

Country Report

Pakistan

FY2021 Visiting Researcher

Asghar Ali Jamali

NDMA

Pakistan

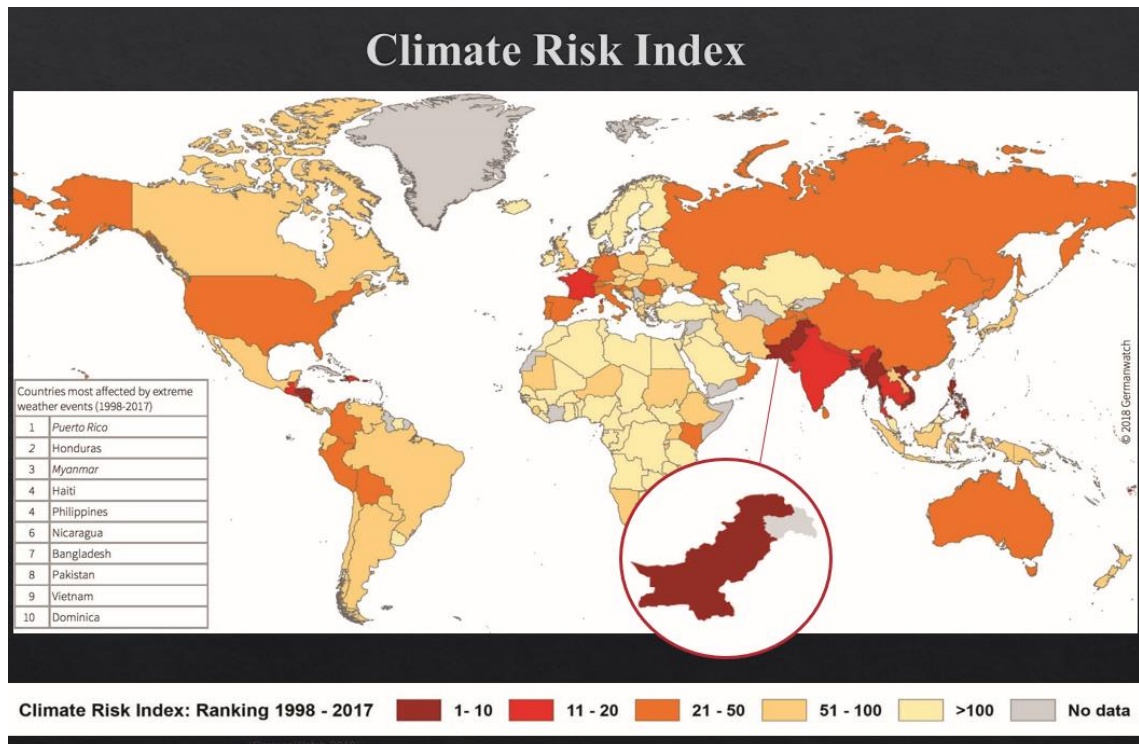
1. Background

Pakistan is under stress from various hazards, including seismic activity originating in the Himalayan region, along with numerous hydro meteorological hazards such as flooding, cyclones and adverse weather. However, different parts of the country are exposed to varying extent; coastal areas are prone to swell waves and cyclones, the low-lying plains of Indus river are increasingly prone to flooding, and the northern regions are highly vulnerable to landslides, snowstorms, avalanches and earthquakes (Ullah & Takaaki, 2016).

These events occur regularly and at all scales, thus increasing vulnerabilities and creating cycles of poverty as they erode the resilience of the most vulnerable inhabiting highly exposed areas. Most damaging events in the past have been cyclones, droughts, floods, and landslides; 75 percent of all disasters between 1980 and 2013 have been the result of hydrometeorological hazards (GFDRR, 2019; Ullah & Takaaki, 2016). However, seismic events are still a particular concern due to the vicinity of the Himalayan orogenic zone, activity of which has triggered severe large-scale earthquakes. For example, the past earthquake measured 7.2 on the moment magnitude scale resulted in catastrophic losses in Kashmir in 2005.

