



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

BULLETIN NO.: 25 (BAY OF BENGAL 01/2020)

TIME OF ISSUE: 0815 HOURS IST

DATED: 19.05.2020

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**Sub: Super Cyclonic Storm 'AMPHAN' (pronounced as UM-PUN) over Westcentral Bay of Bengal: Cyclone Warning for West Bengal and north Odisha coasts: Orange Message.**

The **Super Cyclonic Storm 'AMPHAN'** (pronounced as **UM-PUN**) over Westcentral and adjoining Eastcentral Bay of Bengal moved north-northeastwards with a speed of 14 kmph during past 06 hours and lay centred at 0530 hrs IST of 19<sup>th</sup> May, 2020 near latitude 15.6°N and longitude 86.7°E over **Westcentral Bay of Bengal** about 520 km nearly south of Paradip (Odisha), 670 km south-southwest of Digha (West Bengal) and 800 km south-southwest of Khepupara (Bangladesh).

It is very likely to move north-northeastwards across northwest Bay of Bengal and cross West Bengal – Bangladesh coasts between Digha (West Bengal) and Hatiya Islands (Bangladesh) close to Sundarbans during the Afternoon / Evening of 20<sup>th</sup> May 2020 with maximum sustained wind speed of 155-165 kmph gusting to 185 kmph.

The super cyclone 'AMPHAN' is now being continuously tracked by the Doppler Weather Radar (DWR) at Vishakhapatnam (Andhra Pradesh).

Forecast track and intensity are given in the following table:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
19.05.20/0530	15.6/86.7	225-235 gusting to 255	Super Cyclonic Storm
19.05.20/1130	16.8/87.0	200-210 gusting to 230	Extremely Severe Cyclonic Storm
19.05.20/1730	17.4/87.1	190-200 gusting to 220	Extremely Severe Cyclonic Storm
19.05.20/2330	18.3/87.4	180-190 gusting to 210	Extremely Severe Cyclonic Storm
20.05.20/0530	19.6/87.8	170-180 gusting to 200	Extremely Severe Cyclonic Storm
20.05.20/1730	21.7/88.4	145-155 gusting to 170	Very Severe Cyclonic Storm
21.05.20/0530	23.8/89.1	60-70 gusting to 80	Cyclone
21.05.20/1730	25.9/89.9	40-50 gusting to 60	Depression

**(1) Heavy rainfall Warning:**

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

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

## Odisha

The light to moderate rainfall is very likely at most places of coastal Odisha with heavy rainfall at a few places over north coastal Odisha (Jagatsinghpur, Kendrapara, Jajpur, Balasore, Bhadrak & Mayurbhanj Districts) and isolated heavy to very heavy falls over Khordha & Puri districts on 19<sup>th</sup> May and isolated heavy rainfall over north Odisha (Bhadrak, Balasore, Mayurbhanj, Jajpur, Kendrapara and Keonjhar Districts) on 20<sup>th</sup> May 2020.

## West Bengal

Coastal districts of Gangetic West Bengal (East Medinipur, South & North 24 Parganas) are likely to experience light to moderate rainfall at many places on 19<sup>th</sup> May. Rainfall at most places with heavy to very heavy falls at a few places & extremely heavy falls at isolated places likely over Gangetic West Bengal (east & west Medinipur, south & north 24 Parganas, Howrah, Hoogli, Kolkata and adjoining districts) on 20<sup>th</sup> May and isolated heavy rain over interior districts on 21<sup>st</sup> May, 2020.

## Sub-Himalayan West Bengal and Sikkim

Light to moderate rainfall at most places with heavy to very heavy falls at a few places over Malda & Dinajpur districts on 20<sup>th</sup> May and over most of the districts of Sub-Himalayan West Bengal & Sikkim on 21<sup>st</sup> May, 2020.

## Assam & Meghalaya

Light to moderate rainfall at most places with heavy to very heavy falls at a few places over the western districts of Assam & Meghalaya on 21<sup>st</sup> May.

