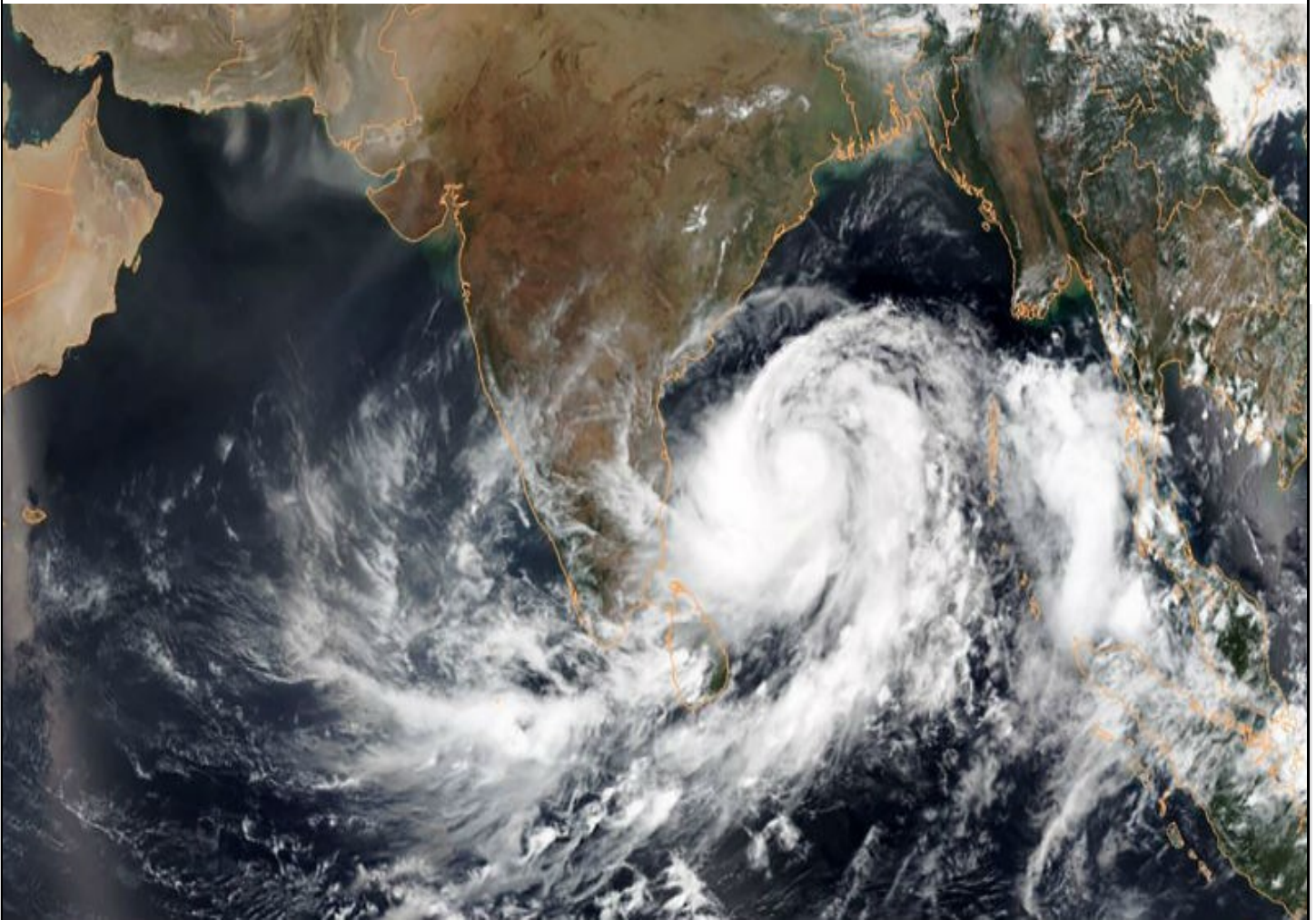




Krishi Care & Management Services Pvt. Ltd.



