Disaster Management in Pakistan: An Appraisal in Light of the Recent Floods

Daniya Gardezi

Management Trainee Officer – NUST Institute of Policy Studies

Email: daniyagardezi@gmail.com

Disaster Management – A History

Disaster management, or the process of preparing for and responding to natural or man-made disasters, has a long history. From ancient civilizations to modern times, people have always had to face natural disasters such as earthquakes, floods, and hurricanes, as well as man-made disasters such as wars and industrial accidents. One of the earliest recorded instances of disaster management can be traced back to ancient China, where the government established a system for responding to natural disasters such as floods and earthquakes. This system involved the use of emergency shelters, food and medical supplies, and evacuation procedures. In the modern era, disaster management has become a more organized and systematic process, with the development of emergency response agencies and the establishment of international organizations such as the United Nations Office for Disaster Risk Reduction (UNDRR). These organizations work to coordinate responses to disasters and aid affected communities. In addition to emergency response, disaster management also involves efforts to reduce the risk of disasters occurring in the first place. Typically, it includes measures such as building codes and regulations, early warning systems, and insurance programs. However, in more developed parts of the world, disaster management has now become a much more technologically advanced and holistic process.

Pakistan has a history of experiencing various types of natural and man-made disasters, including earthquakes, floods, and terrorist attacks. Throughout the history of the country, we have attempted to develop various systems for responding to and managing these disasters and legislations that serve as guidelines on what to do in times of disaster. *The Civil Defense Act 1952* was one of the earliest legislations established to aid the public in defense of any form of hostile act as well as any natural or man-made disaster situation. However, it was not a particularly comprehensive legislation because it did not provide direction on rescue and relief operations, or mitigation measures based on the type of disaster that occurred. Later, the act was reviewed and amended. *The Calamities Act of 1958* was then promulgated which was primarily concerned with emergency response planning, which is the maintenance and restoration of order in areas affected by calamities. This Act was also changed with the establishment of provinces. The *Federal Flood Commission* was established in 1977 in the aftermath of the 1973 and 1976 floods that wreaked havoc across the country. FFC was tasked with assisting in the coordination of flood prevention efforts at the national level. These Acts were never proven to be effective mainly because they lacked coordination. Different agencies and organizations may have conflicting priorities or approaches to disaster management, which can lead to confusion and inefficiency. There was no governing body or organization to oversee disaster management and different agencies and organizations involved had conflicting interests or strategies to manage disasters, resulting in uncertainty and inefficiency. Moreover, natural disasters are constantly evolving in nature. Tackling these phenomena requires constant innovation in the methods used, and the rigidity which is found in our laws and regulations may not allow for the rapid adaptation and modernization that are often needed in the face of changing circumstances. *The Disaster Management Act* 2010 called for the creation of National Disaster Management Authority (NDMA) and was a welcome step, however, the aftermath of any mid-to-large scale disasters in Pakistan in the last decade has proven that disaster management in Pakistan is still not as effective as it needs to be. The efficacy of our system was recently tested once again when Pakistan was hit by floods this year, engulfing one-third of the country as a result.

2022 Pakistan Floods

This year, Pakistan experienced the worst floods in its history. Floods in Pakistan killed 1,739 people and caused Rs 3.2 trillion ($14.9 billion) in damage and Rs 3.3 trillion ($15.2 billion) in economic losses between June and October 2022. Sindh was the worst-hit province with 799 people dead and 8,422 injured. 10 million people have been displaced in Sindh and 57,496 houses were severely damaged or destroyed. A combined total of over 14,000 km² of farmland has been destroyed in the floods, with over half a million livestock killed. This loss of farmland and livestock has resulted in a crisis of food insecurity and increased inflation all over Pakistan, and the flood affected families are the ones to be suffering the most from food insecurity. As of yet, the government has not laid out any plans or strategies for the restoration of the lost farmland.

Moreover, water-borne diseases spread rapidly among the affected people and the winter season has only exacerbated the deteriorating health conditions in those regions. The situation recorded immediately after the floods in Sindh was that there were 588 cases of malaria, with a further 10,604 suspected cases, as well as 17,977 cases of diarrhea, and 20,064 of skin disease. A high of 90,000 cases of diarrhea were reported in a single day on September 1. Healthcare camps and facilities provided during the flood have largely been organized by non-governmental organizations, private hospitals, or the armed forces. The government has failed to create a robust plan which ensures healthcare facilities for those affected and millions were left without any kind of access to medical professionals or medicines. The government hospitals and clinics in Pakistan are severely overburdened and stretched thin, however, it must be the responsibility and foremost priority of the disaster management agency to ensure all affected areas have sufficient healthcare units.

Infrastructural losses due to floods have caused significant damage to the country's economy, however, many of these losses could have been prevented had there been more forceful zoning regulations in place or early warning systems were installed in high-risk areas. An example of poor urban planning leading to infrastructural loss is

the destruction of a luxury hotel in Swat, which was also the largest and most famous hotel in the city. The hotel was situated dangerously close to the river and the foundations were not strong enough to withstand the raging water that eventually submerged it. Another example of infrastructural loss was the complete destruction of the Hassanabad bridge in Hunza which was built under the China-Pakistan Economic Corridor. The bridge collapsed after a Glacial Lake Outburst Flood (GLOF) originated from Shispar Lake and as a result, the CPEC route on the KKH was blocked. To prevent such losses in the future, it is imperative that early warning systems are installed by disaster management agencies.

