



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

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Sub: Super Cyclonic Storm 'AMPHAN' (pronounced as UM-PUN) crossed West Bengal – Bangladesh coasts: Cyclone warning for West Bengal coast: Red Message.

The Super Cyclonic Storm 'AMPHAN' (pronounced as **UM-PUN**) over Northwest Bay of Bengal moved north-northeastwards with a speed of 25 kmph during past 06 hours, crossed West Bengal – Bangladesh coasts as a Very Severe Cyclonic Storm with a speed of 155-165 kmph gusting to 185 kmph across Sundarbans, near Lat. 21.65°N and longitude 88.3°E and lay centred at 1730 hrs IST of today, the 20th May, 2020, over West Bengal coast near latitude 21.9°N and longitude 88.4°E, about 70 km nearly to the south of Kolkata (West Bengal), 95 km east-northeast of Digha (West Bengal), 35 km northeast of Sagar Islands and 185 km south-southwest of Khepupara (Bangladesh).

Kolkata (Alipur) reported 112 kmph winds at 1752 hrs IST of today, the 20th May 2020.

The system is now being continuously tracked by the Doppler Weather Radar (DWR) at Kolkata (West Bengal).

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
20.05.20/1730	21.9/88.4	140-150 gusting to 165	Very Severe Cyclonic Storm
20.05.20/2330	23.2/88.8	100-110 gusting to 125	Severe Cyclonic Storm
21.05.20/0530	24.6/89.3	60-70 gusting to 80	Cyclonic Storm
21.05.20/1130	26.0/90.3	30-40 gusting to 50	Depression

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

(1) Heavy rainfall Warning:

Odisha

Heavy to very heavy rainfall very likely at isolated places over north coastal Odisha (Balasore, Bhadrak and isolated heavy falls over Jagatsinghpur district during next 12 hours.

West Bengal

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) during next 12 hours and isolated heavy rain over interior districts on 21st 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 during next 12 hours and over most of the districts of Sub-Himalayan West Bengal & Sikkim on 21st May, 2020.

Assam & Meghalaya

Light to moderate rainfall at most places with heavy falls at isolated places over Meghalaya during next 12 hours and heavy to very heavy falls at a few places over the western districts of Assam & Meghalaya on 21st May.

(2) Wind warning

West Bengal & Odisha

- Gale wind, speed reaching 60 to 70 kmph gusting to 80 kmph is prevailing along and off Balasore district of Odisha during next 3 hours. It will gradually decrease subsequently.
- **Gale wind speed reaching 140 to 150 kmph gusting to 165 kmph very likely along & off east Medinipur and north & south 24 Parganas districts, 110-120 kmph gusting to 130 kmph over Kolkata, Hoogli, Howrah and West Medinipur Districts and 80-90kmph gusting to 100 kmph over Bardhaman, Murshidabad, & Nadia Districts of West Bengal . It is very likely to decrease during next 06 hours.**

Deep Sea area

- Gale wind speed reaching 130-140 gusting to 150 kmph is prevailing over northern parts of northwest Bay of Bengal. It will gradually decrease during next 06 hours.

(3) Sea condition:

- Sea condition is very High over Northwest Bay of Bengal and is likely to continue for next 06 hours.
- Sea condition will be high to very high over Northeast Bay of Bengal for next 06 hours.

(4) Fishermen Warning

- The fishermen are advised not to venture into North Bay of Bengal during next 12 hours. Also, fishermen are advised not to venture into North Bay of Bengal along and off North Odisha, West Bengal and adjoining Bangladesh coasts during next 12 hours.

(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 next 06 hours. (Figure enclosed)

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

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

(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 kutchha 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.

Kindly visit www.rsmcnewdelhi.imd.gov.in and www.mausam.imd.gov.in for updates on the system.

Next Bulletin will be issued at 2030 hours IST of today, the 20th May, 2020.

