The Social Construction of Systemic Risk:
Towards an Actionable Framework for Risk Governance

COUNTRY CASE STUDY: BANGLADESH

United Nations Development Programme

This case study is one of five case studies (Bangladesh, Colombia, Dominica, Uzbekistan and Zimbabwe) to examine distinct aspects and expressions of systemic risk. It was prepared to inform the UNDP Discussion Paper "The Social Construction of Systemic Risk: Towards an Actionable Framework for Risk Governance" (June 2021).

INTRODUCTION

Bangladesh is a riverine country with most of its fertile area in the Ganga-Brahmaputra deltaic region of South Asia. The river system of the country carries most of the Himalayan water and sediment, creating the world's largest delta. This region includes the Sundarbans, the largest single-patch mangroves in the world. Other ecological areas comprise of an array of wetlands, forests, hills and plateaus. With a large coastline, it assumes a significant status in the ecological as well as the political map of South Asia. It has a landmass of 148 square kilometers and is the eighth most populous country in the world with more than 164 million people (BBS, 2020).

Its resources and a geo-politically advantageous location made it an attraction for the British East India Company, which colonized it as a part of the Bengal Presidency for over 200 years. Under their colonial rule, the region witnessed the catastrophic 1942 Bengal famine which led to widespread loss of lives and mass displacements of people. This fueled the ongoing independence movement and the region received independence in 1947. However, as East Pakistan, it remained disconnected from the government's main seat in the mainland Pakistan making administration difficult. The massive

cyclone 1970 that killed a million people further triggered a national liberation from Pakistan. Following a historic lingua-political struggle of national liberation in 1971, it gained its independence and formed an independent and sovereign nation-state of the People's Republic of Bangladesh.

Bangladesh began its journey with the objective to achieve social justice, welfare of its population, and equality. The challenge, however, was to materialize such goals with limited resources. The situation was termed a 'test case for development', fraught with abject poverty, a large population, hazard exposure and environmental fragility. Disasters have been an inseparable feature of Bangladesh's development narrative and have remained a policy priority of all governments since its independence. The Constitution of Bangladesh adopted in 1972 pledges the ideals of nationalism, socialism, democracy and secularism. These visions have resulted in policy consistency and investments in social and economic development over last five decades. It has defeated the risk of famine and now produces three times more food compared to the 1970s baseline.

Figure 1: Map of Bangladesh with key rivers, borders and urban areas (CFE-DHMA, 2020)

Urban areas	Population (million)
Dhaka	8,906,039
Chittagong	2,592,439
Rajshahi	763,952
Khulna	664,728
Sylhet	526,412
Mymensingh	389,918
Barisal	339,308
Rangpur	307,053
Comilla	296,010
Narayanganj	286,330

Creation of an innovation economy for Bangladesh through labor-centric competitiveness coupled with dynamic entrepreneurship has lifted the country to the 2nd position in the world apparel trade. Equitable distribution of resources and technical knowledge of the world geared towards people's welfare is powerfully reflected in the Digital Bangladesh 2021. Upholding of culture and articulating farmer's welfare mechanism through improved nutrition and reducing occupational health hazards have been geared towards the welfare of its people (GOB, 2020).

Driven by strong domestic demand, Bangladesh's economy currently remains among the fastest growing economies in the developing world. Bangladesh is seen as one of the Next Eleven Emerging Markets (World Bank, 2018). The economy has been growing at around 6 percent annually since the 2000s, which is higher than the average growth rate of all least developed countries together and is currently increasing at the rate of 8 percent annually which is significantly above the current average for Asia. While agriculture remains a significant employer (for nearly half of the working population), rice cultivation and non-rice crops like maize, potato, vegetables, and fruits have helped improving self-sufficiency and ensuring food security. It also remains instrumental in raising farm incomes and real agricultural wages, thereby contributing to rural poverty reduction. Fisheries are also an important part of the economy, with aquaculture the source of more than two-fifths of the country's fish yield.

**Table 1: Export Performance in the Seventh Plan (million US$, source: Export Promotion Bureau)**

	Jute & Jute Goods	Leather	Footwear	Frozen Food	Others	Non-RMG Total	RMG	Total Exports
FY 15	868.5	397.5	673.3	568	3077.6	5717.5	25491.4	31208.9
FY 16	919.6	277.9	714	535.8	1582.9	6163.0	28094.2	34257.2
FY 17	962.4	232.6	777.8	526.5	1770.5	6685.3	28149.8	34835.1
FY 18	1037.8	173	809.7	483	1277.3	6053.5	30614.7	36668.2
FY 19	906.85	411.9	879.41	500.4	862.3	5672.9	34133.3	39806.2
Growth Rate (%)								
FY 15	5.3	-21.4	22.4	-11	0.9	0.4	4.1	3.4
FY 16	5.9	-30.1	6.0	-5.7	-48.6	7.8	10.2	9.8
FY 17	4.7	-16.3	8.9	-1.7	11.9	8.5	0.2	1.7
FY 18	7.8	-25.6	4.1	-8.3	-27.9	-9.5	8.8	5.3
FY 19	-12.6	138.1	8.6	3.6	-32.5	-6.3	11.5	8.6

Garment trade that began in the 1970s, is currently over a USD 30 billion industry (see Table 1). Ready-made Garment (RMG) has led the way in the expansion of export-oriented manufacturing and rapid build of foreign exchange reserves. The services sector, including microfinance and computing, comprises 53 percent of the country's GDP. This has also brought about a digital transformation, spurring more economic growth. The upcoming industries of jute goods, footwear and leather goods exports are likely to emerge, followed by agro-processing, light engineering and electronic goods (Bangladesh, 2021; CFE-DMHA, 2020; GOB, 2020). However, with large reliance on few sectors (RMG and ICT), Bangladesh currently has a low economic complexity (Hausmann et al., 2019) significantly increasing its risks if these sectors are affected in any way (see Figure 2).

