Cyclone Risk Management in Times of an Outbreak

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Prologue

The New Normal induced by COVID-19 has instigated the need of redesigning of our conventional preparedness & response strategies to cope with extreme events like Cyclone. While COVID-19 struck mankind with an utter surprise, it is absolutely possible that, in the times to come, we may encounter similar outbreaks or situations which restricts the mobility and thereby impedes the conventional processes of disaster preparedness and response. As it is said, every disaster is an opportunity to learn and the same has been reinforced by the Hon'ble PM's 10-point agenda, this handout intends to disseminate the experiences gathered by the states which were affected by the cyclones during the period of lockdown. This handout will prove beneficial in making relevant preparedness strategies for tackling future cyclones amid COVID-19 crisis situation which doesn't seem to fizzle out soon.

Contemporary Situation of Cyclonic Systems of India

India is no stranger to high intensity cyclones but over the last decade the bulk of these have originated from the Bay of Bengal. In fact, as per data from Weather Underground, 26 of the 35 most severe cyclones have been recorded in this region. The Bay of Bengal, with its concave bays that allow winds to funnel water into them, and high sea surface temperatures, makes the perfect breeding ground for cyclones. From Cyclone Sidr in 2007, to Aila in 2009 and Cyclone Bulbul as recently as November 2019, the region has witnessed, not only an increase in the frequency of such tropical storms, but a growth in their intensity as well.

More cyclones in the West than the East

The year 2019 was marked for an unusual number of cyclones originating from India's West Coast. According to the India Meteorological Department, the frequency and intensity of cyclonic activity in the Arabian Sea was the highest it had been in over a century, in 2019. Usually, the Arabian Sea sees just a single cyclone every year, but in 2019, it recorded five cyclones. Cyclone Vayu that formed in June, was then followed by Hikaa in September. In late October, two cyclones, Kyarr and Maha brewed at the same time, and finally, in December, the region witnessed Cyclone Pawan. In contrast, the Bay of Bengal witnessed just three cyclones in Pabuk, Fani and Bulbul. The 2020 North Indian Ocean cyclone season was the costliest North Indian Ocean cyclone season on record, mostly due to Cyclone Amphan. The season began on May 16 with the designation of Depression BOB 01 in the Bay of Bengal, which later became Amphan. Cyclone Amphan was the strongest storm in the Bay of Bengal in 21 years. Severe Cyclonic Storm Nisarga was the strongest tropical cyclone to strike the Indian state Maharashtra in the month of June since 1891. It was also the first cyclone to impact Mumbai

since Phyan of 2009. The season concluded with the dissipation of Cyclone Burevi on December 5. Overall, the season was slightly above average, seeing the development of five cyclonic storms.

Rising surface sea temperatures in the Arabian Sea

Scientists are in agreement that rising sea surface temperatures (SST) in the Arabian Sea are contributing to the formation of an increased number of cyclones. In a 2019 report, the Indian Meteorological Department noted that the SST in the Arabian Sea rose by a staggering 0.36 degrees Celsius, compared with the baselines temperatures between 1981 and 2010. Among the various factors that increase the chances of cyclone formation, is ocean heat. The rising temperatures have also increased the intensity of the cyclones forming. Some have asserted that the two seas, the Arabian Sea and the Bay of Bengal are experiencing contrasting phenomena. 2019 is still considered an anomalous year with experts in general agreement that the threat of cyclones in Bay of Bengal is still greater than that in the Arabian Sea. However, the effects of global warming, and countries' failure to lower carbon emission levels, will likely leave India with no choice but to ramp up its climate adaptation initiatives in the coming years.

Response Challenges

Years 2020 & 2021, have already been engulfed with COVID-19 crisis. The pandemic has challenged all the planning and response capacities that were assimilated to deal with disasters over the past several decades. The deadly virus has already affected more than 200 countries. While the challenges imposed by COVID-19 doesn't seems to dilute in near future, impending hazards are posing additional threat & thrust of cascading nature over the concern stakeholders.