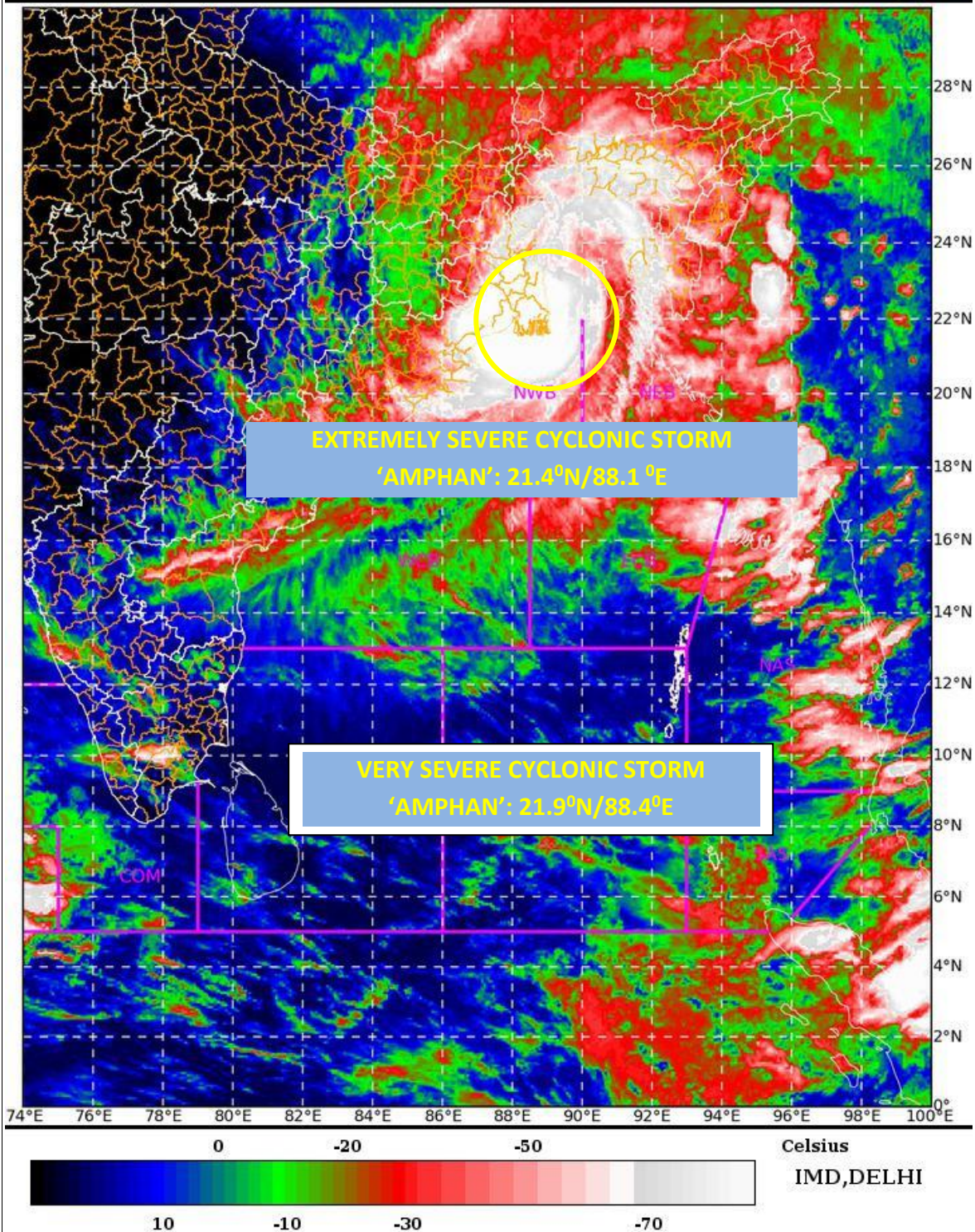
Please follow the hourly bulletin on the link:

<http://www.rsmcnewdelhi.imd.gov.in/images/bulletin/hourly.pdf>

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

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

SAT : INSAT-3D IMG 20-05-2020/(1200 to 1226) GMT
 IMG_TIR1_TEMP 10.8 um 20-05-2020/(1730 to 1756) IST
 L1C Mercator