Figure 2: Bangladesh's exports are dominated by textiles, IT services and fisheries products which do not amount to sufficient economic complexity (Source: https://atlas.cid.harvard.edu/)
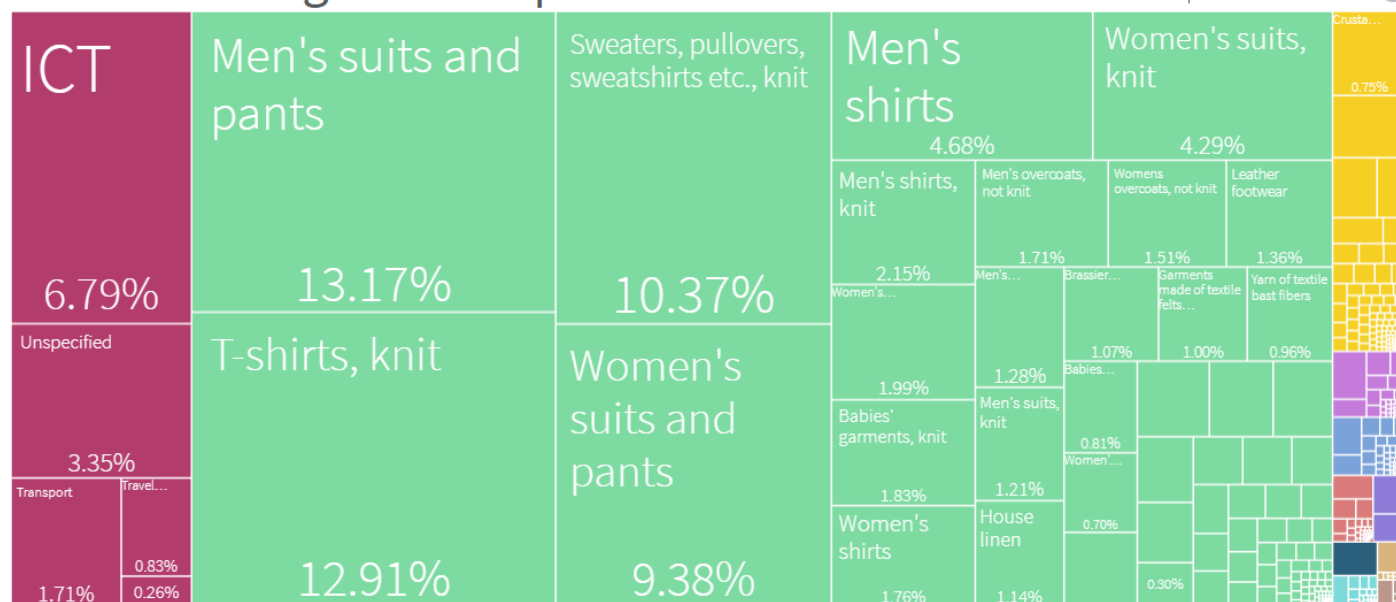
VULNERABILITY, HAZARDS AND RISKS

Impressive economic growth has been complemented by remarkable progress in a set of social indicators related to poverty, child and maternal mortality and school enrolment. However, there remain many formidable challenges for the country including large population size, rapid pace of urbanization, entrenched poverty, unequal access to food, low education infrastructure, increasing global competitiveness in trade and export-market and governance deficit (CFE-DMHA, 2020; Government of Bangladesh, 2020). In addition, it is exposed to several climatic and non-climatic hazards.

Sea-level rise and recurring tropical cyclones in its coastal belt, and flooding and riverbank erosion in mainland areas, combined with the socioeconomic situation of the country, result in the loss of homes, land and property, livelihoods, and large-scale human displacement. Climate-induced displacement is one of the most critical global challenges, and about nine percent of displaced are expected to be from Bangladesh alone. These climate displacements simultaneously involve the risk of abuses, exploitation and human trafficking for the migrants (IOM, 2020) and have grave implications for the rights and entitlements of the individual and communities who experience it (RMMRU, 2021).

Major cyclonic storms have been experienced in 1970, 1991, 2007 and 2009, although the country has demonstrated a consistent decrease in life-loss: 1 million, 136,000, 3,363 and 190 respectively. Meanwhile, marine fisheries and other livelihoods continue to suffer heavy losses. The April 1991 cyclone inflicted a material damage of about USD 2.4 billion. Cyclones *Sidr* (2007), *Aila* (2009), *Mahasen* (2013), and *Amphan* (2020) have also resulted in similarly high economic and environmental losses. These incidences are also putting the cultural heritage at risk due to the sea-level rise and other climatic and environmental extreme events (Jigyasu, 2020). Such recurrence of extreme events is also a dominant reason for increased rural to urban migration.

Flood happens to be another perennial problem in Bangladesh, affecting nearly 20 percent of land area annually and 60 percent over a period of four years. Besides, riverbank erosion of the Ganga and Brahmaputra Rivers affect millions of people and destroys standing crops, farmland and homestead land. It is estimated that about 5 percent of the total floodplain area of Bangladesh is directly affected by erosion (CFE-DMHA, 2020; Rahman, Rahman, & Rahman, 2017). Extreme rains also cause landslides in the hilly regions. Among the hilly districts, Bandarban, Khagrachari, Rangamati and Cox's Bazar are most vulnerable to rainfall induced landslides.

