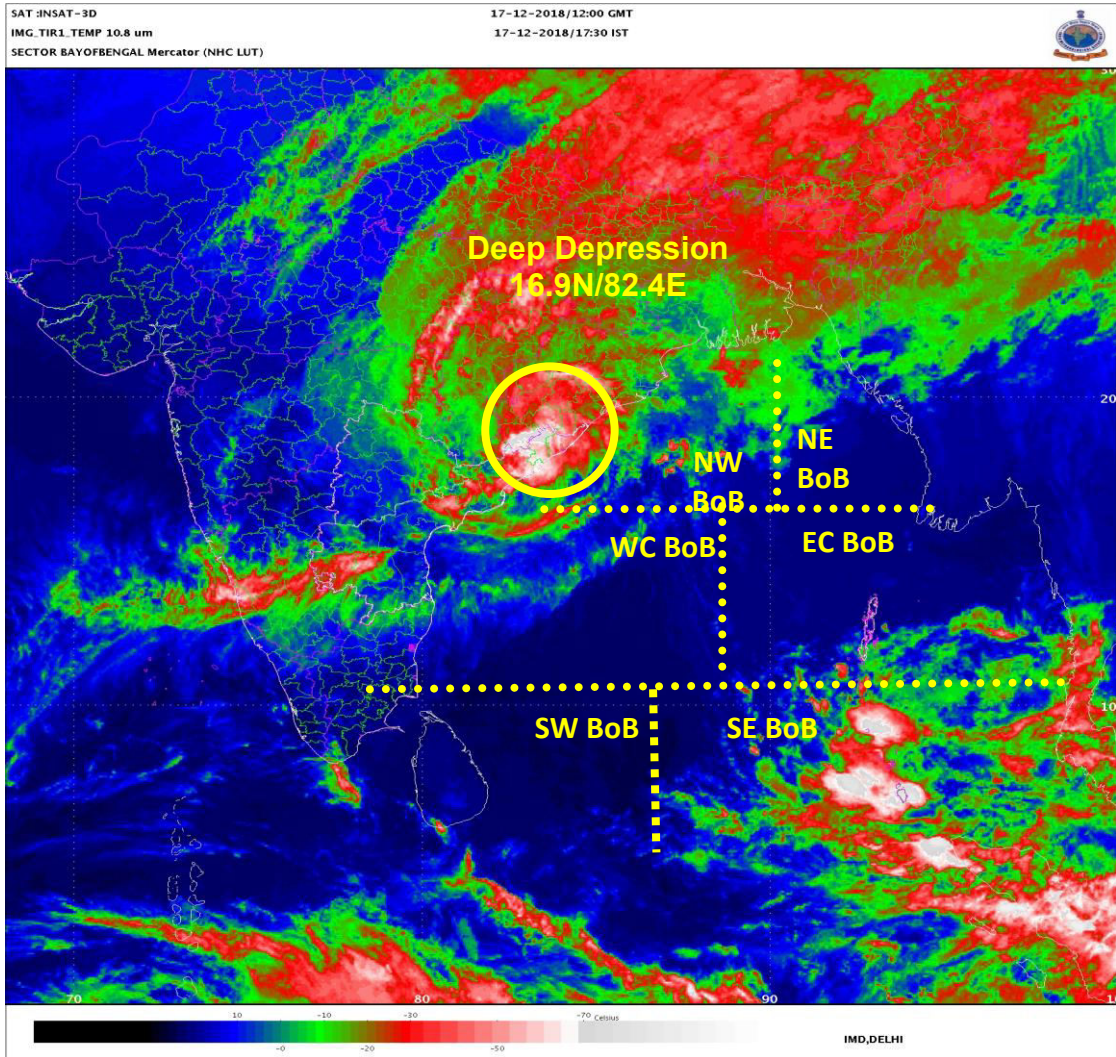
(v) Fishermen warning

- Total suspension of fishing operations along & off North Andhra Pradesh and South Odisha coasts during next 12 hours.
- The fishermen are advised not to venture into westcentral and adjoining northwest Bay of Bengal and along & off north Andhra Pradesh and south Odisha coasts during next 12 hours.

