



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

BULLETIN NO.: 01 (BOB 06/2016)

TIME OF ISSUE: 1630 HOURS IST

DATED: 06.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR (FAX NO. 03192-232656))
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)

Sub: Depression over southeast Bay of Bengal.

Latest observations & satellite imagery indicate that a depression has formed over southeast Bay of Bengal and lay centred at 1430 hrs IST of today, the 6th December, 2016 near Latitude 8.5°N and Longitude 91.0°E, about 1320 km south-southeast of Vishakhapatnam, 1360 km south-southeast of Gopalpur and 210 km west-southwest of Car Nicobar. The system is very likely to move initially west-northwestwards and then northwestwards during next 72 hrs. It is very likely to intensify into a deep depression during next 24 hrs and into a cyclonic storm in subsequent 24 hrs.

Warning:

- (i) **Heavy Rainfall Warning:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places is very likely to commence over Andaman and Nicobar Islands during next 48 hrs.
- (ii) **Wind warning:** Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail over Andaman & Nicobar Islands and adjoining sea areas during next 48 hrs.
- (iii) **Sea condition:** Sea condition would be rough to very rough along & off Andaman & Nicobar Islands and adjoining sea areas during next 48 hrs.
- (iv) **Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andaman & Nicobar Islands and adjoining sea areas during next 48 hrs.

Next bulletin will be issued at 2030 hrs IST of 06th December 2016.

(Naresh Kumar)
Scientist-D
RSMC, New Delhi

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



India Meteorological Department
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BULLETIN NO.: 02 (BOB 06/2016)

TIME OF ISSUE: 1930 HOURS IST

DATED: 06.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
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DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR (FAX NO. 03192-232656)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)**

Sub: Depression over southeast Bay of Bengal.

The depression over southeast Bay of Bengal moved west-northwestwards with a speed of about 20 kmph and lay centred at 1730 hrs IST of today, the 6th December, 2016 over southeast Bay of Bengal near Latitude 8.8°N and Longitude 90.5°E, about 1260 km south-southeast of Vishakhapatnam, 1310 km south-southeast of Gopalpur and 260 km west-southwest of Car Nicobar. The system is very likely to move northwestwards during next 72 hrs. It is very likely to intensify into a deep depression during next 24 hrs and into a cyclonic storm in subsequent 24 hrs.

Warning:

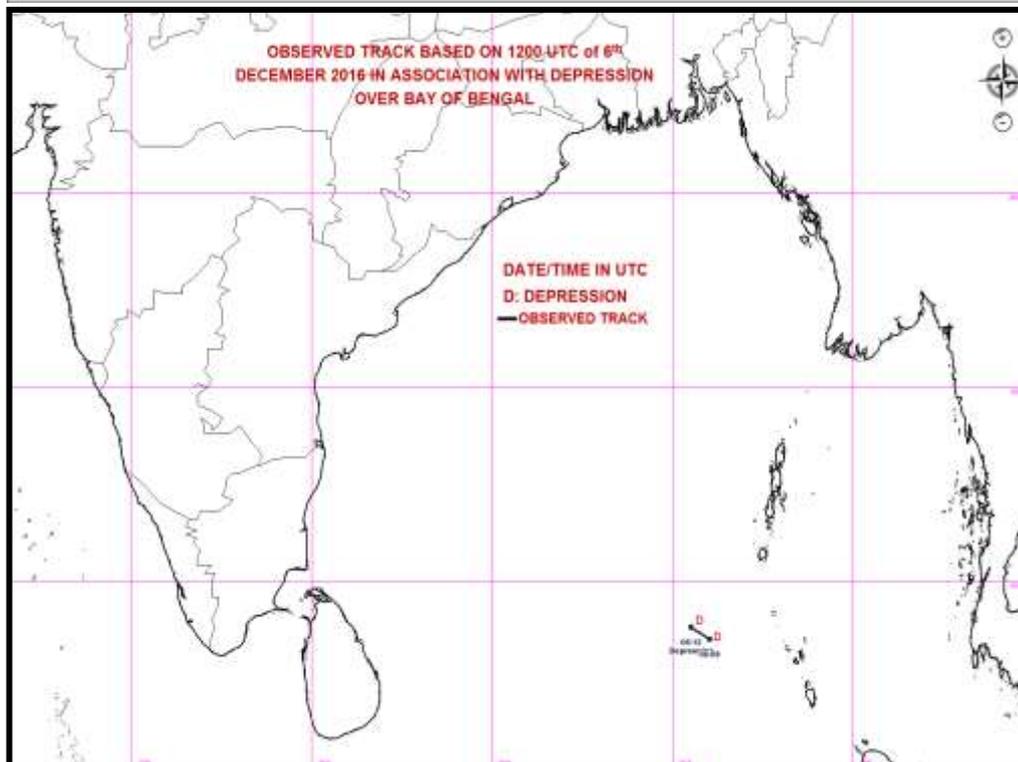
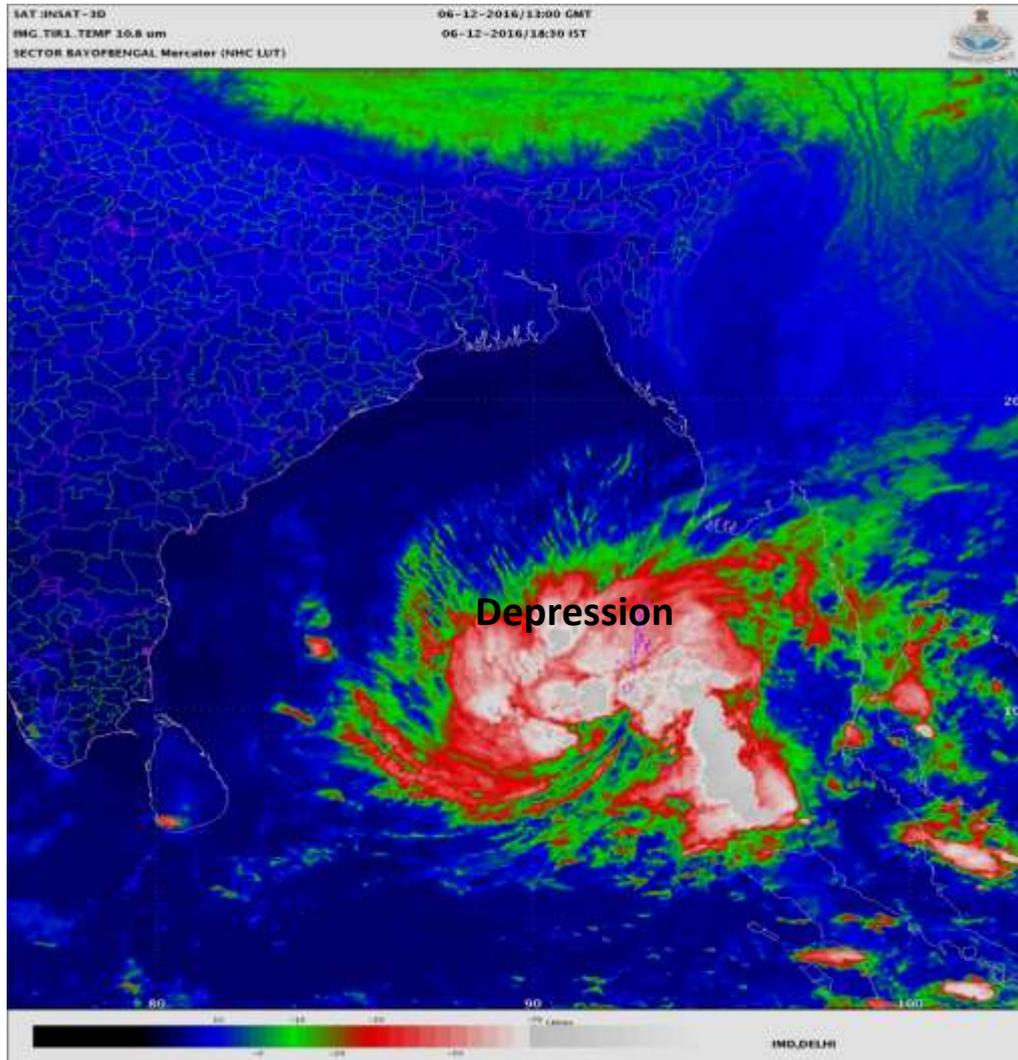
- (v) Heavy Rainfall Warning:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places is very likely to commence over Andaman and Nicobar Islands during next 48 hrs.
- (vi) Wind warning:** Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail over Andaman & Nicobar Islands and adjoining sea areas during next 48 hrs.
- (vii) Sea condition:** Sea condition would be rough to very rough along & off Andaman & Nicobar Islands and adjoining sea areas during next 48 hrs.
- (viii) Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andaman & Nicobar Islands and adjoining sea areas during next 48 hrs.

Next bulletin will be issued at 0230 hrs IST of 07th December 2016.

**(Shambu Ravindren)
Scientist-B**

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC Bhubaneswar/MC Hyderabad/MO Port Blair

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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BULLETIN NO.: 03 (BOB 06/2016)

TIME OF ISSUE: 0130 HOURS IST

DATED: 07.12.2016

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.23793144)
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SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR (FAX NO. 03192-232656)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)**

Sub: Depression over southeast Bay of Bengal.

The depression over southeast Bay of Bengal moved northwards with a speed of about 14 kmph during the past 6 hours and lay centred at 2330 hrs IST of yesterday, the 6th December, 2016 over southeast Bay of Bengal near Latitude 9.5°N and Longitude 90.5°E, about 1200 km south-southeast of Visakhapatnam, 1240 km south-southeast of Gopalpur and 250 km west-southwest of Car Nicobar. The system is very likely to move northwestwards during next 72 hrs. It is very likely to intensify into a deep depression during next 24 hrs and into a cyclonic storm in subsequent 24 hrs.

Warning:

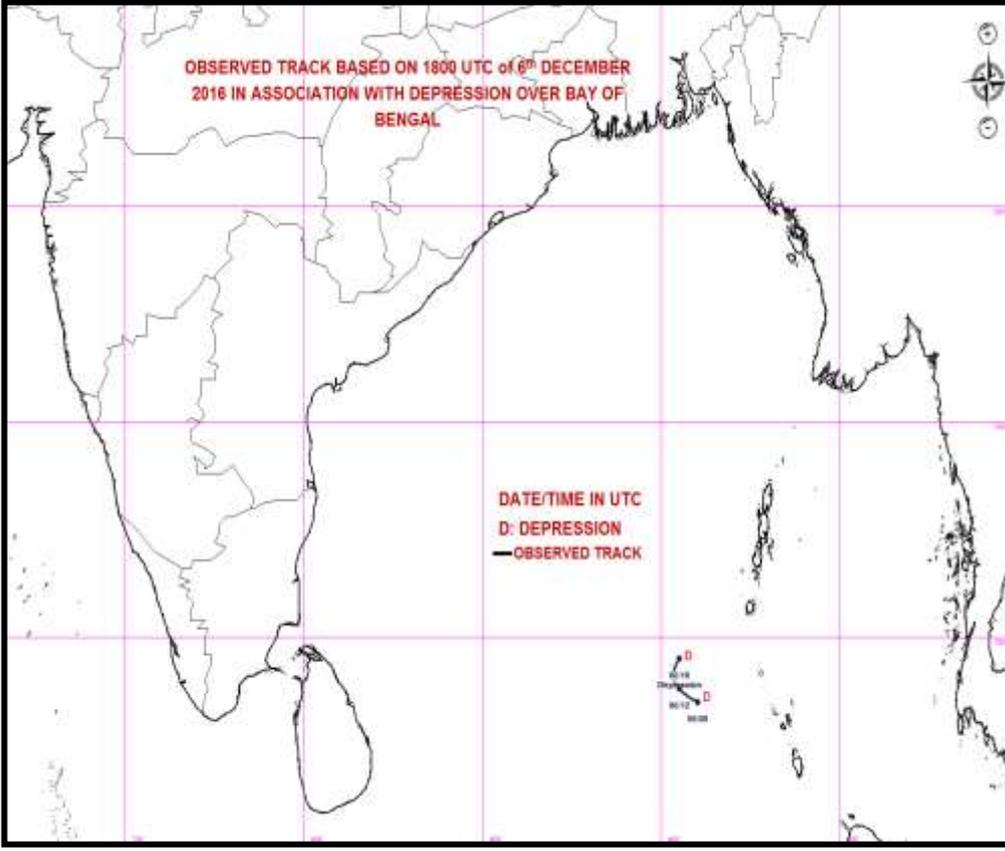
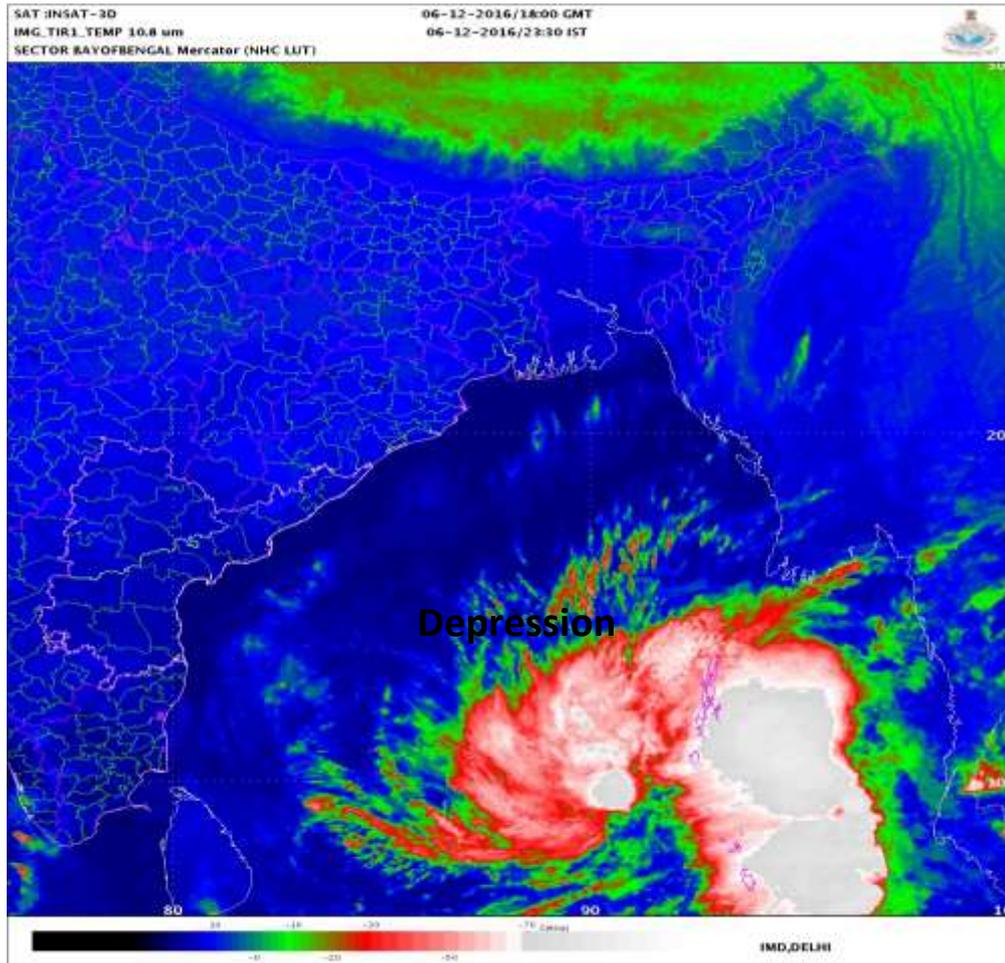
- (ix) Heavy Rainfall Warning:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places is very likely to commence over Andaman and Nicobar Islands during next 48 hrs.
- (x) Wind warning:** Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail over Andaman & Nicobar Islands and adjoining sea areas during next 48 hrs.
- (xi) Sea condition:** Sea condition would be rough to very rough along & off Andaman & Nicobar Islands and adjoining sea areas during next 48 hrs.
- (xii) Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andaman & Nicobar Islands and adjoining sea areas during next 48 hrs.

Next bulletin will be issued at 0830 hrs IST of 07th December 2016.

**(Shambu Ravindren)
Scientist-B**

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC Bhubaneswar/MC Hyderabad/MO Port Blair

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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BULLETIN NO.: 04 (BOB 06/2016)

TIME OF ISSUE: 0830 HOURS IST

DATED: 07.12.2016

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

**TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23093750)
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SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR (FAX NO. 03192-232656)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)**

Sub: Depression over southeast Bay of Bengal.

The depression over southeast Bay of Bengal moved further northwards with a speed of about 10 kmph during the past 6 hours and lay centred at 0530 hrs IST of today, the 7th December, 2016 over southeast Bay of Bengal near Latitude 9.8°N and Longitude 90.5°E, about 1180 km south-southeast of Visakhapatnam, 1210 km south-southeast of Gopalpur, 260 km west-northwest of Car Nicobar and 310 km south-southwest of Port Blair. The system is very likely to move northwestwards during next 72 hrs. It is very likely to intensify into a deep depression during next 24 hrs and into a cyclonic storm in subsequent 24 hrs.

Warning:

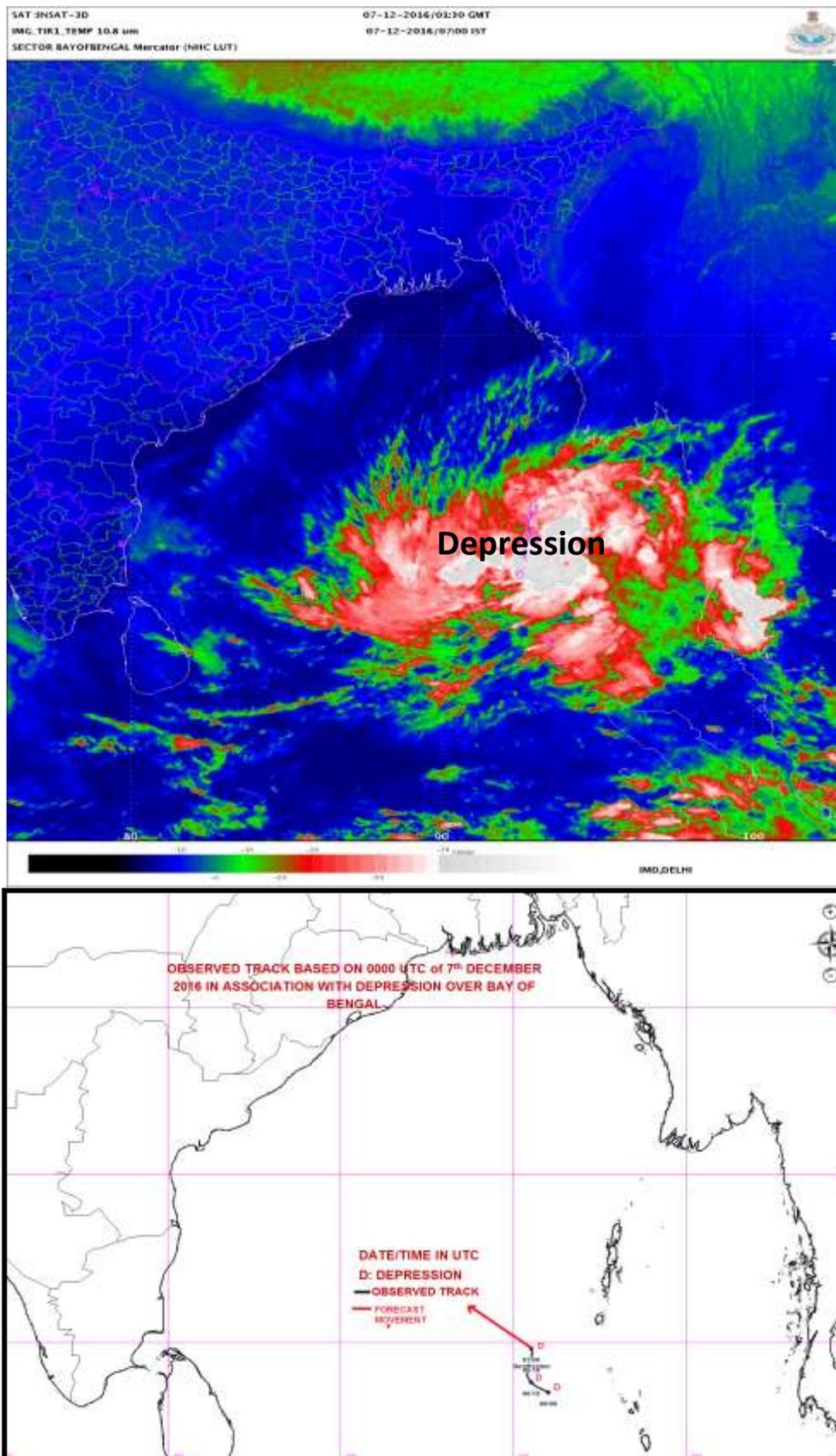
- (xiii) **Heavy Rainfall Warning:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places is very likely to occur over Andaman and Nicobar Islands during next 24 hrs and isolated heavy to very heavy falls thereafter.
- (xiv) **Wind warning:** Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail over Andaman & Nicobar Islands and adjoining sea areas during next 48 hrs.
- (xv) **Sea condition:** Sea condition would be rough to very rough along & off Andaman & Nicobar Islands and adjoining sea areas during next 48 hrs.
- (xvi) **Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andaman & Nicobar Islands and adjoining sea areas during next 48 hrs.

Next bulletin will be issued at 1130 hrs IST of 07th December 2016.

**(Shambu Ravindren)
Scientist-B**

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC Bhubaneswar/MC Hyderabad/MO Port Blair

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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Earth System Science Organisation
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BULLETIN NO.: 05 (BOB 06/2016)

TIME OF ISSUE: 1100 HOURS IST

DATED: 07.12.2016

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

**TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23093750)
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SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
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PIB MOES (FAX NO. 23389042)
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D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
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CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR (FAX NO. 03192-232656)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)**

Sub: Depression over southeast Bay of Bengal.

The depression over southeast Bay of Bengal remained practically stationary during the past 3 hours and lay centred at 0830 hrs IST of today, the 7th December, 2016 over southeast Bay of Bengal near Latitude 9.8°N and Longitude 90.5°E, about 1180 km south-southeast of Visakhapatnam, 1210 km south-southeast of Gopalpur, 260 km west-northwest of Car Nicobar and 310 km south-southwest of Port Blair. The system is very likely to move northwestwards during next 72 hrs. It is very likely to intensify into a deep depression during next 24 hrs and into a cyclonic storm in subsequent 24 hrs.

Warning:

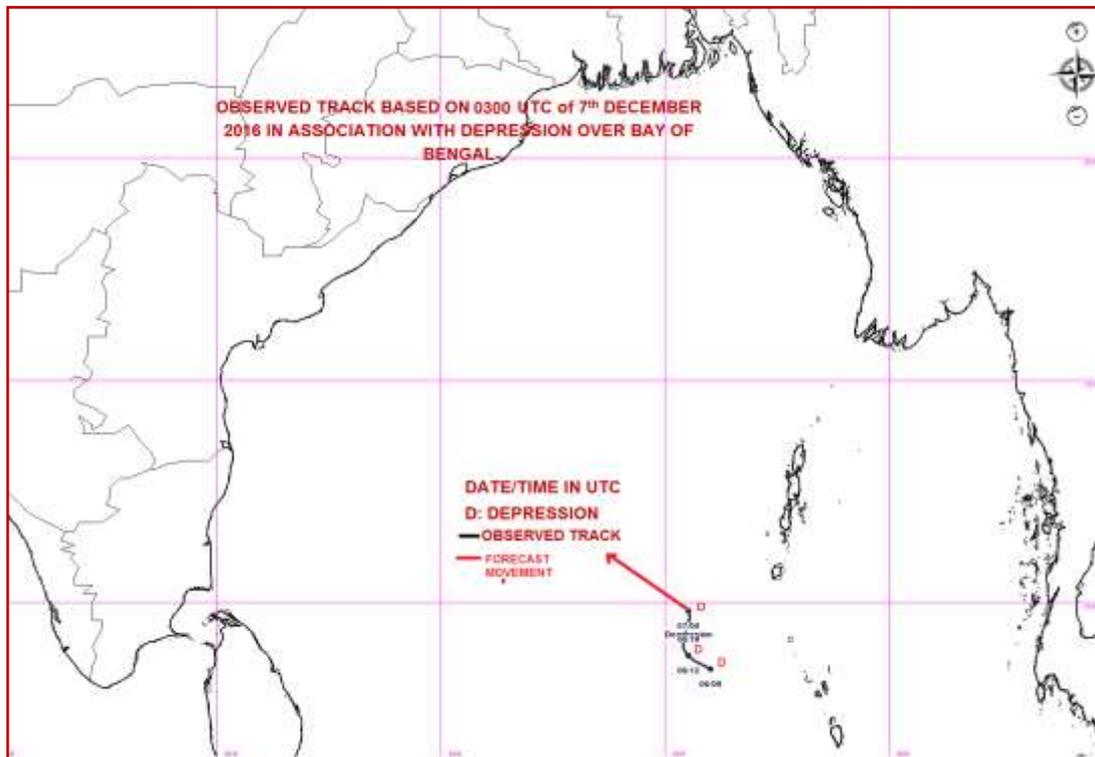
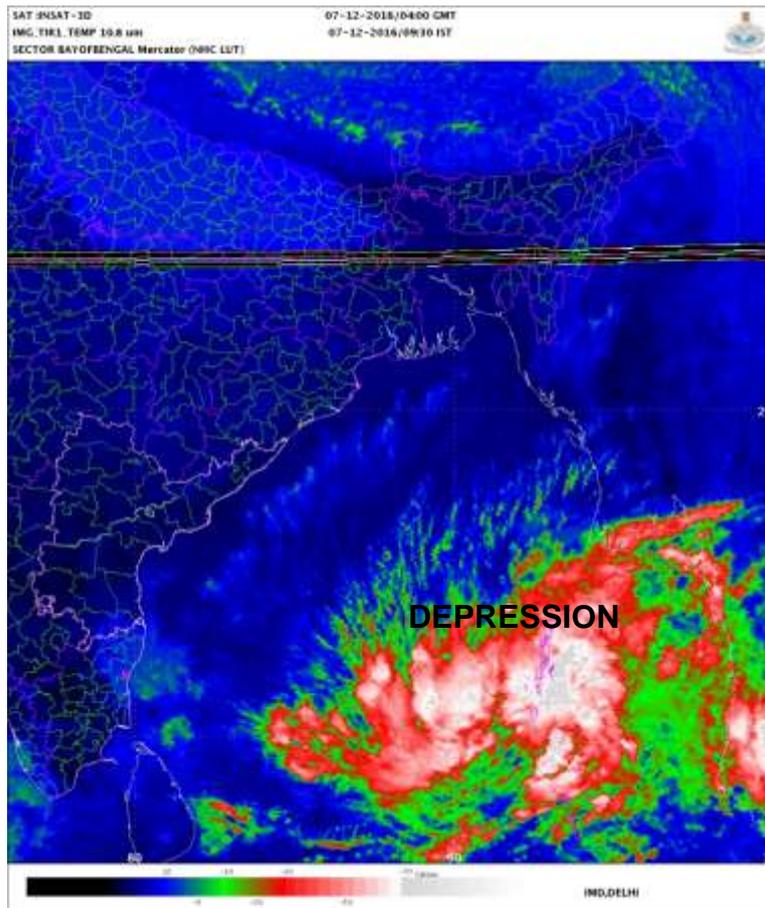
- (xvii) Heavy Rainfall Warning:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places over Andaman Islands and heavy rainfall at isolated places over Nicobar Islands is very likely to occur during next 24 hrs. Light to moderate rainfall at most places with isolated heavy falls is very likely over Andaman and Nicobar Islands during subsequent 24 hours.
- (xviii) Wind warning:** Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail over Andaman & Nicobar Islands and adjoining sea areas during next 48 hrs.
- (xix) Sea condition:** Sea condition would be rough to very rough along & off Andaman & Nicobar Islands and adjoining sea areas during next 48 hrs.
- (xx) Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andaman & Nicobar Islands and adjoining sea areas during next 48 hrs.

Next bulletin will be issued at 1430 hrs IST of 07th December 2016.

**(Naresh Kumar)
Scientist-D**

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC Bhubaneswar/MC Hyderabad/MO Port Blair

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



India Meteorological Department
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BULLETIN NO.: 06 (BOB 06/2016)

TIME OF ISSUE: 1400 HOURS IST

DATED: 07.12.2016

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)
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SECRETARY, DST (FAX NO. 26863847/-2418)
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CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR (FAX NO. 03192-232656)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)**

Sub: Depression over southeast Bay of Bengal.

The depression over southeast Bay of Bengal remained practically stationary during the past 6 hours and lay centred at 1130 hrs IST of today, the 7th December, 2016 over southeast Bay of Bengal near Latitude 9.8°N and Longitude 90.5°E, about 1180 km south-southeast of Visakhapatnam, 1210 km south-southeast of Gopalpur, 260 km west-northwest of Car Nicobar and 310 km south-southwest of Port Blair. The system is very likely to move northwestwards during next 72 hrs. It is very likely to intensify into a deep depression during next 24 hrs and into a cyclonic storm in subsequent 24 hrs.

Warning:

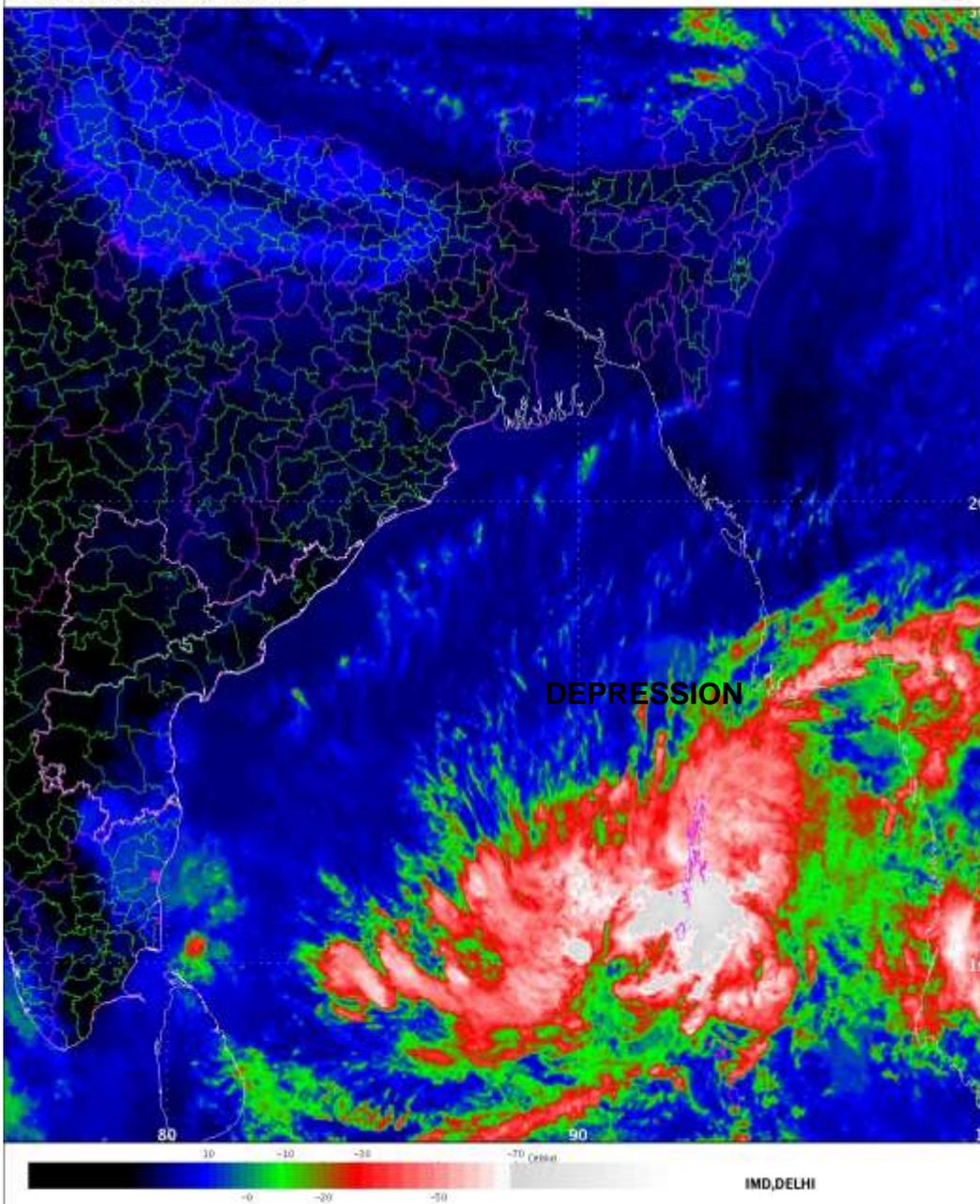
- (xxi) Heavy Rainfall Warning:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places over Andaman Islands and heavy rainfall at isolated places over Nicobar Islands is very likely to occur during next 24 hrs. Light to moderate rainfall at most places with isolated heavy falls is very likely over Andaman and Nicobar Islands during subsequent 24 hours.
- (xxii) Wind warning:** Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail over Andaman & Nicobar Islands and adjoining sea areas during next 48 hrs.
- (xxiii) Sea condition:** Sea condition would be rough to very rough along & off Andaman & Nicobar Islands and adjoining sea areas during next 48 hrs.
- (xxiv) Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andaman & Nicobar Islands and adjoining sea areas during next 48 hrs.

Next bulletin will be issued at 2030 hrs IST of 07th December 2016.

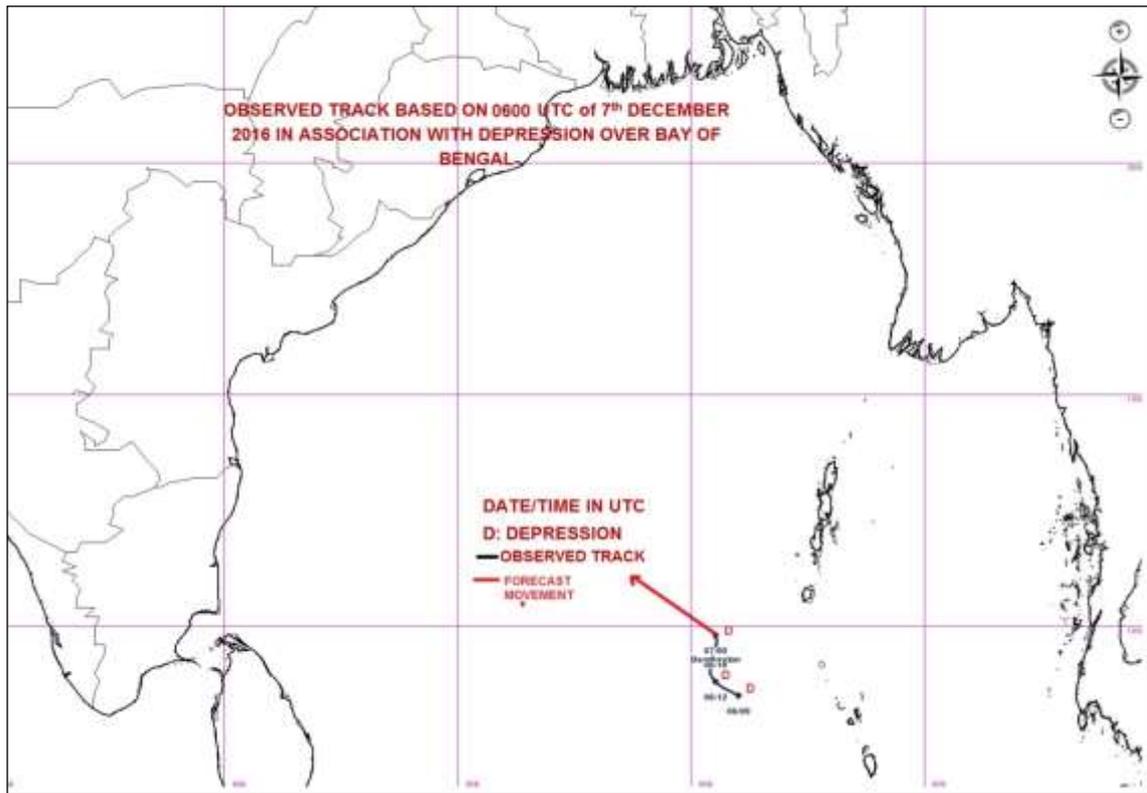
**(Naresh Kumar)
Scientist-D**

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC Bhubaneswar/MC Hyderabad/MO Port Blair

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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BULLETIN NO.: 07 (BOB 06/2016)

TIME OF ISSUE: 2000 HOURS IST

DATED: 07.12.2016

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, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192-232656)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)

Sub: Depression over southeast Bay of Bengal.

The depression over southeast Bay of Bengal moved slightly northward during the past 6 hours and lay centred at 1730 hrs IST of today, the 7th December, 2016 over southeast Bay of Bengal near Latitude 10.0°N and Longitude 90.5°E, about 1160 km southeast of Visakhapatnam, 1220 km east-southeast of Machilipatnam, 270 km west-northwest of Car Nicobar and 300 km south-southwest of Port Blair. The system is very likely to move nearly northward for next 12 hrs and then northwestwards towards Andhra Pradesh coast during subsequent 4 days. It is very likely to intensify into a deep depression during next 24 hrs and into a cyclonic storm in subsequent 24 hrs.

Warning:

- (xxv) **Heavy Rainfall Warning:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places over Andaman Islands and heavy rainfall at isolated places over Nicobar Islands is very likely to occur during next 12 hrs. Light to moderate rainfall at most places with isolated heavy falls is very likely over Andaman & Nicobar Islands during subsequent 24 hours. Light to moderate rainfall at many places with isolated heavy falls over coastal Andhra Pradesh is very likely to commence from 11th December afternoon.
- (xxvi) **Wind warning:** Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail over Andaman Islands & adjoining sea areas during next 36 hrs and Nicobar Islands & adjoining sea areas during next 24 hrs.
- (xxvii) **Sea condition:** Sea condition would be rough to very rough along & off Andaman Islands and adjoining sea areas during next 36 hrs and Nicobar Islands and adjoining sea areas during next 24 hrs.
- (xxviii) **Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andaman Islands and adjoining sea areas during next 36 hrs and Nicobar Islands & adjoining sea areas during next 24 hrs.

Next bulletin will be issued at 0230 hrs IST of 08th December 2016.

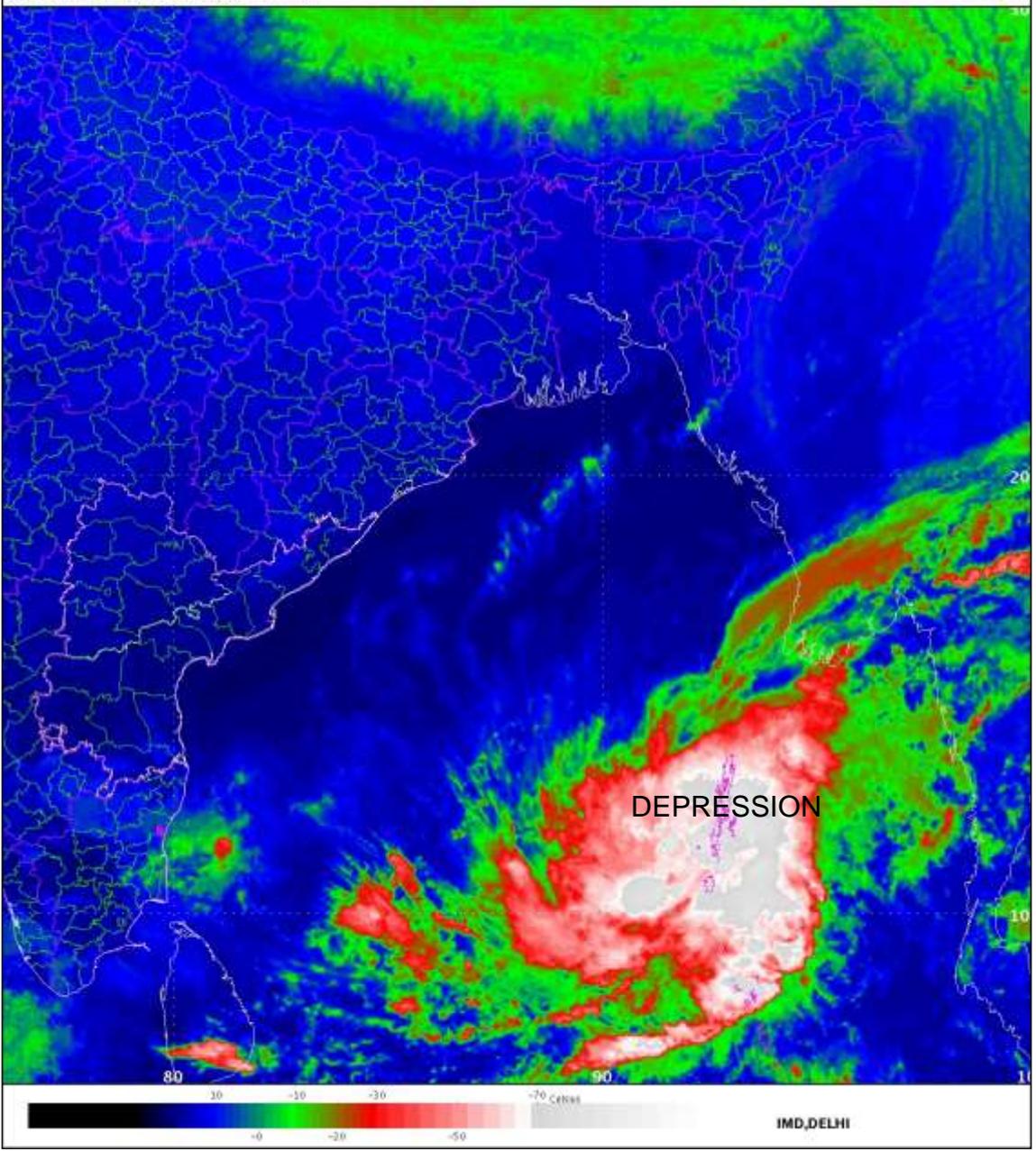
(Naresh Kumar)
Scientist-D

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC Bhubaneswar/MC Hyderabad/MO Port Blair

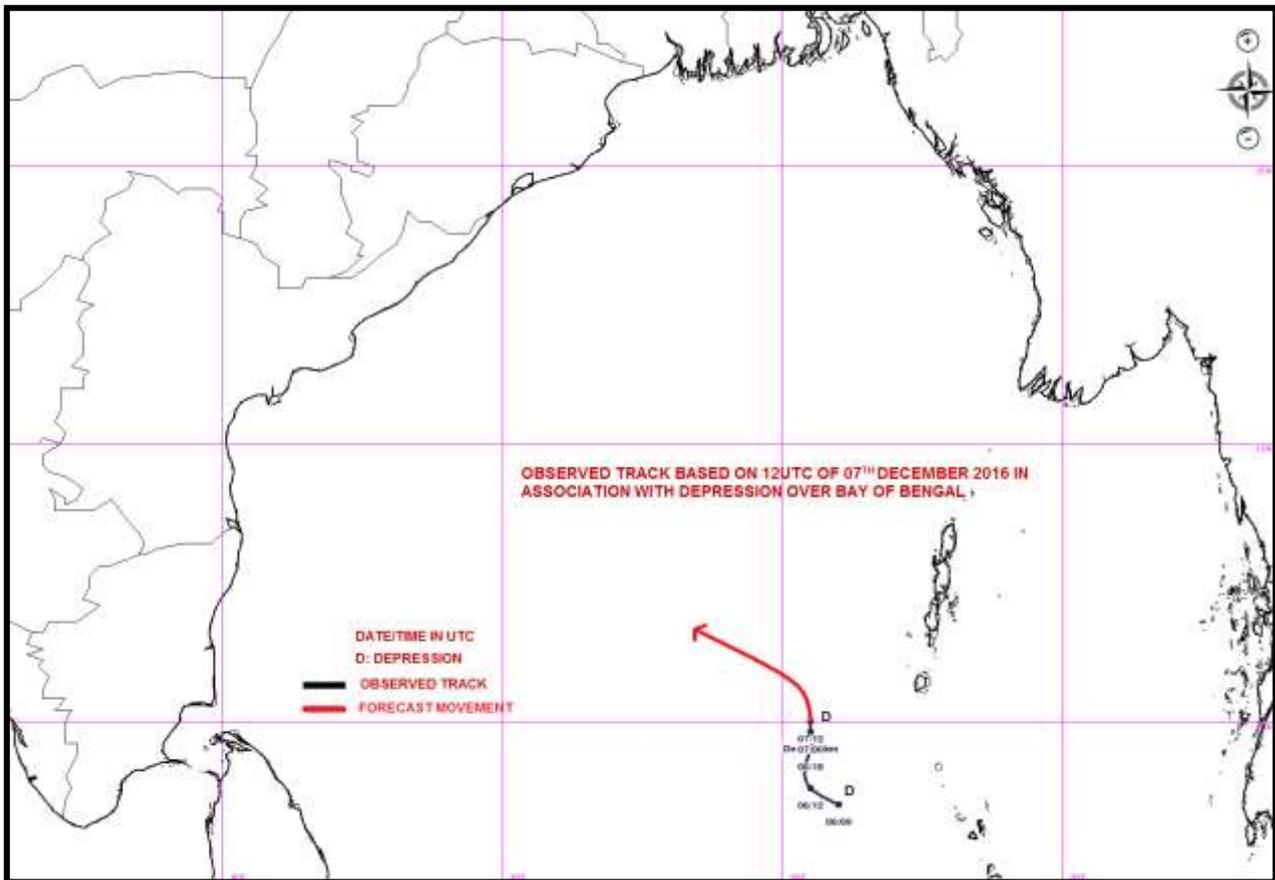
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

SAT :INSAT-3D
IMG_TIR1_TEMP 10.8 um
SECTOR BAYOFBENGAL Mercator (NHC LUT)

07-12-2016/13:00 GMT
07-12-2016/18:30 IST



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 08 (BOB 06/2016)

TIME OF ISSUE: 0100 HOURS IST

DATED: 08.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24621402)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192-232656)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)**

**Sub: Depression over southeast Bay of Bengal intensify into a Deep Depression
Pre-Cyclone Watch for Andhra Pradesh Coast**

The depression over southeast Bay of Bengal moved further northward during the past 6 hours, intensify into deep depression and lay centred at 2330 hrs IST of yesterday, the 7th December, 2016 over southeast Bay of Bengal near Latitude 10.8°N and Longitude 90.5°E, about 1090 km southeast of Visakhapatnam, 1170 km east-southeast of Machilipatnam, 310 km northwest of Car Nicobar and 260 km southwest of Port Blair. The system is very likely to move nearly northward for next 12 hrs and then northwestwards towards Andhra Pradesh coast during subsequent 4 days. It is very likely to intensify into a cyclonic storm during next 24 hrs.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. 0N/ long. 0E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
07-12-2016/2330	10.8/90.5	50-60 gusting to 70	Deep Depression
08-12-2016/0530	11.4/90.5	55-65 gusting to 75	Deep Depression
08-12-2016/1130	11.7/90.5	60-70 gusting to 80	Cyclonic Storm
08-12-2016/1730	12.0/90.3	70-80 gusting to 90	Cyclonic Storm
08-12-2016/2330	12.3/90.1	80-90 gusting to 100	Cyclonic Storm
09-12-2016/1130	12.9/89.6	90-100 gusting to 110	Severe Cyclonic Storm
09-12-2016/2330	13.5/88.8	100-110 gusting to 120	Severe Cyclonic Storm
10-12-2016/1130	14.1/87.4	110-120 gusting to 130	Severe Cyclonic Storm
10-12-2016/2330	14.7/86.0	110-120 gusting to 130	Severe Cyclonic Storm

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

Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

11-12-2016/1130	15.3/84.6	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/2330	15.9/83.2	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/1130	16.4/81.8	80-90 gusting to 100	Cyclonic Storm
12-12-2016/2330	16.8/80.4	40-50 gusting to 60	Depression

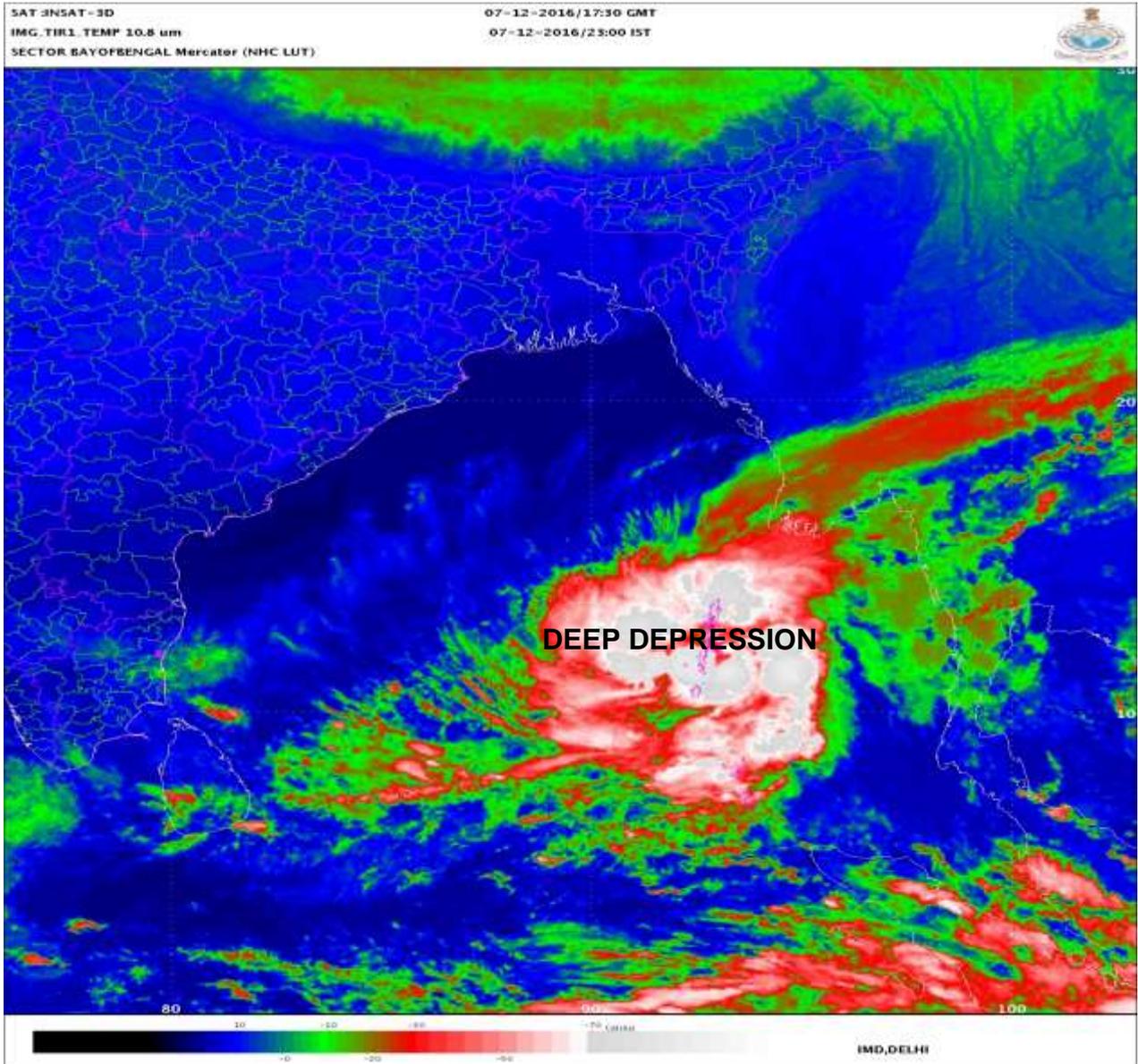
Warning:

- (xxix) Heavy Rainfall Warning:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places over Andaman Islands and heavy rainfall at isolated places over Nicobar Islands is very likely to occur during next 12 hrs. Light to moderate rainfall at most places with isolated heavy falls is very likely over Andaman & Nicobar Islands during subsequent 24 hours. Light to moderate rainfall at many places with isolated heavy falls over coastal Andhra Pradesh is very likely to commence from 11th December afternoon.
- (xxx) Wind warning:** Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail over Andaman Islands & adjoining sea areas during next 36 hrs and Nicobar Islands & adjoining sea areas during next 24 hrs. Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh coast commencing from 11th December night.
- (xxxii) Sea condition:** Sea condition would be rough to very rough along & off Andaman Islands and adjoining sea areas during next 36 hrs and Nicobar Islands and adjoining sea areas during next 24 hrs. Sea condition would be also be rough to very rough along & off Andhra Pradesh coast commencing from 11th December night.
- (xxxiii) Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andaman Islands and adjoining sea areas during next 24 hrs and Nicobar Islands & adjoining sea areas during next 12 hrs. Fishermen are advised not to venture into sea along and off Andhra Pradesh coast from 10th December onwards. The fishermen out at sea are advised to return to the coast by 10th December 2016.

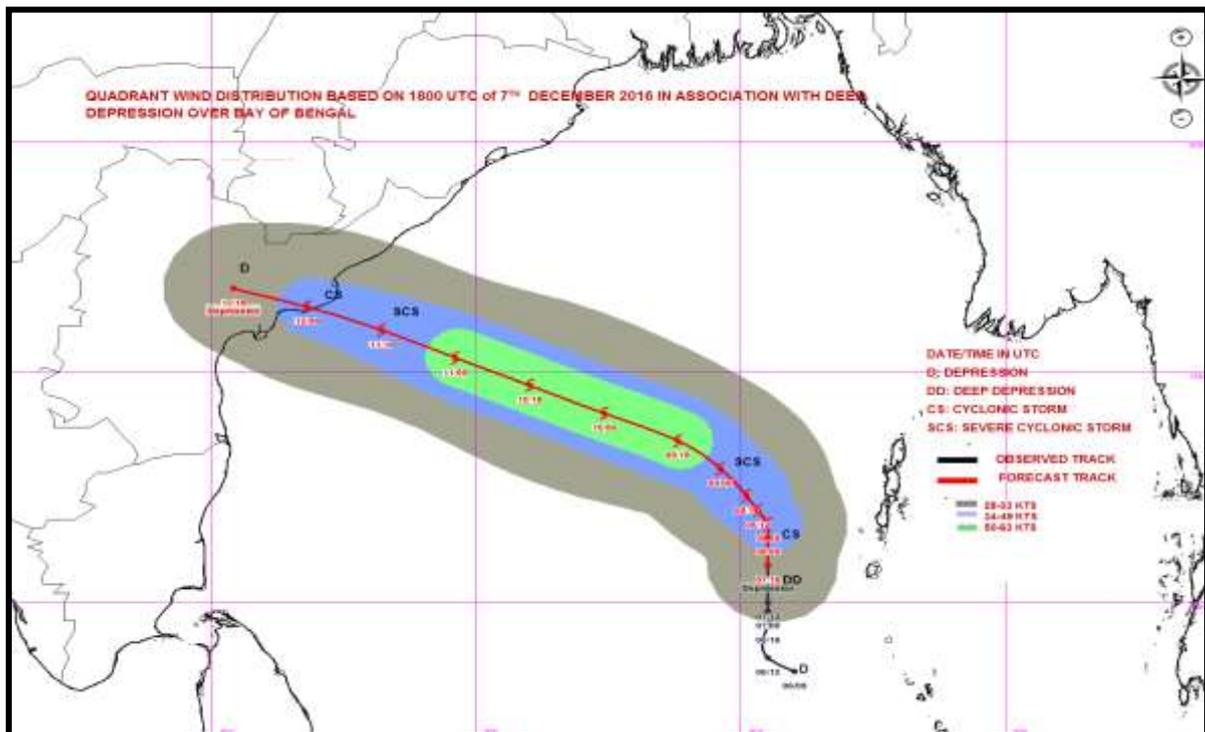
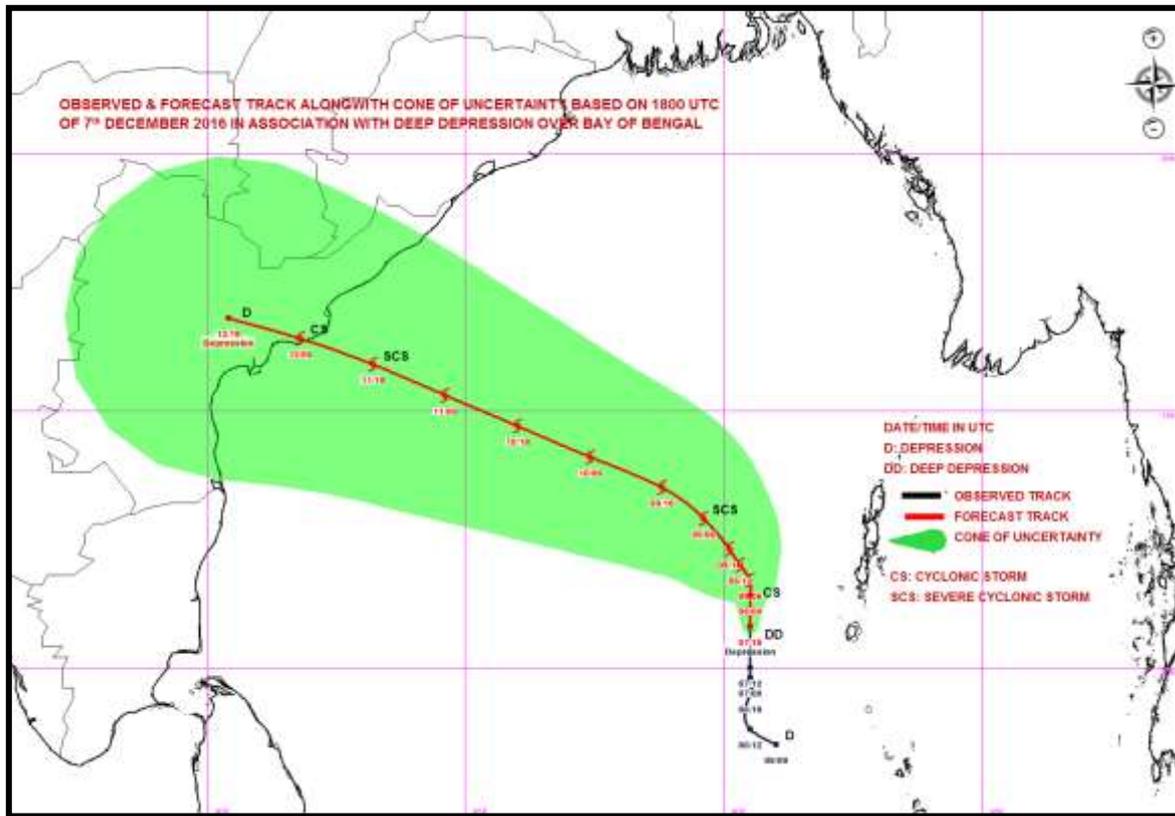
Next bulletin will be issued at 0830 hrs IST of 08th December 2016.

