Natural Hazards Governance in South Asia

Mihir Bhatt, Kelsey Gleason, and Ronak B. Patel

Subject: Case Studies  Online Publication Date: Jan 2019
DOI: 10.1093/acrefore/9780199389407.013.231

Summary and Keywords

South Asia is faced with a range of natural hazards, including floods, droughts, cyclones, earthquakes, landslides, and tsunamis. Rapid and unplanned urbanization, environmental degradation, climate change, and socioeconomic conditions are increasing citizens’ exposure to and risk from natural hazards and resulting in more frequent, intense, and costly disasters. Although governments and the international community are investing in disaster risk reduction, natural hazard governance in South Asian countries remain weak and often warrants a review when a major natural disaster strikes. Natural hazards governance is an emerging concept, and many countries in South Asia have a challenging hazard governance context.

Keywords: hazard, vulnerability, underlying disaster risk drivers, disaster risk reduction, disaster risk governance

Introduction

Though the term natural hazard governance is rarely used, a fairly large body of knowledge and literature is available on the concept of disaster risk governance. Disaster risk governance is defined as “the way in which the public authorities, civil servants, media, private sector, and civil society coordinate at community, national and regional levels in order to manage and reduce disaster and climate related risks” (United Nations Development Programme [UNDP], 2013, p. 1), including technological, industrial and also the risk of terrorism. Along similar lines, another definition describes the term disaster risk governance as “the system of institutions, mechanisms, policy and legal frameworks and other arrangements to guide, coordinate and oversee disaster risk reduction and related areas of policy” by the United Nations Office for Disaster Risk Reduction (UNISDR, 2017). Thus, “the concept of governance includes formal and explicit mechanisms such as legislation, policies, mandatory standards and administrative procedures through which societies are organized as well as the wide range of informal...
and implicit arrangements that mediate social, economic and political relationships and the management of territory and resources” (UNISDR, 2015A, p. 118).

Although government is placed at the center of and given ostensible responsibility for disaster risk governance, the government is not and should not be the sole actor influencing decisions and how they are implemented (International Recovery Platform [IRP], 2010). Apart from government, disaster risk governance involves actors such as UN agencies, national and international civil society organizations, financial institutions, private-sector entities, and so on. However, “only the State has the capacity to engage legal, administrative and economic reforms to involve all stakeholders in the decision-making process and assign them the powers and means necessary for their missions” (Meerpoël, 2015, p. 1).

The issue of disaster risk governance is becoming increasingly important for disaster risk reduction globally and is considered vital for effective disaster management especially in low-income countries with weak governance. “Shortcomings in disaster risk reduction are increasingly being regarded as a consequence of weak governance that combines political and economic factors” (Williams, 2011, p. 7). GAR15, Making Development Sustainable: The Future of Disaster Risk Management showed that “disaster mortality risk is closely correlated with income and the quality of governance. The quality of governance in GAR 15 was assessed on the broad parameters of HFA self-assessment reports, prospective disaster risk management, financing the disaster risk management sector, levels of decentralization, regulatory capacity, corruption and limits of a specialized disaster risk management sector. Since 1990, almost 90 percent of mortality in internationally reported disasters has occurred in low and middle-income countries” (UNISDR, 2015B, pp. 44–45). While these counties had a varying quality of governance, the rapid growth of the urban poor in these countries has outstripped the capacity for local governments to regulate and enforce policies meant to reduce risk and prevent this loss of life. Many of the settlements built right next to the rivers in Uttarakhand, India, violate local environmental laws and suffered massive damages during the Uttarakhand floods in 2013. Similarly, in Nepal, lack of enforcement of building codes resulted in massive infrastructure and economic losses during the 2011 earthquake.

Natural Hazards in South Asia

Covering seven nations—Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka—South Asia is a region sensitive to disasters. South Asia’s geography makes it particularly susceptible to natural hazards. The rapid growth of the South Asian population and its increased concentration in cities that are often in hazardous environments have escalated both the frequency and severity of disasters. With the tropical climate and unstable land forms, coupled with deforestation, unplanned growth, non-engineered constructions that make the disaster-prone buildings more vulnerable, poor communication, and inadequate or missing budgetary allocations for disaster
prevention, developing countries suffer chronically and regularly from disasters (see Table 1).
**Table 1. Country-wide Disaster Occurrence and Related Numbers (Natural Disaster Related Data From 2001–2017)**

<table>
<thead>
<tr>
<th>Country</th>
<th>Occurrence</th>
<th>Total deaths</th>
<th>Injured</th>
<th>Affected</th>
<th>Homel ess</th>
<th>Total affected</th>
<th>Total damage ('000 US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afghanistan</td>
<td>122</td>
<td>9715</td>
<td>61139</td>
<td>535879 7</td>
<td>107925</td>
<td>552786 1</td>
<td>173060</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>109</td>
<td>10717</td>
<td>98544</td>
<td>100311 613</td>
<td>253463</td>
<td>100663 620</td>
<td>675000</td>
</tr>
<tr>
<td>Bhutan</td>
<td>1</td>
<td>1</td>
<td>16</td>
<td>20000</td>
<td>0</td>
<td>20016</td>
<td>0</td>
</tr>
<tr>
<td>India</td>
<td>284</td>
<td>73214</td>
<td>193374</td>
<td>907249 323</td>
<td>130929 42</td>
<td>920535 639</td>
<td>621398 81</td>
</tr>
<tr>
<td>Maldives</td>
<td>3</td>
<td>106</td>
<td>2214</td>
<td>14938</td>
<td>13000</td>
<td>30152</td>
<td>470100</td>
</tr>
<tr>
<td>Nepal</td>
<td>58</td>
<td>12965</td>
<td>21806</td>
<td>104362 15</td>
<td>99889</td>
<td>105579 10</td>
<td>526755 2</td>
</tr>
<tr>
<td>Pakistan</td>
<td>111</td>
<td>83905</td>
<td>146732</td>
<td>495266 64</td>
<td>516068 0</td>
<td>548340 76</td>
<td>257556 48</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>46</td>
<td>37820</td>
<td>179219</td>
<td>133852 93</td>
<td>167362 4</td>
<td>152381 36</td>
<td>345775 0</td>
</tr>
</tbody>
</table>