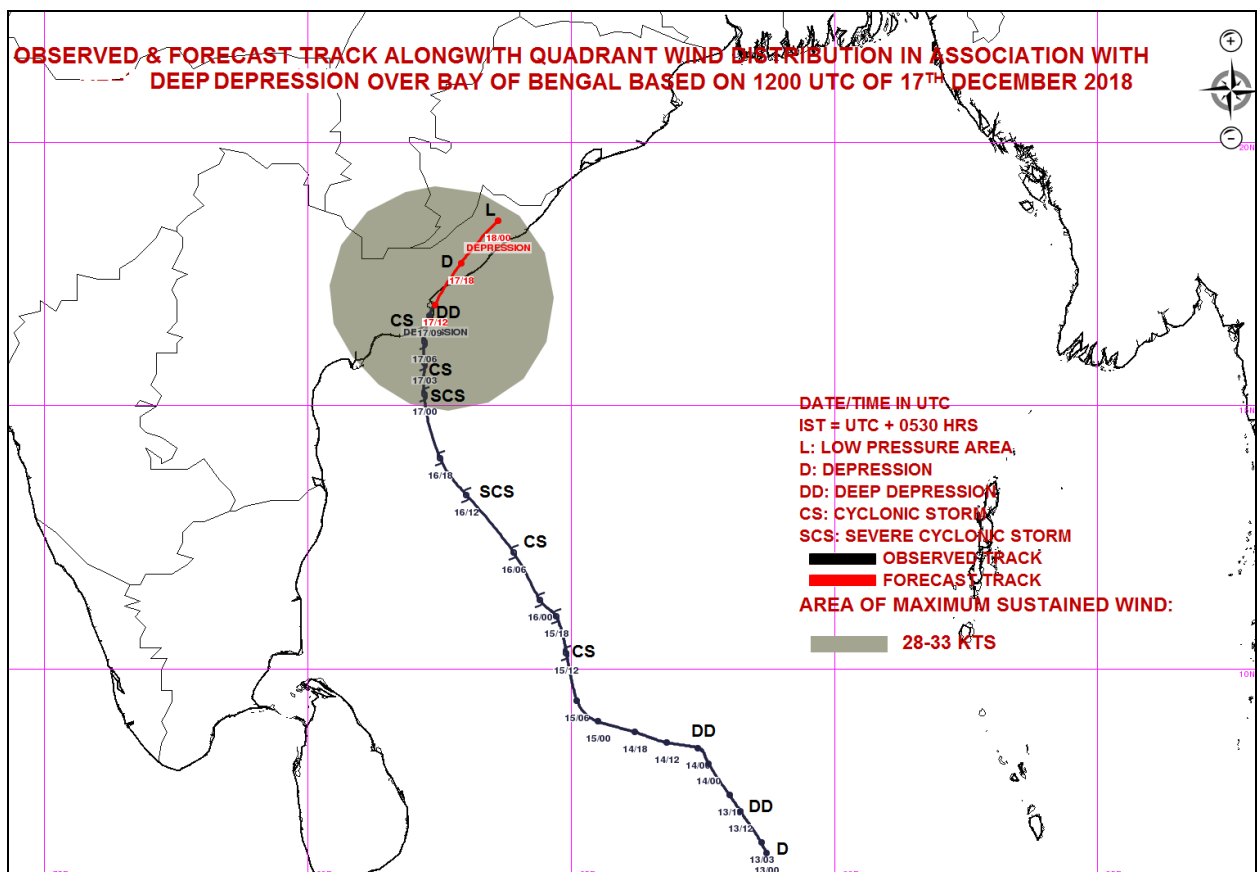
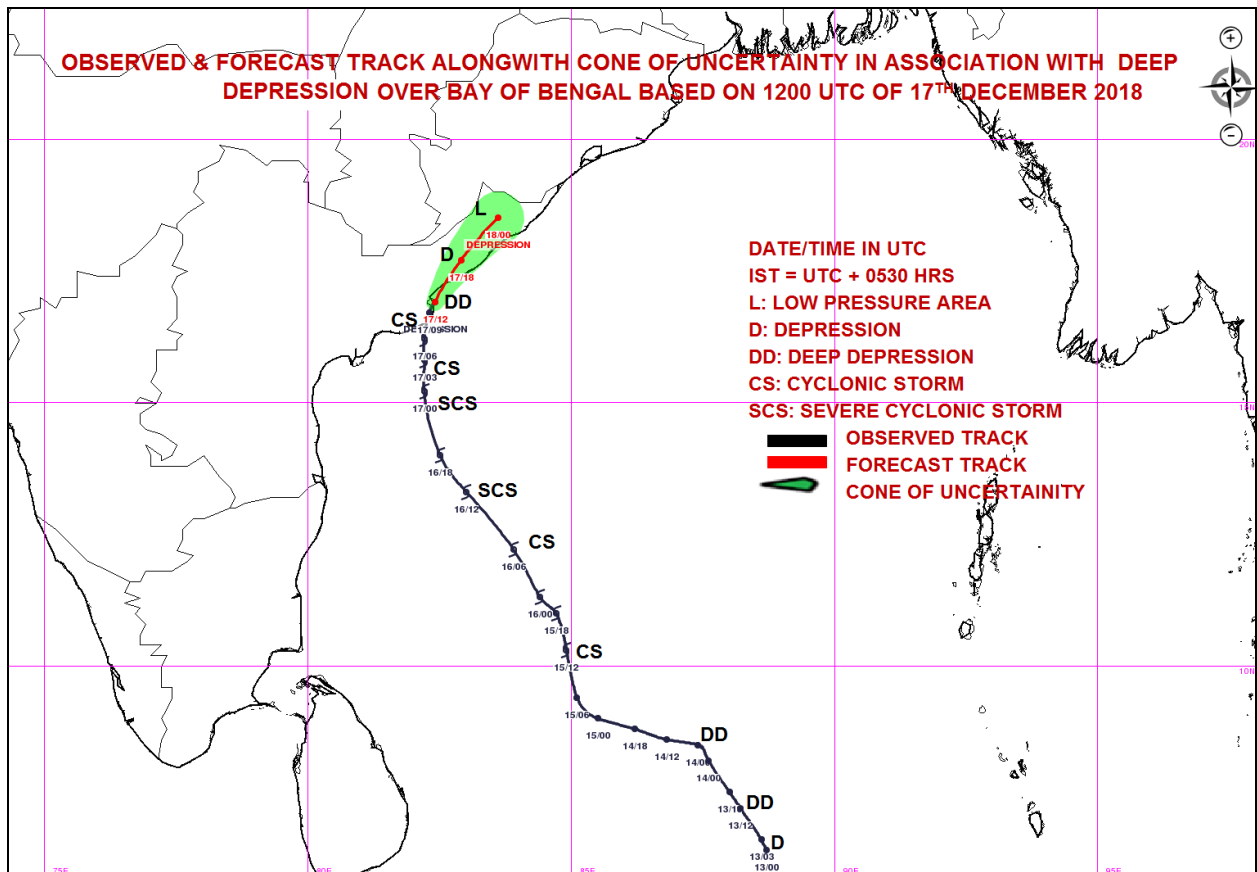
The next bulletin will be issued at 2330 hrs IST of today, the 17th December, 2018.