1. Dual preparedness challenges

When dealing with multiple crises, responding to one disaster may make matters worse for the other. For instance, when dealing with evacuations during an impending cyclone, implementing COVID-19 related rules and regulations may make it difficult to safely evacuate people from exposed regions. The mobility restrictions caused by the COVID-19 pandemic call for new approaches and revision of existing contingency plans to safely evacuate and house people, if needed. In addition, the restrictions imposed for COVID-containment create significant barriers to conducting key preparedness actions such as simulation exercises. Community awareness and risk communication may also be impacted, especially when dissemination at the community level depends heavily on community leaders, organisations and volunteers conducting direct outreach to at-risk communities.

2. The vulnerable among the vulnerable

Disasters act on and exacerbate existing vulnerabilities which are often linked to gender, age, ethnicity, income, health and nutritional status, amongst other factors. COVID-19 has already proven to impact certain groups disproportionately for both epidemiological and socio-economic reasons. The twin impact of disasters and COVID-19 will have a far more adverse effect on groups that are already marginalised and vulnerable. At the same time, existing social protection measures are often not agile enough to respond to the needs of vulnerable individuals and households. In India, a substantial number of poor are excluded from social safety nets for various reasons, such as lack of appropriate identification to get a ration card.

3. Interoperability

Addressing multiple disasters at once requires a great level of coordination between government ministries and partners at the regional, national and local levels. Countries with a low level of coherence in policies, plans and institutional mechanisms are likely to struggle to put rapidly in place appropriate response coordination mechanisms. The dual impacts of a pandemic and a climate or other natural hazard-related disasters will require an integrated disaster risk management approach with close engagement between health officials and disaster management authorities amongst others. In addition, scaled-up cooperation and coordination with civil society will be required to enhance community-level prevention, preparedness and response measures to manage the simultaneous disasters.

4. Challenges to frontline workers

Local actors, including volunteers, are typically the first to respond to a disaster after emergency response teams. The mobility and distancing restrictions imposed by COVID-19 will hamper disaster responses, including their speed and efficiency. Disaster responders will require special personal protective equipment (PPE) and training on how to respond to a disaster while adhering to COVID-19. In addition, international assistance in the form of surge support may be curtailed due to travel restrictions and the need for quarantine.

Lesson Learnt & Preparedness for Future

"COVID-19 has underlined that our response mechanisms, particularly for black swan events – in both developing and developed countries – require a lot of strengthening"

-Kamal Kishore Member, National Disaster Management Authority, India

1. Reorientation of existing Risk Management & Capacity Building Strategies

There is prudent need to augment the existing capacities and resources towards enhancing preparedness for climate-related hazards as they concurrently battle the COVID-19 pandemic. This includes undertaking- through a consultative process- the revision of standard operating procedures (SOPs) and contingency plans to incorporate containment measures for COVID-19, such as physical distancing and provision of PPE. Contingency planning should consider how to put in place special provisions for older people and high-risk groups to limit their exposure to the virus while also ensuring health care is available at evacuation sites and shelters. Identification of additional evacuation sites (schools, government facilities etc.) will reduce the occupational density of the temporary shelters. Planning may also consider staggering evacuations to minimize the amount of time vulnerable communities spend in the shelters. Other measures include pre-positioning emergency supplies and adapting early warning messaging to include information on physical distancing and preventive behaviours during evacuations. Preparedness measures should also focus on strengthening the response capacity of the health system to allow it to better deal with increased numbers of patients as a result of potential double disasters.

2. Need for a proactive mindset

Reducing the dual impact of COVID-19 and climate-related disasters can be achieved by scaling up efforts to reduce underlying vulnerabilities and by anticipating the consequences of the disasters, especially on the vulnerable among vulnerable groups. For example, the twin impact of Cyclone Amphan on top of existing COVID-19 prevention measures compounded vulnerabilities among the most marginalized communities in the state. Early action to reduce the impact of other disasters can also be critical. This can be facilitated through community-level mapping of where vulnerable households reside so that targeted support can be provided both to prevent the spread of COVID-19 and to prevent negative impacts from other disasters. For example, in the case of heatwave action plans, measures can be taken to identify the most vulnerable, such as elderly, so they can be assisted early on and treated in local primary care facilities. This would reduce the eventual burden on already stretched hospitals.