Natural Hazards Governance in South Asia

The growth in the number of hydro-meteorological events is driven by the region’s limited capacity to manage high rainfall and storm events and an increased concentration of assets in high risk areas. Combined, this results in a greater number of disasters and higher economic losses. In fact, South Asia is the most exposed region in the world to flooding and highly exposed to cyclones. Of the world’s total population exposed to floods each year, 64% of them are in the South Asia region. Furthermore, within the developing world, South Asia is the second most exposed region to cyclones.

Concurrently, 302 million people will join the urban population between 2011 and 2030 (Amirtahmasebi, 2016). Major population centers live on key fault lines and in coastal areas that are exposed to hazards; exposure will increase significantly over the next 40 years. By 2050, there will be 246 million city dwellers in cyclone-prone areas in South Asia, in contrast to 160 million people in OECD countries. The urban population exposed to cyclones is expected to grow at 2.2% per year up until 2050. Exposure to earthquake risk will increase significantly as well. The fastest exposure growth rate in the world is in South Asia, at 3.5% per year. The density of people and economic activity in major cities across the region such as Chittagong, Delhi, Dhaka, Karachi, Kathmandu, Lahore, and Mumbai will continue to increase, and the exposure of economic assets to natural hazards will be considerably higher (World Bank, 2012).

During recent years countries in the region have endured a series of catastrophic disasters, thus compounding their pains of poverty and poor performance in various sectors of human development with devastating earthquakes, floods, cyclones, and droughts that have played havoc with poor communities. With a very large population base and ever-increasing development deficit, countries in the region are scrambling to meet development targets. Climate change is a growing challenge that is manifesting in frequent disasters. Economic gains are being overshadowed by excruciating setbacks. Terrorism, conflicts, poor governance, lack of efficient service delivery, and chronic poverty have hindered human development. Disasters are leveling off the meager gains accumulated over the decades.

Overview of Disaster Risk Governance

The participation in international frameworks for disaster risk governance can be traced back to the early 1990s when countries became involved in the International Decade for Natural Disaster Reduction (1990–1999). With adoption of the Hyogo Framework for Action (HFA) 2005–2015, the topic of disaster risk governance received much-needed attention across countries.

Priority 1 of the HFA, to ensure that disaster risk reduction (DRR) is a national and a local priority with a strong institutional basis for implementation, pushed many governments to undertake initiatives and played a key role in strengthening disaster risk governance. The HFA acknowledged that disaster risk reduction efforts needed to be systematically
Natural Hazards Governance in South Asia

integrated into policies, plans, and programs for sustainable development and poverty reduction (UNISDR, 2007, p. 1).

However, it is not surprising to note that “the impetus to reform risk governance arrangements often surfaces in the wake of large disasters” (UNISDR, 2015C, p. 134). For instance, major reforms in disaster risk governance in India took place following the 1999 Orissa super-cyclone and the 2001 Gujarat earthquake. Similarly, Sri Lanka and Pakistan introduced major government reforms following the 2004 Indian Ocean tsunami and 2005 Kashmir earthquake, respectively.

While the topic of risk governance is well explored across the different science disciplines, as Ortwin Renn points out, “none of these disciplines can grasp the entire substance of the issue; only if they combine forces can one expect an adequate approach to understanding and managing risk” (Renn, 2010). Yet the challenges to a more comprehensive approach to risk governance are not insurmountable. Recent work by Dilanthi Amaratunga and colleagues underscores the need for accountability across all levels of society for risk governance to be successful and posits that accountability by the citizens themselves is paramount to the successes of the governance structures under which the citizens live (Amaratunga, Haigh, & Hettige, 2016). This accountability from all stakeholders is particularly relevant in the South Asian context, where many countries may lack sufficient mandate, capacity, and resources for initiatives aimed at improving disaster resilience and strengthening risk governance (Murray, 2017). This whole-of-society approach to risk governance necessitates legal frameworks and dedicated resources, but also, and perhaps more important, the participation of communities, civil society, and vulnerable groups (International Federation of the Red Cross and Red Crescent Societies [IFRC] & UNDP, 2014). Adopting this multi-disciplinary approach, the Intergovernmental Panel on Climate Change (IPCC) has called for a mix of incremental measures to reduce climate change risks (IPCC, 2011). Yet as Emily Wilkinson points out, incremental adjustments may not be enough and current risk governance policies are often lacking in ability to address even existing levels of risk (Wilkinson, 2012).

Like many other countries from different continents, countries from South Asia have made remarkable progress in strengthening disaster risk governance since the Hyogo Framework for Action (HFA) went into effect in 2005. “In practice, however, most resources continue to be invested in strengthening capacities for disaster management, and there has been limited success in applying policies, norms, standards and regulations to manage and reduce risk across development sectors” (UNISDR, 2015D, p. 118).