**(Shobhit Katiyar)
Scientist-B**

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC Bhubaneswar/MC Hyderabad/MO Port Blair



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 09 (BOB 06/2016)

TIME OF ISSUE: 0830 HOURS IST

DATED: 08.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24621402)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192-232656)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

**Sub: Deep Depression over southeast Bay of Bengal intensify into a Cyclonic Storm, VARDHA
Pre-Cyclone Watch for Andhra Pradesh Coast**

The deep depression over southeast Bay of Bengal moved further northwards during past 6 hours, intensify into cyclonic storm, **VARDHA** and lay centred at 0530 hrs IST of today, the 8th December, 2016 over southeast Bay of Bengal near Latitude 11.2°N and Longitude 90.5°E, about 1060 km southeast of Visakhapatnam, 1150 km east-southeast of Machilipatnam, 340 km northwest of Car Nicobar and 240 km west southwest of Port Blair. The system is very likely to intensify further into a severe cyclonic storm, move nearly northwards for some more time and then northwestwards towards Andhra Pradesh coast during next 4 days.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. 0N/ long. 0E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
08-12-2016/0530	11.2/90.5	60-70 gusting to 80	Cyclonic Storm
08-12-2016/1130	11.7/90.5	65-75 gusting to 85	Cyclonic Storm
08-12-2016/1730	12.0/90.3	70-80 gusting to 90	Cyclonic Storm
08-12-2016/2330	12.3/90.1	80-90 gusting to 100	Cyclonic Storm
09-12-2016/0530	12.6/89.8	90-100 gusting to 110	Severe Cyclonic Storm
09-12-2016/1730	13.1/89.2	100-110 gusting to 120	Severe Cyclonic Storm
10-12-2016/0530	13.7/88.1	110-120 gusting to 130	Severe Cyclonic Storm

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

10-12-2016/1730	14.2/86.7	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/0530	14.6/85.1	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/1730	15.0/83.6	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/0530	15.3/82.3	90-100 gusting to 110	Severe Cyclonic Storm
12-12-2016/1730	15.6/80.9	70-80 gusting to 90	Cyclonic Storm
13-12-2016/0530	15.8/79.6	40-50 gusting to 60	Depression

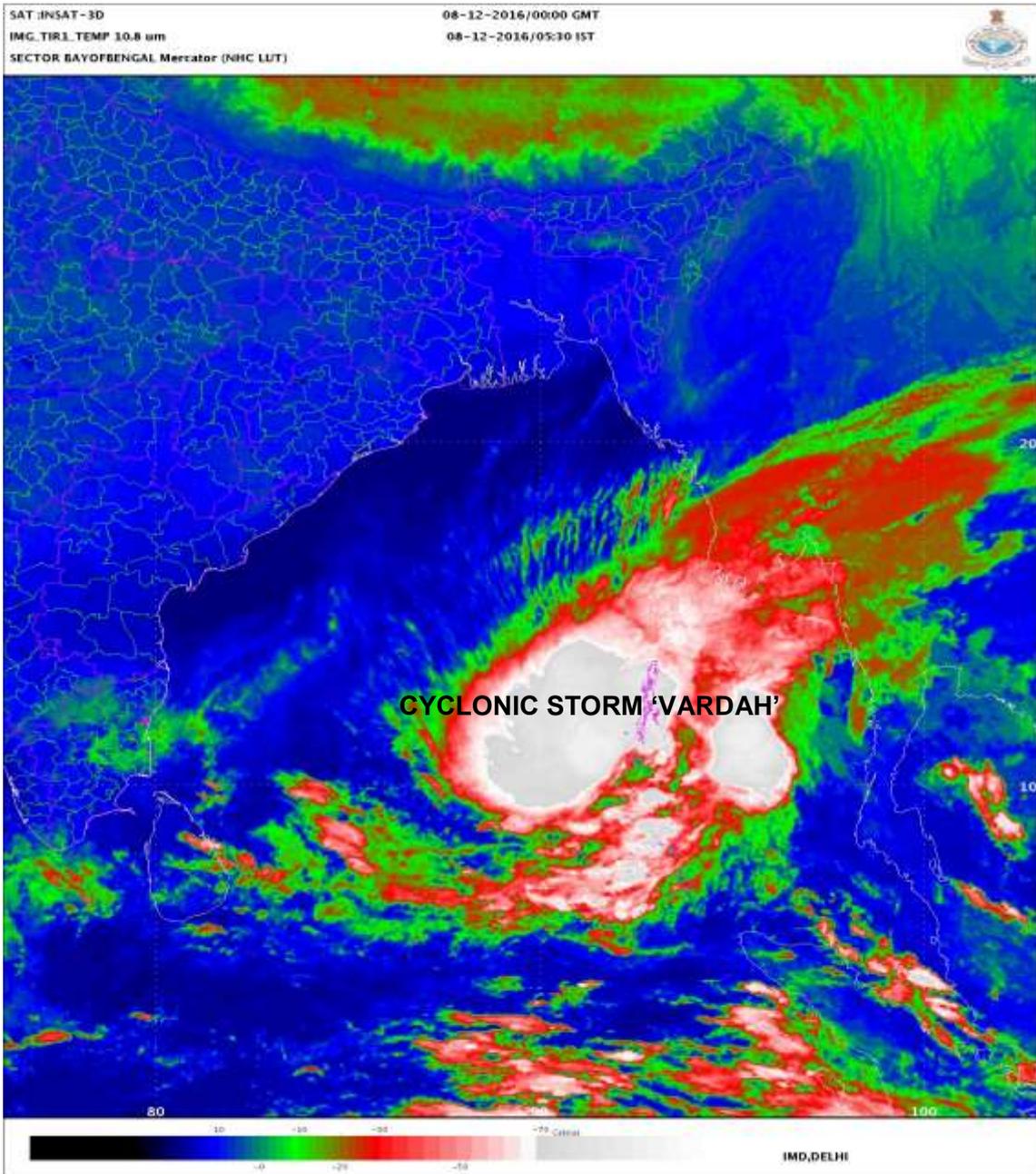
Warning:

- (xxxiii) **Heavy Rainfall Warning:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places over Andaman Islands and heavy rainfall at isolated places over Nicobar Islands is very likely to occur during next 24 hrs. Light to moderate rainfall at most places with isolated heavy falls is very likely over Andaman & Nicobar Islands during subsequent 24 hours. Light to moderate rainfall at many places with isolated heavy falls over coastal Andhra Pradesh is very likely to commence from 11th December evening.
- (xxxiv) **Wind warning:** Squally winds speed reaching 45-55 kmph gusting to 65 kmph would prevail over Andaman Islands & adjoining sea areas during next 24 hrs and Nicobar Islands & adjoining sea areas during next 12 hrs. Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh coast commencing from 11th December night.
- (xxxv) **Sea condition:** Sea condition would be rough to very rough along & off Andaman Islands and adjoining sea areas during next 24 hrs and Nicobar Islands and adjoining sea areas during next 12 hrs. Sea condition would be also be rough to very rough along & off Andhra Pradesh coast commencing from 11th December night.
- (xxxvi) **Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andaman Islands and adjoining sea areas during next 24 hrs and Nicobar Islands & adjoining sea areas during next 12 hrs. Fishermen are advised not to venture into sea along and off Andhra Pradesh coast from 10th December onwards. The fishermen out at sea are advised to return to the coast by 10th December 2016.

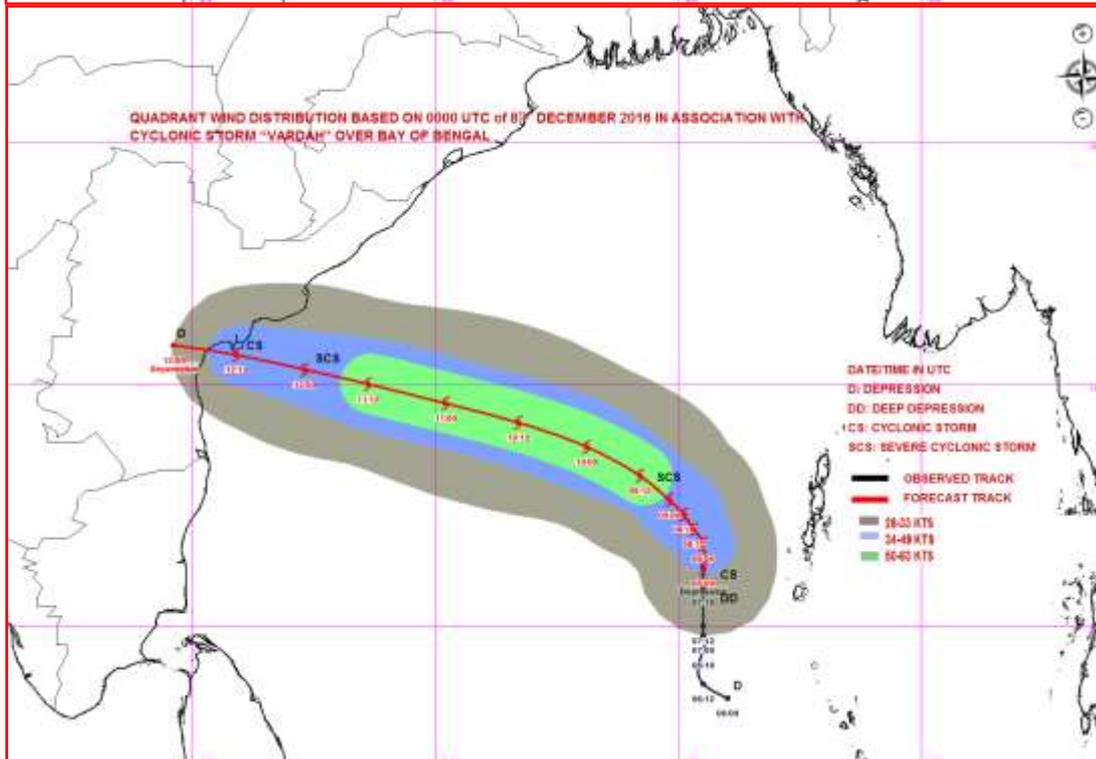
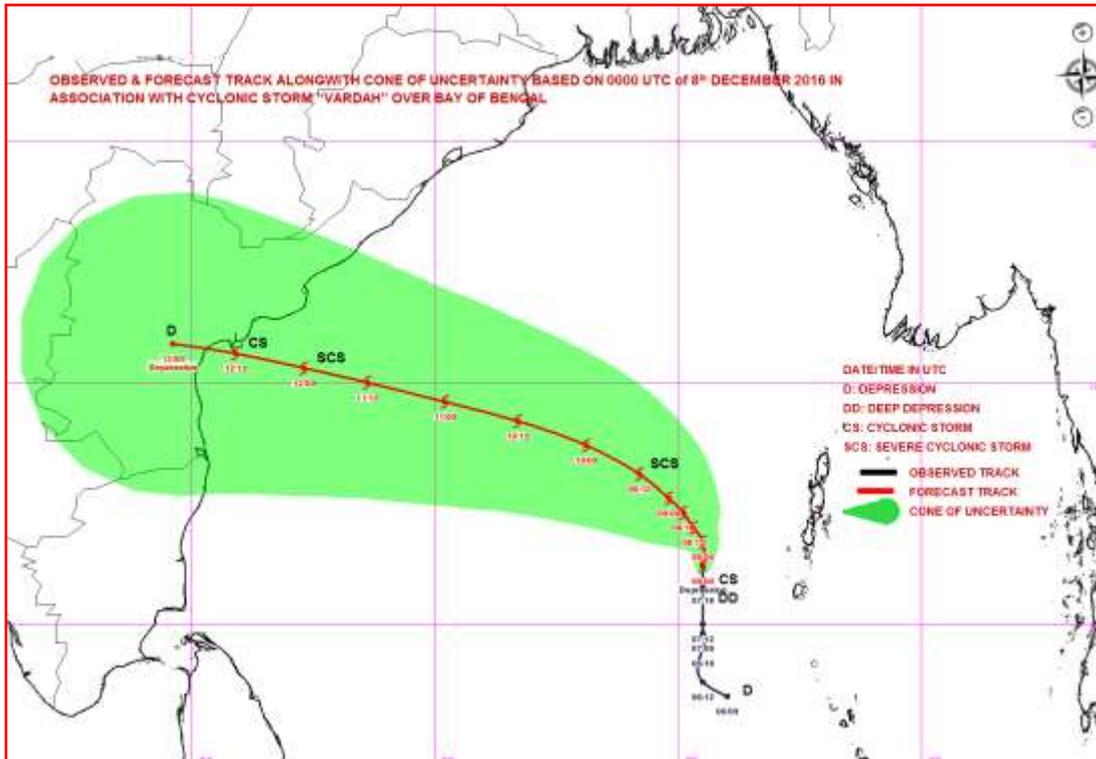
Next bulletin will be issued at 1130 hrs IST of 08th December 2016.

(Shobhit Katiyar)
Scientist-B

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 10 (BOB 06/2016)

TIME OF ISSUE: 1200 HOURS IST

DATED: 08.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24621402)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192-232656)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

**Sub: Cyclonic Storm, VARDHA over southeast Bay of Bengal:
Cyclone Alert for Andhra Pradesh Coast**

The cyclonic storm, **VARDHA** over southeast Bay of Bengal moved further northwards during past 06 hours with a speed of 9 kmph and lay centred at 0830 hrs IST of today, the 8th December, 2016 over southeast Bay of Bengal near Latitude 11.5°N and Longitude 90.5°E, about 1040 km east-southeast of Visakhapatnam, 1135 km east-southeast of Machilipatnam, 360 km northwest of Car Nicobar and 240 km west-southwest of Port Blair. The system is very likely to intensify further into a severe cyclonic storm during next 24 hours. It is very likely to move nearly northwards for some more time, then northwestwards and cross Andhra Pradesh coast between Nellore and Kakinada around forenoon/ noon of 12th December 2016.

There is possibility of slight weakening of the system before landfall.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. 0N/ long. 0E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
08-12-2016/0830	11.5/90.5	60-70 gusting to 80	Cyclonic Storm
08-12-2016/1130	11.7/90.5	65-75 gusting to 85	Cyclonic Storm
08-12-2016/1730	12.0/90.3	70-80 gusting to 90	Cyclonic Storm
08-12-2016/2330	12.3/90.1	80-90 gusting to 100	Cyclonic Storm
09-12-2016/0530	12.6/89.8	90-100 gusting to 110	Severe Cyclonic Storm
09-12-2016/1730	13.1/89.2	100-110 gusting to 120	Severe Cyclonic Storm

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

Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

10-12-2016/0530	13.7/88.1	110-120 gusting to 130	Severe Cyclonic Storm
10-12-2016/1730	14.2/86.7	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/0530	14.6/85.1	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/1730	15.0/83.6	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/0530	15.4/82.0	90-100 gusting to 110	Severe Cyclonic Storm
12-12-2016/1730	15.8/80.4	70-80 gusting to 90	Cyclonic Storm
13-12-2016/0530	16.1/78.8	40-50 gusting to 60	Depression

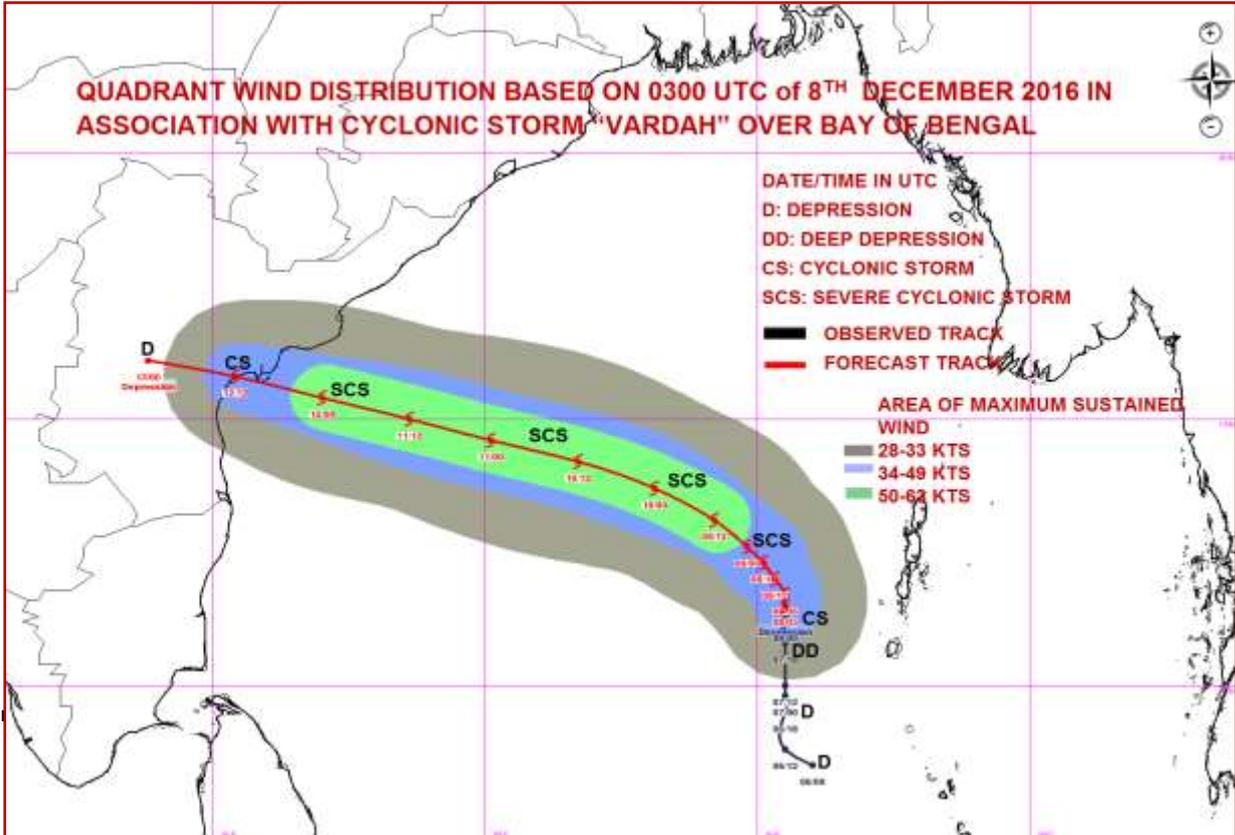
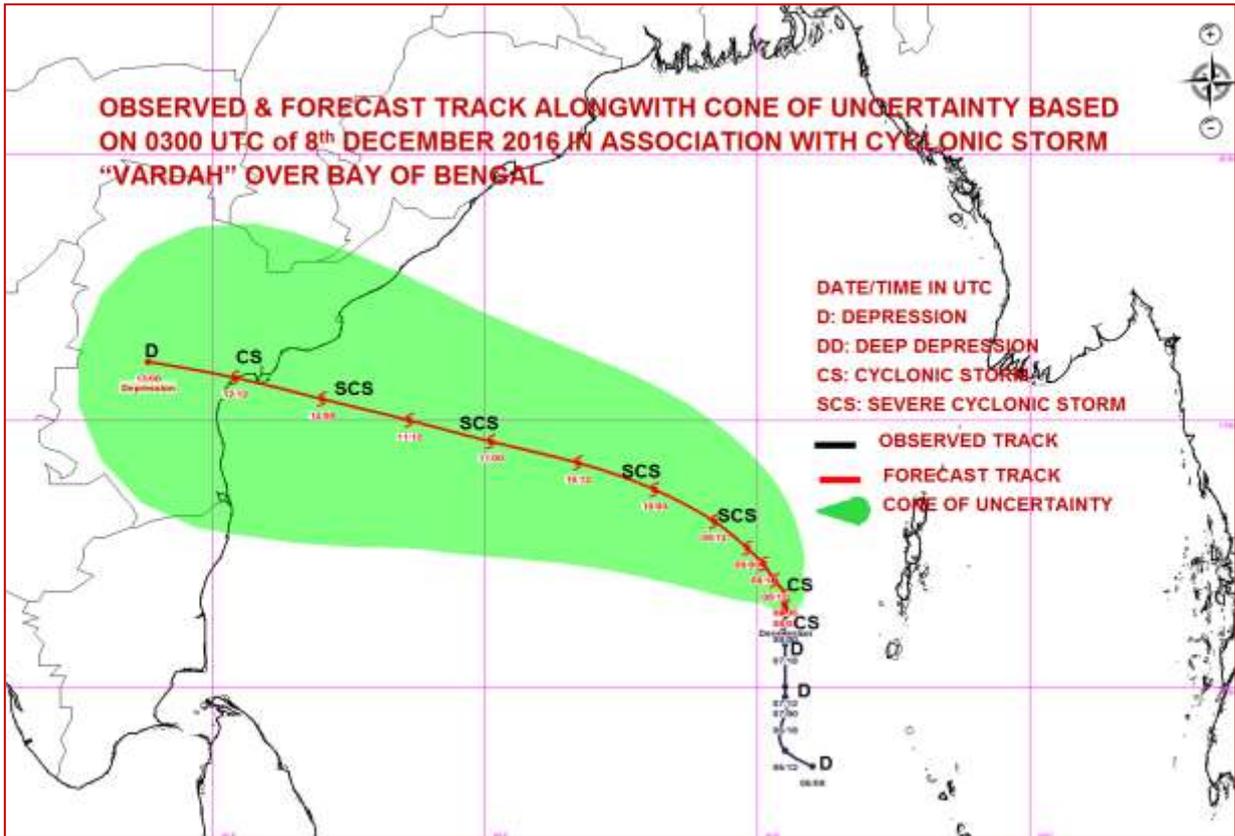
Warning:

- (xxxvii) **Heavy Rainfall Warning:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places over Andaman Islands and heavy rainfall at isolated places over Nicobar Islands is very likely to occur during next 24 hrs. Light to moderate rainfall at most places with isolated heavy falls is very likely over Andaman & Nicobar Islands during subsequent 24 hours. Light to moderate rainfall at many places with isolated heavy falls over coastal Andhra Pradesh is very likely to commence from 11th December evening.
- (xxxviii) **Wind warning:** Squally winds speed reaching 45-55 kmph gusting to 65 kmph would prevail over Andaman Islands & adjoining sea areas during next 24 hrs and Nicobar Islands & adjoining sea areas during next 12 hrs. Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh coast commencing from 11th December night.
- (xxxix) **Sea condition:** Sea condition would be rough to very rough along & off Andaman Islands and adjoining sea areas during next 24 hrs and Nicobar Islands and adjoining sea areas during next 12 hrs. Sea condition would be also be rough to very rough along & off Andhra Pradesh coast commencing from 11th December night.
- (xl) **Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andaman Islands and adjoining sea areas during next 24 hrs and Nicobar Islands & adjoining sea areas during next 12 hrs. Fishermen are advised not to venture into sea along and off Andhra Pradesh coast from 10th December onwards. The fishermen out at sea are advised to return to the coast by 10th December 2016.

Next bulletin will be issued at 1430 hrs IST of 08th December 2016.

**(Naresh Kumar)
Scientist-D**

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC Bhubaneswar/MC Hyderabad/MO Port Blair



Rainfall a



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

BULLETIN NO.: 11 (BOB 06/2016)

TIME OF ISSUE: 1430 HOURS IST

DATED: 08.12.2016

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.23793144)
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SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
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D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
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CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

**Sub: Cyclonic Storm, VARDHA over southeast Bay of Bengal:
Cyclone Alert for Andhra Pradesh Coast**

The cyclonic storm, **VARDHA** over southeast Bay of Bengal remained practically stationary during past 03 hours and lay centred at 1130 hrs IST of today, the 8th December, 2016 over southeast Bay of Bengal near Latitude 11.5°N and Longitude 90.5°E, about 1040 km east-southeast of Visakhapatnam, 1135 km east-southeast of Machilipatnam, 360 km northwest of Car Nicobar and 240 km west-southwest of Port Blair. The system is very likely to intensify further into a severe cyclonic storm during next 24 hours. It is very likely to move nearly northwards for some more time. Thereafter, it is very likely to move northwestwards, then west-northwestwards and cross Andhra Pradesh coast between Nellore and Kakinada around afternoon/evening of 12th December 2016.

There is possibility of slight weakening of the system before landfall.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. 0N/ long. 0E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
08-12-2016/1130	11.5/90.5	60-70 gusting to 80	Cyclonic Storm
08-12-2016/1730	11.8/90.5	70-80 gusting to 90	Cyclonic Storm
08-12-2016/2330	12.1/90.3	80-90 gusting to 100	Cyclonic Storm
09-12-2016/0530	12.5/89.8	90-100 gusting to 110	Severe Cyclonic Storm
09-12-2016/1130	12.8/89.5	90-100 gusting to 110	Severe Cyclonic Storm
09-12-2016/2330	13.4/88.7	110-120 gusting to 130	Severe Cyclonic Storm

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

Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

10-12-2016/1130	14.0/87.3	110-120 gusting to 130	Severe Cyclonic Storm
10-12-2016/2330	14.4/85.9	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/1130	14.8/84.4	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/2330	15.2/82.8	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/1130	15.5/81.2	80-90 gusting to 100	Cyclonic Storm
12-12-2016/2330	15.8/79.6	50-60 gusting to 70	Deep Depression
13-12-2016/1130	16.1/78.0	25-35 gusting to 45	Low

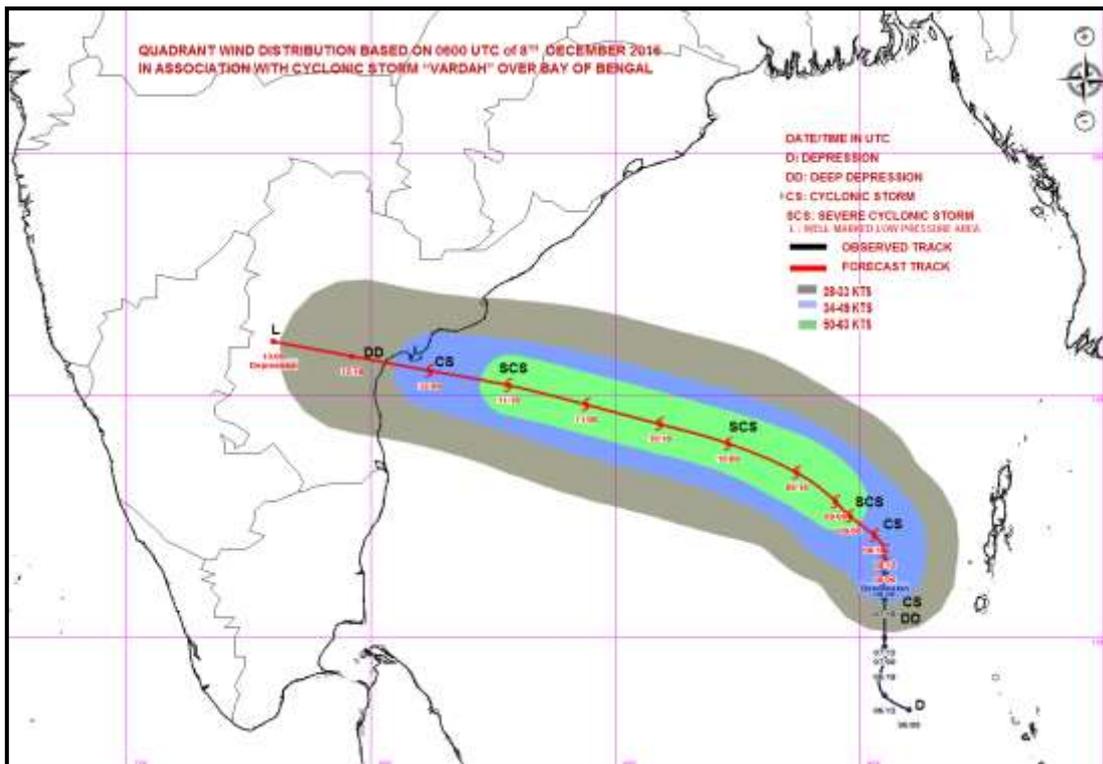
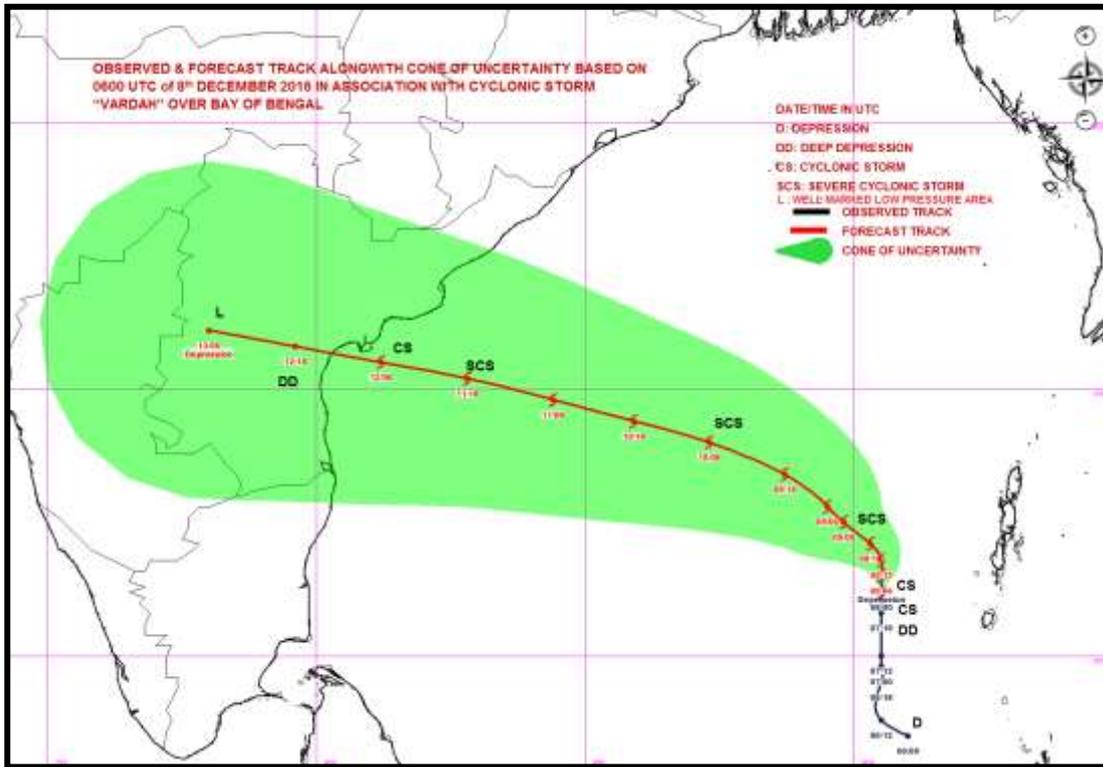
Warning:

- (xli) **Heavy Rainfall Warning:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places over Andaman Islands and heavy rainfall at isolated places over Nicobar Islands is very likely to occur during next 24 hrs. Light to moderate rainfall at most places with isolated heavy falls is very likely over Andaman & Nicobar Islands during subsequent 24 hours. Light to moderate rainfall at many places with isolated heavy falls over coastal Andhra Pradesh is very likely to commence from 11th December evening.
- (xlii) **Wind warning:** Squally winds speed reaching 45-55 kmph gusting to 65 kmph would prevail over Andaman Islands & adjoining sea areas during next 24 hrs and Nicobar Islands & adjoining sea areas during next 12 hrs. Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh coast commencing from 11th December night.
- (xliii) **Sea condition:** Sea condition would be rough to very rough along & off Andaman Islands and adjoining sea areas during next 24 hrs and Nicobar Islands and adjoining sea areas during next 12 hrs. Sea condition would be also be rough to very rough along & off Andhra Pradesh coast commencing from 11th December night.
- (xliv) **Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andaman Islands and adjoining sea areas during next 24 hrs and Nicobar Islands & adjoining sea areas during next 12 hrs. Fishermen are advised not to venture into sea along and off Andhra Pradesh coast from 10th December onwards. The fishermen out at sea are advised to return to the coast by 10th December 2016.

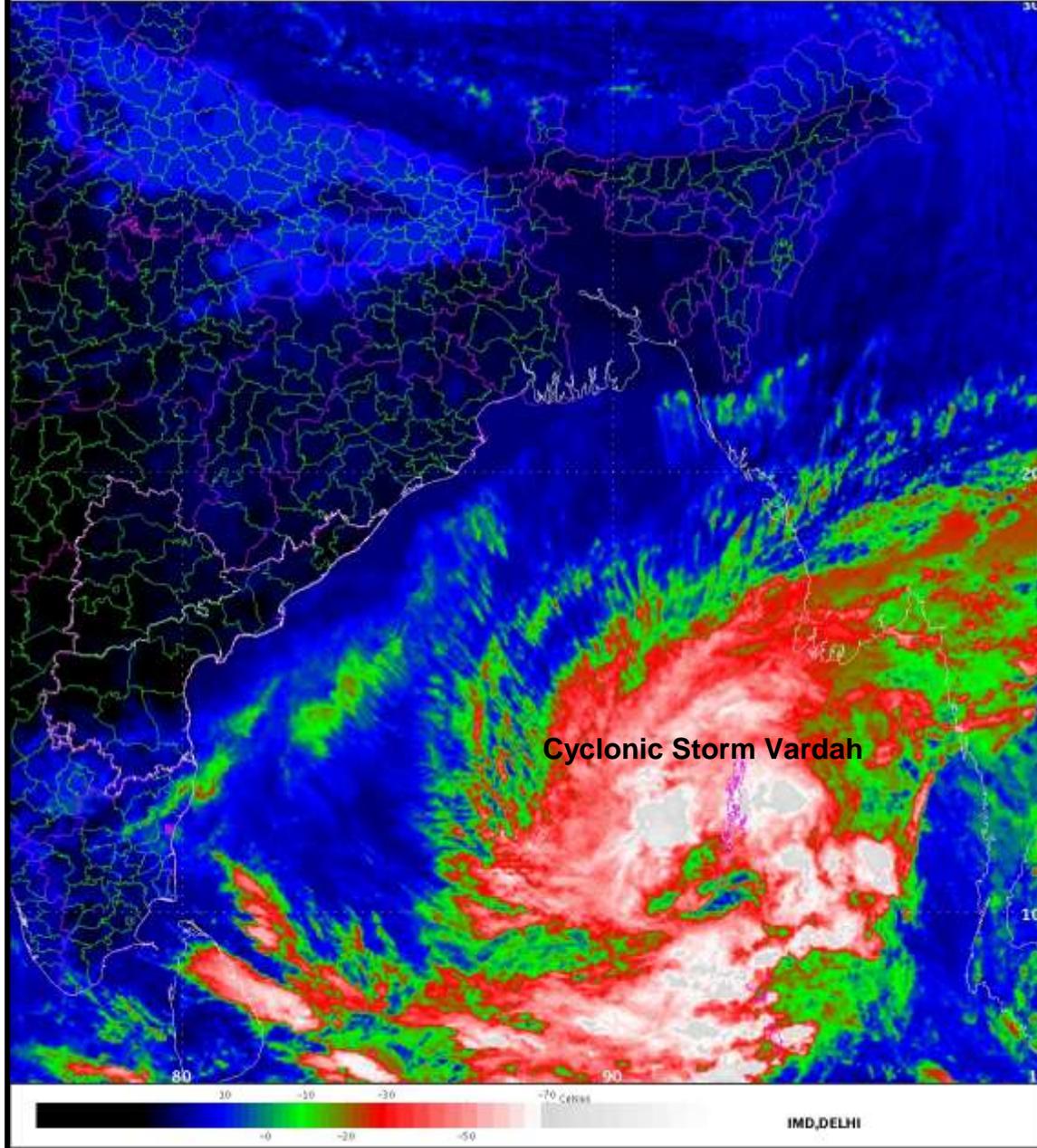
Next bulletin will be issued at 1730 hrs IST of 08th December 2016.

**(Naresh Kumar)
Scientist-D**

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC Bhubaneswar/MC Hyderabad/MO Port Blair



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

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

BULLETIN NO. : 12 (BOB 05/2016)

TIME OF ISSUE: 1130 HOURS IST

DATED: 01.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO.0413-2337575)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF KERALA (FAX NO.0471-2327176)**

Sub: Cyclonic storm “Nada” over southwest Bay of Bengal

The cyclonic storm “Nada” over southwest Bay of Bengal moved westwards during past six hours with a speed of about 5 kmph and lay centred at 0830 hrs IST of today, the 1st December, 2016 near Latitude 10.4°N and Longitude 81.7°E over southwest Bay of Bengal, about 330 km south-southeast of Chennai, 270 km southeast of Puducherry and 210 km north-northeast of Trincomalee (Srilanka). The system is very likely to move west-northwestward, weaken gradually into a deep depression during next 12 hours and cross north Tamil Nadu coast between Vedaranniyam and Puducherry, south of Cuddalore by early hours of 2nd December.

Date/time(IST)	Position (lat. °N/ long. °E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
01-12-2016/0830	10.4/81.7	65-75 GUSTING TO 85	CYCLONIC STORM
01-12-2016/1130	10.6/81.1	60-70 GUSTING TO 80	CYCLONIC STORM
01-12-2016/1730	10.8/80.4	55-65 GUSTING TO 75	DEEP DEPRESSION
01-12-2016/2330	11.0 /79.8	50-60 GUSTING TO 70	DEEP DEPRESSION
02-12-2016/0530	11.2/79.1	40-50 GUSTING TO 60	DEPRESSION
02-12-2016/1730	11.3/77.7	20-30 GUSTING TO 40	LOW

Warning:

(xlv) Heavy Rainfall Warning: Light to moderate rainfall at most places with isolated heavy to very heavy rainfall is very likely during next 24 hours and rainfall at many places with isolated heavy falls during subsequent 24 hours over Tamil Nadu & Puducherry.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

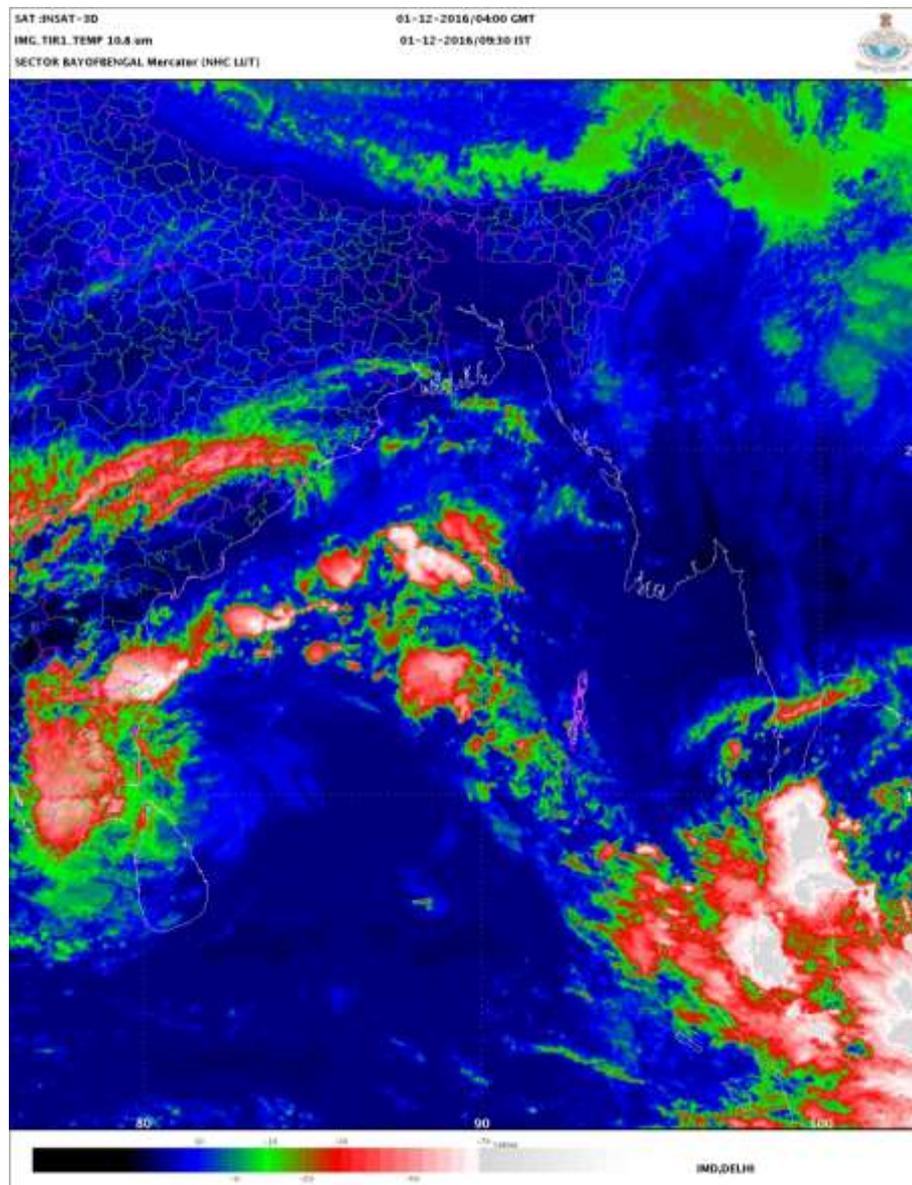
Light to moderate rainfall at many places with isolated heavy falls is very likely over Kerala on 2nd and 3rd December 2016.

- (xlvi) **Wind warning:** Squally winds speed reaching 45-55 kmph gusting to 65 kmph would prevail along & off Tamil Nadu and Puducherry coasts during next 24 hours.
- (xlvii) **Sea condition:** Sea condition would be rough to very rough along & off Tamil Nadu and Puducherry coasts during next 24 hours.
- (xlviii) **Action Suggested:** Fishermen are advised not to venture into sea along & off Tamil Nadu and Puducherry coasts during next 24 hours.

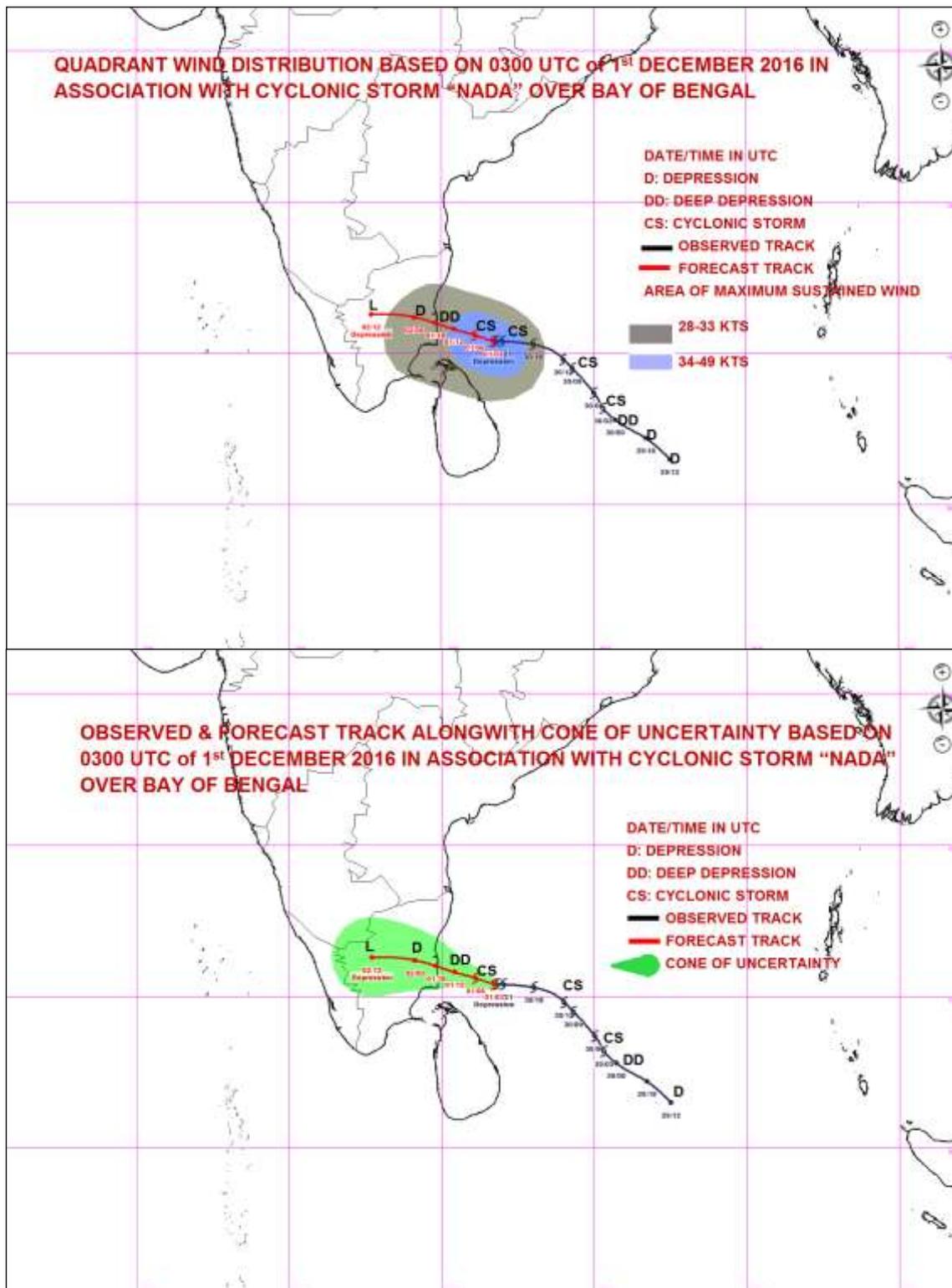
Next bulletin will be issued at 1430 hrs IST of 1st December 2016.

(Naresh Kumar)
Scientist-D
NWFC, New Delhi

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/Thiruvananthapuram



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 13 (BOB 06/2016)

TIME OF ISSUE: 2000 HOURS IST

DATED: 08.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24621402)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192-232656)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)

**Sub: Cyclonic Storm, VARDAH over southeast Bay of Bengal:
Cyclone Alert for Andhra Pradesh Coast**

The cyclonic storm, **VARDAH** over southeast Bay of Bengal moved slowly northwards with a speed of 4 kmph during past 06 hours and lay centred at 1730 hrs IST of today, the 8th December, 2016 over southeast Bay of Bengal near Latitude 11.7°N and Longitude 90.5°E, about 1020 km east-southeast of Visakhapatnam, 1120 km east-southeast of Machilipatnam and 240 km west-southwest of Port Blair. The system is very likely to intensify further into a severe cyclonic storm during next 24 hours. It is very likely to move nearly northwards for some more time. Thereafter, it is very likely to move northwestwards, then west-northwestwards and cross Andhra Pradesh coast between Nellore and Kakinada around afternoon/evening of 12th December 2016.

There is possibility of slight weakening of the system before landfall.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. 0N/ long. 0E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
08-12-2016/1730	11.7/90.5	70-80 gusting to 90	Cyclonic Storm
08-12-2016/2330	12.1/90.4	80-90 gusting to 100	Cyclonic Storm
09-12-2016/0530	12.5/90.0	90-100 gusting to 110	Severe Cyclonic Storm
09-12-2016/1130	12.8/89.5	95-105 gusting to 115	Severe Cyclonic Storm

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

09-12-2016/1730	13.1/89.1	100-110 gusting to 120	Severe Cyclonic Storm
10-12-2016/0530	13.7/88.0	105-115 gusting to 125	Severe Cyclonic Storm
10-12-2016/1730	14.2/86.7	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/0530	14.6/85.2	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/1730	14.9/83.6	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/0530	15.2/82.0	90-100 gusting to 110	Severe Cyclonic Storm
12-12-2016/1730	15.4/80.4	70-80 gusting to 90	Cyclonic Storm
13-12-2016/0530	15.6/78.8	40-50 gusting to 60	Depression

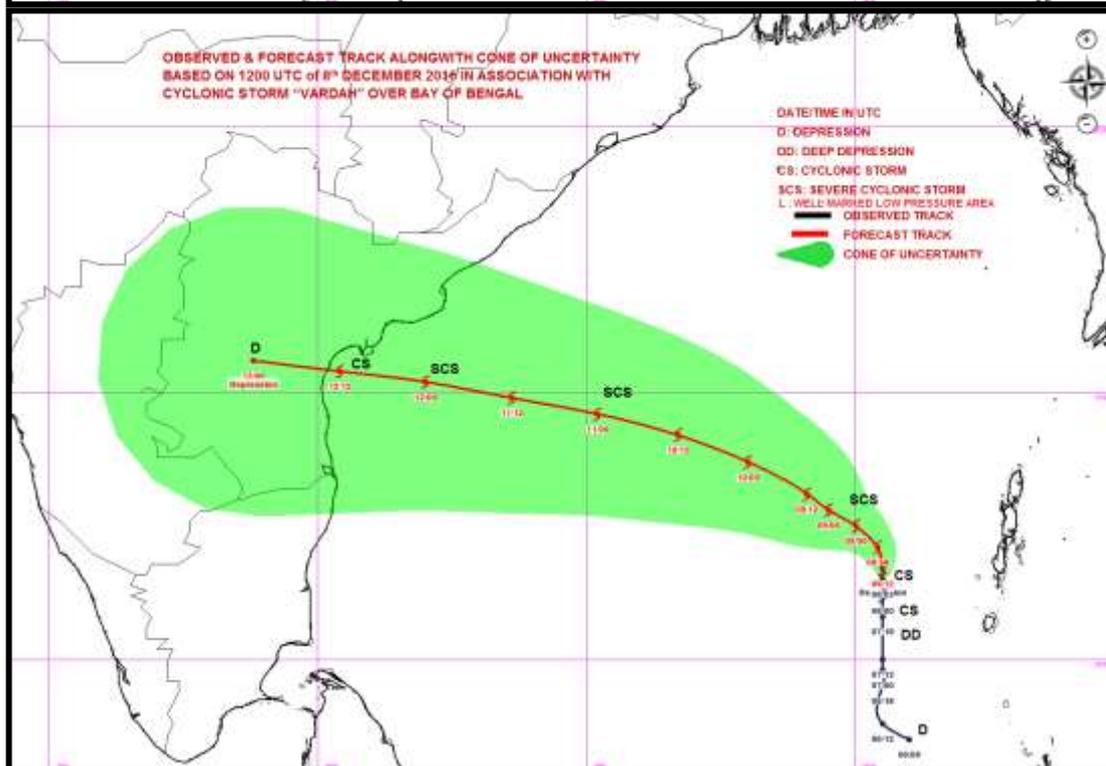
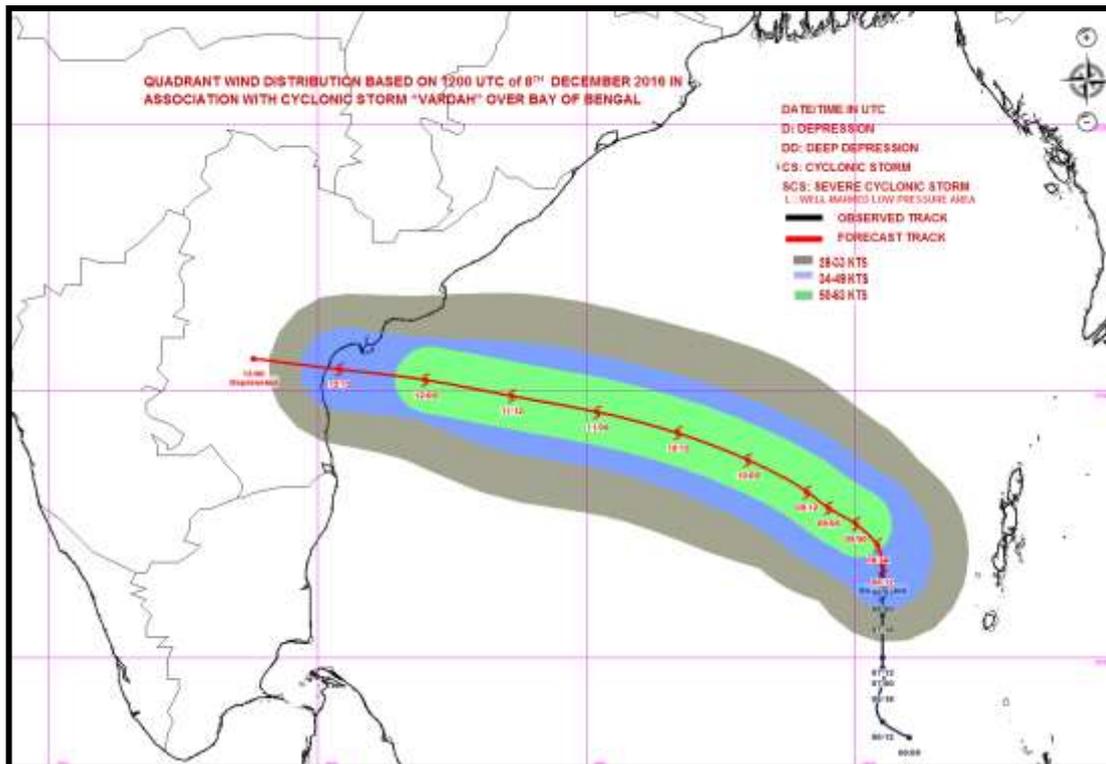
Warning:

- (xlix) Heavy Rainfall Warning:** Light to moderate rainfall at most places with heavy to very heavy falls at a few places over Andaman Islands and heavy rainfall at isolated places over Nicobar Islands is very likely to occur during next 12 hrs. Light to moderate rainfall at many places is very likely over Andaman & Nicobar Islands during subsequent 24 hours. Light to moderate rainfall at many places with isolated heavy falls over coastal Andhra Pradesh is very likely to commence from 11th December evening.
- (i) Wind warning:** Squally winds speed reaching 45-55 kmph gusting to 65 kmph would prevail over Andaman and Nicobar Islands & adjoining sea areas during next 12 hrs and gradually decrease thereafter. Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh coast commencing from 11th December night.
- (ii) Sea condition:** Sea condition would be rough to very rough along & off Andaman and Nicobar Islands and adjoining sea areas during next 12 hrs and moderate to rough in subsequent 12 hrs. Sea condition would be also be rough to very rough along & off Andhra Pradesh coast commencing from 11th December night.
- (lii) Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andaman Islands and adjoining sea areas during next 24 hrs and Nicobar Islands & adjoining sea areas during next 12 hrs. Fishermen are advised not to venture into sea along and off Andhra Pradesh coast from 10th December onwards. The fishermen out at sea are advised to return to the coast by 10th December 2016.

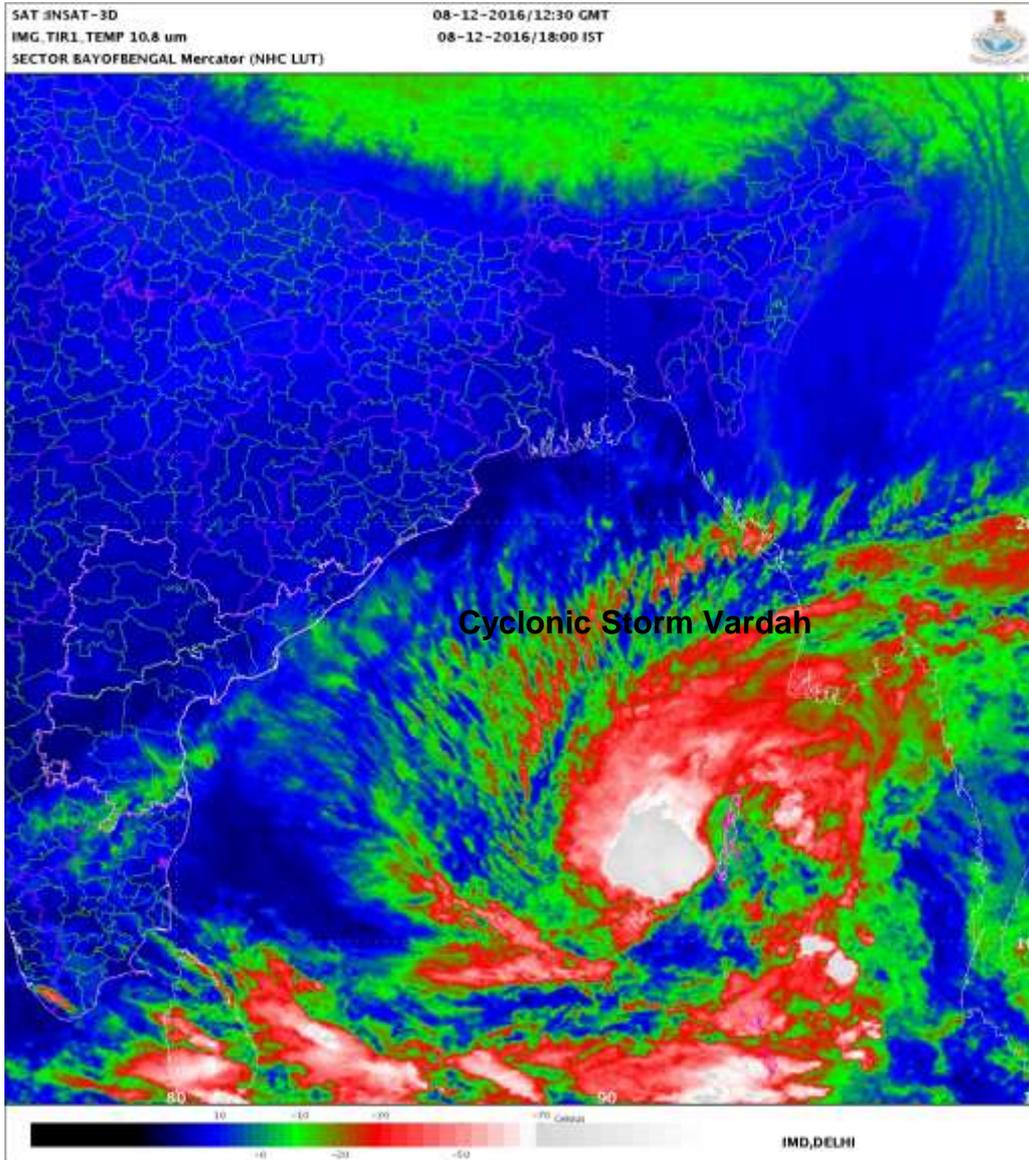
Next bulletin will be issued at 2330 hrs IST of 08th December 2016

**(Shambu Ravindren)
Scientist-B**

*Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair*



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 14 (BOB 06/2016)

TIME OF ISSUE: 2300 HOURS IST

DATED: 08.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24621402)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192-232656)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

**Sub: Cyclonic Storm, VARDHA over southeast Bay of Bengal:
Cyclone Alert for Andhra Pradesh Coast**

The cyclonic storm, **VARDHA** over southeast Bay of Bengal remained practically stationary during past 03 hours and lay centred at 2030 hrs IST of today, the 8th December, 2016 over southeast Bay of Bengal near Latitude 11.7°N and Longitude 90.5°E, about 1020 km east-southeast of Visakhapatnam, 1120 km east-southeast of Machilipatnam and 240 km west of Port Blair. The system is very likely to intensify further into a severe cyclonic storm during next 24 hours. It is very likely to move nearly northwards for some more time. Thereafter, it is very likely to move northwestwards, then west-northwestwards and cross Andhra Pradesh coast between Nellore and Kakinada around afternoon/evening of 12th December 2016.

However, there is possibility of slight weakening of the system before landfall.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. 0N/ long. 0E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
08-12-2016/2030	11.7/90.5	70-80 gusting to 90	Cyclonic Storm
08-12-2016/2330	12.1/90.4	80-90 gusting to 100	Cyclonic Storm
09-12-2016/0530	12.5/90.0	90-100 gusting to 110	Severe Cyclonic Storm
09-12-2016/1130	12.8/89.5	95-105 gusting to 115	Severe Cyclonic Storm
09-12-2016/1730	13.1/89.1	100-110 gusting to 120	Severe Cyclonic Storm
10-12-2016/0530	13.7/88.0	105-115 gusting to 125	Severe Cyclonic Storm

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

Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

10-12-2016/1730	14.2/86.7	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/0530	14.6/85.2	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/1730	14.9/83.6	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/0530	15.2/82.0	90-100 gusting to 110	Severe Cyclonic Storm
12-12-2016/1730	15.4/80.4	70-80 gusting to 90	Cyclonic Storm
13-12-2016/0530	15.6/78.8	40-50 gusting to 60	Depression

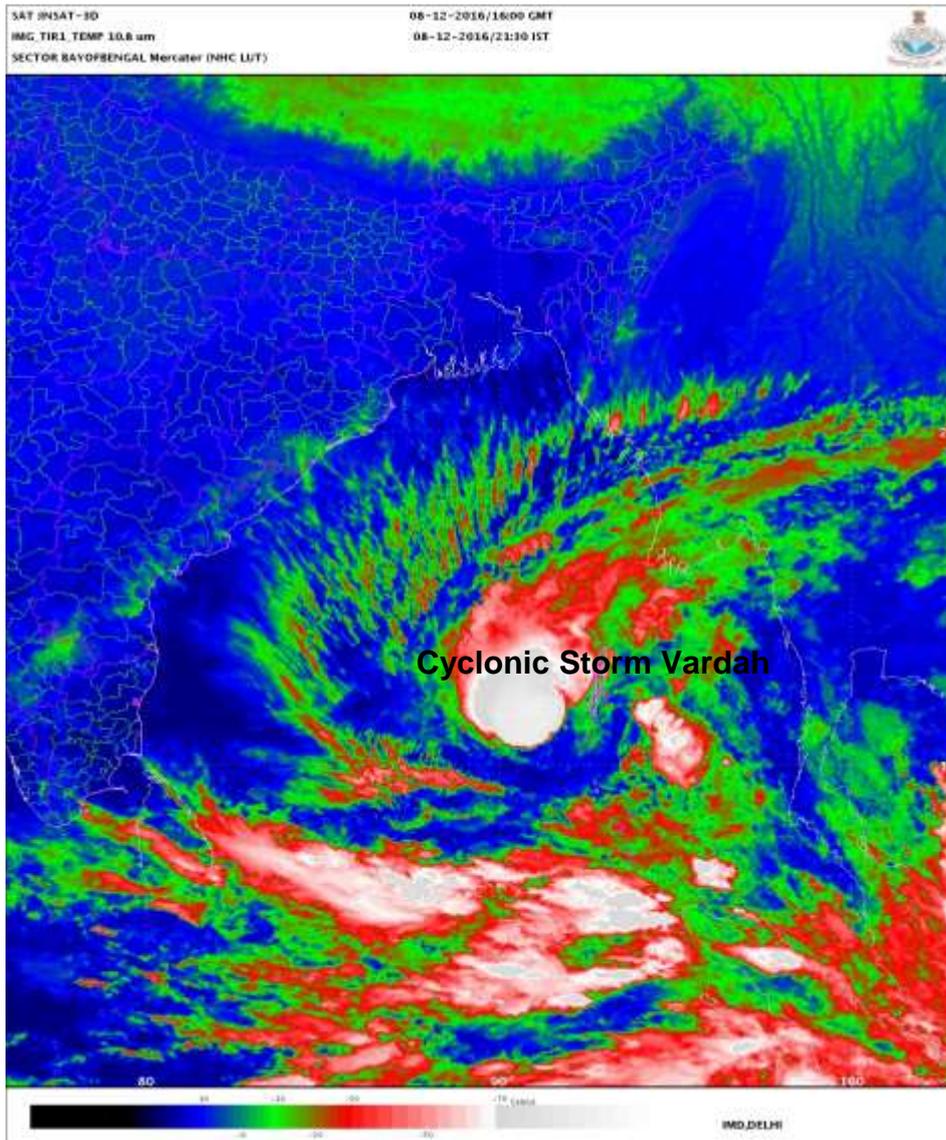
Warning:

- (liii) **Heavy Rainfall Warning:** Light to moderate rainfall at many places with isolated heavy falls over Andaman Islands is very likely to occur during next 12 hrs. Light to moderate rainfall at many places is very likely over Andaman & Nicobar Islands during subsequent 24 hours. Light to moderate rainfall at many places with isolated heavy falls over coastal Andhra Pradesh is very likely to commence from 11th December evening.
- (liv) **Wind warning:** Squally winds speed reaching 45-55 kmph gusting to 65 kmph would prevail over Andaman and Nicobar Islands & adjoining sea areas during next 12 hrs and gradually decrease thereafter. Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh coast commencing from 11th December night.
- (lv) **Sea condition:** Sea condition would be rough to very rough along & off Andaman and Nicobar Islands and adjoining sea areas during next 12 hrs and moderate to rough in subsequent 12 hrs. Sea condition would be also be rough to very rough along & off Andhra Pradesh coast commencing from 11th December night.
- (lvi) **Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andaman Islands and adjoining sea areas during next 24 hrs and Nicobar Islands & adjoining sea areas during next 12 hrs. Fishermen are advised not to venture into sea along and off Andhra Pradesh coast from 10th December onwards. The fishermen out at sea are advised to return to the coast by 10th December 2016.

