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Capacity Building for Disaster Management: A Case of Pakistan

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Abstract: *Disaster management is a nucleus for mitigating negative impacts of natural hazards. Its success or failure depends upon application of institutional frameworks, infrastructure development, and human and technical resources. Community participation in supporting government authorities to handle disaster-induced crises, is essential, too. It is an enhanced capacity building that provides an opportunity to Disaster Management Authorities to do collaborative decision-making for tackling natural disasters. Capacity building ensures strengthening of disaster management activities with a collective spirit of skilled force. Thus, almost all functions are placed under special control of Disaster Management Authorities which usher in an integrated adaptation of administrative activity with a shared purpose to address natural disasters. This article investigates existing capacity building for disaster management and inherent challenges, such as, insufficient infrastructure, fragmented governance, and limited resources, in Pakistan. Using capacity development theory for disaster management with qualitative methods and a descriptive research design coupled with analytical and explanatory aspects, this article analysed secondary and primary data, including interviews with experts. Purposive sampling has been used due to few experts on the topic. This study found that insufficient institutional framework, dearth of resources, poor training facilities, lack of modern technology, for example, Geographic Information Systems (GIS) are the main hurdles. Therefore, capacity building looks limited. Poor performance of state's institutions has failed to mitigate losses caused by several natural disasters, especially frequent floods. Resultantly, floods have damaged socio-economic capital. This poor showing demands a much larger meaningful capacity building for disaster management.*

Keywords: Disaster management, capacity building, infrastructure, natural hazards, planning, implementation

INTRODUCTION

During several past years, disasters have significantly damaged infrastructure in world, including Pakistan (Ahmed, 2013; Shah et al., 2020). Therefore, to minimize risks and

vulnerabilities of a number of frequent hazards, more systematic and strategic efforts are desperately required at global as well as national levels (Shah et al., 2022). Strong institutions are needed to build capacity for disaster management; with a comprehensive analysis of existing institutional architecture (Lodhi, 2024; Shah et al., 2019). This research is performed through some comprehensive expert interviews conducted with officers working in disaster management institutions at federal, provincial, and district levels. Research outcomes show that disaster management authorities (DMAs) suffer from duplication of assignments, overlap of jurisdictions, dearth of technical and financial resources, and less coordination between offices/departments. The legal and policy documents are not properly enforced. In addition, dependency syndrome persists at lower institutions.

Disaster risk governance is the primary assignment of official authorities. Therefore, proper legal and policy instruments are required for establishing institutions that can build management capacity at all levels to handle hazards. The federal government is expected to muscle up Disaster Risk Management within the institutional jurisdictions. The United Nations International Strategy for Disaster Reduction (UNISDR) reads disaster risk management (DRM) as, "a systematic procedure of deploying administrative devices, organizational set ups, operational capacities to implement policy and strategy documents and best practices in order to address negative effects of hazards, and any disaster possibility in future" (Azhar, 2022; Naseer, 2014).

Large-scale disasters have significantly diversified process of DRM with legal and institutional evolution. Pakistan has continuously been improving the DRM mechanisms based on lessons derived from past hazards. In this regard, establishment of institutions, including capacities, skills, and mechanisms contributed to build resilience to disasters but with limited success (Irshad et al., 2015; Lodhi, 2024). Pakistan also signed and adopted international framework for disaster risk reduction (DRR) on second and third World Conference held in Japan. It is amongst the most hazard-hit nations which are vulnerable to natural disasters, for example, earth quacks, droughts, cyclones, landslides, and floods etc. (Shah et al., 2020; Swathi, 2015). The Global Climate Risk Index (GCRI) ranks Pakistan at 7 amongst 180 countries (Saputra et al., 2025).

Empirical literature shows that well-established institutions at national level mitigate disaster-induced economic and human losses (Saputra et al., 2025). Shah et al. (2022) discovered that Pakistan needs to place DRM as one of the major elements within government structures with sufficient institutional arrangements. Because DRM seems to be incapacitated with limited organizational, administrative, political, and financial capacities to cope with disasters. Therefore, well-established and efficient institutions are required for DRM with more responsiveness, accountability, and transparency (Azam et al., 2012; Lodhi, 2024; Naseer, 2014).