## (2) Wind warning

### West Bengal & Odisha

- Squally wind speed reaching 55 to 65 kmph gusting to 75 kmph extend to along & off north Odisha coast from 19<sup>th</sup> afternoon and along and off West Bengal coast from 19<sup>th</sup> night.
- The wind speed will gradually increase becoming gale wind speed reaching 75 to 85 kmph gusting to 95 kmph from 20<sup>th</sup> morning along and off north Odisha (Jagatsinghpur, Kendrapara, Bhadrak, Balasore and Mayurbhanj districts) and West Bengal (east & west Medinipur, south & north 24 Parganas, Howrah, Hoogli, Kolkata Districts). **It will gradually increase thereafter becoming 100 to 110 kmph gusting to 125 kmph along & off the above mentioned districts of North Odisha.**
- **Gale wind speed reaching 155 to 165 kmph gusting to 180 kmph very likely along & off east Medinipur and north & south 24 Parganas districts and 110-120 kmph gusting to 130 kmph over Kolkata, Hoogli, Howrah and West Medinipur Districts of West Bengal during the time of landfall (20<sup>th</sup> afternoon to night).**
- Squally wind speed reaching 55-65 kmph gusting to 75 kmph likely to prevail over Puri, Khordha, Cuttack, Jajpur districts of Odisha during 20<sup>th</sup> May 2020.

### Deep Sea area

- Gale wind speed reaching 225-235 gusting to 255 kmph is prevailing over westcentral Bay of Bengal. It is likely to prevail over northern parts of central Bay of Bengal and adjoining North Bay of Bengal during 19<sup>th</sup> May.
- Gale wind speed reaching 180-190 gusting 210 kmph over north Bay of Bengal from 19<sup>th</sup> afternoon, will gradually decrease becoming 165-175 kmph gusting to 195 kmph by 20<sup>th</sup> afternoon.

## (3) Sea condition:

- Sea condition is Phenomenal and is likely to continue for next 12 hours over southern parts of Westcentral Bay of Bengal. It will become Phenomenal over northern parts of central Bay of Bengal and adjoining north Bay of Bengal on 19<sup>th</sup> May and over north Bay of Bengal on 20<sup>th</sup> May 2020.

## (4) Fishermen Warning

- The fishermen are advised not to venture into west-central and adjoining central parts of south Bay of Bengal during next 24 hours, into central Bay of Bengal and North Bay of Bengal during 19<sup>th</sup> to 20<sup>th</sup> May 2020.

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

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

- Also, fishermen are advised not to venture into North Bay of Bengal along and off North Odisha, West Bengal and adjoining Bangladesh coasts till 20th May 2020.

**(5) Storm Surge expected**

- Storm Surge of about 4-5 meters above Astronomical Tide is likely to inundate low lying areas of south & north 24 Parganas and about 3-4 meters over the low lying areas of East Medinipur District of West Bengal during the time of Landfall. (Figure enclosed)

**(6) Damage Expected and Action suggested**

**(a) West Bengal (east Medinipur, south & north 24 Parganas, Howrah, Hoogli, Kolkata districts)**

**Damage Expected:**

- Extensive damage to all types of kutcha houses, some damage to old badly managed Pucca structures. Potential threat from flying objects.
- Extensive uprooting of communication and power poles.
- Disruption of rail/road link at several places.
- Extensive damage to standing crops, plantations, orchards.
- Blowing down of Palm and coconut trees.
- Uprooting of large bushy trees.
- Large boats and ships may get torn from their moorings.

**Fishermen Warning & Action Suggested:**

- Total suspension of fishing operations till 20th May 2020.
- Diversion or suspension of rail and road traffic.
- People in affected areas to remain indoors. Mobilise evacuation from Low lying areas.
- Movement in motor boats and small ships not advisable.

**(b) Odisha (Jagatsinghpur, Kendrapara, Bhadrak, Balasore, Jajpur & Mayurbhanj)**

**Damage Expected:**

- Total destruction of thatched houses/ extensive damage to kutcha houses. Potential threat from flying objects.
- Bending/ uprooting of power and communication poles.
- Major damage to Kutcha and Pucca roads. Minor disruption of railways, overhead power lines and signalling systems.
- Widespread damage to standing crops, plantations, orchards, falling of green coconuts and tearing of palm fronds. Blowing down of bushy trees like mango.
- Small boats, country crafts may get detached from moorings.

**Fishermen Warning & Action Suggested:**

- Total suspension of fishing operations till 20th May 2020.
- Diversion or suspension of rail and road traffic.
- People in affected areas to remain indoors.
- Movement in motor boats and small ships not advisable.