3. Protect the first responders and frontline workers

As with health workers responding to the COVID19 crisis, disaster response teams, humanitarian workers and volunteers should also be protected from any exposure to the virus while assisting

communities at the frontlines of a climate-related disaster. In addition to providing first responders with appropriate PPE, protocols should be introduced on how they can protect themselves from COVID-19 and for the provision of psychosocial care.

4. Empowering Local Actors

Local level actors are the first to respond to emergencies, yet often cannot easily access resources to support their prevention and response activities. Due to the travel and quarantine restrictions, it is likely that, except in exceptional circumstances, developing countries will have to rely on national and local responders to meet humanitarian needs. This requires reflection on how to provide appropriate reinforcement to local and national actors in diverse and complex humanitarian contexts. Accordingly, as part of preparedness measures, partnership strategies and funding agreements between international, national and local actors, including donors, should be revised to increase direct funding to local partners. This increased reliance on local actors should be accompanied by a corresponding increase in the representation of local actors in coordination and decision-making fora. At the same time, principles should be put in place that champion inclusive approaches that tap into the capacity of faith-based organizations, women and youth groups, and indigenous leaders.

Addressing the Contemporary Challenges: Anecdotes from India

The pandemic situation led to inception of novel challenges that required reorientation of conventional cyclone risk management strategies. The cumulative risk of pandemic and the cyclones had the potential to incur grave social loss on the exposed demography. But, with meticulous strategies and swift administration, a grave calamity was averted. The current section highlights the challenges that were posed by the series of events during cyclone season infested by pandemic and their redressal.

