

A satellite image of Cyclone Amphan, showing a well-defined eye and spiral cloud bands. The image is overlaid with a grid and a yellow circle highlighting the central region. A blue box at the top contains text about the storm's name and coordinates.

Extremely Severe Cyclonic Storm 'AMPHAN'

20.30°N/87.83°E

**LESSONS LEARNT-
CYCLONE AMPHAN :**

***LOCAL LEVEL RESPONSE AND
CHALLENGES CAUSED BY COVID19-
INDIA EXPERIENCE***



Cyclone Amphan



- It was the strongest cyclone to strike the Indian coast since the 1999 Odisha Super cyclone. The name 'Amphan' was given by Thailand.
- Initial forecast issued by **IMD** on **13.05.2020**.
- Intensified from a low-pressure area formed 300 km east of Colombo, Sri Lanka, on 13 May 2020.
- **NDRF** Battalions were **alerted** and the situation was monitored. Rescue teams were pre-positioned.
- Monitoring at highest level- First NCMC held on 16.05.2020.



Cyclone Amphan



- On 17 May, **Amphan** underwent rapid intensification and became an extremely severe cyclonic storm within 12 hours and subsequently into Super cyclone (wind speed 222 kmph).
- On 20th May 2020 landfall process began as extremely severe cyclonic storm near Sunderbans in West Bengal at 1430 Hrs and completed by 7 pm.
- The Coastal areas in West Bengal (E/Midnapur, 24 Parganas (N & S), Kolkata, Hooghly, and Howrah as well as the coastal areas of Odisha were severely affected by the cyclone. It also caused significant destruction in Bangladesh.



**OBSERVED & FORECAST 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

21/06, 20KT, D

21/00, 35KT, CS

20/18, 55KT, SCS

20/12, 80KT, VSCS

20/06, 90KT, VSCS

20/00, 95KT, ESCS

19/18, 100KT, ESCS

19/12, 105KT, ESCS

19/06, 155KT, ESCS

19/00, 120KT, SuCS

18/12, 120KT, SuCS

17/18, 65KT, VSCS

16/12, 35KT, CS

16/00, 25KT, D



- Prior to the landfall, NDRF teams started **Awareness Campaign** and assisted State administration in evacuation.
- Post land fall, NDRF, SDRF and other stakeholders started response on **20th May afternoon itself in Odisha** and **20th May evening in West Bengal** as soon as the weather situation permitted.
- **20 NDRF, ODRAF** and local agencies were engaged in the affected districts of **Odisha**.
- **38 NDRF teams, SDRF** and local agencies were engaged in restoration work in the affected districts of **West Bengal**.