Meanwhile, recurring and persistent droughts, especially in the north-western and south-western region, result in crop failures in rural areas, as well as urban water shortages (Singh, Jain, Sukhwani, & Shaw, 2021). About 2.7 million hectares of agricultural land is severely drought prone causing hardship to poor agricultural laborers and others. Although the hilly Sylhet region is traditionally less prone to droughts, inconsistent rainfall and an increasing number of dry days indicate new emerging drought tendencies (Ali Shah & Hasan, 2014).

Due to its close proximity to tectonically active plate boundaries, Bangladesh is also prone to earthquakes and associated landslides. The country has experienced a few large earthquakes in the past 200 years with the Great Indian Earthquake of 1897 being the largest. Rapid and unplanned urbanization has increased the risks for earthquake as well as the risks of fire, building collapse and industrial hazards, especially in dense cities like Dhaka (Government of Bangladesh, 2020). The Chittagong Hill Tracts (CHT) located in the south eastern part of Bangladesh is home to 11 ethnic communities (as per CHT Accord), with each of them having their own distinctive language, culture, and tradition. CHT is one of the most seismically active zones in the world, where the earthquake outcomes are worsened because of difficulty in communications (UNDP, 2010).This area is also home to the stateless Rohingya refugees from Myanmar. In July 2019, after 14 inches of rain fell in 72 hours, 26 landslides in Rohingya refugee camps in Cox's Bazar killed one person and left more than 4,500 without shelter (Society, 2019).

All of these past disasters have caused serious loss of lives and economy. Between1996 to 2015, 185 disaster events were recorded in Bangladesh which incurred an averaging 0.732 percent of GDP loss per annum and total economic loss was $2.283 billion. During the timeframe of The National Plan for Disaster Management (NPDM) 2016-2020, Bangladesh faced many such localized disasters, with economic losses ranging from 0.8 to 1.1 percent of GDP. Several cyclones hit the coastal areas of the country during this period, among them, Roano (May 2016), Mora (May 2017), Fani (May 2019), Bulbul

(November 2019) and Amphan (May 2020). The most recent monsoon floods in 2020 had an overall impact on the northern, north-eastern and south-eastern region of Bangladesh which engulfed more than 36 percent of the country and impacted 30 districts including 15 moderately to severely. The COVID Pandemic has furthermore caused havoc impact its macroeconomic conditions (Government of Bangladesh, 2020).

In addition, 8.5 pecent of the total deaths in Bangladesh are a result of Water Sanitation and Hygiene (WASH) related issues (CFE-DMHA, 2020). As per the 2020 Human Development Report for Bangladesh, only half the population uses safely managed drinking-water services. In addition, Bangladesh has experienced the largest arsenic catastrophe in human history. For instance, about 97 percent of the rural population drinks underground water through millions of hand-pump tube wells. Unfortunately, the underground water of Bangladesh is now widely contaminated by arsenic (>0.05 mg/L). A higher concentration of arsenic was identified in 61 out of 64 districts and about 29 percent of the total tube wells was arsenic contaminated. Based on estimates, about 57 million inhabitants in Bangladesh are at risk of drinking arsenic contaminated water exceeding 0.05 mg/L and 0.01 mg/L, respectively[1] (MICS, 2019). Arsenic is not only a physical but also a social phenomenon. Besides arsenic toxicity and arsenicosis diseases, arsenic poisoning creates extensive social implications for its victims and their families in affected areas. Arsenicosis is found to be more prevalent among the poor who suffer from dietary deficiency, who have no alternative sources of safe drinking water and who are unable to get proper care and treatment because of financial constraints. At the same time the effects of long-term arsenicosis could cause social problems, interrupt societal ties and are also responsible for mental health issues and depression, something that remains largely unaddressed in Bangladesh as a health risk and a social vulnerability (Brinkel, Khan, & Kraemer, 2009).

Such conditions continue to stress the already stretched health care system in the country (CFE-DMHA, 2020). Although, the country has made remarkable gains in eradicating several communicable diseases with its Expanded Vaccine Programme, others such as tuberculosis, malaria, hepatitis B, cholera, diphtheria, and now COVID-19 continue to strain the system as well as households.

In this, women and girls are disproportionally affected due to several circumstances including lack of access to information, exclusion from decision-making, a disproportionately distributed care responsibilities, and lack of access to economic and health care resources. Following the 1991 tropical cyclone in Bangladesh, women accounted for 90 percent of the 140,000 deaths. However, with recognition, and concerted actions for ensuring women's inclusion in preparedness programmes, this disproportionate impact has now been greatly reduced. The country has also made significant strides on improving gender parity in education and health, making it rank highest amongst the South Asian countries on the Gender Gap Index. However, social issues such as gender-based violence, safety, trafficking, and child marriage continue to keep its women and girls vulnerable. Many families live in insecure conditions threatened by frequent flooding, and thus view marrying off their young daughters as a short-term survival tactic (CFE-DMHA, 2020).

