

## Natural Disasters, Challenges for Pakistan and Role of Various Institutions

*Social Sciences and Humanities*

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### Abstract

*Pakistan falls in the region, highly prone to Natural Disasters. Limited resources in terms of technical gadgetry and human resource are the major reasons for inadequacies in efficient management of disasters. Modern world has developed sophisticated methods and equipment to deal with natural disasters to bring the losses to bare minimum. In line to what is reported after the colossal earthquake of 2005, a methodical attempt was observed in building a feasible configuration of disaster management that resulted in the establishment of National Disaster Management Authority (NDMA), the progress is far from satisfaction. The statement is supported by the flood of 2010 that exposed the thoughtlessness and flimsy administrative policies that shaped as serious damages and transience. Keeping the intense enormity of floods and other natural disasters, this calls for an efficient disaster management in the country. Consequently, it is the dire need of the nation to devise an organized disaster management system to manage the catastrophes that occur frequently in the region. Hence, the scope of this article deals with the major challenges being faced by Pakistan and role of various institutions to generate a coherent response in case of any future natural disaster.*

**Keywords:** Natural Disasters, Capacity Building of Pakistani Disaster, Management institutions, Challenges related to Disaster Management, Response mechanism for Natural Disasters

### Introduction

Disaster is defined as an abrupt, catastrophic incident causing great loss and devastation to human and material. Damage of disasters is infinite that changes due to change in environmental and physical location, type of weather, kind of earth surface and degree of vulnerability. Within this context, Pakistan being situated at the Arabian basin is naturally prone to a

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variety of natural disasters. Additionally, non-natural, simulated exposures also intimidate the country that includes transportation concerns, industrialized waste and spill phenomenon, pollution based restructuring and social inconsistencies etc (IMF, 2010). Within this context, the past few decades observed a disaster-rejoinder approach while dealing with such emergencies. However, the 2005 earthquake of Pakistan became an eye opener that forced the stakeholders and policymakers in constructing and deploying appropriate guidelines and procedures in order to curtail disaster-liked injuries and losses. Consequently, the National Disaster Management Ordinance (NDMO) was approved in 2010 and based on the very edict; the National Disaster Management Commission (NDMC) was shaped under the direct supervision of the Prime Minister of Pakistan. Till today, the NDMC is a recognized and leading policy making institute that manages and deals with natural and manmade disasters in the country. Since the birth of NDMC, the National Disaster Management Authority (NDMA) was constituted to watch over the accomplishment of nationwide policies and practicable stratagems on disaster management.

Inline to what is reported above; Pakistan Armed Forces along with other related institutes have undertaken laudable relief operations while dealing with any type of calamity in the country. Foreign governments and relief organizations also commended our institutions for their efforts. There was however some critical shortcomings, that pointed towards lack of coordination, requisite capacity building, and legislation issues between various tiers. There is thus a need to identify shortfalls in existing systems for disaster management in Pakistan focusing on conceptual frame work for response by various institutions.

### **Disaster management in global and national milieu**

It is well known that disaster of any type results in the impediment of progress as it directly obliterate basic infrastructure. Such calamitous events may have sudden and destructive impact or may create distress over an extended period (Sinha, 2006). The frequency of such disasters has increased off-late due to seemingly tangible shift in global environment. Weak town planning codes, incompetent governance systems and lack of awareness about ways to deal with future disasters can all impact the extent of death and destruction.

### **Disaster management**

Technically speaking, the art and science of systematization and administration of resources and errands for handling emergencies while keeping the attentiveness, retort and recuperation of calamities of any kind is

termed as disaster management (World Confederation for Physical Therapy, 2016). While dealing with disasters, an important variable of interest is the level of disaster-related knowledge that prevails in the society. For that reason, disaster management processes and procedures can only work if the public is at least aware about such issues. An educated populace is reported to respond positively at the time of adversities that is being the objective of an effective disaster management program.