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

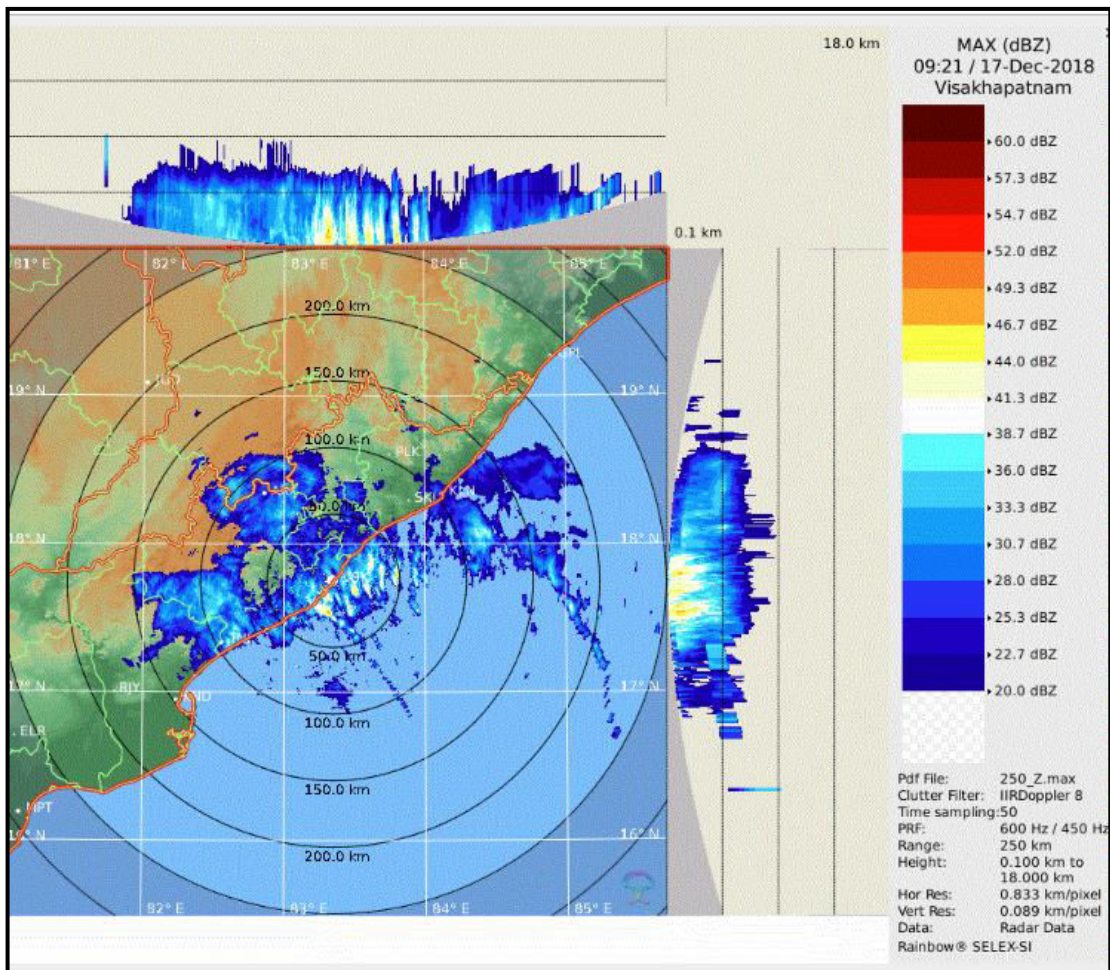
Copy to: CRS, Pune/ ACWC Kolkata/ Chennai/ CWC Bhubaneswar/CWC Visakhapatnam



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



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



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



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

BULLETIN NO. : 31 (BOB/10/2018)

TIME OF ISSUE: 2145 HOURS IST

DATED: 17.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (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, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029, 08645246600)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: DEEP DEPRESSION OVER COASTAL ANDHRA PRADESH

The Deep Depression over westcentral Bay of Bengal moved north-northeastwards with a speed of 11 kmph during past 06 hours, crossed Andhra Pradesh coast close to Tuni during 1930 to 2030 hrs IST of today, the 17th December, 2018 and lay centred at 2030 hrs IST of 17th December, 2018 over Coastal Andhra Pradesh, near latitude 17.3°N and longitude 82.5°E, close to Tuni. It is very likely to move north-northeastwards and weaken further into a Depression during next six hours and into a well marked low pressure area during subsequent six hours.

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
17.12.18/2030	17.3/82.5	50-60 gusting to 70	Deep Depression
17.12.18/2330	17.7/82.9	40-50 gusting to 60	Depression
18.12.18/0530	18.5/83.6	25-35 gusting to 45	Well marked low pressure area

Warnings:

(i) Heavy rainfall warning

Region	17-18 December 2018*
North Coastal Andhra Pradesh and Yanam district	Rainfall at most places with heavy to very heavy falls at isolated places during next 12 hours
Odisha	Rainfall most places with isolated heavy falls during next 12 hours
Jharkhand	Rainfall at many places with isolated heavy falls during next 24 hours
Chhattisgarh	Rainfall at most places with isolated heavy falls over south Chhattisgarh during next 12 hours
Gangetic West Bengal	Rainfall at most places with isolated heavy falls during next 24 hours

Legends: Red-Take Action; Orange- Be prepared; Yellow- be updated; Green: No warning

Note 1: * Rainfall till 0830 IST of next day. Note 2: Red colour warning means take action. It does not mean red alert.

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

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 for Andhra Pradesh and south Odisha coasts

- Squally wind speed reaching 50-60 kmph gusting to 70 kmph very likely along & off north Andhra Pradesh coast (**East & west Godavari, Vishakhapatnam, Vizianagaram, Srikakulam, Krishna Districts**) and Yanam district of Puducherry during next 06 hours and 40-50 kmph gusting to 60 kmph during subsequent 06 hours.
- Squally wind speed reaching 30-40 kmph gusting to 50 kmph likely along & off South Odisha coast during next 12 hours.

(iii) Wind warning for Sea areas

- Squally wind speed reaching 50-60 kmph gusting to 70 kmph prevails over westcentral Bay of Bengal off north Andhra Pradesh Coast during next 06 hours and 40-50 kmph gusting to 60 kmph during subsequent 06 hours.
- Squally wind speed reaching 30-40 kmph gusting to 50 kmph likely over northwest Bay of Bengal during next 12 hours.