NDRF DEPLOYMENT IN WEST BENGAL



West Bengal - 38 T

HMC Salkia-01 T

Domjur-01 T

Uluberia 01 T

Howrah 01 T

Nadia-01 T

Hasnabad 01 T

Bangaon-01 T

Kolkata-19T

Basirhat-01 T

Barasat-01T

Chinsura-01 T

Hingalganj-01T

Baruipur- 01 T

Budge Budge- 02 T

Diamond Harbour-01T

Haldia-01 T

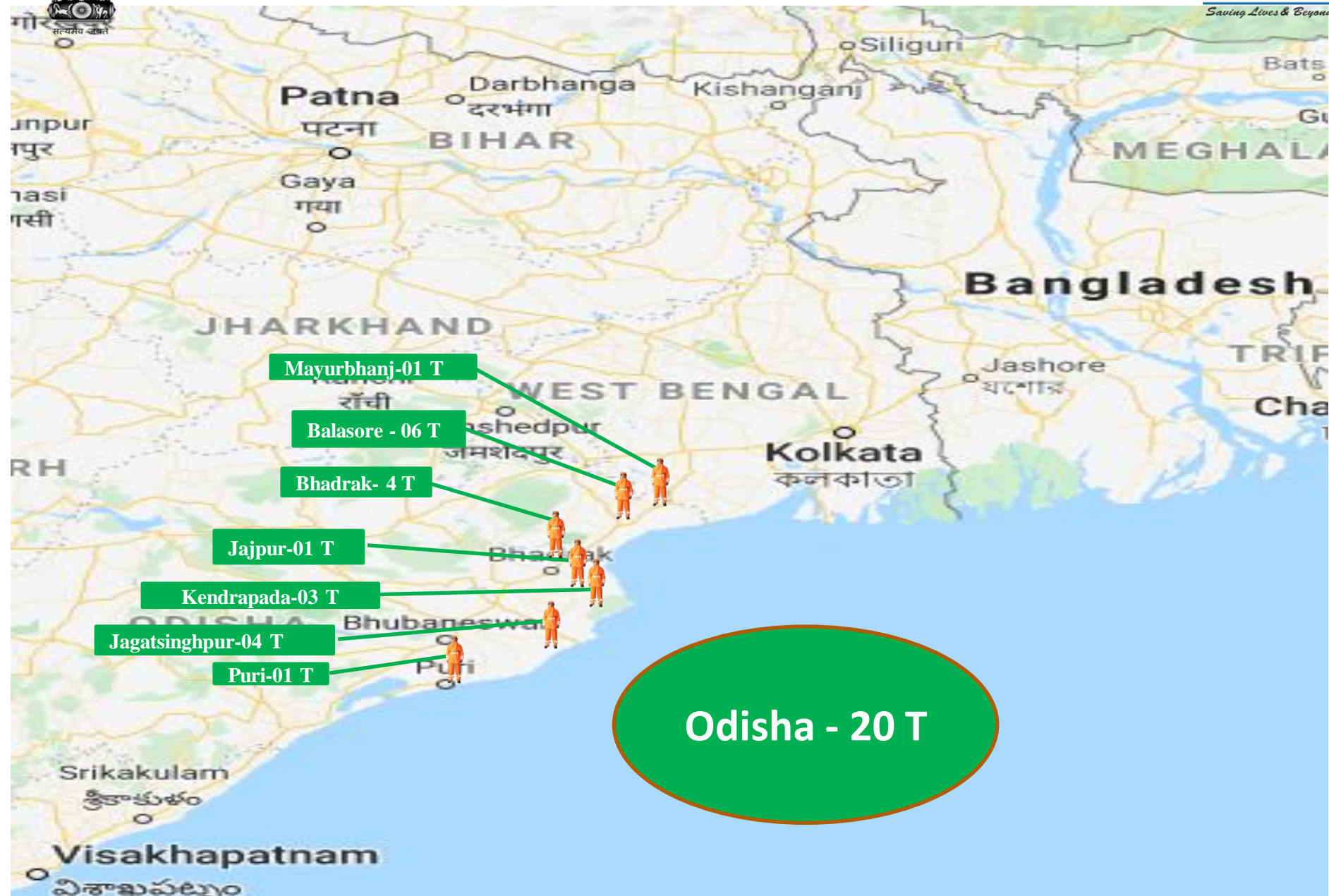
Kaakdwip-01 T

Sagar Island -01 T

Nandigram-01T



NDRF TEAMS DEPLOYMENT IN ODISHA





COMMUNITY AWARENESS IN WEST BENGAL





COMMUNITY AWARENESS IN WEST BENGAL



সতর্ক প্রশাসন

নাস সমস্যার মোকাবিলায় অবসরপ্রাপ্ত নাস এ



COMMUNITY AWARENESS IN ODISHA





EVACUATION DURING “CYCLONE AMPHAN”