### **Disaster management cycle**

The fundamental rationale of a 'Disaster Management Cycle (DMC)' is to guarantee an all-inclusive pre- and post- disaster measures. An ideal DMC focuses on a 2P & 2R approach i.e. (Prevention, Preparedness, Relief and Rehabilitation).

### **Earthquakes**

Being situated at the seismic belt, the country is faced with frequent earthquakes during the whole year. This is augmented by the mountainous strips of Himalaya, Hindu Kush and Karakorum that are also susceptible to earthquakes. The said risk becomes even higher as Pakistan is placed at the eastern border of the collision between Indian and the Eurasian Plates. Because of this collision, the northern area of Pakistan faces the probability of severe earthquakes. On the other hand, the Indian Plate and its transverse motion relate to the Iranian and Afghan micro-plates that constructs the Chaman fault (Pararas, 2007). Furthermore, the subduction of the Arabian plates is being observed underneath the Iranian Plate and that resulted in the earthquake of 1945 (Waqas, 2006).

### **Floods**

In Pakistan, floods happen due to soaring rainfall over adequately longer period. Additionally, the poor management of water reservoirs, indecent administration of water level in dams and hence the discharge of the said water particularly during the rainfall season results in unexpected floods (Sreekesh, 2009). The monsoons are very venerable as heavy rains are observed during the season and among all provinces, Punjab faces the major damages followed by Sindh. The others parts of Pakistan (Khyber Pakhtun Khawa and Balochistan) are also prone to flash floods; however, coastal floods are rare in these areas. The major damage because of coastal floods was reported in 2004 that included the destruction of the coastal highway. Being faced with such turmoil, the Indus Water River System Authority (IRSA) mounted a telemetric system at barrages and other water flow control points. Although, the effort was deemed useful in monitoring

discharge of water and flood forecast, attempts to manage flood and flood-related emergencies are not satisfactory. All relative stakeholders (Irrigation and Planning departments) do not work in collaboration and a joint effort is nowhere observed. Unfortunately, the provincial government also shows a non-serious attitude towards flood relief which is evident from the measures taken to control and manage floods. At the end of the day, the whole responsibility is taken up by the Armed Forces that supervise the overall management and rehabilitation process.

### **Tropical cyclones**

The general investigation reveals that cyclones are period-based in Pakistan and occur between April - May and October - December. Just like other natural disasters, cyclones result in loss of lives and damage to the properties. However, a lot can be saved if timely and necessary measures are taken in advance (Jana, 2009). In the time span of 45 years, 20 cyclones were reported and heavy damage was observed at the coastal areas of Balochistan and Sindh province.

### **Droughts**

By and large, consistent and below average rainfalls are the major reasons of drought. While categorizing natural disasters, drought is rated as the highest effecting catastrophe. Within this context, the province of Balochistan, few areas of Sindh and the belt of south-eastern Punjab receive very few rainfalls throughout the year. Hence, such mentioned areas are liable to face drought. Extreme drought was observed in the beginning of the current century that lasted for two years. The dearth resulted in mass migrations, unexpected morbidities and mortalities. On a rough estimate, 2.2 million people were affected by the drought of 2000 – 2002.

### **Institutional framework for Disaster Risk Management**

The NDMC 2010 established the NDMC as a unit to control and manage disasters in the country. Alongside, the NDMA was recognized as the administrative arm of NDMC (Gazette of Pakistan, 2010). In addition, the DMC and provincial authorities were also established and are as under:

#### ***National Disaster Management Commission***

Led by the Prime Minister of Pakistan, the NDMC consists of the following members:

- a. Federal ministers,
- b. Leaders of opposition

- c. Chief Ministers (all provinces)
- d. Prime Minister AJK,
- e. Governor KPK (to represent FATA),
- f. Chief Executive Gilgit Baltistan,
- g. Chairman Joint Chiefs of Staff Committee (or the nominee) and
- h. Representatives of civil society (or any other member appointed by the Prime Minister).

The NDMC is authorized to devise strategies and guidelines for national disaster relief management plans (NDRMP) and other related activities.