The Kashmir earthquake killed nearly 75 000 people and destroyed 3 million homes partly due to massive-scale landslides (Naranjo, 2008). Furthermore, the tectonic activity of the main plates may trigger the other complex fault zones which have the potential for severe failures. For example, the earthquake of 2008 in Balochistan, where the strike-slip failure of the Chaman fault (driven by the collision of the Indian and Eurasian plates which further interact with the Afghan block) caused a main shock of Mw 6.4 which further cascaded into 1185 total recorded shocks (Yadav, et al., 2012).

Climate Risk



POPULATION 2017	
Total Population	207,774,520
Urban Population	75,584,989 (36.3%)
Population Density Per Km ²	166.3
ECONOMIC INDICATORS	
Gross Domestic Product in Current \$US	305 billion
GDP Per Capita (\$US)	1547
GDP Growth (Annual %)	5.28%
HUMAN DEVELOPMENT	
Human Development Index	0.562
HDI Rank	150
Income Level Category	Lower-Middle income

Climate Risk Index

Rank 8 / Very High Risk*

INFORM Risk Index

Rank 19 / High Risk**

* Climate Risk Index of 2019 analyses the extent to which countries have been affected by weather-related losses between 1998-2017 (GermanWatch, 2019)

** INFORM risk index is a global tool which measures the risk of humanitarian crises and disasters based on 50 indicators assessing hazards, vulnerability and capacity (resources available to mitigate the impact) (INFORM, 2019)

2. Economic Impact of Disaster

Several large-scale disasters have affected Pakistan and the development of the country's economy. As a disaster-prone country, with a high exposure to hydrometeorological, and geophysical hazards with reoccurring and seasonal characteristics, damages caused by earthquakes, flooding, droughts, landslides and storms are not uncommon (ADRC, 2016). Disasters have been found to have a profound impact on economic growth, harming not only human capital but also infrastructure and assets in a manner which has been established to have negative effects on the annual GDP (Shahzad, 2014).

In 1998-2001, a severe period of drought reduced the GDP growth by 50 percent (LEAD, 2015). This was followed by the Kashmir earthquake of 2005, the flooding of 2010, earthquake in 2011, and another severe flooding in 2012. On average, these reoccurring disasters have led to 1.16 percent reduction of the national GDP annually, and have forced households to divert resources from productive sectors towards rebuilding and recovery activities (LEAD, 2015).

3. Social Impact of Disaster

Disasters have also had adverse impacts on human life. The flooding of 2010 affected an estimated of 18 million people, caused 1984 casualties, displaced 150,000 families and damaged or destroyed approximately 1.8 million houses across the 78 impacted districts (WHO, 2011). Out of the 9,721 health facilities in the country, 515 were reported damaged or destroyed. However, most severe impacts were caused by the disruption on the delivery of health services as the lack of medical equipment, medication and displaced staff were restricting the effectiveness of relief efforts. Also, displacement persisted several months after the flood depending on the area.

By August 2010, almost half a million cases of dysentery and other

diseases had been reported as a result of the flooding, and approximately 3.5 million children were estimated to be at risk of contracting diarrhea, cholera, and other water-borne diseases (Looney, 2012). During the months following the flooding, cases of Crimean-Congo hemorrhagic fever, dengue, cholera, malaria, measles, polio and diphtheria started unfolding (Warraich, et al., 2011). Such health impacts and losses of livelihoods following cascading disasters affect households due to the forced need to redirect resources to recovery activities, and also the children of low-income backgrounds are forced to drop out of education to seek employment opportunities to support their families (LEAD, 2015).

4. Disaster Risk Reduction and Climate Action Interventions

While the Indian Ocean Tsunami 2004 is thought to have promoted DRM advancement in affected countries such as Sri Lanka, Maldives and Thailand, the Kashmir Earthquake in October, 2005, created a sense of urgency for establishing a proactive and comprehensive DRR system in Pakistan. The major flood event in 2010 has expedited further actions to drive DRR momentum into full implementation. The following chapters capture highlights of the legacy of past attempts and current status in DRR, as well as looks into the implementation challenges and priorities for the future.