(iv) Sea condition

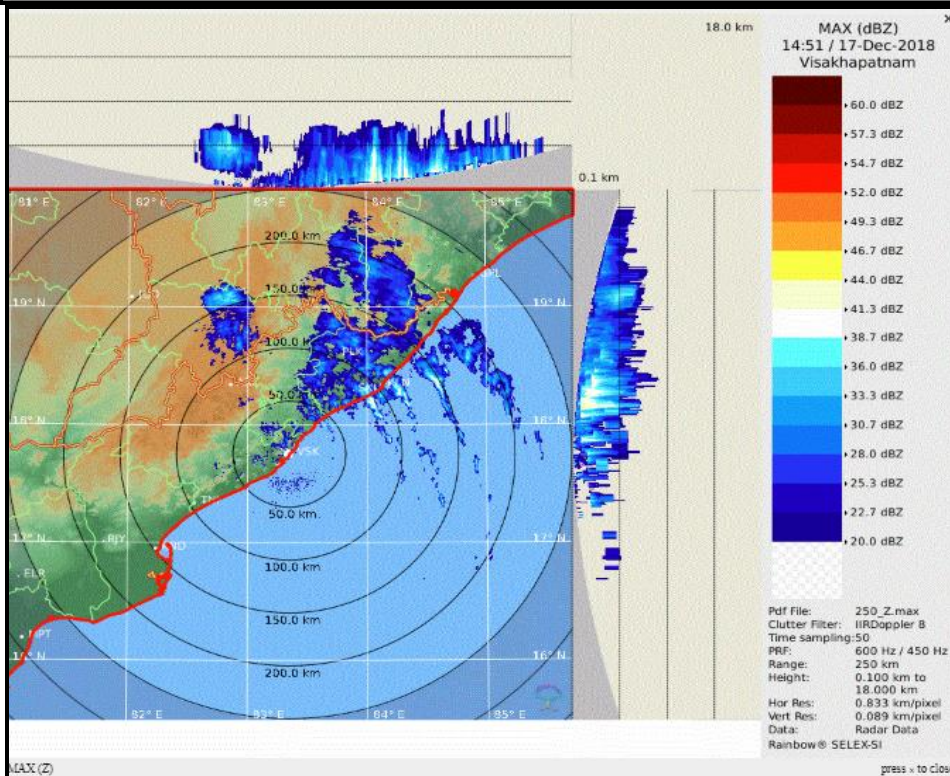
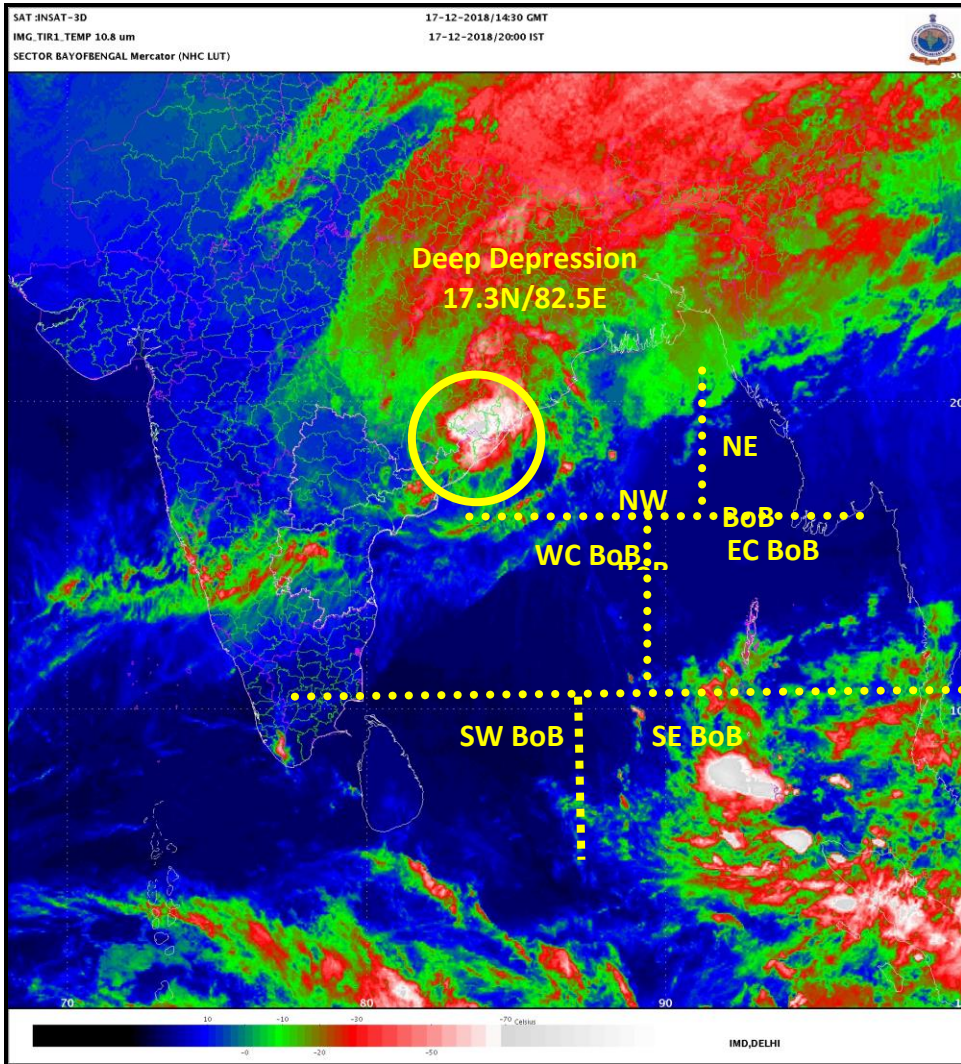
The sea condition is rough to very rough over westcentral Bay of Bengal. The sea condition is very likely to be rough to very rough over westcentral Bay of Bengal and along & off north Andhra Pradesh coast and Yanam district of Puducherry during next 12 hours.