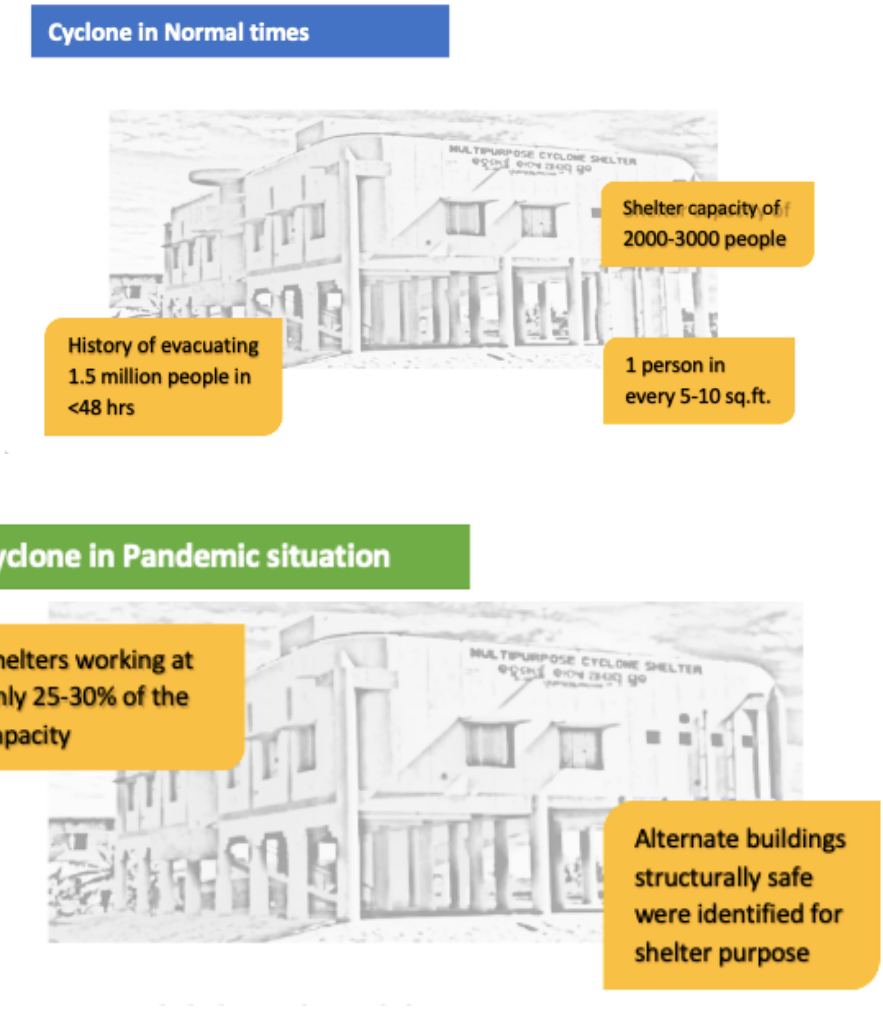
1. Evacuation

Previously, in case on any impending cyclone, the vulnerable population was evacuated from their homes to the shelters using public buses, trucks, jeeps etc. During the course of pandemic this was not possible for the fact that not many buses were actively plying for their services and secondly, in order to follow physical distancing norms, the evacuees cannot be cramped up as done in previous cyclone induced evacuations. To address the issue, temporary cyclone shelters like pukka school buildings, Govt. offices etc. were identified near the habitation such that the vulnerable population didn't have to move more than 1-2 Km from the location of their residence. The evacuation process was selective and the administration was directed not to evacuate people who were living in their

pukka houses unless there were chance of submergence due to tidal surge or their location was in the regions bracing for direct impact of the cyclone.

2. Cyclone Shelters

In wake of pandemic situation, the cyclone shelters were already being used as quarantine centres which restricted their usage as cyclone shelters. Additionally, in order to maintain social distancing, the available shelters had to be operated on 25-30 % of their capacity. To counter these issues, large number of decentralized shelters were identified at strategic location so that they were easily accessible and people could be mobilized to these shelters through foot.



3. Non-Availability of Workforce

Commissioning of fresh cyclone shelters made additional burden of the logistical arrangements facility. There was scarcity of workforce as gram panchayats were already occupied with COVID management. In order to tackle the issue other Government staff particularly teachers were deputed

to manage evacuation process and cyclone shelters. As these staff did not have formal training in managing shelters/people in a shelter, a capsule course of 1 -2 hours was provided.

4. Community Kitchen

During pre-pandemic times, when physical distancing need not to be followed, on and average single community kitchen could cater round 1000 people in a shelter. But during COVID-19 times around20 kitchens were required to serve 1000 people. To ensure additional staff for community kitchen service, Gram Panchayats were asked to engage women SHGs. Women SHGs have already been involved in catering of COVID quarantine shelters and they knew to serve people while following the safety protocols like social distancing, disposal of used utensils, etc. Every SHG had experience of being associated with quarantine centres so they knew the drill.

5. Safety of the Responders

In case of Cyclone Amphan, 900 personnel were sent to West Bengal to assist in restoration efforts. These included 200 NDRF personnel and 700 from Odisha State Disaster Rapid Action Force and Odisha State Fire Service. After returning these personnel were kept in temporary quarantine centre and were tested for COVID-19. About, 220+ were detected with COVID-19 positive and it came in cognizance later that they could not wear PPE kits properly while working as the temperature was more than 40 degrees and while working in a different State, the locations were unknown and people were dragging and forcing them to go to their roads and internal roads for debris clearance, etc. People were just not concerned of the social distancing and it was difficult to avoid physical contact.

6. Inclusivity of Marginalized Section & Building Confidence among the Masses

Even though people were properly alerted still they were unwilling to evacuate. There was severe resistance because since the start of the pandemic, people were asked to stay home and stay safe. People were in lockdown and thus no one was ready to suddenly come out and move to a new place. To resolve this, the community leaders were counselled to make them understand that cotemporary risk of cyclone was more grave than COVID-19. People were asked to choose between COVID 19 and cyclone, weigh the impact themselves and were sensitized to the fact that living in vulnerable location was more dangerous than COVID- 19 infection. Evacuation of vulnerable people posed a serious challenge to the administration as people were already going through psychological stress due to pandemic situation. The shelters already being used as temporary medical centres were thoroughly and visibly sanitized not only to ensure prevention of infection but also to gain psychological confidence of the people being sheltered there. Similarly, steps like usage of liquid soaps instead of

soap bars were ensured to build confidence among inmates to limit down possibility of cross infection through usage of common soap bars. Elderly person & pregnant women were separated from others and extra precautions were taken to minimize possible physical contact.

7. Management of Dead Bodies

To curb infection from potentially infected dead bodies, administration made special arrangements for ambulances and mortuaries for their proper and dignified disposal.

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