Next bulletin will be issued at 0230 hrs IST of 09th December 2016

(Shambu Ravindren)
Scientist-B

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 15 (BOB 06/2016)

TIME OF ISSUE: 0230 HOURS IST

DATED: 09.12.2016

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.23793144)
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H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
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PIB MOES (FAX NO. 23389042)
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D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
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CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

**Sub: Cyclonic Storm, VARDHA over southeast Bay of Bengal:
Cyclone Alert for Andhra Pradesh Coast**

The cyclonic storm, **VARDHA** over southeast Bay of Bengal moved slightly northwards with a speed of 4 kmph during past 06 hours and lay centred at 2330 hrs IST of yesterday, the 8th December, 2016 over southeast Bay of Bengal near Latitude 11.8°N and Longitude 90.5°E, about 1020 km east-southeast of Visakhapatnam, 1120 km east-southeast of Machilipatnam and 240 km west of Port Blair. The system is very likely to intensify further into a severe cyclonic storm during next 24 hours. It is very likely to move nearly northwards for some more time. Thereafter, it is very likely to move northwestwards, then west-northwestwards and cross Andhra Pradesh coast between Nellore and Kakinada around afternoon/evening of 12th December 2016.

However, there is possibility of slight weakening of the system before landfall.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. 0N/ long. 0E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
08-12-2016/2330	11.8/90.5	70-80 gusting to 90	Cyclonic Storm
09-12-2016/0530	12.3/90.2	80-90 gusting to 100	Cyclonic Storm
09-12-2016/1130	12.7/89.7	90-100 gusting to 110	Severe Cyclonic Storm
09-12-2016/1730	13.0/89.3	95-105 gusting to 115	Severe Cyclonic Storm
09-12-2016/2330	13.4/88.5	100-110 gusting to 120	Severe Cyclonic Storm
10-12-2016/1130	14.0/87.3	105-115 gusting to 125	Severe Cyclonic Storm

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

Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

10-12-2016/2330	14.4/86.0	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/1130	14.8/84.2	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/2330	15.0/82.8	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/1130	15.3/81.2	70-80 gusting to 90	Cyclonic Storm
12-12-2016/2330	15.5/79.6	40-50 gusting to 60	Depression

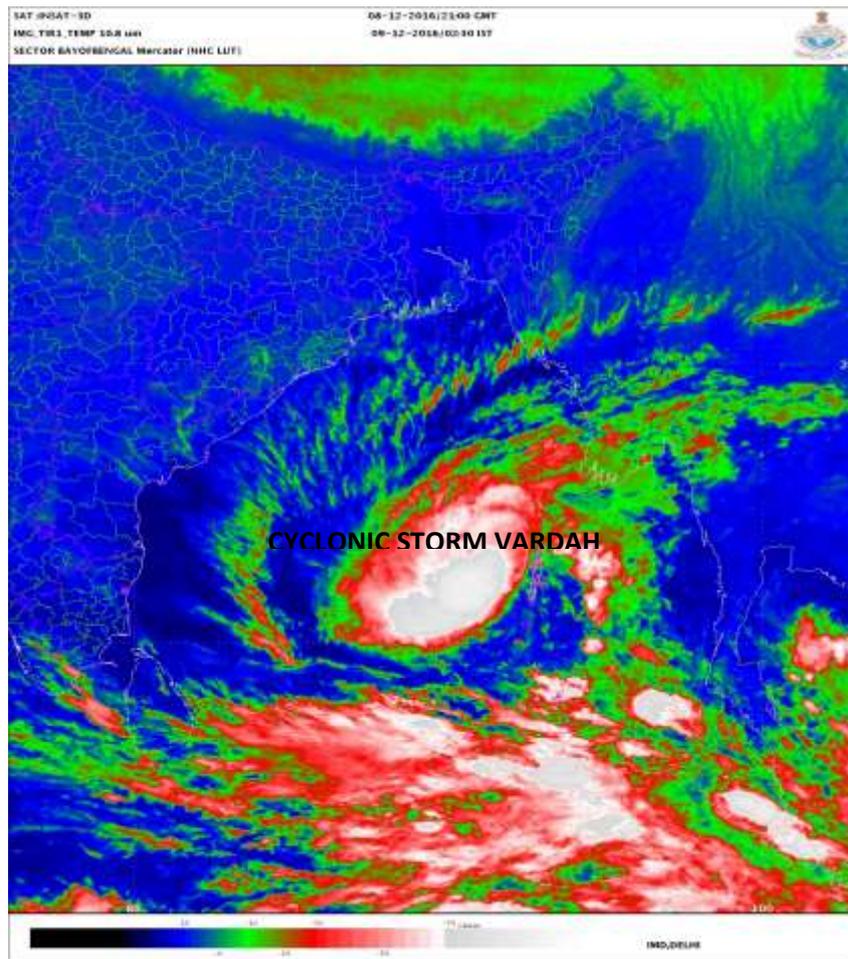
Warning:

- (lvii) **Heavy Rainfall Warning:** Light to moderate rainfall at many places with isolated heavy falls over Andaman Islands is very likely to occur during next 12 hrs. Light to moderate rainfall at many places is very likely over Andaman & Nicobar Islands during subsequent 24 hours. Light to moderate rainfall at many places with isolated heavy falls over coastal Andhra Pradesh is very likely to commence from 11th December evening.
- (lviii) **Wind warning:** Squally winds speed reaching 45-55 kmph gusting to 65 kmph would prevail over Andaman and Nicobar Islands & adjoining sea areas during next 12 hrs and gradually decrease thereafter. Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh coast commencing from 11th December night.
- (lix) **Sea condition:** Sea condition would be rough to very rough along & off Andaman and Nicobar Islands and adjoining sea areas during next 12 hrs and moderate to rough in subsequent 12 hrs. Sea condition would be also be rough to very rough along & off Andhra Pradesh coast commencing from 11th December night.
- (lx) **Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andaman Islands and adjoining sea areas during next 24 hrs and Nicobar Islands & adjoining sea areas during next 12 hrs. Fishermen are advised not to venture into sea along and off Andhra Pradesh coast from 10th December onwards. The fishermen out at sea are advised to return to the coast by 10th December 2016.

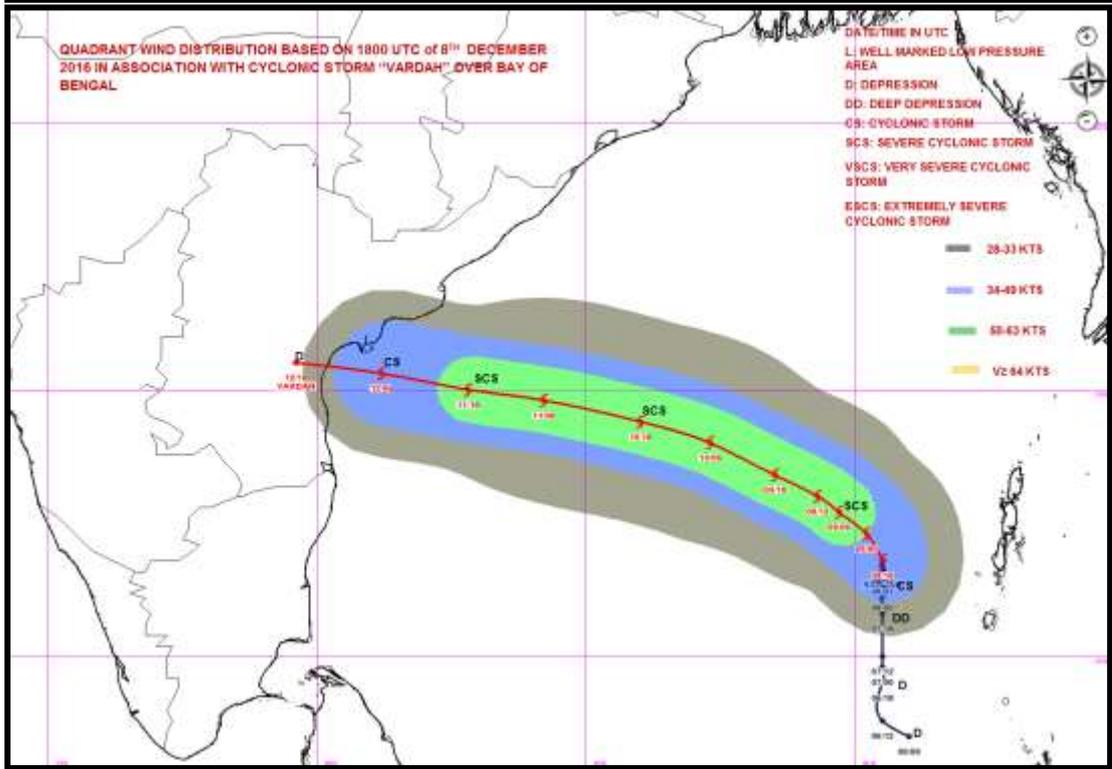
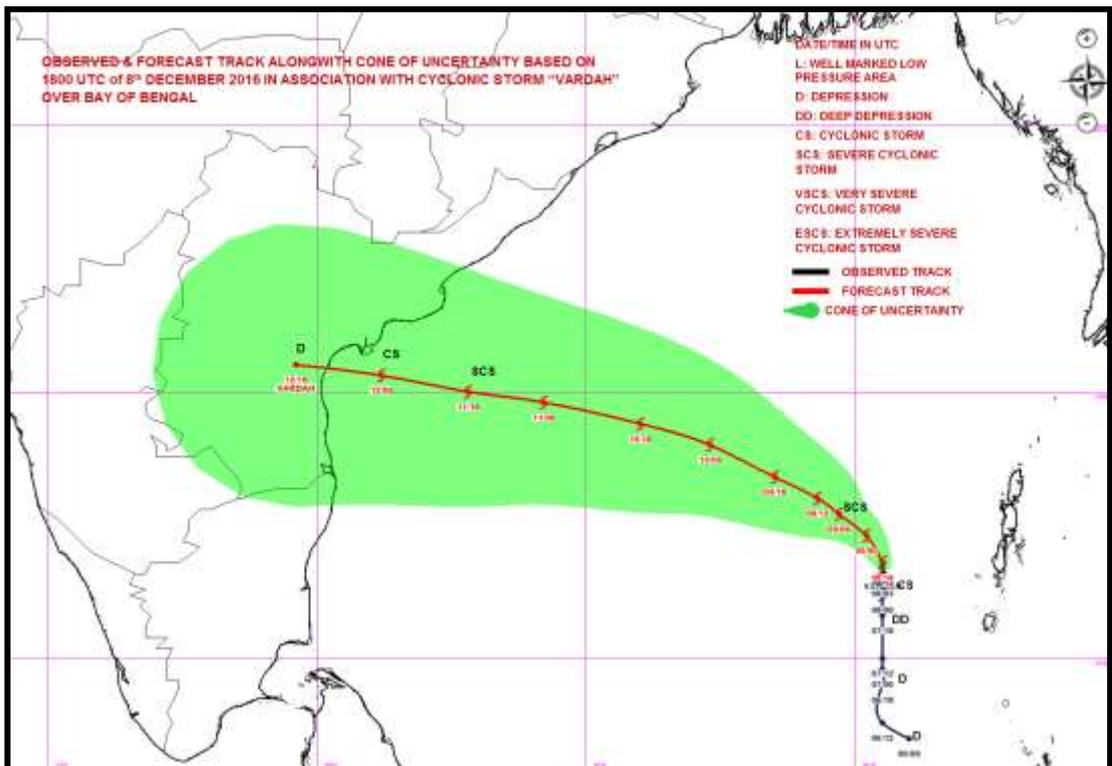
Next bulletin will be issued at 0530 hrs IST of 09th December 2016

(Shambu Ravindren)
Scientist-B

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 16 (BOB 06/2016)

TIME OF ISSUE: 0500 HOURS IST

DATED: 09.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24621402)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192-232656)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

**Sub: Cyclonic Storm, VARDHA over southeast Bay of Bengal:
Cyclone Alert for Andhra Pradesh Coast**

The cyclonic storm, **VARDHA** over southeast Bay of Bengal moved further northwards with a speed of 10 kmph during past 06 hours and lay centred at 0230 hrs IST of today, the 9th December, 2016 over southeast Bay of Bengal near Latitude 12.0°N and Longitude 90.5°E, about 1000 km east-southeast of Visakhapatnam, 1110 km east-southeast of Machilipatnam and 240 km west-northwest of Port Blair. The system is very likely to intensify further into a severe cyclonic storm during next 24 hours. It is very likely to move nearly northwards for some more time. Thereafter, it is very likely to move northwestwards, then west-northwestwards and cross Andhra Pradesh coast between Nellore and Kakinada around afternoon/evening of 12th December 2016.

However, there is possibility of slight weakening of the system before landfall.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. 0N/ long. 0E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
08-12-2016/0230	12.0/90.5	70-80 gusting to 90	Cyclonic Storm
09-12-2016/0530	12.3/90.2	80-90 gusting to 100	Cyclonic Storm
09-12-2016/1130	12.7/89.7	90-100 gusting to 110	Severe Cyclonic Storm
09-12-2016/1730	13.0/89.3	95-105 gusting to 115	Severe Cyclonic Storm
09-12-2016/2330	13.4/88.5	100-110 gusting to 120	Severe Cyclonic Storm
10-12-2016/1130	14.0/87.3	105-115 gusting to 125	Severe Cyclonic Storm

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

Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

10-12-2016/2330	14.4/86.0	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/1130	14.8/84.2	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/2330	15.0/82.8	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/1130	15.3/81.2	70-80 gusting to 90	Cyclonic Storm
12-12-2016/2330	15.5/79.6	40-50 gusting to 60	Depression

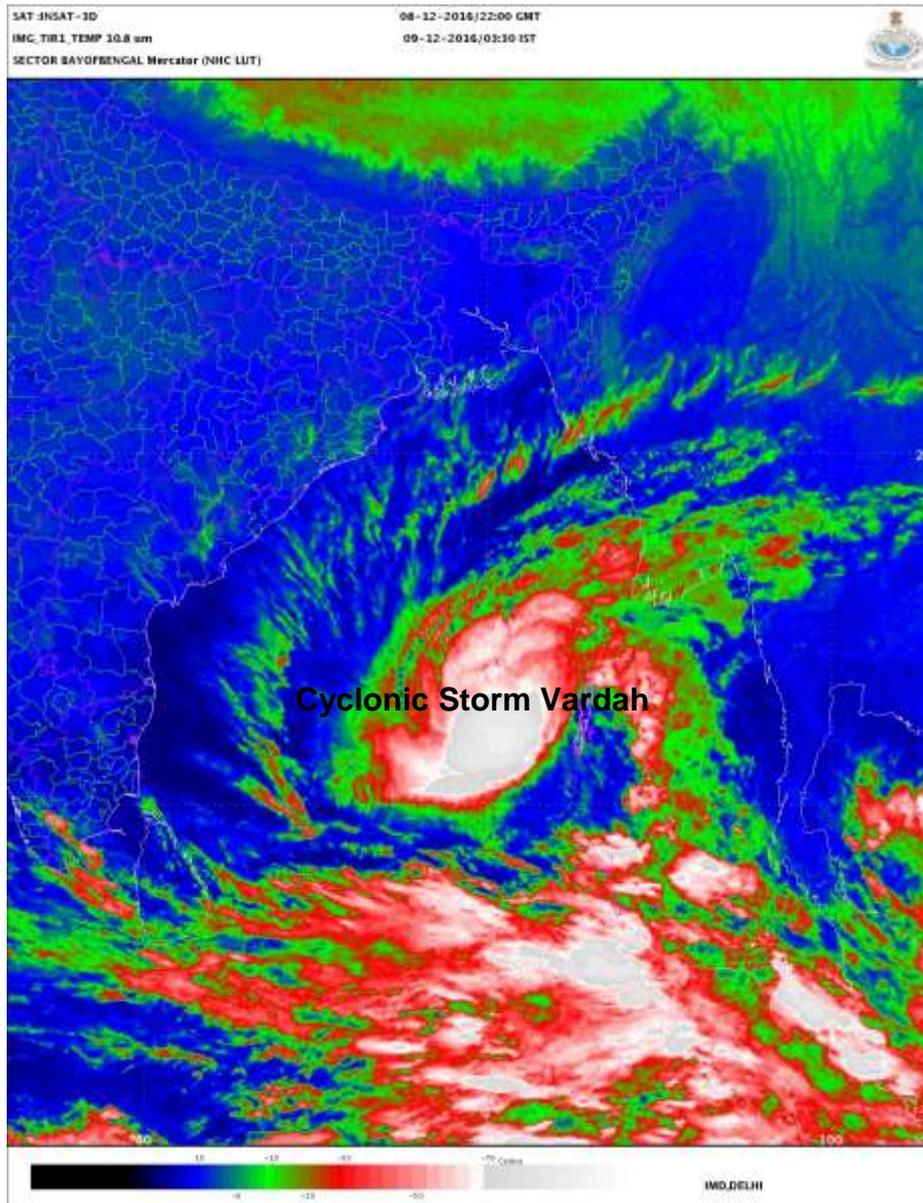
Warning:

- (Ixi) **Heavy Rainfall Warning:** Light to moderate rainfall at many places with isolated heavy falls over Andaman Islands is very likely to occur during next 12 hrs. Light to moderate rainfall at many places is very likely over Andaman & Nicobar Islands during subsequent 24 hours. Light to moderate rainfall at many places with isolated heavy falls over coastal Andhra Pradesh is very likely to commence from 11th December evening.
- (Ixii) **Wind warning:** Squally winds speed reaching 45-55 kmph gusting to 65 kmph would prevail over Andaman and Nicobar Islands & adjoining sea areas during next 12 hrs and gradually decrease thereafter. Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh coast commencing from 11th December night.
- (Ixiii) **Sea condition:** Sea condition would be rough to very rough along & off Andaman and Nicobar Islands and adjoining sea areas during next 12 hrs and moderate to rough in subsequent 12 hrs. Sea condition would be also be rough to very rough along & off Andhra Pradesh coast commencing from 11th December night.
- (Ixiv) **Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andaman Islands and adjoining sea areas during next 24 hrs and Nicobar Islands & adjoining sea areas during next 12 hrs. Fishermen are advised not to venture into sea along and off Andhra Pradesh coast from 10th December onwards. The fishermen out at sea are advised to return to the coast by 10th December 2016.

Next bulletin will be issued at 0830 hrs IST of 09th December 2016

(Shambu Ravindren)
Scientist-B

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 17 (BOB 06/2016)

TIME OF ISSUE: 0830 HOURS IST

DATED: 09.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24621402)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192-232656)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

**Sub: Cyclonic Storm, VARDHA over southeast Bay of Bengal:
Cyclone Alert for Andhra Pradesh Coast**

The cyclonic storm, **VARDHA** over southeast Bay of Bengal moved north-northwestwards with a speed of 10 kmph during past 06 hrs, slightly intensified further and lay centred at 0530 hrs IST of today, the 9th December, 2016 over southeast Bay of Bengal near Latitude 12.1°N and Longitude 90.4°E, about 990 km southeast of Visakhapatnam, 1090 km east-southeast of Machilipatnam and 250 km west-northwest of Port Blair. The system is very likely to intensify further into a severe cyclonic storm during next 12 hours. It is very likely to move initially northwestwards, then west-northwestwards and cross Andhra Pradesh coast between Nellore and Kakinada around afternoon/evening of 12th December 2016.

However, there is possibility of slight weakening of the system before landfall.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. 0N/ long. 0E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
09-12-2016/0530	12.1/90.4	80-90 gusting to 100	Cyclonic Storm
09-12-2016/1130	12.4/90.3	90-100 gusting to 110	Severe Cyclonic Storm
09-12-2016/1730	12.7/90.1	95-105 gusting to 115	Severe Cyclonic Storm
09-12-2016/2330	13.1/89.6	100-110 gusting to 120	Severe Cyclonic Storm
10-12-2016/0530	13.4/89.0	110-120 gusting to 130	Severe Cyclonic Storm
10-12-2016/1730	14.2/87.0	110-120 gusting to 130	Severe Cyclonic Storm

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

Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

11-12-2016/0530	14.6/85.1	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/1730	14.9/83.5	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/0530	15.1/82.0	80-90 gusting to 100	Cyclonic Storm
12-12-2016/1730	15.4/80.4	65-75 gusting to 85	Cyclonic Storm
13-12-2016/0530	15.6/78.6	40-50 gusting to 60	Depression

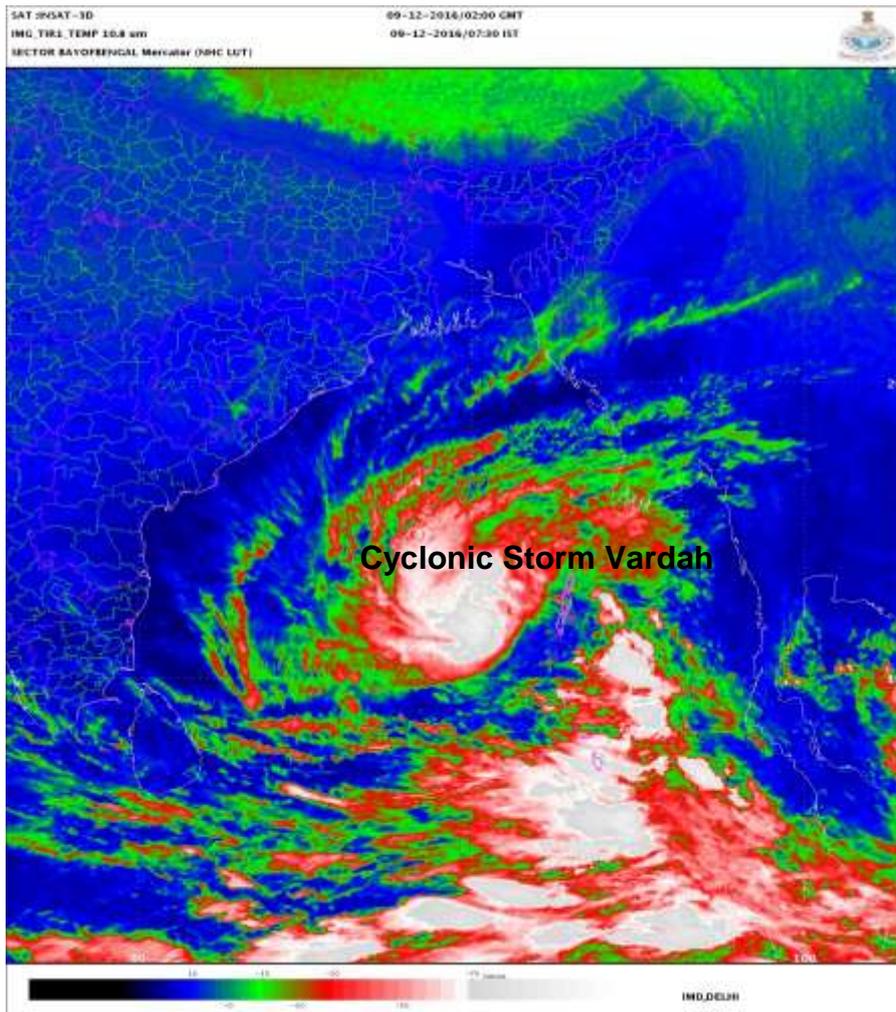
Warning:

- (I xv) **Heavy Rainfall Warning:** Light to moderate rainfall at many places with isolated heavy falls over coastal Andhra Pradesh is very likely to commence from 11th December evening.
- (I xvi) **Wind warning:** Squally winds speed reaching 35-45 kmph gusting to 55 kmph would prevail over Andaman and Nicobar Islands & adjoining sea areas during next 12 hrs and gradually decrease thereafter. Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh coast commencing from 11th December night.
- (I xvii) **Sea condition:** Sea condition would be moderate to rough along & off Andaman and Nicobar Islands and adjoining sea areas during next 12 hrs. Sea condition would be also be rough to very rough along & off Andhra Pradesh coast commencing from 11th December night.
- (I xviii) **Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andaman Islands and adjoining sea areas during next 12 hrs. Fishermen are advised not to venture into sea along and off Andhra Pradesh coast from 10th December onwards. The fishermen out at sea are advised to return to the coast by 10th December 2016.

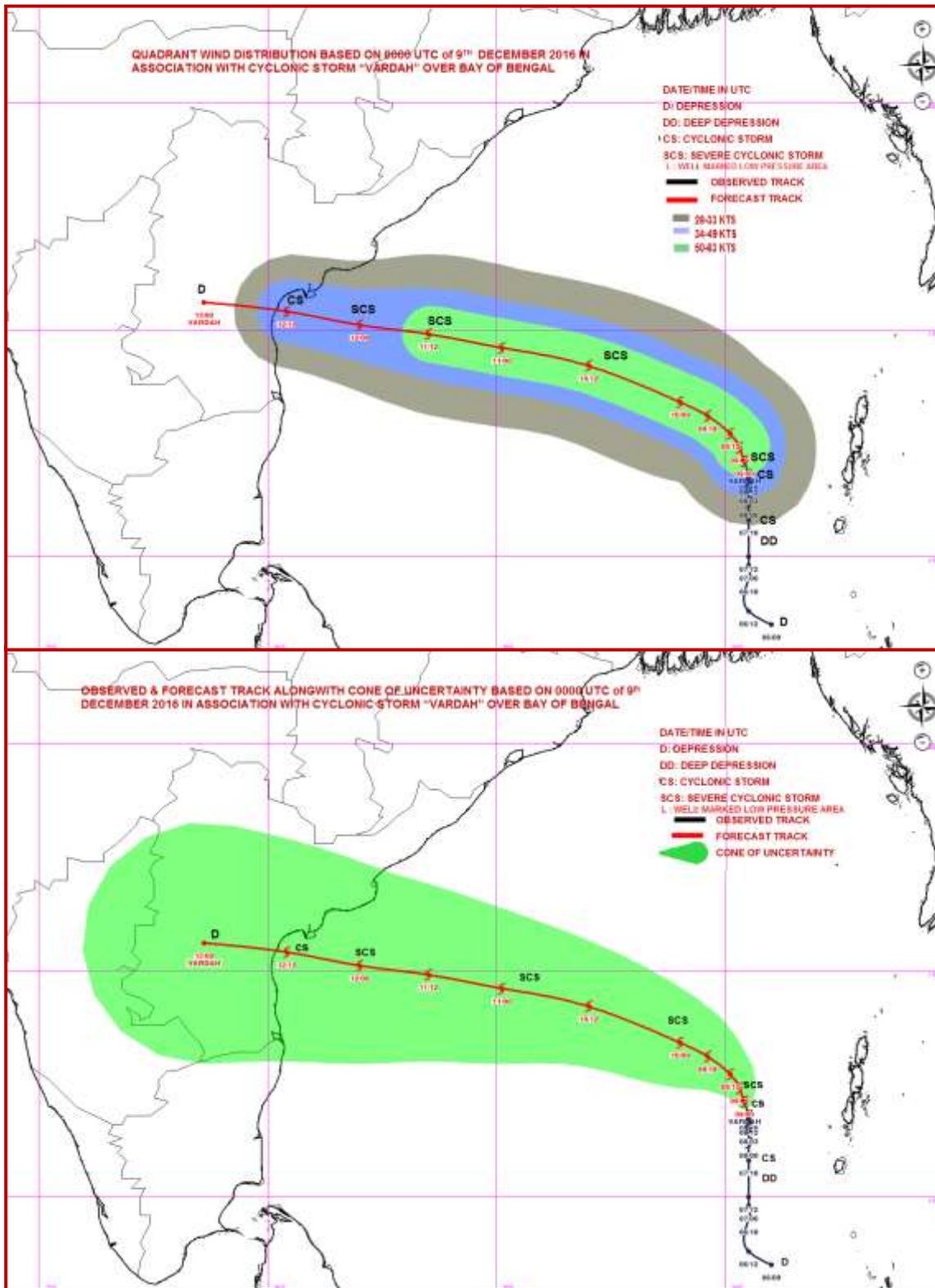
Next bulletin will be issued at 1130 hrs IST of 09th December 2016

(Shambu Ravindren)
Scientist-B

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 18 (BOB 06/2016)

TIME OF ISSUE: 1130 HOURS IST

DATED: 09.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192-232656)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)

**Sub: Cyclonic Storm, VARDAH over southeast Bay of Bengal:
Cyclone Alert for Andhra Pradesh Coast**

The cyclonic storm, **VARDAH** over southeast Bay of Bengal remained practically stationary during past 03 hrs and lay centred at 0830 hrs IST of today, the 9th December, 2016 over southeast Bay of Bengal near Latitude 12.1°N and Longitude 90.4°E, about 990 km southeast of Visakhapatnam, 1090 km east-southeast of Machilipatnam and 250 km west-northwest of Port Blair. The system is very likely to intensify further into a severe cyclonic storm during next 12 hours. It is very likely to move initially northwestwards, then west-northwestwards and cross Andhra Pradesh coast between Nellore and Kakinada around afternoon/evening of 12th December 2016.

However, there is possibility of slight weakening of the system before landfall.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. 0N/ long. 0E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
09-12-2016/0830	12.1/90.4	80-90 gusting to 100	Cyclonic Storm
09-12-2016/1130	12.4/90.3	90-100 gusting to 110	Severe Cyclonic Storm
09-12-2016/1730	12.7/90.1	95-105 gusting to 115	Severe Cyclonic Storm
09-12-2016/2330	13.1/89.6	100-110 gusting to 120	Severe Cyclonic Storm
10-12-2016/0530	13.4/89.0	110-120 gusting to 130	Severe Cyclonic Storm
10-12-2016/1730	14.2/87.0	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/0530	14.6/85.1	110-120 gusting to 130	Severe Cyclonic Storm

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

11-12-2016/1730	14.9/83.5	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/0530	15.1/82.0	80-90 gusting to 100	Cyclonic Storm
12-12-2016/1730	15.4/80.4	65-75 gusting to 85	Cyclonic Storm
13-12-2016/0530	15.6/78.6	40-50 gusting to 60	Depression

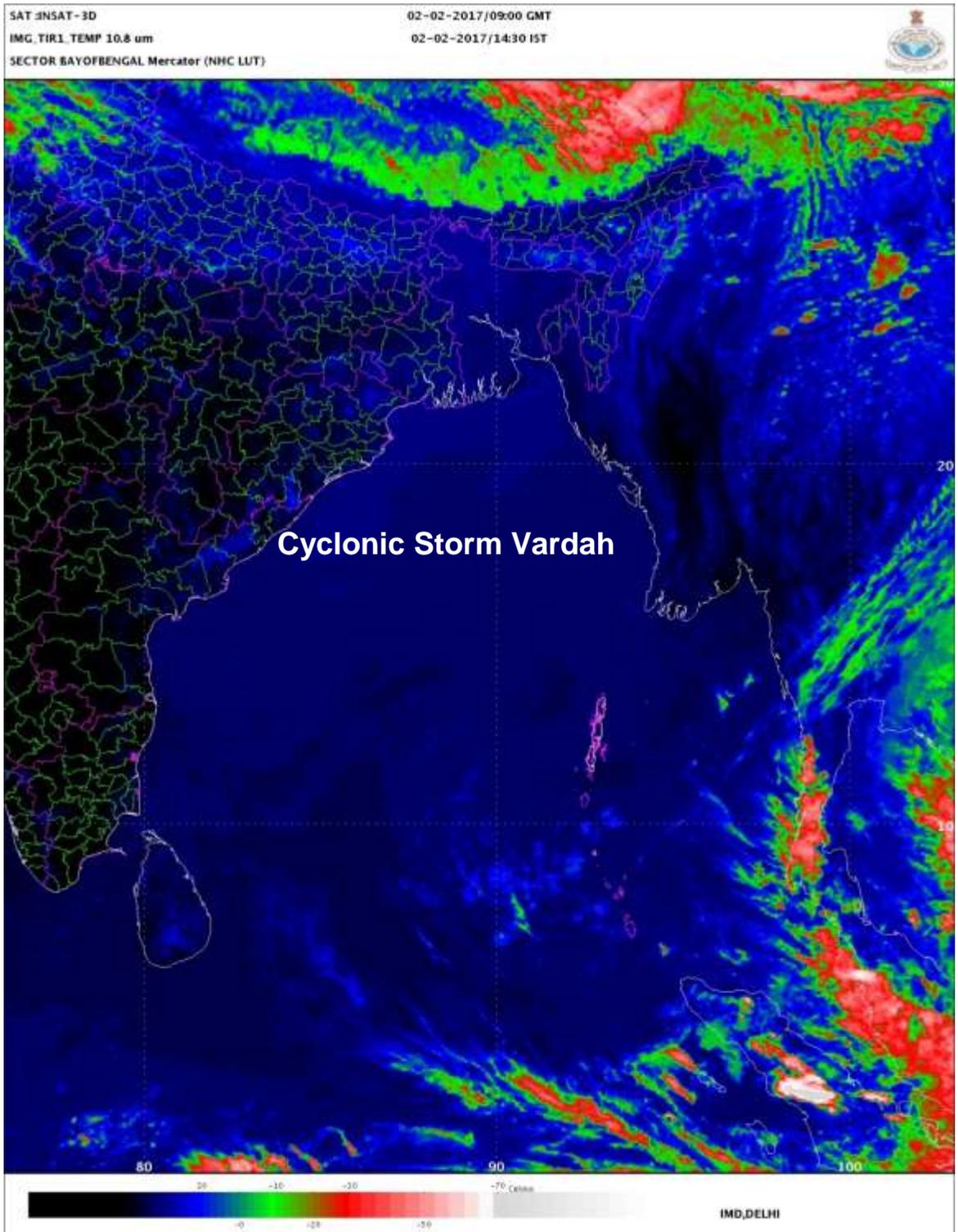
Warning:

- (Ixi) Heavy Rainfall Warning:** Light to moderate rainfall at many places with isolated heavy falls over coastal Andhra Pradesh is very likely to commence from 11th December evening.
- (Ixx) Wind warning:** Squally winds speed reaching 35-45 kmph gusting to 55 kmph would prevail over Andaman and Nicobar Islands & adjoining sea areas during next 12 hrs and gradually decrease thereafter. Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh coast commencing from 11th December night.
- (Ixxi) Sea condition:** Sea condition would be moderate to rough along & off Andaman and Nicobar Islands and adjoining sea areas during next 12 hrs. Sea condition would be also be rough to very rough along & off Andhra Pradesh coast commencing from 11th December night.
- (Ixxii) Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andaman Islands and adjoining sea areas during next 12 hrs. Fishermen are advised not to venture into sea along and off Andhra Pradesh coast from 10th December onwards. The fishermen out at sea are advised to return to the coast by 10th December 2016.

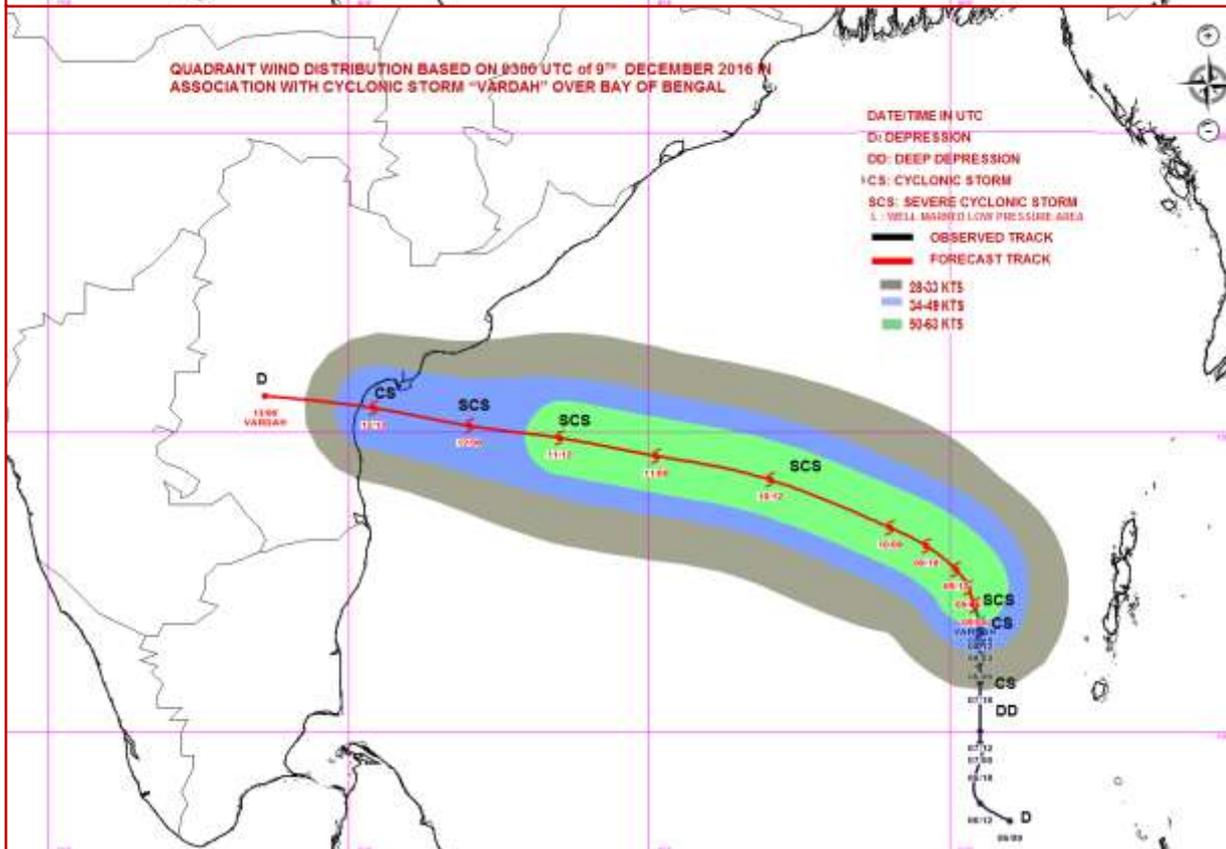
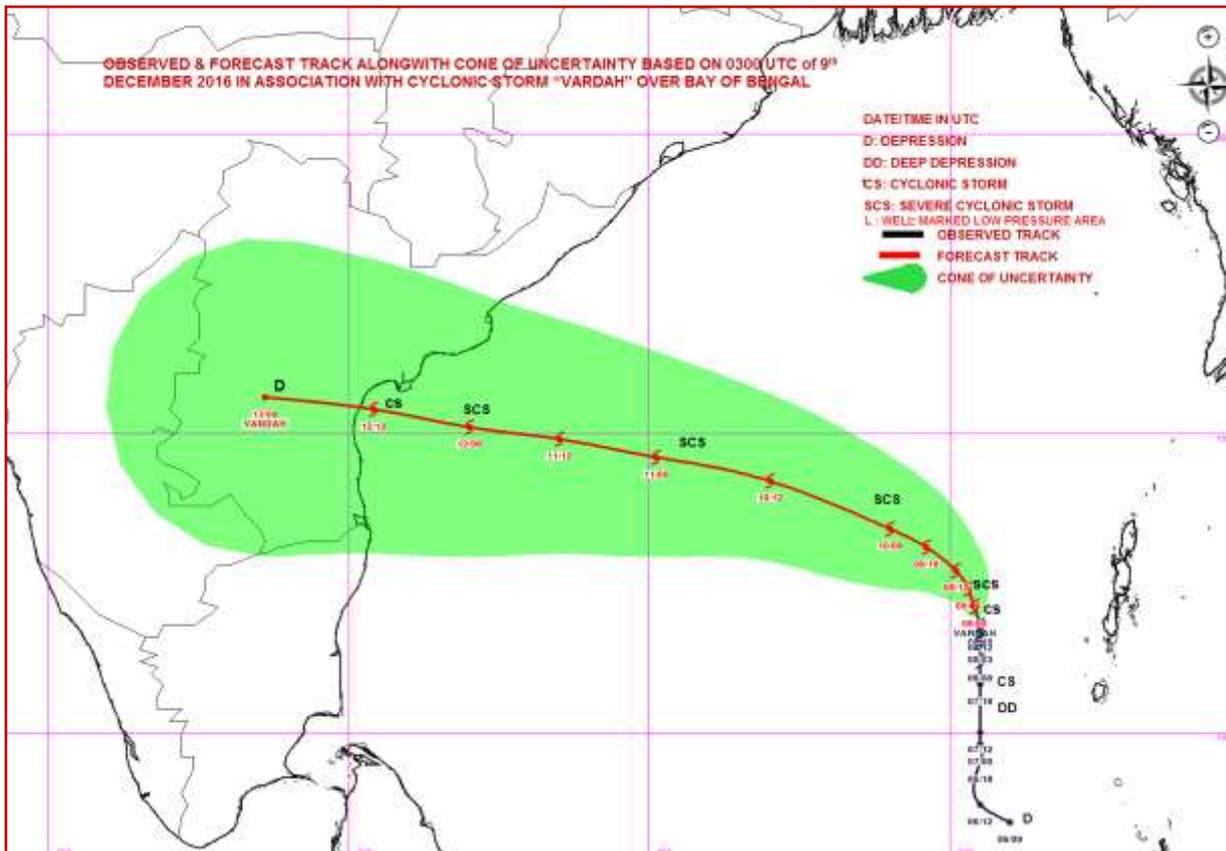
Next bulletin will be issued at 1430 hrs IST of 09th December 2016

**(Neetha K. Gopal)
Scientist-E**

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 19 (BOB 06/2016)(Modified)

TIME OF ISSUE: 1430 HOURS IST

DATED: 09.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192-232656)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)

**Sub: Cyclonic Storm, VARDHA over southeast Bay of Bengal:
Cyclone Alert for Andhra Pradesh Coast**

The cyclonic storm, **VARDHA** over southeast Bay of Bengal remained practically stationary during past 06 hrs and lay centred at 1130 hrs IST of today, the 9th December, 2016 over southeast Bay of Bengal near Latitude 12.1°N and Longitude 90.4°E, about 990 km southeast of Visakhapatnam, 1090 km east-southeast of Machilipatnam and 250 km west-northwest of Port Blair. The system is very likely to intensify further into a severe cyclonic storm during next 12 hours. It is very likely to move initially northwestwards, then west-northwestwards and cross Andhra Pradesh coast between Nellore and Machilipatnam around afternoon/evening of 12th December 2016.

However, there is possibility of slight weakening of the system before landfall.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. 0N/ long. 0E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
09-12-2016/1130	12.1/90.4	80-90 gusting to 100	Cyclonic Storm
09-12-2016/1730	12.4/90.1	90-100 gusting to 110	Severe Cyclonic Storm
09-12-2016/2330	12.7/89.6	95-105 gusting to 115	Severe Cyclonic Storm
10-12-2016/0530	13.0/89.0	100-110 gusting to 120	Severe Cyclonic Storm
10-12-2016/1130	13.6/88.0	110-120 gusting to 130	Severe Cyclonic Storm
10-12-2016/2330	14.4/86.2	110-120 gusting to 130	Severe Cyclonic Storm

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

11-12-2016/1130	14.8/84.3	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/2330	15.0/82.7	90-100 gusting to 110	Severe Cyclonic Storm
12-12-2016/1130	14.8/81.2	70-80 gusting to 90	Cyclonic Storm
12-12-2016/2330	14.4/79.8	55-65 gusting to 75	Deep Depression

Warning:

(lxxiii) Heavy Rainfall Warning: Light to moderate rainfall at many places with isolated heavy falls over coastal Andhra Pradesh is very likely to commence from 11th December evening.

(lxxiv) Wind warning: Squally winds speed reaching 35-45 kmph gusting to 55 kmph would prevail over Andaman and Nicobar Islands & adjoining sea areas during next 12 hrs and gradually decrease thereafter. Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh coast commencing from 11th December night.

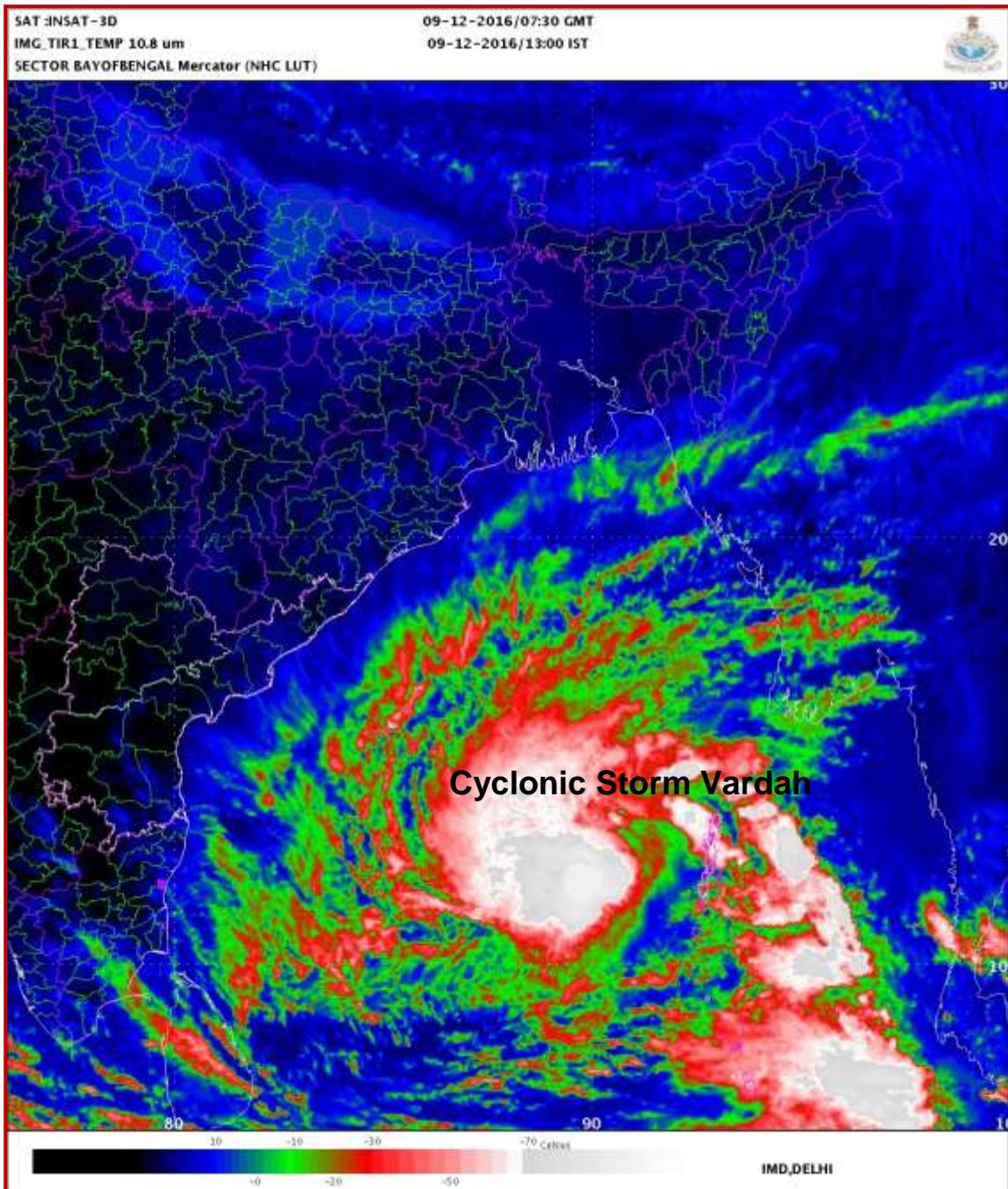
(lxxv) Sea condition: Sea condition would be moderate to rough along & off Andaman and Nicobar Islands and adjoining sea areas during next 12 hrs. Sea condition would be also be rough to very rough along & off Andhra Pradesh coast commencing from 11th December night.

(lxxvi) Fishermen Warning: Fishermen are advised not to venture into sea along and off Andaman Islands and adjoining sea areas during next 12 hrs. Fishermen are advised not to venture into sea along and off Andhra Pradesh coast from 10th December onwards. The fishermen out at sea are advised to return to the coast by 10th December 2016.

Next bulletin will be issued at 1730 hrs IST of 09th December 2016

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

*Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair*



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 20 (BOB 06/2016) (MODIFIED)

TIME OF ISSUE: 1700 HOURS IST

DATED: 09.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192-232656)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)

**Sub: Cyclonic Storm, VARDHA over southeast Bay of Bengal:
Cyclone Alert for Andhra Pradesh Coast**

The cyclonic storm, **VARDHA** over southeast Bay of Bengal moved slightly northwestwards in past 06 hrs with a speed of 3 kmph and lay centred at 1430 hrs IST of today, the 9th December, 2016 over southeast Bay of Bengal near Latitude 12.2°N and Longitude 90.3°E, about 970 km southeast of Visakhapatnam, 1080 km east-southeast of Machilipatnam and 270 km west-northwest of Port Blair. The system is very likely to intensify further into a severe cyclonic storm during next 12 hours. It is very likely to move initially northwestwards, then west-northwestwards and cross Andhra Pradesh coast between Nellore and Machilipatnam around afternoon/evening of 12th December 2016.

However, there is possibility of slight weakening of the system before landfall.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. 0N/ long. 0E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
09-12-2016/1430	12.2/90.3	80-90 gusting to 100	Cyclonic Storm
09-12-2016/1730	12.4/90.1	90-100 gusting to 110	Severe Cyclonic Storm
09-12-2016/2330	12.7/89.6	95-105 gusting to 115	Severe Cyclonic Storm
10-12-2016/0530	13.0/89.0	100-110 gusting to 120	Severe Cyclonic Storm
10-12-2016/1130	13.6/88.0	110-120 gusting to 130	Severe Cyclonic Storm
10-12-2016/2330	14.4/86.2	110-120 gusting to 130	Severe Cyclonic Storm

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

Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

11-12-2016/1130	14.8/84.3	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/2330	15.0/82.7	90-100 gusting to 110	Severe Cyclonic Storm
12-12-2016/1130	14.8/81.2	70-80 gusting to 90	Cyclonic Storm
12-12-2016/2330	14.4/79.8	55-65 gusting to 75	Deep Depression

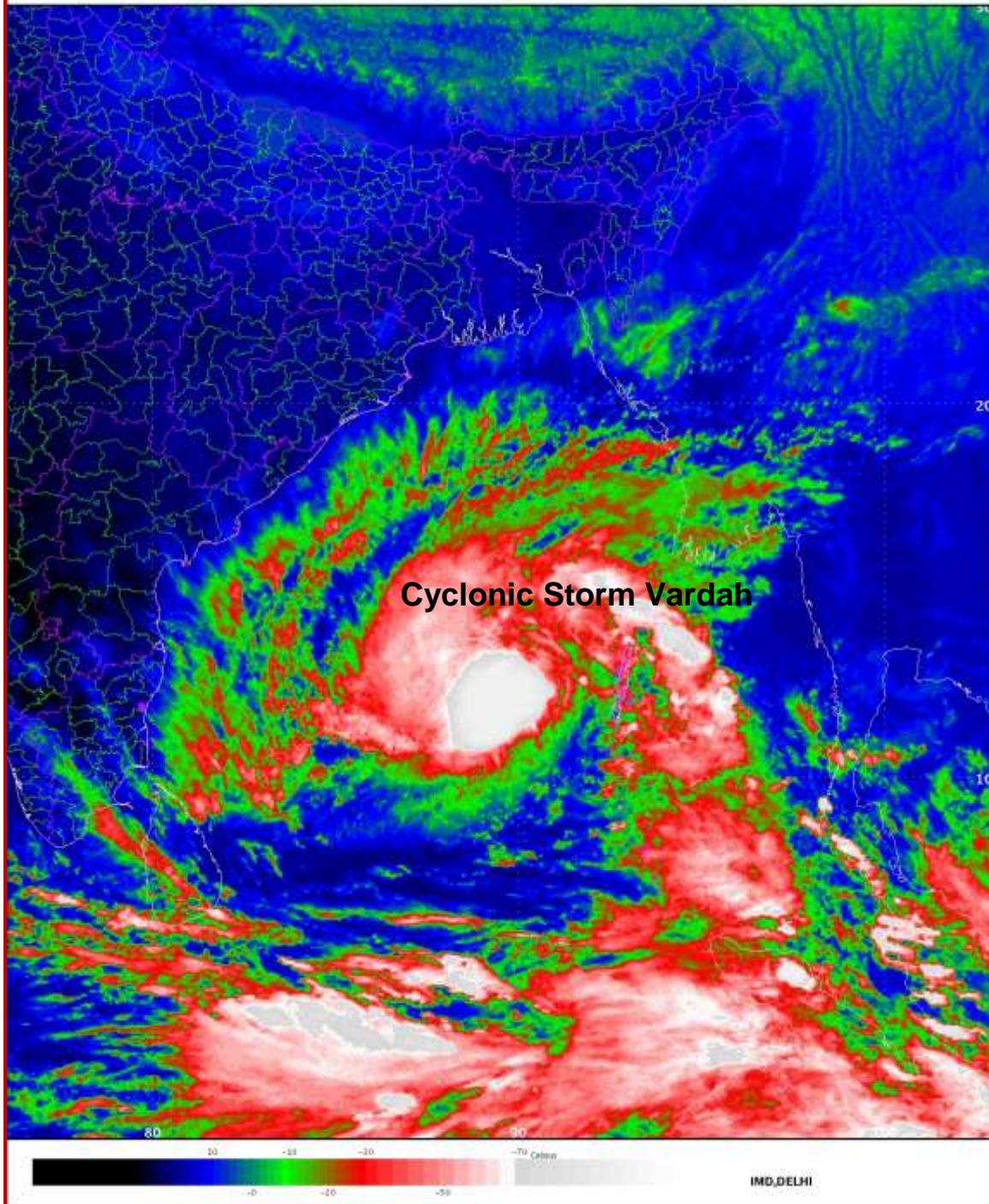
Warning:

- (lxxvii) Heavy Rainfall Warning:** Light to moderate rainfall at many places with isolated heavy falls over coastal Andhra Pradesh is very likely to commence from 11th December evening.
- (lxxviii) Wind warning:** Squally winds speed reaching 35-45 kmph gusting to 55 kmph would prevail over Andaman and Nicobar Islands & adjoining sea areas during next 12 hrs and gradually decrease thereafter. Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh coast commencing from 11th December night.
- (lxxix) Sea condition:** Sea condition would be moderate to rough along & off Andaman and Nicobar Islands and adjoining sea areas during next 12 hrs. Sea condition would be also be rough to very rough along & off Andhra Pradesh coast commencing from 11th December night.
- (lxxx) Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andaman Islands and adjoining sea areas during next 12 hrs. Fishermen are advised not to venture into sea along and off Andhra Pradesh coast from 10th December onwards. The fishermen out at sea are advised to return to the coast by 10th December 2016.

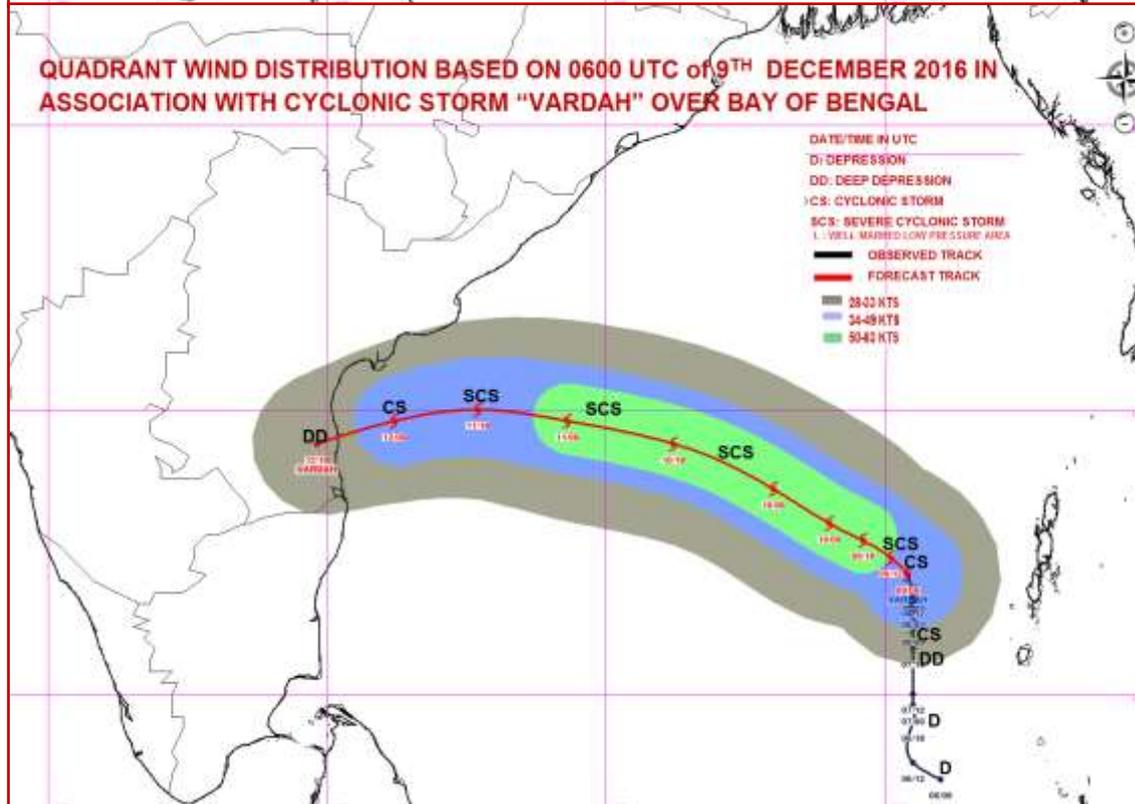
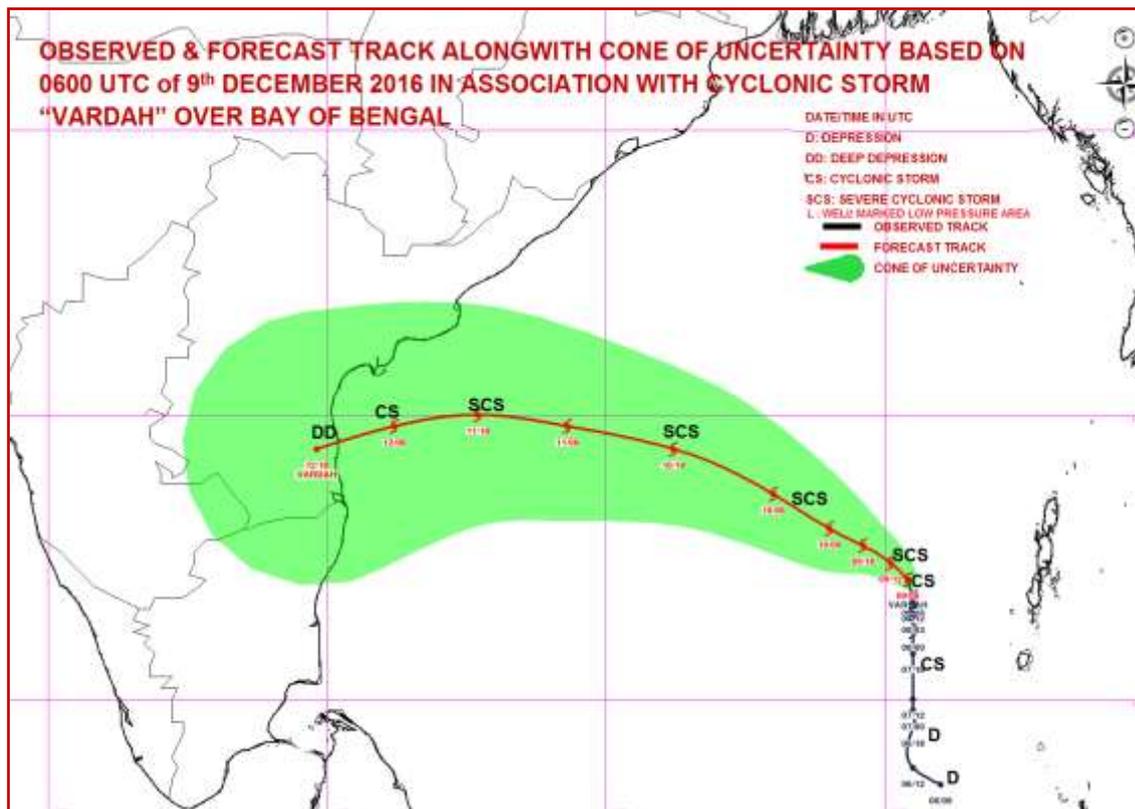
Next bulletin will be issued at 2030 hrs IST of 09th December 2016

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

*Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair*



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 21 (BOB 06/2016)

TIME OF ISSUE: 2000 HOURS IST

DATED: 09.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192-232656)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)

**Sub: Cyclonic Storm, VARDHA over southeast Bay of Bengal:
Cyclone Alert for Andhra Pradesh Coast**

The cyclonic storm, **VARDHA** over southeast Bay of Bengal moved west-northwestwards in past 06 hrs with a speed of 7 kmph and lay centred at 1730 hrs IST of today, the 9th December, 2016 over southeast Bay of Bengal near Latitude 12.2°N and Longitude 90.0°E, about 950 km south-southeast of Visakhapatnam, 1050 km southeast of Machilipatnam and 300 km west-northwest of Port Blair. The system is very likely to move west-northwestwards and intensify further into a severe cyclonic storm during next 12 hours. It is very likely to maintain its peak intensity upto evening of 11th December 2016. Thereafter, it is likely to weaken gradually while moving towards Andhra Pradesh coast. It is very likely to cross Andhra Pradesh coast between Nellore and Machilipatnam around afternoon/evening of 12th December 2016.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. 0N/ long. 0E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
09-12-2016/1730	12.2/90.0	80-90 gusting to 100	Cyclonic Storm
09-12-2016/2330	12.4/89.5	90-100 gusting to 110	Severe Cyclonic Storm
10-12-2016/0530	12.8/88.9	95-105 gusting to 115	Severe Cyclonic Storm
10-12-2016/1130	13.5/88.0	100-110 gusting to 120	Severe Cyclonic Storm
10-12-2016/1730	14.0/87.1	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/0530	14.5/85.2	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/1730	14.7/83.5	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/0530	14.8/82.0	80-90 gusting to 100	Cyclonic Storm
12-12-2016/1730	14.7/80.5	65-75 gusting to 85	Cyclonic Storm
13-12-2016/0530	14.4/79.0	40-50 gusting to 60	Depression

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

Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

Warning:

(lxxxix) Heavy Rainfall Warning: Light to moderate rainfall at many places with isolated heavy falls over coastal Andhra Pradesh is very likely to commence from 11th December evening.