Legal and institutional instruments for DRM is a specialized procedure across all stages to tackle the underlying drivers of risk. Research demonstrates that some developed nations have successfully adopted and executed DRM polices, while Pakistan is still lagging behind. The main gaps in DRM procedures are the result of incapacitated institutions, scarcity of resources,

fragmented governance, and dearth of political will (Shah et al., 2019). With comprehensive legislation, improvement in existing agencies, and creation of new institutions empowered by clarifying mandates, functions, and earmarking of more human, technical, and financial resources, the disaster management capacity can be increased. Furthermore, UN underlines that organizations and stakeholders require modern skills and capacities to withstand negative impact of disasters.

Report of Hyogo Framework of Action (HFA), 2005-2015 acknowledged that dearth of needed resources, including human, financial, and technical, in Pakistan, blocked disaster management progress. Pakistan's HFA Mid-Term Review (2011-2015) highlighted successive government's lacklustre commitments, and undertakings to achieve strategic benchmarks of HFA. Pakistan enacted various laws, and implemented policies frameworks, and created authorities to tackle hazards; attaining strategic goal-2. This report also pinpointed various gaps in achieving HFA strategic goal-2 which included: (1) scarcity of capacity, skills, and resources at national level; (2) increased dependency syndrome of local office/departments on higher authorities; (3) insufficient awareness among people and institutions to incorporate risk mitigation policy into sustainable development; (4) improper policy planning and implementation to reduce hazard risks (Shah et al., 2020).

THEORETICAL DISCUSSION

Capacity development theory (Saputra et al., 2025) deals with capacity building process for disaster management, focusing on existing disaster management, including institutional skills, capacity building, resources, both technical and human, and infrastructure development. It evaluates effectiveness of key institutions like National Disaster Management Authority (NDMA), Provincial Disaster Management Authorities (PDMAs), local government's departments and how they respond to natural disasters. This theory identifies gaps, challenges, and barriers in current system, such as, insufficient capacity, limited legal and policy instruments' enforceability, and fragmented governance. The theoretical framework stresses strengthening of organizations, enhancing stakeholders' competencies, institutional capabilities, and community engagement to respond and mitigate disasters. It recommends a holistic approach to developing multi-pronged capacity across levels: federal, national, and local. It provides a mechanism for capturing how international collaboration is needed for an effective policy planning and implementation, leading to disaster prevention, mitigation and post-recovery. By applying this theoretical underpinning, we can understand and build disaster management capacity, in Pakistan to systematically cope with disasters.

MATERIAL AND METHODS

This is a qualitative study with descriptive research design. Secondary and primary, both data are analysed. Findings of this research are the outcomes of primary data collected through expert interviews and secondary information in shape of government reports, legal documents, and international reports, for example, HFA Mid-Term Report (2013-15). Quality research papers were consulted before conducting interviews with the exerts. Purposive sampling (Gay

et al., 2020) has been made due few experts available on topic. The purpose of expert interviews was to collect an in-depth information on following major themes: (1) current institutional capacity; (2) institutional architecture for disaster management; (3) minimizing dependency syndrome of institutions and stakeholders for disaster governance; (4) building resilience at district level; (5) mainstreaming of risk minimization into maturity/development. Objective of the article is to investigate Pakistan's capacity building and progress on coping with challenges found in HFA Mid-Term Review report of 2013–15. The core research questions are: (1) What are the available financial, technical, and human capacities at all levels of disaster management? (2) What steps have been taken for streamlining institutions at federal, provincial, and local levels? (3) How the current DRM institutional set up reduce dependency syndrome of lower institutions? (4) How institutions contribute to increase awareness at local and community levels in constructing resilience to hazards? (5) What are the institutional measures adopted to mainstream risk lowering into development?

