# Focus 64 – Smart Governance in times of extreme Natural Disasters: An Introspection. The 'After Phase' of Super Cyclone Amphan in India and Bangladesh

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## Abstract

Every year, the Bay of Bengal coast shared between India and Bangladesh is struck by one or more cyclonic storms during both pre- and post- monsoon seasons. Although the inhabitants of this region remain mentally prepared to withstand the devastation caused by natural calamities, they don't have adequate financial support to combat the physical losses involved. This year, super cyclone Amphan caused irreversible disruptions to lives and livelihoods among those living in the Sundarban and along the coastal areas of Odisha. This paper aims to explore the collateral damages caused by Amphan across both India and Bangladesh. We intend to identify the ground reality of disaster governance – what goes wrong and why? Furthermore, how is it that, in spite of a widespread awareness concerning the hazard-prone character of this coastline, permanent solutions are never sought? This question leads us to a quest for alternative channels of governance. With an overview of success stories across different countries in the world, this study focuses on future prospects open to e-media, particularly as concerns unconventional channels for information collection and service delivery to affected citizens.

## The Context

As the COVID-19 pandemic swept the world, South Asian countries and their cities were barely able to cope with the crisis: a lockdown on 1.8 billion people posing numerous challenges – economic, social and psychological – all demanding an alert governance and an ever-increasing volume of resources. Barely two months into lockdown and within a seemingly wary situation, super cyclone Amphan hammered the coastal and adjacent districts of both Odisha and West Bengal in India on the evening of May 20, 2020 – then progressing further to devastate Bangladesh. Amphan was the most intense, powerful and devastating cyclone striking the Bengal coast since 1737. The gusting winds and storm surges associated with this pre-monsoon cyclone completely destroyed both the landscape and the livelihoods of Indian Sundarbans – as well as six coastal blocks of the Purba Medinipur district of West Bengal and four districts in Odisha. Significant disruption was caused in coastal Bangladesh (Nandy, 2020); the anthropo-ecology of 26 districts of South and Western Bangladesh were impacted. The India Meteorological Department (IMD) had alerted the local administration to evacuate coastal areas and strongly advised fishermen not to venture out into the sea (Nandy, 2020). This multi-hazard scenario affected 14 million residents in the Bengal's delta and coastal Odisha. The devastation was so massive that citizens in affected areas forgot the threats related to COVID-19, as families needed to be evacuated and were huddled away into safer buildings in large areas along the coast. Social distancing norms meant little when people left their homes, knowing fully well that they wouldn't find anything when they returned. Following the disaster, many affected areas - including Kolkata's metropolitan area – witnessed full cuts to electricity, internet and communication lines. The struggle by municipal authorities, National Disaster Response Force and State Disaster Response Force, continued for over a week as they worked to remove debris and fallen trees from roads.

## Extent of Devastation

Although over 3 million people were evacuated from the Sundarbans in both countries, this action was unable to prevent the destruction of 1.5 million dwelling units, thousands of acres of fertile agricultural lands, crops, village and urban roads, etc. In West Bengal a 160 km-long embankment was wiped out and 5000 km of roads were badly damaged. In Bangladesh 1100 km of roads were damaged, 180500 hatcheries were inundated by saline water, and a 150 km-long embankment was breached (The Business Standard, 2020) by the gusting winds and storm surges.

Initially government officials estimated a loss of $10000 billion in West Bengal (The Times of India, 2020) and $130 million in Bangladesh (Hindustan Times, 2020). As over 11 million people were evacuated and accommodated in 567 cyclone shelters and 7000 concrete buildings (The Hindu, 2020), no deaths were confirmed in Odisha; still, the cyclone disrupted the lives of 45 lakh people (The New Indian Express, 2020). In the most affected parts of West Bengal 10.5 lakh hectares of farmland and 58000 hectares of fisheries were affected; the state government also reported deaths of 9 lakh poultries and cattle (The Times of India, 2020).

## Ground Reality of Disaster Governance

Smarter governance of natural disasters involves two factors - first, effective local governance; second, improved application of communication technologies. It is basically a comprehensive process that involves mitigation, risk reduction, prevention, preparedness, response and recovery (Asghar, Alahakoon, & Churilov, 2004; Dorasamy, Raman, & Kaliannan, 2013). Following a natural disaster, the demand for food, shade, clothing and medicine are elementary so as to relieve affected people. Proper recording, exchange and transmission of information during different stages of the disaster are therefore crucial. In many instances, people become unable to convey their messages to the authorities; at the same time, it becomes difficult for administrators to trace back each and every affected person. Accordingly, the local community's role in extending help to neighbours and relatives becomes indispensable. During such devastating situations the relationship between local community and government must be organic and trustworthy. The role and responsibility of community volunteers – as in the case of COVID-19 management in Kerala – could be useful to disaster governance. Local problems needed to be addressed through public participation and generous involvement by elected representatives. This requires increased political and financial autonomy for local governments – for, during such emergencies, it is essential to follow area-based approaches. Top-down mechanisms often fail to either address or even understand local problems and aspirations among citizens inhabiting areas distant from the state or the centre. Governments should obviously formulate standard operating guidelines; however, implementation at the ground level demands a proper understanding of local situations. The attitudes by municipal or panchayat officials, disaster managing authorities, and elected representatives must be generous. They should not merely act as law enforcers – rather as caregivers (Vijayan, 2020).