Kindly visit [www.rsmcnewdelhi.imd.gov.in](http://www.rsmcnewdelhi.imd.gov.in) and [www.mausam.imd.gov.in](http://www.mausam.imd.gov.in) for updates on the system.

**Next Bulletin will be issued at 1130 hours IST of 19<sup>th</sup> May, 2020.**

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

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

**Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%**  
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SAT : INSAT-3D IMG

19-05-2020/(0100 to 0127) GMT

IMG\_TIR1\_TEMP 10.8 um

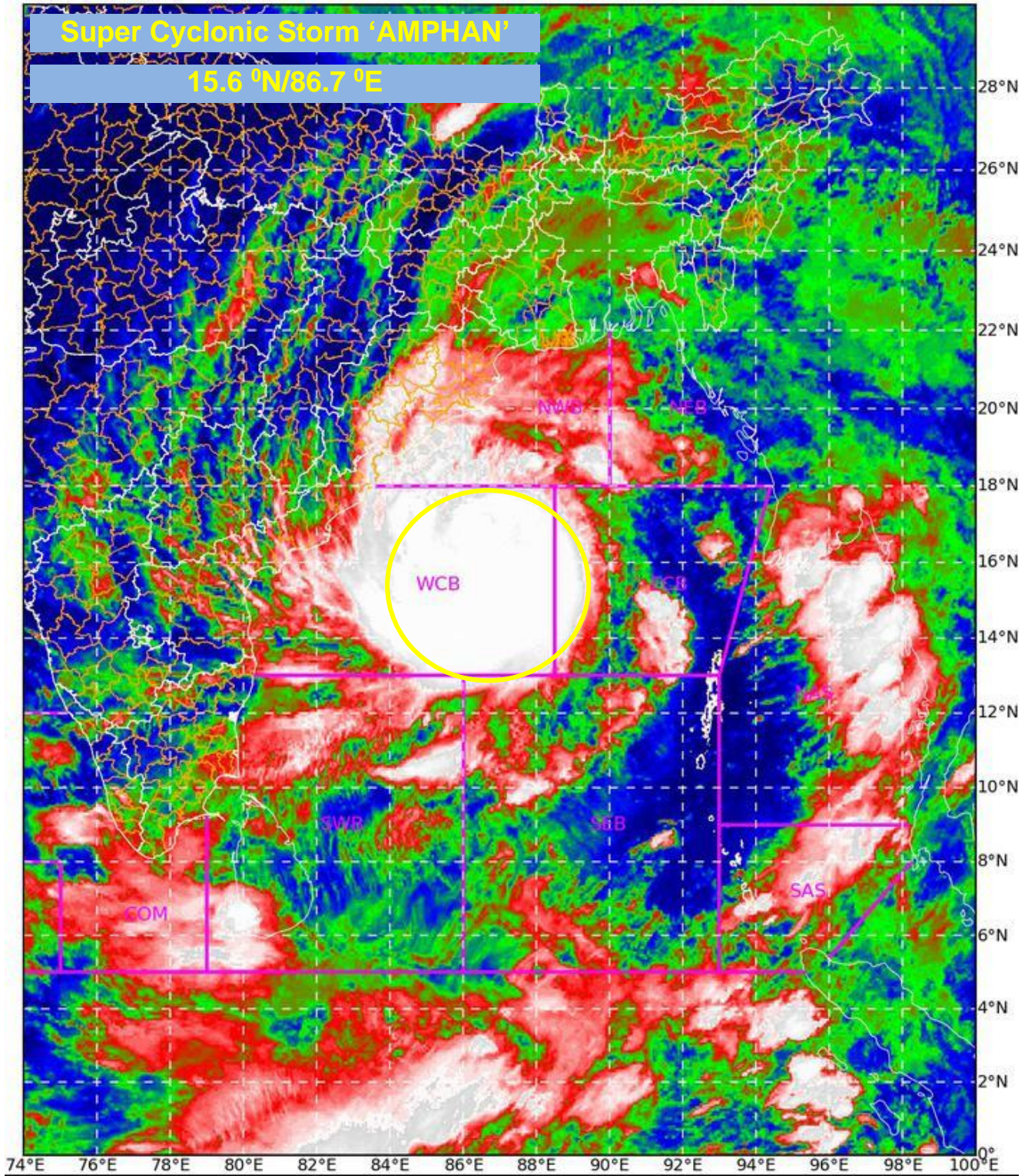
19-05-2020/(0630 to 0657) IST

L1C Mercator



### Super Cyclonic Storm 'AMPHAN'

15.6 °N/86.7 °E



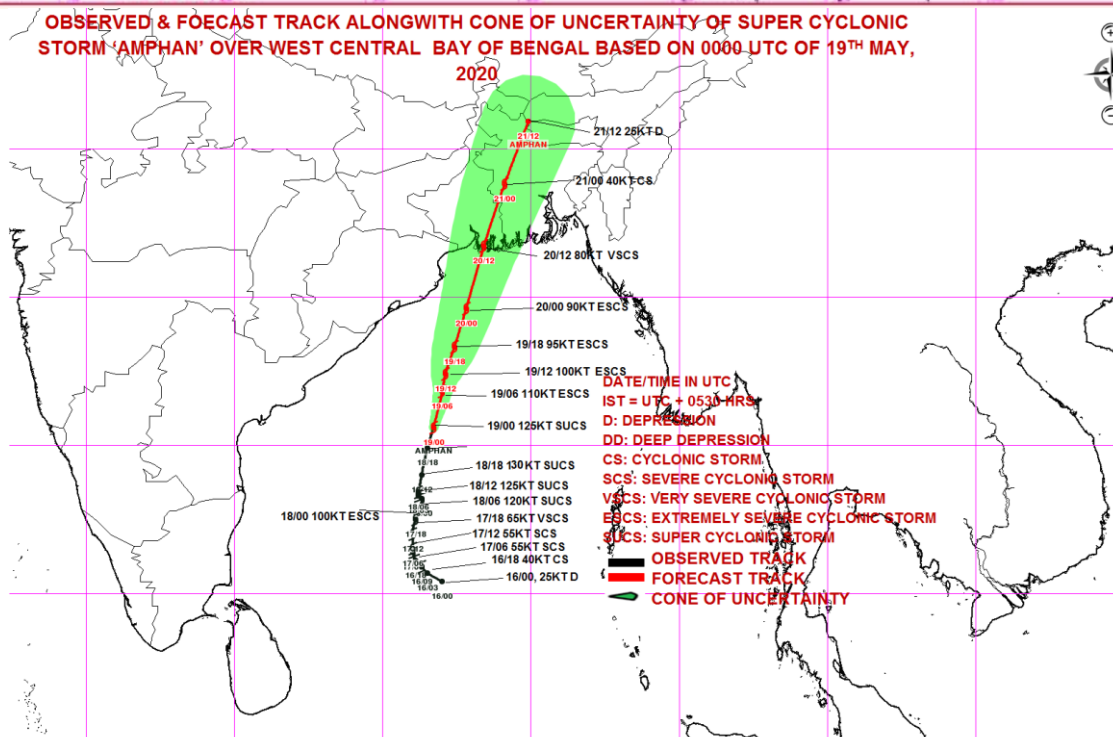
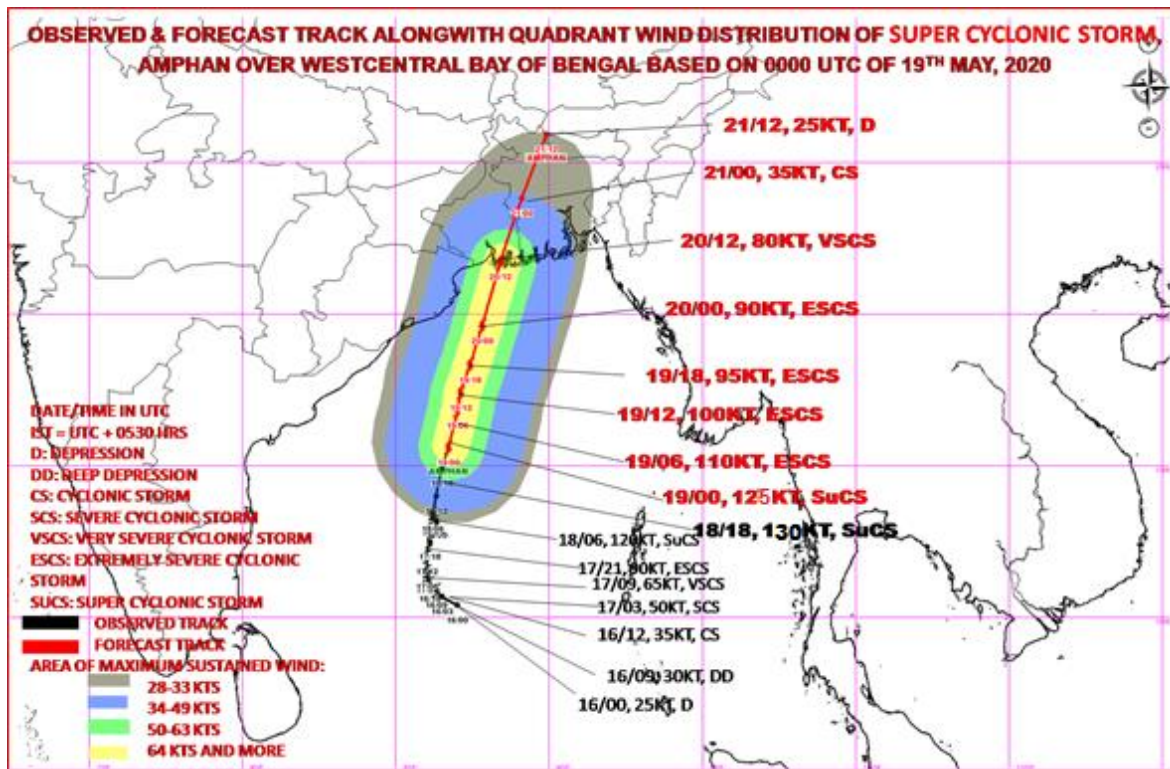
0 -20 -50 Celsius