CYCLONE AMPHAN 20 - A REPORT

AMPHAN 20 - GLOBAL DISASTER ALERT & COORDINATION SYSTEM

Tropical Cyclone **AMPHAN-20** can have a high humanitarian impact based on the maximum sustained wind speed, exposed population and vulnerability.

GDACS ID	TC 1000667
Name	AMPHAN-20
Glide number:	TC-2020-000137-BGD
From - To	16 May - 20 May
Exposed countries	India, Bangladesh, Bhutan
Exposed population	32.1 million in Category 1 or higher
Maximum wind speed	269 km/h, Category 5
Maximum storm surge	1.9 m (20 May 19:00 UTC)
Vulnerability	High (Bangladesh)

GDACS Score



For more info on GDACS alert score click [here](#).

+	Wind	Storm surge	Rainfall	GDACS score
GDACS	269 km/h	1.9 m	n.a.	2.5

Single TC: maximum expected impact (wind, storm surge, rainfall)

Maximum expected impact (wind, storm surge and rainfall) using different [data sources](#).



Impact

Tropical Cyclone **AMPHAN-20** can have a high humanitarian impact based on the maximum sustained wind speed,exposed population and vulnerability.

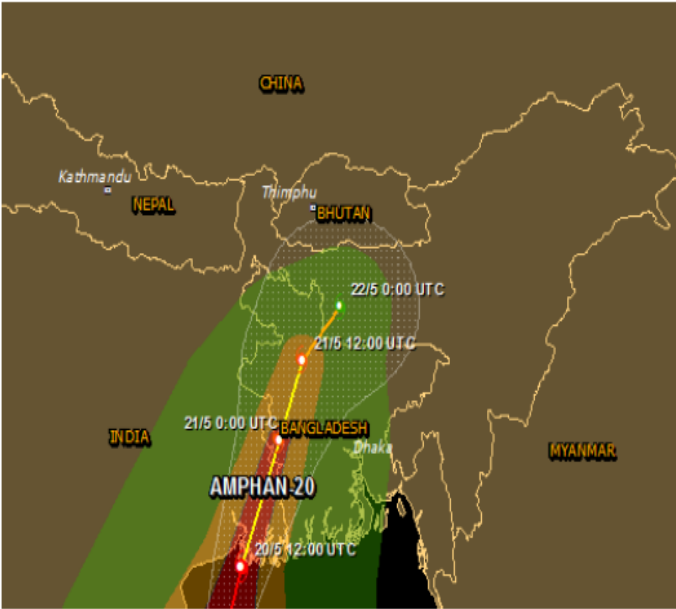
	Wind	Storm surge	Rainfall	GDACS score
GDACS Current	157 km/h	1.9 m	n.a.	2.5
GDACS Overall	269 km/h	1.9 m	n.a.	2.5

Maximum winds, storm surge, rainfall (Current: over the next 72 h, Overall: entire TC track)

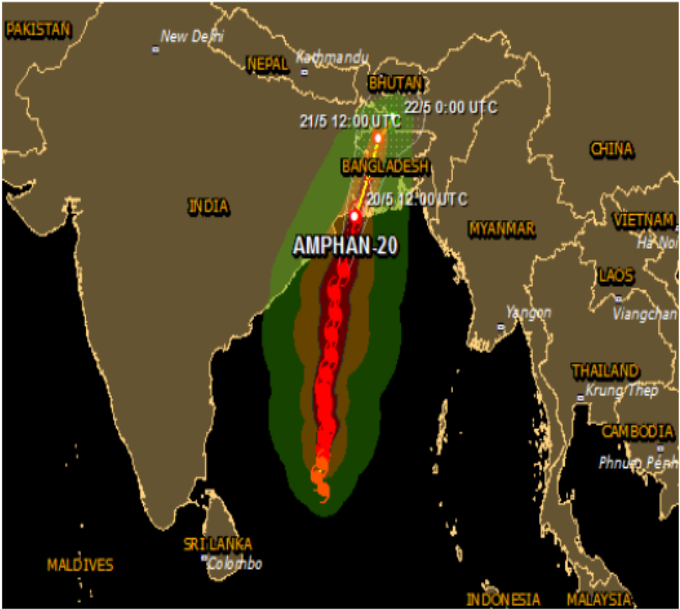
Wind

TOP

157 km/h Current Up to 32.1 million people in Category 1 strength or higher (see SSHA)



