Capacity building of disaster management institutions in Pakistan

In Pakistan, legal and institutions' development for disaster reduction has evolved over the decades; and the legal and administrative strategies were formulated and impacted by changes in disaster landscape characterized by a galaxy of methods, and precedents shared by the vulnerable people and regions (Naseer, 2014; Swathi, 2015). Owing to the spread of enlightenment secularism, and progress of scientific knowledge, perceptions concerning disaster are being changed into legislation. Pakistan has long concentrated on disaster governance but has neglected risk reduction aspect of disasters. Recently, the country has invested some resources in developing DRM as a collective priority (Azhar, 2022; Naseer, 2014). For this purpose, the federal government has enacted some laws, made policies, and established agencies at all levels for accelerating DRM framework. The legislative and policy acts provide basic legal framework and foundation to implement DRM structure. So, legislative aspect is regarded as the most important dimension upon which designing of other DRM policies, and strategies, and their implementation are anchored.

In a few decades, Pakistan has made substantial efforts for arranging institutional structure for DRM. Especially, after 2005 devastating earthquake, and 2010 and 2020 floods, Pakistan strengthened legislative and institutional arrangement for DRM. Legislation paved the way for establishment of a federal and provincial agencies for well-orchestrated planning, institutional façade to implement policies at all levels. For instance, creation of Disaster Management Authority was a main policy instrument to develop disaster reduction structure. This Act aimed at encouraging the international cooperation and exchange in Pakistan's disaster mitigation field. Under this strategy, DMA was created for information exchange, technical help, and emergency rescue and relief operations (Azhar, 2022; Shah et al., 2022).

In Pakistan, the National Disaster Management Ordinance (NDMO) was passed in 2006. Its prime objective was to deal with flood disaster, rescue and relief activities. Prior to it, disasters were tackled under Calamity Act of 1958 (Naseer, 2014)., Federal Flood Commission, Pakistan Meteorological Department, Civil Defence were working to support federal agencies for responding to disasters. After cyclone of 1970 in East Pakistan, Emergency Relief Cell (ERC) was set up as a focal place for emergency situations at national level complemented by relief

commissioners at sub-national levels. National Crises Management Cell (MCMC) was established in 1999. It was the main information and coordination organization for relief operations and services in emergencies. Till 2006, main focus of these agencies was on disaster risk management. The country did not have a coherent and inclusive legislative and institutional structure to address disaster vulnerabilities and risks reduction in future. The devastating earthquake of 2005 necessitated a policy change in disaster and emergency situations. National Disaster Management Act was passed in 2010. It laid the foundation of a modern institutional framework for mitigating disasters. For the first time, the National Disaster Risk Management Framework (NDRFM), outlined a national strategy for DRM by engaging various commissions and ministries at national level. Its responsibility was to coordinate with provincial governments, providing strategic guidelines to the entire fabric of DRM (Ahmed, 2013; Naseer, 2014; Shah et al., 2022).

The NDRFM, a comprehensive policy document, presented a five-year plan that included: construction of legal and institutional frameworks; assessment of hazards and vulnerabilities; proliferation of education, training and awareness; careful programming for DRM; community based risk mitigation strategy; introduction of multi-hazard early warning system; disaster risk mitigation and emergency response mechanism development; and capacity building to deal with post recovery operations. NDMA Act of 2010 proposed a three-tier institutional structure to cope with disasters. Under this act, at first level, National Disaster Management Commission (NDMC) was constituted followed by provincial commissions. NDMC was tasked with formulating policies, and laying down guidelines for disaster authorities. NDMC has also the mandate for approving plans chalked out by divisions/ministries, arranging and overseeing strategies for risk preparedness, reduction, and response, and taking other essential steps for capacity enhancement. The NDMA under a Director General was established to serve as a focal point to coordinate, implement, and monitor disaster management strategies, too. NDMA was also empowered to provide technical expertise to the lower authorities. Another body, the Provincial Disaster Management Commission (PDMC) was created at provincial level with responsibility to create provincial and regional strategy for disaster mitigation; approving, and reviewing disaster programs, and overseeing provisions of financial resources. At provincial levels, Provincial Disaster Management Authorities (PDMAs) were formed. The provincial authorities were responsible for formulating provincial disaster preparedness policies, giving policy directions on financial matters, coordinating and ensuring plan implementation, evaluating preparedness of strategic plans, monitoring of disasters, and coordinating with stakeholders for effective response at provincial levels. At district level, the District Disaster Management Authority (DDMA) was proposed headed by district mayors to formulate, and implement district disaster programs. Its responsibility was to coordinate with key stakeholders; giving policy guidelines to other departments to take necessary actions for disaster mitigation and prevention. Such measures were proposed at Tehsil and Town levels to respond to hazards in consultation and coordination with DDMA (Azar, 2022; Saputra, 2025; Swathi, 2015).