IMD, DELHI

10 -10 -30 -70

Legend: WCB – Westcentral Bay of Bengal

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



MSW(knot)/kmph)	Impact	Action
28-33/(52-61)	Very rough seas.	Total suspension of fishing operations
34-40/(62-74)	High to very high seas	Total suspension of fishing operations
41-63/(75-117)	Very High seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations

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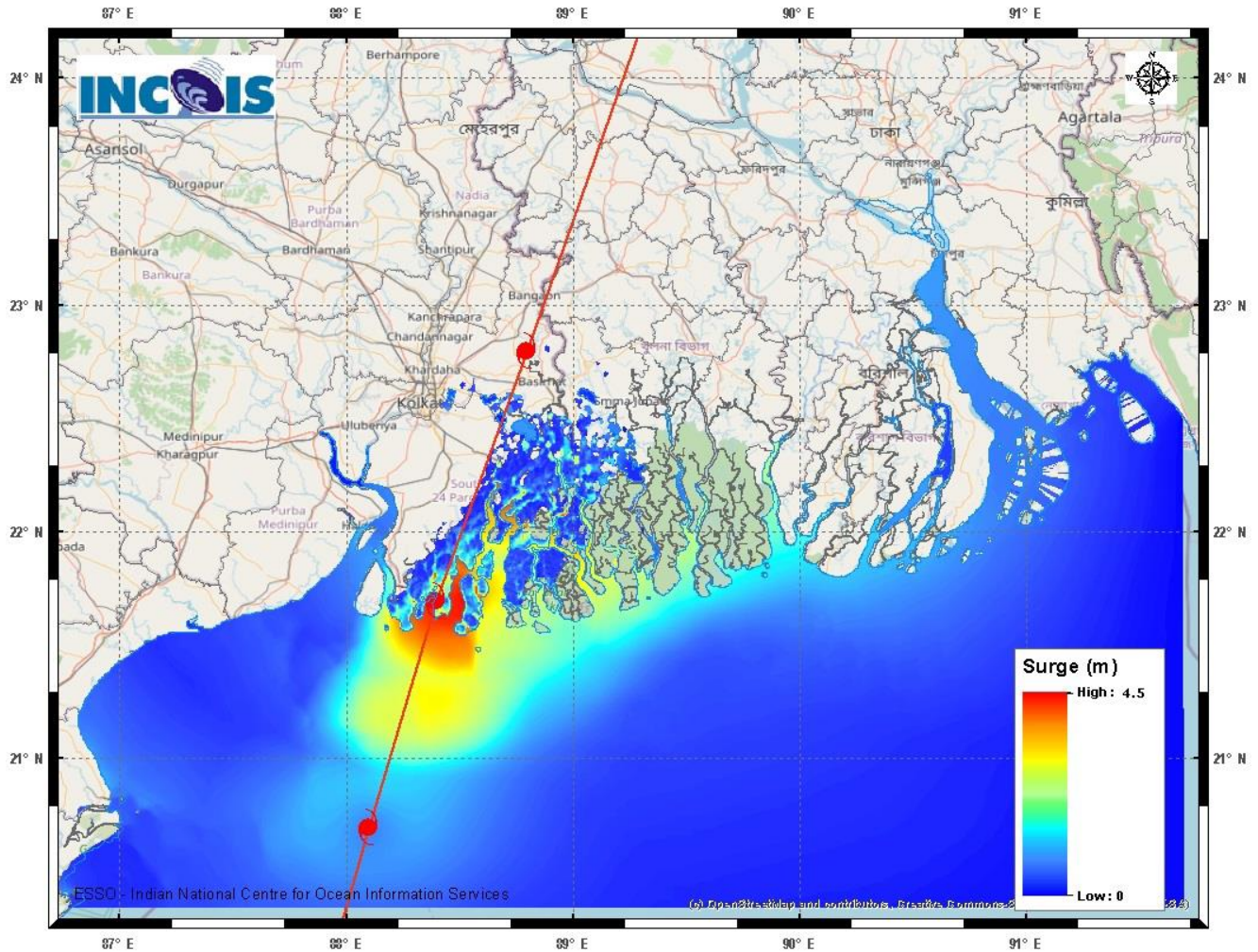