Current situation (last bulletin): TC track, Wind buffers (Green: 63-92 km/h, Orange: 93-118 km/h, Red:>118 km/h)



Overall situation: TC track, Wind buffers (Green: 63-92 km/h, Orange: 93-118 km/h, Red:>118 km/h)

Impact Timeline

Alert N°	Date (UTC)	Max Winds (km/h)	Population in Tropical Storm	Population in Cat. 1 or higher	Countries
 <u>1</u>	16 May 2020 06:00	167	243.2 million	65.9 million	India, Bangladesh
 <u>2</u>	16 May 2020 12:00	148	271.3 million	22.3 million	India, Bangladesh
 <u>3</u>	16 May 2020 18:00	194	281.6 million	17.5 million	India, Bangladesh
 <u>4</u>	17 May 2020 00:00	194	287.9 million	45.9 million	India, Bangladesh, Bhutan
 <u>5</u>	17 May 2020 06:00	148	195.2 million	22 million	India, Bangladesh
 <u>6</u>	17 May 2020 12:00	204	260.9 million	32.2 million	India, Bangladesh
 <u>7</u>	17 May 2020 18:00	204	237.9 million	18.6 million	India, Bangladesh
 <u>8</u>	18 May 2020 00:00	204	263.6 million	31.3 million	India, Bangladesh
 <u>9</u>	18 May 2020 06:00	148	244.5 million	28.2 million	India, Bangladesh
 <u>10</u>	18 May 2020 12:00	204	235.5 million	33.7 million	India, Bangladesh
 <u>11</u>	18 May 2020 18:00	204	242.6 million	21.1 million	India, Bangladesh
 <u>12</u>	19 May 2020 00:00	213	246.7 million	23.7 million	India, Bangladesh
 <u>13</u>	19 May 2020 06:00	157	260.3 million	47.2 million	India, Bangladesh
 <u>14</u>	19 May 2020 12:00	157	252.6 million	36.8 million	India, Bangladesh
 <u>15</u>	19 May 2020 18:00	185	261.9 million	34.8 million	India, Bangladesh
 <u>16</u>	20 May 2020 00:00	157	277.1 million	32.1 million	India, Bangladesh

Bulletin Timeline

Alert	N°	Date (UTC)	Category	Max winds (km/h)	Population in Tropical Storm	Population in Cat.1 or higher	Location (lat, lon)	Countries
	1	16 May 2020 06:00	Tropical storm	65	no people	no people	9.8, 86.4	
	2	16 May 2020 12:00	Tropical storm	74	no people	no people	10.3, 86	
	3	16 May 2020 18:00	Tropical storm	83	no people	no people	10.9, 86.3	
	4	17 May 2020 00:00	Tropical storm	111	no people	no people	10.9, 86.3	
	5	17 May 2020 06:00	Category 1	120	no people	no people	11.4, 86.3	
	6	17 May 2020 12:00	Category 1	139	no people	no people	12, 86.4	
	7	17 May 2020 18:00	Category 4	213	no people	no people	12.6, 86.6	
	8	18 May 2020 00:00	Category 4	241	no people	no people	13, 86.4	
	9	18 May 2020 06:00	Category 5	259	no people	no people	13.6, 86.4	
	10	18 May 2020 12:00	Category 5	269	no people	no people	14, 86.3	
	11	18 May 2020 18:00	Category 4	241	230000 people	no people	14.8, 86.5	India
	12	19 May 2020 00:00	Category 4	222	11.7 million people	no people	15.6, 86.8	India
	13	19 May 2020 06:00	Category 3	204	28.1 million people	no people	16.5, 86.8	India
	14	19 May 2020 12:00	Category 3	185	43.7 million people	no people	17.4, 87	Bangladesh
	15	19 May 2020 18:00	Category 3	185	96.5 million people	190000 people	18.3, 86.9	India
	16	20 May 2020 00:00	Category 2	176	140.4 million people	260000 people	19.2, 87.4	India
	16	20 May 2020 12:00	Category 2	157	237.9 million people	32.1 million people	21.5, 88.1	Bangladesh
	16	21 May 2020 00:00	Tropical storm	102	224.2 million people	no people	23.6, 88.9	India
	16	21 May 2020 12:00	Tropical storm	74	113.9 million people	no people	24.9, 89.4	Bangladesh
	16	22 May 2020 00:00	Tropical depression	46	no people	no people	25.8, 90.2	India