Furthermore, under NDMA Act, 2010, the National Institute of Disaster Management (NIDM) was proposed for improving skills of institutions via education and training of official functionaries and stakeholders. The creation of National Disaster Response Plan (NDRP) in

2010, was a milestone to deal with grey areas in disaster governance; especially, identification of functions and responsibilities of authorities and stakeholders to strengthen response mechanism. In 2012, formulated in synchronization with HFA, disaster management system was strengthened under National Disaster Management Plan (NDMP) with technical help of International Cooperation Agency (ICA) of Japan. This plan adopted 41 strategies, 118 priority programs. Its main objective was to handle the spectrum of disaster management for the next decade (2012-2022). Its broader aim was to develop risk mitigation policies, strategies, and programs. The NDMP emphasises on amplifying institutional skills and capacities with a prime focus on effective risk preparedness, prevention, and mitigation. After the passage of 18th amendment, disaster management was shifted to the provinces. Additionally, a network of response departments with different technical skills, and capacities are functional at both federal and provincial levels but with blurred and opaque operations. Disaster management practices are executed on ad hoc basis. And this situation is further worsened due to legislative and regulative gaps, dearth of political commitment, low capacity, institutional weaknesses, including opaqueness in mandates, overambitious but impracticable plans, poor coordination among federal, provincial, and district agencies, departments and stakeholders (Shah et al., 2022).

ANALYSIS AND DISCUSSION

Following is the critical analysis of disaster management capacity building in Pakistan:

Fig. 1. https://www.unocha.org › pakistan accessed, May 23, 2025.

Institutional arrangements for disaster risk management

Institutional arrangement outlined for DRM was in line with international standards to lay down three layers decentralized disaster management institutions at national, provincial, and local levels. Likewise, institutional arrangement suggested for DRM in Pakistan included the international commitments to create three tiers decentralized disaster management. Likewise, modern institutional structure for DRM was drawn from Disaster Management Ordinance (2006), National Disaster Management Framework (NDRFM) (2007) and National Disaster

Management Act (2010) which recommended construction of a three-layers disaster governance. The institutional arrangement for federal and provincial levels works as supreme policy designing for DRM. Further, federal, provincial, and local authorities laid down focal coordination, facilitation, and policy implementation frameworks, too. The legal tools gave an overall roadmap for policy planning and execution of DRM. It meets its expenditures through government's grants, loans from banks, aid from donor agencies, and donations from international and national agencies. Still many regions of Pakistan are vulnerable to different hazards which put pressure on budget earmarked for disaster risk management. The policy implementation of the proposed DRM actions has emanated from two documents: first, NDRFM (2007) pinpointed gaps, priorities, needs and execution road maps for DRM; secondly, Disaster Risk Reduction Policy 2012-2020 was promulgated in 2012 as a major instrument to speed up the process to change it from a reactionary approach to disaster preparedness, prevention, and mitigation response. Though, these policy instruments were with limited enforceability but over the decades the successive governments undertaken important measures to improve institutional structure for minimizing vulnerability and developed a network of safety and resilience. Moreover, during the fiscal year (2017-2018) the NDMA planned contingency guidelines for rainy season, and created awareness, and transported relief items to warehouses of Central Mechanical Transport and Store Depot (CMT & SD) of Pakistan Army, and Pakistan International Airlines (PIA). In some provinces at divisional levels, the PDMA proposed Hydro Meteorological Guidance System, establishing warehouses in six districts of Khyber Pakhtunkhwa province, conducting training and awareness raising sessions in some districts as well (Shah et al., 2020).