(lxxxii) Wind warning: Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh coast commencing from 11th December night.

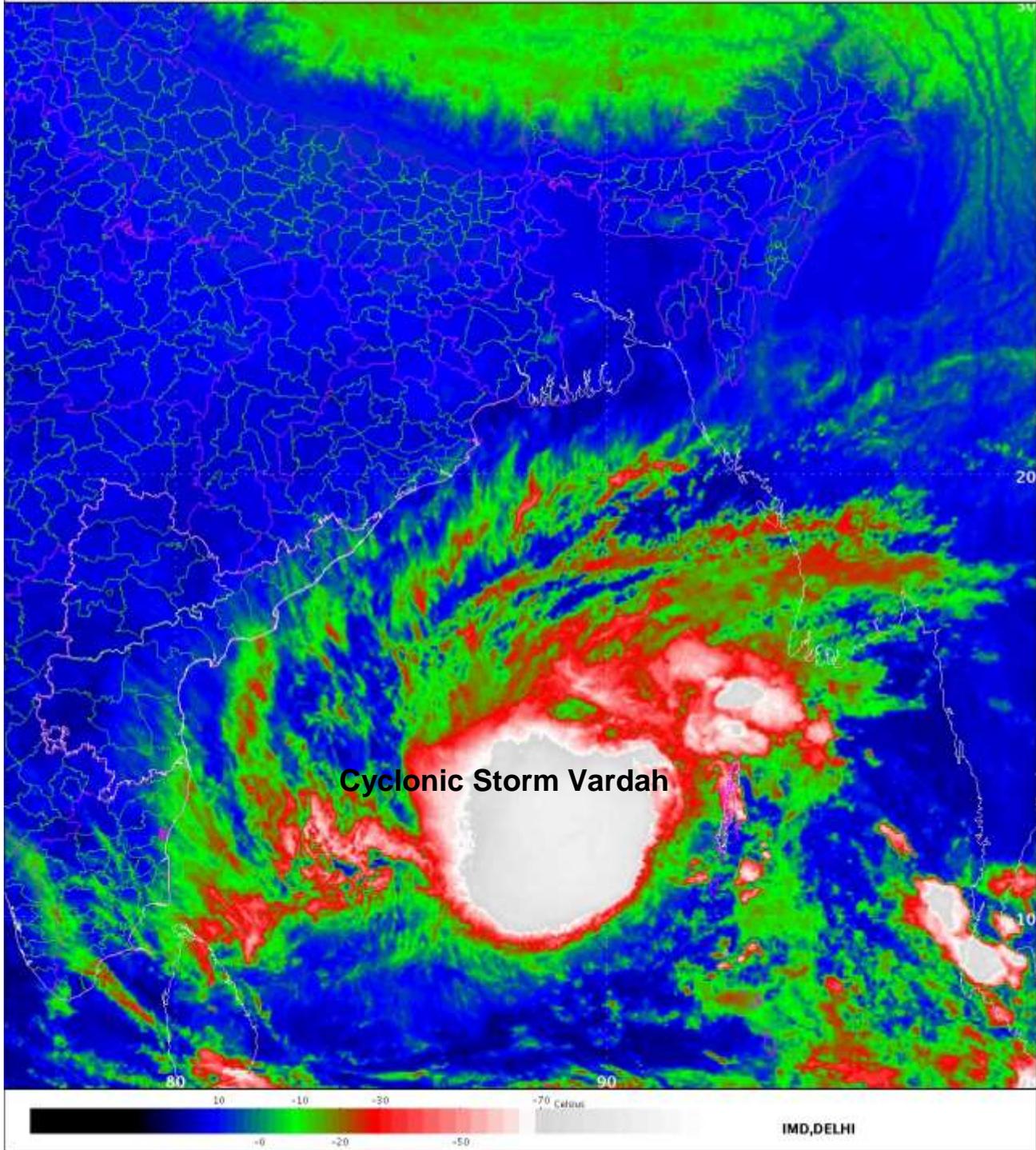
(lxxxiii) Sea condition: Sea condition would be also be rough to very rough along & off Andhra Pradesh coast commencing from 11th December night.

(lxxxiv) Fishermen Warning: Fishermen are advised not to venture into sea along and off Andhra Pradesh coast from 10th December onwards. The fishermen out at sea are advised to return to the coast by 10th December 2016.

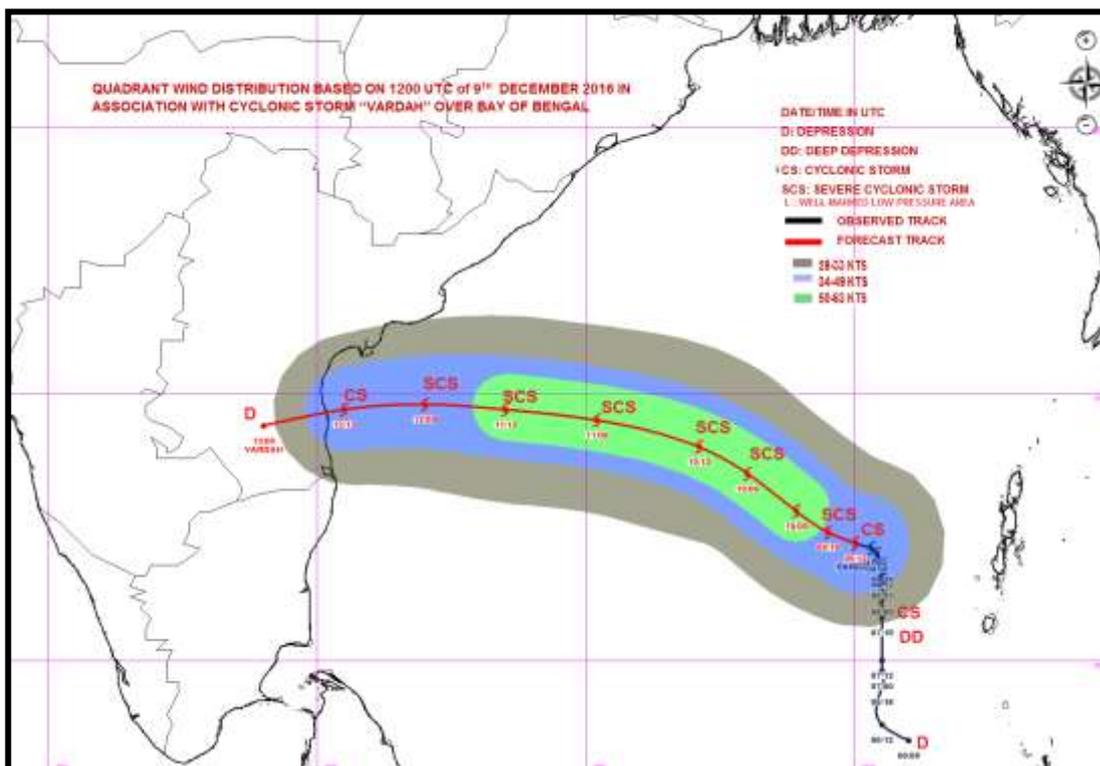
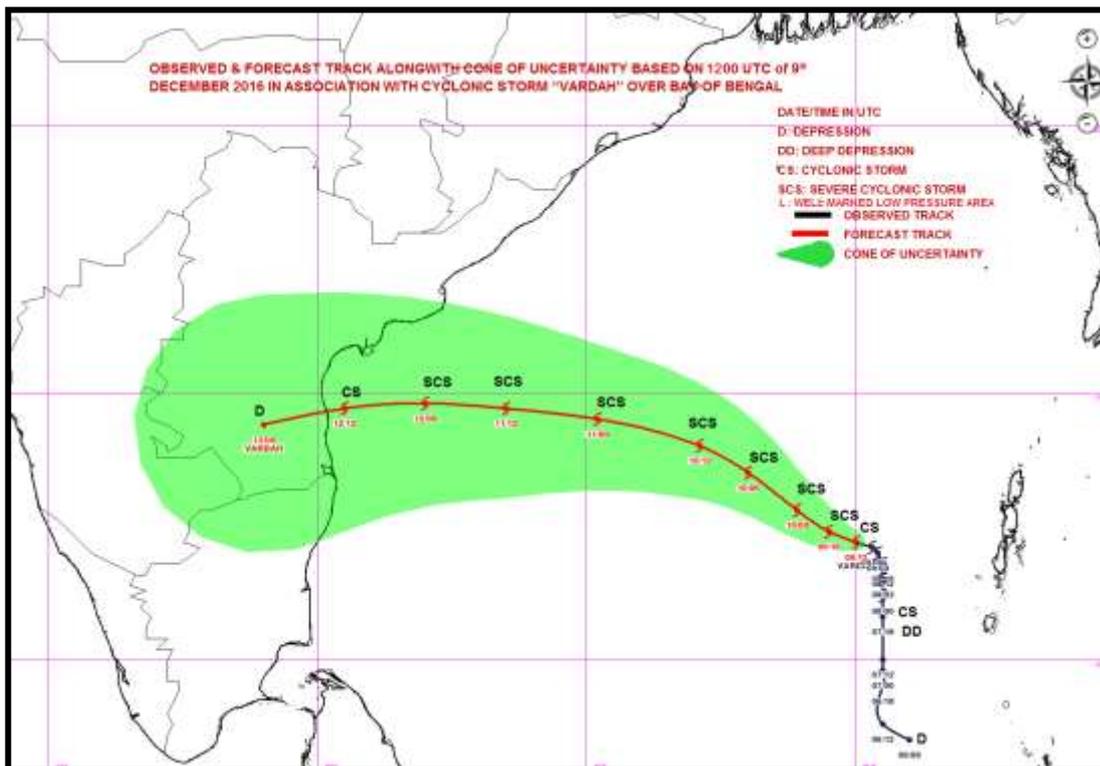
Next bulletin will be issued at 2330 hrs IST of 09th December 2016

**(Shobhit Katiyar)
Scientist-B
RSMC, New Delhi**

*Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair*



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 22 (BOB 06/2016)

TIME OF ISSUE: 2200 HOURS IST

DATED: 09.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192-232656)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

**Sub: Cyclonic Storm, VARDHA over southeast Bay of Bengal:
Cyclone Alert for Andhra Pradesh Coast**

The cyclonic storm, **VARDHA** over southeast Bay of Bengal moved westwards during past 06 hrs with a speed of 5 kmph and lay centred at 2030 hrs IST of today, the 9th December, 2016 over southeast Bay of Bengal near Latitude 12.2°N and Longitude 89.9°E, about 940 km south-southeast of Visakhapatnam, 1040 km southeast of Machilipatnam and 310 km west-northwest of Port Blair. The system is very likely to move west-northwestwards and intensify further into a severe cyclonic storm during next 12 hours. It is very likely to maintain its peak intensity upto evening of 11th December 2016. Thereafter, it is likely to weaken gradually while moving towards Andhra Pradesh coast. It is very likely to cross Andhra Pradesh coast between Nellore and Machilipatnam around afternoon/evening of 12th December 2016.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. 0N/ long. 0E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
09-12-2016/2030	12.2/89.9	80-90 gusting to 100	Cyclonic Storm
09-12-2016/2330	12.4/89.5	90-100 gusting to 110	Severe Cyclonic Storm
10-12-2016/0530	12.8/88.9	95-105 gusting to 115	Severe Cyclonic Storm
10-12-2016/1130	13.5/88.0	100-110 gusting to 120	Severe Cyclonic Storm
10-12-2016/1730	14.0/87.1	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/0530	14.5/85.2	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/1730	14.7/83.5	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/0530	14.8/82.0	80-90 gusting to 100	Cyclonic Storm
12-12-2016/1730	14.7/80.5	65-75 gusting to 85	Cyclonic Storm
13-12-2016/0530	14.4/79.0	40-50 gusting to 60	Depression

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

Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

Warning:

(lxxxv) Heavy Rainfall Warning: Light to moderate rainfall at many places with isolated heavy falls over coastal Andhra Pradesh is very likely to commence from 11th December evening.

(lxxxvi) Wind warning: Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh coast commencing from 11th December night.

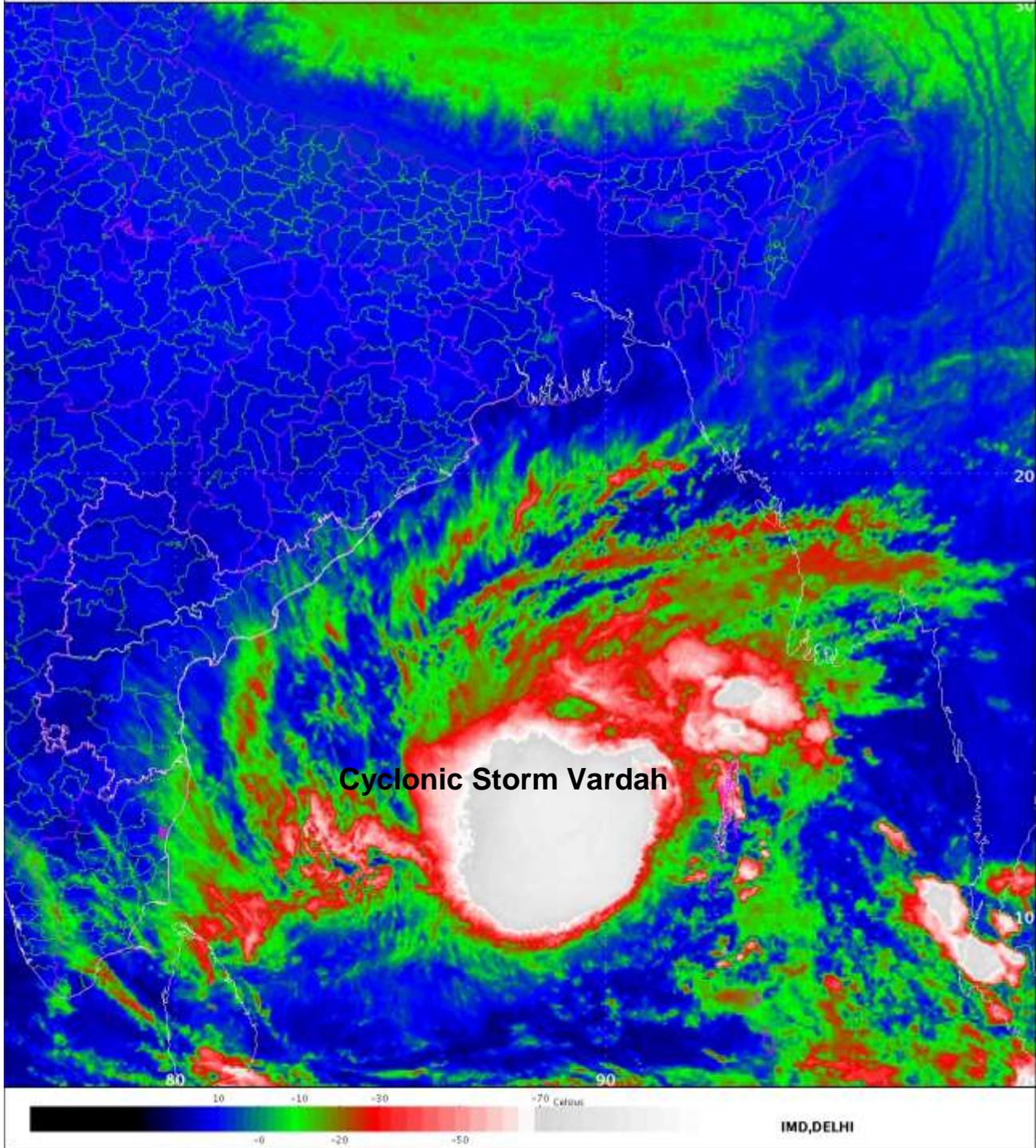
(lxxxvii) Sea condition: Sea condition would be also be rough to very rough along & off Andhra Pradesh coast commencing from 11th December night.

(lxxxviii) Fishermen Warning: Fishermen are advised not to venture into sea along and off Andhra Pradesh coast from 10th December onwards. The fishermen out at sea are advised to return to the coast by 10th December 2016.

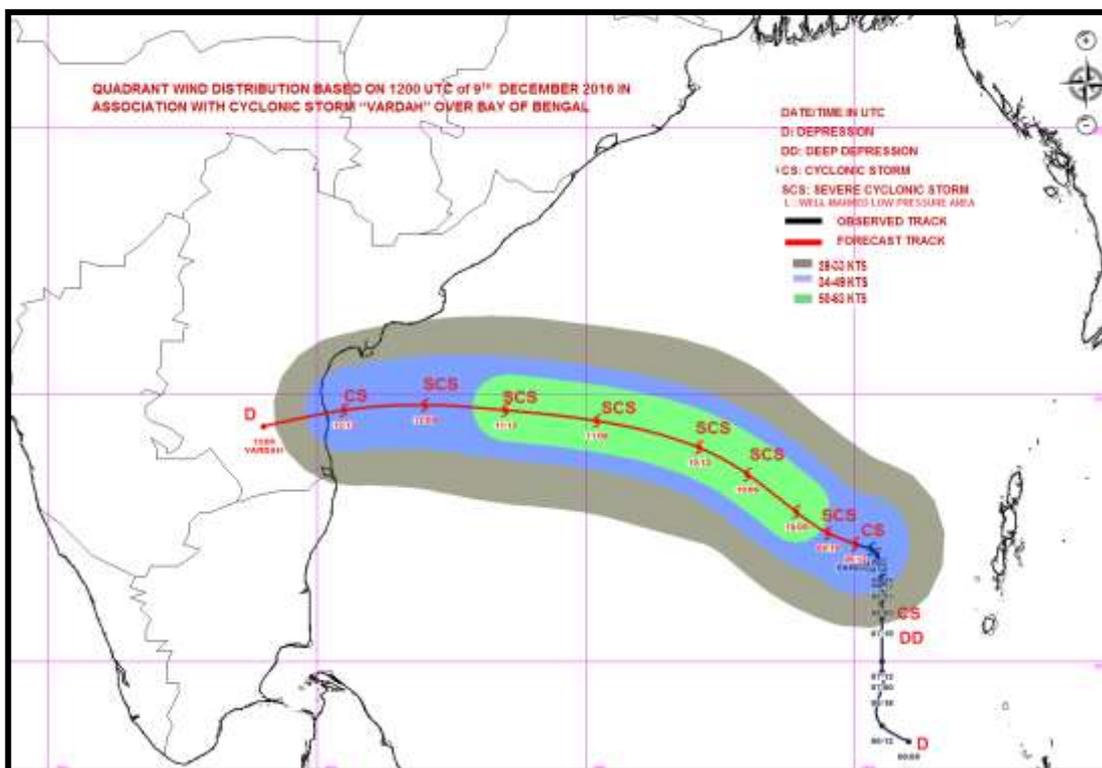
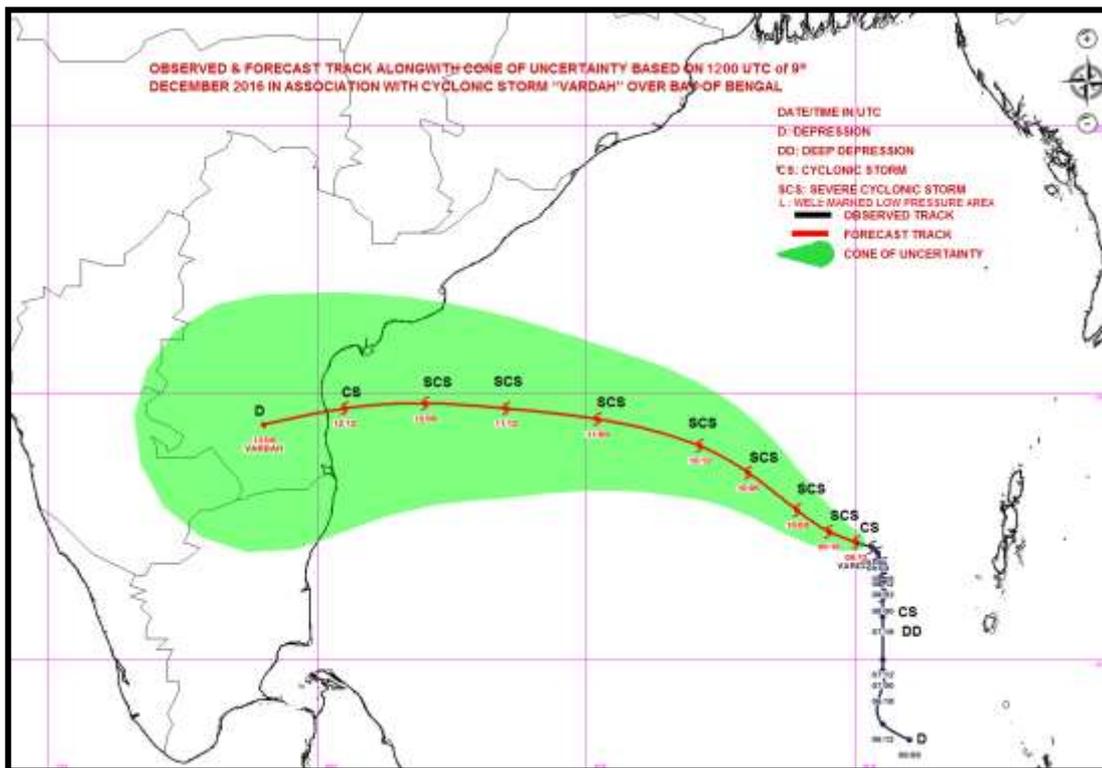
Next bulletin will be issued at 0230 hrs IST of 10th December 2016

**(AKHIL SRIVASTAVA)
Scientist-B
RSMC, New Delhi**

*Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair*



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 23 (BOB 06/2016)

TIME OF ISSUE: 0130 HOURS IST

DATED: 10.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
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PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192-232656)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

Sub: Cyclonic Storm, VARDHA over southeast Bay of Bengal intensify into a Severe Cyclonic Storm:

Cyclone Alert for Andhra Pradesh Coast

The cyclonic storm, **VARDHA** over southeast Bay of Bengal moved west-northwestwards during past 06 hrs with a speed of 7 kmph intensified further into a Severe Cyclonic Storm and lay centred at 2330 hrs IST of 9th December, 2016 over southeast Bay of Bengal near Latitude 12.3°N and Longitude 89.6°E, about 910 km south-southeast of Visakhapatnam, 1000 km southeast of Machilipatnam and 340 km west-northwest of Port Blair. The system is very likely to move west-northwestwards and intensify further during next 24 hours. It is very likely to maintain its peak intensity upto evening of 11th December 2016. Thereafter, it is likely to weaken gradually while moving towards Andhra Pradesh coast. It is very likely to cross Andhra Pradesh coast between Nellore and Machilipatnam around afternoon/evening of 12th December 2016.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. 0N/ long. 0E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
09-12-2016/2330	12.3/89.6	90-100 gusting to 110	Severe Cyclonic Storm
10-12-2016/0530	12.8/88.9	95-105 gusting to 115	Severe Cyclonic Storm
10-12-2016/1130	13.5/88.0	100-110 gusting to 120	Severe Cyclonic Storm
10-12-2016/1730	14.0/87.1	110-120 gusting to 130	Severe Cyclonic Storm
10-12-2016/2330	14.3/86.1	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/1130	14.6/84.3	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/2330	14.7/82.7	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/1130	14.7/81.2	80-90 gusting to 100	Cyclonic Storm
12-12-2016/2330	14.6/79.7	40-50 gusting to 60	Depression
13-12-2016/1130	14.2/78.3	40-50 gusting to 60	Depression

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

Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

Warning:

(lxxxix) Heavy Rainfall Warning: Light to moderate rainfall at many places with isolated heavy falls over coastal Andhra Pradesh is very likely to commence from 11th December evening.

(xc) Wind warning: Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh coast commencing from 11th December night.

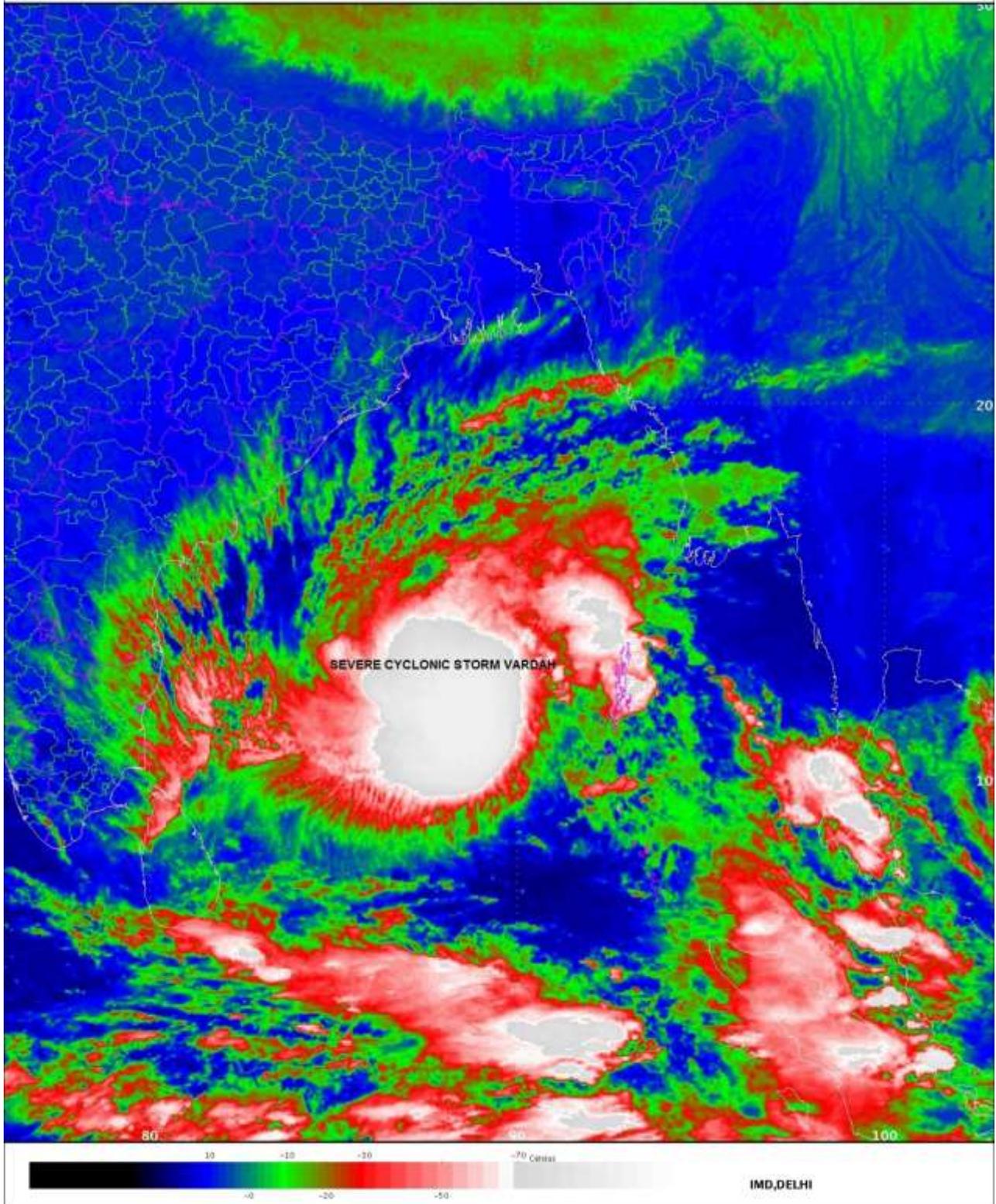
(xci) Sea condition: Sea condition would be also be rough to very rough along & off Andhra Pradesh coast commencing from 11th December night.

(xcii) Fishermen Warning: Fishermen are advised not to venture into sea along and off Andhra Pradesh coast from 10th December onwards. The fishermen out at sea are advised to return to the coast by 10th December 2016.

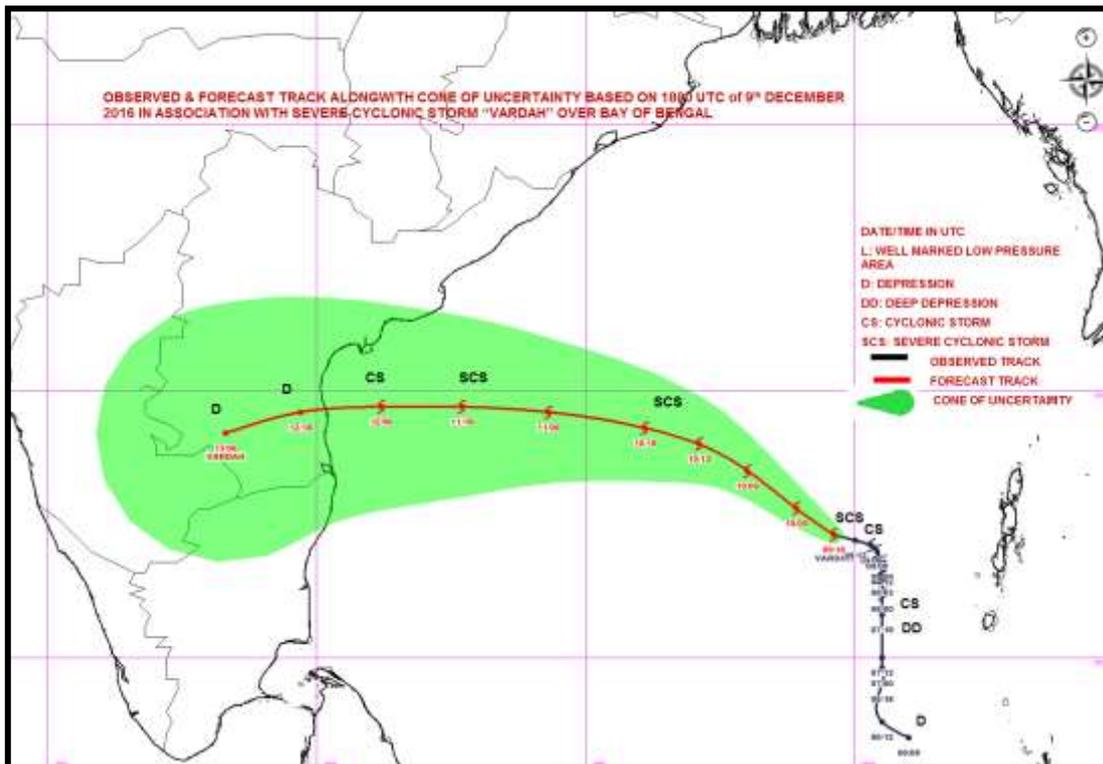
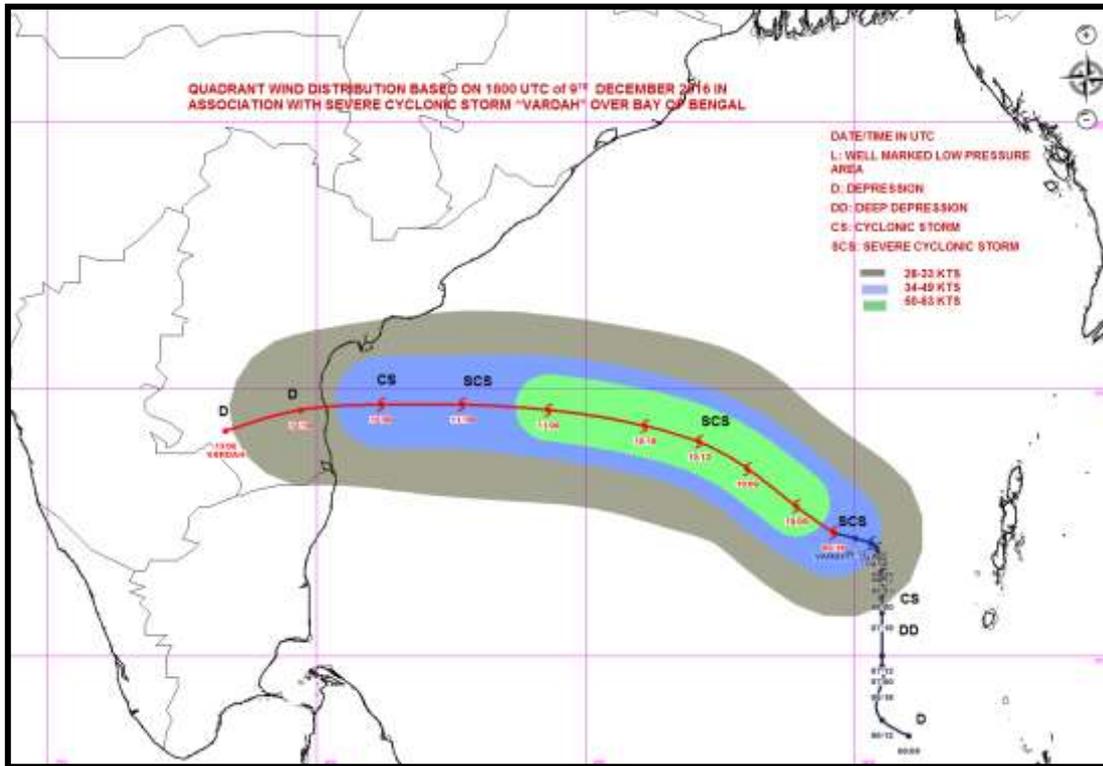
Next bulletin will be issued at 0530 hrs IST of 10th December 2016

**(AKHIL SRIVASTAVA)
Scientist-B
RSMC, New Delhi**

*Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair*



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 24 (BOB 06/2016)

TIME OF ISSUE: 0530 HOURS IST

DATED: 10.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192-232656)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)

**Sub: Severe Cyclonic Storm, VARDHA over southeast Bay of Bengal:
Cyclone Alert for Andhra Pradesh Coast**

The severe cyclonic storm, **VARDHA** over southeast Bay of Bengal moved west-northwestwards during past 06 hrs with a speed of 17 kmph and lay centred at 0230 hrs IST of today, the 10th December, 2016 over southeast Bay of Bengal near Latitude 12.5°N and Longitude 89.0°E, about 840 km south-southeast of Visakhapatnam, 930 km southeast of Machilipatnam and 410 km west-northwest of Port Blair. The system is very likely to move west-northwestwards and intensify further during next 24 hours. It is very likely to maintain its peak intensity upto evening of 11th December 2016. Thereafter, it is likely to weaken gradually while moving towards Andhra Pradesh coast. It is very likely to cross Andhra Pradesh coast between Nellore and Machilipatnam around afternoon/evening of 12th December 2016.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. 0N/ long. 0E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
10-12-2016/0230	12.5/89.0	90-100 gusting to 110	Severe Cyclonic Storm
10-12-2016/0530	12.8/88.9	95-105 gusting to 115	Severe Cyclonic Storm
10-12-2016/1130	13.5/88.0	100-110 gusting to 120	Severe Cyclonic Storm
10-12-2016/1730	14.0/87.1	110-120 gusting to 130	Severe Cyclonic Storm
10-12-2016/2330	14.3/86.1	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/1130	14.6/84.3	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/2330	14.7/82.7	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/1130	14.7/81.2	80-90 gusting to 100	Cyclonic Storm

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

Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

12-12-2016/2330	14.6/79.7	40-50 gusting to 60	Depression
13-12-2016/1130	14.2/78.3	40-50 gusting to 60	Depression

Warning:

(xciii) Heavy Rainfall Warning: Light to moderate rainfall at many places with isolated heavy falls over coastal Andhra Pradesh is very likely to commence from 11th December evening.

(xciv) Wind warning: Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh coast commencing from 11th December night.

(xcv) Sea condition: Sea condition would be also be rough to very rough along & off Andhra Pradesh coast commencing from 11th December night.

(xcvi) Fishermen Warning: Fishermen are advised not to venture into sea along and off Andhra Pradesh coast from 10th December onwards. The fishermen out at sea are advised to return to the coast by 10th December 2016.

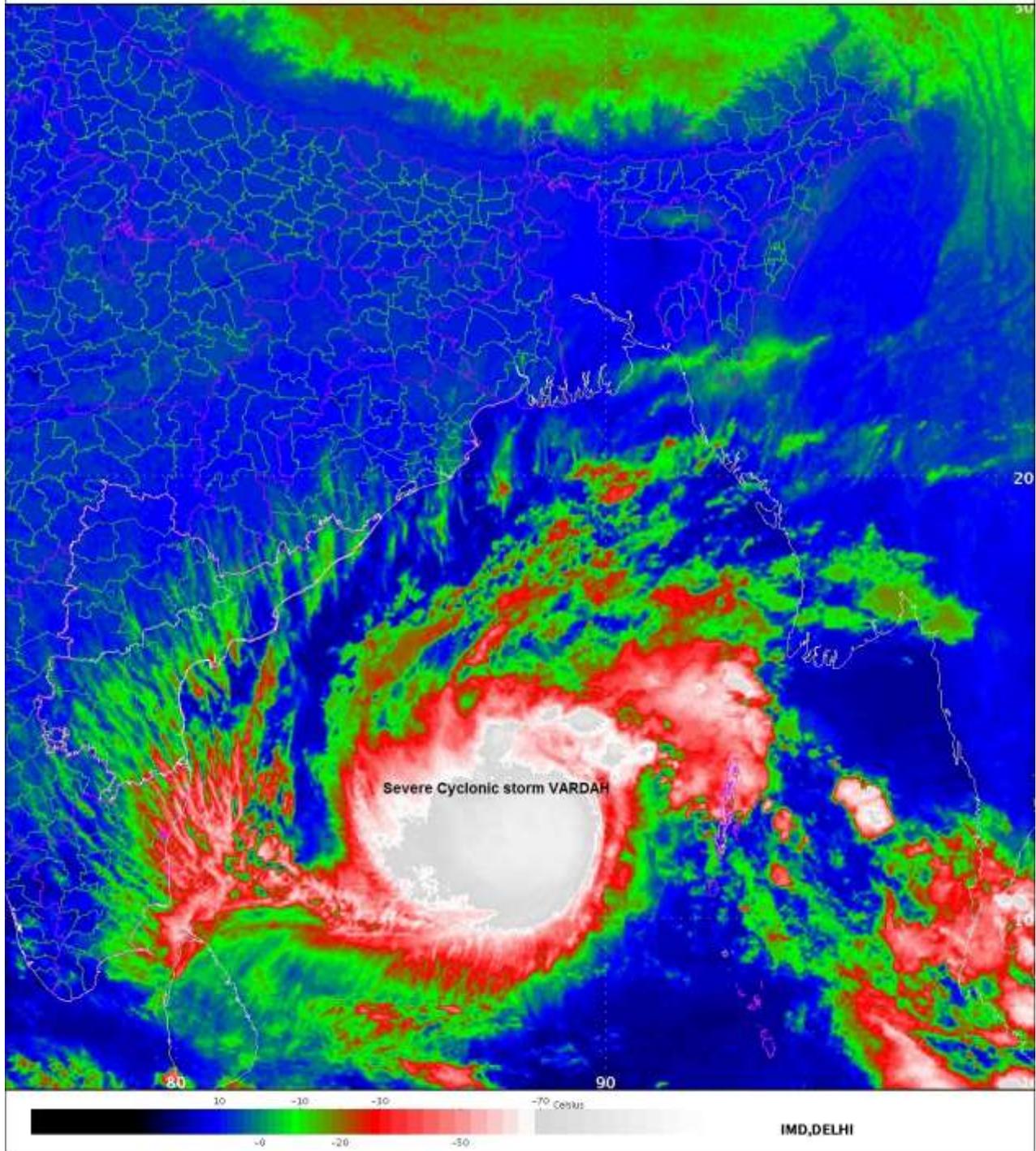
Next bulletin will be issued at 0830 hrs IST of 10th December 2016

**(AKHIL SRIVASTAVA)
Scientist-B
RSMC, New Delhi**

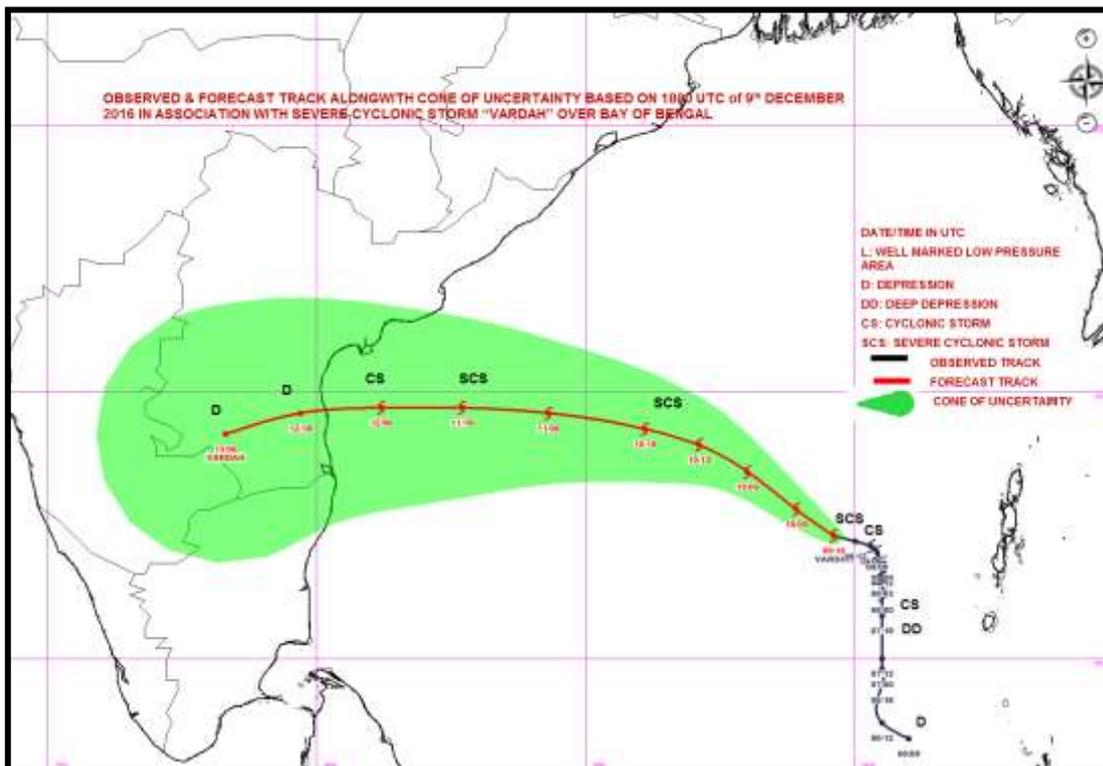
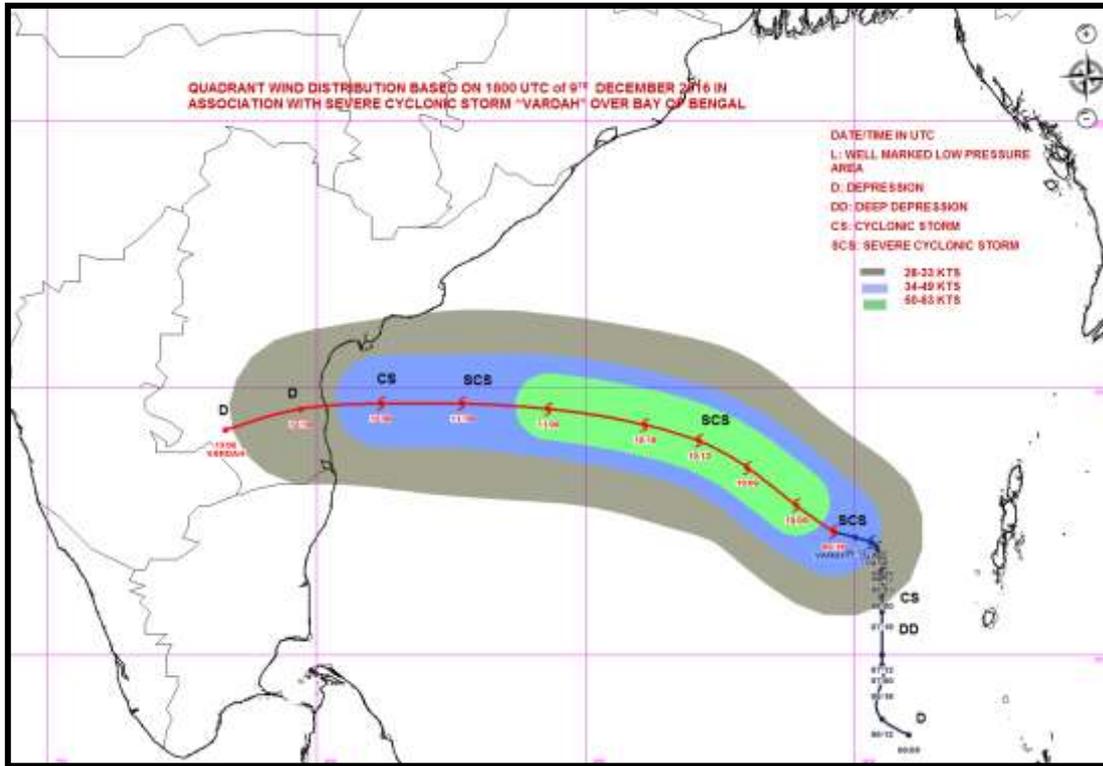
Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC Bhubaneswar/MC Hyderabad/MO Port Blair

SAT :INSAT-3D
IMG.TIR1_TEMP 10.8 um
SECTOR BAYOFBENGAL Mercator (NHC LUT)

09-12-2016/21:00 GMT
10-12-2016/02:30 IST



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 25 (BOB 06/2016)

TIME OF ISSUE: 0830 HOURS IST

DATED: 10.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192-232656)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

**Sub: Severe Cyclonic Storm, VARDHA over southeast Bay of Bengal:
Cyclone Alert for Andhra Pradesh Coast**

The severe cyclonic storm, **VARDHA** over southeast Bay of Bengal moved west-northwestwards during past 06 hrs with a speed of 22 kmph and lay centred at 0530 hrs IST of today, the 10th December, 2016 over southeast Bay of Bengal near Latitude 12.6°N and Longitude 88.4°E, about 790 km south-southeast of Visakhapatnam, 870 km southeast of Machilipatnam and 480 km west-northwest of Port Blair. The system is very likely to move west-northwestwards and intensify further during next 24 hours. It is very likely to maintain its peak intensity upto evening of 11th December 2016. Thereafter, it is likely to weaken gradually while moving towards Andhra Pradesh coast. It is very likely to cross Andhra Pradesh coast between Nellore and Machilipatnam around afternoon/evening of 12th December 2016.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. 0N/ long. 0E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
10-12-2016/0530	12.6/88.4	100-110 gusting to 120	Severe Cyclonic Storm
10-12-2016/1130	12.9/87.6	100-110 gusting to 120	Severe Cyclonic Storm
10-12-2016/1730	13.2/86.8	110-120 gusting to 130	Severe Cyclonic Storm
10-12-2016/2330	13.5/86.0	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/0530	13.8/85.1	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/1730	14.4/83.3	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/0530	14.7/81.6	80-90 gusting to 100	Cyclonic Storm
12-12-2016/1730	14.7/80.0	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 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

13-12-2016/0530	14.5/78.4	40-50 gusting to 60	Depression
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Warning:

(xcvii) Heavy Rainfall Warning: Light to moderate rainfall at many places with isolated heavy falls over coastal Andhra Pradesh is very likely to commence from 11th December evening.

(xcviii) Wind warning: Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh coast commencing from 11th December night.

(xcix) Sea condition: Sea condition would be rough to very rough along & off Andhra Pradesh coast commencing from 11th December night.

(c) Fishermen Warning: Fishermen are advised not to venture into sea along and off Andhra Pradesh coast from 10th December onwards. The fishermen out at sea are advised to return to the coast by today, the 10th December 2016.

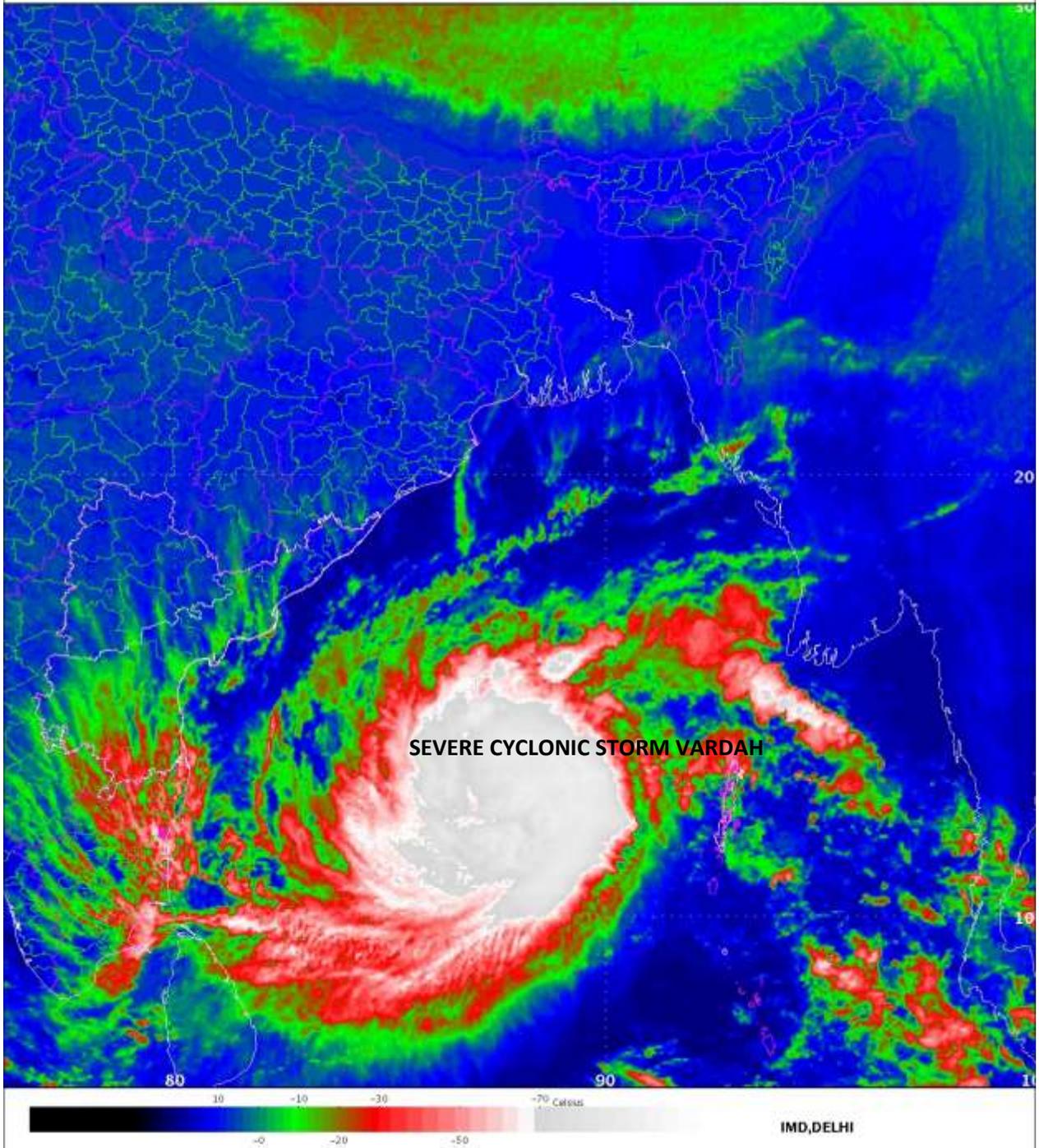
Next bulletin will be issued at 1130 hrs IST of 10th December 2016

**(AKHIL SRIVASTAVA)
Scientist-B
RSMC, New Delhi**

*Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair*

SAT :INSAT-3D
IMG_TIR1_TEMP 10.8 um
SECTOR BAYOFBENGAL Mercator (NHC LUT)

10-12-2016/01:30 GMT
10-12-2016/07:00 IST



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 26 (BOB 06/2016)

TIME OF ISSUE: 1130 HOURS IST

DATED: 10.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)

**Sub: Severe Cyclonic Storm, VARDHAH over southeast Bay of Bengal:
Cyclone Alert for Andhra Pradesh Coast**

The severe cyclonic storm, **VARDHAH** over southeast Bay of Bengal moved west-northwestwards during past 06 hrs with a speed of 20 kmph and lay centred at 0830 hrs IST of today, the 10th December, 2016 over southeast Bay of Bengal near Latitude 12.7°N and Longitude 88.0°E, about 880 km east-southeast of Nellore and 830 km east-southeast of Machilipatnam. The system is very likely to move west-northwestwards and further intensify slightly during next 24 hours. It is very likely to maintain its peak intensity upto evening of 11th December 2016. Thereafter, it is likely to weaken gradually while moving towards Andhra Pradesh coast. It is very likely to cross south Andhra Pradesh coast between Nellore and Machilipatnam around afternoon/evening of 12th December 2016.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. 0N/ long. 0E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
10-12-2016/0830	12.7/88.0	100-110 gusting to 120	Severe Cyclonic Storm
10-12-2016/1130	12.9/87.6	100-110 gusting to 120	Severe Cyclonic Storm
10-12-2016/1730	13.2/86.8	110-120 gusting to 130	Severe Cyclonic Storm
10-12-2016/2330	13.5/86.0	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/0530	13.8/85.1	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/1730	14.4/83.3	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/0530	14.7/81.6	80-90 gusting to 100	Cyclonic Storm

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

Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

12-12-2016/1730	14.7/80.0	60-70 gusting to 80	Cyclonic Storm
13-12-2016/0530	14.5/78.4	40-50 gusting to 60	Depression

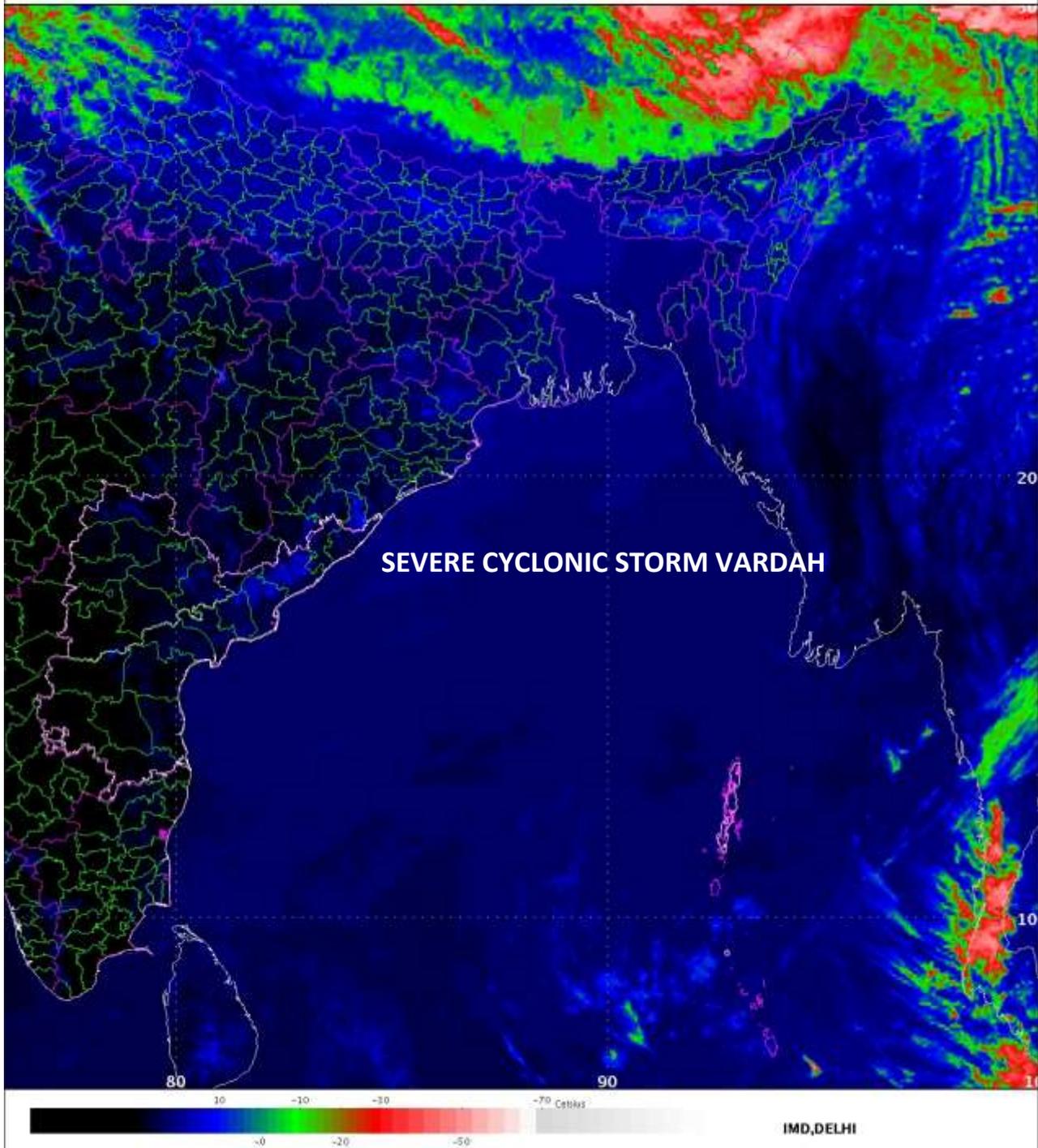
Warning:

- (ci) **Heavy Rainfall Warning:** Light to moderate rainfall at many places with isolated heavy to very heavy falls over south coastal Andhra Pradesh is very likely to commence from 11th December evening for subsequent 36 hrs. Light to moderate rainfall likely over north coastal Andhra Pradesh during the same period.
- (cii) **Wind warning:** Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh and adjoining north Tamil Nadu coasts commencing from 11th December night.
- (ciii) **Sea condition:** Sea condition would be rough to very rough along & off Andhra Pradesh and adjoining north Tamil Nadu coasts commencing from 11th December night.
- (civ) **Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andhra Pradesh and adjoining north Tamil Nadu coasts. The fishermen out at sea are advised to return to the coast.