### ***National Disaster Management Authority***

The NDMA is a supervisory appendage of the NDMC. The NDMA harmonizes the Disaster Relief Management (DRM) activities at all levels of the nation (Ibid). The NDMA is accountable in formulating NDRMP, developing strategic guidelines and to provide technological and other related support.

### ***Provincial Disaster Management Commissions***

Provincial Disaster Management Commissions (PDMCs) are the management units at the provincial level. The major responsibilities of PDMCs are to construct the required rules and policies and also to execute errors in functions. The Chief Minister of the respective province chairs the PDMCs and is facilitated by member of the opposition leader and a representative of his choice. Other members are selected on the discretionary choice of the Chief Ministers.

### ***Provincial Disaster Management Authorities***

The Provincial Disaster Management Authorities (PDMAs) are accountable to the smooth accomplishment of DRM plans and procedures (Ibid). The constituent varies as four provinces (Sindh, Balochistan, Khyber Pakhtunkhwa and Punjab) hold PDMAs, whereas in AJK and Gilgit-Baltistan, the same is referred as State Disaster Management Authorities (SDMAs).

### ***District Disaster Management Authorities***

In addition to the above mentioned units, the NDMO also focuses on the establishment of District Disaster Management Authorities (DDMAs) at the entire district level of the country (Ibid).

### **Disaster management: role of Pakistan army**

In relation to disaster management and Pakistan army, the latter carries intense and affluent familiarity and experience of carrying out relief activities. Moreover, Pakistan army also has her proficiency in handling disasters related industrial hazards (Ali, 2009). Being the prime institute of the country, Pakistan army always pursues cautious preparation in resource handling and situational analysis. The organization has the capability to face every challenge brilliantly and never backs whenever support of any kind is needed in the country. It is evident that Pakistan Army played a crucial role in damage control, asset management and managed to save human lives and the livelihood of the nation. Pakistan army is accountable for disaster-related damage control and at the same time is involved in relief operations that assist the civil government. In terms of the management responsibilities, the organization is also involved in evacuation of casualties hence providing additional support to the civil administration. Alongside with these activities, aviation facilities, medicinal support and recuperation of the accessible nationalized possessions (camp setting, medical camps organization and establishing tent villages etc) are also focused by the army. For all these activities, Pakistan army keeps a close synchronization with pertinent departments and provides the required safety and security measures during the time of turmoil in the country (ERRA, 2015).

The Army Disaster Management Cell (ADMC) is situated at the General Headquarters. The ADCM is the focal point for NDMA and the base of Army-based disaster management operations. The section is liable to close observation, task achievement and adroitness of Army strategies and guiding principles.

### **Disaster management: Earthquake Reconstruction and Rehabilitation Authority**

The 2005 earthquake in Pakistan caused massive destruction. The earthquake resulted in the establishment of Earthquake Reconstruction and Rehabilitation Authority (ERRA). The ERRA is responsible for scheduling, organizing and regulating the renovation and rehabilitation of the areas that are affected by the earthquake (ERRA, 2009).

### **Legislation issues**

Disaster management regime in the country has historically been centrally controlled. Since the scale and locale of disasters remain unpredictable, any new legislation on power sharing will have to cater to centralization of authority and resources for response mechanisms for future disasters. As

mentioned earlier, Chief Ministers are responsible for disaster management at the provincial levels. However, there is lack of established teams at the communal levels that can address the issue at the grass root level. In addition, the related Ministries of Health and its related wings are never added to the management system hence creating a large vacuum in the system. Necessary amendments / provisions in relevant protocols will cement the response mechanism. Based on the literature, the country faced heavy earthquakes, floods and droughts that results in far-reaching damages. The clear and comprehensive legislative measures focusing on mandatory budgetary allocations to various tiers of disaster management regime will strengthen the hitherto fore ineffectual efforts.