(v) Fishermen warning

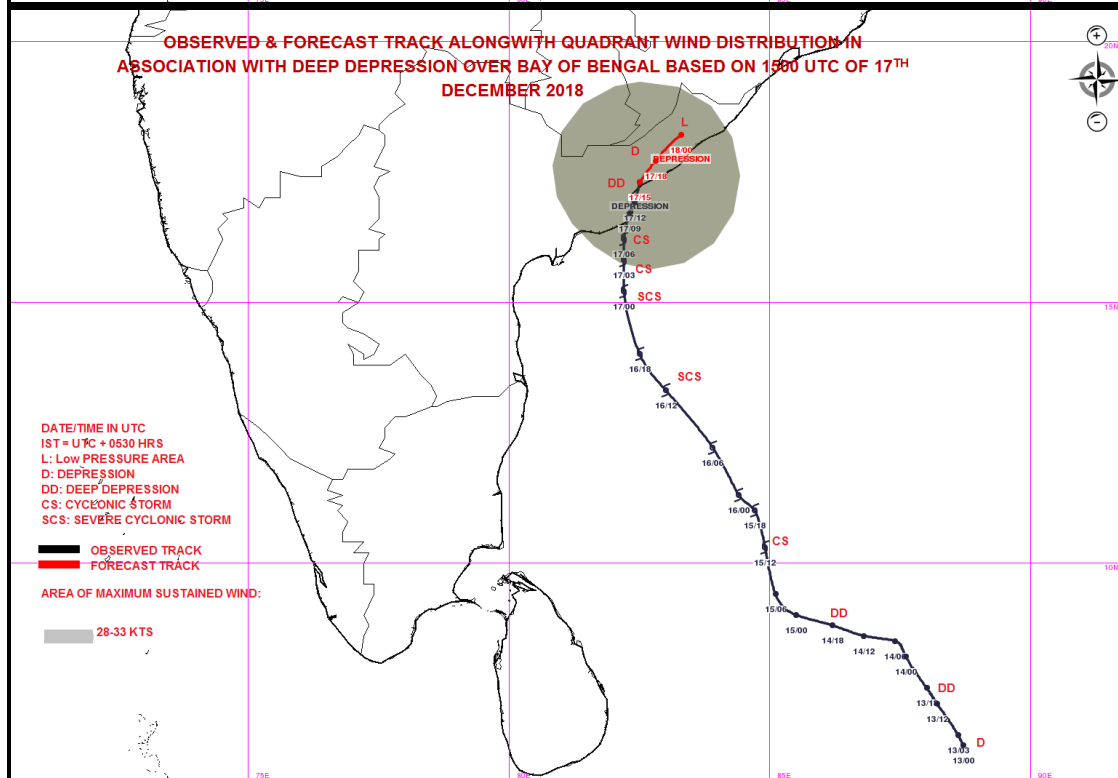
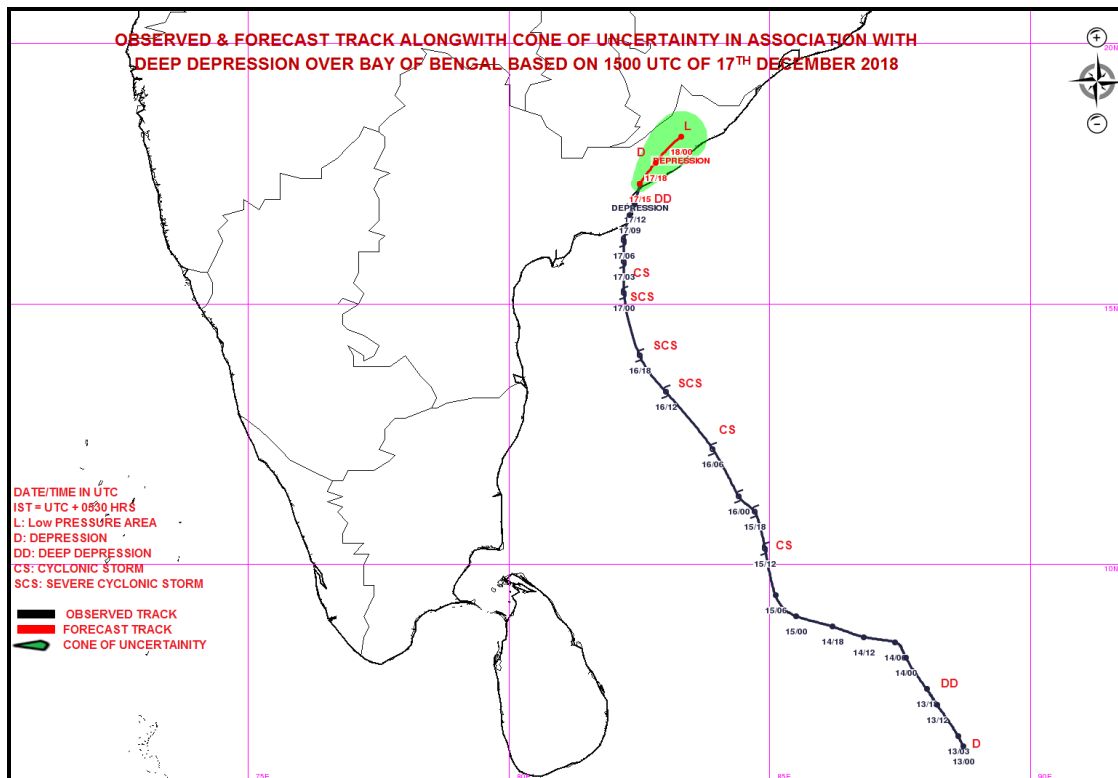
- Total suspension of fishing operations along & off North Andhra Pradesh and South Odisha coasts during next 12 hours.
- The fishermen are advised not to venture into westcentral and adjoining northwest Bay of Bengal and along & off north Andhra Pradesh and south Odisha coasts during next 12 hours.

The next bulletin will be issued at 0230 hrs IST of 18th December, 2018.

**(D.R. PATTANAİK)
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.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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 (BOB/10/2018)

TIME OF ISSUE: 0030 HOURS IST

DATED: 18.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (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, GOVT. OF ODISHA (FAX NO. 0674 -2536660)
CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029, 08645246600)
CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)
CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)
CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: DEEP DEPRESSION WEAKENED INTO DEPRESSION OVER COASTAL ANDHRA PRADESH

The Deep Depression over Coastal Andhra Pradesh moved nearly northwards with a speed of 11 kmph during past 06 hours, weakened into a depression and lay centred at 2330 hrs IST of 17th December, 2018 over Coastal Andhra Pradesh, near latitude 17.5°N and longitude 82.5°E, about 20 km north-northwest of Tuni. It is very likely to move north-northeastwards and further weaken into a well marked low pressure area during next six hours.

Warnings:

(i) Heavy rainfall warning

Region	18 December 2018*
Vizianagaram, Srikakulam, Vishakhapatnam, East Godavari districts of North Coastal Andhra Pradesh and Yanam district of Puducherry	Rainfall at most places with heavy falls at isolated places during next 06 hours
Odisha	Rainfall most places with isolated heavy falls during next 12 hours
Jharkhand	Rainfall at many places with isolated heavy falls during next 24 hours
Chhattisgarh	Rainfall at most places with isolated heavy falls over south Chhattisgarh during next 06 hours
Gangetic West Bengal	Rainfall at most places with isolated heavy falls during next 24 hours

Legends: Red-Take Action; Orange- Be prepared; Yellow- be updated; Green: No warning

Note 1: * Rainfall till 0830 IST of next day. Note 2: Red colour warning means take action. It does not mean red alert.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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 for Andhra Pradesh and south Odisha coasts

- Squally wind speed reaching 45-55 kmph gusting to 65 kmph very likely along & off north Andhra Pradesh coast (**East & west Godavari, Vishakhapatnam, Vizianagaram, Srikakulam, Krishna Districts**) and **Yanam district of Puducherry** during next 06 hours and 30-40 kmph gusting to 50 kmph during subsequent 06 hours.
- Squally wind speed reaching 30-40 kmph gusting to 50 kmph likely along & off South Odisha coast during next 12 hours.