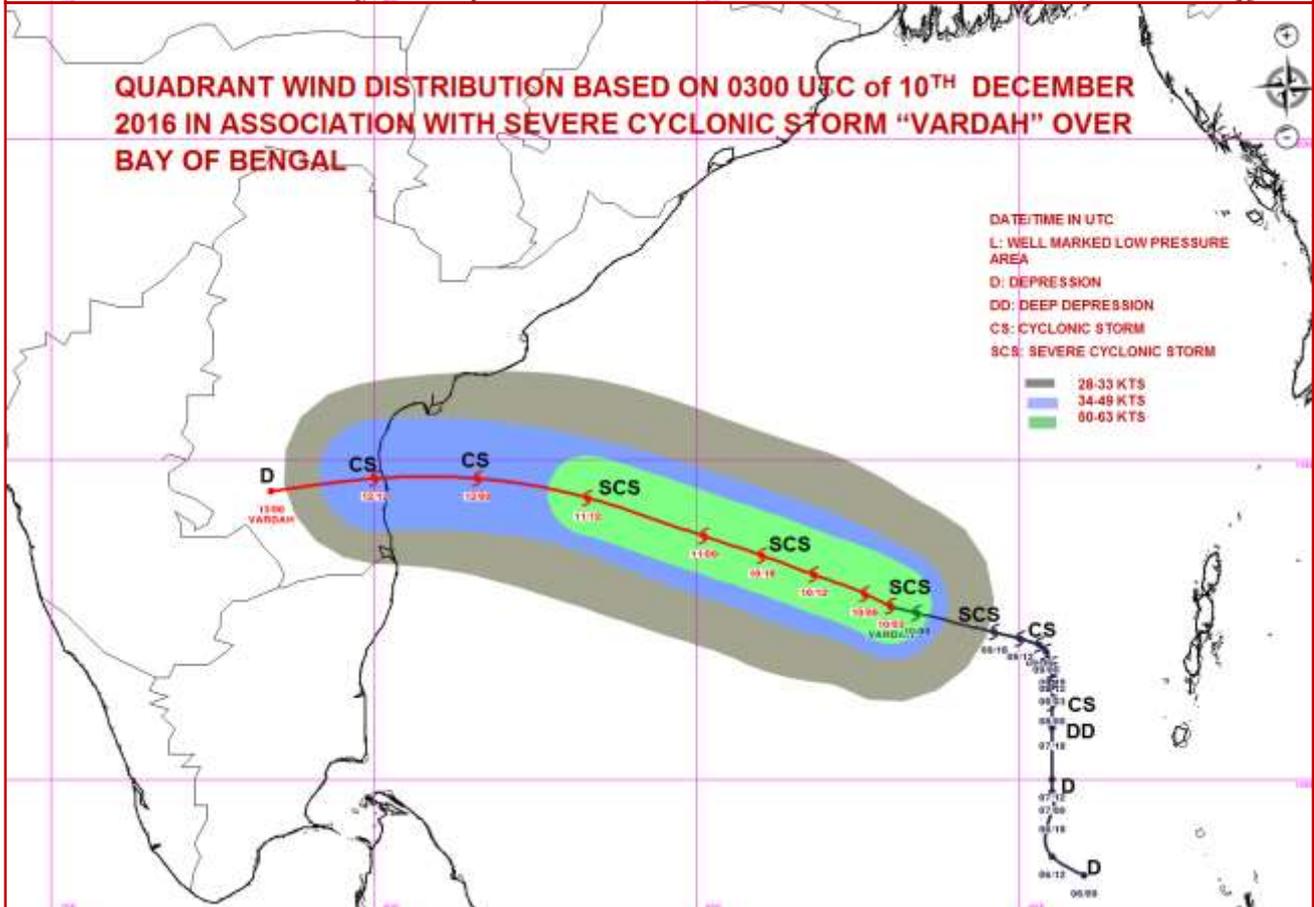
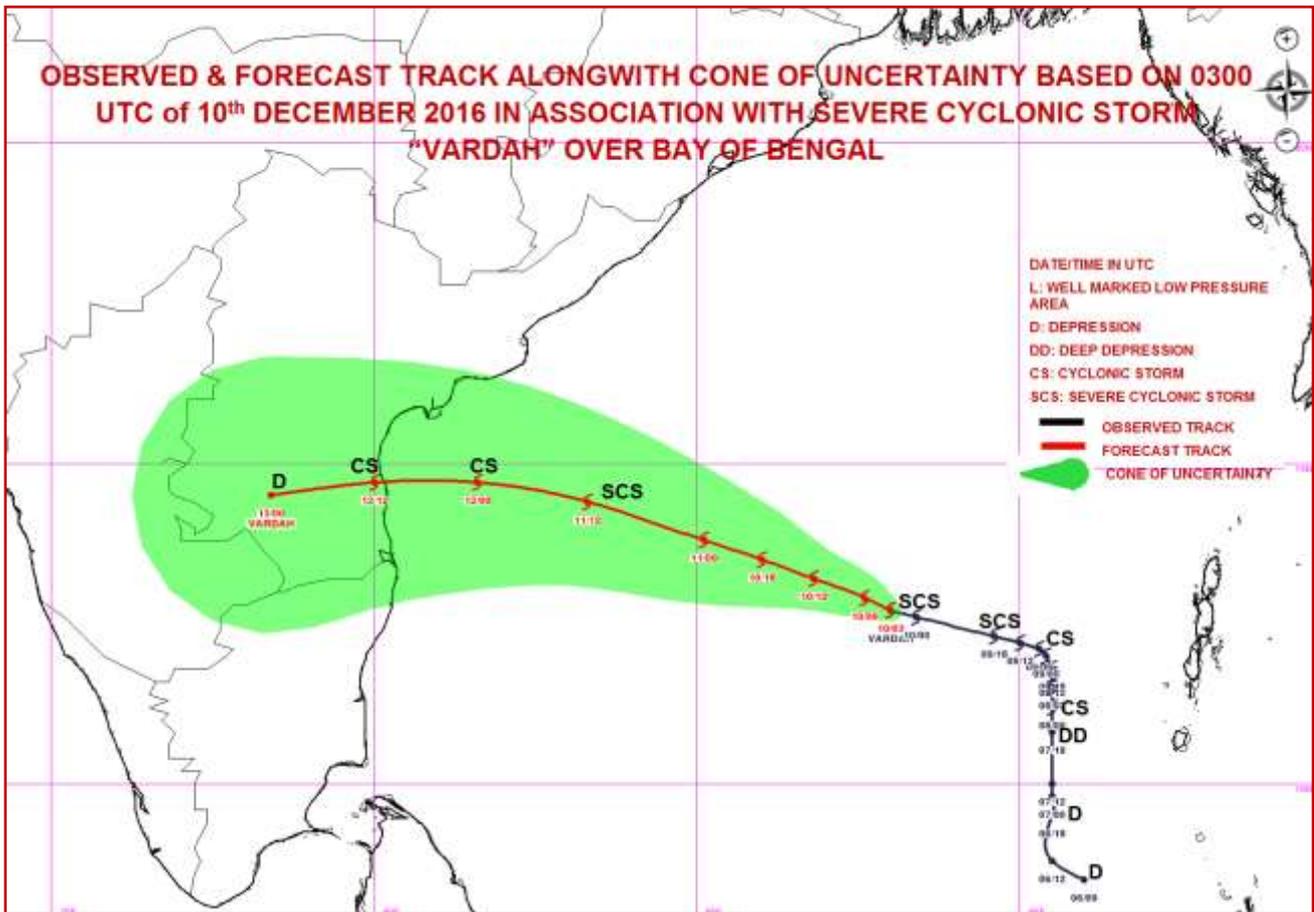
Next bulletin will be issued at 1430 hrs IST of 10th December 2016

(NARESH KUMAR)
Scientist-D
RSMC, New Delhi

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC Bhubaneswar/MC Hyderabad/MO Port Blair



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 27 (BOB 06/2016)

TIME OF ISSUE: 1400 HOURS IST

DATED: 10.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

**Sub: Severe Cyclonic Storm, VARDHAH over southeast Bay of Bengal:
Cyclone Alert for Andhra Pradesh Coast**

The severe cyclonic storm, **VARDHAH** over southeast Bay of Bengal moved further west-northwestwards during past 06 hrs with a speed of 20 kmph and lay centred at 1130 hrs IST of today, the 10th December, 2016 over southeast Bay of Bengal near Latitude 13.0°N and Longitude 87.4°E, about 820 km east-southeast of Nellore and 760 km east-southeast of Machilipatnam. The system is very likely to move west-northwestwards and further intensify slightly during next 24 hours. It is very likely to maintain its peak intensity upto evening of 11th December 2016. Thereafter, it is likely to weaken gradually while moving towards Andhra Pradesh coast. It is very likely to cross south Andhra Pradesh coast between Nellore and Machilipatnam around afternoon/evening of 12th December 2016.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. 0N/ long. 0E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
10-12-2016/1130	13.0/87.4	100-110 gusting to 120	Severe Cyclonic Storm
10-12-2016/1730	13.2/86.8	110-120 gusting to 130	Severe Cyclonic Storm
10-12-2016/2330	13.4/86.0	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/0530	13.6/85.1	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/1130	13.9/84.2	110-120 gusting to 130	Severe Cyclonic Storm
11-12-2016/2330	14.2/82.6	90-100 gusting to 110	Severe Cyclonic Storm
12-12-2016/1130	14.5/81.0	70-90 gusting to 100	Cyclonic Storm
12-12-2016/2330	14.5/79.8	55-65 gusting to 75	Cyclonic Storm

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

13-12-2016/1130	14.2/78.4	35-45 gusting to 55	Depression
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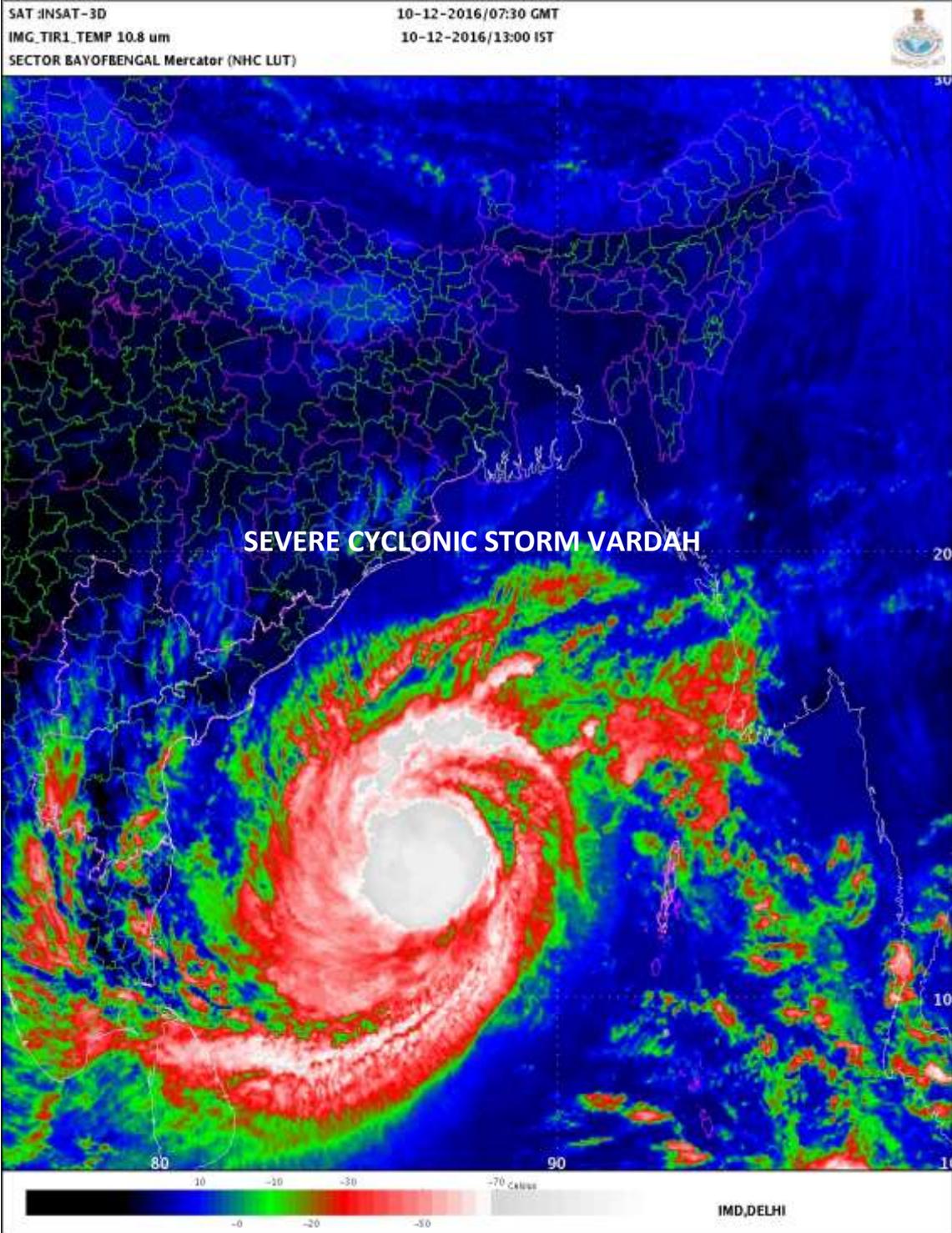
Warning:

- (cv) **Heavy Rainfall Warning:** Light to moderate rainfall at many places with isolated heavy to very heavy falls over south coastal Andhra Pradesh and adjoining areas of north coastal Tamil Nadu is very likely to commence from 11th December evening for subsequent 36 hrs. Light to moderate rainfall likely over north coastal Andhra Pradesh during the same period.
- (cvi) **Wind warning:** Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh and adjoining north Tamil Nadu coasts commencing from 11th December night.
- (cvii) **Sea condition:** Sea condition would be rough to very rough along & off Andhra Pradesh and adjoining north Tamil Nadu coasts commencing from 11th December night.
- (cviii) **Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andhra Pradesh and adjoining north Tamil Nadu coasts. The fishermen out at sea are advised to return to the coast.

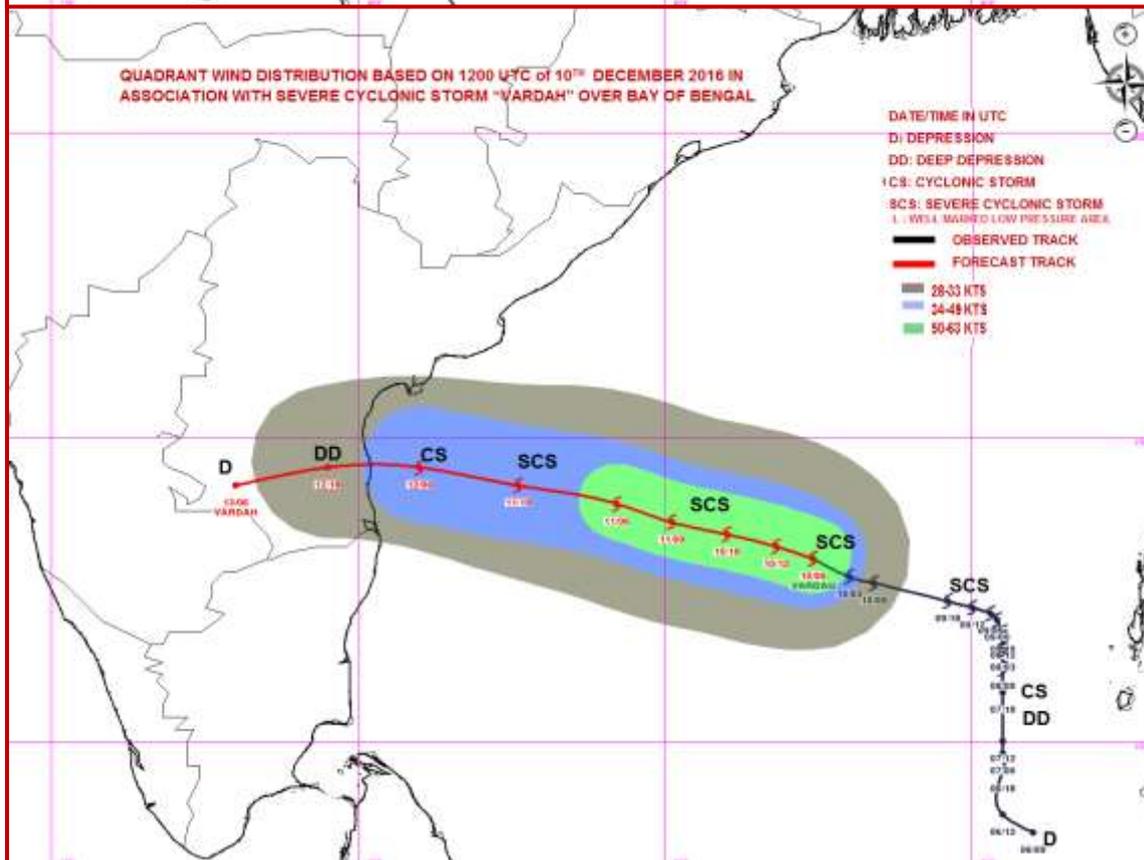
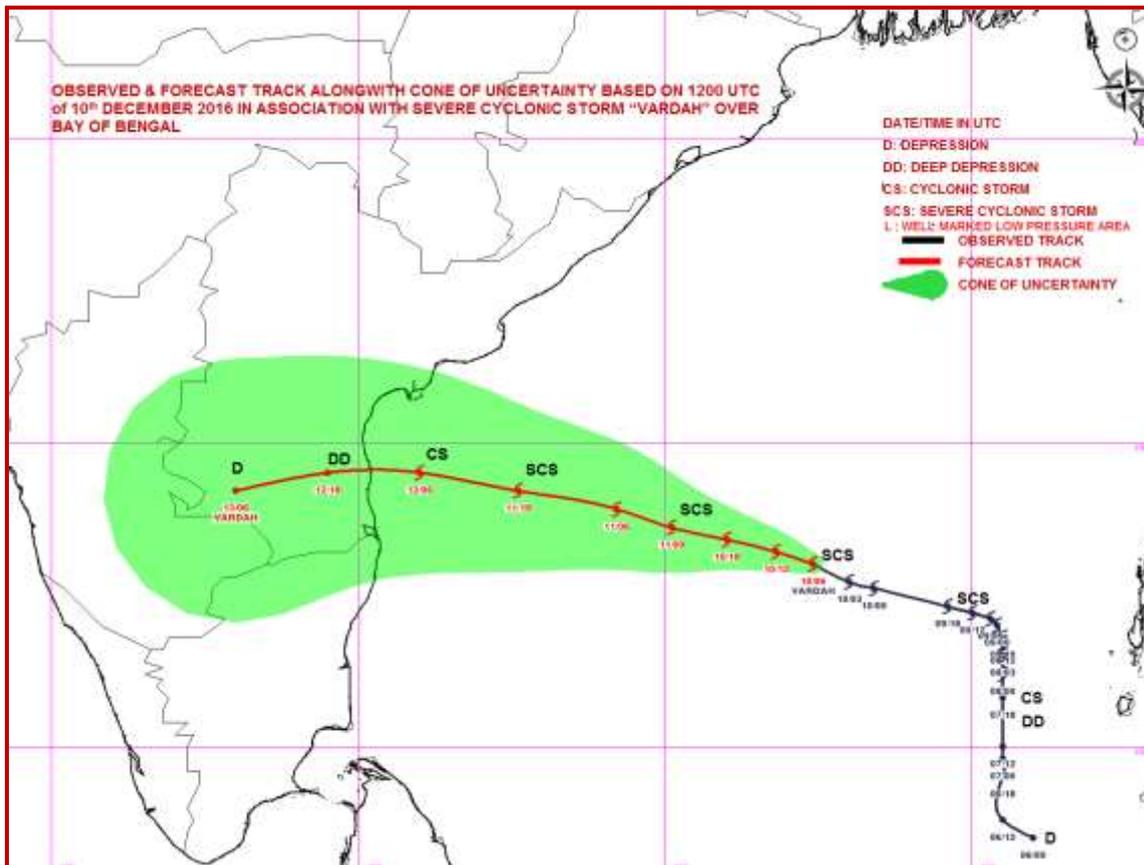
Next bulletin will be issued at 1730 hrs IST of 10th December 2016

**(NARESH KUMAR)
Scientist-D
RSMC, New Delhi**

*Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair*



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 28 (BOB 06/2016)

TIME OF ISSUE: 1630 HOURS IST

DATED: 10.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

**Sub: Severe Cyclonic Storm, VARDHA over southeast Bay of Bengal:
Cyclone Alert for Andhra Pradesh Coast**

The severe cyclonic storm, **VARDHA** over southeast Bay of Bengal moved further west-northwestwards during past 06 hrs with a speed of 23 kmph and lay centred at 1430 hrs IST of today, the 10th December, 2016 over southeast Bay of Bengal near Latitude 13.1°N and Longitude 86.8°E, about 750 km east-southeast of Nellore, 700 km east-southeast of Machilipatnam and 710 km east of Chennai. The system is very likely to move west-northwestwards and intensify into a very severe cyclonic storm during next 06 hours. It is very likely to maintain its peak intensity upto the evening of 11th December 2016. Thereafter, it is likely to weaken gradually while moving towards Andhra Pradesh coast. It is very likely to cross south Andhra Pradesh coast between Nellore and Machilipatnam around afternoon/evening of 12th December 2016.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. °N/ long. °E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
10-12-2016/1430	13.1/86.8	110-120 gusting to 130	Severe Cyclonic Storm
10-12-2016/1730	13.2/86.4	120-130 gusting to 145	Very Severe Cyclonic Storm
10-12-2016/2330	13.4/85.5	125-135 gusting to 150	Very Severe Cyclonic Storm
11-12-2016/0530	13.6/84.6	130-140 gusting to 155	Very Severe Cyclonic Storm
11-12-2016/1130	13.9/83.8	130-140 gusting to 155	Very Severe Cyclonic Storm
11-12-2016/2330	14.2/82.2	110-120 gusting to 130	Severe Cyclonic Storm
12-12-2016/1130	14.5/80.6	80-90 gusting to 100	Cyclonic Storm

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

Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

12-12-2016/2330	14.5/78.8	45-55 gusting to 65	Depression
13-12-2016/1130	14.2/77.3	25-35 gusting to 45	Well Marked Low

Warning:

- (cix) **Heavy Rainfall Warning:** Light to moderate rainfall at many places with isolated heavy to very heavy falls over south coastal Andhra Pradesh and adjoining areas of north coastal Tamil Nadu is very likely to commence from 11th December evening for subsequent 36 hrs. Light to moderate rainfall likely over north coastal Andhra Pradesh during the same period.
- (cx) **Wind warning:** Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh and adjoining north Tamil Nadu coasts commencing from 11th December night.
- (cxi) **Sea condition:** Sea condition would be rough to very rough along & off Andhra Pradesh and adjoining north Tamil Nadu coasts commencing from 11th December night.
- (cxii) **Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andhra Pradesh and adjoining north Tamil Nadu coasts. The fishermen out at sea are advised to return to the coast.

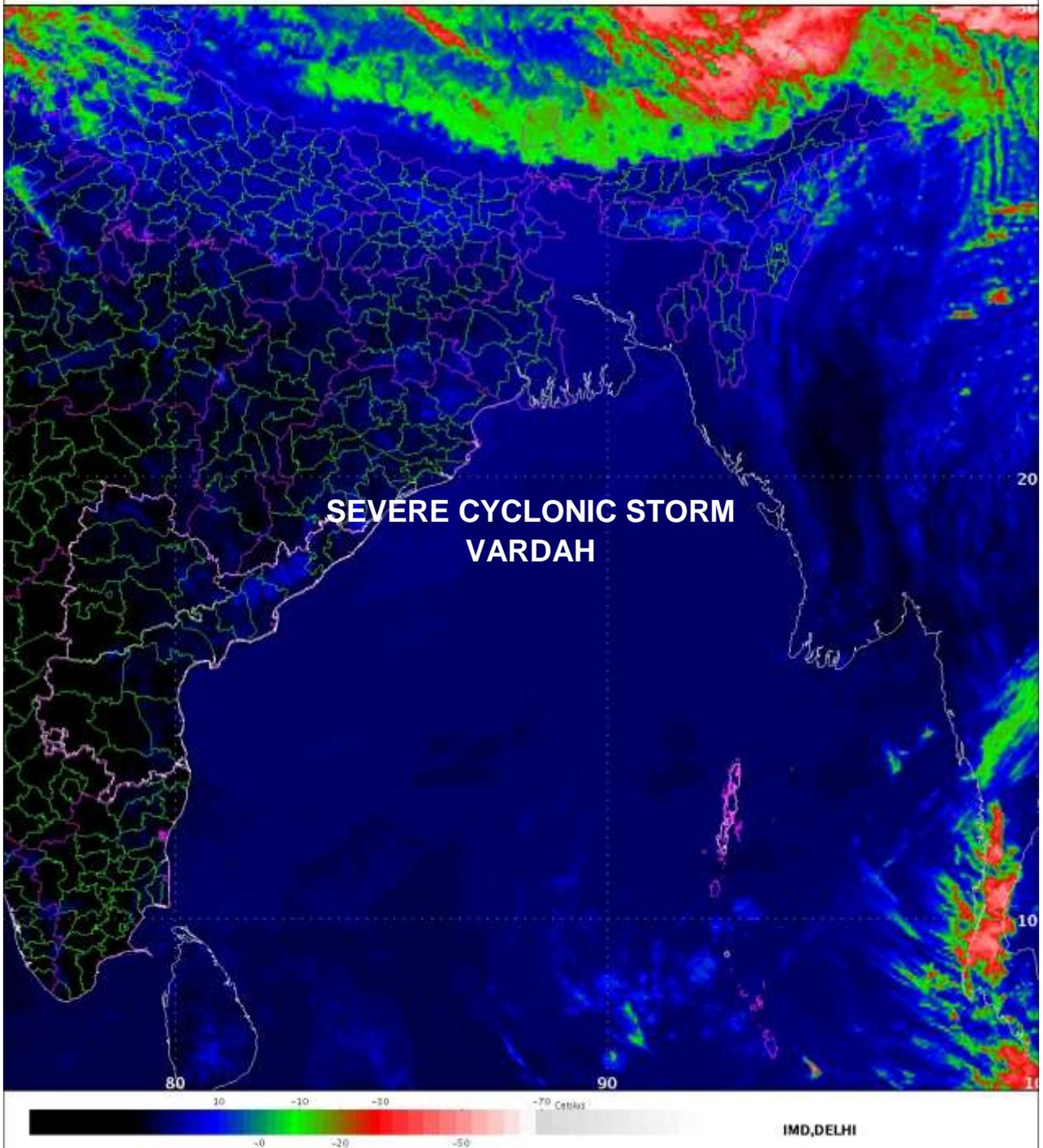
Next bulletin will be issued at 2030 hrs IST of 10th December 2016

(M. MOHAPATRA)
Scientist-G (SERVICES)
HEAD RSMC, New Delhi

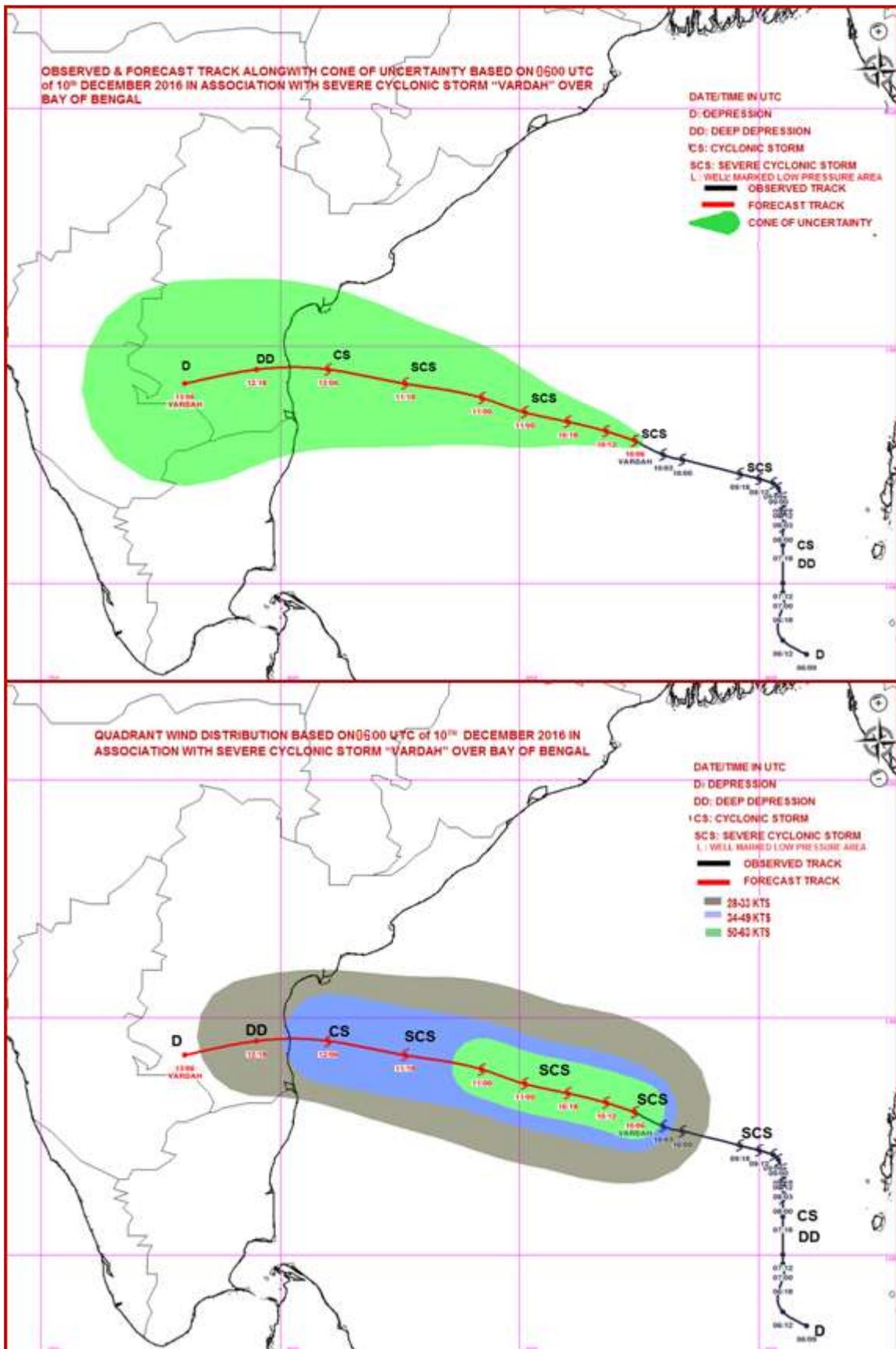
Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC Bhubaneswar/MC Hyderabad/MO Port Blair

SAT :INSAT-3D
IMG_TIR1_TEMP 10.8 um
SECTOR BAYOFBENGAL Mercator (NHC LUT)

02-02-2017/09:30 GMT
02-02-2017/15:00 IST



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 29 (BOB 06/2016)

TIME OF ISSUE: 2015 HOURS IST

DATED: 10.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

Sub: Very Severe Cyclonic Storm, VARDHAH over west central and adjoining south Bay of Bengal: Cyclone Alert for Andhra Pradesh Coast

The severe cyclonic storm, **VARDHAH** over southeast Bay of Bengal moved further west-northwestwards during past 06 hrs with a speed of 18 kmph, intensified into a very severe cyclonic storm and lay centred at 1730 hrs IST of today, the 10th December, 2016 over west central and adjoining south Bay of Bengal near Latitude 13.2°N and Longitude 86.4°E, about 710 km east-southeast of Nellore, 650 km east-southeast of Machilipatnam and 660 km east of Chennai. The system is very likely to continue to move west-northwestwards and maintain its peak intensity upto the evening of 11th December 2016. Thereafter, it is likely to weaken gradually while moving towards south Andhra Pradesh coast. It is very likely to cross south Andhra Pradesh coast between Chennai and Ongole around afternoon/evening of 12th December 2016.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. °N/ long. °E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
10-12-2016/1730	13.2/86.4	120-130 gusting to 145	Very Severe Cyclonic Storm
10-12-2016/2330	13.4/85.5	125-135 gusting to 150	Very Severe Cyclonic Storm
11-12-2016/0530	13.6/84.6	130-140 gusting to 155	Very Severe Cyclonic Storm
11-12-2016/1130	13.8/83.8	130-140 gusting to 155	Very Severe Cyclonic Storm
11-12-2016/1730	14.0/83.0	120-130 gusting to 145	Very Severe Cyclonic Storm
12-12-2016/0530	14.2/81.4	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/1730	14.4/79.6	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 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

13-12-2016/0530	14.3/78.0	35-45 gusting to 55	Depression
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Warning:

(cxiii) Heavy Rainfall Warning: Light to moderate rainfall at many places with isolated heavy to very heavy falls over south coastal Andhra Pradesh and adjoining areas of north coastal Tamil Nadu is very likely to commence from 11th December evening for subsequent 36 hrs. Light to moderate rainfall very likely over north coastal Andhra Pradesh during the same period.

(cxiv) Wind warning: Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh and adjoining north Tamil Nadu coasts commencing from 11th December night.

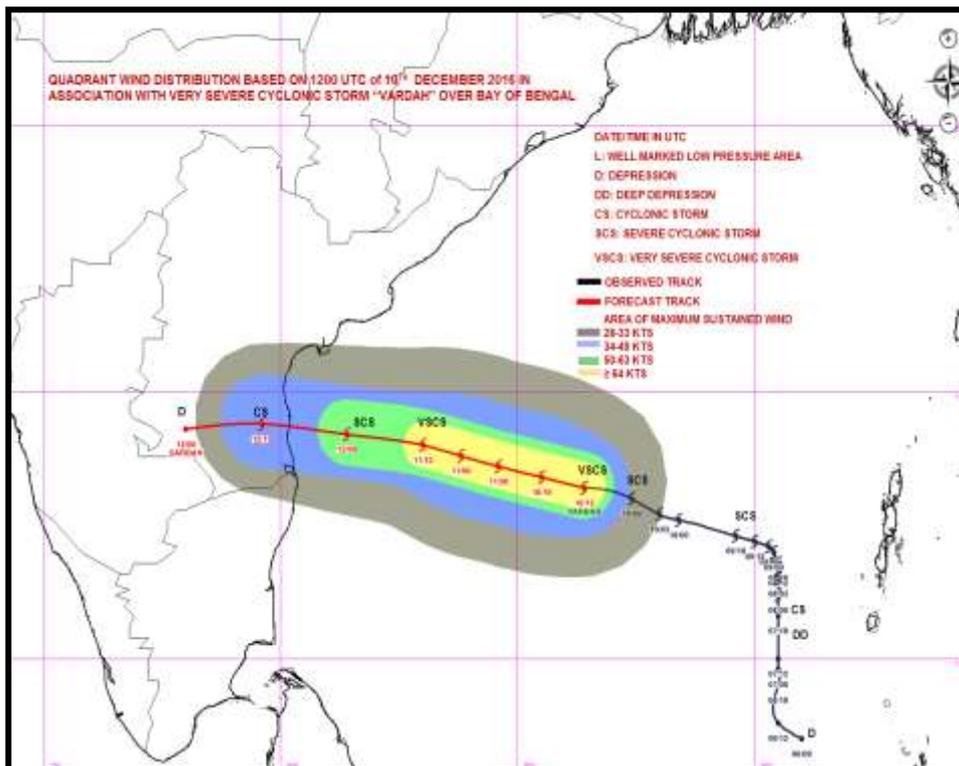
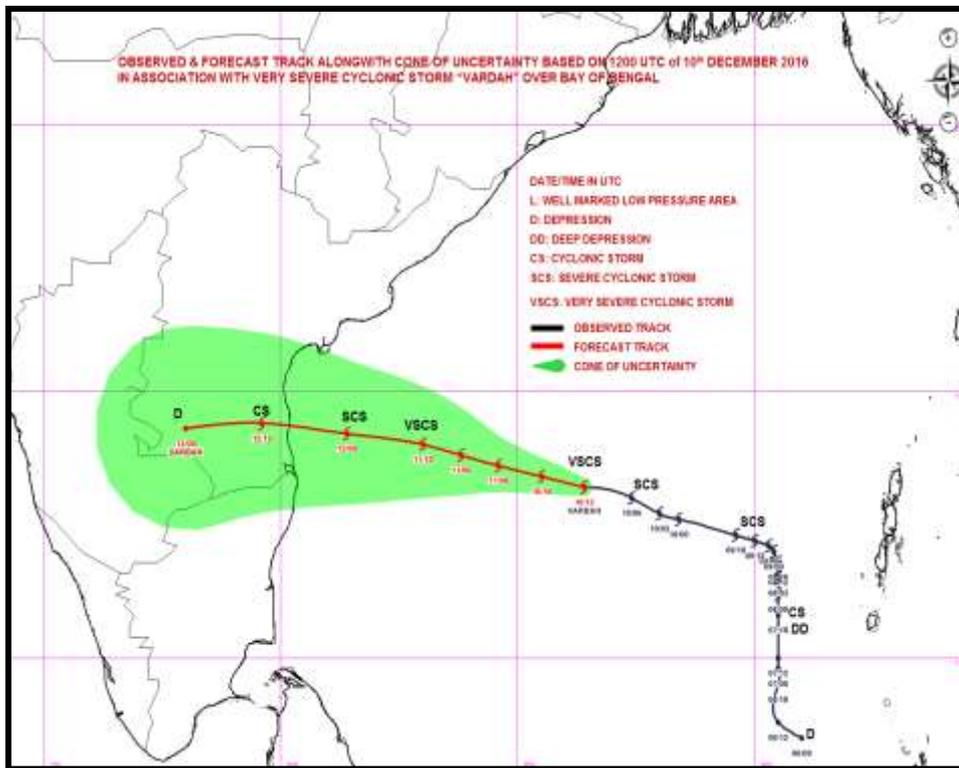
(cxv) Sea condition: Sea condition would be rough to very rough along & off Andhra Pradesh and adjoining north Tamil Nadu coasts commencing from 11th December night.

(cxvi) Fishermen Warning: Fishermen are advised not to venture into sea along and off Andhra Pradesh and adjoining north Tamil Nadu coasts. The fishermen out at sea are advised to return to the coast.

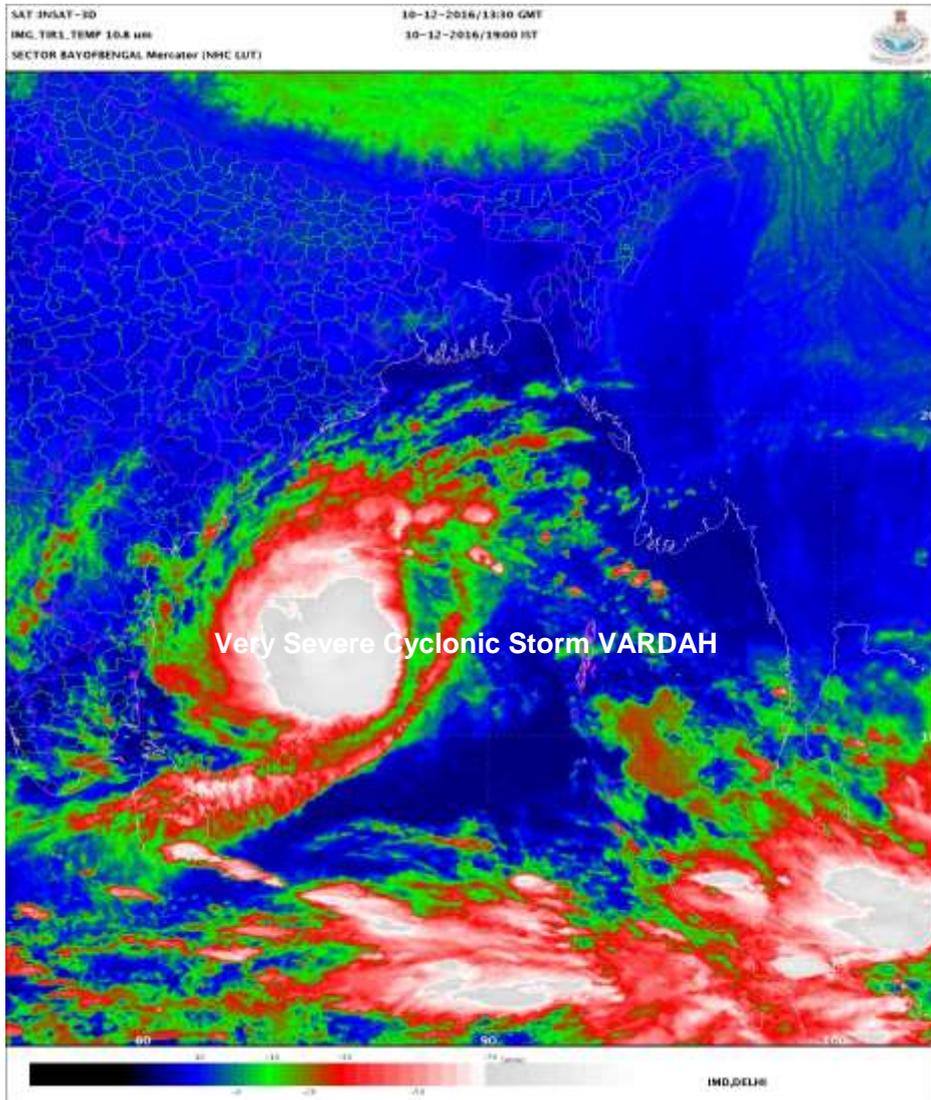
Next bulletin will be issued at 2330 hrs IST of 10th December 2016

**(M. MOHAPATRA)
Scientist-G (SERVICES)
HEAD RSMC, New Delhi**

*Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair*



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 30 (BOB 06/2016)

TIME OF ISSUE: 2230 HOURS IST

DATED: 10.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

Sub: Very Severe Cyclonic Storm, VARDHA over west central and adjoining south Bay of Bengal: Cyclone Alert for Andhra Pradesh Coast

The very severe cyclonic storm, **VARDHA** over west central and adjoining south Bay of Bengal moved further west-northwestwards during past 06 hrs with a speed of 17 kmph and lay centred at 2030 hrs IST of today, the 10th December, 2016 over west central and adjoining south Bay of Bengal near Latitude 13.3°N and Longitude 85.9°E, about 650 km east-southeast of Nellore, 600 km east-southeast of Machilipatnam and 610 km east-northeast of Chennai. The system is very likely to continue to move west-northwestwards and maintain its peak intensity upto the evening of 11th December 2016. Thereafter, it is likely to weaken gradually while moving towards south Andhra Pradesh coast. It is very likely to cross south Andhra Pradesh coast between Chennai and Ongole around afternoon/evening of 12th December 2016.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. °N/ long. °E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
10-12-2016/2030	13.3/85.9	120-130 gusting to 145	Very Severe Cyclonic Storm
10-12-2016/2330	13.4/85.5	125-135 gusting to 150	Very Severe Cyclonic Storm
11-12-2016/0530	13.6/84.6	130-140 gusting to 155	Very Severe Cyclonic Storm
11-12-2016/1130	13.8/83.8	130-140 gusting to 155	Very Severe Cyclonic Storm
11-12-2016/1730	14.0/83.0	120-130 gusting to 145	Very Severe Cyclonic Storm
12-12-2016/0530	14.2/81.4	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/1730	14.4/79.6	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 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

13-12-2016/0530	14.3/78.0	35-45 gusting to 55	Depression
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Warning:

(cxvii) Heavy Rainfall Warning: Light to moderate rainfall at many places with isolated heavy to very heavy falls over south coastal Andhra Pradesh and adjoining areas of north coastal Tamil Nadu is very likely to commence from 11th December evening for subsequent 36 hrs. Light to moderate rainfall very likely over north coastal Andhra Pradesh during the same period.

(cxviii) Wind warning: Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh and adjoining north Tamil Nadu coasts commencing from 11th December night.

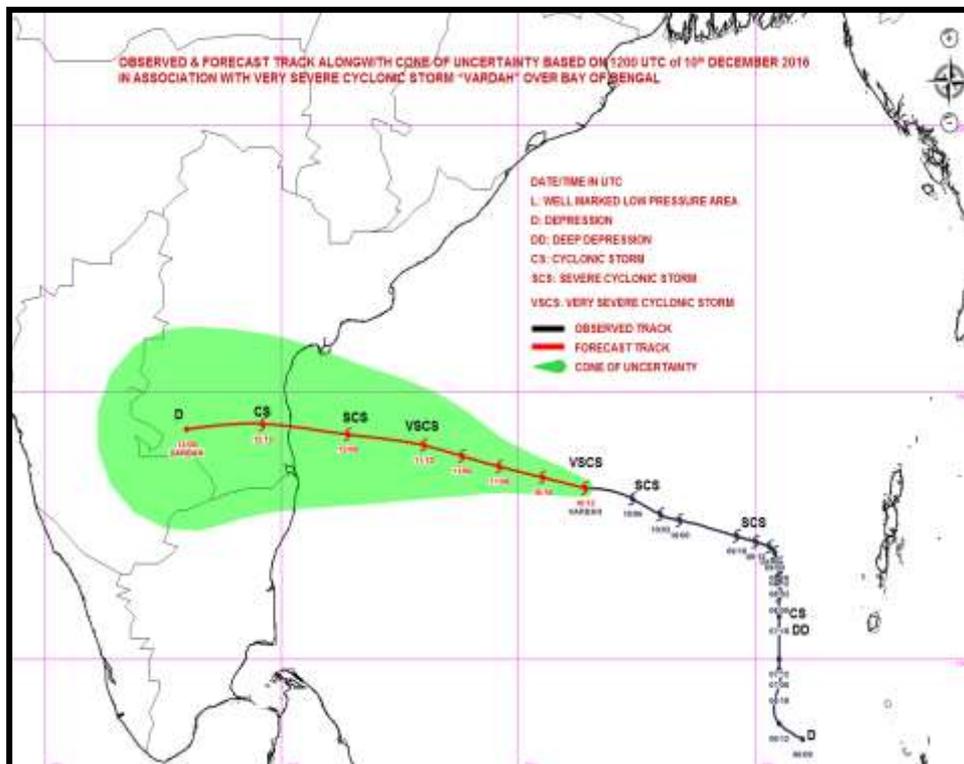
(cxix) Sea condition: Sea condition would be rough to very rough along & off Andhra Pradesh and adjoining north Tamil Nadu coasts commencing from 11th December night.

(cxx) Fishermen Warning: Fishermen are advised not to venture into sea along and off Andhra Pradesh and adjoining north Tamil Nadu coasts. The fishermen out at sea are advised to return to the coast.

Next bulletin will be issued at 0230 hrs IST of 11th December 2016

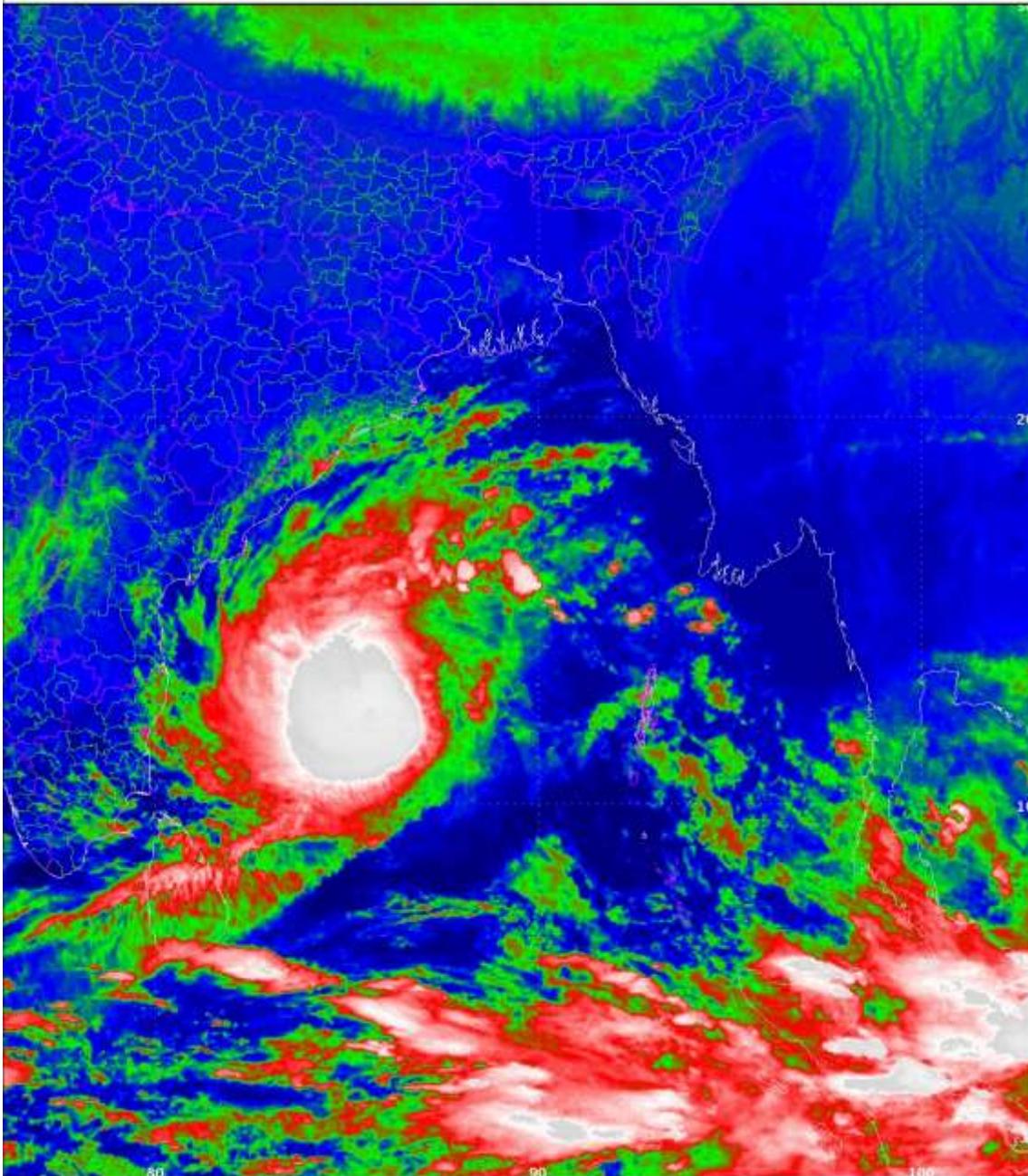
**(SHAMBU RAVINDREN)
Scientist-B
IMD, New Delhi**

*Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair*



SAT :INSAT-3D
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 SECTOR BAYOFBENGAL Mercator (NHC LUT)

10-12-2016/15:30 GMT
 10-12-2016/21:00 IST



Rainfall

more.



IMD,DELHI



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

BULLETIN NO.: 31 (BOB 06/2016)

TIME OF ISSUE: 0230 HOURS IST

DATED: 11.12.2016

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.23793144)
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SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
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PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

Sub: Very Severe Cyclonic Storm, VARDHAH over west central and adjoining south Bay of Bengal: Cyclone Alert for Andhra Pradesh Coast

The very severe cyclonic storm, **VARDHAH** over west central and adjoining south Bay of Bengal moved further west-northwestwards during past 06 hrs with a speed of 20 kmph and lay centred at 2330 hrs IST of yesterday, the 10th December, 2016 over west central and adjoining south Bay of Bengal near Latitude 13.3°N and Longitude 85.3°E, about 580 km east-southeast of Nellore, 550 km east-southeast of Machilipatnam and 540 km east-northeast of Chennai. The system is very likely to continue to move west-northwestwards and maintain its intensity upto the evening of 11th December 2016. Thereafter, it is likely to weaken gradually while moving towards south Andhra Pradesh coast and adjoining north Tamilnadu coast. It is very likely to cross south Andhra Pradesh coast and adjoining north Tamilnadu coast between Chennai and Ongole around afternoon of 12th December 2016.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. °N/ long. °E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
10-12-2016/2330	13.3/85.3	125-135 gusting to 150	Very Severe Cyclonic Storm
11-12-2016/0530	13.4/84.5	125-135 gusting to 150	Very Severe Cyclonic Storm
11-12-2016/1130	13.5/83.7	125-135 gusting to 150	Very Severe Cyclonic Storm
11-12-2016/1730	13.6/82.8	120-130 gusting to 145	Severe Cyclonic Storm
11-12-2016/2330	13.7/81.9	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/1130	13.7/80.2	90-100 gusting to 110	Cyclonic Storm
12-12-2016/2330	13.5/78.7	35-45 gusting to 55	Depression

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

Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

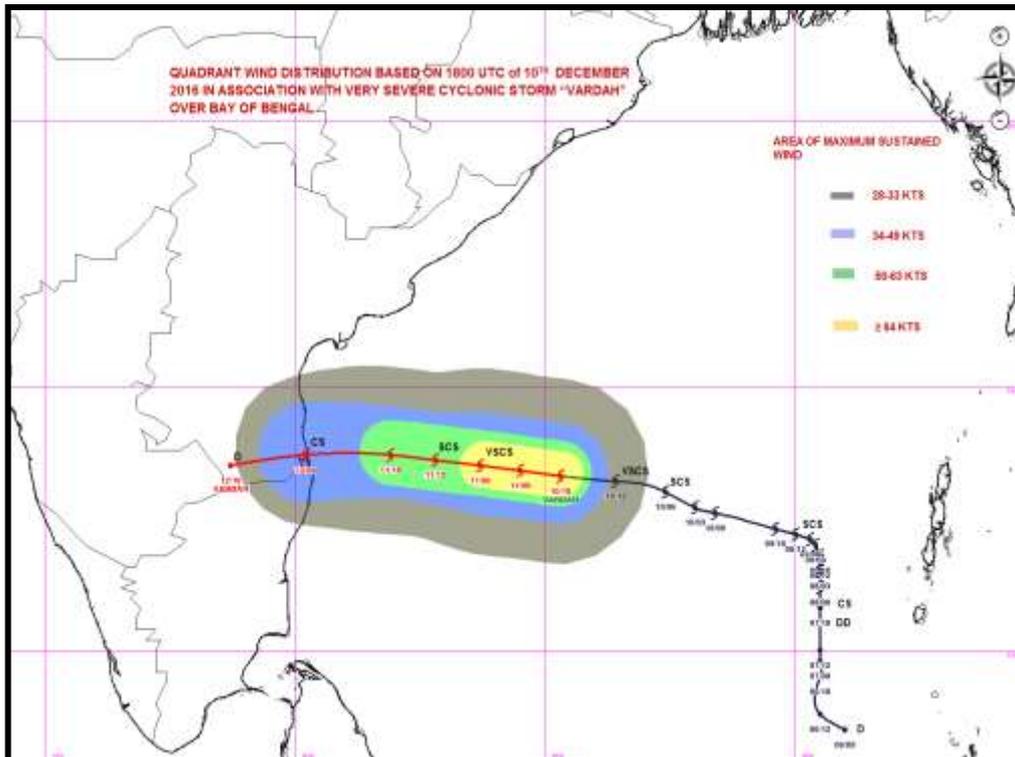
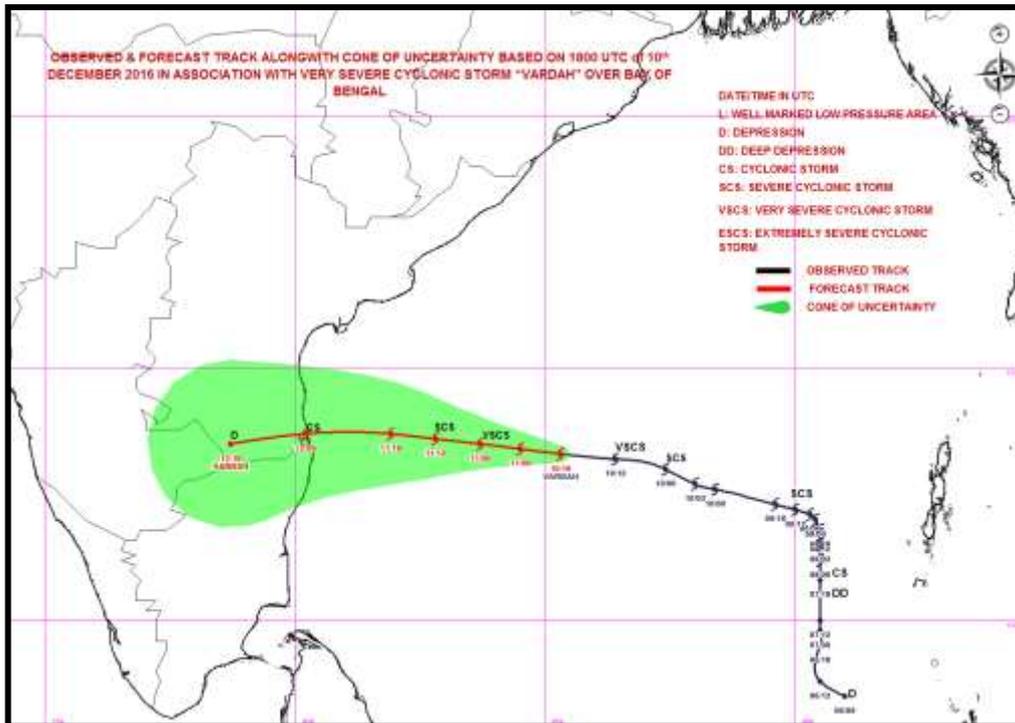
Warning:

- (cxxi) **Heavy Rainfall Warning:** Light to moderate rainfall at many places with isolated heavy to very heavy falls over south coastal Andhra Pradesh and adjoining areas of north coastal Tamil Nadu is very likely to commence from 11th December evening for subsequent 36 hrs. Light to moderate rainfall very likely over north coastal Andhra Pradesh during the same period.
- (cxxii) **Wind warning:** Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh and adjoining north Tamil Nadu coasts commencing from 11th December night.
- (cxxiii) **Sea condition:** Sea condition would be rough to very rough along & off Andhra Pradesh and adjoining north Tamil Nadu coasts commencing from 11th December night.
- (cxxiv) **Fishermen Warning:** Fishermen are advised not to venture into sea along and off Andhra Pradesh and adjoining north Tamil Nadu coasts. The fishermen out at sea are advised to return to the coast.

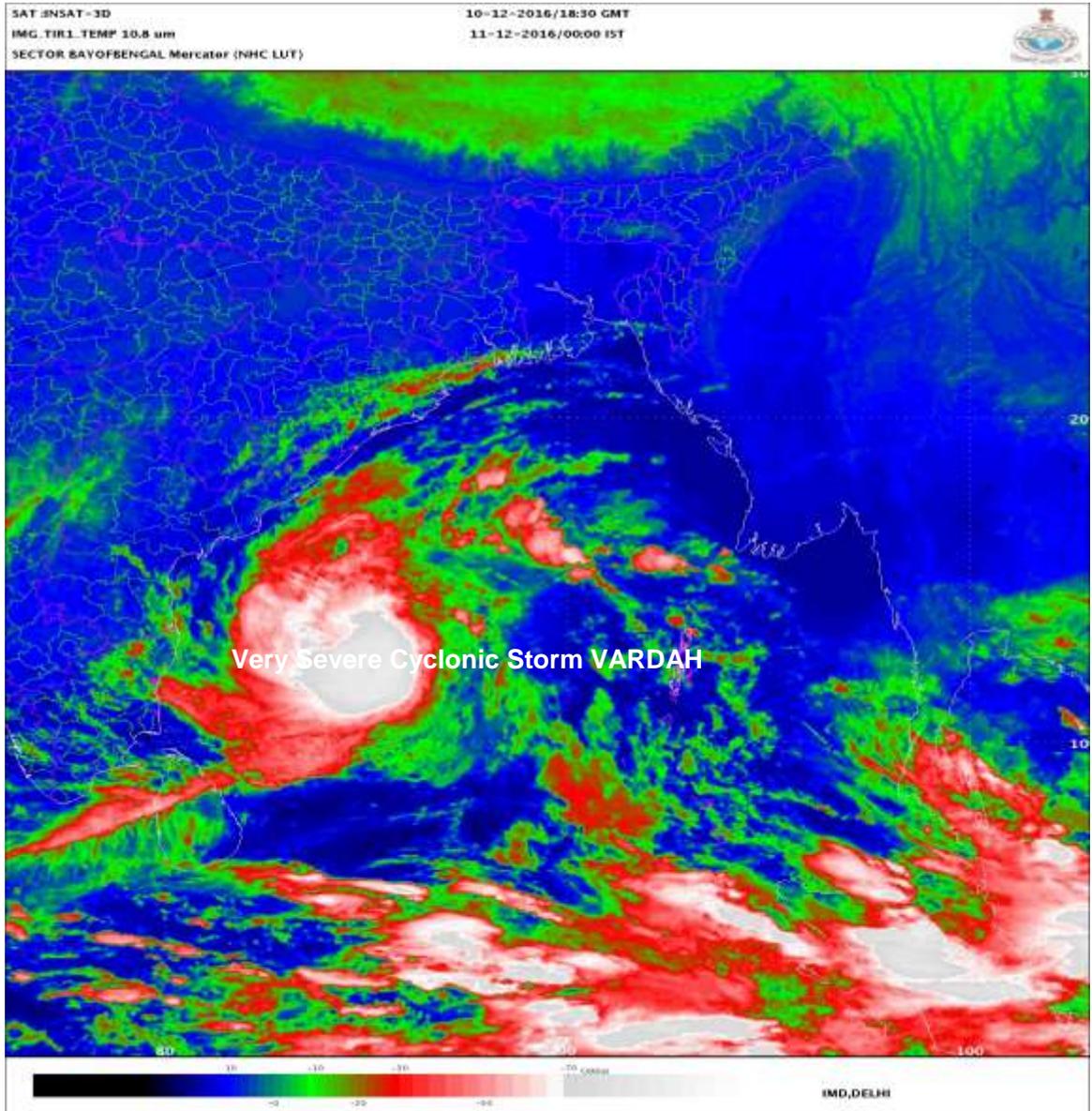
Next bulletin will be issued at 0530 hrs IST of 11th December 2016

(SHAMBU RAVINDREN)
Scientist-B
IMD, New Delhi

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC Bhubaneswar/MC Hyderabad/MO Port Blair



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 32 (BOB 06/2016)

TIME OF ISSUE: 0530 HOURS IST

DATED: 11.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

Sub: Very Severe Cyclonic Storm, VARDHAH over west central and adjoining south Bay of Bengal: Cyclone Alert for Andhra Pradesh Coast

The very severe cyclonic storm, **VARDHAH** over west central and adjoining south Bay of Bengal moved westwards during past 06 hrs with a speed of 16 kmph and lay centred at 0230 hrs IST of today, the 11th December, 2016 over west central and adjoining south Bay of Bengal near Latitude 13.3°N and Longitude 85.0°E, about 550 km east-southeast of Nellore, 520 km east-southeast of Machilipatnam and 510 km east-northeast of Chennai. The system is very likely to move nearly westwards and maintain its intensity upto the evening of 11th December 2016. Thereafter, it is likely to weaken gradually while moving towards south Andhra Pradesh coast and adjoining north Tamilnadu coast. It is very likely to cross south Andhra Pradesh coast and adjoining north Tamilnadu coast between Chennai and Ongole around afternoon of 12th December 2016.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. °N/ long. °E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
10-12-2016/0230	13.3/85.0	125-135 gusting to 150	Very Severe Cyclonic Storm
11-12-2016/0530	13.4/84.5	125-135 gusting to 150	Very Severe Cyclonic Storm
11-12-2016/1130	13.5/83.7	125-135 gusting to 150	Very Severe Cyclonic Storm
11-12-2016/1730	13.6/82.8	120-130 gusting to 145	Severe Cyclonic Storm
11-12-2016/2330	13.7/81.9	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/1130	13.7/80.2	90-100 gusting to 110	Cyclonic Storm
12-12-2016/2330	13.5/78.7	35-45 gusting to 55	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

Warning:

(cxxv) Heavy Rainfall Warning: Light to moderate rainfall at many places with isolated heavy to very heavy falls over south coastal Andhra Pradesh and adjoining areas of north coastal Tamil Nadu is very likely to commence from 11th December evening for subsequent 36 hrs. Light to moderate rainfall very likely over north coastal Andhra Pradesh during the same period.