### **Coordination issues**

As natural or manmade disasters are predictable, rational planning and enlistment is an effective method to combat the seriousness of such disasters. However, this is not easy as the preparation process needs and effective and timely harmonization among all related stakeholders. Effectual pre- disaster synchronization is also important as it can help in saving human lives and to accommodate the post- disaster damages. However, this does not happen in reality as poor resource management and lack of responsiveness is often reported from developing countries.

Unfortunately, there is scarcity of an efficient global body that works for the supervision and management of disasters. To the best of our knowledge, certain international set of rules and frameworks are available to provide a brief overview of disaster management. There are no policies and plans at the state and local levels; the administration has no choice then to look upon the armed forces to help during the pre- and post disaster period. In this context, we propose frequent emergency disaster exercises that can be of assistance in the time of commotion. Even a small scale disaster rescue exercise will be helpful in combating the damages related to disasters. Furthermore, majority of the loss results because of either poor / lack of knowledge or feeble understanding of the disasters amongst the general public. Till today, there is no training program or awareness campaign scheduled for the general public. In addition, mass, print and social media are seldom used by the DRM system of Pakistan.

In the nutshell, although the respective stakeholders have tried their level best in handing the disaster-related problems in Pakistan, much is still needed to be done. A better coordination, communication and commitment is the need of time that will offer the necessary environment to combat disaster-related issues in the country.

## **Capacity enhancement issues**

It is evident that disasters are not controllable but an appropriate risk assessment and quality supervision can curtail the overall effect of the damages. These call upon for collaborative linkages at the global and regional level that will initiate early warnings hence helping in better management of emergencies.

New dams and barrages to avoid water loss every year needs serious consideration. Moreover, recent electricity / gas shortage is posing a serious threat to economy and industrial production. Natural resource management in an organized and systematic manner will be of great importance in averting disasters like droughts, famines and social dislocation.

Disaster management institutions of Pakistan were found not up to the desired standards in all crisis situations and heavily relied on the armed forces for post disaster management. The existing institutions like NDMA and its offshoots at lower levels need serious capacity enhancement.

## **Recommendations**

Based on the detailed overview of disaster and its management in Pakistan, the following is recommended as possible framework for the future:

### ***Strategy / approach for disaster management***

It is high time that stakeholders at the national and local level should devise policies that have governmental endorsement. The said policies are meant to serve as the guideline of disaster management in the country. Additionally, it will also direct the officials at the central and regional levels that are envisaged in disaster management programs. However, it is important to understand that the developed strategies should encapsulate long-term, comprehensive and consistent measures to concentrate on disaster-related concerns. This requires the collaboration of political, military and civil society stakeholders in order to handle large scale adversities under an articulate legislation.

### ***Federal control***

The country is in dire need of strong centralized institutions that can handle disasters at the national and regional levels. Based on the 18<sup>th</sup> amendment, the role of federal institutes in managing disasters is now questionable. Whatever the case is, apparent and unequivocal law legislation is needed as precedence to maintain the leading role of the federal body towards disaster management.

### ***Budgetary allocations***

Disaster management institutes need continuous financial flow and legislations are needed in this regard for proficient and continuous



functioning. Therefore, the connoisseur authorities must come up with an appropriate allocation of budget for smooth functioning and coordination and competence improvement of the disaster management units in the country.

### ***Punishments for crimes***

Regrettably, incidences of crimes are frequently reported during an emergency. Hence austere penalties and punishments for such criminal activities during nationwide disasters must be devised by the legal authorities. We therefore suggest a translucent and immediate trial through special courts to discourage such activities.

### ***Strong urban structures***

Currently, major loss results because of poor infrastructure at the national and the regional levels. The three major areas of concerns are the edifice in disaster prone areas should be based on safety principles, areas of risk are to be nominated as conservation zones and future absorption of inhabitants in such areas must be strictly controlled.

### ***Disaster profile***

We urge the authorities to set up a disaster commission that will undertake comprehensive study of disasters, the susceptibility and a precautionary profile that will classify the affected or suspected areas. This will also help in designing contingency plans that will be useful in reducing the disaster-related effects in general and particular.