(iii) Wind warning for Sea areas

- Squally wind speed reaching 45-55 kmph gusting to 65 kmph prevails over westcentral Bay of Bengal off north Andhra Pradesh Coast during next 06 hours and 30-40 kmph gusting to 50 kmph during subsequent 06 hours.
- Squally wind speed reaching 30-40 kmph gusting to 50 kmph likely over adjoining northwest Bay of Bengal during next 12 hours.

(iv) Sea condition

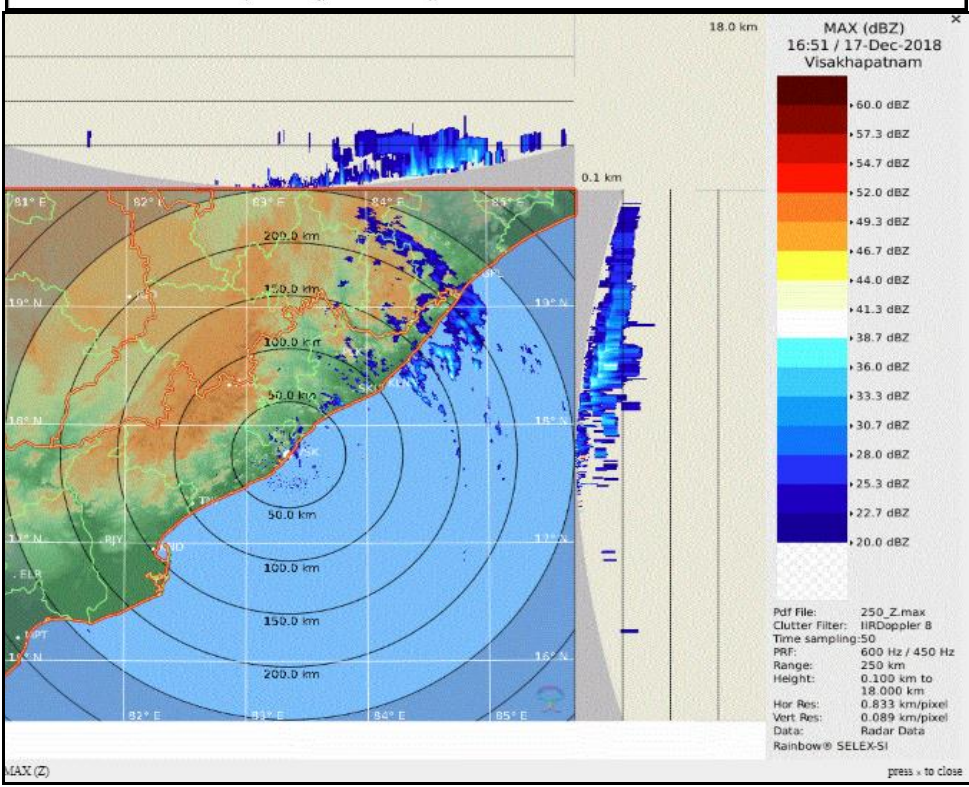
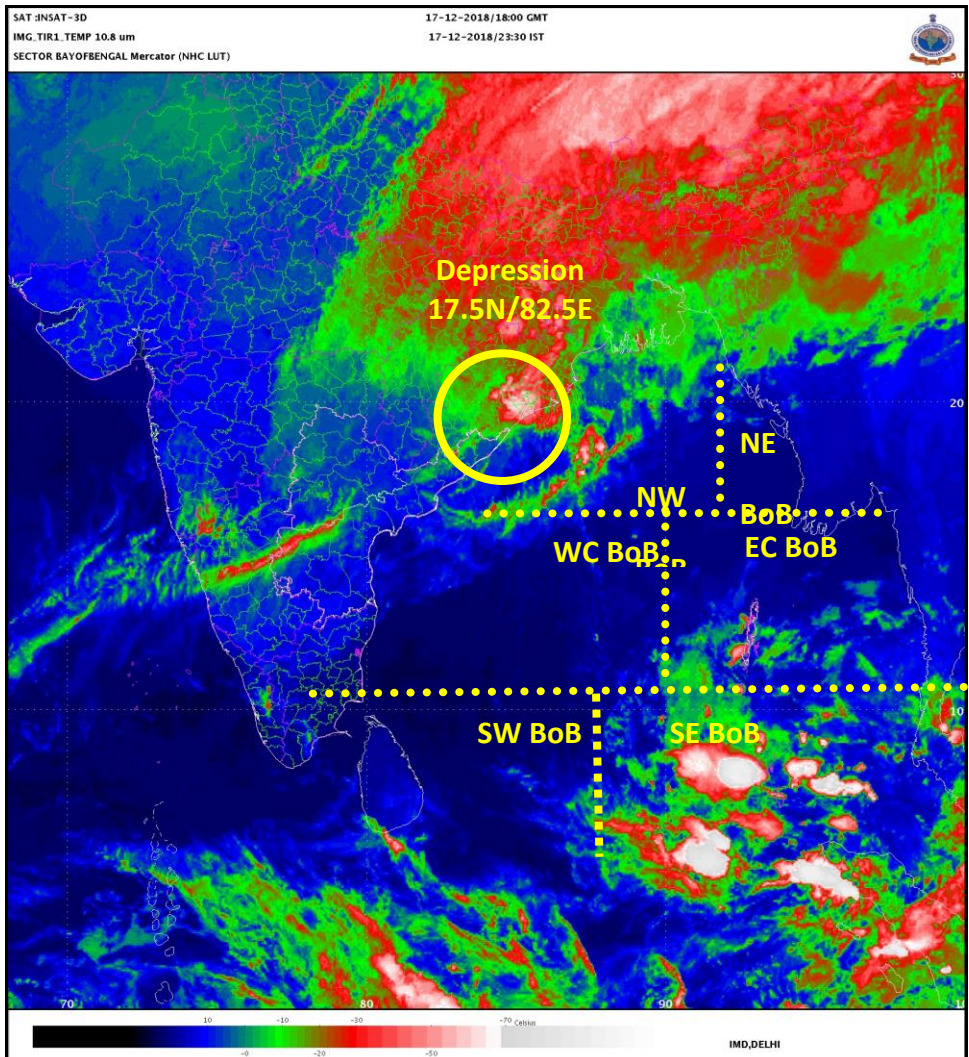
The sea condition is rough to very rough over westcentral Bay of Bengal. The sea condition is very likely to be rough to very rough over westcentral Bay of Bengal and along & off north Andhra Pradesh coast and Yanam district of Puducherry during next 12 hours.