(cxxvi) Wind warning: Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh and adjoining north Tamil Nadu coasts commencing from 11th December night.

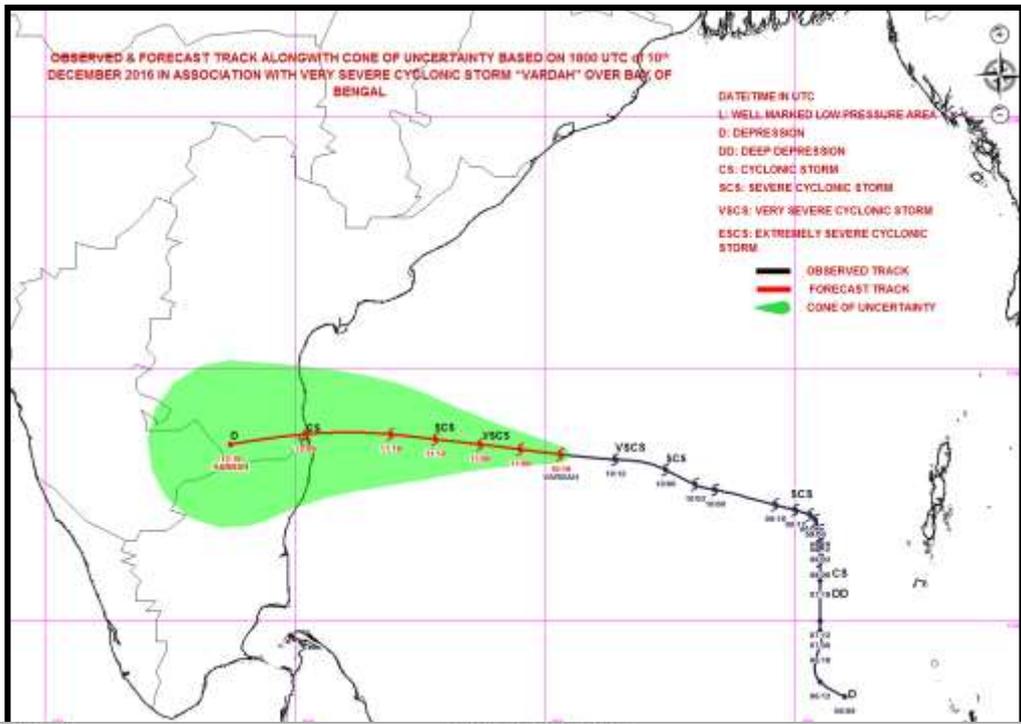
(cxxvii) Sea condition: Sea condition would be rough to very rough along & off Andhra Pradesh and adjoining north Tamil Nadu coasts commencing from 11th December night.

(cxxviii) Fishermen Warning: Fishermen are advised not to venture into sea along and off Andhra Pradesh and adjoining north Tamil Nadu coasts. The fishermen out at sea are advised to return to the coast.

Next bulletin will be issued at 0830 hrs IST of 11th December 2016

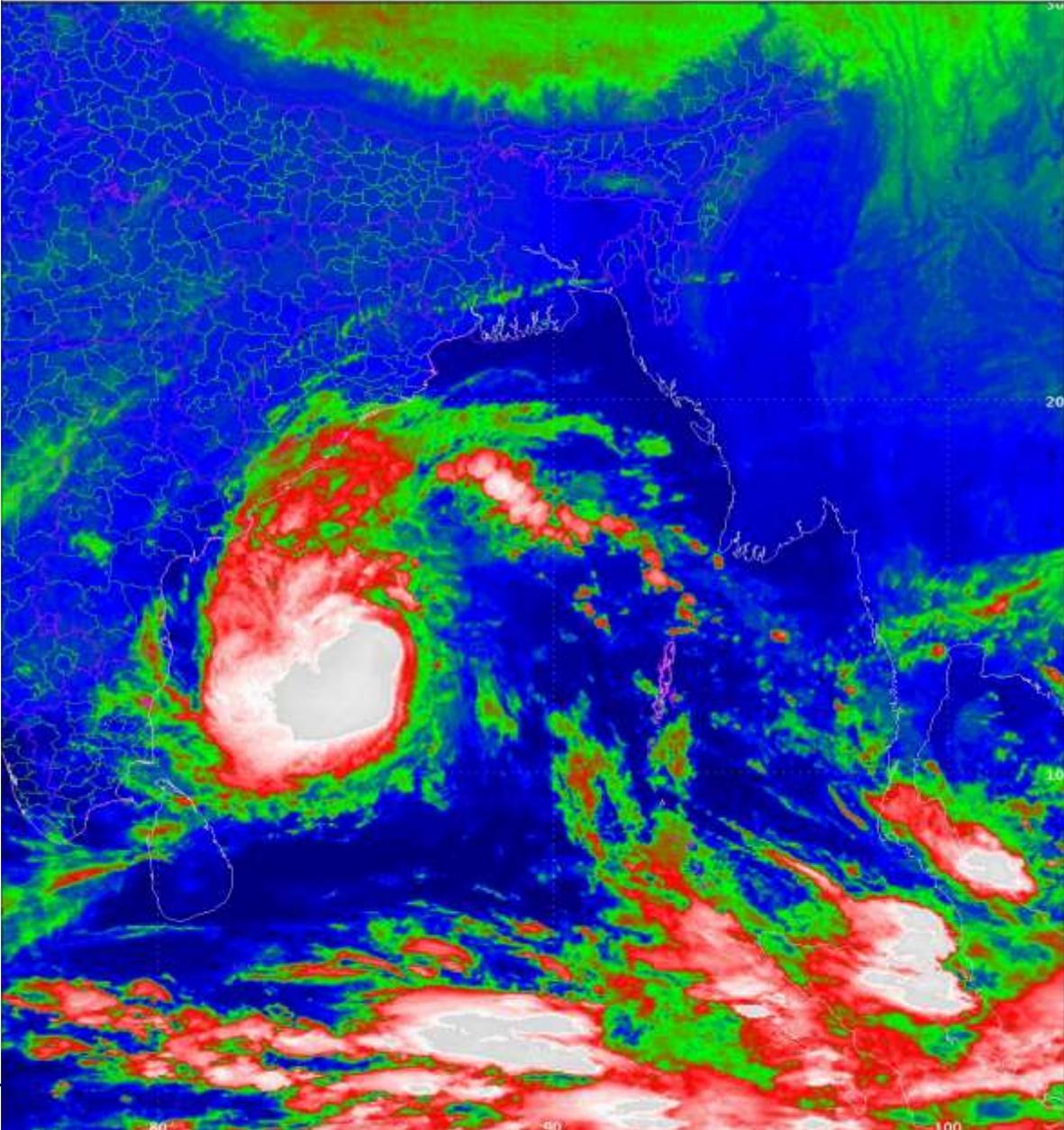
**(SHAMBU RAVINDREN)
Scientist-B
IMD, New Delhi**

*Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair*



SAT :INSAT-3D
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 SECTOR BAYOFBENGAL Mercator (NHC LUT)

10-12-2016/22:30 GMT
 11-12-2016/04:00 IST



Rainfall am





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

BULLETIN NO.: 33 (BOB 06/2016)

TIME OF ISSUE: 0830 HOURS IST

DATED: 11.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

Sub: Very Severe Cyclonic Storm, VARDHAH over west central and adjoining southwest Bay of Bengal: Cyclone Alert for South Andhra Pradesh and north Tamil Nadu Coasts

The very severe cyclonic storm, **VARDHAH** over west central and adjoining south Bay of Bengal moved further westwards during past 06 hrs with a speed of 11 kmph and lay centred at 0530 hrs IST of today, the 11th December, 2016 over west central and adjoining southwest Bay of Bengal near Latitude 13.3°N and Longitude 84.7°E, about 520 km east-southeast of Nellore, 490 km east-southeast of Machilipatnam and 480 km east-northeast of Chennai. The system is very likely to move nearly west-southwestwards and maintain its intensity upto the evening of today, the 11th December 2016. Thereafter, it is likely to weaken gradually while moving towards south Andhra Pradesh coast and adjoining north Tamilnadu coast. It is very likely to cross north Tamilnadu and south Andhra Pradesh coast, close to Chennai by 12th December 2016 afternoon.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. °N/ long. °E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
11-12-2016/0530	13.3/84.7	125-135 gusting to 150	Very Severe Cyclonic Storm
11-12-2016/1130	13.2/83.8	125-135 gusting to 150	Very Severe Cyclonic Storm
11-12-2016/1730	13.1/82.9	110-120 gusting to 145	Severe Cyclonic Storm
11-12-2016/2330	13.0/82.1	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/0530	12.9/81.3	80-90 gusting to 100	Cyclonic Storm
12-12-2016/1730	12.9/79.6	55-65 gusting to 75	Deep Depression
13-12-2016/0530	13.0/78.0	40-50 gusting to 60	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

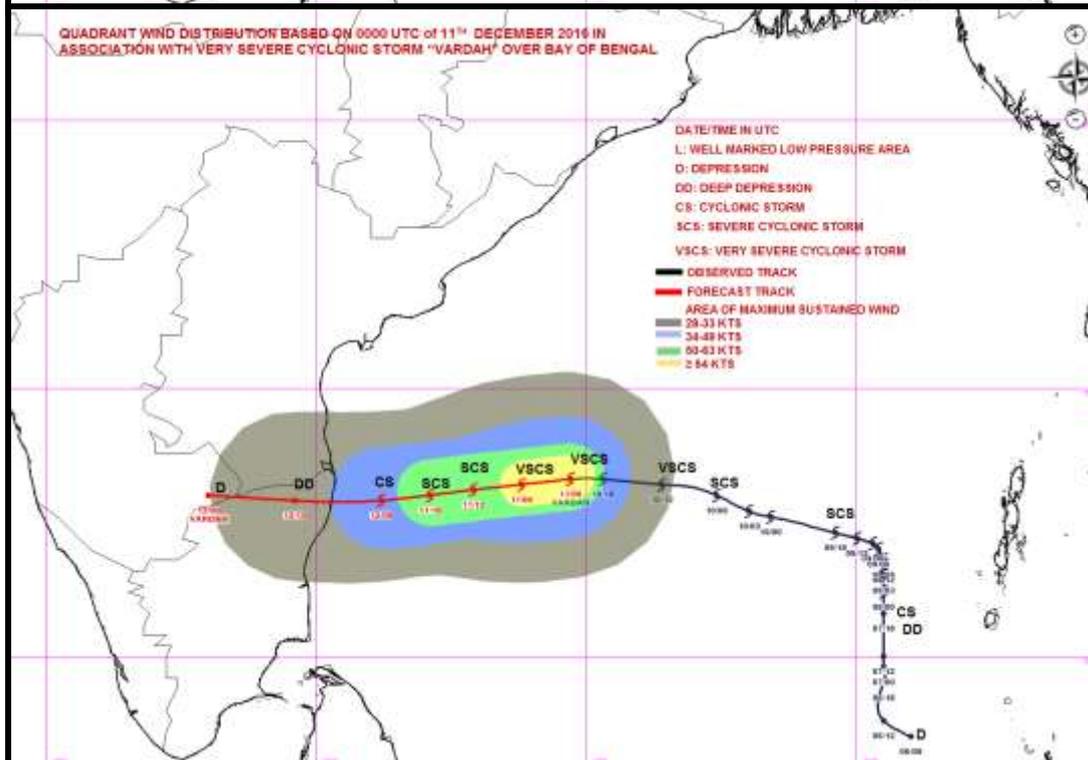
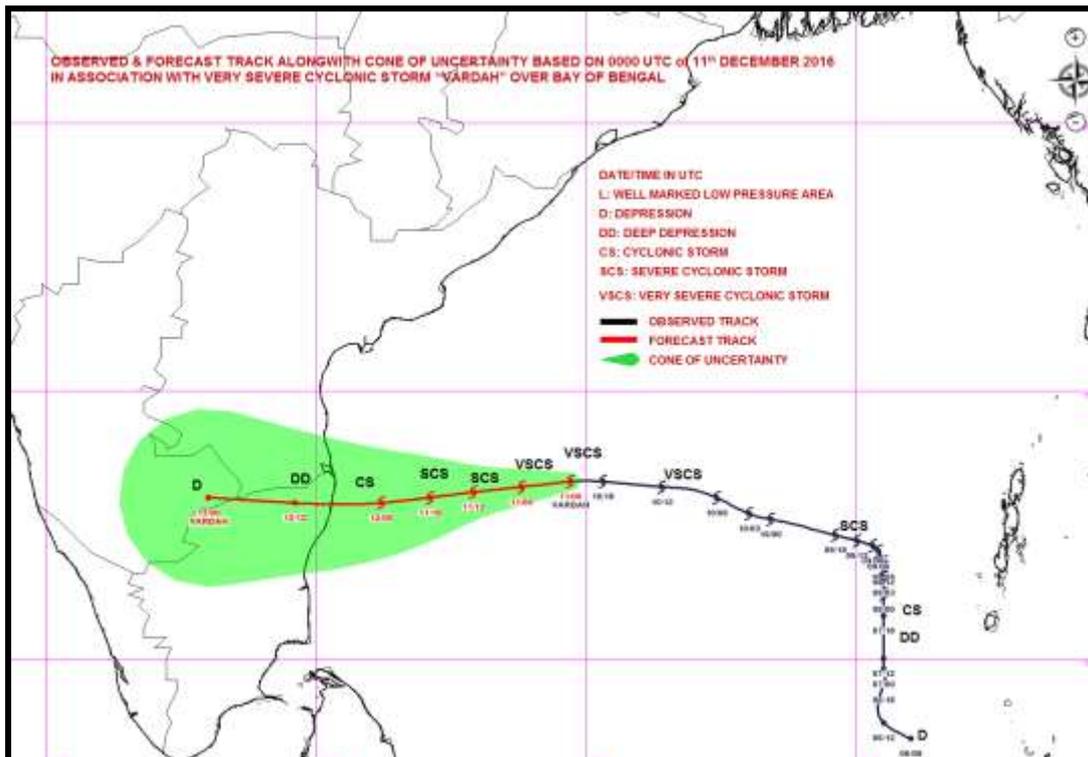
Warning:

- (cxxix) **Heavy Rainfall Warning:** Light to moderate rainfall at many places with isolated heavy to very heavy falls over south coastal Andhra Pradesh and north coastal Tamil Nadu is very likely to commence from 11th December evening for subsequent 36 hrs. Light to moderate rainfall very likely over north coastal Andhra Pradesh during the same period.
- (cxxx) **Wind warning:** Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh and adjoining north Tamil Nadu coasts commencing from 11th December night. It will gradually increase becoming 70-80 kmph gusting to 90 kmph at the time of landfall.
- (cxxxii) **Sea condition:** Sea condition would be rough to very rough along & off Andhra Pradesh and north Tamil Nadu coasts commencing from 11th December night. Sea condition along and off these coasts will become high from 12th December morning
- (cxxxiii) **Damage Expected:** Damage to thatched huts. Minor damage to power & communication lines due to breaking of branches. Major damage to Kutcha and minor damage to Pucca roads. Some damage to paddy crops, banana, papaya trees and orchards.
- (cxxxiii) **Action Suggested:** Fishermen are advised not to venture into sea along and off south Andhra Pradesh, north Tamil Nadu and Puducherry coasts. During next 48 hrs

Next bulletin will be issued at 1130 hrs IST of 11th December 2016

(SHAMBU RAVINDREN)
Scientist-B
IMD, New Delhi

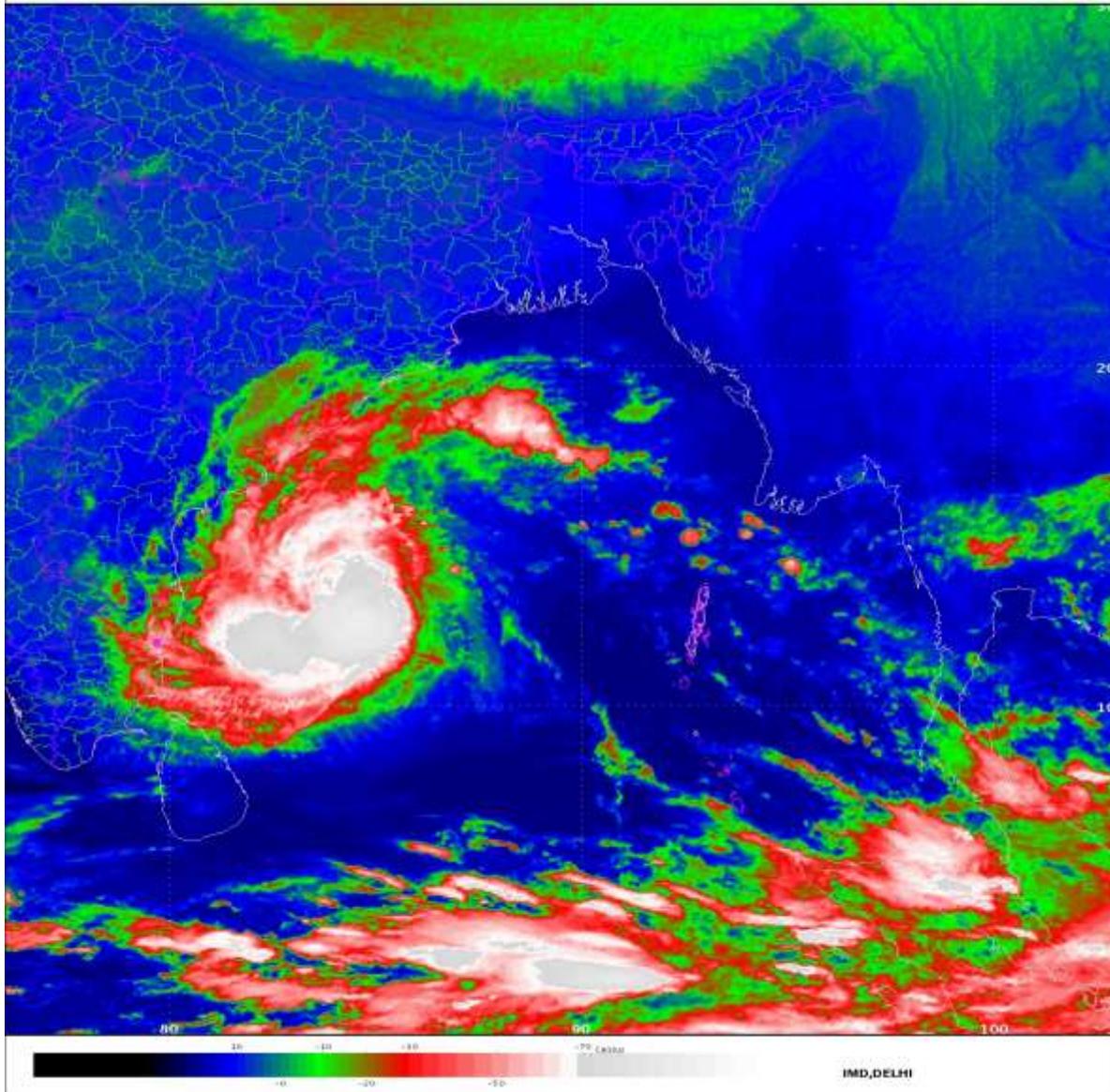
Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC Bhubaneswar/MC Hyderabad/MO Port Blair



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

SAT :INSAT-3D
IMG_TIRL_TEMP 10.8 um
SECTOR BAYOFBENGAL Mercator (NHC LUT)

11-12-2016/01:30 GMT
11-12-2016/07:00 IST



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 34 (BOB 06/2016)

TIME OF ISSUE: 1100 HOURS IST

DATED: 11.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

Sub: Very Severe Cyclonic Storm, VARDHA over westcentral and adjoining southwest Bay of Bengal:

Cyclone Warning for South Andhra Pradesh and north Tamil Nadu Coasts: Orange Message

The very severe cyclonic storm, **VARDHA** over westcentral and adjoining southwest Bay of Bengal moved west-southwestwards during past 06 hrs with a speed of 13 kmph and lay centred at 0830 hrs IST of today, the 11th December, 2016 over westcentral and adjoining southwest Bay of Bengal near Latitude 13.1°N and Longitude 84.3°E, about 490 km east-southeast of Nellore, 480 km southeast of Machilipatnam and 440 km east of Chennai. The system is very likely to move nearly west-southwestwards and weaken gradually from today evening onwards while moving towards north Tamilnadu and adjoining south Andhra Pradesh coast. It is very likely to cross north Tamilnadu and south Andhra Pradesh coast, close to Chennai as a cyclonic storm by 12th December 2016 afternoon.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. °N/ long. °E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
11-12-2016/0830	13.1/84.3	125-135 gusting to 150	Very Severe Cyclonic Storm
11-12-2016/1130	13.0/83.8	125-135 gusting to 150	Very Severe Cyclonic Storm
11-12-2016/1730	12.9/82.9	110-120 gusting to 145	Severe Cyclonic Storm
11-12-2016/2330	12.8/82.1	95-105 gusting to 115	Severe Cyclonic Storm
12-12-2016/0530	12.8/81.2	80-90 gusting to 100	Cyclonic Storm
12-12-2016/1730	12.8/79.6	55-65 gusting to 75	Deep Depression
13-12-2016/0530	12.9/78.0	40-50 gusting to 60	Depression

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

Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

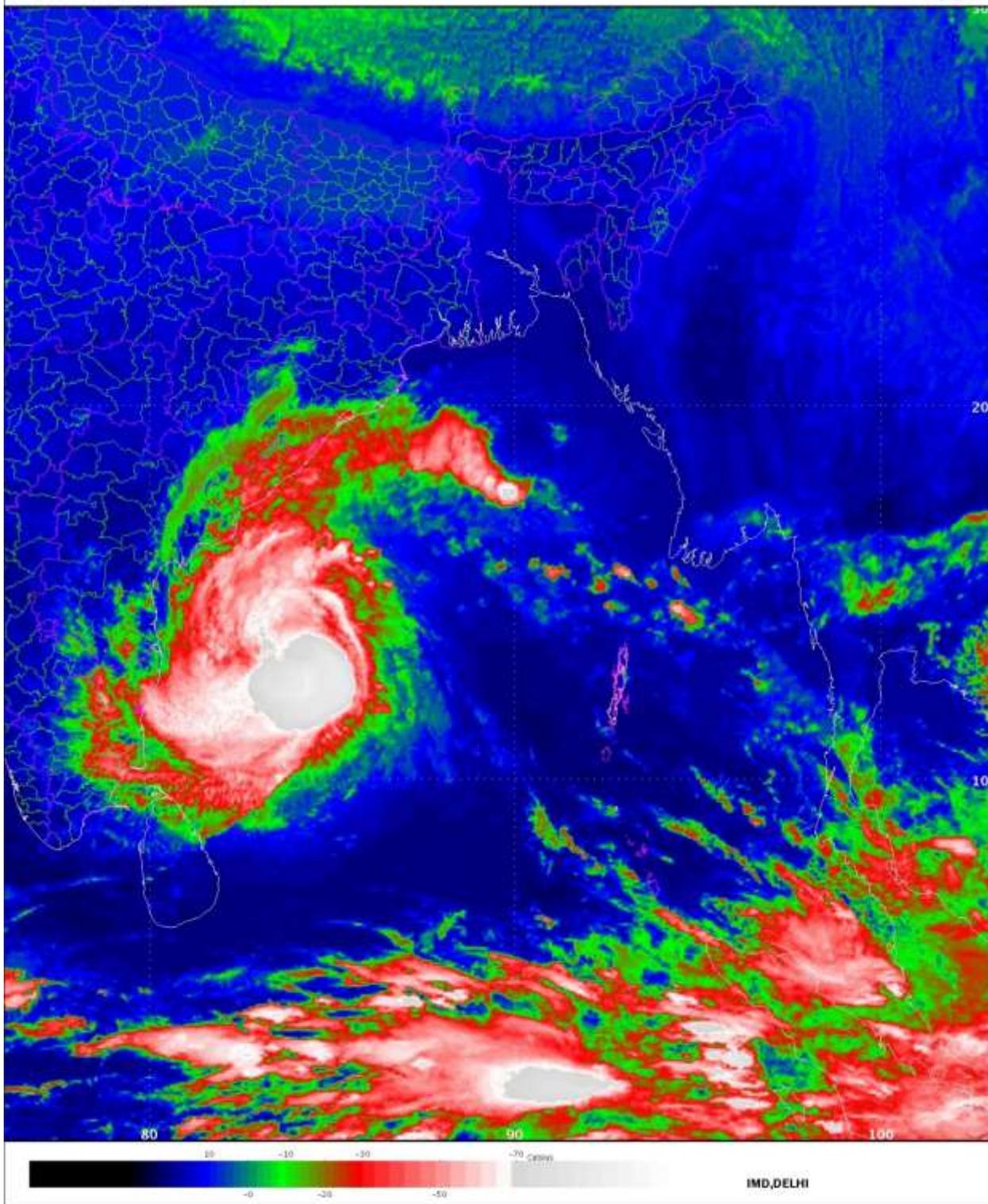
Warning:

- (cxxxiv) **Heavy Rainfall Warning:** Rainfall at most places with isolated heavy to very heavy falls over south coastal Andhra Pradesh, north coastal Tamil Nadu and Puducherry is very likely to commence from 11th December evening for subsequent 36 hrs. The rainfall intensity will increase gradually becoming heavy to very heavy rainfall (7-19 cm) at a few places and isolated extremely heavy rainfall (≥ 20 cm) over Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore and Prakasam districts of Andhra Pradesh on 12th December
- (cxxxv) **Wind warning:** Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh and adjoining north Tamil Nadu coasts commencing from 11th December night. It will gradually increase becoming 80-90 kmph gusting to 100 kmph during the time of landfall along and off Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu, Puducherry and Nellore and Prakasam districts of Andhra Pradesh.
- (cxxxvi) **Sea condition:** Sea condition would be rough to very rough along & off Andhra Pradesh and north Tamil Nadu coasts commencing from 11th December night. Sea condition along and off these coasts will become high to phenomenal from 12th December morning.
- (cxxxvii) **Storm surge :** The tidal wave of about one meter height above the astronomical tide is very likely to inundate the low lying areas of Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore districts of Andhra Pradesh during the time of landfall.
- (cxxxviii) **Damage Expected:** Damage to thatched huts. Minor damage to power & communication lines due to breaking of branches. Major damage to Kutcha and minor damage to Pucca roads. Damage to paddy crops, banana, papaya trees and orchards over Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu; Ongole & Nellore districts of Andhra Pradesh and Puducherry.
- (cxxxix) **Action Suggested:** Fishermen are advised not to venture into sea along and off south Andhra Pradesh, north Tamil Nadu and Puducherry coasts. During next 48 hrs

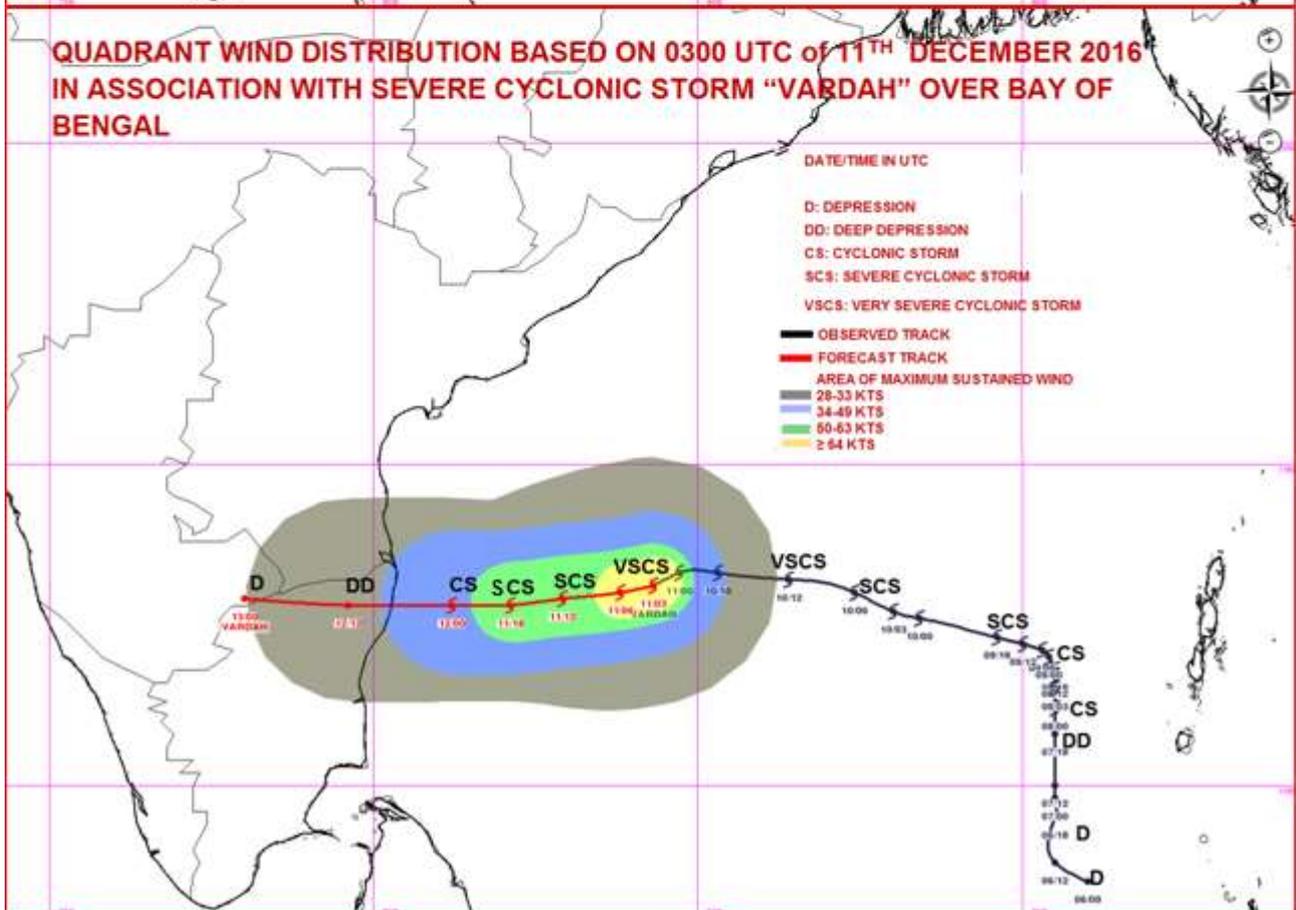
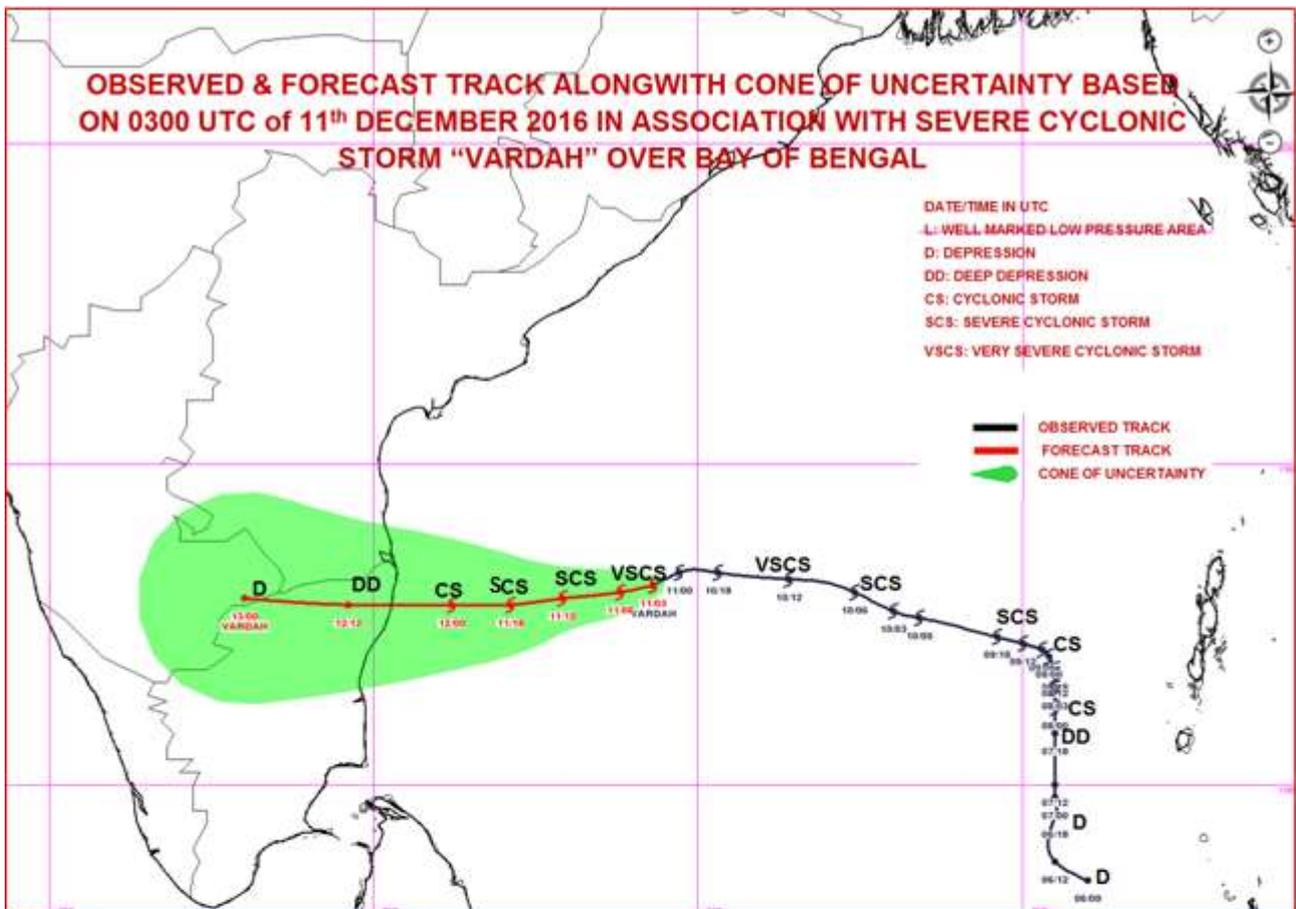
Next bulletin will be issued at 1430 hrs IST of 11th December 2016

(CHARAN SINGH)
Scientist-E
IMD, New Delhi

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC Bhubaneswar/MC Hyderabad/MO Port Blair



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 35 (BOB 06/2016)

TIME OF ISSUE: 1400 HOURS IST

DATED: 11.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
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SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, GOVT. OF WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

**Sub: Very Severe Cyclonic Storm, VARDHAH over westcentral and adjoining southwest Bay of Bengal:
Cyclone Warning for South Andhra Pradesh and north Tamil Nadu Coasts: Orange Message**

The very severe cyclonic storm, **VARDHAH** over westcentral and adjoining southwest Bay of Bengal moved west-southwestwards during past 06 hrs with a speed of 18 kmph and lay centred at 1130 hrs IST of today, the 11th December, 2016 over westcentral and adjoining southwest Bay of Bengal near Latitude 13.1°N and Longitude 83.7°E, about 420 km east-southeast of Nellore, 440 km south-southeast of Machilipatnam and 370 km east of Chennai. The system is very likely to move nearly west-southwestwards and weaken gradually from today evening onwards while moving towards north Tamilnadu and adjoining south Andhra Pradesh coast. It is very likely to cross north Tamilnadu and south Andhra Pradesh coast, close to Chennai as a cyclonic storm with a wind speed of 80 to 90 kmph gusting to 100 kmph by 12th December 2016 afternoon.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. °N/ long. °E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
11-12-2016/1130	13.1/83.7	125-135 gusting to 150	Very Severe Cyclonic Storm
11-12-2016/1730	13.0/82.9	120-130 gusting to 145	Very Severe Cyclonic Storm
11-12-2016/2330	12.9/82.0	110-120 gusting to 130	Severe Cyclonic Storm
12-12-2016/0530	12.9/81.2	90-100 gusting to 110	Severe Cyclonic Storm
12-12-2016/1130	12.9/80.4	80-90 gusting to 100	Cyclonic Storm
12-12-2016/2330	12.8/78.8	55-65 gusting to 75	Deep Depression
13-12-2016/1130	12.8/77.2	25-35 gusting to 45	Well Marked Low

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

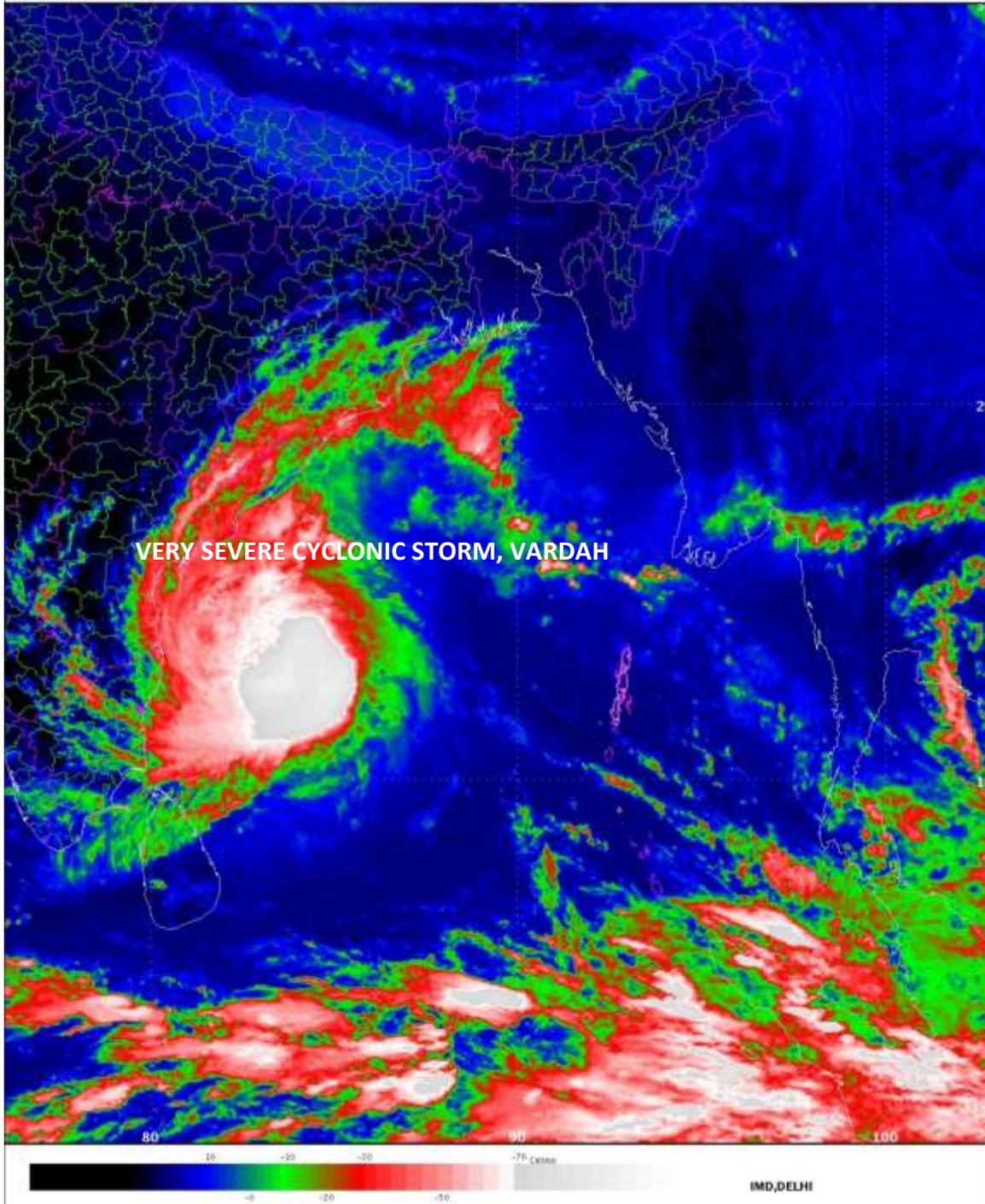
Warning:

- (cxi) **Heavy Rainfall Warning:** Rainfall at most places with isolated heavy to very heavy falls over south coastal Andhra Pradesh, north coastal Tamil Nadu and Puducherry is very likely to commence from 11th December evening for subsequent 36 hrs. The rainfall intensity will increase gradually becoming heavy to very heavy rainfall (7-19 cm) at a few places and isolated extremely heavy rainfall (≥ 20 cm) over Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore and Prakasam districts of Andhra Pradesh on 12th December
- (cxli) **Wind warning:** Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh and adjoining north Tamil Nadu coasts commencing from 11th December night. It will gradually increase becoming 80-90 kmph gusting to 100 kmph during the time of landfall along and off Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu, Puducherry and Nellore and Prakasam districts of Andhra Pradesh.
- (cxlii) **Sea condition:** Sea condition would be rough to very rough along & off Andhra Pradesh and north Tamil Nadu coasts commencing from 11th December night. Sea condition along and off these coasts will become high to phenomenal from 12th December morning.
- (cxliii) **Storm surge :** The tidal wave of about one meter height above the astronomical tide is very likely to inundate the low lying areas of Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore districts of Andhra Pradesh during the time of landfall.
- (cxliv) **Damage Expected:** Damage to thatched huts. Minor damage to power & communication lines due to breaking of branches. Major damage to Kutcha and minor damage to Pucca roads. Damage to paddy crops, banana, papaya trees and orchards over Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu; Ongole & Nellore districts of Andhra Pradesh and Puducherry.
- (cxlv) **Action Suggested:** Fishermen are advised not to venture into sea along and off south Andhra Pradesh, north Tamil Nadu and Puducherry coasts. During next 48 hrs

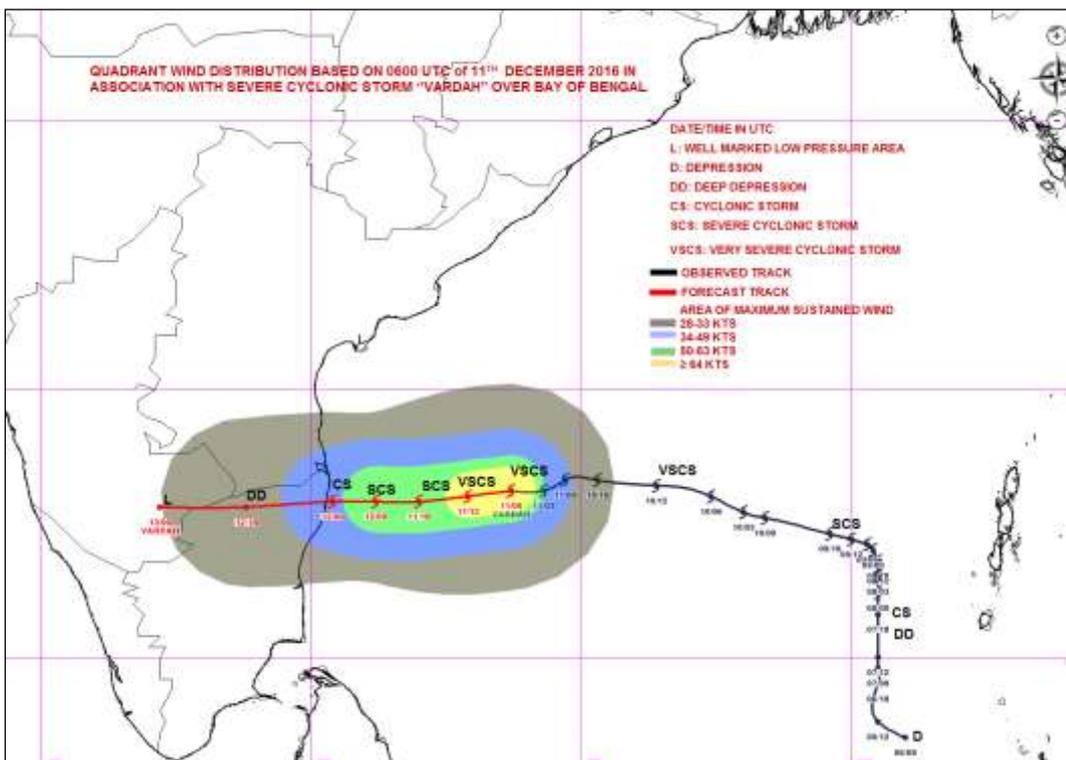
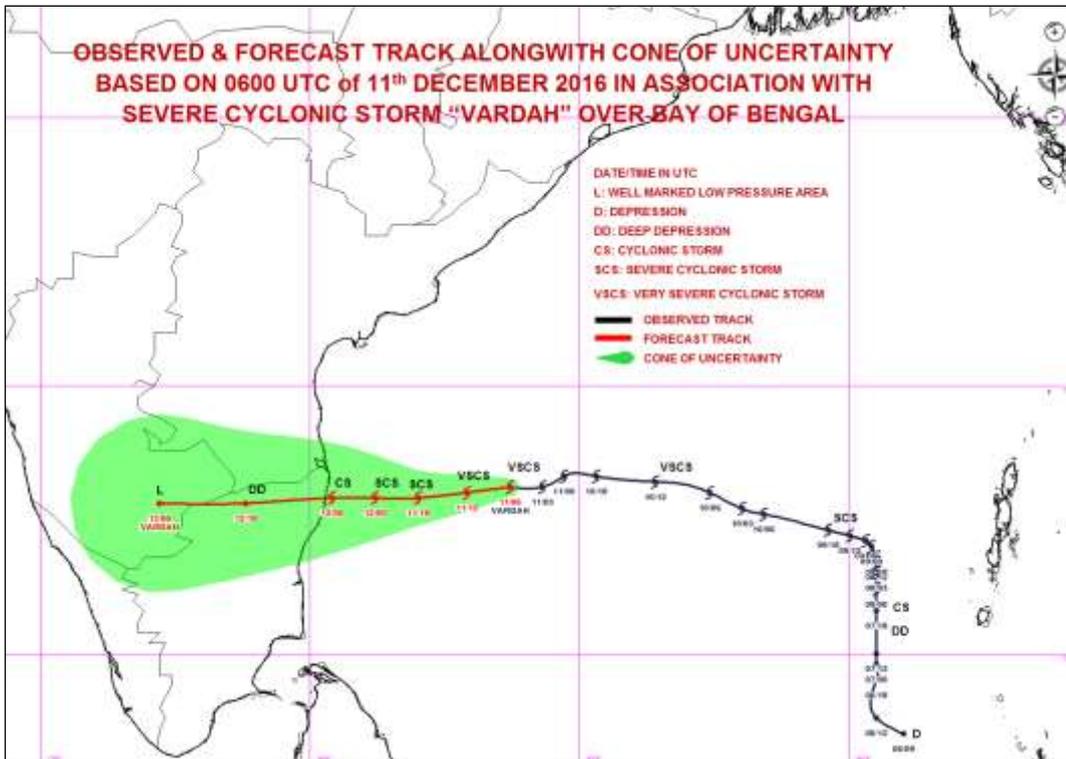
Next bulletin will be issued at 1730 hrs IST of 11th December 2016

**(CHARAN SINGH)
Scientist-E
IMD, New Delhi**

*Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair*



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 36 (BOB 06/2016)

TIME OF ISSUE: 1700 HOURS IST

DATED: 11.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

**Sub: Very Severe Cyclonic Storm, VARDHAH over westcentral and adjoining southwest Bay of Bengal:
Cyclone Warning for South Andhra Pradesh and north Tamil Nadu Coasts: Orange Message**

The very severe cyclonic storm, **VARDHAH** over westcentral and adjoining southwest Bay of Bengal moved westwards during past 06 hrs with a speed of 20 kmph and lay centred at 1430 hrs IST of today, the 11th December, 2016 over westcentral and adjoining southwest Bay of Bengal near Latitude 13.1°N and Longitude 83.3°E, about 330 km east of Chennai and 390 km east-southeast of Nellore. The system is very likely to move nearly westwards and weaken gradually while moving towards north Tamilnadu and adjoining south Andhra Pradesh coasts. It is very likely to cross north Tamilnadu and south Andhra Pradesh coasts, close to Chennai as a cyclonic storm with a wind speed of 80 to 90 kmph gusting to 100 kmph by 12th December 2016 afternoon.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. °N/ long. °E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
11-12-2016/1430	13.1/83.3	125-135 gusting to 150	Very Severe Cyclonic Storm
11-12-2016/1730	13.2/82.9	120-130 gusting to 145	Very Severe Cyclonic Storm
11-12-2016/2330	13.2/82.0	110-120 gusting to 130	Severe Cyclonic Storm
12-12-2016/0530	13.2/81.2	90-100 gusting to 110	Severe Cyclonic Storm
12-12-2016/1130	13.2/80.4	80-90 gusting to 100	Cyclonic Storm
12-12-2016/2330	13.2/78.8	55-65 gusting to 75	Deep Depression
13-12-2016/1130	13.2/77.2	25-35 gusting to 45	Well Marked Low

**Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.**

Warning:

(cxlvi) Heavy Rainfall Warning: Rainfall at most places with isolated heavy to very heavy falls over south coastal Andhra Pradesh, north coastal Tamil Nadu and Puducherry is very likely to commence from 11th December evening for subsequent 36 hrs. The rainfall intensity will increase gradually becoming heavy to very heavy rainfall (7-19 cm) at a few places and isolated extremely heavy rainfall (≥ 20 cm) over Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore and Prakasam districts of Andhra Pradesh on 12th December

(cxlvii) Wind warning: Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh and adjoining north Tamil Nadu coasts commencing from 11th December night. It will gradually increase becoming 80-90 kmph gusting to 100 kmph during the time of landfall along and off Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu, Puducherry and Nellore and Prakasam districts of Andhra Pradesh.

(cxlviii) Sea condition: Sea condition would be rough to very rough along & off Andhra Pradesh and north Tamil Nadu coasts commencing from 11th December night. Sea condition along and off these coasts will become high to phenomenal from 12th December morning.

(cxlix) Storm surge : The tidal wave of about one meter height above the astronomical tide is very likely to inundate the low lying areas of Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore districts of Andhra Pradesh during the time of landfall.

(cl) Damage Expected: Damage to thatched huts. Minor damage to power & communication lines due to breaking of branches. Major damage to Kutcha and minor damage to Pucca roads. Damage to paddy crops, banana, papaya trees and orchards over Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu; Ongole & Nellore districts of Andhra Pradesh and Puducherry.

(cli) Action Suggested: Fishermen are advised not to venture into sea along and off south Andhra Pradesh, north Tamil Nadu and Puducherry coasts. During next 48 hrs

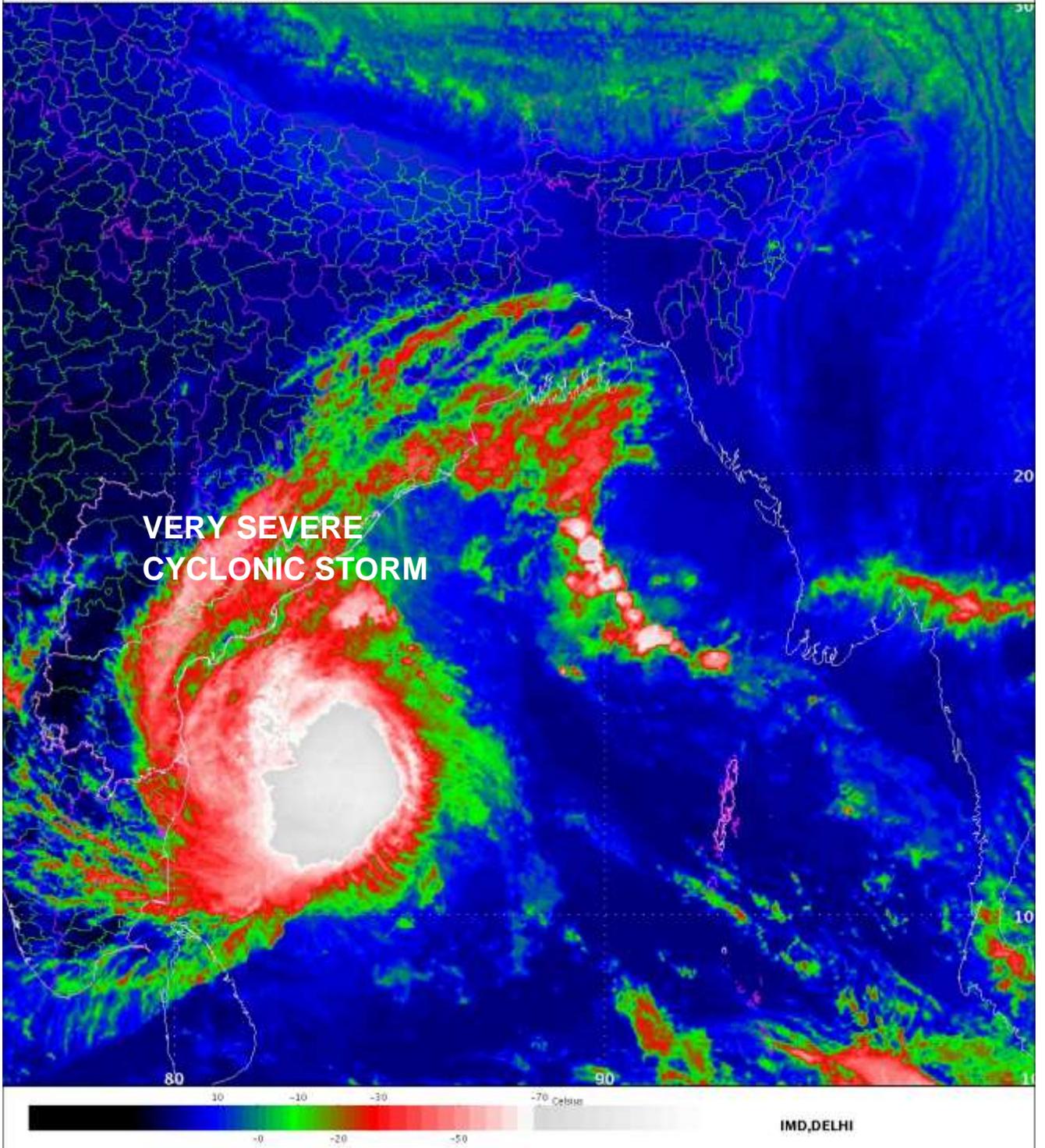
Next bulletin will be issued at 2030 hrs IST of 11th December 2016

**(CHARAN SINGH)
Scientist-E
IMD, New Delhi**

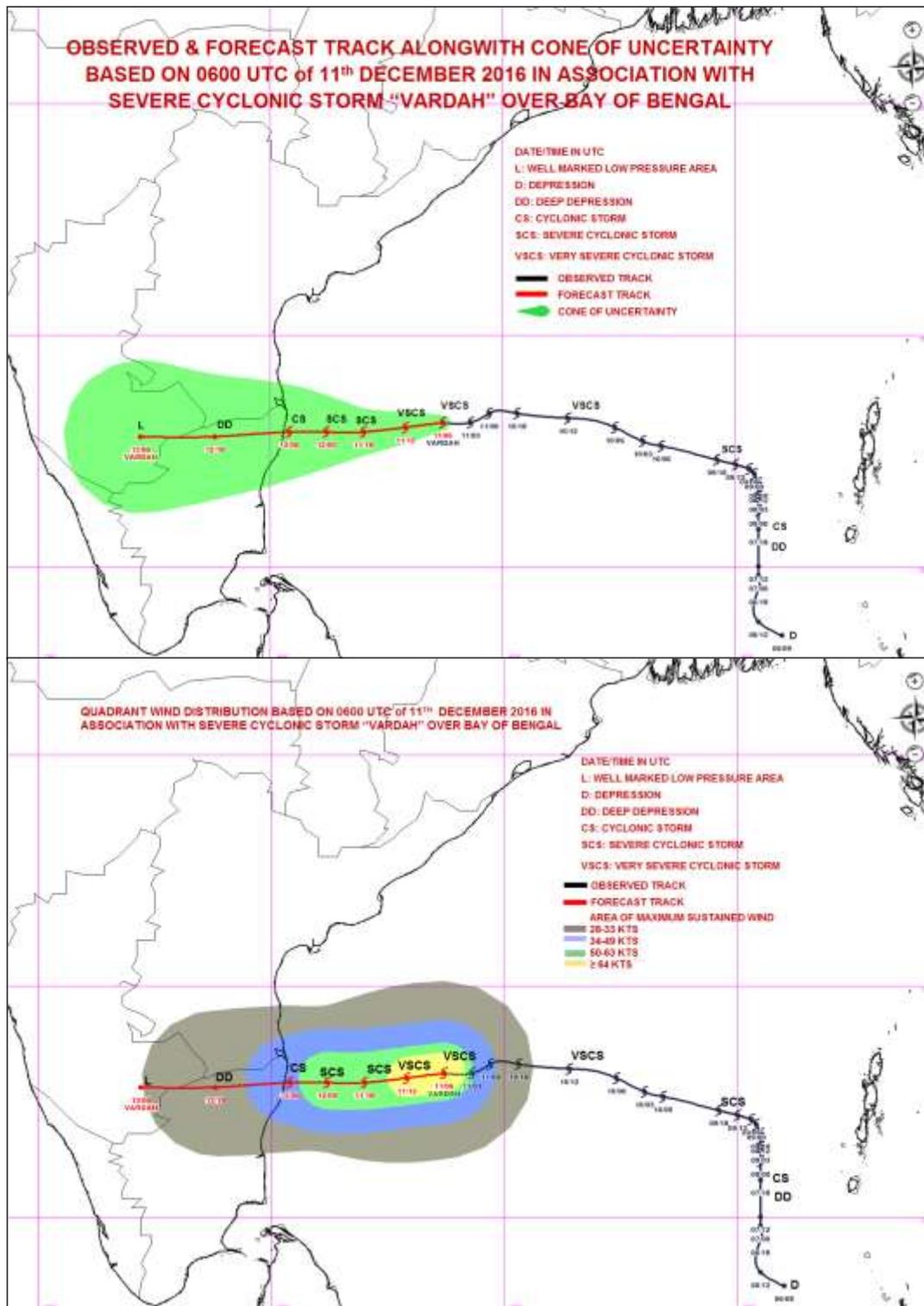
Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC Bhubaneswar/MC Hyderabad/MO Port Blair

SAT :INSAT-3D
IMG_TIR1_TEMP 10.8 um
SECTOR BAYOFBENGAL Mercator (NHC LUT)

11-12-2016/10:00 GMT
11-12-2016/15:30 IST



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 37 (BOB 06/2016)(Modified)

TIME OF ISSUE: 2030 HOURS IST

DATED: 11.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)

Sub: Very Severe Cyclonic Storm, VARDHA over westcentral and adjoining southwest Bay of Bengal:
Cyclone Warning for South Andhra Pradesh and north Tamil Nadu Coasts: RED Message

The very severe cyclonic storm, **VARDHA** over westcentral and adjoining southwest Bay of Bengal moved nearly westwards during past 06 hrs with a speed of 13 kmph and lay centred at 1730 hrs IST of today, the 11th December, 2016 over westcentral & adjoining southwest Bay of Bengal near Latitude 13.3°N and Longitude 83.0°E, about 300 km east-northeast of Chennai and 350 km east-southeast of Nellore. The system is very likely to move nearly westwards and weaken gradually while moving towards north Tamilnadu and adjoining south Andhra Pradesh coasts. It is very likely to cross north Tamilnadu and south Andhra Pradesh coasts, close to Chennai as a cyclonic storm with a wind speed of 80 to 90 kmph gusting to 100 kmph by 12th December 2016 afternoon.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. °N/ long. °E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
11-12-2016/1730	13.3/83.0	125-135 gusting to 150	Very Severe Cyclonic Storm
11-12-2016/2330	13.4/82.3	120-130 gusting to 145	Very Severe Cyclonic Storm
12-12-2016/0530	13.4/81.5	110-120 gusting to 130	Severe Cyclonic Storm
12-12-2016/1130	13.4/80.8	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/1730	13.4/80.1	70-80 gusting to 90	Cyclonic Storm
13-12-2016/0530	13.5/78.5	35-45 gusting to 55	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

Warning:

- (clii) **Heavy Rainfall Warning:** Rainfall at most places with isolated heavy to very heavy falls over south coastal Andhra Pradesh, north coastal Tamil Nadu and Puducherry is very likely during 36 hrs. The rainfall intensity will increase gradually becoming heavy to very heavy rainfall (7-19 cm) at a few places and isolated extremely heavy rainfall (≥ 20 cm) over Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore and Prakasam districts of Andhra Pradesh on 12th December
- (cliii) **Wind warning:** Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh and adjoining north Tamil Nadu coasts during next 36 hours. It will gradually increase becoming 80-90 kmph gusting to 100 kmph during the time of landfall along and off Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu, Puducherry and Nellore and Prakasam districts of Andhra Pradesh.
- (cliv) **Sea condition:** Sea condition would be rough to very rough along & off Andhra Pradesh and north Tamil Nadu coasts. Sea condition along and off these coasts will become high to phenomenal from 12th December morning.
- (clv) **Storm surge :** The tidal wave of about one meter height above the astronomical tide is very likely to inundate the low lying areas of Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore districts of Andhra Pradesh during the time of landfall.
- (clvi) **Damage Expected:** Damage to thatched huts. Minor damage to power & communication lines due to breaking of branches. Major damage to Kutcha and minor damage to Pucca roads. Damage to paddy crops, banana, papaya trees and orchards over Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu; Ongole & Nellore districts of Andhra Pradesh and Puducherry.
- (clvii) **Action Suggested:** Fishermen are advised not to venture into sea along and off south Andhra Pradesh, north Tamil Nadu and Puducherry coasts. During next 36 hrs