In reality, the 73rd and 74th amendments of the Indian constitution have so failed to properly delegate authority to the local, so-called grassroots level. On top of that, traditional routes of interaction among the government and the community remain weak – in fact, administrators and communities often remain in extreme, opposite ends of the communication spectrum.

Fear often impedes this communication from ever becoming effective and meaningful. The people who govern often do not realise that the distance between themselves and the citizenry at large is highly damaging to a community in times of need. In most cases, government officials remain out of reach of the actual beneficiaries – whose needs are all too often not visible to those who govern. It is at this juncture that Information and Communication Technology (ICT) based mediums of communication may come to the forefront – through the establishment of real time, both one-to-one and one-to-many communication. It enables easy and timely communication across distant places. It facilitates interactive communications and collaborative actions by both the public, private agents, and disaster relief agencies. This would enable to share live information regarding situations in remote localities and among those who inhabit said localities. Online and tele-network-based messenger applications also show great potential. Unmanned Aerial Vehicle (UAV) and remote-sensing technologies can efficiently monitor sea-level rises, wind speed, embankment conditions, vegetation coverage and anthropogenic activities. It would become easy for officials to communicate warnings as well as information about rescue teams, rehabilitation centres and financial compensations. E-resources such as weather prediction, land stability information, predictions of sea-level rises as well as wind speed and direction can easily be shared through electronic channels such as e-mail, SMS and TV advertisements. Social media platforms such as Facebook, YouTube, Twitter, Instagram, WhatsApp etc. also show huge potential. In the recovery phase the benefits of virtual technologies could be harnessed for academic exchange and expertise development. Sensor-based information networks are efficient to develop community preparedness (Troy, Carson, Vanderbeek, & Hutton, 2008; Sakurai & Murayama, 2019).

## Looking for Smarter Channels

The real-time communication and information-sharing facilities of online social media can be harnessed not only for assessing the live status of affected areas, but also for rescue and rehabilitation operations. These virtual platforms are useful to share news even through mobile devices and outside the platforms itself (Lachlan, Spence, & Lin, 2014).

Besides, they provide opportunities for public audit of funds utilised in rescue, relief, and rehabilitation. Citizen-generated information through open digital platforms are vital for situational analysis and awareness generation – once platforms are adequately managed by the administration (Sakurai & Murayama, 2019). In the Amphan's aftermath many roads were closed, trees were uprooted, electricity connections were lost; however, the administration did not have access to proper information regarding the exact location of each and every situation. This much burdened the restoration process.

In such conditions, satellite phones and Global Positioning System receivers can be used for location identification and mapping. Alternate network designing is also possible through Geographic Information System software. Geo-tagged images are also convenient in this regard. Nowadays, most smart phones possess geo-tagging facilities; these are helpful for uploading geo-tagged images and sharing real-time locations of incidence sites, rehabilitation centres, hotspots, etc. Print and TV media have played an important role in preparing citizens before natural catastrophes. Presently, the government of West Bengal is using electronic mass media as well as web platforms for assessing ground realities and raising funds for reconstruction works. Open web platforms such as social networking sites accelerate information dissemination to global audiences; this ultimately fosters fund generation. These operations are quite different from regular public-management activities. They necessitate context-specific and quick responses to affected areas, as well as timely decision-making. Local people can easily become involved in creating maps of affected areas and evacuation sites.

Utilisation of electronic media for relief, rescue and rehabilitation operations can be traced back to the beginning of the 21st century. Sahana Relief and Rehabilitation (ShaRe) Hub was initiated after the Indian Ocean earthquake and tsunami of 2004 (Dorasamy, Raman, & Kaliannan, 2013). This is a platform of humanitarian communities – public and private organisations – for disaster relief. This initiative aims to raise funds so as to reduce disaster risks and meet the Sustainable Development Goals (SDGs) as well (Sahana Foundation, 2020). Online neighbourhood-based forums were developed during the Southern California forest fire in 2007. They are used for communicating community-relevant information, particularly to geographically dispersed communities (Shklovski, Palen, & Sutton, 2008). The experience was quite like that following the typhoon Morakot in Southern Taiwan in August, 2009 (Huang, Chan, & Hyder, 2010).