Legend: WCB – Westcentral Bay of Bengal
 NWB – Northwest Bay of Bengal

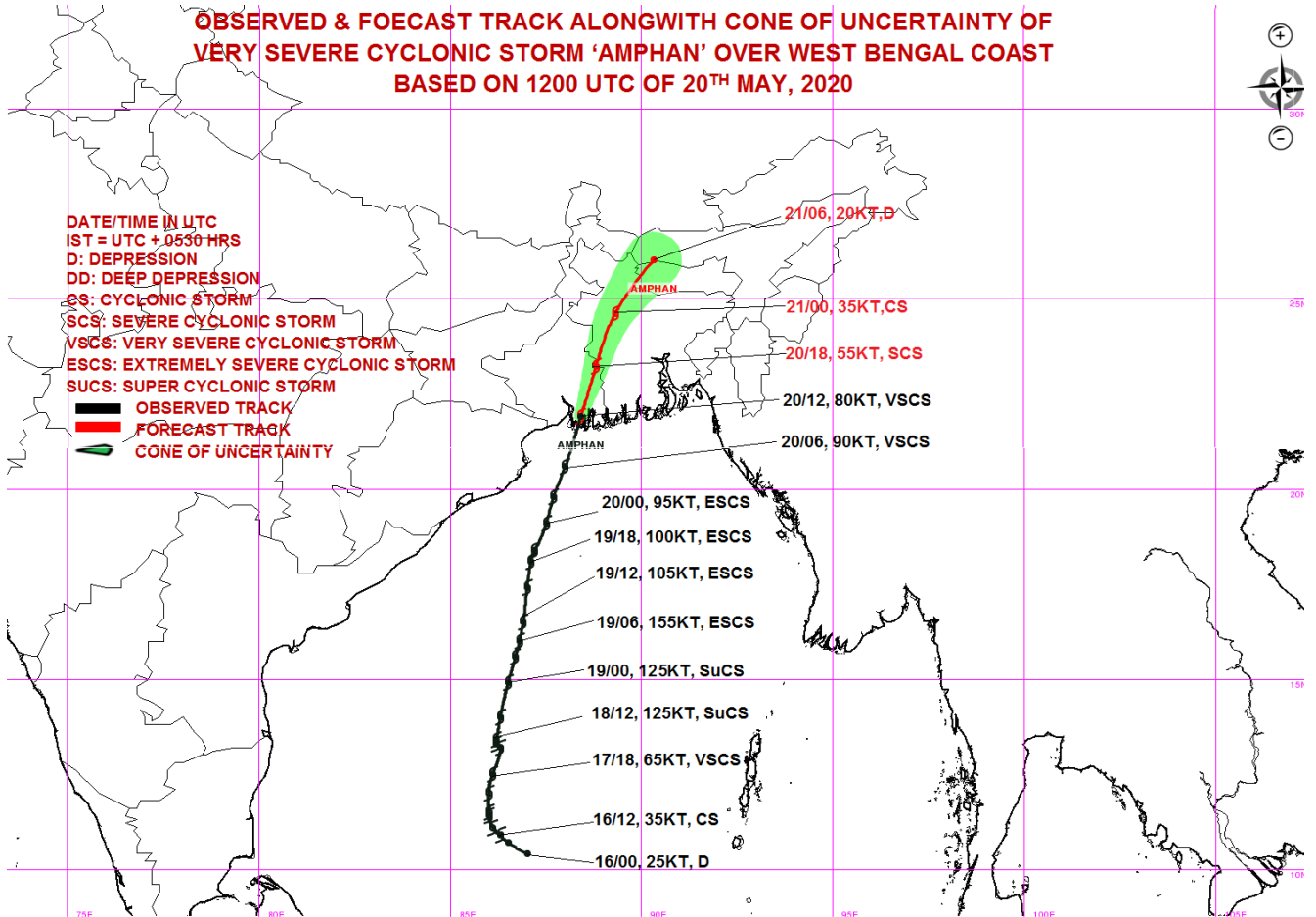
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

OBSERVED & FOECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF VERY SEVERE CYCLONIC STORM 'AMPHAN' OVER WEST BENGAL COAST BASED ON 1200 UTC OF 20TH MAY, 2020



DATE/TIME IN UTC
 IST = UTC + 0530 HRS
 D: DEPRESSION
 DD: DEEP DEPRESSION
 CS: CYCLONIC STORM
 SCS: SEVERE CYCLONIC STORM
 VSCS: VERY SEVERE CYCLONIC STORM
 ESCS: EXTREMELY SEVERE CYCLONIC STORM
 SuCS: SUPER CYCLONIC STORM