(v) Fishermen warning

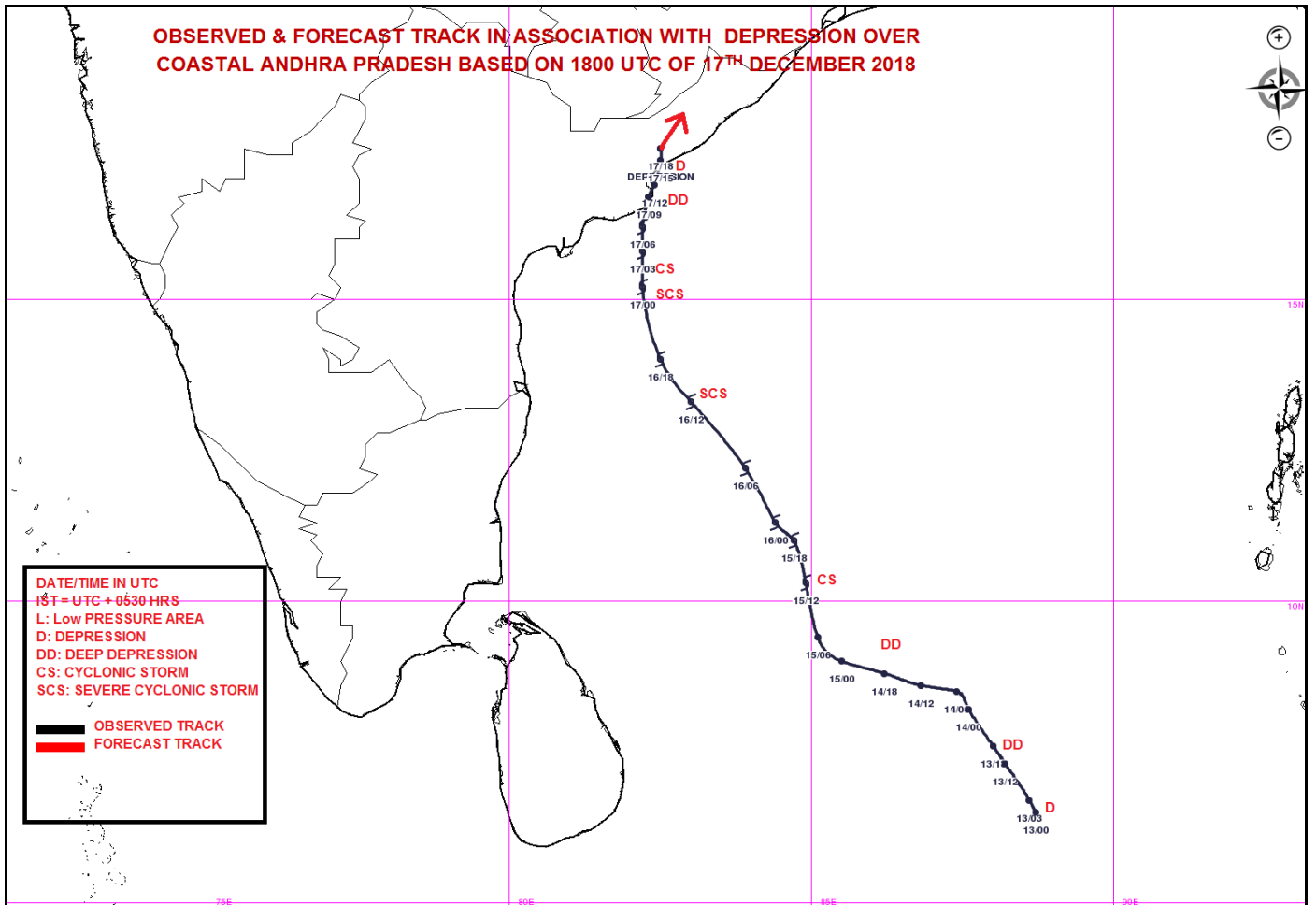
- Total suspension of fishing operations along & off North Andhra Pradesh and South Odisha coasts during next 12 hours.
- The fishermen are advised not to venture into westcentral and adjoining northwest Bay of Bengal and along & off north Andhra Pradesh and south Odisha coasts during next 12 hours.

The next bulletin will be issued at 0830 hrs IST of 18th December, 2018.

**(D.R. PATTANAİK)
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.



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



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

BULLETIN NO. : 33 (BOB/10/2018)

TIME OF ISSUE: 0800 HOURS IST

DATED: 18.12.2018

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 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 (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, GOVT. OF ODISHA (FAX NO. 0674 -2536660)
CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029, 08645246600)
CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)
CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)
CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575)

Sub: Depression weakened into well marked low pressure over Northwest & adjoining Westcentral Bay of Bengal and Odisha

The Depression over north Coastal Andhra Pradesh moved nearly north-northeastwards during past 06 hours, weakened into a well marked low pressure area and lay over Northwest & adjoining Westcentral Bay of Bengal and Odisha at 0530 hrs IST of 18th December, 2018. It is very likely to weaken further into a low pressure area during next 12 hours.

Warnings:

(i) Heavy rainfall warning

Region	18 December 2018*
Odisha	Light to moderate rainfall at many places over north Odisha and at a few places over south Odisha during next 12 hours
Jharkhand	Rainfall at many places during next 24 hours
Chhattisgarh	Rainfall at a few places over north Chhattisgarh and isolated places over south Chhattisgarh during next 12 hours
Gangetic West Bengal	Rainfall at most places with isolated heavy falls during next 24 hours

Legends: **Red-Take Action; Orange- Be prepared; Yellow- be updated; Green: No warning**

Note 1: * Rainfall till 0830 IST of next day. **Note 2: Red colour warning means take action. It does not mean red alert.**

(ii) Wind warning for Odisha coast

- Strong wind speed reaching 30-40 kmph gusting to 50 kmph likely along & off Odisha coast and over northwest & adjoining westcentral Bay of Bengal during next 12 hours.