Recommendations

(a) Community Based Disaster Management

The United Nations General Assembly declared the 1990s as the International Decade for Natural Disaster Reduction (IDNDR) on December 11, 1987, at its 42nd session. The IDNDR Program Forum (Geneva Forum), held in Geneva in 1999, aimed to summarize the IDNDR Program's achievements and plan disaster relief efforts for the twenty-first century. An analysis of the Geneva Forum outcomes shows that communities received greater attention. The Geneva Mandate on Disaster Reduction shows that "national, regional and international efforts toward disaster prevention and mitigation are necessary but should be considered as supportive of community-based measures". Community mobilization in disaster relief has remained one of the most effective strategies throughout history; nevertheless, this should not mean that communities are left to fend for themselves. Unfortunately, this was the case in the towns of Johi and Mehar in Sindh where the provincial government and district administration failed to take notice of the rising level of the Manchar Lake. This is when an engineer residing in the area took the initiative of making ring bands around their towns along with other residents and ended up saving their towns from destruction. While the responsibility for protecting the areas should not solely fall on the residents, communities should be empowered in this regard by raising awareness, conducting workshops on prevention and mitigation, and appropriate plans for

their role in rescue and relief should be laid out and disseminated through district administrations.

(b) Eliminating Redundancy in Governmental Bodies

Another issue with the way disasters are managed in Pakistan is the establishment of new departments or commissions each time a disaster occurs. While there is an NDMC and NDMA, establishing parallel bodies such as the National Coordination Committee and the National Command and Operation Centre only creates redundancy and disorder in governance. Such arrangements are incompatible with the need for cohesion, optimal resource utilization, and collaborative efforts and will further weaken the state apparatus. In contrast to well-established principles of public policy, intrusive tendencies into governmental institutions create fractures that lead to the collapse of the administration's entire structure. Therefore, instead of creating additional departments, we need to focus on optimizing the central bodies overseeing disaster management under which provincial governments and district administrations are empowered to effectively handle disasters.

(c) Decentralization

Decentralization in disaster management is providing local governments and communities more control and responsibility for disaster planning and response. This can entail giving local organizations more funding and training, as well as giving them a greater say in decision-making. In the past, our challenges with decentralization have been coordination issues and the lack of strong communication between local and central authorities, and most importantly, lack of accountability. However, with the formation of intergovernmental committees for the sole purpose of facilitating communication and the use of audits or citizen feedback mechanisms to ensure accountability, decentralization can prove to be an extremely effective strategy.

(d) Prevention First

A study of the legislations established throughout Pakistan's history and the way disasters are managed shows that there is a greater focus on rescue and relief operations rather than prevention techniques. While there is currently a lot of good quality research on disaster prevention being carried out in academic circles, the government is still lagging in developing prevention strategies based on that research. The 2022 floods were caused by heavier-than-usual monsoon rains and melting glaciers following a severe heat wave, both of which are linked to climate change. Machine Learning models and predictive systems already forecasted that the climatic patterns would touch extremes this year. However, there were little to no prevention measures in place for the floods. There is an urgent need to fund the research and development for Decision Support Systems for flood management and AI/Machine Learning based predictive models.

(e) Emerging Technologies for Prevention and Mitigation

Despite having a relatively minor fraction of global carbon emissions, Pakistan is one of the worst-affected countries by the effects of climate change and it is expected that climate change induced disasters will become more frequent in the coming years. Thus, we need to invest in technologically innovative solutions to fight the effects of climate change. Some of the emerging technologies that can be used for disaster management include:

  i. Predictive analytics: Machine learning and data analytics approaches can be used to anticipate the possibility and impact of natural disasters such as floods. This data can assist disaster management authorities in planning and preparing for possible catastrophes.

  ii. Virtual and augmented reality: Technologies like virtual and augmented reality can be used to teach first responders and to envision and prepare for disaster situations. Simulations can be created which can help authorities understand the potential impacts of a disaster and plan for various scenarios. These tools can also be used to test response plans and identify potential weaknesses or areas for improvement.

iii. Blockchain: The use of blockchain technology to track donations and other resources could increase the transparency and effectiveness of disaster relief efforts.

iv. GIS and mapping tools: Data regarding disasters and their effects can be gathered and analyzed using Geographic Information Systems (GIS) and other mapping techniques. This information can aid in planning response actions, assessing damage, and understanding the scope of the crisis.

Conclusion

The worst floods Pakistan has ever experienced occurred in 2022, and its repercussions will be felt for a very long time. The floods presented numerous challenges and exposed many gaps in our disaster management architecture and strategies. Pakistan must learn from its errors and boost the effectiveness of its disaster management organizations. Additionally, there is an urgent need to fund research and development of prevention and mitigation methods in light of the increasing threat of climate change. Effective disaster management involves the participation and engagement of all sectors of society, including government, private industry, and civil society organizations. By working together, Pakistan can better prepare for and respond to disasters, and reduce their negative impacts.