Figure: Storm Surge forecast from INCOIS issued at 0556 IST of 19<sup>th</sup> May 2020

Storm Surge of about 4-6 meters above Astronomical Tide is likely to inundate low lying areas of south & north 24 Parganas and about 3-4 meters over the low lying areas of East Medinipur District of West Bengal during the time of Landfall.

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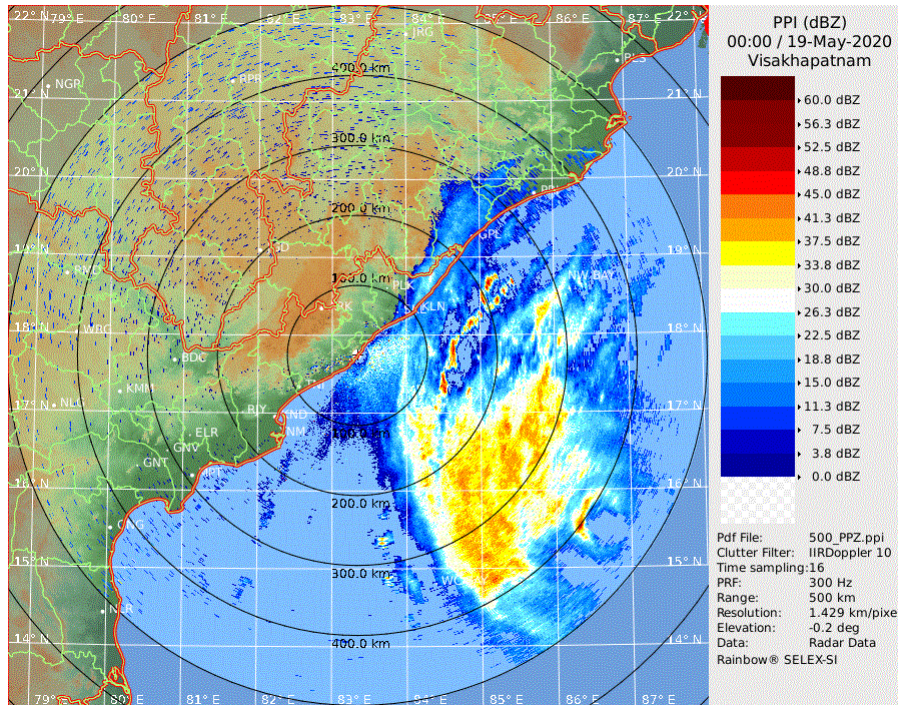


Figure: Reflectivity of Vishakhapatnam Doppler Weather Radar at 05:30 IST of 19<sup>th</sup> May 2020

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