“The governance arrangements adopted by many countries, relying heavily on specialized emergency management organizations, are not always appropriate to address disaster risk. The governance approach based on the disaster management cycle and represented by a specialized disaster risk management sector may have reached its limit, while at the same time a new governance paradigm has yet to emerge” (UNISDR, 2015E, p. 128).
Reiterating the importance of disaster risk governance, priority 2, strengthening disaster risk governance to manage disaster risk of the Sendai Framework for Disaster Risk Reduction (2015–2030), has noted that “Disaster risk governance at the national, regional and global levels is of great importance for an effective and efficient management of disaster risk” (UNISDR 2015F, p. 17).

The main outcome document of the Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR) 2016, the Asia Regional Plan for implementation of the Sendai Framework, has identified the following actions (AMCDRR, 2016, pp. 9–10) in the context of disaster risk governance, which address priorities of Asia in the next two years and are guided by the Sendai Framework:

a) Review/revise existing national and local disaster risk reduction strategies/plans in line with the Sendai Framework, Paris Agreement, SDGs, and New Urban Agenda to ensure disaster risk sensitive development.

b) Establish/strengthen multi-stakeholder and multi-sectoral national and local platforms that are gender responsive and inclusive, with the participation of local community representatives and other stakeholders.

c) Improve the legal, policy, and regulatory environment to incentivize businesses to reinforce DRR.

dl) Build corporate governance and risk-sensitive investment beyond corporate social responsibility, through business associations, chambers of commerce, and national and local platforms on DRR.

e) Develop guidelines for coherent implementation of the 2030 development agendas at the local and national level involving the relevant national authority.

f) Promote implementation of health aspects of the Sendai Framework for Disaster Risk Reduction 2015–2030, including the Bangkok Principles, with a view to ensuring more systematic cooperation, coherence, and integration between disaster and health risk management.

g) Undertake an inventory of available local DRR strategies/plans and work toward achieving the Sendai Framework Target e) on “risk-informed local DRR strategies/plans” by 2020.

h) Foster local leadership and forums such as the “Asian Local Disaster Risk and Resilience Forum.”

i) Ensure women’s full and effective participation and equal opportunities for leadership at all levels of decision-making in disaster risk reduction.

Current Practices

Disasters affect all countries in the South Asia—those with high, medium, and low incomes. However, low-income counties with weaker governance are affected disproportionately. Traditionally, disaster risk governance in South Asia has been reactive rather than proactive. Overall, efforts to improve disaster risk governance practices in South Asia have been triggered by major disasters. International efforts such as the HFA
have supported governments in South Asia to review and reform their disaster risk arrangements. While, each country in South Asia has established institutional structures, policies, and plans, including national legislation and coordination platforms in most countries, the South Asian Association for Regional Cooperation (SAARC) promotes cooperation and knowledge sharing at the regional level. Along with limited participation of private-sector players, NGOs play a key role in linking local communities with national efforts by improving governance arrangements at the sub-national levels.

**Large, Relatively Wealthy, Tech Sophisticated, Continental: India and Pakistan**

**India**

The government of India enacted the Disaster Management Act in 2005. The Act makes it obligatory for the country to evolve a more organized disaster risk governance system and shift its approach from post-disaster relief and rehabilitation to proactive pre-disaster preparedness and mitigation by formation of national, state, and district-level institutions and authorities with clear plans and guidelines. Within this structure, the National Disaster Management Authority sits at the top with the responsibility for formulating policy and guidelines for all disaster management work in the country. The state authorities further lay down the guidelines for departments and districts falling in their respective jurisdictions. Similarly, district authorities direct the departments and local authorities such as the municipalities, police department, and civil services. The State Executive Committees are responsible for development of state disaster management plans and execution of the tasks envisaged therein. In June 2016 the Government of India released a National Disaster Management Plan, which lays down guidelines for preparation of state-level disaster management plans and plans by each central ministry and department. A review of five State Disaster Management Plans (SDMPs) in India (Bahadur, Lovell, & Pichon, 2016, p. 33) concluded that due to factors such as the lack of role clarity, responsibility, and financing for risk-reduction these SDMPs emphasize relief and response but need to consider all states of the disaster management cycle. This shows the need for mainstreaming disaster risk management across government departments.

**Pakistan**

After the 2005 Kashmir earthquake, the Government of Pakistan circulated the National Disaster Management Ordinance in 2006, which was converted to the National Disaster Management Act in 2010. It provided the institutional and regulatory framework for comprehensive disaster management in the country. The National Disaster Management Authority (NDMA) was established in 2007 to act as the national coordinating agency for disaster risk reduction together with the Earthquake Reconstruction and Rehabilitation Authority. The NDMA acts as the executive arm of the National Disaster Management Commission, the highest policymaking body in the field of disaster management, chaired by the prime minister. The 2010 National Disaster Management Act also established the National Institute of Disaster Management with responsibilities for research and training,
as well as a National Disaster Response Force for more specialized management of disaster events. At subnational levels, there are Provincial Disaster Management Commissions, Provincial Disaster Management Authorities, and District Disaster Management Authorities. Analysis of disaster management structures, policies, and institutions in Pakistan post-2005 shows short-term approaches to response and relief efforts, with relatively less strategic focus on prevention, preparedness, and capacity building, including a chronic absence of civil society organizations in disaster reduction and management policy and planning (Cheema, Mehmood, & Imran, 2016, p. 460).