(iii) Sea condition

The sea condition is likely to be rough over northwest and adjoining westcentral Bay of Bengal during next 12 hours.

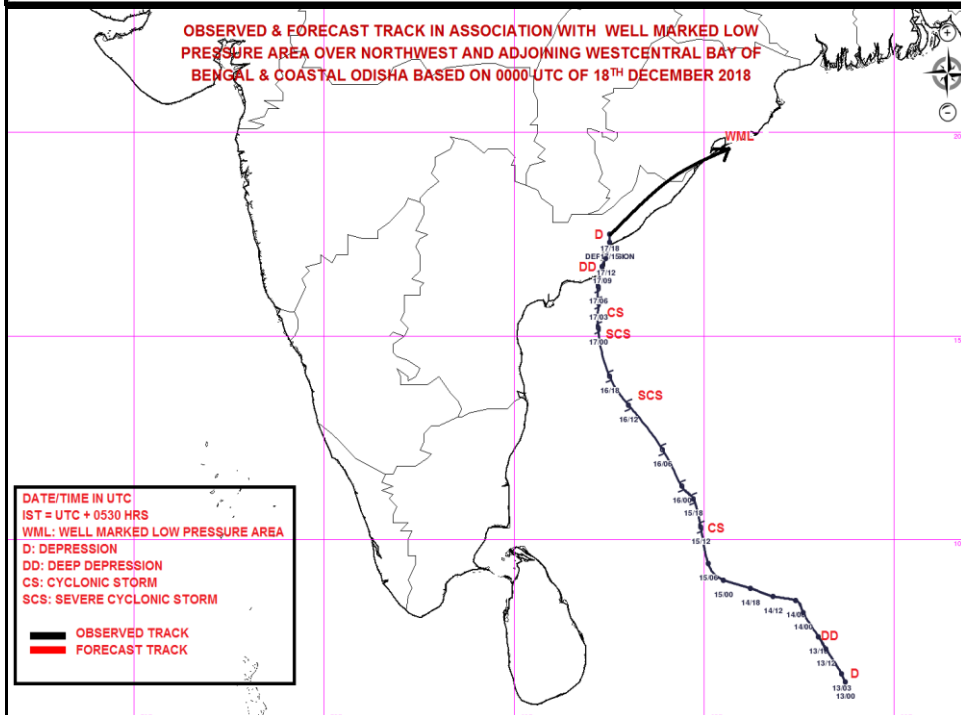
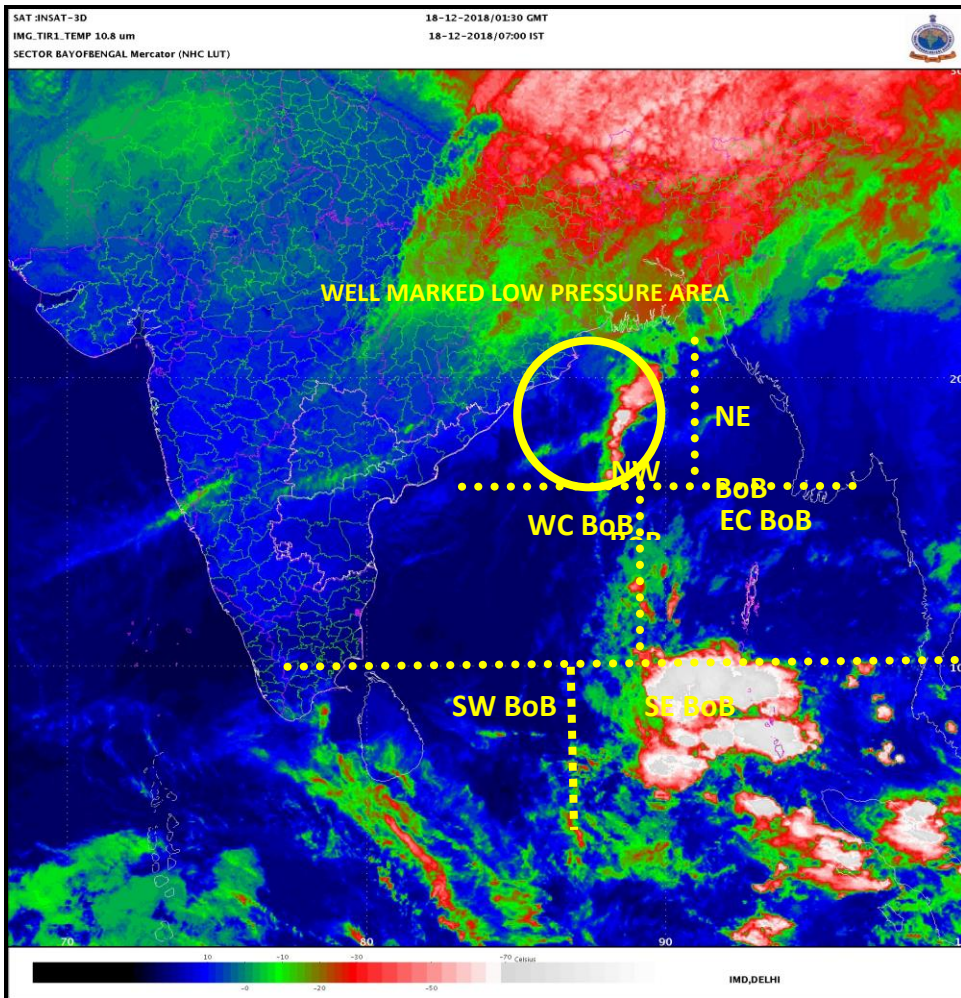
(iv) Fishermen warning

- The fishermen are advised not to venture into northwest and adjoining westcentral Bay of Bengal and Odisha coast during next 12 hours.

This is the last bulletin with respect to this system. However, the regular bulletin will continue from National Weather Forecasting Centre (NWFC), New Delhi and Regional Met Centres/Met. Centres.

(D.R. PATTANAİK)
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.



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