States	People Evacuated
West Bengal	8,13,092
Odisha	2,37,296



RESTORATION WORK IN WEST BENGAL





RESTORATION WORK IN ODISHA



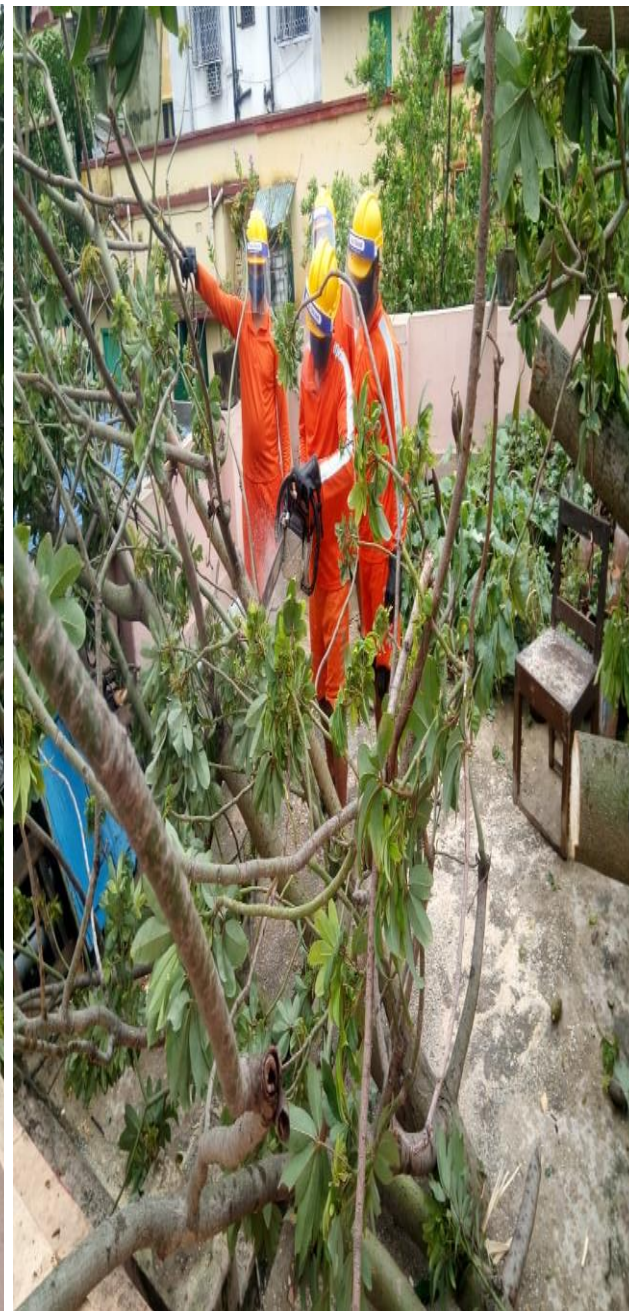
RESTORATION WORK IN WEST BENGAL



PURANA DAD ROAD WARD NO 87,KMC KOLKATA



WARD NO -33 ,108 CIT ROAD ,SCHEME IV , KOLKATA



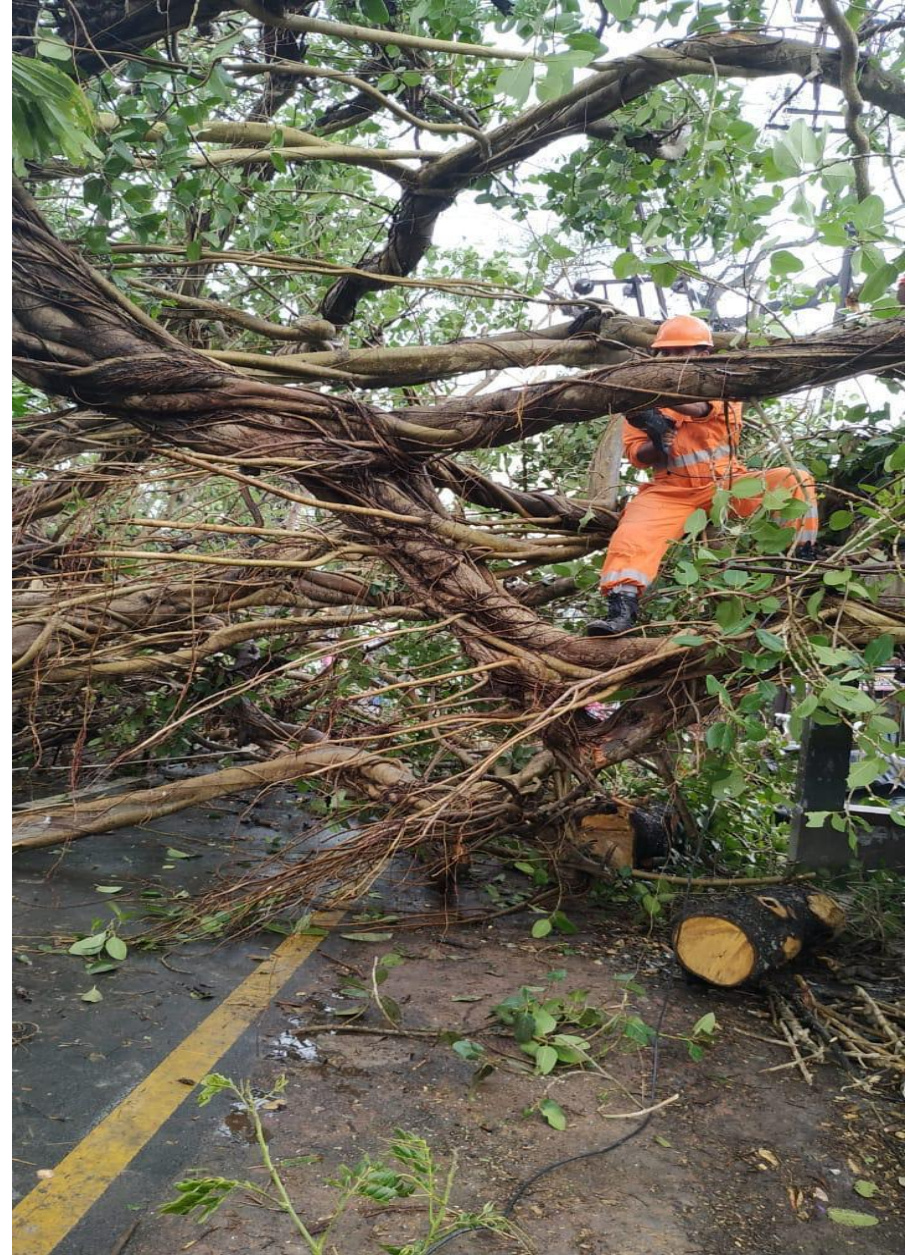
SOUTHERN AVENUE ROAD KMC KOLKATA



WARD NO 112-PATULI KMC KOLKATA



TENTULIA - SWARUPNAGAR ROAD, BASIRAHAT, NORTH 24 PGNS



SAWAROOP NAGAR BASHIRHAT DIST NORTH 24 PGS



RESTORATION WORK IN ODISHA





SUMMARY OF RESTORATION WORK IN **WEST BENGAL**

- | | | |
|-------------|------------------------------|----------------------|
| I. | Live stock | - 7650 Nos. |
| II. | Trees Removed | - 7392 Nos. |
| III. | Electric Pole removed | - 1150 Nos. |
| IV. | Road cleared | - 3152.5 Kms. |

SUMMARY OF RESTORATION WORK IN ODISHA

- I. Trees Removed - 515 Nos.**
- II. Electric Pole removed - 30 Nos.**
- III. Road cleared - 354.5 Kms.**

PLANNING

- A close watch was kept over both the Cyclonic systems.
- Coordination.
- All teams had multilayered communication system.
- Teams were equipped with tree cutters/pole cutters for post land fall restoration.
- **In view of the current COVID-19 scenario, all teams were reoriented for facing dual challenge and also equipped with PPE etc.**



COVID-19 : ABCD ANALYSIS AND PREPAREDNESS BY NDRF

A

(Neck above & hand protection)

- Head cover (water proof)
- Googles/visor
- Masks (water resistant)
- Gloves (skin tight upto wrist/elbow)

B

(Hip above protection)

Good quality light water/ wind proof jacket with hood which can be easily washed/ disinfected

C

(Full body protection)

Full water/rain proof two piece suit — (with hood)

D

(Hygiene & sanitation)

- Hand sanitizers
- Area disinfectants
- Masks for rescued civilians during evacuation
- Medicines for own troops



PLANNING



- Public safety guidelines in view COVID-19 Pandemic scenario.