The role of online social media was also evident following hurricane Sandy (2012) in the Caribbean region (Sakurai & Murayama, 2019). During the massive earthquake in Nepal in 2015 the digital volunteer community used social media for disaster management as well (Sakurai & Thapa, 2017; Sakurai & Murayama, 2019). During hurricane Harvey, which struck the Gulf of Mexico coast of the USA in August 2017, we witnessed a massive utilisation of social media platforms for requesting aid and relief (Rainear, Lachlan, Oeldorf-Hirsch, & DeVoss, 2018; Robertson, Johnson, Murthy, Smith, & Stephens, 2019). Even in India, during the Chennai (2015) and Kerala (2018) floods social media platforms were used for information sharing and relief collection by both public and private bodies (Varghese & Yadukrishnan, 2019). At the time of the Chennai flood emergency health services were made available through information sharing in online social media (The Economic Times, 2015).

In the course of cyclone Fani in May, 2019, the Odisha government generated pre-disaster awareness among the coastal inhabitants through an SMS service. Electronic media are crucial for information management of natural and anthropogenic disasters. Their efficiency was evident during the foot-and-mouth-farming crisis in the UK in 2001 (Hagar, 2009; Shklovski, Palen, & Sutton, 2008). Case Management Systems in Singapore used during the SARS outbreak (2003), National Incident Management Systems in the USA (2004), the US-Indian Ocean Tsunami Warning System Program (2007) are some initiatives worthy of acknowledgment in this regard (Dorasamy, Raman, & Kaliannan, 2013). During the West Japan Earthquake, 2018, the disaster victim certificate generation process was managed through virtual channels (Sakurai & Murayama, 2019). These certificates are essential to estimate the recovery budget aftermaths of any disaster. After nature's devastations, internet and telephone connection are often not available. However, electronic media have a monumental impact on evacuation and preparedness development. Government officials can be deployed to potentially affected areas prior to the occurrence of cyclones – and communication with administrative hierarchies is easy to establish through satellite technologies. Since Japan is highly susceptible to natural hazards and disasters, social networking services are widely availed for situation reporting, disaster response and information sharing by local governments (Sakurai & Murayama, 2019). However, the citizenry should be responsible enough not to share false information which may cause unnecessary harassment to public service providers.

## Conclusion: Visions for the Future

As the corona virus outbreak loomed large over the world, the international community remained largely unaware and unable to assist populations affected by this last, devastating natural event. According to the global official rhetoric, Amphan did not create a major upheaval as it has affected only a few coastal areas in two countries. However, that was enough to affect over 14 million people – now and certainly for coming years. Thankfully, this devastating cyclone made its landfall during a low tide. It took 84 lives – a number which would be substantially higher if a high tide regime was the case. All the same, it deeply disrupted the lives of 14 million people (BBC News, 2020; United Nations, 2020). Many areas of Sundarbans are engulfed under saline water which has not drained even a month after the disaster. Thousands of houses in Sagar, Patharpratima, Mathurapur, Kultali, Kakdwip, Nandigram, Haldia, Sutahata, Khejuri, Deshopran, as well as in the Contai II Block and Basirhat Subdivision of West Bengal (The Telegraph, 2020) were complete demolished. The cyclone also shattered 92 blocks of Odisha – covering the Balasore, Bhadrak, Kendrapada, Jagatsinghpur, Mayurbhanj, Cuttack, Jajpur, Keonjhar, Khordha, and Puri districts (NDTV, 2020).

The Jhalokathi, Pirojpur, Borguna, Bhola, Barishal, Laxmipur Jheniadah, Jessore, Chuadanga, Meherpur, Rajsahi, Kusthia and Natore districts of Bangladesh was also affected by the cyclone's tail - including the worst affected areas of the Sathkhira, Bagerhat, Patuakhali (The Business Standard, 2020) and Khulna districts. Quite fortunately, the Rohingya camp settling Cox's Bazar was not so deeply affected. Both during and after the event many online groups, pages and posts were created so as to improve communication with marooned citizens and extend rehabilitation facilities. WhatsApp, YouTube, Facebook, Twitter and Instagram platforms are all frequently used by civil society so as to share photos and videos of the devastation, as well as collect rebuilding funds. However, administrative responses to those efforts remain questionable. Although different government websites are being used for relief funding and material collection, there are many more technological blessings still to be harnessed for the purpose of efficient disaster governance. In the same vein, holistic strategy formulation by local governments is required for managing risk-information for the people living in vulnerable areas. This might take into account community-based information sharing, open virtual platform monitoring, Unmanned Aerial Vehicle surveillance, and authenticity checking of public-generated information.

E-resources can solve problems arising from dearth of spatial information – hence, connecting the community and developing adaptive attitudes to mass emergencies (Shklovski, Palen, & Sutton, 2008) constitutes an important element of disaster governance. However, this requires more ICT operations in local governments as concerns infrastructure and human resources. Long-term perspective planning is to be designed, involving both the local community and Information Technology professionals.

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