**Less Wealthy, Less Tech, Largely Coastal: Bangladesh and Sri Lanka**

**Bangladesh**

Bangladesh has developed a Draft National Disaster Management Policy (2008), Standing Orders for Disaster Management (2010), Disaster Management Act (2012), Climate Change Action Plan (2009–2018), and National Plan for Disaster Management (2016–2020). By developing these necessary legal frameworks, institutions, and plans to support disaster risk reduction and climate change adaptation, the country exceeded the standard of practice for the Asia-Pacific region in the Hyogo Framework for Action (HFA) progress report in every category including early warning systems, risk assessment, DRR policy, and preparedness for effective response (Center for Excellence in Disaster Management and Humanitarian Assistance [CFE-DMHA], 2015). Bangladesh has established a number of bodies at national and subnational levels to guide disaster management policies and plans. These include the National Disaster Management Council (NDMC), Inter-Ministerial Disaster Management Coordination Committees (IMDMCCs), and the National Disaster Management Advisory Committee (NDMAC). The Ministry of Food and Disaster Management (MoFDM) functions as the government’s focal point for disaster management and coordination. After the enactment of the Disaster Management Act 2012, the Department of Disaster Management (DDM) was established under the Ministry of Disaster Management and Relief. Disaster Management Committees (DMCs) perform at the local level with authority for disaster and relief operations.

An example of how these different organizations work in crises can be drawn from the 2017 Rohingya refugee crisis. As of October 20, about 600,000 Rohingya refugees fled to Bangladesh due to ethnic unrest in Myanmar (United Nations Office for the Coordination of Humanitarian Affairs [UNOCHA], 2017). The Ministry of Disaster Management and Relief (MoDMR) is coordinating with the Armed Forces Division (AFD), Border Guard Bangladesh (BGB), Rohingya Refugee Repatriation Commissioner’s Office (RRRC), United Nations High Commissioner for Refugees (UNHCR), International Organisation for Migration, World Food Programme, and any other agencies to construct the shelters for Rohingya refugees (Dhaka Tribune, 2017). Many citizens of Cox’s Bazar, a district in the deep south of Bangladesh close to the Myanmar border where most Rohingya refugees came from, believe that their government made the right decision when it allowed the Rohingya to enter the country (Hoekstra, 2017). The government NGO Affairs Bureau in Bangladesh eased restrictions on aid groups working in refugee camps (it cleared 30
local and international groups to meet “emergency needs” in camps) in late September 2017 (Livemint, 2017).

**Sri Lanka**

The Sri Lanka Disaster Management Act was enacted in May 2005. Under this act, the National Council for Disaster Management was established as the apex body for disaster risk management in Sri Lanka. The Ministry of Disaster Management was empowered as the leading ministry and the Disaster Management Centre was established as the executing agency for disaster risk management. The Disaster Management Centre is the national-level nodal agency responsible for coordinating all aspects of disaster risk management including policies, plans, and post-disaster reconstruction. The Centre has also promoted collaboration between local-level DRM programs and has guided their development to ensure alignment with sector development programs. The challenge for improving hazard governance in Sri Lanka for government, international, and local NGOs, and the private sector is to establish a functional balance in their roles and responsibilities in all phases of disaster management (Oxfam, 2007, p. 18).

**Less Wealthy, Less Tech, Largely Himalayan: Nepal and Bhutan**

**Nepal**

Nepal has developed various laws and policies, including the Natural Calamity (Relief) Act, 1982, and National Strategy on Disaster Risk Management (NSDRM), 2009. The Ministry of Home Affairs is working as a nodal agency of disaster risk management both at the national and international level for Nepal. The National Strategy for Disaster Risk Management, released in 2009, describes the formation of the National Council for Disaster Management (NCDM) as the lead national body for disaster management. The National Disaster Management Authority (NDMA) serves as the secretariat for the operation of the National Council. The NDMA directly coordinates and collaborates with ministries, departments, district level agencies, and other stakeholders to plan and implement disaster risk management. Nepal relies heavily on donor funding, which influences the development and DRR agenda in Nepal to a large extent (Jones, Oven, Manyena, & Aryal, 2014). The Ministry of Federal Affairs and Local Development (MoFALD), unique to governance as it is the only ministry with direct links to local bodies, has an important role to play in laying the foundation for local action, enabling risk reduction and resilience. A focus on this local level is critical to addressing natural hazards not only because this is where impacts play out but also because national and state bodies may lack the resources to directly reach all segments of the population. MoFALD has been playing an important role developing new model laws and developing a flood resilience portal, for example, that allows local bodies to take proactive steps to address natural hazards and sustainable development (New Spotlight Online, 2017; myRepublica, 2018).
Bhutan

In 2013, the first Disaster Management Act (DMA) of Bhutan was enacted, which was drafted in 2009, the same year cyclone Aila caused millions of ngultrum worth of damage to the public infrastructure (UNISDR/SDMC, 2014, p. 72). As per the 2013 DMA, the National Disaster Management Authority (NDMA) is the highest decision-making body on disaster management in Bhutan and the Department of Disaster Management comes under the NDMA. The Department of Disaster Management is the nodal National Coordinating Agency for disaster management in the country, under which the Inter-Ministerial Task Force supports its activities. Further down, every Dzongkhag (district) administration has a Dzongkhag Disaster Management Committee (DDMC) under the chairmanship of the Dzongkhag. The lowest level of the DRR organization is subcommittees: Thromde subcommittee, Dungkhag subcommittee, and Gewog subcommittee.

Small Island State and Fragile Postconflict State: Maldives and Afghanistan

Maldives

In the Maldives, the National Disaster Management Centre (NDMC) is mandated to develop strategies and manage emergency relief, response, and disaster preparedness and mitigation activities. The Centre works under the leadership of the Minister of Defence and National Security. The current structure divides the organization into three units: (1) Early warning and Emergency Operations, (2) Disaster Preparedness and Risk Reduction, and (3) Cooperate Affairs. Overall, disaster risk reduction actions in the Maldives are guided by the Disaster Management Act, 2006, which provides for the establishment, structure, organization, powers, functioning, and responsibilities of the National Disaster Management Council and the National Disaster Management Authority of Maldives. Climate change governance in Maldives is suffering from a lack of experts and unclear institutional mandates UNISDR/SDMC, 2014, p. 99).