Exposed population

Countries

Country

India

Bangladesh

Provinces

Region Province	Country	Population
West Bengal	India	58.2 million people
Khulna	Bangladesh	31.3 million people

Populated places

Name	Region Province	Country	City class	Population
Rajpur	West Bengal	India	City	330000 people
Maheshtala	West Bengal	India	City	430000 people
Rajarhat Gopalpur	West Bengal	India	City	320000 people
Kolkata	West Bengal	India	Major city	4.6 million people
Haora	West Bengal	India	City	990000 people
South Dum Dum	West Bengal	India	City	440000 people
Dum Dum	West Bengal	India	City	120000 people
Bally	West Bengal	India	City	290000 people
North Dum Dum	West Bengal	India	City	230000 people
Barasat	West Bengal	India	City	230000 people

Critical infrastructure

Airports, ports, nuclear plants and hydrodams at risk, if affected, are listed below.

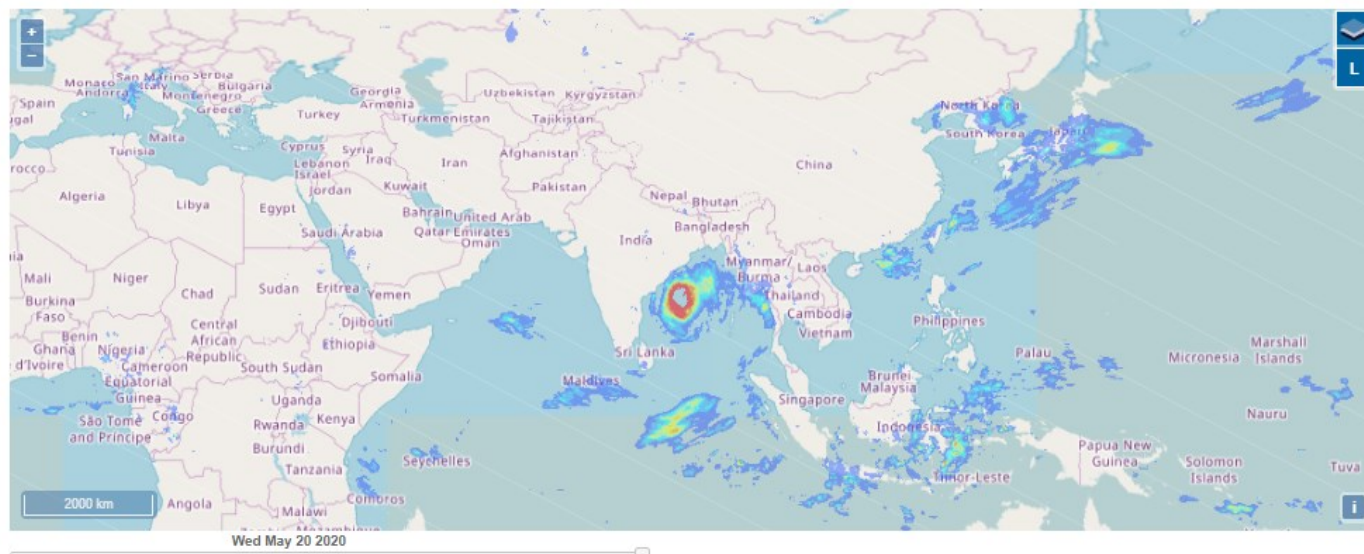
Airports

Name	IATA Code	Elevation (m)	Usage	Runway type	IFR	Runway Length (ft)
Calcutta Netaji Subhas Chandra	<u>CCU</u>	6	Civ.	Paved	Yes	11900
Barrackpore		5				0