— OBSERVED TRACK
 — FORECAST TRACK
 — CONE OF UNCERTAINTY

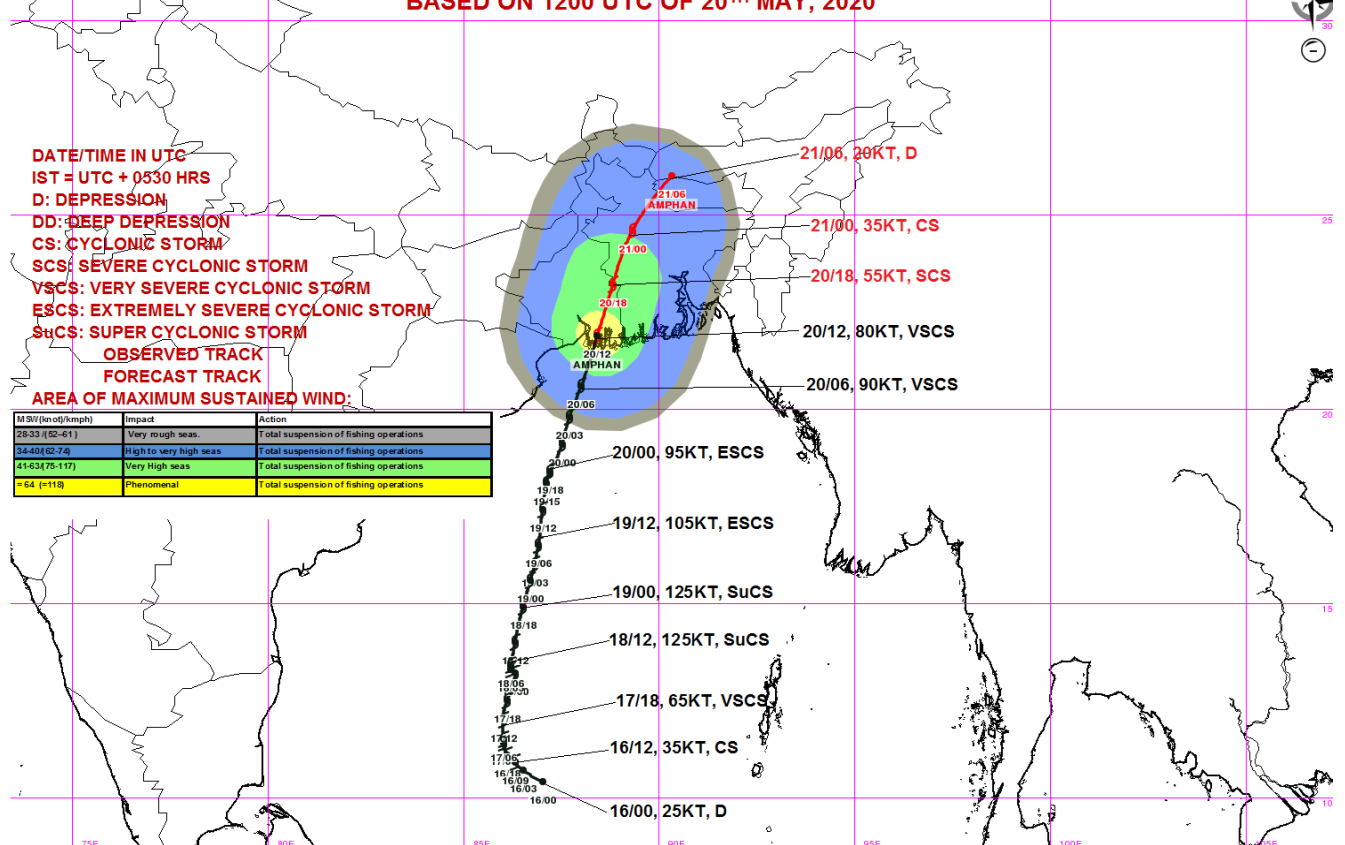


OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF VERY SEVERE CYCLONIC STORM 'AMPHAN' OVER WEST BENGAL COAST BASED ON 1200 UTC OF 20TH MAY, 2020



DATE/TIME IN UTC
 IST = UTC + 0530 HRS
 D: DEPRESSION
 DD: DEEP DEPRESSION
 CS: CYCLONIC STORM
 SCS: SEVERE CYCLONIC STORM
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 SuCS: SUPER CYCLONIC STORM

— OBSERVED TRACK
 — FORECAST TRACK
 — AREA OF MAXIMUM SUSTAINED WIND:



MSW (knott/kmph)	Impact	Action
26-33 (49-61)	Very rough seas.	Total suspension of fishing operations
34-40 (62-74)	High to very high seas	Total suspension of fishing operations
41-53 (75-117)	Very High seas	Total suspension of fishing operations
≥ 54 (≥118)	Phenomenal	Total suspension of fishing operations