Among the other most vulnerable groups are the Muslim Rohingyas, largely settled in Cox's Bazar who have been politically, ethnically and religiously persecuted and ousted from neighboring Myanmar. They have moved to Bangladesh in phases: between the largest exodus in 1991 and latest in 2017, about one million Rohingya people, more than half of them children, have fled violence in Myanmar to seek refuge across the border in Bangladesh, creating a massive humanitarian crisis. By September 2019, around 1,295,000 people were estimated to be in need of assistance; by the end of 2020, the Cox's Bazar District was still hosting more than 860,000 Rohingya refugees from Myanmar. Those fleeing attacks and violence in the 2017 exodus joined around 300,000 people already in Bangladesh from previous waves of displacement, effectively forming the world's largest refugee camp. New spontaneous settlements sprouted overnight adding pressure on the host community, raising concerns over the lack of adequate shelter, water and sanitation, access to basic services, and general protection considerations such as safety for women and girls (UNHCR, 2019). Many refugees live in flimsy bamboo and tarpaulin shelters where the dangers of everyday life remain all too real. On 22 March 2021, a fire in Cox's Bazar caused widespread devastation when it quickly spread across four Rohingya refugee camps, displacing around 50,000 refugees – half of whom were children (Rohingyaa Crisis, 2021). However, the Rohingya's refugee camps' vulnerability get further heightened when we factor in the consistent cyclone hazards, flash floods, landslides, communicable disease outbreaks and storm surges in the Cox's Bazar region and the risk and exposure of the refugees to the disaster vulnerabilities in terms of evacuation process, spatial distribution in cyclone shelters, access to food, relief, medicines and their rehabilitation.

According to a 2019 study weighing hazard, exposure, and vulnerability, 53 percent of the Cox's Bazar district has a "very high" or "high" cyclone risk. More than 30 percent of the Rohingya refugee camps are at a very high or high cyclone risk (CFE-DMHA, 2020). The Rohingyas are not permitted to build permanent structures and are therefore forced to live in densely populated temporary shelters made of plastic sheets, tarpaulins and bamboos, highly vulnerable to cyclonic winds. The humanitarian crisis coupled with the cyclone risk scenario of the Cox's Bazar division is a case that needs long-term intervention and right-based solutions (Alam, Sammonds, & Ahmed, 2020; UNDP, 2019a). However, in the recent years, the World Bank came forward and invested to help Rohingyas in Cox' Bazar under the 'Emergency Multi-Sector Rohingya Crisis Response Project' to build and rehabilitate basic infrastructure, improve community resilience and help prevent gender-based violence (Bank, 2019; Star, 2019). Despite such efforts and initiatives, the risk remains still very high.

The COVID-19 situation has further exacerbated the plight of the Rohingya refugees in camps. The prompt effort of the local administration in enforcing a total shut down has slowed the spread of the virus. However, the congested nature of the dwellings in camps has made it virtually impossible for the refugees to maintain social distancing. The negative perception associated with the virus contributes to a general reluctance to visit clinics for testing or treatment, particularly for fever and other COVID-like symptoms. The situation becomes more complex with brewing discontent and tension among the host community that refugees will spread the virus. The emphasis on Covid-19 appears to have overshadowed other critical health needs, such as routine immunization, mental health services, maternal/child health services, etc. (Siddiqui, 2020).

The Covid-19 Pandemic has also triggered a wave of out-migration of labor force from Bangladesh: a total of 2,17,669 Bangladeshi migrants workers went to different countries of the world including the Gulf, other Arab and South-East Asian countries in 2020 looking for jobs and employment (Siddiqui, 2020).

As per the recent study by UNDP, the impacts of the pandemic have created a multidimensional crisis increasing immediate humanitarian needs, while at the same time exacerbating structural inequalities and pre-existing barriers in access to services; aggravating vulnerabilities in the country's governance and administrative systems; and undermining Bangladesh's development gains to date. The loss of livelihoods brought about by the crisis is in a vicious feedback loop with slowing demand. The decreased purchasing power of the large number of 'newly poor' – including those whose jobs have been lost to falling international demand, has reduced domestic demand for many products. This, along with breakdowns in supply chains and transportation systems, has crippled food production systems and countless micro, small and medium-sized enterprises, further affecting the livelihoods of urban and rural workers. At the macro-level, the multidimensional shocks of the crisis are likely to set back the country's steady economic progress. In addition to forcing a downward revision of its economic growth forecast, the pandemic has laid bare existing fundamental vulnerabilities within the economy that serve to heighten risk during the crisis. These vulnerabilities include an overreliance on readymade garments and remittances as drivers of economic growth, a very low tax-to-GDP ratio, a fragile banking system, significant risks to disaster and climate, and the enormous informal sector. Despite the overwhelming challenges created by the pandemic, its disruptive effects offer an opportunity to address entrenched assumptions, interests and ways of working in national and local institutions' (UNDP Bangladesh, 2021)

URBAN RISK IN BANGLADESH

Urbanization has been driving Bangladesh's economic growth and contributes to over 65 percent of the national GDP that helped it graduate from the Least Developed Country category (LDC) (UNDP Bangladesh, 2019a). However, urban areas in Bangladesh also face a variety of risks due to increasing population densities resulting from migration caused by climatic stresses in deltaic regions and other rural areas. Internal in-country migration from rural to urban areas has helped poverty reduction at the national level by offering higher income opportunities for many migrant workers. But urban development has not kept pace on the supply side of housing, infrastructure and service delivery in response to the higher influx of people. In this, most pressure has been exerted on the capital city of Dhaka and the neighboring districts of Narayanganj, Gazipur and Narsingdi. Most other urban city centers, especially in the Western Region, have not provided the environment to facilitate economic growth or urban services. As a result, there is now a growing concentration of poor in a few urban areas instead of multiple city nodes. This has perpetuated multidimensional poverty in these areas due to poor access to water

and sanitation causing health risks, income inequality, unemployment, food insecurity, loss of safety, and traffic congestion leading to poor air quality and productivity losses (GOB, 2020).

Land continues to be a limited resource in urban areas with poor quality housing especially in slums, riddled with tenure insecurity and evictions, and the practice of illegal land grabbing (Land Watch Asia, 2018). These further impeding economic and social growth as well as productivity and scope of investment. Flooding and water-logging due to poor drainage are common, worsened by climate variability and erratic weather conditions (Ahmed, 2014). Apart from slums, other poorly regulated buildings are common sites for urban fires as well as increase risks during earthquakes and cyclones.