Ports

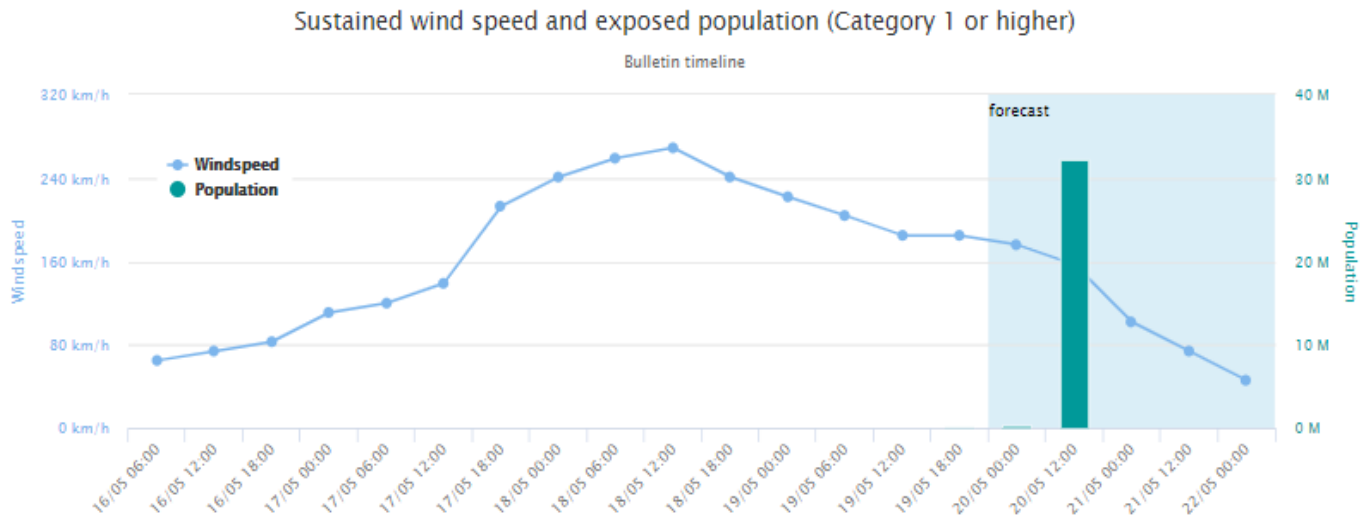
Name	LOCODE	Country
Haldia	INHAL	India
Port Canning		India
Budge-Budge	INBUD	India
Calcutta	INCCU	India
Howrah		India

Rainfall Accumulation





Actual track of the current bulletin
The alert for forecast greater than 3 days is limited to Orange level.



StormSurge

Alert	Date (UTC)	Name	Country	Storm surge height (m)
	20 May 2020 19:00	Sarankhola Forest Office	Bangladesh	1.9
	20 May 2020 13:00	Bijavbati	India	1.7
	20 May 2020 23:00	Jagannathpur	Bangladesh	1.5
	20 May 2020 19:00	Dhalua	Bangladesh	1.5
	20 May 2020 21:00	Adam Manirabad	Bangladesh	1.5
	20 May 2020 22:00	Boro Char	Bangladesh	1.5
	20 May 2020 19:00	Bara Patharghata	Bangladesh	1.5
	20 May 2020 22:00	Char Idris	Bangladesh	1.5
	20 May 2020 22:00	Aithadi	Bangladesh	1.5
	20 May 2020 22:00	Bara Char Kalia	Bangladesh	1.5

AMPHAN - 20 CYCLONE BULLETIN - 20.05.2020

The Super Cyclonic Storm '**AMPHAN**' (pronounced as **UM-PUN**) over Northwest Bay of Bengal moved north-northeastwards with a speed of 22 kmph during past 06 hours and lay centred at 0830 hrs IST of today, the 20th May, 2020 as an Extremely Severe Cyclonic Storm over **Northwest Bay of Bengal** near latitude 19.8°N and longitude 87.7°E, about 120 km east-southeast of Paradip (Odisha), 200 km south of Digha (West Bengal) and 360 km 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 Afternoon to Evening hours of today, the 20th May 2020 with maximum sustained wind speed of 155-165 kmph gusting to 185 kmph. Landfall process to commence from today afternoon. After landfall the system is likely to move north-northeastwards close to Kolkata.