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

Figure: Storm Surge forecast from INCOIS issued at 1500 IST of 20th May 2020

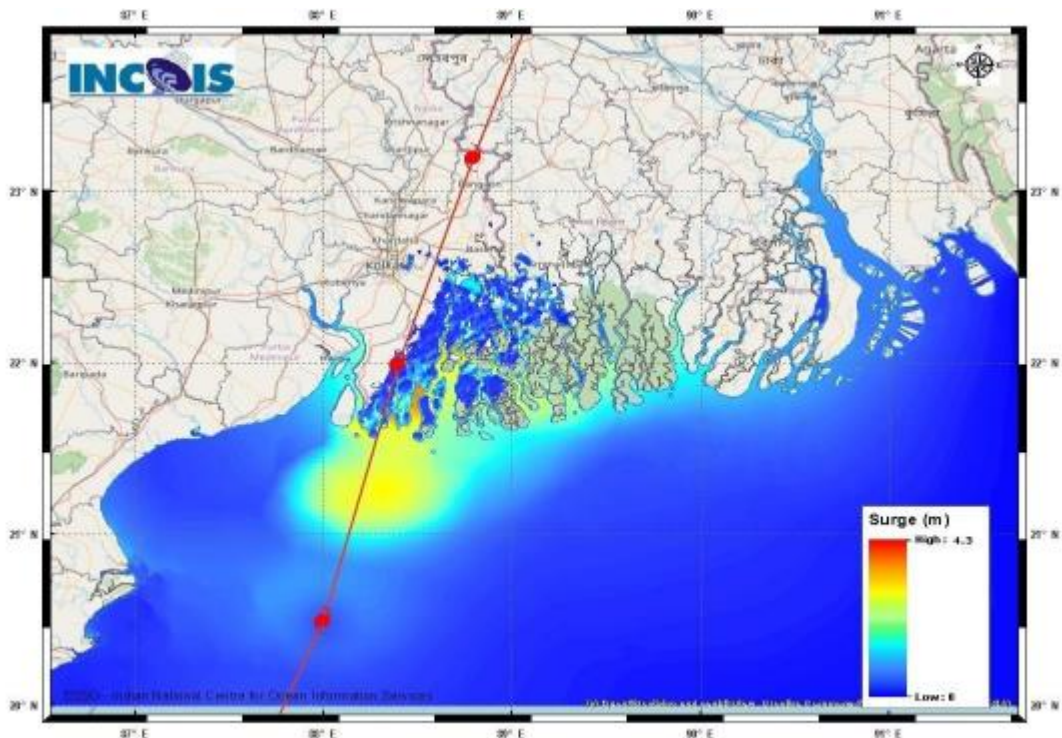


Fig: Computed storm surge & Inundation based on the IMD track forecast

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. Given below is the direct model output from INCIOS Storm Surge model.