Bangladesh's economic mainstay, the readymade garments (RMG) industry, that contributes to over 84 percent of its export earnings (see Table 1), is also largely based in urban areas taking advantage of the available and affordable labor and strategic connections with international supply chains. For the longest, Bangladesh remained the largest source of RMG imports for Europe and North America, second only to China. Bangladesh has the world's highest number of green garment factories (BGMEA, 2021).

However, repeated fire breakouts in its garment factories, especially in Dhaka, Gazipur, Narayanganj, and Chittagong brought a severe blow to Bangladesh's economy. On November 22, 2012 a fire in the Tazreen Fashion Ltd. Garment factory in the Ashulia District, Dhaka, Bangladesh, killed 112 people. Just five months later, on April 24, 2013, another fire broke in the Rana Plaza building which housed five garment factories, killing at least 1,132 people and injuring more than 2,500. Since then, over 109 more accidents have occurred, out of which, at least 35 were RMG factory incidents killing 27 and injuring 491 workers (ILO, 2017). These series of incidences woke the world to the poor labor conditions and the unsafe work environment in these factories, affecting their sentiments towards imports from Bangladesh (Berg, Chhaparia, Hedrich, & Magnus, 2021). Besides, Bangladesh's graduation from the LDCs category will lead to a loss of access to LDC-specific duty-free quota-free schemes, preferential rules of origin and other trade benefits. Significant impacts are expected in the EU, Canada, Japan and other markets, affecting especially the garments industry. Bangladesh will forego benefits accorded to LDCs in future trade negotiations, and lose access to or priority in training and capacity building opportunities (UNDESA, 2020).

These transitions need catalyzed concerted governance and social efforts at the national level to transform the working conditions in these factories and improve transparency regarding factory safety and value chain responsibility. A National Resilience Programme was envisioned in 2020 by the Bangladesh government to create disaster-resilient supply chains to reduce economic losses from disasters. It was aimed towards a strategy creation, building many infrastructures, developing affiliated structure and facilities along the Dhaka-Chittagong corridor and an expressway or a riverine route as an alternative to the single-road Dhaka-Chattogram highway to efficiently transport RMG products and to keep the supply chains active and robust. Additionally, the programme recommended bringing necessary regulatory reforms, establishment of institutions and conducting studies for mainstreaming disaster and climate change-related risks into the RMG supply chain. These were also extended to pharmaceutical and agricultural goods (UNDP, 2019b, 2020).

In this regard, a guideline for supply chain resilience in the RMG sector is being developed through the National Resilience Programme for ensuring an active and functional channel for garment transport (Government of Bangladesh, 2020). At the same time, new export strategies are being discussed and implemented. The Perspective Plan of Bangladesh 2021-2041 (PP2041) projects robust export growth on the back of export-oriented manufacturing expansion. RMG exports will continue to lead the way for much of the Plan period, though new and diversified export products will emerge as the export diversification strategy begins to take hold. Home textiles, jute and jute goods, footwear and leather goods exports are likely to grow, followed by agro-processing, light engineering and electronic goods. The export strategy of the future will take a two-pronged approach: (a) put in place a policy regime that accords the same facilities (duty-free imported inputs) to all non-RMG exports as are provided to RMG, and (b) rationalize the tariff and protection regime to eliminate the policy bias against exports. With projected remittances growing at around 10 percent a year, the current account balance should be comfortable and will allow Bangladesh to procure the imports necessary to support high growth. It also aims at creating an easy and business-friendly economic ecosystem for attracting greater direct foreign investment to finance infrastructure and manufacturing investments. This will also facilitate technology transfer while the technological transition could endanger workers in the factories (GOB, 2020).

Over the next two decades, as Bangladesh graduates out of the LDC status, the share of concessional multilateral loans will start dwindling and non-concessional loans will start appearing larger in Bangladesh's outstanding loan portfolio. As the private sector also takes on external debt from the capital markets abroad, the overall debt burden and cost of servicing debt is expected to rise. However, with the economy's growth rate reaching greater heights, it will be able to sustain moderately higher debt with somewhat higher interest cost. Meanwhile, the issues with the larger urban development persists (GOB, 2020). Continuing urban vulnerabilities end up hindering the realization of Bangladesh's economic growth to its maximum potential by deflecting new investment opportunities that can significantly contribute to rising productivity and accelerating economic and social growth (UNDP Bangladesh, 2019b).

GOVERNANCE FOR RISK AND CRISIS

Times of crisis often present themselves as moments of institutional reflection and reform. For Bangladesh, it was the 1942 famine, the 1970 and 1991 cyclones, in addition to a series of major floods, especially those in 1987 and 1988, all of which caused great human and economic losses that brought about significant shifts in its governance approaches, including from response and relief[2] to a more preventative risk reduction approach, as well as converging disaster risk reduction with climate change adaptation. Since these disasters were a major setback to the country's overall development, risk management is highly prioritized. Risk is managed and governed in Bangladesh through an array of approaches, although each faces its own sets of challenges.