### ***Improving potentiability of Earthquake Reconstruction and Rehabilitation Authority***

Obligatory improvements are needed in the NDMO 2010. The ERRA is to be added as an integral part of disaster management. The ERRA must be amalgamated under NDMA or it can run parallel to NDMA. This will help in handling the post- disaster rehabilitation processes that will augment the Ministry of Disaster Management or other related institutes.

### ***Special legislation for children***

The disaster management strategies and plans currently target adults in general. The other demographic units of the society especially children are not focused intensely. Therefore, policies related to child protection and rehabilitation is equally needed in emergency situations.

### ***Horizontal / Vertical coordination***

The up-bottom and bottom-up approach among all related institutes is needed during peace as well as emergency time. The processes and procedures are to

be synchronized in a way that resources are used effectively and efficiently to operationalize the necessary response when needed.

### ***Interface between armed forces and government agencies***

Improved and successful collaboration between armed forces and civil servants is very important. This will lead to the maximum usefulness to the whole disaster control and management process. Although there are examples of collaboration, efficient relationship between armed forces and other stakeholders needs improvement.

### ***Coordination with media***

The time of emergency needs least sensationalism and effective reporting of incidences to the nation. For that reason, a hands-on dexterity between media and disaster management units is needed. It is the duty of disaster management units to provide available information to media cells before and after a disaster has occurred. The information can be latterly used for general awareness, prophylaxis and protection by the public.

### ***Fund utilization***

It is imperative that transparency in fund utilization is very important. The stakeholders have to make sure that public is convinced about the safe use of funds. The disaster management units and other stakeholders have to build trust so that public support and donations can be attained during the time of emergencies.

### ***Regional level coordination***

A variety of global frameworks are available that can provide elementary guiding principles to the disaster units. Conducting disaster management exercises with the neighboring countries is an excellent option in enhancing augmenting management skills.

### ***Coordination with global institutions***

An improved relationship with the global community and civil society that have experience in disaster relief can prove to be beneficial in improving future disaster management responsibilities. A successful cooperation when maintained can have appropriate and timely concoction of foreign support during the time of disasters.

### ***Early warning and risk mitigation centre***

An institution that can translate early warning and risk assessment of disasters in needed. The institution should not only focus on natural disasters but also be mandated to deal with industrial and manmade hazards.

### ***New dams and barrages***

To avoid the impact of floods construction of new dams and water storage facilities like Kalabagh, Bhasha and small dams may be pursued earnestly. Moreover, recent electricity / gas shortage is posing a serious threat to economy and industrial production and consequently the ability to manage disasters. Natural resource management in an organized and systematic manner will thus be of monumental importance in averting disasters like droughts, famines and social dislocation.

### ***Damage assessment***

The preliminary evaluation should focus on rescue and mass departure of population. Only after that, long term measures should be considered. For initial assessment, qualified persons being the component of National Rescue Team should be assisted by all stakeholders so that they can perform their duties effectively and efficiently.

### ***Capacity building of NDMA***

National Disaster Management Authority holds the key responsibility of preparedness, prevention and reconstruction before and after a disaster. However, the NDMA needs to have qualified proficiency with appropriate financial, logistics and human resources. In reality, NDMA, however, is critically constrained and the required possessions that are needed for smooth functioning limits the competency of NDMA. Major areas that lack competence building are construction of National Disaster Management Fund (NDMF), availability of disaster management apparatus, equipment and logistic support that includes food and non food items.

### ***Role of armed forces***

The armed forces must build up a coordinating center that will be able to connect the services capacities of all stakeholders. Jobs should be distributed and defined such as aviation response being with the Pakistan Air Force and maritime related disasters being the primary responsibility of the Navy. A methodology may be worked out by Joint Services Headquarters to correctly prepare leadership towards disaster management. There is also a need to interact with foreign institutes to expand educational and training plans for rescue teams and other dedicated disaster management skills.

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