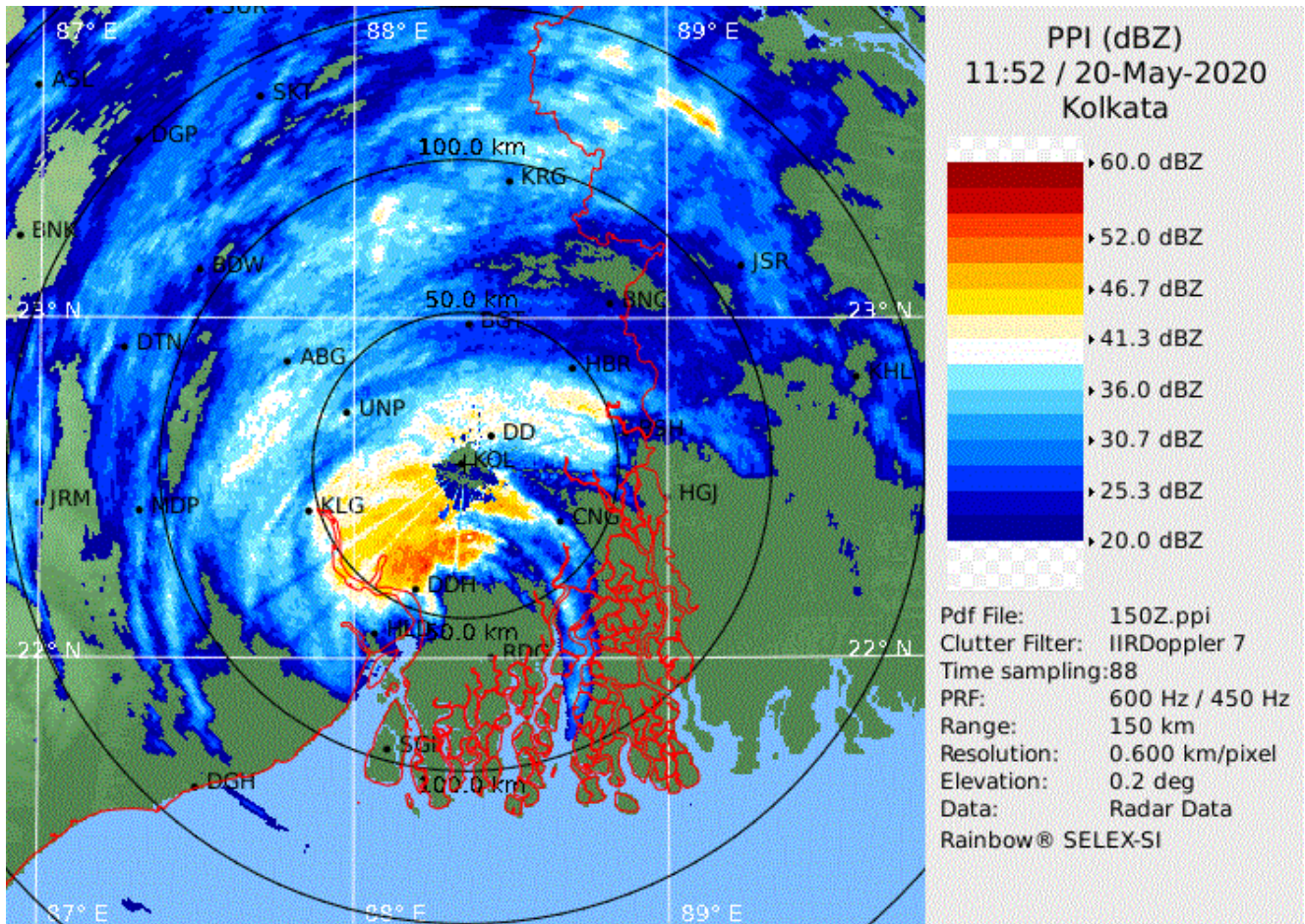
STORM SURGE HEIGHT INFORMATION:

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

MANDAL/TALUK	DISTRICT	STATE / UNION TERRITORY	NEAREST PLACE OF HABITATION	* STORM SURGE (m)	* EXPECTED INUNDATION EXTENT (km)
Bhangar-I	South 24 Parganas	West Bengal	Bhangar-I	0.5-4.3	Around 17
Basirhat	North 24 Parganas	West Bengal	Basirhat	0.5-3.9	Around 10
Diamond Harbour	South 24 Parganas	West Bengal	Diamond Harbor	0.5-3.5	Around 17
Bagnan-II	Haora	West Bengal	Bagnan-II	0.5-1.0	Around 0.4
Mahisadal	Medhinipur	West Bengal	Tentul Berya	0.5-1.0	Around 0.4
Nandigram-I	Medhinipur	West Bengal	Nakchira Chara	0.5-0.8	Around 0.4
off Haldia	Purba Medhinipur	West Bengal	Nayachar Island	0.5-1.5	Around 0.5
Sutahata-I	Medinipur	West Bengal	Maniruddin Chara	0.5-1.6	Around 0.4
Sutahata-II	Medinipur	West Bengal	Haldia	0.5-1.5	Around 0.3
Digha	Purba Medhinipur	West Bengal	Digha	0.5-0.7	Around 0.3
Tamluk	East Midnapore	West Bengal	Tamluk	0.5-1.5	Around 0.3
Bhadrak	Bhadrak	Odisha	Mohanpur	0.5-1.1	Around 0.8
Kendrapara	Kendraparha	Odisha	Baligarh	0.5-0.8	Around 2.6
Baleshwar	Baleshwar	Odisha	Sahapur	0.5-0.7	Around 0.7

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Figure: Reflectivity of Kolkata Doppler Weather Radar at 1152 UTC of 20th 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.