- Representatives of NDRF were placed at SEOC for smooth flow of information.
- Tac HQ was established at Kakdwip (West Bengal) for Cyclone Amphan for coordination & supervision of NDRF teams.
- Briefing of Do's, don'ts to Officers & all the Team Commanders by the Unit Commandant.
- Availability of rain coat with each rescuer was ensured.
- Portable lighting systems.



EXECUTION OF OPS



- Entire affected area was divided into zones and sub-zones for the purpose of response.
- Evacuation measures.
- Search & rescue, clearance of uprooted trees & damaged electric poles.
- Restoration of electricity.
- Clearing of main highways/link roads.
- De-mobilisation.



CHALLENGES



- Evacuation issues.
- Provisions at cyclone shelters / evacuation centers keeping in view the COVID advisories about physical distancing & should also have quarantine facility.
- Lack of COVID-19 safe accommodation.
- Requirement of large no. of evacuation centers and vehicles for mass evacuation.
- Disrupted communication network
- Speedy and timely assistance to the affected & needy people.



CHALLENGES



- Continued adverse weather conditions.
- Operations in confined space.
- Prolonged duration of ops. Hardly any rest & relief for the responders and stakeholders.
- COVID-19 infection to responders and stakeholders during operations (including 74 NDRF personnel).
- Maintaining the high moral of responders and stakeholders during odd situations and extended ops durations.



LESSONS LEARNT



- Complex emergency situation - Super Cyclone Amphan and COVID-19 pandemic.
- The importance of equipment spare parts and field workshop.
- Tailor-made training on COVID-19.
- Regular briefing and debriefing paid dividends.
- Community involvement.
- Coordination- both at macro and micro level.
- Homogeneity between central, state and local agencies
- Effective media and social media management.
- **India's preparedness and EWS contained the loss of lives to just double digits.**



Thank you!