Figure 3: Disaster Risk Governance in Bangladesh (CFE-DMHA, 2020)
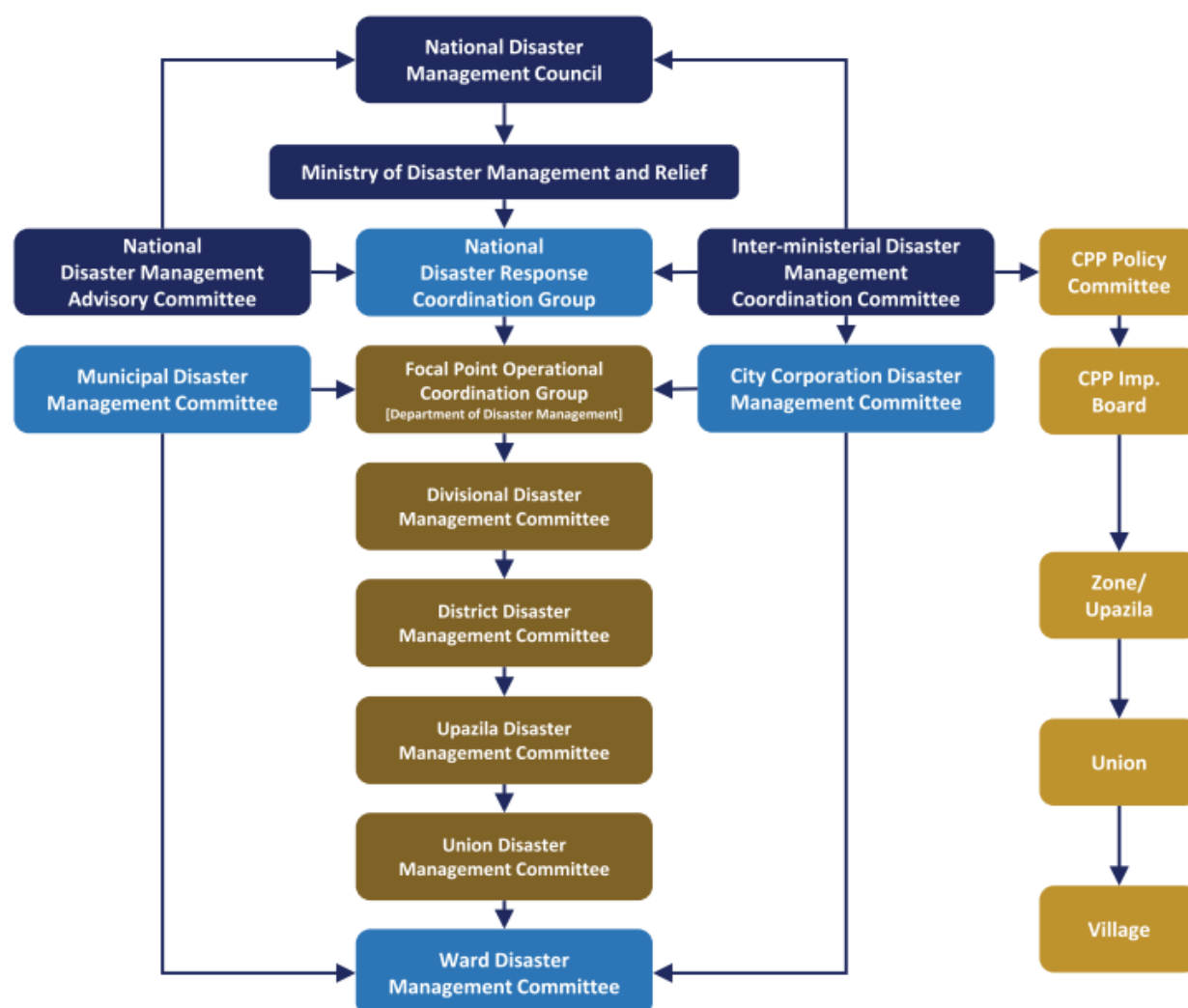
Risk oversight

The National Disaster Management Council (NDMC), headed by the Prime Minister, is the top agency at the national level that provides overall direction for disaster management (DM) which includes disaster risk reduction, mitigation, preparedness, response and recovery. DM is seen as a multi-sectoral and multi-functional discipline, with planning and execution responsibilities vested in agencies with primary technical/management focus related to specific sectors, with the Ministry of Disaster Management and Relief (MoDMR) having an overall coordinating and facilitating role as the "Secretariat" to NDMC. The Inter-Ministerial Disaster Management Coordination Committee (IMDMCC) coordinates across different ministries of the government at the national level (CFE-DMHA, 2020; UNDP, 2018). See Figure 3 for the institutional structure of disaster risk governance in the country. The Department of Disaster Management (DDM) was set up as the focal point operational coordination group under the Ministry of Disaster Management and Relief, in 2012, with the mandate of "*reducing the overall vulnerability from different impacts of disaster by undertaking risk reduction activities; conducting humanitarian assistance programs efficiently to enhance the capacity of poor and disadvantaged as well as strengthening and coordinating programs undertaken by various government and non-government organizations related to disaster risk reduction and emergency response*".[3] In addition to these institutions, others such as the Geological Survey of Bangladesh, the Meteorological Department, the Flood Forecasting and Warning Centre, and a network of universities and research institutions including the Institute for Water Monitoring and the Center for Environmental and Geographic Information Services, help provide timely information and support evidence-based policy-making.

Multi-actor and multi-level policy and planning

The Comprehensive Disaster Management Programme (CDMP), a collaborative initiative of Government of Bangladesh and UNDP with the support of UK Aid, European Union, Australian Aid, Norwegian Embassy and Swedish SIDA, initiated the establishment of Bangladesh's disaster management policy framework, which eventually led to the establishment of the Disaster Management (DM) Act in 2012, the National Plan for Disaster Management (NPDM) 2010-2015 (later succeeded by NPDM 2016-20), and the related Standing Orders for Disaster (SODs – first issued in 1997, then revised in 1999, 2010, and 2019). A key factor of its successes is attributed to the support it received from the highest levels of government, rooted in their commitment towards climate change and disaster mitigation.