Existing institutional capacities

The existing institutional capacity have been evaluated at three tiers. First, availability of human and financial resources at each tier of institutional arrangement; secondly, planning, implementation and operationalization of disaster management policies; and lastly, assessment of technical and material resources.

Human resources

The NDMA authority has recruited staff at federal level for performing disaster management responsibilities. NDMA's official's capacity is enhanced by trainings at both national and international forums. The authority provides training to provincial civil servants, NGOs' representatives, civil society members, academics, media staff, and industrial workers. Further, the Surge Emergency Response Team (SERT) was created with assistance of Action Aid and National Humanitarian Network for engaging all stakeholders and volunteers, under one platform, to expedite emergency and disaster operations. The SERT has been channelizing

technical and human resources during disasters. In 2018, the National Disaster Response Force (NDRF) was approved. The Provincial Disaster Management Authority (PDMA) lacked permanent staff. However, it has recruited specialists for expert opinion on policy planning and implementation. Furthermore, staff training at international, national, and provincial levels was arranged. The line departments and agencies like Fire Services, 1122 Emergency Services, Social Welfare, Police Department, Health, Food, Education, Communication and Works, Civil Defence, and Irrigation Departments also support PDMA. At lower administrative level, such institutional set up is in a weak position. The local governments are least interested in disaster management programs as well (Shah et al., 2020).

Technical resources

NDMA has technical resources to launch rescue and relief operations. The authority has two national, two provincial and eleven regional warehouses. It has capacity to provide relief services to 0.5 people in an emergency situation across the country. The authority has issued instructions for storing, maintenance and supply of food and non-food materials. It is supported by the Anti-Narcotics Force, Armed Forces, and cabinet division for aerial operations in emergencies. NDMA has established Provincial Emergency Operation Centres (PEOCs); and is constructing control centres in provinces. However, it lacked technical resources for large scale relief activities. For example, PDMA has outdated weather forecasting equipment and flood gauging instruments, and old other gadgets. Furthermore, PDMA has no aerial firefighting capacity, for example, helicopters for ultra-rapid response and mega operations. PDMA has warehouses and stockpiles with non-food and food items in six districts. It is documented that PDMA is completing surveys about risk prone areas for better disaster management operations. In addition, a network of collaboration with line departments has been established (Azam et al., 2012; Shah et al., 2019).

Financial resources

Over the years, the NDMA has been facing budgetary constraints; which has severely affected implementation of polices at all stages. The federal government has not increased National Disaster Risk Management Fund (NDRMF). The provincial relief commissioner and some line agencies have limited emergency budgets; to support DDMA, which has limited funding, too. The district authorities often complain that the higher management authorities have never allocated sufficient funds. Therefore, union councils are always dependent upon districts, and provinces for budget allocations (Swathi, 2015).

Minimization of dependency syndrome

The 18th constitutional amendment devolved disaster management to the federating units. Now, provinces undertake rescue and relief activities. The local governments are also responsible for designing contingency plans in consultation with district authorities. But, dependency syndrome has marred their capacity, for example, provincial governments suffer from low capacity to implement disaster management strategies. The NDMA still gives direction to provincial and regional authorities in framing contingency plans. Experts say that NDMA should enhance capacity building of PDMAs, district authorities, local institutions, and NGOs to minimize dependency syndrome (Azam et al., 2012; Irshad et al., 2015; Shah et al., 2020). The 18th constitutional amendment provides operational autonomy to provincial governments,

but still they are not capable of tackling problems of enormous level. Likewise, district authorities are dependent on provincial governments for planning, budgeting, resource allocation, technical assistance, and monitoring of hazards.