Afghanistan

The Afghanistan National Disaster Management Authority (ANDMA) is the principal institution at the national level with the mandate to coordinate and manage all aspects of emergency response that relate to national disasters through its national and provincial offices. The institutional arrangements for Afghanistan include a National Commission for Emergency and Disaster Management consisting of relevant ministries tasked to intervene in disaster situations by utilizing their existing structures and resources in a coordinated fashion, an Executive Committee consisting of lead ministries, and a Management office. The Commission is charged with formulating national policies, developing and approving of plans, and coordinating and mobilizing international finance. ANDMA coordinates its activities closely with relevant ministries, but considerable capacity strengthening is required for both ANDMA and ministries to effectively implement their mandate (UNISDR/SDMC, 2014, pp. 55, 59). The ANDMA has provincial directorates in all 34 provinces of Afghanistan. At the local level, District Development
Committees and Community Development Councils have been established for disaster preparedness and response. A number of national and international NGOs in Afghanistan provided support to the Afghans during the years of conflict, and they continue to play a critical role in the development of the country. Within the overall institutional setup for disaster management in Afghanistan, the role of international agencies is well recognized in providing relief, coordination with the government, conduct awareness and capacity building programs, preparedness activities at the community level, and assistance in reconstruction and rehabilitation given the limited reach of the national government in some areas (UNISDR/SDMC, 2014, pp. 55, 59).

**Key Issues and Challenges**

“Disaster risk governance (DRG) often mirrors the challenges, restrictions, blockages and obstacles that exist within the overall governance arrangements, but DRG can also support good governance” (Economic and Social Commission for Asia and the Pacific [ESCAP], 2015, p. 147). The World Bank has noted that “as an emerging topic, exposure and vulnerability to natural hazards and their consequential impacts are not yet at the forefront of development agendas” (World Bank, 2012, p. 1).

Achieving a more effective DRR governance system in South Asia requires vulnerability analyses and hazard-specific action plans, better integration of DRR and Climate Change Adaptation (CCA) approaches with development, strengthening local governance arrangements, improving representation of private-sector players, sufficient financing, robust monitoring and accountability mechanics, and the participation of the poor and at-risk communities in decisions that impact them.

**Addressing the Root Causes of Vulnerability**

Vulnerability is an essential concept for the study of any natural hazard such as earthquakes and landslides or climate change impacts and adaptation. Attempts to understand vulnerability are complicated by the multifaceted nature of the topic, and major theoretical and practical issues remain in understanding and, thus, measuring it. Vulnerability is often too narrowly limited to the physical proximity to a hazard, such as a steep and degraded hillside or body of water (Sudmeier-Rieux, Ash, & Murti, 2013). Underdeveloped infrastructure, density of housing, poor roads, inadequate water and sanitation systems, and other consequences of rapid urban development further exacerbate the vulnerability of these populations. Compounding the physical component of vulnerability are characteristics of the person, household, or populations themselves, such as minority status, poverty, and social cohesion that impact the overall resilience of at-risk communities. The concept of resilience or adaptive capacity extends the understanding of vulnerability into features that define the ability to withstand or adapt to the effects of the hazard such as mobility or strong social networks.
Natural Hazards Governance in South Asia

It has been proposed in various forms that understanding climate change risk requires measuring and differentiating between physical proximity and probability of natural hazards, and the sensitivity and adaptive capacity of the of the individual and system. Together, these concepts drive the creation or reduction of population vulnerability and risk.

From this perspective, mapping of populations and physical hazards alone provides an indicative but solely preliminary assessment of vulnerability. These maps provide an incomplete assessment of vulnerability without delving into the social factors that drive sensitivity and adaptive capacity. Yusuf and Francisco carry this analysis forward by mapping both physical and social features of Southeast Asia (Yusuf & Francisco, 2009). Such assessment of vulnerability overlays climate hazard maps, sensitivity maps, and adaptive capacity maps in consideration of the vulnerability assessment framework of the United Nations’ Intergovernmental Panel on Climate Change (IPCC). In doing so, these authors succeed in identifying and attempting to quantify the multifaceted nature of vulnerability.

Yet such analyses have yet to be downscaled to rapidly urbanizing contexts to support climate change adaptation and response efforts. Another study analyzed vulnerabilities experienced by urban refugees from Myanmar living in Mae Sot, Thailand. One of the strongest factors influencing the vulnerability of this community to external shocks was related to governance: the discriminatory policy of the host Thai government, which refused to grant the refugees legal status in Thailand. Thus, their vulnerability arises not only from household or community traits, but from government action, or inaction, as well (Jacobsen & Nichols, 2011).

Vulnerability Analyses and Hazard-Specific Action Plans

Good governance for disaster risk reduction requires effective and efficient vulnerability analyses to inform the decisions. Still, many government decisions in South Asia do not rest on vulnerability assessments. Multisector, multilevel, and multi-stakeholder vulnerability assessments should be the basis for not only any disaster risk reduction decisions but also any development decisions related to critical infrastructure and public services. Hazard-specific city action plans are needed, starting from the highest risk and most distributed hazards. Also, cities are increasingly the economic engines of countries. In fact, urban GDP represents about 80% of the world GDP (UNISDR, 2013A, p. 6). The risk reduction priorities of local governments should be context specific, and resilience indicators must be locally developed, based on the city’s own risks, current governance systems, and protective factors (UNISDR, 2013B, p. 7). These analyses must also recognize the spatial distribution of risk and vulnerability across cities. While some hazards may affect a wide swath of the population, specific groups remain more vulnerable than others simply by their location. Vulnerable populations also accumulate factors that increase risk, such as lack of savings or access to finances, baseline poverty, poor access to public services, and reduced coping mechanisms, among others. The specific factors that place such populations at greater vulnerability must be understood in
depth to inform government actions. Similarly, a locally contextualized understanding of the protective factors that various populations use to avoid specific hazards and risks must be recognized, along with vulnerability analyses to strengthen the most beneficial of them. In some cities social protection programs may make the most impact while in others enhanced public services or infrastructure support may be the highest priorities. In a world of heightened risks and limited resources, spending time and effort on locally contextualized vulnerability and resilience assessments would help guide governance decisions on priority actions and policies.