The country has a long-term Perspective Plan as a major policy guidance for disaster management (MoDMR & UNDP, 2017). The NPDM is aimed at achieving these long-term goals. A resilience-oriented sustainable development framework has been adapted by NPDM through risk reduction, resilience building and sustainable budgeting systems (Government of Bangladesh, 2020). The NPDM (2010-2015) marked the first significant shift from relief and response to comprehensive risk reduction management, while drawing from regional and global frameworks such as the SAARC Disaster Management Framework and the Hyogo Framework for Action. At its closure, it pointed to 8 key strategic directions for building resilience: *Upgrading existing DM programs and policies; DM governance; Investments for building resilience against chronic disasters; Social protection; Inclusive development; Private sector engagement; Resilient post-disaster response and recovery; and Emerging risks* (MoDMR & UNDP, 2017).

It's successor, the NPDM 2016-2020, was prepared aligning with the GoB's seventh 5-year development plan, taking into account the Asia Regional Plan for Implementation of the Sendai Framework for Disaster Risk Reduction. The plan places importance on "*emerging risks linked to urbanization and climate change, and the necessity of DRR for sustainable development, and is flexible and adaptive in cognizance of the changing nature of risks in Bangladesh*" (MoDMR & UNDP, 2017, p. i). It recognizes climate change, urbanization, gender-based issues, poverty, and increased vulnerability of industrial sectors as its key drivers for emerging risks posing human development challenges. It also expects health to assume significance due to these other emerging risks. The plan highlights the importance of the private sector, as well as takes a 'whole-of-Government' approach (CFE-DMHA, 2020; MoDMR & UNDP, 2017). It explicitly recognizes the connection between development and disasters and that "development and investment plans should be risk-informed based on disaster risk assessments and avoid generating new risks or exacerbating existing ones."

In line with SFDRR, it focuses on:

- Promoting policy coherence among DM and development in-country;
- Making disaster risk reduction a development practice to achieve resilient public investment and the SDGs;
- Encouraging private sector engagement towards risk sensitive investments;
- Building capacity and leadership to implement the NPDM 2016-2020 at the national and local levels.

It takes inclusion as its underlying and cross-cutting strategy in all action plans, ensuring incorporation of gender issues in decision making and participation of women and men and considerations for people with vulnerabilities. However, as per expert inputs, the implementation of these ideals has been weak, and inclusion is less prioritized in practice.

Figure 4: The Bangladesh Disaster Management Model (CFE-DMHA, 2020)
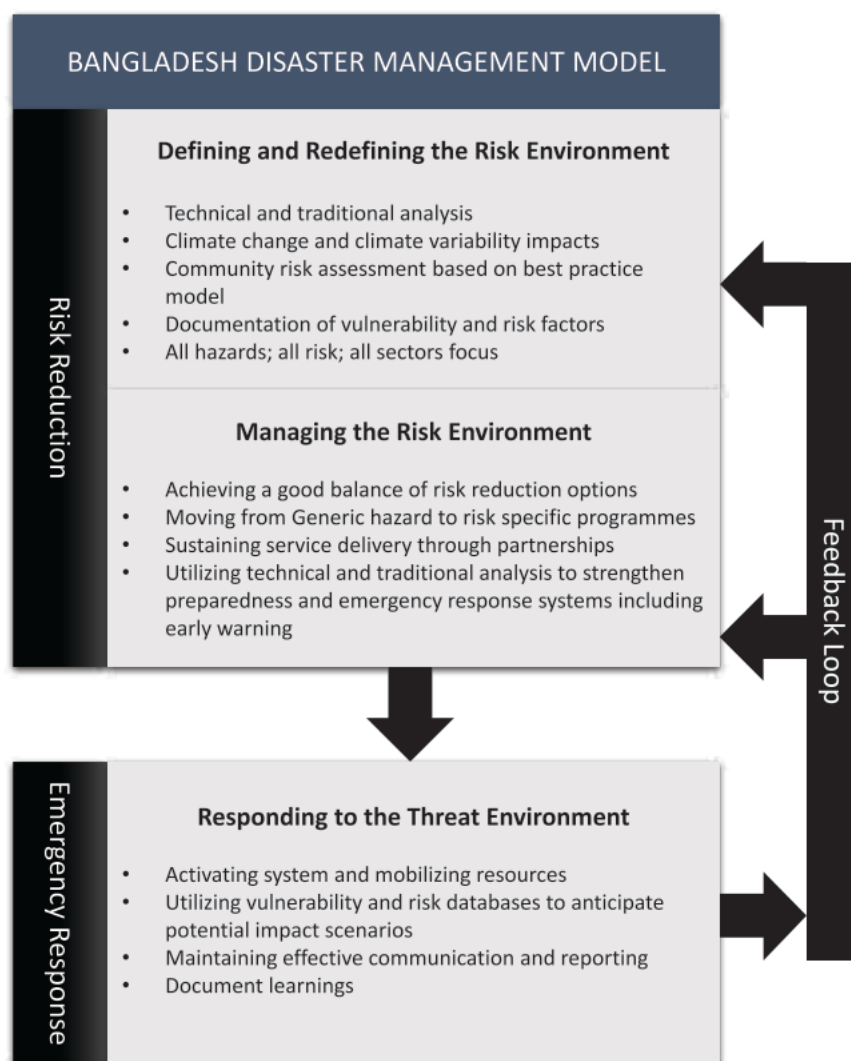
Bangladesh has a Climate Change Strategy and Action Plan (BCCSAP 2009), which sets out 44 programmes to issues across 6 strategic areas over a short, medium and long-term: Food security, social protection and health; Comprehensive disaster management; Infrastructure; Research and knowledge management; Mitigation and low carbon development; Capacity building and institutional strengthening.[4]

The Flood Action Plan (FAP) an initiative to study the causes and nature of floods in Bangladesh and to prepare guidelines for controlling it, was based on several earlier studies by UNDP, a French Engineering Consortium, USAID and the Japan International Cooperation Agency (JICA). It set the foundation of a long-term programme for achieving a permanent and comprehensive solution to the flood problems (World Bank, 1990).