The system is now being continuously tracked by the Doppler Weather Radar (DWR) at Vishakhapatnam (Andhra Pradesh), Paradip (Odisha) and Gopalpur (Odisha).

Heavy to very heavy rainfall occurred at isolated places over north coastal districts of Odisha and heavy rainfall over coastal West Bengal during past 24 hours. Gale Wind, speed reaching 100-110 kmph gusting to 125 kmph, prevailed along & off north coastal Odisha districts and 55-65 kmph gusting to 75 kmph prevailed along & off south coastal Odisha.

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
20.05.20/0830	19.8/87.7	165-175 gusting to 195	Extremely Severe Cyclonic Storm
20.05.20/1130	20.5/88.0	160-170 gusting to 190	Extremely Severe Cyclonic Storm
20.05.20/1730	22.0/88.4	150-160 gusting to 180	Very 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 – 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, Mayurbhanj, Jajpur, Kendrapara and Keonjhar Districts) and isolated heavy falls over Jagatsinghpur district on 20th May 2020.

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) on 20th May 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 on 20th May 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 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 90 to 100 kmph gusting to 110 kmph is prevailing along and off Jagatsinghpur, Kendrapara, Bhadrak, Balasore and Mayurbhanj districts of Odisha and squally wind speed reaching 55 to 65 kmph gusting to 75 kmph is prevailing along & off remaining coastal districts of Odisha (Puri, Khordha, Cuttack, Jajpur) during 20th May 2020.
- **It will gradually increase becoming 100 to 110 kmph gusting to 125 kmph along & off the above mentioned districts of North Odisha during forenoon to afternoon of 20th May 2020.**
- Gale wind speed reaching 80 to 90 kmph gusting to 100 kmph is prevailing along and off West Bengal coast (east & west Medinipur, south & north 24 Parganas, Howrah, Hoogli, Kolkata Districts).
- **Gale wind speed reaching 155 to 165 kmph gusting to 185 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 (20th afternoon to night).**

Deep Sea area

- Gale wind speed reaching 165-175 gusting to 195 kmph is prevailing over northwest and adjoining westcentral Bay of Bengal. Gale wind, speed reaching 150-160 gusting to 175 kmph is prevailing over northern parts of central Bay of Bengal. It will gradually decrease becoming 155-165 kmph gusting to 185 kmph over North Bay of Bengal during the evening hours of today, the 20th May.

(3) Sea condition:

- Sea condition is Phenomenal and is very likely to continue for next 06 hours over Westcentral Bay of Bengal and for next 12 hours over Northwest Bay of Bengal.

(4) Fishermen Warning

- The fishermen are advised not to venture into North Bay of Bengal and adjoining central Bay of Bengal during next 24 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 24 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 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 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.

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

Damage Expected:

- Total destruction of thatched houses/ extensive damage to kutchha houses. Potential threat from flying objects.
- Bending/ uprooting of power and communication poles.
- Major damage to Kutchha 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.

7. Post Landfall Outlook:

After the landfall the system is very likely to continue to move north-northeastwards, across Gangetic West Bengal & Bangladesh and weaken gradually. It is likely to maintain the intensity of Cyclonic Storm till the morning of 21st May and thereafter it will weaken into a Deep Depression over Bangladesh.

Under its influence gale wind speed reaching 70-80 kmph gusting to 90 kmph likely over interior Districts (Murshidabad & Nadia) of Gangetic West Bengal during 20th night to 21st morning.

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

Damage Expected and Action suggested for interior districts of Gangetic West Bengal.

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



Sources:

- GLOBAL DISASTER ALERT & COORDINATION SYSTEM (GDACS)
- INDIAN METEOROLOGICAL DEPARTMENT (IMD)

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