**Mainstreaming**

Mainstreaming of DRR and climate risk reduction into development plans and setting achievable targets to measure impact are key to improving disaster risk governance in South Asia. However, such integration remains weak to nonexistent. Institutionally, development, DRR, and climate change adaptation continue as separate streams of activities. In the early 21st century, disaster risk reduction governance and climate change–related governance are mostly run in parallel. Developing country governments typically assign sectoral ministries and specialized agencies to each issue with the result that narrow and them-based policies are prepared with limited attention to the cross-sectoral nature of the problem (Sheikh, 2012, p. 8). Such disconnects between DRR and CCA can be seen in Table 2, which analyzes policy evolution for DRR and CCA in SAARC countries.

<table>
<thead>
<tr>
<th>Country</th>
<th>Policy evolution for DRR and CCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afghanistan</td>
<td>The development of formal structures addressing action on climate change and for disaster management in Afghanistan began after 1991. Analysis of these structures suggests parallel but disconnected evolution of the two frameworks.</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>Similarly, the action for responding to climate change and disaster management initiatives began simultaneously in Bangladesh in the 1990s, and parallels can also be drawn in the shifting emphasis of policy action in both.</td>
</tr>
<tr>
<td>Bhutan</td>
<td>In Bhutan climate change and disaster management initiatives began simultaneously after 1999. Bhutan responded to climate change and disaster management by developing several, separate policies and plans.</td>
</tr>
<tr>
<td>India</td>
<td>In India, the development of formal structures addressing action on climate change and for disaster management began in the 1990s.</td>
</tr>
</tbody>
</table>
Analysis of these structures suggests parallel but disconnected evolution of the two frameworks.

**Maldives**
The government of the Maldives has fully endorsed the world’s first Strategic National Action Plan (SNAP) that integrates DRR and CCA.

**Nepal**
For disaster management, the Natural Calamity Act in 1982 and for climate change, the establishment of a natural resources and environment committee in 1990 may be considered as the starting points for action. The development of formal structures addressing action on climate change and for disaster management came in the 1990s. Parallels can also be drawn in the shifting emphasis of policy action in both these fields.

**Pakistan**
Actions for responding to disaster management and climate change in Pakistan have been taking place since 1992. The timeline for Pakistan, similar to global developments, suggests parallel but disconnected evolution of the two frameworks.

**Sri Lanka**
In Sri Lanka, climate change has been looked at as an environmental problem, whereas disaster management has evolved from the initiatives taken for dealing with climatic variability and resultant climatic extreme weather events, thus featuring different institutional setups. Therefore, coordination between the two is still weak.


International organizations and funding agencies often reinforce this fragmentation by transferring their own segmented administrative requirements and policies for funding to the recipient (ESCAP, 2013, p. 1). As a result, time, money, and efforts are expended inefficiently and redundantly. These silos of activity and duplication of efforts not only waste precious resources but also accomplish far less and place the gains of development at risk. As rapidly growing economies and cities in South Asia further expose this growth to natural hazards and concentrate disaster risks, they must engage DRR and CCA into this rapid development to ensure that these gains do not go unprotected. Exactly how this can be done is uncertain without clear mandates from the top that require development authorities (institutions and persons) to incorporate DRR into programmatic or policy outputs. Government funding should be made contingent upon such an arrangement while international organizations and funders must also make this link and remove such barriers within their own organizations to develop integrated funding vehicles. Only with the power of the purse can such mainstreaming and integration be accomplished to successfully improve natural hazard governance in South Asia.
Local Governance and Community Engagement

Community-Driven Data and Adaptation

While global and regional trends such as climate change and geological risks such as fault lines drive risks, natural hazard-related disasters are acutely felt at a local level. This makes local natural hazard risk governance extremely complex yet critical. It is at this community level where the impact of natural hazards will be most suffered, and where successful interventions must be implemented. Urban centers are most likely to be impacted by the effects of natural disasters given that they now contain the majority of the world’s populations and may have stretched resources. Because government surveillance and data collection often lacks the capacity necessary for adequate mapping and hazard identification, community members and community organizations are a very valuable resource for supporting mapping and data collection initiatives. These community members are able to provide the local expertise necessary to accurately and efficiently understand community-level risks related to climate change for example (Satterthwaite, 2011; Yamin, Rahman, & Huq, 2005). This approach succeeds not only in achieving a more detailed and comprehensive understanding of individual communities, but also in understanding seismic risk and adaptation strategies. A community-led approach to data collection simultaneously empowers individuals and communities. Such methods are time- and labor-intensive, but pay benefits in the form of local knowledge sharing and community engagement. Community-based methods are particularly potent in informal settlements now arising in many urban areas, many of which have ambiguous legal status and thus have never been adequately mapped. The resulting increased awareness, preparedness, and engagement will provide a critical component to local-level resilience to climate change.