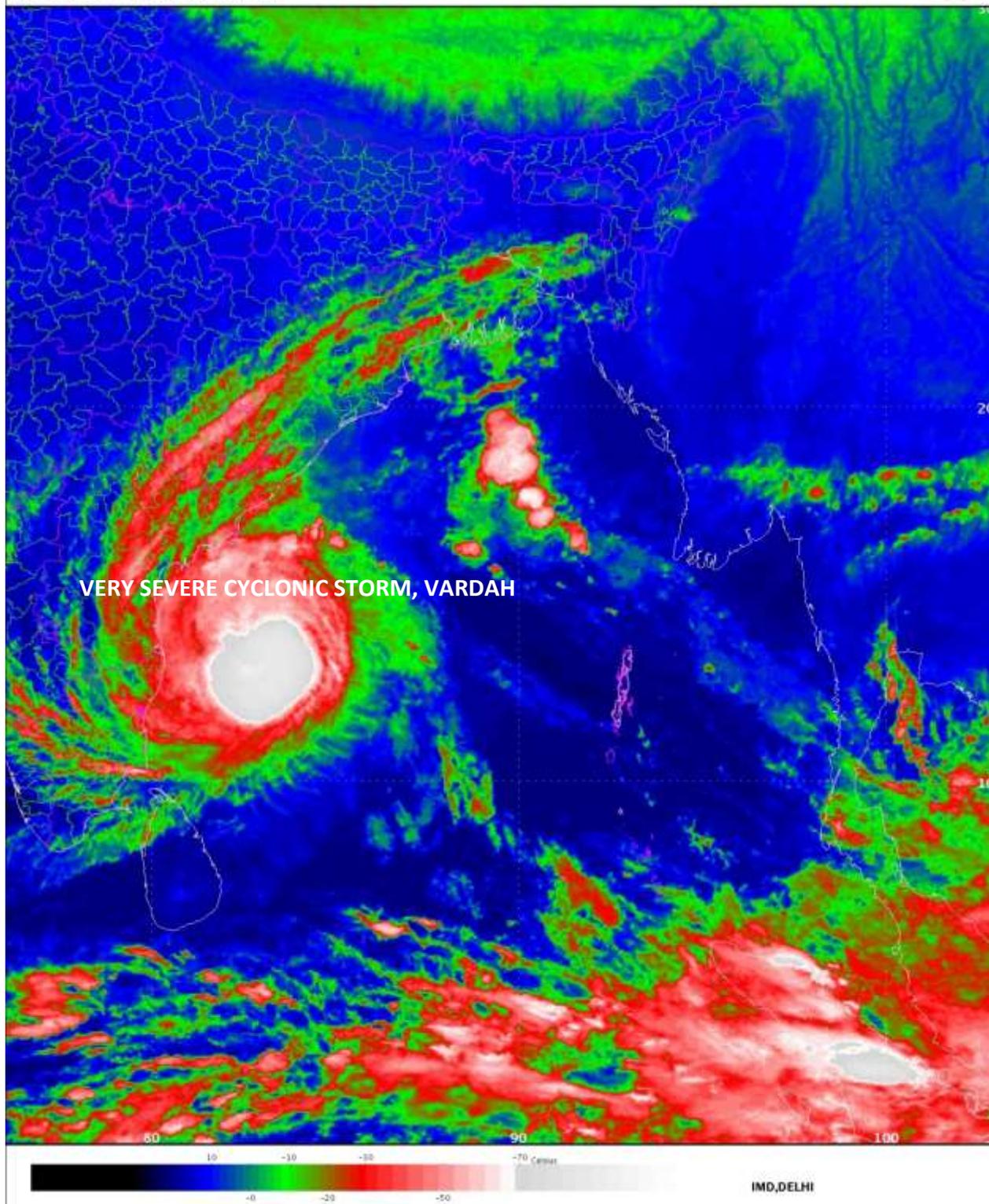
Next bulletin will be issued at 2330 hrs IST of 11th December 2016

(NEETHA K GOPAL)
Scientist-E
IMD, New Delhi

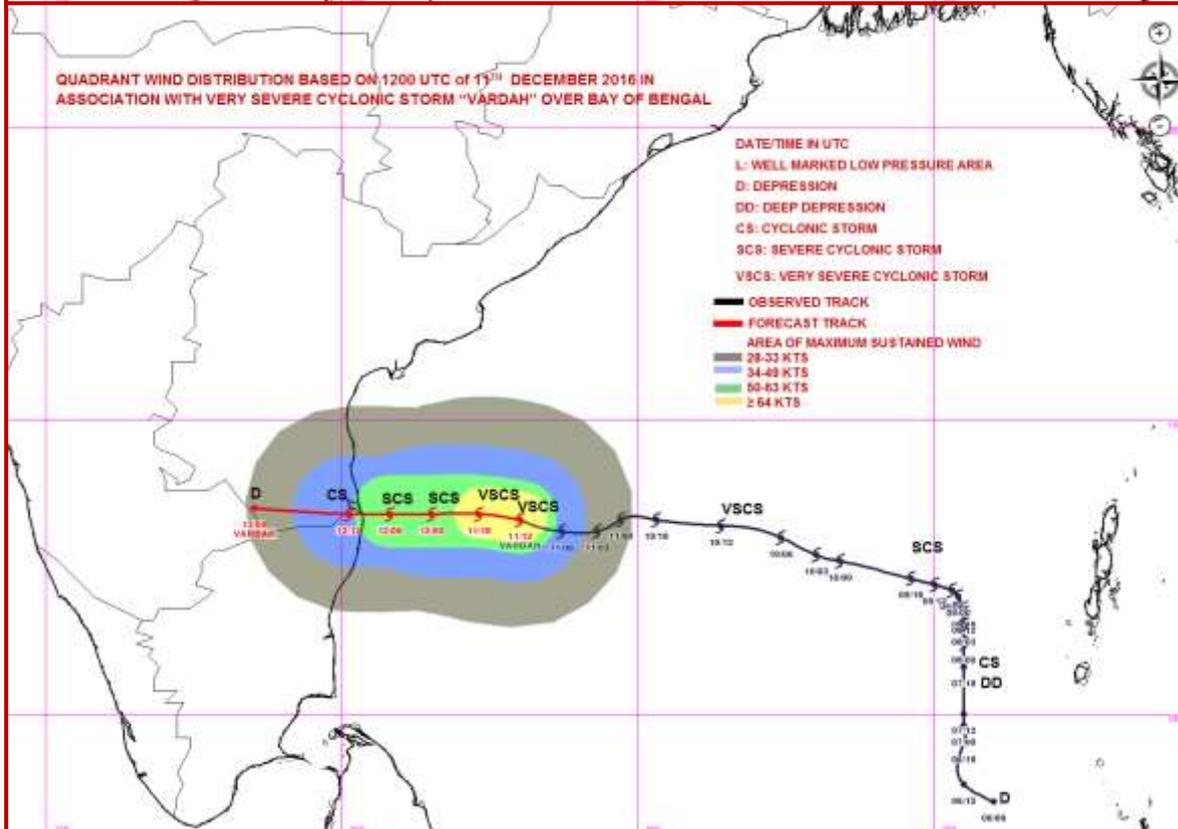
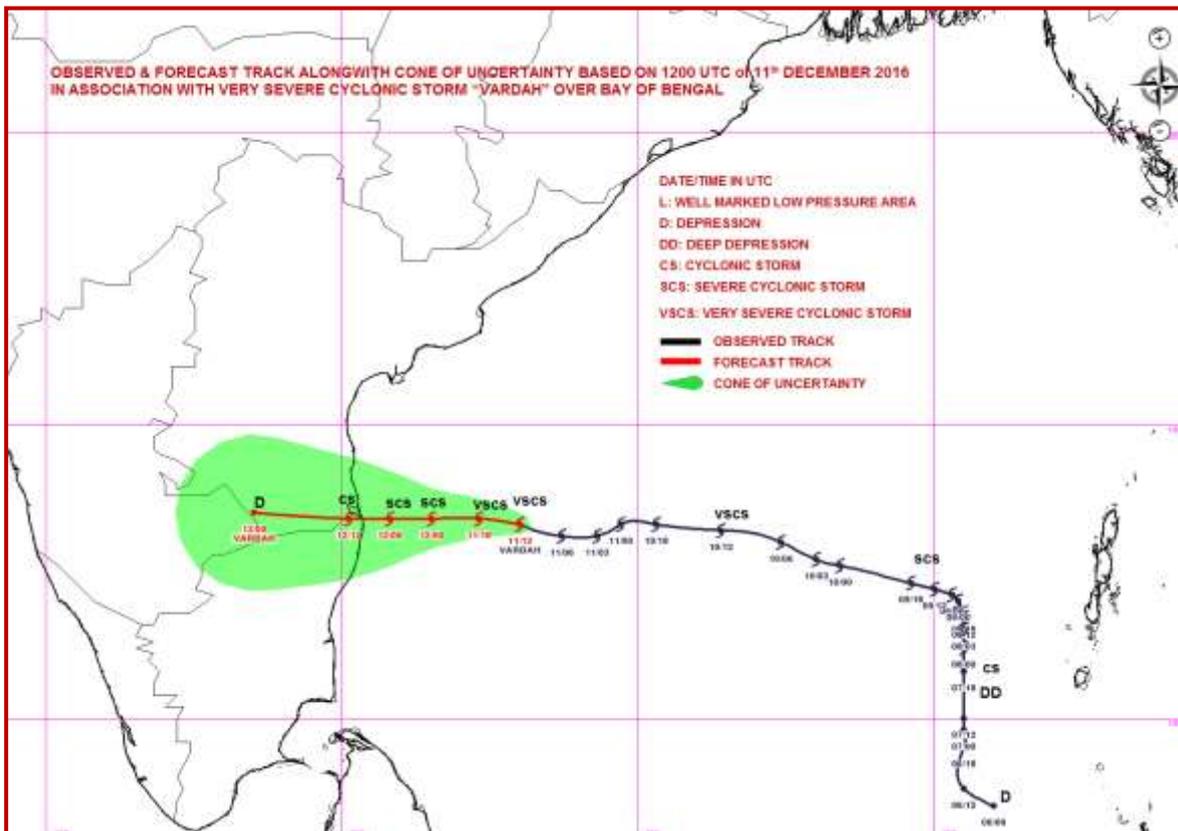
*Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair*

SAT:INSAT-3D
IMG_TIR1_TEMP 10.8 um
SECTOR BAYOFBENGAL Mercator (NHC LUT)

11-12-2016/13:00 GMT
11-12-2016/18:30 IST



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 38 (BOB 06/2016)

TIME OF ISSUE: 2130 HOURS IST

DATED: 11.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

**Sub: Very Severe Cyclonic Storm, VARDHA over westcentral and adjoining southwest Bay of Bengal:
Cyclone Warning for South Andhra Pradesh and north Tamil Nadu Coasts: RED Message**

The very severe cyclonic storm, **VARDHA** over westcentral and adjoining southwest Bay of Bengal moved further nearly westwards during past 06 hrs with a speed of 15 kmph and lay centred at 2030 hrs IST of today, the 11th December, 2016 over westcentral & adjoining southwest Bay of Bengal near Latitude 13.3°N and Longitude 82.5°E, about 240 km east-northeast of Chennai and 300 km east-southeast of Nellore. The system is very likely to move nearly westwards and weaken gradually while moving towards north Tamilnadu and adjoining south Andhra Pradesh coasts. It is very likely to cross north Tamilnadu and south Andhra Pradesh coasts, close to Chennai as a cyclonic storm with a wind speed of 80 to 90 kmph gusting to 100 kmph by 12th December 2016 afternoon.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. °N/ long. °E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
11-12-2016/2030	13.3/82.5	125-135 gusting to 150	Very Severe Cyclonic Storm
11-12-2016/2330	13.3/82.3	120-130 gusting to 145	Very Severe Cyclonic Storm
12-12-2016/0530	13.3/81.5	110-120 gusting to 130	Severe Cyclonic Storm
12-12-2016/1130	13.3/80.8	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/1730	13.3/80.1	70-80 gusting to 90	Cyclonic Storm
13-12-2016/0530	13.4/78.5	35-45 gusting to 55	Depression

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

Warning:

- (clviii) Heavy Rainfall Warning:** Rainfall at most places with isolated heavy to very heavy falls over south coastal Andhra Pradesh, north coastal Tamil Nadu and Puducherry is very likely during 36 hrs. The rainfall intensity will increase gradually becoming heavy to very heavy rainfall (7-19 cm) at a few places and isolated extremely heavy rainfall (≥ 20 cm) over Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore and Prakasam districts of Andhra Pradesh on 12th December
- (clix) Wind warning:** Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh and adjoining north Tamil Nadu coasts during next 36 hours. It will gradually increase becoming 80-90 kmph gusting to 100 kmph during the time of landfall along and off Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu, Puducherry and Nellore and Prakasam districts of Andhra Pradesh.
- (clx) Sea condition:** Sea condition would be rough to very rough along & off Andhra Pradesh and north Tamil Nadu coasts. Sea condition along and off these coasts will become high to phenomenal from 12th December morning.
- (clxi) Storm surge :** The tidal wave of about one meter height above the astronomical tide is very likely to inundate the low lying areas of Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore districts of Andhra Pradesh during the time of landfall.
- (clxii) Damage Expected:** Damage to thatched huts. Minor damage to power & communication lines due to breaking of branches. Major damage to Kutcha and minor damage to Pucca roads. Damage to paddy crops, banana, papaya trees and orchards over Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu; Ongole & Nellore districts of Andhra Pradesh and Puducherry.
- (clxiii) Action Suggested:** Fishermen are advised not to venture into sea along and off south Andhra Pradesh, north Tamil Nadu and Puducherry coasts. During next 36 hrs

Next bulletin will be issued at 0230 hrs IST of 12th December 2016

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

*Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair*



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

BULLETIN NO.: 39 (BOB 06/2016)

TIME OF ISSUE: 0230 HOURS IST

DATED: 12.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
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SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

**Sub: Very Severe Cyclonic Storm, VARDHA over westcentral and adjoining southwest Bay of Bengal:
Cyclone Warning for South Andhra Pradesh and north Tamil Nadu Coasts: RED Message**

The very severe cyclonic storm, **VARDHA** over westcentral and adjoining southwest Bay of Bengal moved further nearly west-southwest-wards during past 06 hrs with a speed of 12 kmph and lay centred at 2330 hrs IST of 11th December, 2016 over westcentral & adjoining southwest Bay of Bengal near Latitude 13.1°N and Longitude 82.3°E, about 220 km east-northeast of Chennai and 290 km east-southeast of Nellore. The system is very likely to move nearly westwards and weaken gradually while moving towards north Tamilnadu and adjoining south Andhra Pradesh coasts. It is very likely to cross north Tamilnadu and south Andhra Pradesh coasts, close to Chennai as a cyclonic storm with a wind speed of 80 to 90 kmph gusting to 100 kmph by 12th December 2016 afternoon.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. °N/ long. °E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
11-12-2016/2330	13.1/82.3	120-130 gusting to 145	Very Severe Cyclonic Storm
12-12-2016/0530	13.1/81.5	110-120 gusting to 130	Severe Cyclonic Storm
12-12-2016/1130	13.1/80.8	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/1730	13.1/80.1	80-90 gusting to 100	Cyclonic Storm
12-12-2016/2330	13.2/79.3	50-60 gusting to 70	Depression
13-12-2016/1130	13.2/78.1	25-35 gusting to 45	Low

The very severe cyclonic storm, VARDHA is being monitored by Doppler Weather Radar at Chennai apart from Satellite and other observations.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

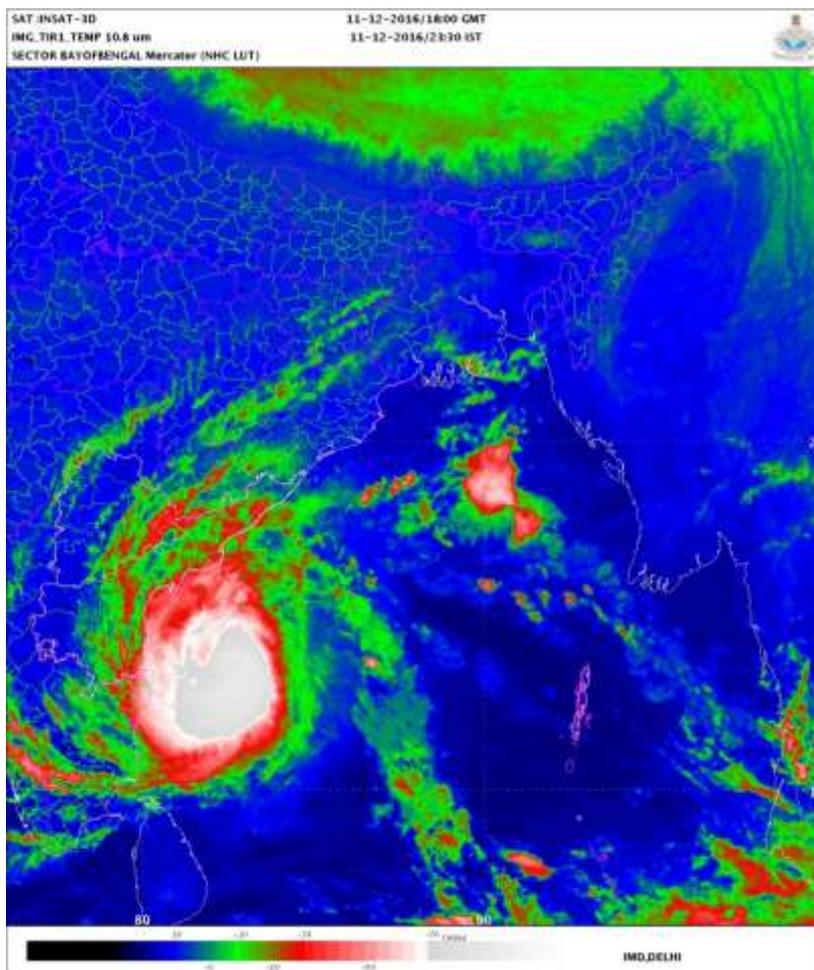
Warning:

- (clxiv) **Heavy Rainfall Warning:** Rainfall at most places with isolated heavy to very heavy falls over south coastal Andhra Pradesh, north coastal Tamil Nadu and Puducherry is very likely during 36 hrs. The rainfall intensity will increase gradually becoming heavy to very heavy rainfall (7-19 cm) at a few places and isolated extremely heavy rainfall (≥ 20 cm) over Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore and Prakasam districts of Andhra Pradesh on 12th December
- (clxv) **Wind warning:** Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh and adjoining north Tamil Nadu coasts during next 36 hours. It will gradually increase becoming 80-90 kmph gusting to 100 kmph during the time of landfall along and off Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu, Puducherry and Nellore and Prakasam districts of Andhra Pradesh.
- (clxvi) **Sea condition:** Sea condition would be rough to very rough along & off Andhra Pradesh and north Tamil Nadu coasts. Sea condition along and off these coasts will become high to phenomenal from 12th December morning.
- (clxvii) **Storm surge :** The tidal wave of about one meter height above the astronomical tide is very likely to inundate the low lying areas of Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore districts of Andhra Pradesh during the time of landfall.
- (clxviii) **Damage Expected:** Damage to thatched huts. Minor damage to power & communication lines due to breaking of branches. Major damage to Kutcha and minor damage to Pucca roads. Damage to paddy crops, banana, papaya trees and orchards over Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu; Ongole & Nellore districts of Andhra Pradesh and Puducherry.
- (clxix) **Action Suggested:** Fishermen are advised not to venture into sea along and off south Andhra Pradesh, north Tamil Nadu and Puducherry coasts during next 36 hrs.
- (clxx) **Post Landfall Outlook:** (a) Even after landfall, the system is likely to maintain its intensity for 06 Hours and weaken gradually. Under its influence, rains at most places with heavy to very heavy falls at few places likely to continue in Chennai, Thiruvallur & Kanchipuram districts of north Tamil Nadu, Puducherry and Nellore & Prakasam districts of Andhra Pradesh during next 12 hrs after landfall. Winds speed reaching 55-65 kmph gusting to 75 kmph likely to continue over these districts during next 24 hrs after landfall.
(b) As the cyclone moves inland north Interior districts of Tamil Nadu and Rayalaseema may also experience heavy to very heavy rain at isolated places during next 24 hours after land fall.
(c) People are advised to remain in safe places and cooperate with state government officials and disaster management agencies.

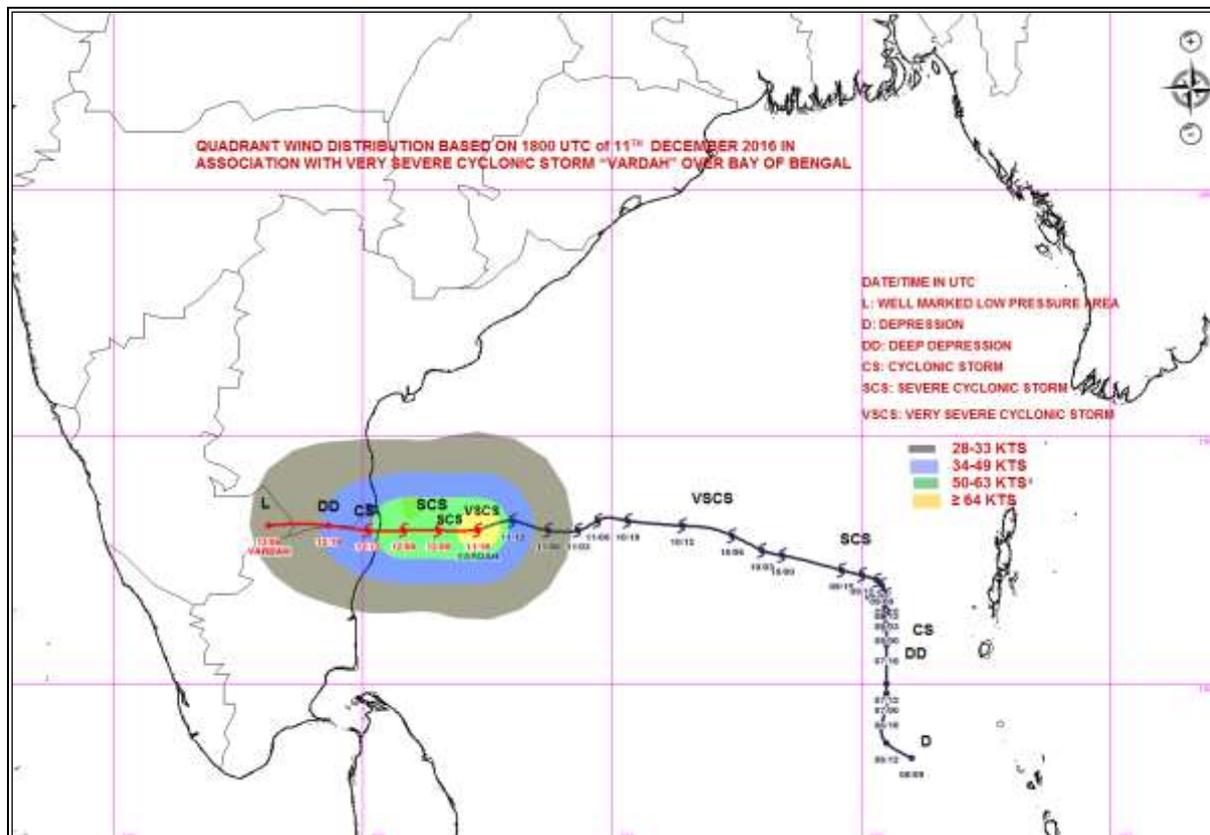
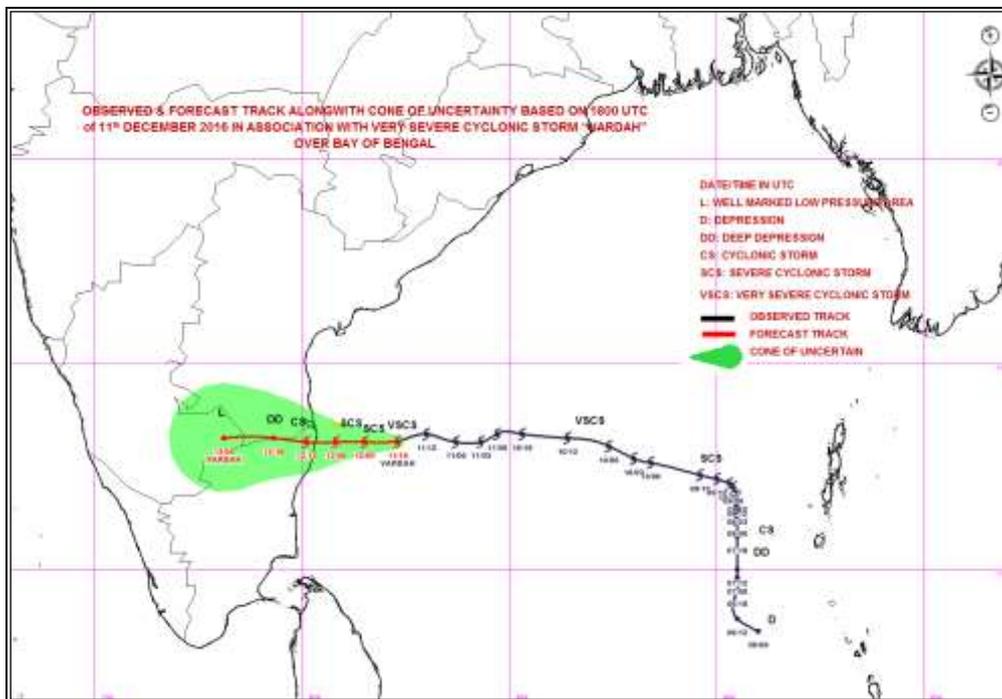
Next bulletin will be issued at 0530 hrs IST of 12th December 2016

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

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC Bhubaneswar/MC Hyderabad/MO Port Blair



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 40 (BOB 06/2016)

TIME OF ISSUE: 0500 HOURS IST

DATED: 12.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)

Sub: Very Severe Cyclonic Storm, VARDHA over westcentral and adjoining southwest Bay of Bengal:

Cyclone Warning for South Andhra Pradesh and north Tamil Nadu Coasts: RED Message

The very severe cyclonic storm, **VARDHA** over westcentral and adjoining southwest Bay of Bengal moved further nearly west-southwest-wards during past 06 hrs with a speed of 11 kmph and lay centred at 0230 hrs IST of today, the 12th December, 2016 over westcentral & adjoining southwest Bay of Bengal near Latitude 13.2°N and Longitude 81.9°E, about 180 km east-northeast of Chennai and 250 km east-southeast of Nellore. The system is very likely to move nearly westwards and weaken gradually while moving towards north Tamilnadu and adjoining south Andhra Pradesh coasts. It is very likely to cross north Tamilnadu and south Andhra Pradesh coasts, close to Chennai as a cyclonic storm with a wind speed of 80 to 90 kmph gusting to 100 kmph by 12th December 2016 afternoon.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. °N/ long. °E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
12-12-2016/0230	13.2/81.9	120-130 gusting to 145	Very Severe Cyclonic Storm
12-12-2016/0530	13.2/81.5	110-120 gusting to 130	Severe Cyclonic Storm
12-12-2016/1130	13.2/80.8	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/1730	13.2/80.1	80-90 gusting to 100	Cyclonic Storm
12-12-2016/2330	13.3/79.3	50-60 gusting to 70	Depression
13-12-2016/1130	13.3/78.1	25-35 gusting to 45	Low

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

Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

The very severe cyclonic storm, VARDHA is being monitored by Doppler Weather Radar at Chennai apart from Satellite and other observations.

Warning:

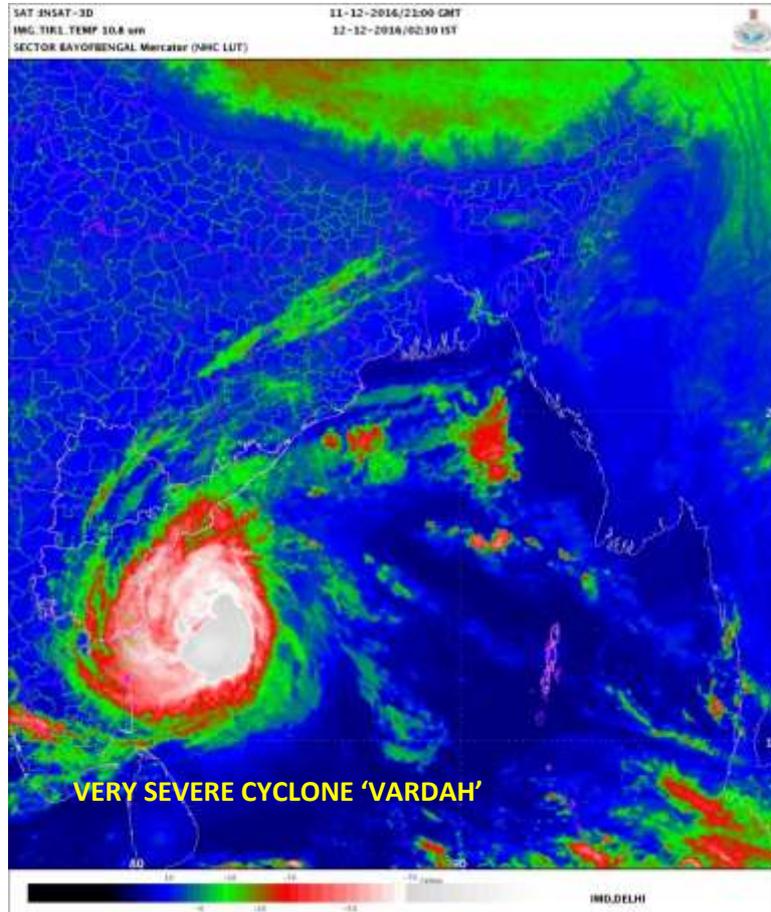
- (clxxi) Heavy Rainfall Warning:** Rainfall at most places with isolated heavy to very heavy falls over south coastal Andhra Pradesh, north coastal Tamil Nadu and Puducherry is very likely during 36 hrs. The rainfall intensity will increase gradually becoming heavy to very heavy rainfall (7-19 cm) at a few places and isolated extremely heavy rainfall (≥ 20 cm) over Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore and Prakasam districts of Andhra Pradesh on 12th December
- (clxxii) Wind warning:** Squally winds speed reaching 40-50 kmph gusting to 60 kmph would prevail along and off Andhra Pradesh and adjoining north Tamil Nadu coasts during next 36 hours. It will gradually increase becoming 80-90 kmph gusting to 100 kmph during the time of landfall along and off Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu, Puducherry and Nellore and Prakasam districts of Andhra Pradesh.
- (clxxiii) Sea condition:** Sea condition would be rough to very rough along & off Andhra Pradesh and north Tamil Nadu coasts. Sea condition along and off these coasts will become high to phenomenal from 12th December morning.
- (clxxiv) Storm surge :** The tidal wave of about one meter height above the astronomical tide is very likely to inundate the low lying areas of Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore districts of Andhra Pradesh during the time of landfall.
- (clxxv) Damage Expected:** Damage to thatched huts. Minor damage to power & communication lines due to breaking of branches. Major damage to Kutcha and minor damage to Pucca roads. Damage to paddy crops, banana, papaya trees and orchards over Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu; Ongole & Nellore districts of Andhra Pradesh and Puducherry.
- (clxxvi) Action Suggested:** Fishermen are advised not to venture into sea along and off south Andhra Pradesh, north Tamil Nadu and Puducherry coasts during next 36 hrs.
- (clxxvii) Post Landfall Outlook:** (a) Even after landfall, the system is likely to maintain its intensity for 06 Hours and weaken gradually. Under its influence, rains at most places with heavy to very heavy falls at few places likely to continue in Chennai, Thiruvallur & Kanchipuram districts of north Tamil Nadu, Puducherry and Nellore & Prakasam districts of Andhra Pradesh during next 12 hrs after landfall. Winds speed reaching 55-65 kmph gusting to 75 kmph likely to continue over these districts during next 24 hrs after landfall.
(b) As the cyclone moves inland north Interior districts of Tamil Nadu and Rayalaseema may also experience heavy to very heavy rain at isolated places during next 24 hours after land fall and squally winds reaching 40-50 kmph gusting to 60 kmph likely during next 12 hrs after the landfall.
(c) People are advised to remain in safe places and cooperate with state government officials and disaster management agencies.

Next bulletin will be issued at 0830 hrs IST of 12th December 2016

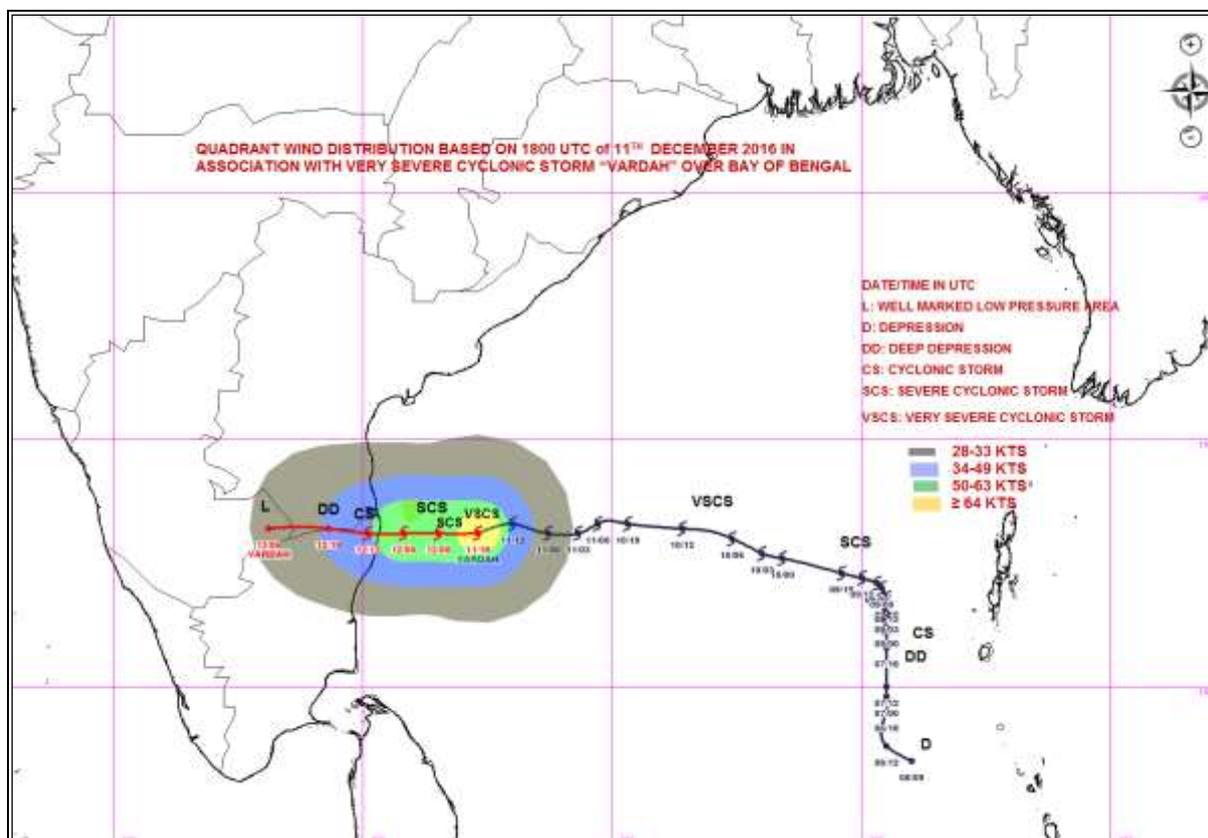
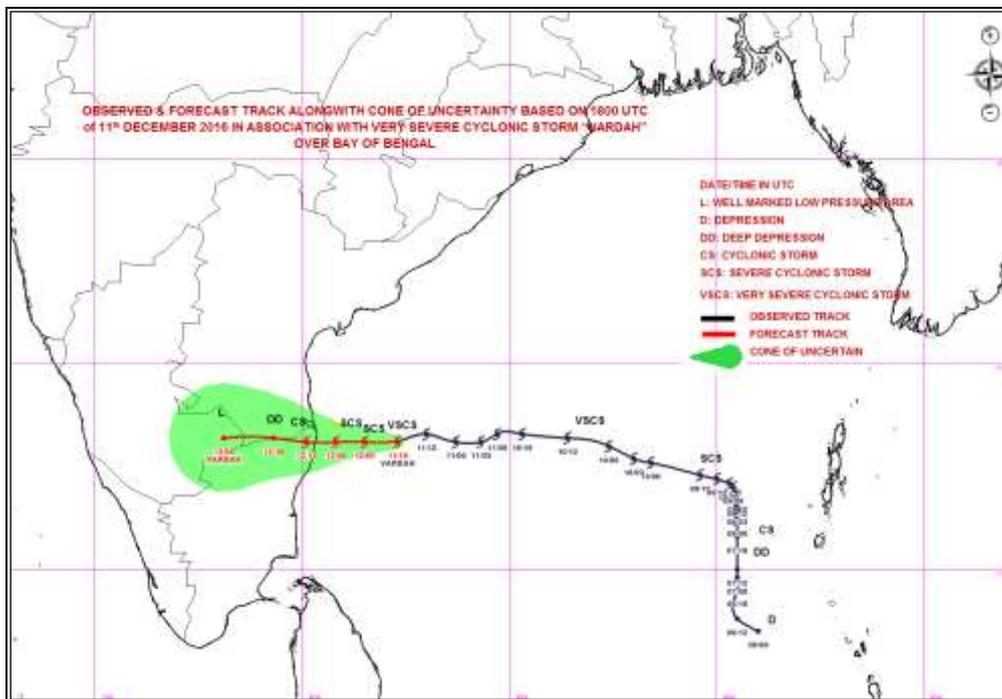
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

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

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Bhubaneswar/MC Hyderabad/MO Port Blair



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
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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.: 41 (BOB 06/2016)

TIME OF ISSUE: 0800 HOURS IST

DATED: 12.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

Sub: Very Severe Cyclonic Storm, VARDHA over westcentral and adjoining southwest Bay of Bengal:

Cyclone Warning for South Andhra Pradesh and north Tamil Nadu Coasts: RED Message

The very severe cyclonic storm, **VARDHA** over westcentral and adjoining southwest Bay of Bengal moved further nearly westwards during past 06 hrs with a speed of 13 kmph and lay centred at 0530 hrs IST of today, the 12th December, 2016 over westcentral & adjoining southwest Bay of Bengal near Latitude 13.2°N and Longitude 81.6°E, about 150 km east-northeast of Chennai and 220 km east-southeast of Nellore. The system is very likely to move nearly westwards and cross north Tamilnadu and south Andhra Pradesh coasts, close to Chennai as a severe cyclonic storm with a wind speed of 100 to 110 kmph gusting to 120 kmph by today, the 12th December 2016 afternoon.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. °N/ long. °E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
12-12-2016/0530	13.2/81.6	120-130 gusting to 140	Very Severe Cyclonic Storm
12-12-2016/1130	13.2/80.8	110-120 gusting to 130	Severe Cyclonic Storm
12-12-2016/1730	13.3/80.1	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/2330	13.3/79.3	65-75 gusting to 85	Cyclonic storm
13-12-2016/0530	13.4/78.5	40-50 gusting to 60	Depression

The very severe cyclonic storm, **VARDHA** is being monitored by Doppler Weather Radar at Chennai apart from Satellite and other observations.

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

Warning:

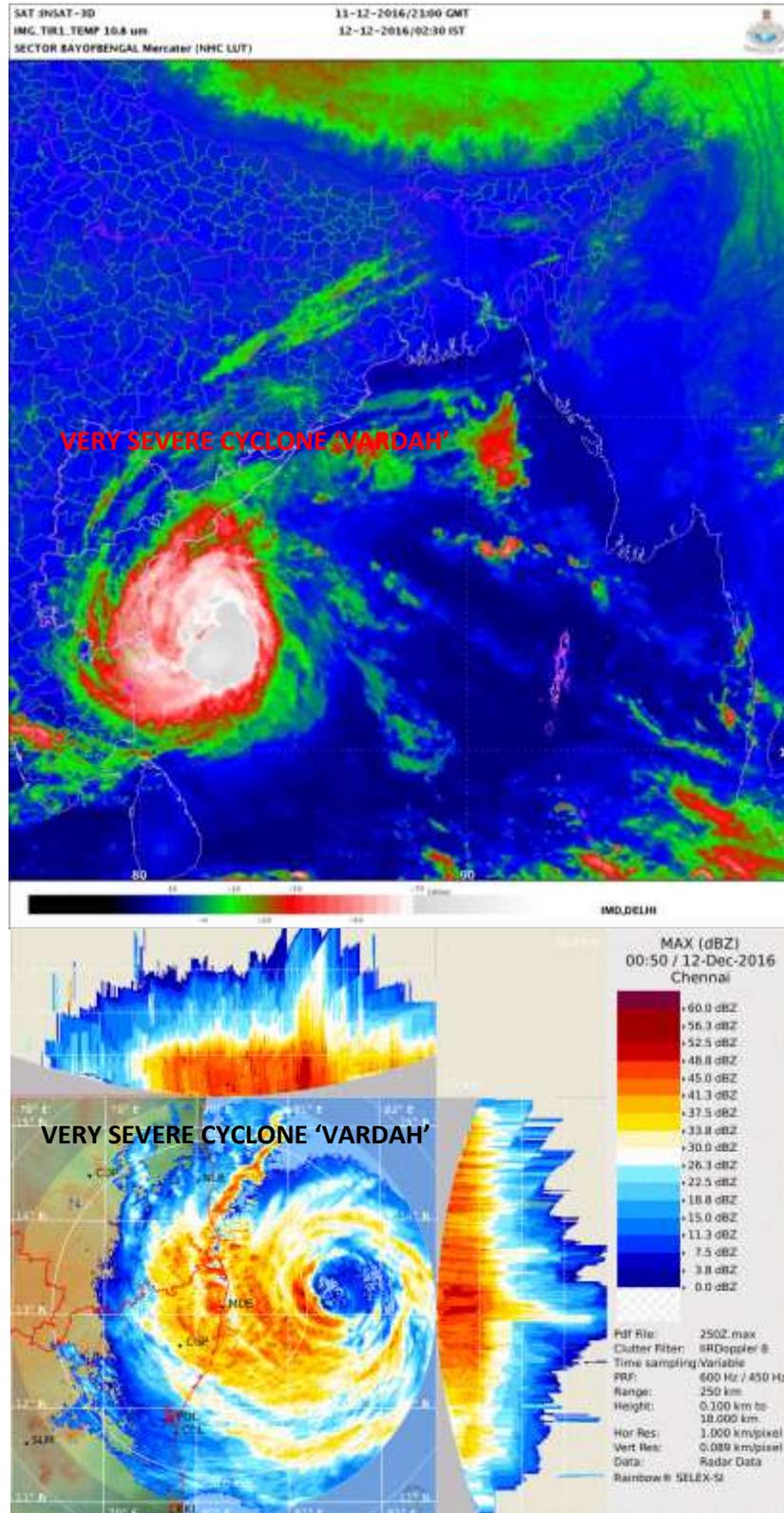
- (clxxviii) **Heavy Rainfall Warning:** Rainfall at most places with isolated heavy to very heavy falls over south coastal Andhra Pradesh, north coastal Tamil Nadu and Puducherry is very likely during 36 hrs. The rainfall intensity will increase gradually becoming heavy to very heavy rainfall (7-19 cm) at a few places and isolated extremely heavy rainfall (≥ 20 cm) over Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore and Prakasam districts of Andhra Pradesh on 12th December
- (clxxix) **Wind warning:** Squally winds speed reaching 50-60 kmph gusting to 70 kmph would prevail along and off Andhra Pradesh and adjoining north Tamil Nadu coasts becoming 100-110 kmph gusting to 120 kmph during the time of landfall along and off Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore and Prakasam districts of Andhra Pradesh.
- (clxxx) **Sea condition:** Sea condition will be high to phenomenal along and off these coasts from 12th December morning.
- (clxxxii) **Storm surge :** The tidal wave of about one meter height above the astronomical tide is very likely to inundate the low lying areas of Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore districts of Andhra Pradesh during the time of landfall.
- (clxxxiii) **Damage Expected:** Damage to thatched huts/houses. Roof tops may blow off. Unattached metal sheets may fly. Minor damage to power & communication lines. Breaking of branches and uprooting of trees. Major damage to Kutchra and damage to Pucca roads. Damage to paddy crops, banana, papaya trees and orchards, Flooding of escape routes over Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu; Ongole & Nellore districts of Andhra Pradesh and Puducherry.
- (clxxxiv) **Action Suggested:** Fishermen are advised not to venture into sea along and off south Andhra Pradesh, north Tamil Nadu and Puducherry coasts during next 24 hrs. Coastal hutment dwellers are advised to move to safer places.
- (clxxxv) **Post Landfall Outlook:**
- (a) Even after landfall, the system is likely to maintain its cyclonic storm intensity for next 06 Hours and weaken gradually thereafter. Under its influence, rains at most places with heavy to very heavy falls at few places likely to continue in Chennai, Thiruvallur & Kanchipuram districts of north Tamil Nadu, Puducherry and Nellore & Prakasam districts of Andhra Pradesh during next 12 hrs after landfall. Winds speed reaching 65-75 kmph gusting to 85 kmph likely to continue over these districts during next 06 hrs after landfall and gradually decrease thereafter.
- (b) As the cyclone moves inland north Interior districts of Tamil Nadu and Rayalaseema may also experience heavy to very heavy rain at isolated places during next 24 hours after land fall and squally winds reaching 40-50 kmph gusting to 60 kmph likely during next 12 hrs after the landfall.
- (c) People are advised to remain in safe places and cooperate with state government officials and disaster management agencies.

Next bulletin will be issued at 1130 hrs IST of 12th December 2016

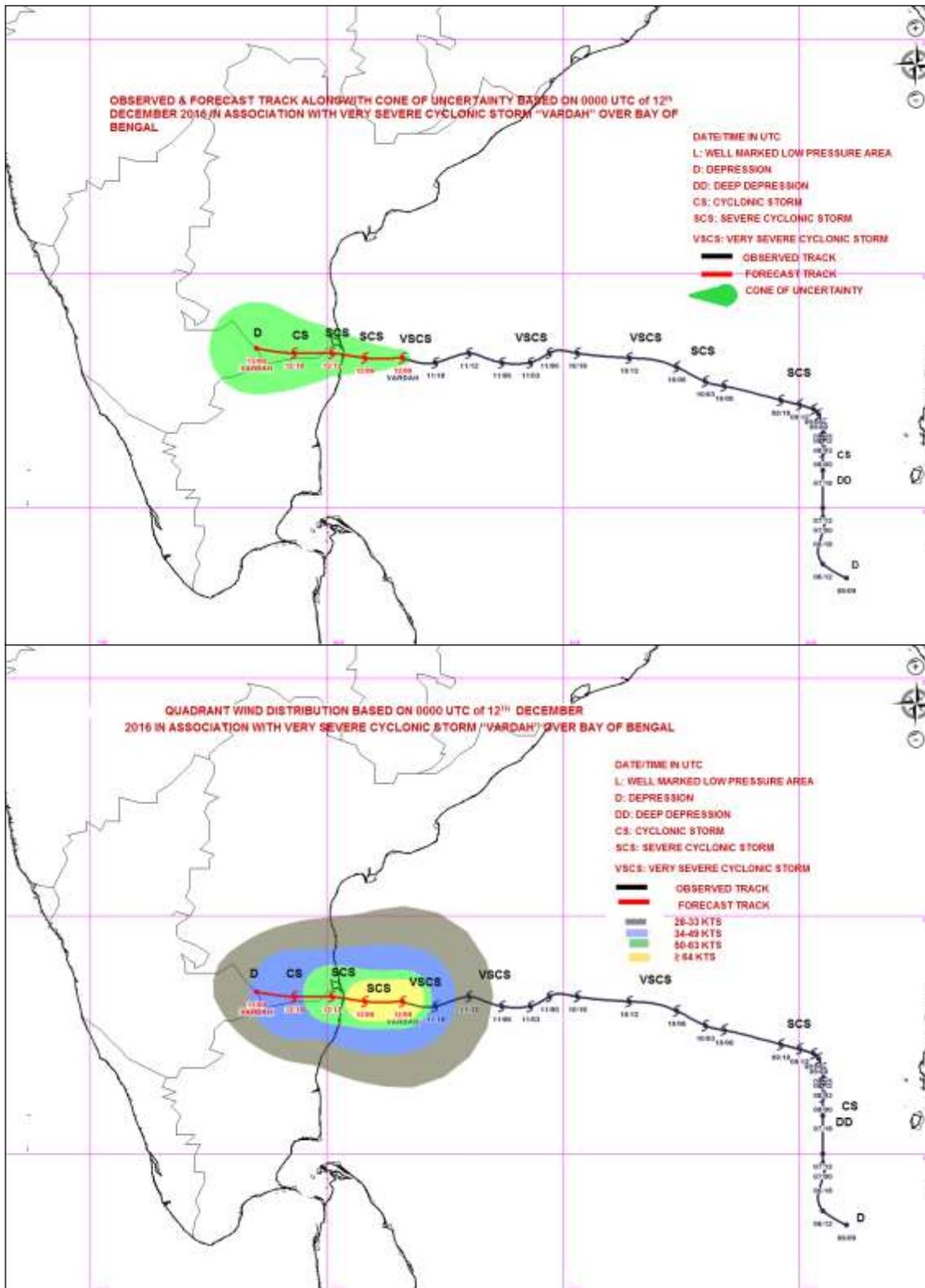
**(D. R. Pattanaik)
Scientist-E**

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC Bhubaneswar/MC Hyderabad/MO Port Blair



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.: 42 (BOB 06/2016)

TIME OF ISSUE: 1000 HOURS IST

DATED: 12.12.2016

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)
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CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

**Sub: Very Severe Cyclonic Storm, VARDHA over westcentral and adjoining southwest Bay of Bengal:
Cyclone Warning for South Andhra Pradesh and north Tamil Nadu Coasts: RED Message**

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Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. °N/ long. °E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
12-12-2016/0830	13.2/81.2	120-130 gusting to 140	Very Severe Cyclonic Storm
12-12-2016/1130	13.2/80.8	110-120 gusting to 130	Severe Cyclonic Storm
12-12-2016/1730	13.3/80.1	100-110 gusting to 120	Severe Cyclonic Storm
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13-12-2016/0530	13.4/78.5	40-50 gusting to 60	Depression

The very severe cyclonic storm, VARDHA is being monitored by Doppler Weather Radar at Chennai apart from Satellite and other observations.

Warning:

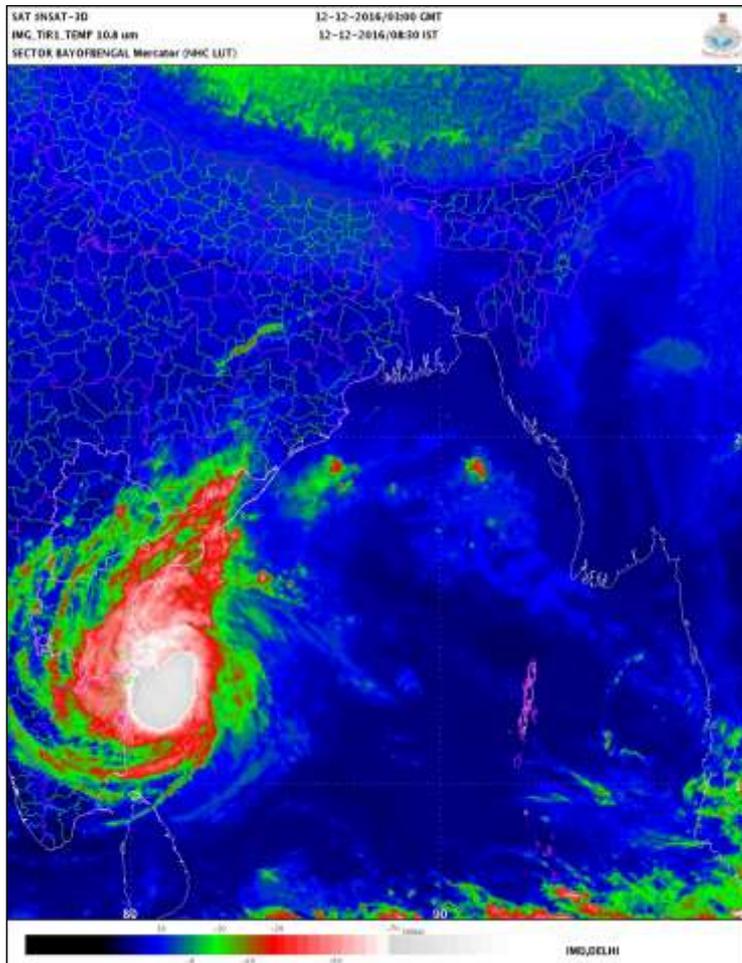
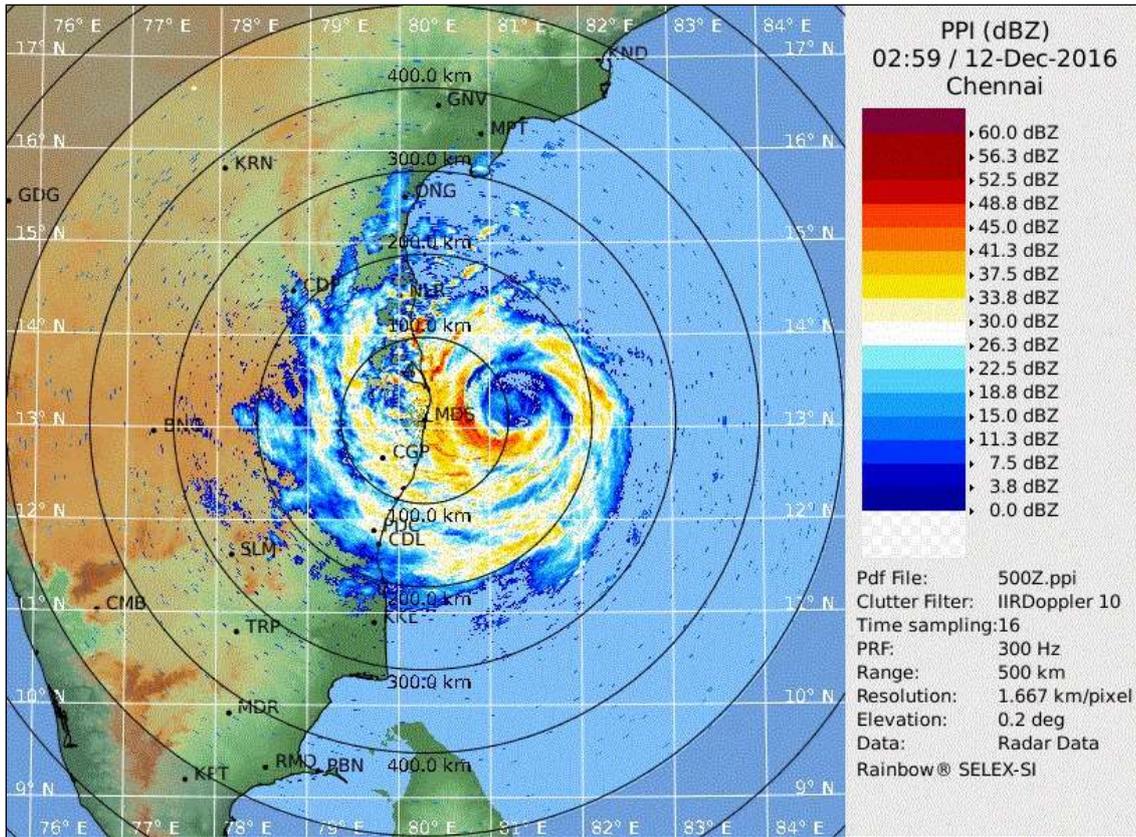
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- (clxxxvi) **Wind warning:** Gale winds speed reaching 100-110 kmph gusting to 120 kmph very likely to prevail during next 12 hours along & off Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore and Prakasam districts of Andhra Pradesh. Squally wind speed reaching 50-60 kmph gusting to 70 kmph very likely to prevail remaining districts of north Tamilnadu & Puducherry and south Andhra Pradesh coasts during the same period.
- (clxxxvii) **Sea condition:** Sea condition will be high to phenomenal along & off Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore and Prakasam districts of Andhra Pradesh during next 12 hours. Sea conditions very likely to very rough over remaining districts of north Tamilnadu & Puducherry and south Andhra Pradesh coasts during the same period.
- (clxxxviii) **Storm surge :** The tidal wave of about one meter height above the astronomical tide is very likely to inundate the low lying areas of Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore districts of Andhra Pradesh during the time of landfall.
- (clxxxix) **Damage Expected:** Damage to thatched huts/houses. Roof tops may blow off. Unattached metal sheets may fly. Minor damage to power & communication lines. Breaking of branches and uprooting of trees. Major damage to Kutcha and damage to Pucca roads. Damage to paddy crops, banana, papaya trees and orchards, Flooding of escape routes over Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu; Ongole & Nellore districts of Andhra Pradesh and Puducherry.
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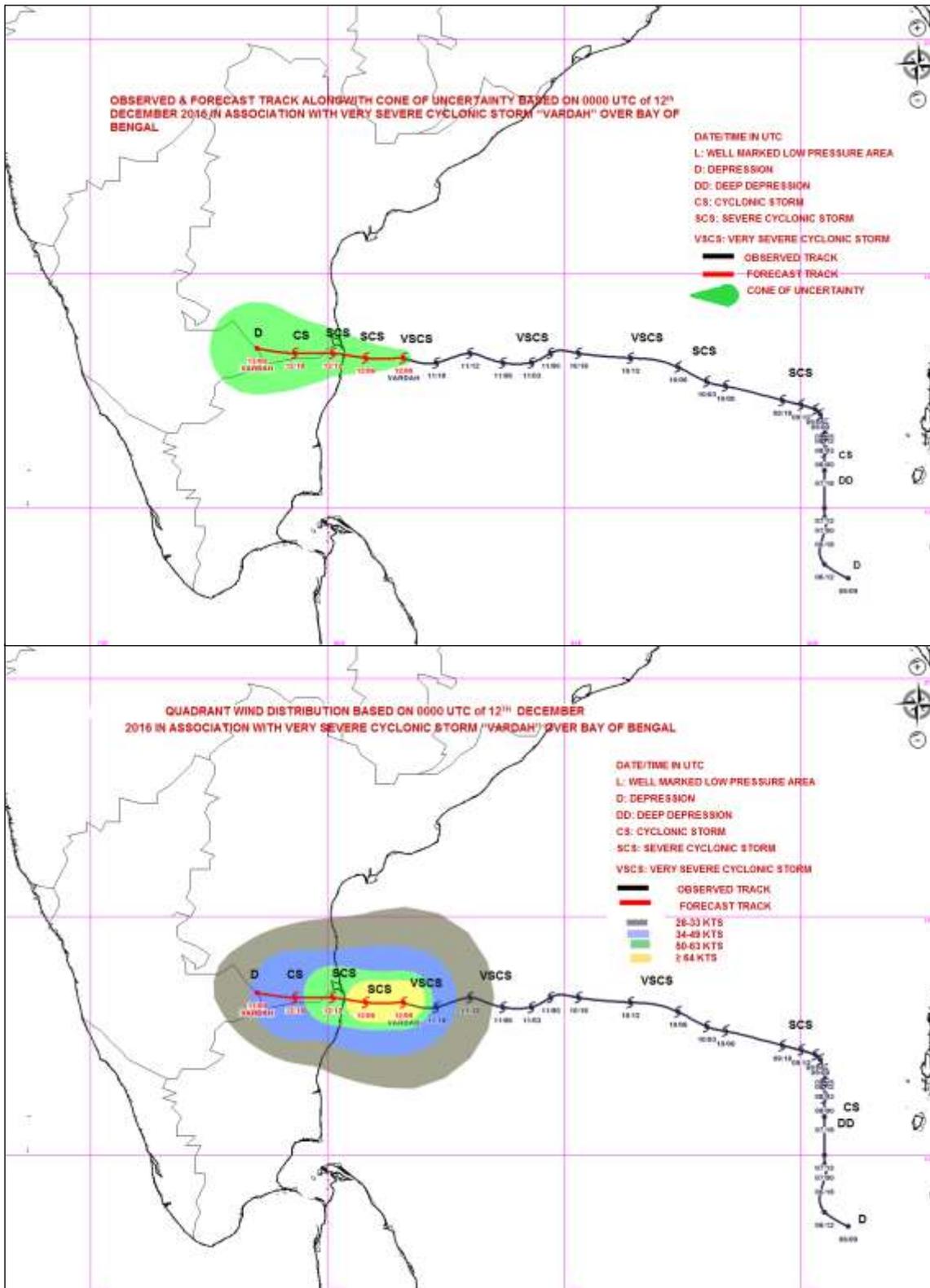
Next bulletin will be issued at 1430 hrs IST of 12th December 2016

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

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC Bhubaneswar/MC Hyderabad/MO Port Blair



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 43 (BOB 06/2016)

TIME OF ISSUE: 1300 HOURS IST

DATED: 12.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

Sub: Very Severe Cyclonic Storm, VARDHA over westcentral & adjoining southwest Bay of Bengal:

Cyclone Warning for South Andhra Pradesh and north Tamil Nadu Coasts: RED Message

The very severe cyclonic storm, **VARDHA** over westcentral & adjoining southwest Bay of Bengal moved further westwards during past 06 hrs with a speed of 16 kmph and lay centred at 1130 hrs IST of today, the 12th December, 2016 over westcentral & adjoining southwest Bay of Bengal near Latitude 13.2°N and Longitude 80.7°E, about 50 km east-northeast of Chennai. The system is very likely to continue to move nearly westwards and cross north Tamilnadu and south Andhra Pradesh coasts, close to Chennai as a severe cyclonic storm with a wind speed of 100 to 110 kmph gusting to 120 kmph by today, the 12th December 2016 afternoon.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. °N/ long. °E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
12-12-2016/1130	13.2/80.7	120-130 gusting to 140	Very Severe Cyclonic Storm
12-12-2016/1730	13.3/80.1	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/2330	13.3/79.3	65-75 gusting to 85	Cyclonic storm
13-12-2016/0530	13.4/78.5	40-50 gusting to 60	Depression

The very severe cyclonic storm, **VARDHA** is being monitored by Doppler Weather Radar at Chennai apart from Satellite and other observations.