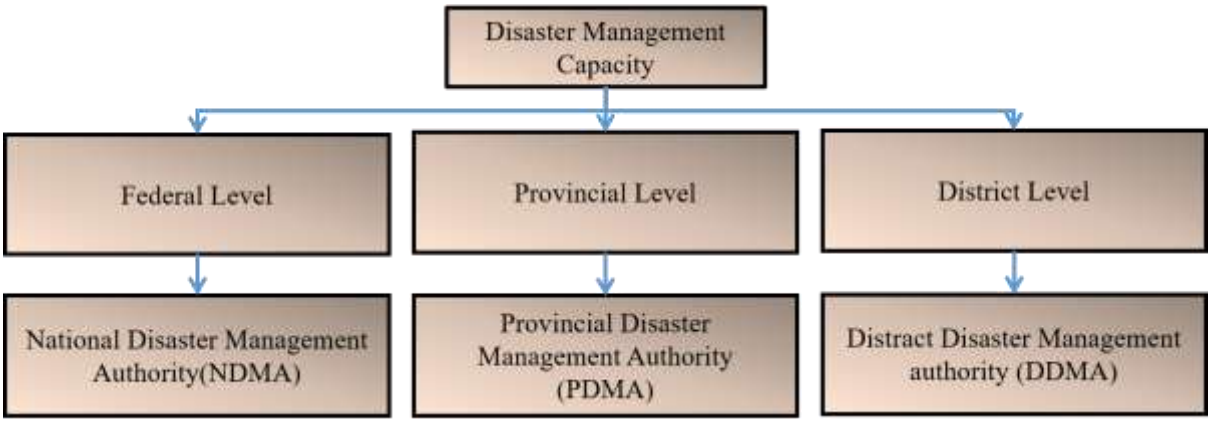

Fig. 2. Pakistan's Disaster Management Capacity [Source: http://ndma.gov.pk, 2025]

CONCLUSION

Critical analysis of the investigation demonstrate that the country has taken significant measures to improve DRM. The National Disaster Management Ordinance (2006) and National Disaster Management Act (2010) are the main legal instruments to make, and implement disaster management policies. The legal documents provided bases for establishing of a three-layer disaster institutional set up. This also translated countries commitments to achieve strategic benchmarks as outlined by Hyogo Framework of Action (HFA). Moreover, promulgation of NDRFM (2007) was a milestone policy document to streamline DRM. In 2 012, NDMP evaluated country's commitments to achieve benchmarks set by HFA, however, findings show a limited progress in improving the capacity. Because the disaster management authorities have low capacity due to dearth of financial resources, technical expertise, insufficient coordination, institutional overlaps, and duplication of responsibilities. The legal and policy documents also witnessed limited enforceability, especially after passage of the 18th constitutional amendment, process of decentralization further increased fragmented and disjointed governance. In addition, there are severe gaps in policy making and implementation. The existing capacities of disaster authorities project that the availability of technical and human resources is not up to the mark. The main issues highlighted are: first, institutions of disaster management are incapacitated; secondly, insufficiency of resources, and limited technical capacities; thirdly, HFA commitments are not fully put into practice; fourthly, heavy dependency on the armed forces for stockpiling, logistics, and operational activities; fifthly, dependency syndrome in institutions; sixthly, 18th constitutional amendment has made disaster institutions more fragile, particularly, district authorities remained practically the ineffective structure; seventhly, international collaborations are in initial stages; and lastly, there are serious gaps in policy designing, implementation and enforceability.

Recommendations

Based on study findings, the following recommendations are put forth. First, the federal government desperately requires to strengthen the lower tiers of disaster management through allocation of more technical and human resources, construction of independent departments at local level to use them as a frontline during disasters and emergencies; secondly, the federal and provincial governments need to identify administrative hurdles in legal and policy instruments to accelerate both vertical and horizontal collaboration among institutions, and stakeholders. It will accelerate joint planning, pooling of resources, and an effective implementation; thirdly, community engagement in DRM is a must for timely interventions in emergency and relief activities; fourthly, mainstreaming of disaster risk mitigation into development is equally important for result-oriented policy planning and execution; fifthly, National Disaster Risk Reduction (NDRR), 2013, and National Disaster Management Plan (NDMP), 2012-22, should be implemented in line with the HFA guidelines. Implementation of above-mentioned points will definitely yield significant policy implications for an effective disaster preparedness, and mitigation in future.

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