Community Engagement in South Asia

In South Asia, not enough attention is given to strengthening the lowest governing structures such as Panchayats (village councils) in rural areas and Urban Local Bodies (ULBs) in towns and cities. Although these structures carry roles and responsibilities laid out by legislation, they are often ill-equipped to deal with disasters both in terms of power and the resources at their disposal. Effective decentralization of disaster management responsibilities and mainstreaming cannot be done without empowering these most essential structures at the local levels. “All the countries in the region have highlighted the limited capacity of the local government functionaries and elected representatives as one of the key challenges they are facing in DRR programming” (Duryog Nivaran, 2014A). Creating complementarity between international humanitarian frameworks and local or national humanitarian/development frameworks for effective action is becoming even more important to good governance of disaster risk reduction. While national governments are the signatories to international and regional covenants or frameworks such as the HFA, the subnational and local governments are not normally consulted or involved by the respective national
governments in the decision-making process with regard to international commitments. This situation creates a serious disconnect between the “international” and the “local” (Duryog Nivaran, 2014B). The international humanitarian system is growing and regionalizing. Local government/community engagement and ownership of resilience building efforts was repeatedly emphasized in the HFA2 consultations (UNISDR, 2013C, p. 12).

As local municipalities are typically responsible for urban planning, initiatives should encourage local governments to integrate climate change preparedness and adaptation into their core functions. In order to achieve local participation in climate change adaptation efforts, it is crucial that global impacts of climate change are translated and understood at the local level. Within cities, departments of urban planning, housing, and public works all have a vested interest in being the active entities that get this data and produce these models/maps at the local level. Correspondingly, it is cities that are often leading the global response to climate change.

Though municipalities are critical actors, capacity at this level is often lacking where it is most needed. Strict municipal budgets often undermine the importance of preparing for such impending challenges as climate change. Investments must be made in human capital at the municipal levels. In support, national governments should come forward to motivate and support local government authorities in adopting climate change planning and adaptation strategies through specific funding mechanisms. The opportunity for state governments to introduce initial adaptive planning campaigns will allow for future expansion and acceptance of such initiatives. As such, it is imperative that the international donors and relevant bodies promote these adaptive planning efforts with transfers of knowledge, training, and tools to allow for better preparation and response to climate change at this level.

Similarly, the humanitarian community is increasingly recognizing the value of locally driven humanitarian response, and this was a major theme of the most recent World Humanitarian Summit and specifically the Global Alliance for Urban Crises (Global Alliance for Urban Crises, 2016). Emerging approaches such as a settlement approach or Area based Programming are adapting a locally informed and driven approach to humanitarian practice borrowed directly from development practice (Parker & Maynard, 2015). Governance in South Asia around natural hazards should do the same, simply for the immense value that local bodies and communities pose in knowledge, driving sustainable change, and addressing local needs. Empowering local governing bodies will further integrate well with emerging international humanitarian practice for more effective humanitarian response and creating smoother and more natural transitions from acute relief to recovery and development.

Being effectively engaged with communities is a must for any good governance initiative, and progressing from listening to the community members to jointly taking decisions to reduce risk in these communities is a move now overdue in South Asia. Engaging citizens through advocacy and public awareness is critical to stimulating social demand and
signaling priorities to elected officials (UNISDR, 2013C, p. 7). Addressing autonomous adaptation to climate change and disaster risk reduction activities is a starting point. Good governance for disaster risk reduction must recognize where communities are and what they do themselves.

The Private Sector and Governance

The private sector’s engagement in disaster risk governance in South Asia has thus far been limited. The private sector is key to filling the financing gap in DRR and adaptation as well addressing its role in hazard creation and exposure. The private sector has a role in shaping risk transfer arrangements. Insurance coverage for property, health, and accidents, including crop and index-based insurance schemes, is extremely low in developing countries of South Asia. Similarly, microfinancing to extend coverage for disasters as well as financing improvements in shelter and housing to reduce risks for the most vulnerable are areas in which the private sector has much room to grow and ensuring policies that encourage such innovation are key to creating an enabling environment. Similarly, the construction industry can improve risk governance practices by introducing and influencing government policies and plans to use hazard-resistant construction technologies. Efforts to train local masons to improve the quality of reconstruction has been made in number of disasters in South Asia, most recently in Nepal. Emphasizing the private sector’s contribution to risk and hazard exposure in industrial zones alone is not enough. Private-sector bodies need to be represented in natural hazard governance arrangements as well. The region needs to find ways to engage the private sector more to share the burden of reducing risks. For instance, the role of the private sector in risk proofing business investments is well understood, but most governments have not been able to capitalize on this expertise for covering disaster risks to public systems. The private sector also has very concrete interests in reducing exposure and risk to natural hazards overall and unrelated to particular investments, as they can disturb the business cycle and markets. Representative bodies from the private sector, either through commerce or trade associations, should help inform government policy with clear analyses of the potential impacts of specific policies and programs considered by government. Real estate developers, consulting agencies, and insurers that have very specific expertise in natural hazard management should also be leaned on to lend expertise to government.