To respond to the fire incidences, a National Tripartite Plan of Action (NTPA) was agreed between government, employers and workers in March 2013, to improve fire safety in the Ready-Made Garment (RMG) industry in Bangladesh. After the

collapse of the Rana Plaza building, only five months later, on April 24, 2013, this NTPA was extended to include structural integrity. Since then, a host of activities have been carried out to improve fire safety in the garment industry (Wadud, Huda, & Ahmed, 2014). However, fire incidents continue to damage properties, cause loss of lives and affect Bangladesh's economy as the safety protocols and infrastructural system in the garment factories remain risk prone.

While some of the action plans and approaches are still 'hazard' focused, the Disaster Management Model pursued considers the risk environment, including vulnerability drivers across all sectors (see Figure 4). Apart from the national strategies and plans, Bangladesh has also formulated a long-term comprehensive development plan especially for its deltaic region, called the Bangladesh Delta Plan (BDP 2100), which focuses on economic growth, environmental conservation, and enhanced climate resilience. The plan lays out holistic and cross-sectoral action needed to improve productivity and minimize disaster risks. The Delta Plan will also help reduce urban migration by about 60 percent, coastal zone out-migration by 50 percent, and river area out-migration by 50 percent[5].

Decentralized institutional mechanisms

CDMP also led to the establishment of some key institutional entities and processes, including the Climate Change Cell, the Disaster Management Information Centre, Community Risk Assessment and Risk Reduction Action Planning Guidelines, a Local Disaster Risk Reduction Fund, and the Livelihood Adaptation to Climate Change Programme, that further helped localizing risk reduction actions (GoB & UNDP, 2009; Luxbacher & Uddin, 2012). Although, it has been noted that for local governments, risk reduction was not a priority, and they faced 'mainstreaming fatigue' stemming from "*communities' desire for direct benefits from programmes, and their frustration when that did not materialize project after project*" (Luxbacher & Uddin, 2012, p. 11). This has somewhat prevented communities and local governments from prioritizing medium to long-term risk reduction. Project Implementation Committees were set up to overcome this challenge by ensuring transparency and accountability.

Backed by resource allocation

The main target of the financing formulation and mechanism is to assist identify sustainable sources of finance to implement the key targets of the NPDM. These can come from existing national budgets (as can be identified from Annual Development Plan) and from external sources (such as donors, regional partners, etc.) with a dedicated 'DRR/CCA Fund' at national, local and community levels; adequate fund allocation (at least 5 percent) for Research and Development for all targeted activities and support from private sectors and development banks (Government of Bangladesh, 2020).

The Inclusive Budgeting and Financing for Climate Resilience (IBFCR) project has been undertaken to rationalize the Public Financial Management of climate finance and introduce a climate policy based on planning, budgeting and performance management of climate finance by implementing the Climate Fiscal Framework (CFF). The project intends to foster a sustainable basis for identifying, maximizing and managing sources and application of funds for financing climate resilient actions (UNDP Bangladesh, 2014). The Climate Change Trust Fund Act was enacted in 2010 and the Climate Change Trust Fund (CCTF) with the budget allocation of US$ 100 million for 2009-2010 and US$ 100 million for 2010-2011 from Government's own resources (UNDP Case study on mainstreaming disaster risk reduction and climate adaptation, 2020). The challenges remain in its low investments in infrastructure, inadequate promotion of labor-intensive manufacturing exports and the need for job creation, resolving food insecurity and nutrition imbalance and adoption of upgraded technology and skill-based employment while maintaining a macroeconomic stability (GOB, 2020).

Infrastructural measures

The GoB has used its own and external funds to build 1841 cyclone shelters and 200 flood shelters in the most hazard exposed areas to reduce future risks. In addition, it has implemented 482 flood control projects as safety measures against inundation by tidal waves, storm-surges and flooding have been constructed.[6] However, these structural measures lack climate foresight, and may potentially need to be upgraded to remain useful. A total investment of $5,516 million and $112 million in annual recurrent costs will be needed by 2050 for rehabilitation of these structures for protection against increased intensity and frequency of storm surge risk, flood etc. due to climate change (UNDP Case study on mainstreaming risk, 2021).

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ENDNOTES

[1] For updated data. http://hdr.undp.org/en/countries/profiles/BGD. Accessed on 27 July 2021

[2] The Cyclone Preparedness Programme (CPP), a globally renowned volunteer organization of Bangladesh, was established in 1972 after the devastating Bhola cyclone combining volunteerism and communication technology. CPP was the lead organization dealing with disaster response prior to 1991.

[3] http://www.ddm.gov.bd/site/page/48e43e67-78e6-428f-9be1-584e9f93446d/Creation-of-DDM accessed on 14 Feb 2021

[4] http://nda.erd.gov.bd/en/c/publication/bangladesh-climate-change-strategy-action-plan-bccsap-2009

[5] https://blogs.worldbank.org/endpovertyinsouthasia/implementing-bangladesh-delta-plan-2100-key-boost-economic-growth

[6] https://www.adrc.asia/countryreport/BGD/2003/page2.htmlAccessed on 03 March 2021

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