Government Interventions

IMPLEMENTATION	LEGISLATION/POLICY	SCOPE	PURPOSE
GOVERNMENT OF PAKISTAN	The Calamities Act (1958)	National	To guide the state's action during emergencies with a focus on response and relief
EARTHQUAKE RECONSTRUCTION AND REHABILITATION AUTHORITY (ERRA)	ERRA Act 2011 (enforced as an ex-post facto law from July 1st, 2007)	National	To rehabilitate the affected regions and to establish an institutional framework for undertaking reconstruction and development work after the 2005 earthquake.
NATIONAL DISASTER MANAGEMENT AUTHORITY	National Disaster Management Act (2010)	National, Provincial, Districts	To lay down a comprehensive framework for DRM, covering all phases of the disaster management cycle (replacing the DM ordinance of 2009)
NATIONAL DISASTER MANAGEMENT AUTHORITY	National Disaster Risk Management Framework (2007-2012)	National, Provincial, Districts	Intended to identify guiding principles and priorities for disaster risk reduction
NATIONAL DISASTER MANAGEMENT COMMISSION	National Disaster Management Plan (2012-2022)	National, Provincial, Districts	To guide and mainstream institutional and technical DRM priorities, in recognition of the needs of pre-disaster phases.
NATIONAL DISASTER MANAGEMENT AUTHORITY	National Disaster Risk Reduction Policy (2013)	National, Provincial, Districts	To outline priorities and directions for risk reduction from a proactive perspective, with a special emphasis on prevention, mitigation and preparedness
NATIONAL DISASTER MANAGEMENT AUTHORITY	National Disaster Management Plan Implementation Road Map (2016-2030)	National, Provincial, Districts	Sets up priority activities for the period of 2016-2030, with a focus on multi-hazard risk assessments, capacity building, community resilience and raising awareness.
NATIONAL DISASTER MANAGEMENT AUTHORITY	The national Disaster Response Plan (2019)	National, Provincial, Districts	Outlines the framework for disaster response based on identified roles and responsibilities of various stakeholders

Table 1. National disaster and climate risk reduction policies, plans and legislation in Pakistan

5. Issues in Implementation of DRR and Climate Policy

With increased frequency and intensity of disaster events, emergency response capacity and more amplified preparedness interventions have to be strengthened, especially for floods as recurrent hazards. Moreover, for disaster risk reduction, actions should be emphasized by establishing coherent plans, with the division of functions and roles between multi-tiered DRM structures and concerned agencies at different levels (Fayaz & Bussell, 2017). Revisiting DRM institutional arrangements and mandates at all levels should be prioritized to clarify the division of tasks and chain of incident command. While each district has formulated a District Disaster Risk Mitigation (DRM) Plan, putting the plan into action has been hampered in part by lack of resources (NDMA, 2015). Thus, addressing financial challenges is another critical area. Direct allocation from federal level for provincial and district DRR activities is not in tune with the current budget system, and PDMA and DDMA themselves have faced serious impediment in mobilizing locally-generated funds for DRR, amidst various competing demands. Alignment of donor priorities with national strategies and more effective resource allocation from donor-funded schemes should be explored (ADPC, 2018) to channel financial resource, and thus realizing planning into materialized actions. Disaster risk finance strategy is compulsory for Pakistan to address the significant financial and fiscal costs arising from disasters and climate change.

6. Future Challenges and Priority Issues

Challenges related to water security have reached their critical threshold. Various factors are acknowledged to be contributing to the situation; poor water data and information for water resource monitoring and management, weak processes for water resources planning and allocation, absence of environmentally sustainable water utilization, widespread pollution, and low water productivity in

agriculture (World Bank, 2019). Coupled with increasing flood and drought risks, sustainable water management by adopting multi-disciplinary solutions, with basin-scale multi-stakeholder water planning, will be crucial. Risk-sensitive spatial planning is still hindered by the lack of technical capacity, comprehensive disaster and climate risk information, and due to complex governance and urban development systems. However, the plethora of government agencies involved in DRM and DRR at federal, provincial and district level as well as non-state actors provided both, opportunities as well as challenges. From DRR perspective, there is a lack of long-term planning for flood risk reduction and activities remain extremely centralized (Imran, et al., 2016)