Accountability and Performance

Issues of participation, decentralization, accountability, and transparency, including citizens’ awareness of their rights and risk information are critical to effective risk governance (UNISDR, 2014). Having policies and legal frameworks in place will not be enough; policies and law supporting DRR must be supported with clear indicators in planning, consequences for noncompliance, and incentives for responsible actions. Coherence of the targets and indicators with the Sustainable Development Goals and harmonizing monitoring and review mechanisms, especially at the national level, is of

Financing

An analysis of the National Progress Reports on the HFA shows that except for Bangladesh and the Maldives, all other countries in the region, including India, have made legislation that mandates local DRR functions for local governments. However, when it comes to regular provision of financial resources to local governments for undertaking these functions, except for Bangladesh, no country in the region provides the local governments the required financial resources for DRR. Meeting challenges posted by natural hazards and climate change will require sustainable changes in financing. In the absence of reliable financing support, it would be unrealistic to expect many developing countries to take full advantage of the post-2015 DRR framework (Ministry of External Affairs, Government of India [MoEA], 2014). The recently concluded review of state disaster management plans in India has revealed that although “equal legal importance is given to financing for disaster response and risk reduction at the national level, . . . there are limited funds for risk reduction across states, despite legal and legislative mandates for this” (Bahdur et al., 2016). In South Asian natural hazard governance this is the most recurring theme and inescapable truth. While aligning frameworks, mainstreaming DRR into development practice, involving the private sector, and clear accountability are needed, adequate and sustained financing must be made available to carry out the most basic elements of DRR. Far too often, declarations and signatures to frameworks are easy to obtain, and government policy and plans can be idealistic, but without the funds to support such efforts, they are meaningless. The 2011 “Views from the Frontline Survey” found very limited progress across a range of local risk governance indicators, such as lack of political authority, inadequate capacities and financial resources, and minimal support from central government. Weak risk governance has been identified as the single most important factor to explain the limited progress of the HFA (Global Network of Civil Society Organisations for Disaster Reduction, 2013, p. 18).

Conclusion: A Way Forward

Dissanaike argues that exclusionary development in South Asia has led to top-down governance systems, which treat disaster mitigation separately from development and do not adequately address the root causes of vulnerability (Dissanaike, 2009, p. 9). The 2010 South Asia Disasters Report states that “disasters are today recognized to be the pending issues and unresolved problems of development and governance” (Duryog Nivaran, 2010, p. 49). The strong relationships between natural hazards, disaster risk, implications of climate change, and underlying root causes of vulnerability are fairly well established. Thus, disaster risk governance arrangements require a more comprehensive approach
and integration with overall governance arrangements within a particular country or region.

In an attempt to construct a solution, the 2010 South Asia Disasters Report presented a diagram that is useful to understand how the global, regional, and national/local policies, practices, and governance dynamics can contribute to a community with reduced vulnerability, increased resilience, and strong adaptive capacity (figure 1). The architecture of a solution presented in the diagram requires (a) sustainable development and the pursuit of a low carbon pathway to reduce disasters and climatic pressures, (b) mainstreaming climate change adaptation and DRR approaches into socioeconomic development policy, and (c) an enabling environment to address root causes.

While this figure uses climate change as an example, it applies to the whole range of natural hazards that governance can address. As trends in urbanization and technology present new challenges and opportunities, this framework can be applied across the wide spectrum of natural hazards the world faces. Sustainable development and the good governance that accompanies it also means growth that does not place more populations at risk into flood zones or fault lines or concentrates the risks and hazards on the poor, for example. Mainstreaming adaptation and mitigation toward resilience to these hazards into policy is critical to protect any gains made by development. Governments should create an enabling policy environment for the growth of innovation and scaling solutions to protect populations from natural hazards. As the global community and local governments cope with current population displacements and anticipate a further influx of migrants, there are many challenges to confront, and many advantages to exploit. Further attention to the specifics of these challenges and opportunities in high-risk global cities will add to the repertoire of expertise in preparedness and response to the ongoing impacts of climate change on urban areas.

Current disaster risk governance arrangements in South Asia are weak and inadequate to deliver disaster risk reduction outcomes envisaged by national legislation, policies, plans, and international commitments. In order to provide effective governance arrangements, governments in South Asia must integrate disaster risk reduction and climate change...
initiatives with development so that underlying risk factors can be addressed. Devolution of power and resources and strengthening subnational governance arrangements are extremely important. Although most countries in South Asia have constituted legislation, policy, and institutions, the institutional and legislative framework has failed to influence the decisions related to integration of DRR into national development planning. These arrangements have also failed to allocate enough resources and functions to local governments for DRR (SAARC Disaster Management Center [SDMC], 2014, pp. 31–32) Meaningful engagement of communities and nonstate actors, including businesses, leverages resources and knowledge while encouraging efficiency and transparency. Their engagement should be harnessed, complemented, and strengthened.

The need and will for strengthening disaster risk governance was acknowledged by ministers across South Asia in New Delhi at the Asian Ministerial Conference in November 2016. By adopting the New Delhi Declaration during the conference, these ministers made a commitment to “strengthen national and local governance of disaster risk reduction to ensure coherence among policies and institutional arrangements across sectors with representation of stakeholders in line with national circumstances and policies” (UNISDR, 2016A, p. 1). They also promised to “increase public and private investment in capacity building, science and technology, innovation, critical infrastructure and services to contribute to achievement of community resilience” (UNISDR 2016B, p. 1). This commitment can only be fulfilled if governments across Asia learn to embrace and harness the power of its people on the ground and a vast array of nonstate actors.

References


Natural Hazards Governance in South Asia


Natural Hazards Governance in South Asia


United Nations Office for Disaster Risk Reduction/SDMC (2014). *Integration of disaster risk reduction and climate change adaptation in SAARC region: Implementation of the Thimphu Statement on Climate Change—a comprehensive study of the policy, institutional landscape, and resource allocation for disaster risk reduction and climate change adaptation in South Asia (Disaster prevention, preparedness & management, linkages with CCA)*.


Williams, G. (2011). *Study on disaster risk reduction, decentralisation and political economy, global assessment report on disaster risk reduction (GAR)*.
Natural Hazards Governance in South Asia


Mihir Bhatt
All India Disaster Mitigation Institute

Kelsey Gleason
University of Vermont College of Medicine

Ronak B. Patel
Harvard Humanitarian Initiative, Department of Emergency Medicine, Brigham and Women’s Hospital, Harvard University