Warning:

(cxcii) Heavy Rainfall Warning: Rainfall at most places with isolated heavy to very heavy falls over south coastal Andhra Pradesh, Rayalaseema, north coastal Tamil Nadu and Puducherry is very likely during next 24 hrs. Heavy to very heavy rainfall (7-19 cm) at a few places and

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

Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

isolated extremely heavy rainfall (≥ 20 cm) very likely over Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore and Prakasam districts of Andhra Pradesh during next 24 hours.

(cxciii) Wind warning: Gale winds speed reaching 100-110 kmph gusting to 120 kmph very likely to prevail during next 12 hours along & off Chennai & Thiruvallur districts of Tamil Nadu and Nellore & adjoining areas of Prakasam districts of Andhra Pradesh. Squally wind speed reaching 50-60 kmph gusting to 70 kmph very likely to prevail over remaining districts of north Tamilnadu & Puducherry and south Andhra Pradesh coasts during the same period.

(cxciv) Sea condition: Sea condition will be phenomenal all along the coasts of Chennai, Thiruvallur districts of Tamil Nadu and Nellore & adjoining areas of Prakasam districts of Andhra Pradesh during next 12 hours.

(cxcv) Storm surge : The tidal (storm surge wave of about one meter height above the astronomical tide is very likely to inundate the low lying areas of Chennai and Thiruvallur districts of Tamil Nadu and Nellore districts of Andhra Pradesh associated with landfall.

(cxcvi) Damage Expected:

- Damages to thatched huts/houses.
- Roof tops may blow off.
- Unattached metal sheets may fly.
- Minor damage to power & communication lines.
- Breaking of branches and uprooting of trees.
- Major damage to Kutcha and damage to Pucca roads. Damage to paddy crops, banana, papaya trees and orchards, Flooding of escape routes over Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu & Nellore districts of Andhra Pradesh

(cxcvii) Action Suggested: Fishermen are advised not to venture into sea along & off south Andhra Pradesh, north Tamil Nadu and Puducherry coasts during next 24 hrs. Coastal hutment dwellers are advised to move to safer places.

(cxcviii) Post Landfall Outlook:

(a) Even after landfall, the system is likely to maintain its cyclonic storm intensity for next 06 Hours and weaken gradually thereafter. Under its influence, rains at most places with heavy to very heavy falls at few places very likely to continue in Chennai, Thiruvallur & Kanchipuram districts of north Tamil Nadu, Puducherry and Nellore & Prakasam districts of Andhra Pradesh during next 12 hrs after landfall. Winds speed reaching 65-75 kmph gusting to 85 kmph likely to continue over these districts during next 06 hrs after landfall and gradually decrease thereafter.

(b) As the cyclone moves inland north Interior districts of Tamil Nadu and Rayalaseema may also experience heavy to very heavy rain at isolated places during next 24 hours after land fall and squally winds reaching 40-50 kmph gusting to 60 kmph likely during next 12 hrs after the landfall.

(c) People are advised to remain in safe places and cooperate with state government officials and disaster management agencies.

Next bulletin will be issued at 1730 hrs IST of 12th December 2016

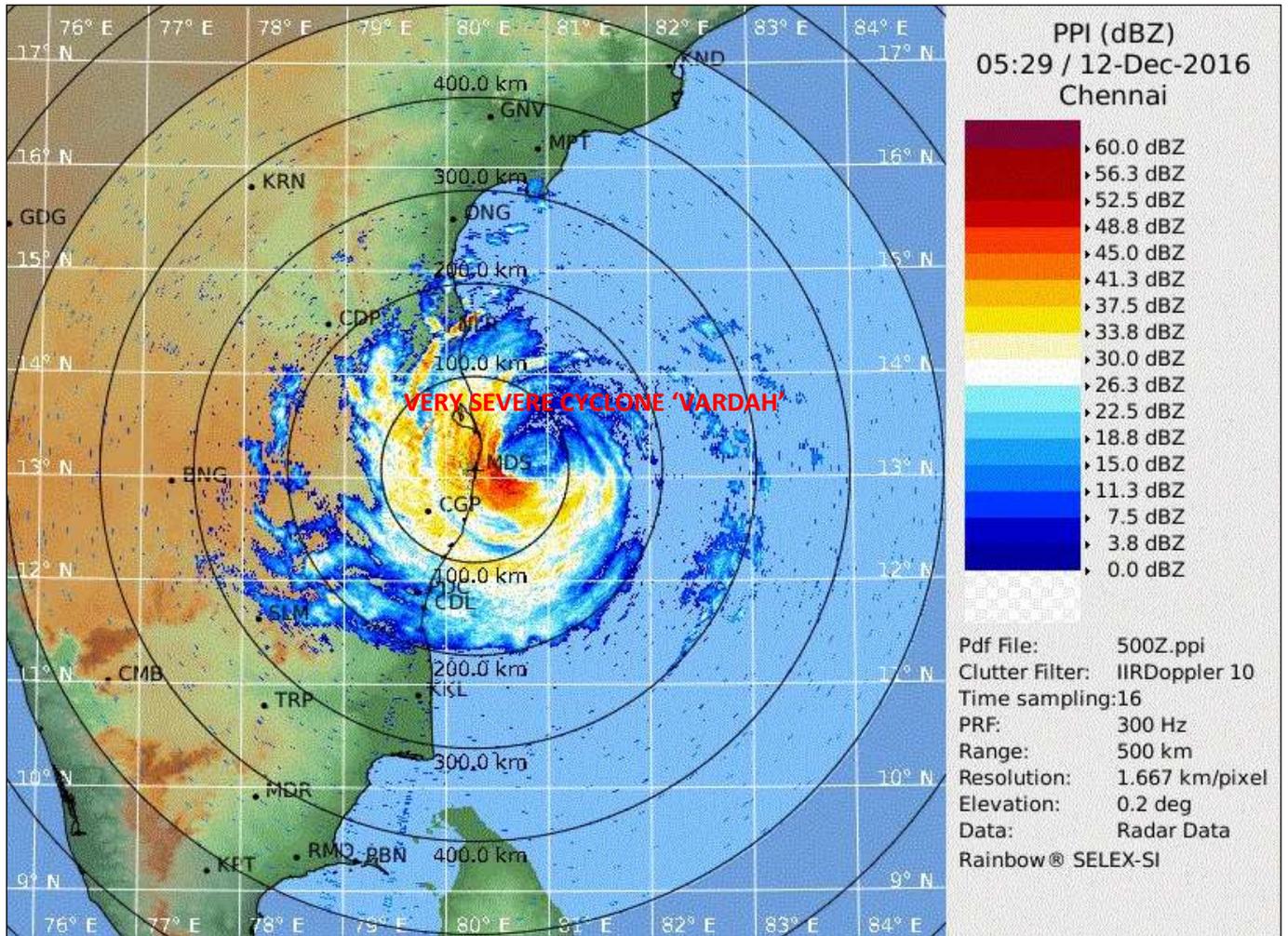
(Naresh Kumar)

Scientist-D, RSMC, New Delhi

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair

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

Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 44 (BOB 06/2016)

TIME OF ISSUE: 1600 HOURS IST

DATED: 12.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

Sub: Very Severe Cyclonic Storm, VARDHA is in process of crossing coast near Chennai

The very severe cyclonic storm, **VARDHA** over westcentral & adjoining southwest Bay of Bengal moved nearly westwards during past 06 hrs with a speed of 16 kmph and lay centred at 1430 hrs IST of today, the 12th December, 2016 over west central & adjoining southwest Bay of Bengal near Latitude 13.1°N and Longitude 80.3°E, close to Chennai coast. Latest observation indicates, it is in the process of crossing the north Tamilnadu coast close to Chennai as a severe cyclonic storm with a wind speed of 100 to 110 kmph gusting to 120 kmph.

The system is very likely to continue to move nearly westwards and weaken gradually into a cyclonic storm during next 06 hours.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. °N/ long. °E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
12-12-2016/1430	13.1/80.3	100-110 gusting to 120	Severe Cyclonic Storm
12-12-2016/1730	13.2/79.9	70-80 gusting to 90	Cyclonic Storm
12-12-2016/2330	13.2/79.1	40-50- gusting to 60	Depression
13-12-2016/0530	13.2/78.3	20-30 gusting to 40	Low

The severe cyclonic storm, **VARDHA** is being monitored by Doppler Weather Radar at Chennai apart from Satellite and other observations.

Warning:

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

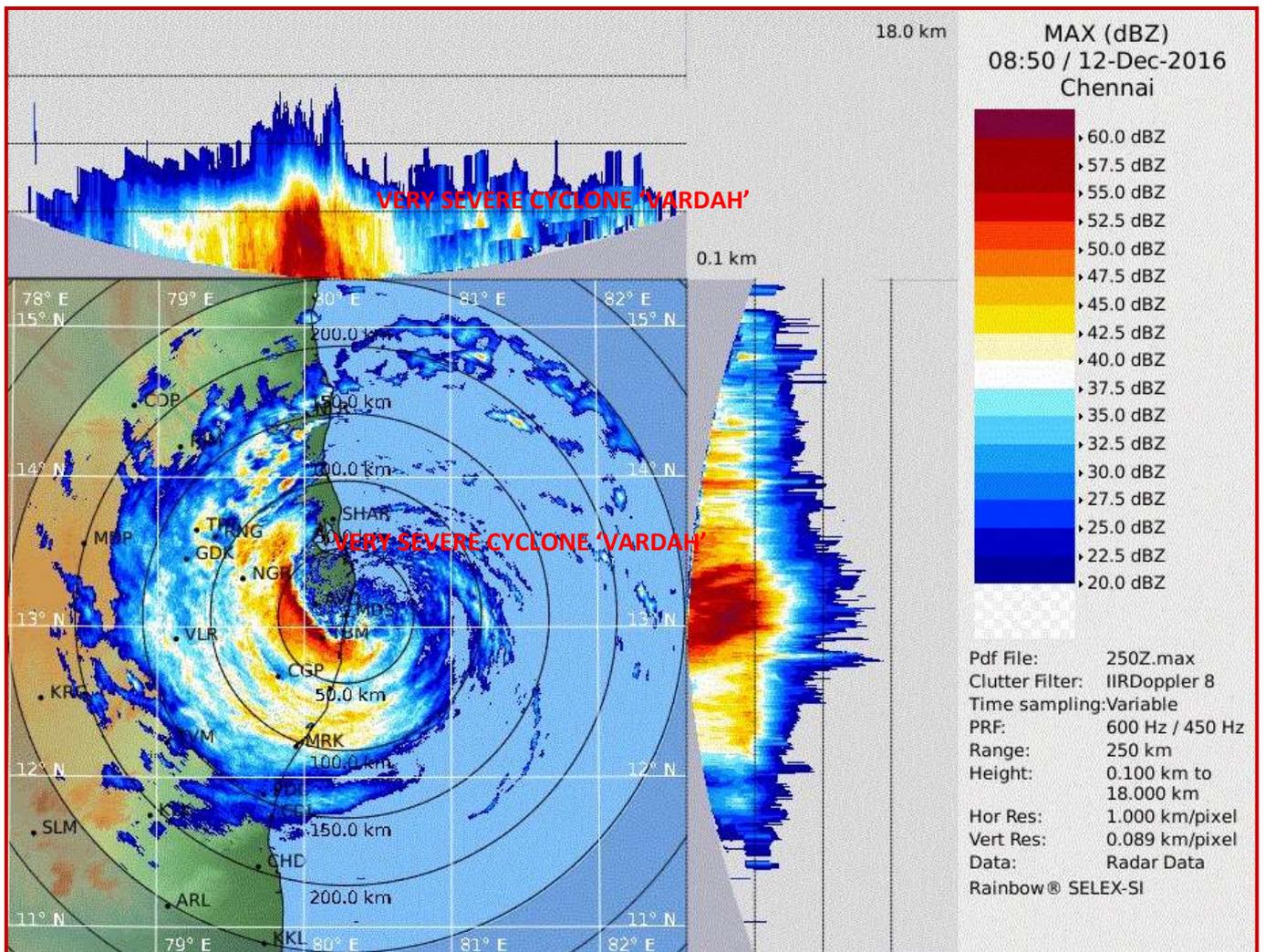
- (cxcix) Heavy Rainfall Warning:** Rainfall at most places with isolated heavy to very heavy falls over south coastal Andhra Pradesh, Rayalaseema, north coastal Tamil Nadu and Puducherry is very likely during next 12 hrs. Heavy to very heavy rainfall (7-19 cm) at a few places and isolated extremely heavy rainfall (≥ 20 cm) very likely over Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu and Nellore and Prakasam districts of Andhra Pradesh during next 12 hours.
- (cc) Wind warning:** Gale winds speed reaching 100-110 kmph gusting to 120 kmph very likely to prevail during next 06 hours along & off Chennai & Thiruvallur districts of Tamil Nadu and Nellore district of Andhra Pradesh. Squally wind speed reaching 50-60 kmph gusting to 70 kmph very likely to prevail over remaining districts of north Tamilnadu & Puducherry and south Andhra Pradesh coasts during the same period.
- (cci) Sea condition:** Sea condition will be phenomenal all along the coasts of Chennai, Thiruvallur districts of Tamil Nadu and Nellore district of Andhra Pradesh during next 06 hours.
- (ccii) Storm surge :** The tidal (storm surge wave of about one meter height above the astronomical tide is very likely to inundate the low lying areas of Chennai and Thiruvallur districts of Tamil Nadu and Nellore districts of Andhra Pradesh associated with landfall.
- (cciii) Damage Expected:**
- Damages to thatched huts/houses.
 - Roof tops may blow off.
 - Unattached metal sheets may fly.
 - Minor damage to power & communication lines.
 - Breaking of branches and uprooting of trees.
 - Major damage to Kutcha and damage to Pucca roads. Damage to paddy crops, banana, papaya trees and orchards, Flooding of escape routes over Chennai, Thiruvallur and Kanchipuram districts of Tamil Nadu & Nellore districts of Andhra Pradesh
- (cciv) Action Suggested:** Fishermen are advised not to venture into sea along & off south Andhra Pradesh, north Tamil Nadu and Puducherry coasts during next 24 hrs. Coastal hutment dwellers are advised to move to safer places.
- (ccv) Post Landfall Outlook:**
- (a)** Even after landfall, the system is likely to maintain its cyclonic storm intensity for next 06 Hours and weaken gradually thereafter. Under its influence, rains at most places with heavy to very heavy falls at few places very likely to continue in Chennai, Thiruvallur & Kanchipuram districts of north Tamil Nadu, Puducherry and Nellore district of Andhra Pradesh during next 12 hrs after landfall. Winds speed reaching 65-75 kmph gusting to 85 kmph likely to continue over these districts during next 06 hrs after landfall and gradually decrease thereafter.
- (b)** As the cyclone moves inland north Interior districts of Tamil Nadu and Rayalaseema may also experience heavy to very heavy rain at isolated places during next 24 hours after land fall and squally winds reaching 40-50 kmph gusting to 60 kmph likely during next 12 hrs after the landfall.
- (c)** People are advised to remain in safe places and cooperate with state government officials and disaster management agencies.

Next bulletin will be issued at 2030 hrs IST of 12th December 2016

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

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 45 (BOB 06/2016)

TIME OF ISSUE: 1930 HOURS IST

DATED: 12.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

Sub: Severe Cyclonic Storm, VARDHA crossed north Tamil Nadu coast close to Chennai between 1500-1700 hrs IST of today the 12th December

The Severe Cyclonic Storm, **VARDHA** over west central & adjoining southwest Bay of Bengal, close to Chennai coast moved nearly westwards during past 06 hrs with a speed of 15 kmph, crossed north Tamil Nadu Coast close to Chennai between 1500-1700 Hrs IST of today, the 12th December as a Severe Cyclonic Storm with maximum sustained surface wind speed of 100-110 Kmph gusting to 120 Kmph. It lay centred at 1730 hrs IST of today, the 12th December, 2016 near Latitude 13.0°N and Longitude 79.9°E, 40 km west of Chennai.

The system is very likely to continue to move nearly westwards, weaken gradually into a cyclonic storm during next three hours and further into a deep depression during subsequent six hours.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. °N/ long. °E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
12-12-2016/1730	13.0/79.9	85-95 gusting to 105	Severe Cyclonic Storm
12-12-2016/2330	12.9/79.1	50-60 gusting to 70	Deep Depression
13-12-2016/0530	12.8/78.3	35-45 gusting to 55	Depression

Warning:

(ccvi) Heavy Rainfall Warning: Rainfall at most places with isolated heavy to very heavy falls over south coastal Andhra Pradesh, Rayalaseema, north Tamil Nadu and Puducherry is very likely during next 24 hrs.

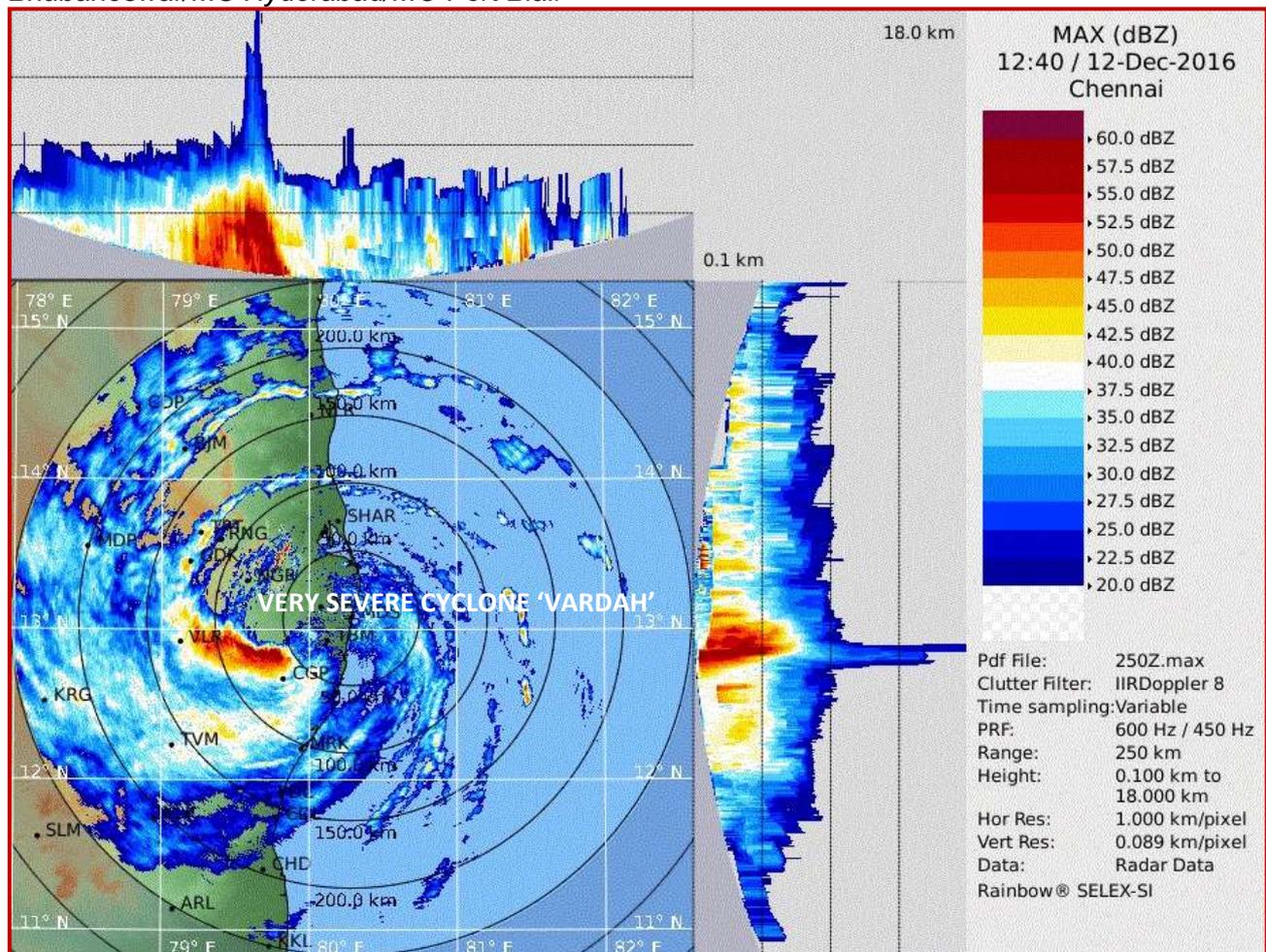
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

- (ccvii) **Wind warning:** Gale winds speed reaching 70-80 kmph gusting to 90 kmph very likely to prevail during next three hours along & off Chennai & Thiruvallur districts of Tamil Nadu and adjoining Nellore district of Andhra Pradesh. Wind speed will gradually decrease after three hours becoming 25-35 kmph gusting to 45 kmph by tomorrow morning.
- (ccviii) **Sea condition:** Sea condition will be high all along the coasts of Chennai, Thiruvallur districts of Tamil Nadu and Nellore district of Andhra Pradesh during next three hours. It will gradually become moderate by tomorrow morning.
- (ccix) **Damage Expected:** Damage to thatched huts. Minor damage to power & communication lines due to breaking of branches. Major damage to Kutcha and minor damage to Pucca roads. Damage to paddy crops, banana, papaya trees and orchards over Chennai & Thiruvallur districts of Tamil Nadu and adjoining areas of Nellore district of Andhra Pradesh.
- (ccx) **Action Suggested:** Fishermen are advised not to venture into sea along & off south Andhra Pradesh, north Tamil Nadu and Puducherry coasts during next 12 hours.

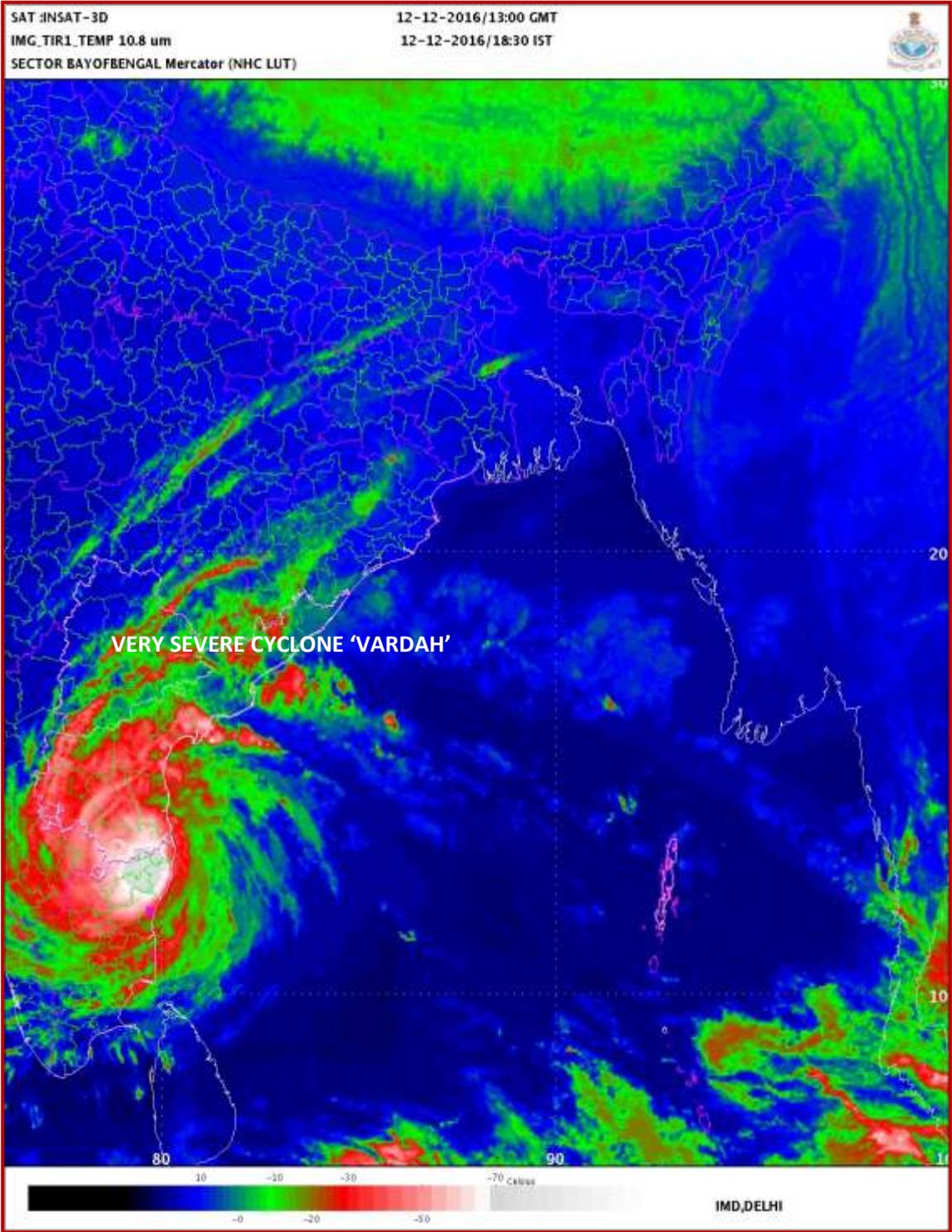
Next bulletin will be issued at 2330 hrs IST of 12th December 2016

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

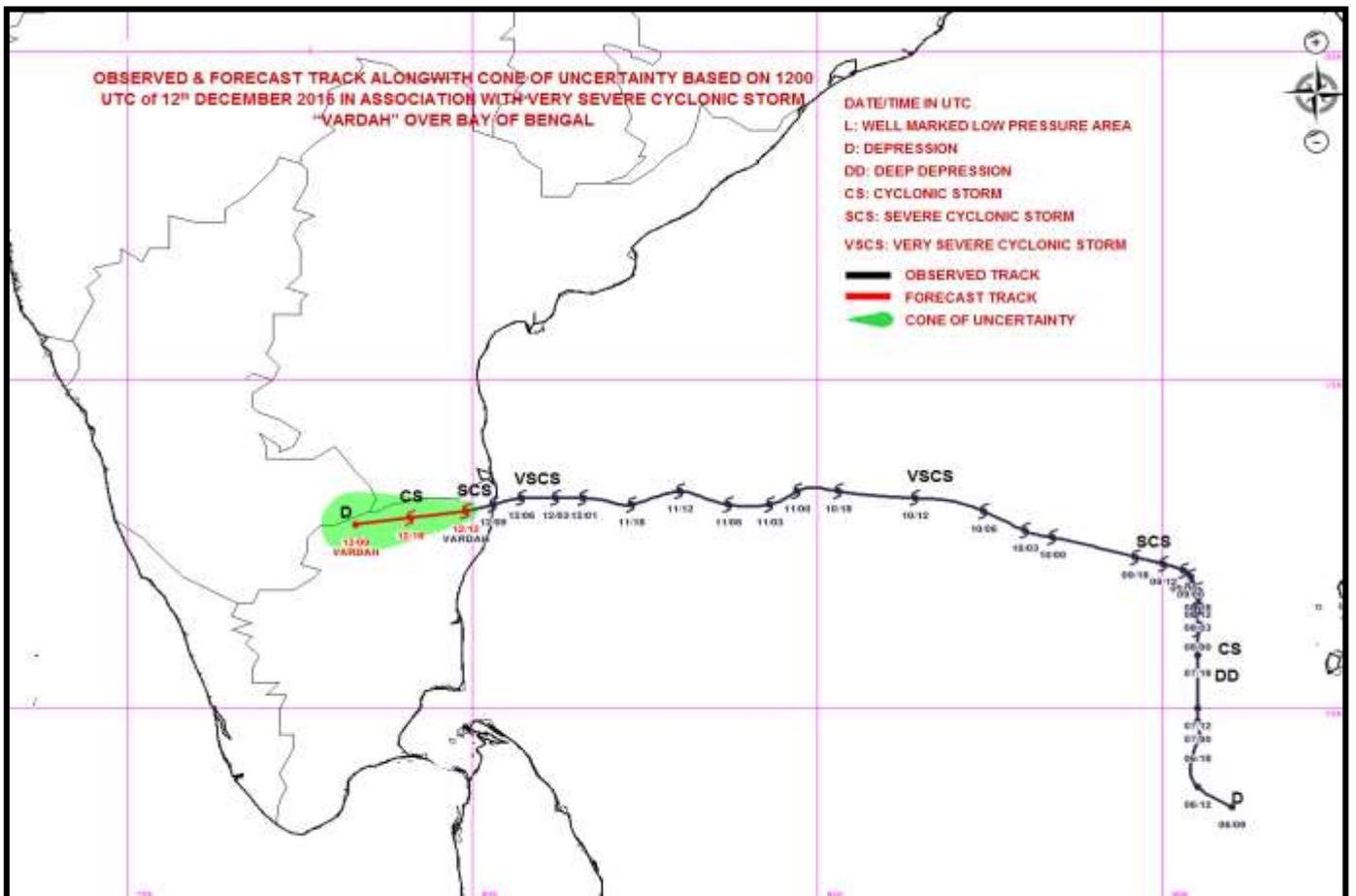
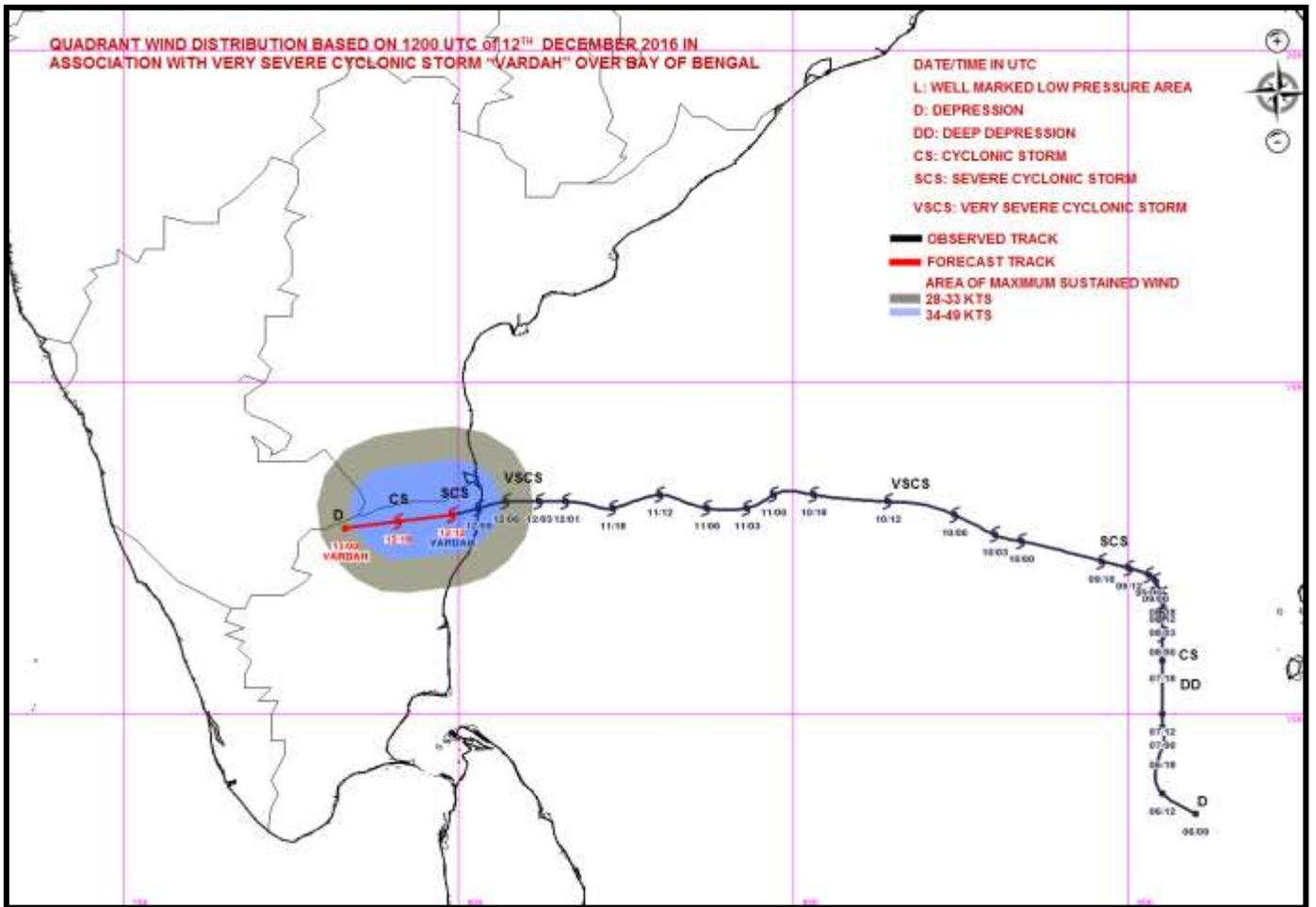
Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC Bhubaneswar/MC Hyderabad/MO Port Blair



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 46 (BOB 06/2016)

**TIME OF ISSUE: 2230 HOURS IST
12.12.2016**

DATED:

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)**

Sub: Cyclonic Storm, VARDHAH over north Tamil Nadu

The Severe Cyclonic Storm, **VARDHAH** over coastal Tamil Nadu moved nearly westwards during past 06 hrs with a speed of 15 kmph, weakened into a cyclonic storm and lay centred at 2030 hrs IST of today, the 12th December, 2016 near Latitude 12.9°N and Longitude 79.5°E over north Tamil Nadu, about 40 km east of Vellore and 80 km west-southwest of Chennai.

The system is very likely to continue to move nearly westwards, weaken gradually into a deep depression during next three hours and further into a depression during subsequent six hours.

Forecast track and intensity of the system are given in the table below:

Date/time(IST)	Position (lat. °N/ long. °E)	Maximum sustained surface wind speed (kmph)	Category of cyclonic Disturbance
12-12-2016/2030	12.9/79.5	60-70 gusting to 80	Cyclonic Storm
12-12-2016/2330	12.9/79.1	50-60 gusting to 70	Deep Depression
13-12-2016/0530	12.8/78.3	35-45 gusting to 55	Depression

Warning:

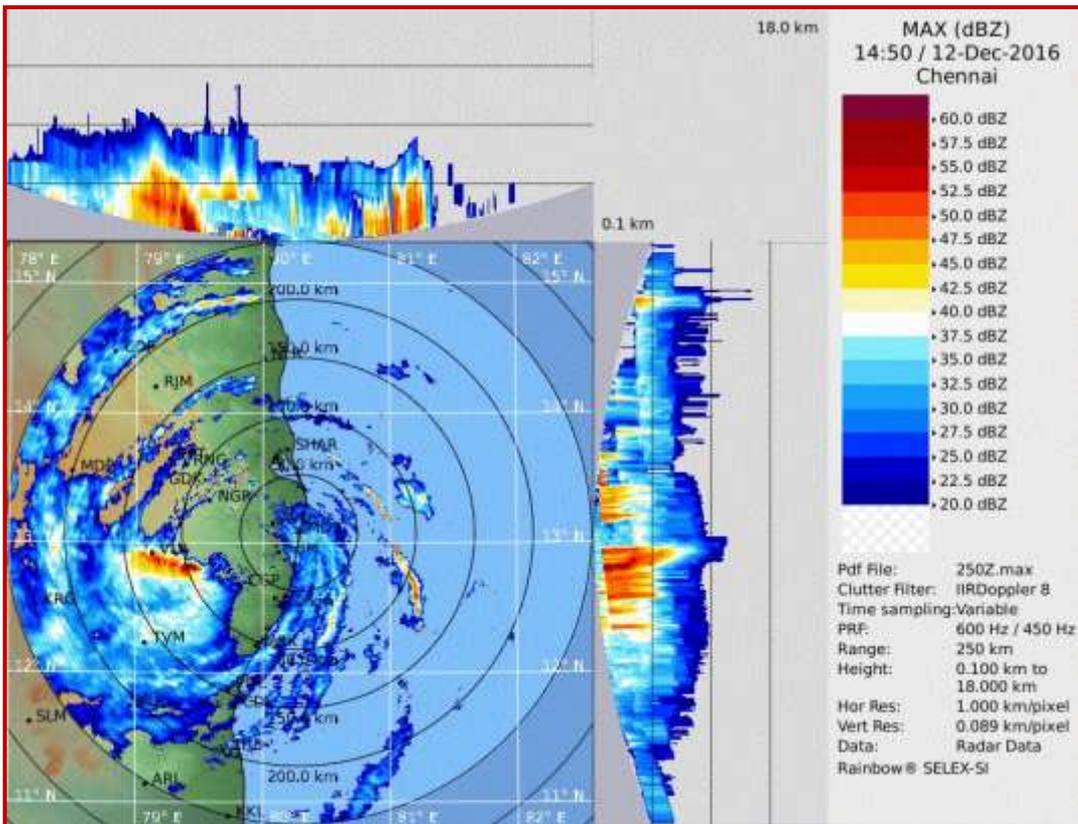
(ccxi) Heavy Rainfall Warning: Rainfall at most places with isolated heavy to very heavy falls over south coastal Andhra Pradesh, Rayalaseema and north Tamil Nadu & Puducherry is very likely during next 12 hrs.

(ccxii) Wind warning: Gale winds speed reaching 60-70 kmph gusting to 80 kmph very likely to prevail during next three hours around the system centre over north Tamil Nadu. Wind speed will gradually decrease after three hours becoming 45-55 kmph gusting to 65 kmph for subsequent six hours.

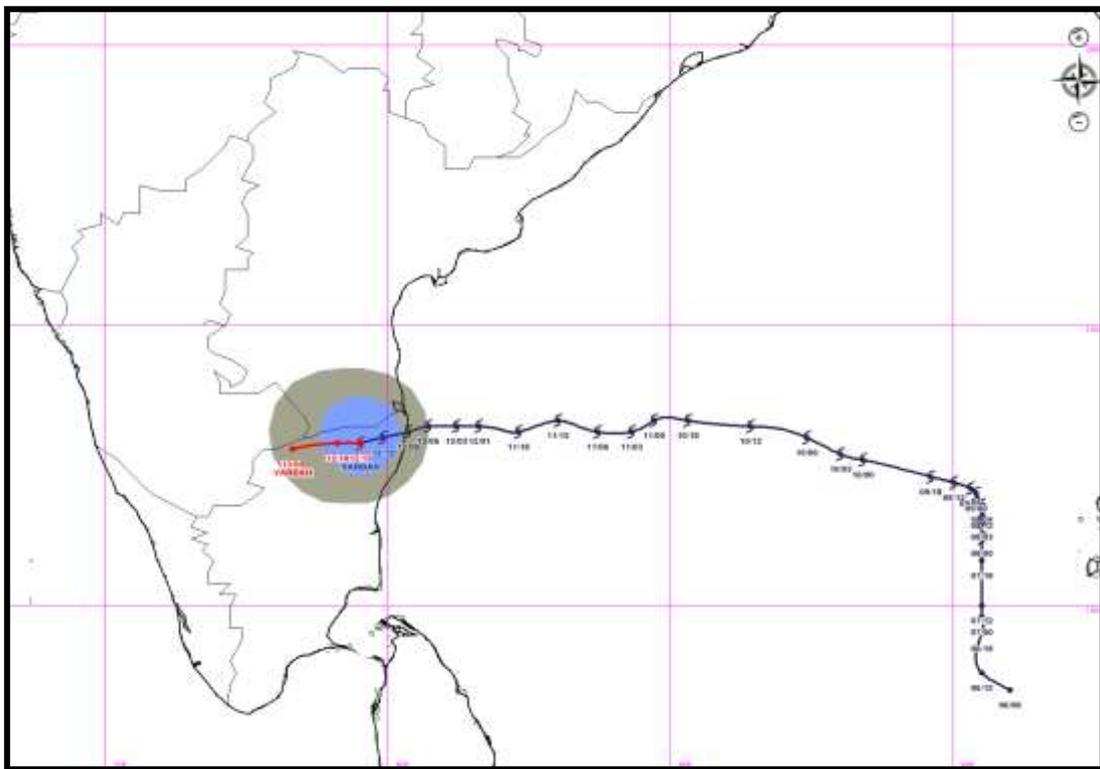
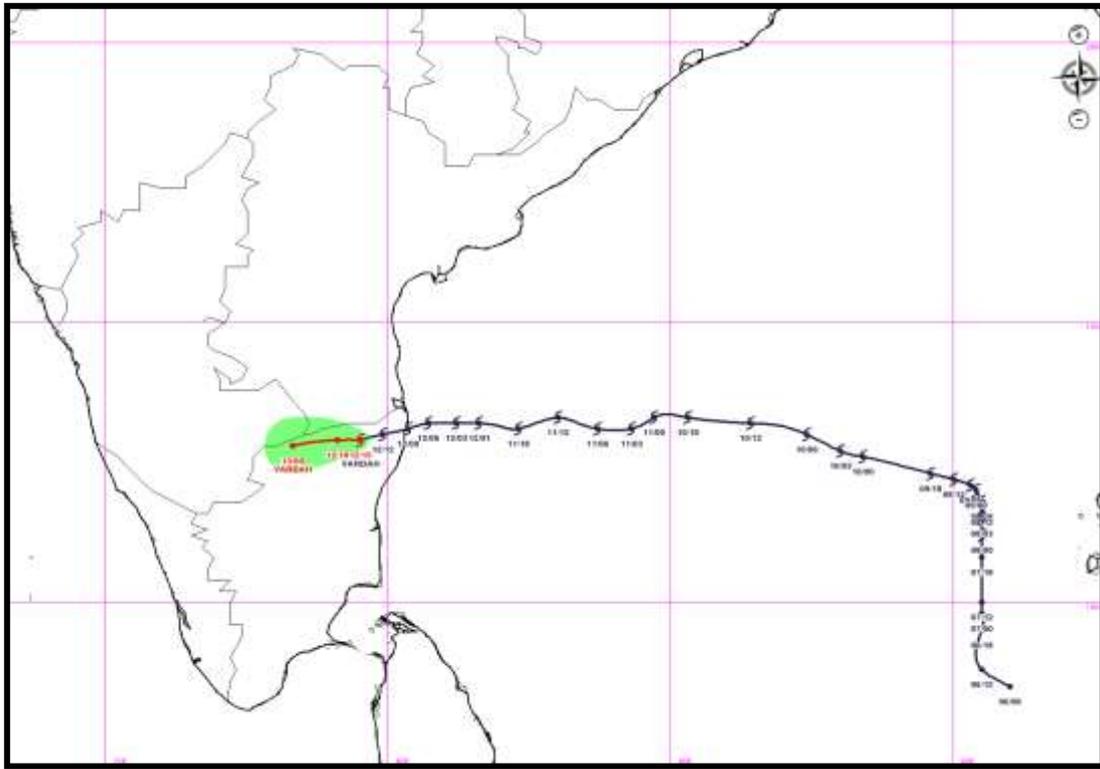
Next bulletin will be issued at 0230 hrs IST of 13th December 2016

**(Naresh Kumar)
Scientist-D, 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 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 47 (BOB 06/2016)

TIME OF ISSUE: 0230 HOURS IST

DATED: 13.12.2016

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.23793144)
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SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
PIB MOES (FAX NO. 23389042)
UNI (FAX NO. 23355841)
D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
DIRECTOR OF PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)

Sub: The Cyclonic Storm, VARDHAH weakened into a Deep Depression

The Cyclonic Storm, **VARDHAH** over north Tamil Nadu moved west-southwestwards during past 06 hrs with a speed of 15 kmph, weakened into a deep depression and lay centred at 2330 hrs IST of today, the 12th December, 2016, over north interior Tamil Nadu near Latitude 12.7°N and Longitude 79.1°E, about 25 km southeast of Vellore and 60 km east-northeast of Tiruppattur.

The system is very likely to continue to move nearly west-southwestwards and weaken gradually into a depression during next twelve hours.

Warning:

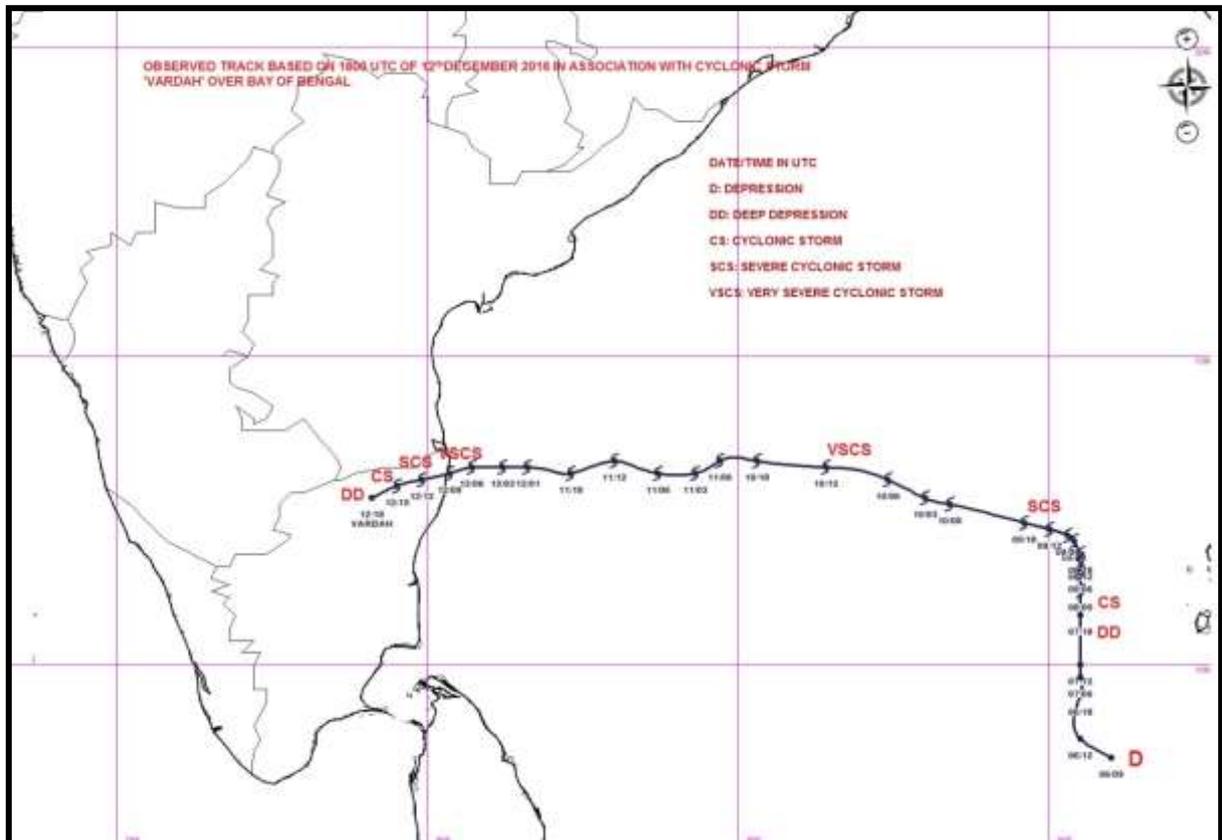
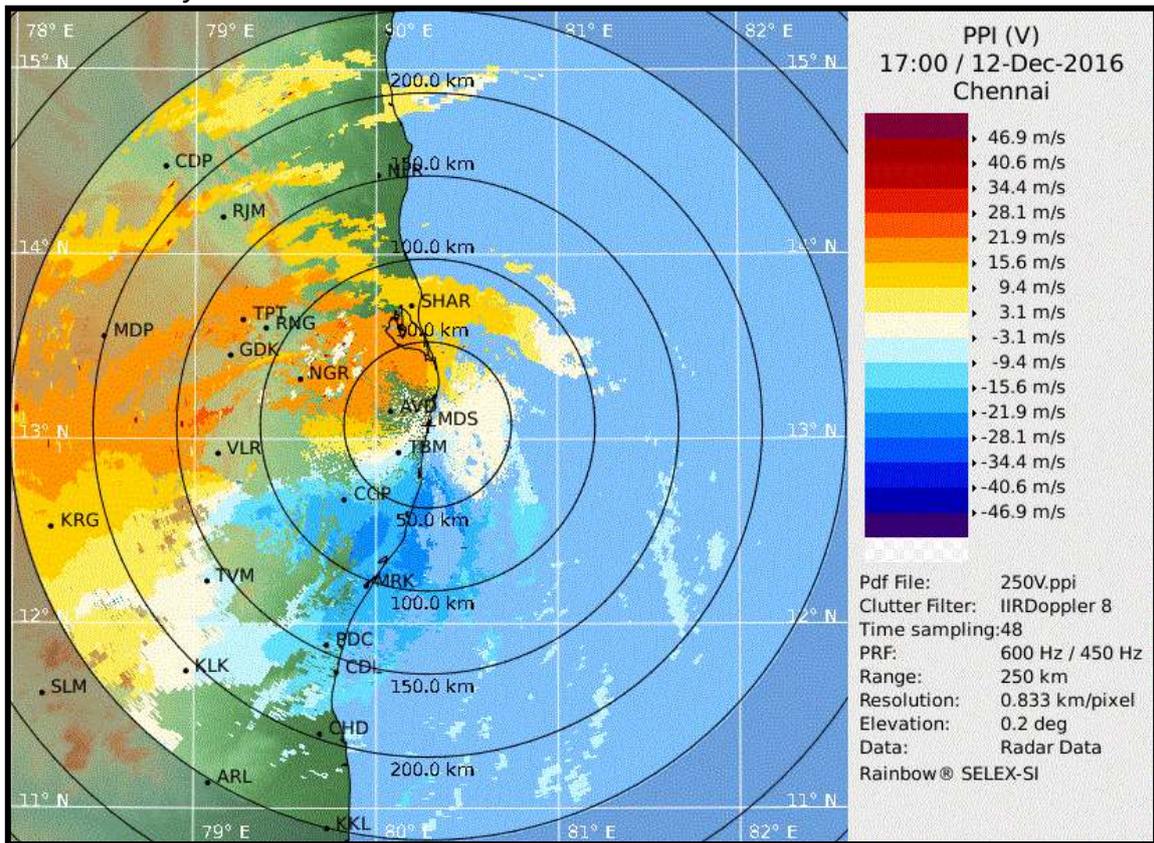
(ccxiii) Heavy Rainfall Warning: Rainfall at most places with isolated heavy to very heavy falls over north Tamil Nadu is very likely during next 24 hrs and rainfall at many places with isolated heavy falls is likely over Nellore, Kadapa and Chittoor districts of Andhra Pradesh during next 12 hrs.

(ccxiv) **Wind warning:** Squally winds speed reaching 40-50 kmph gusting to 60 kmph very likely to prevail during next six hours around the system centre over north Tamil Nadu. Wind speed gradually decrease thereafter.

Next bulletin will be issued at 0830 hrs IST of 13th December 2016

(Shobhit Katiyar)
Scientist-B, 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 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



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

BULLETIN NO.: 48 (BOB 06/2016)

TIME OF ISSUE: 0830 HOURS IST

DATED: 13.12.2016

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.23793144)
PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)
PS TO HON'BLE MINISTER OF STATE FOR S & T AND EARTH SCIENCES (FAX NO.24669707)
SECRETARY, MOES, (FAX NO. 24629777)
SECRETARY, DST (FAX NO. 26863847/-2418)
H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
DIRECTOR GENERAL, AIR (25843825)
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D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912)
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CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH (FAX NO. 040-23453700)
CHIEF SECRETARY, GOVT. OF PUDUCHERRY (FAX NO. 0413-2337575)
CHIEF SECRETARY, GOVT. OF TELENGANA (040-23453700)
CHIEF SECRETARY, GOVT. OF TAMILNADU (FAX NO.044-25672304)

Sub: The Deep Depression over north Tamil Nadu weakened into a Depression

The Deep Depression over north Tamil Nadu moved further west-southwestwards during past 06 hrs with a speed of 20 kmph, weakened into a depression and lay centred at 0530 hrs IST of today, the 13th December, 2016, over north interior Tamil Nadu near Latitude 12.5°N and Longitude 78.0°E, about 50 km west of Tiruppattur and 40 km north of Dharmapuri.

The system is very likely to continue to move west-sothwestwards and weaken gradually into a well marked low pressure area during next six hours.

Warning:

(ccv) **Heavy Rainfall Warning:** Rainfall at many places with isolated heavy falls over north Tamil Nadu and adjoining areas of south interior Karnataka is very likely during next 12 hrs.

Next bulletin will be issued at 1130 hrs IST of 13th December 2016

(Shobhit Katiyar)
Scientist-B, RSMC, New Delhi

Copy to: DFDD, Pune/ACWC Kolkata /ACWC Chennai/CWC Vishakhapatnam/CWC
Bhubaneswar/MC Hyderabad/MO Port Blair

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.

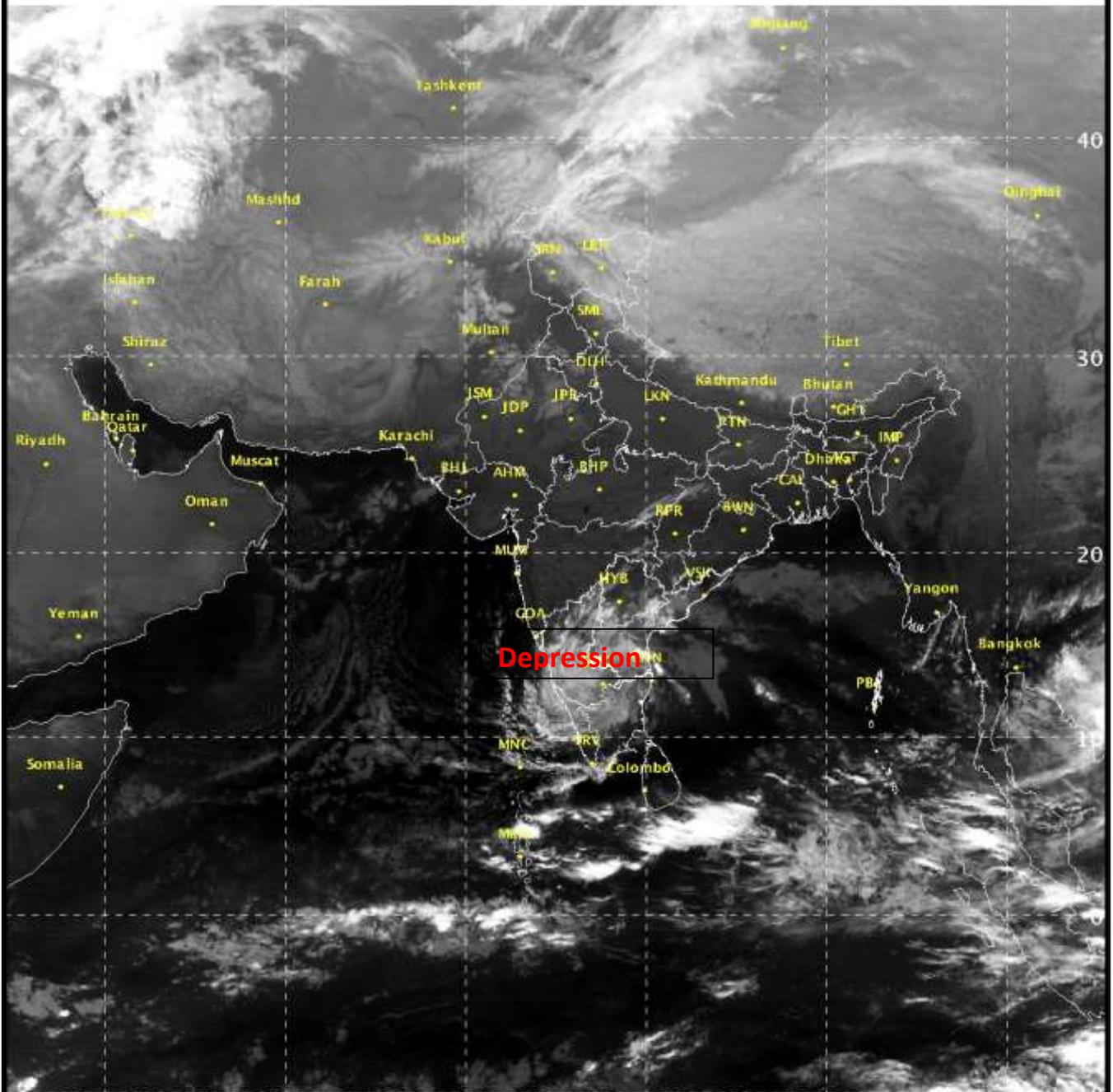
SAT :INSAT-3D IMG

IMG_TIR2 12.0 um

LIC Mercator (LINEAR STRETCH: 1.0%)

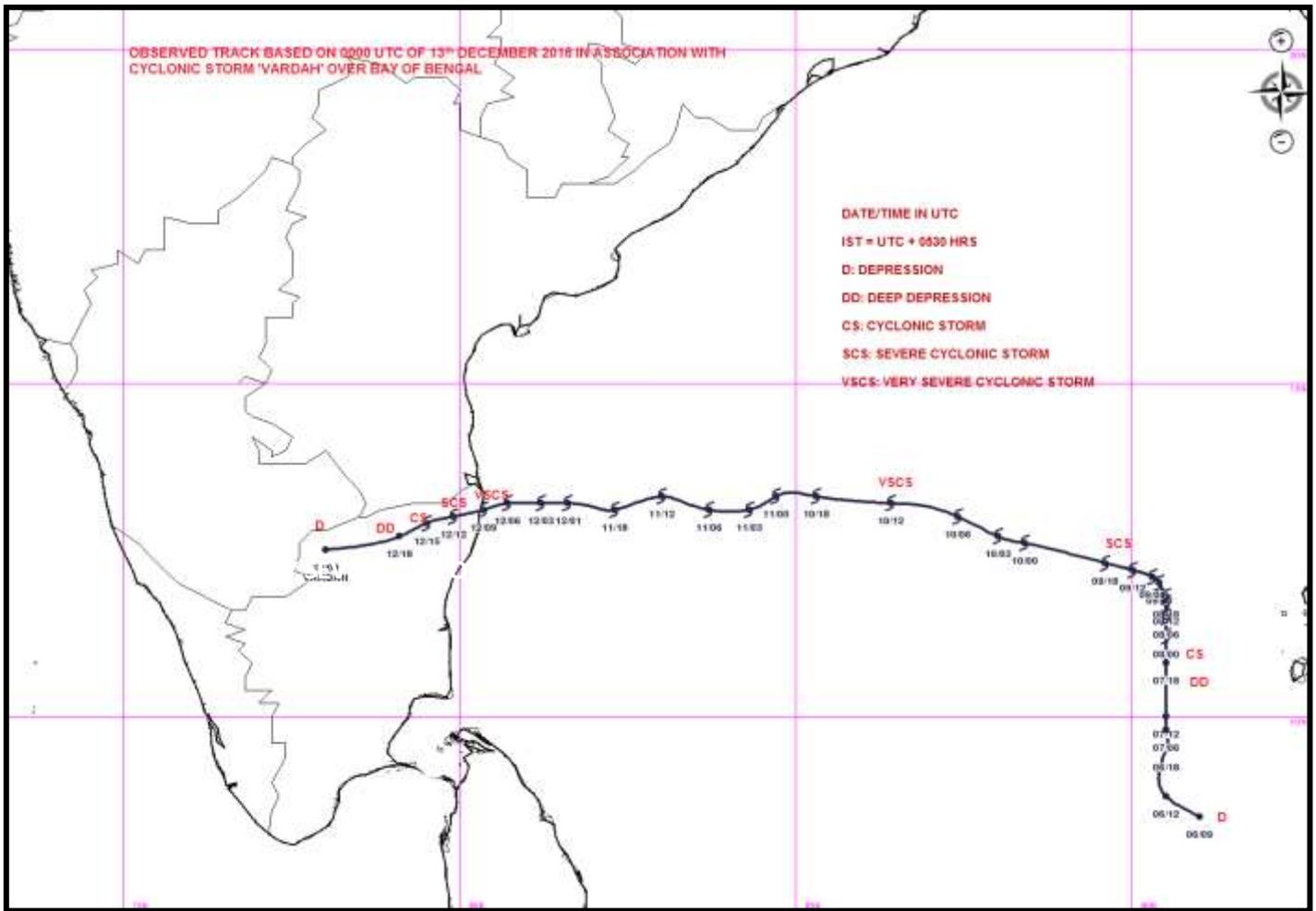
13-12-2016/02:00 GMT

13-12-2016/07:30 IST



IMD/Delhi

Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.



Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 124.4, Very heavy rain: 124.5 – 200.4, Extremely heavy rain: 200.5 or more.