



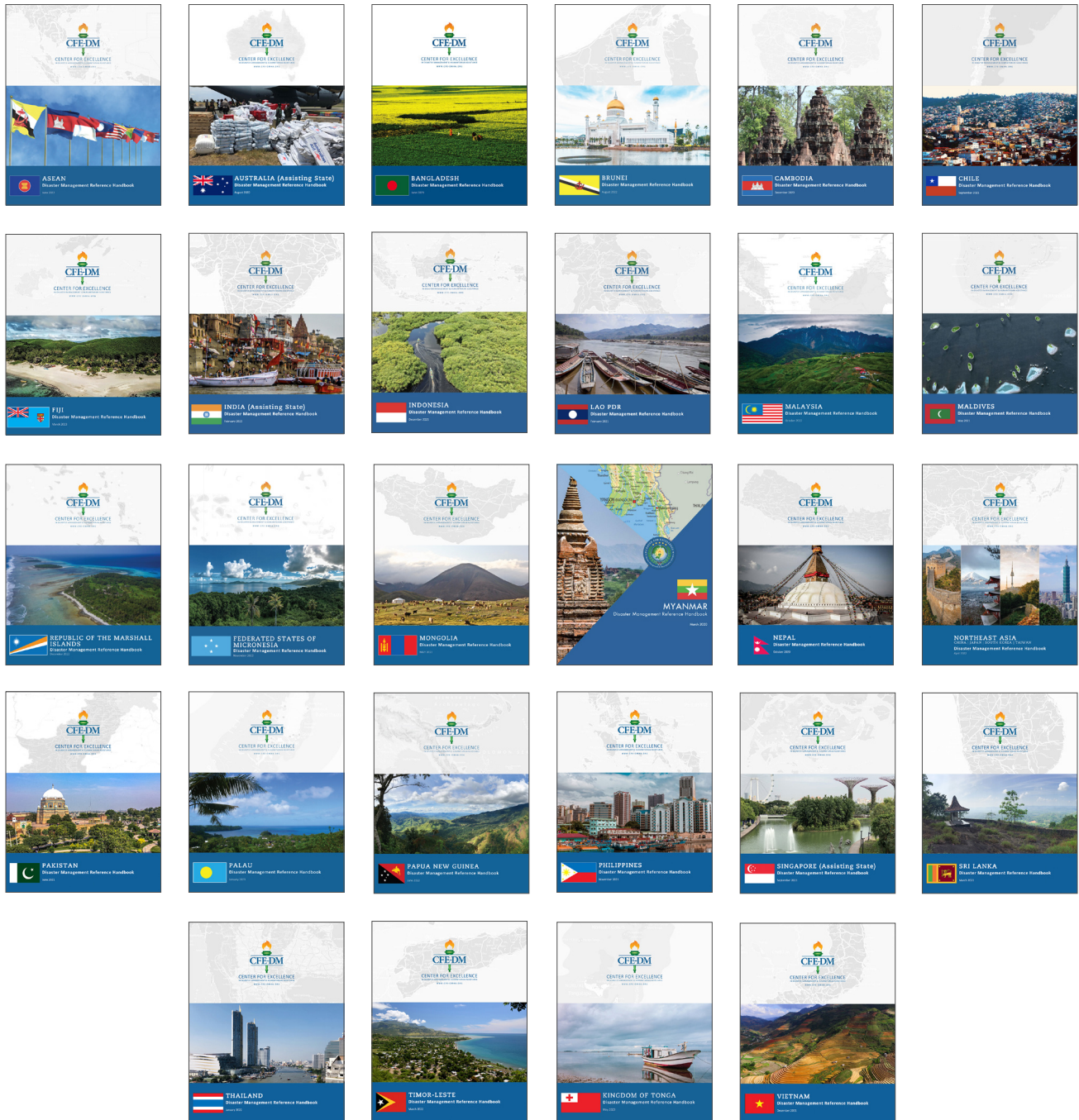
BANGLADESH

Disaster Management Reference Handbook

June 2023

Disaster Management Reference Handbook Series

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Front Cover

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Letter from the Director

Bangladesh has a well-developed community of practice in disaster management and humanitarian response; government agencies partner with United Nations (UN) entities, academia, and the private sector. Moreover, Dhaka maintains active bilateral and multilateral relationships that fuel development, climate change adaptation, and risk reduction. Among those key activities is Bangladesh's involvement and historic leadership of the Regional Consultative Group (RCG) on Humanitarian Civil-Military Coordination for Asia and the Pacific with the support of the UN Office for the Coordination of Humanitarian Affairs (OCHA) Regional Office for Asia and the Pacific and the Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM).

Bangladesh and the United States (U.S.) celebrated 50 years of bilateral ties in 2022, and the foundation of economic, political, and security cooperation provides ample opportunity to continue to build in the realms of climate, humanitarian action, and global peacekeeping. In addition to the RCG, CFE-DM contributes to this steady development via participation in exercises and workshops that bring together Bangladesh's humanitarian, civilian, and military stakeholders with their global counterparts. Most recently, in 2022, CFE-DM supported the annual Disaster Response Exercise and Exchange (DREE), co-hosted by U.S. Army Pacific (USARPAC) and Bangladesh's Armed Forces Division (AFD); the DREE focused on best practices for emergency preparedness, especially on preparation for earthquakes. Additional subject matter expert exchanges and regional exercises build the network of humanitarian assistance and disaster response practitioners within South Asia and the Indo-Asia-Pacific region in general.

As Bangladesh continues to confront the climate change-influenced hazard landscape, the CFE-DM will continue to work to build the bilateral and multilateral network that shares information, best practices, and knowledge resources to ensure at-risk and vulnerable communities gain the capacity they need to build resilience to the impacts of storms, earthquakes, rising sea levels, and other hazards.

As part of its contribution, CFE-DM delivers this disaster management reference handbook, which updates the 2020 edition with further details on how climate models foresee Bangladesh's experience of climate change-influenced hazards. It presents the country's government and civil society organizations for disaster management as well as the details on past disaster events, and historical, cultural, geographic, economic, and political background. This handbook is crafted as an initial information resource for personnel planning for or deploying to a disaster risk reduction or humanitarian assistance mission in partnership with Bangladesh stakeholders.



Sincerely,

Joseph D. Martin, SES
Director

About the Center for Excellence in Disaster Management & Humanitarian Assistance

Overview

The Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM) is a United States (U.S.) Department of Defense (DoD) organization comprised of nearly 30 subject matter experts that provide academic research, civil-military coordination training, and operational insights to support decision making before, during, and after crises. The Center is designed to bridge understanding between humanitarians, civilian, and military responders. CFE-DM partners with a diverse group of governmental and nongovernmental actors, as well as academic institutions to increase collaborations and capabilities in humanitarian assistance and disaster response. While maintaining a global mandate, the Indo-Pacific region is our priority of effort and collaboration is the cornerstone of our operational practice. The Center is a direct reporting unit to U.S. Indo-Pacific Command (USINDOPACOM) and is located on Ford Island, Joint Base Pearl Harbor-Hickam, Hawaii.

Vision

The Joint Force, allies, and partners are fully prepared to conduct and support foreign humanitarian assistance.

Mission

CFE-DM builds crisis response capacity in U.S. and partner militaries, enhances coordination and collaboration with civilian and foreign partners, and strengthens those relationships to save lives and alleviate human suffering before, during, and after humanitarian crises.

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EXECUTIVE SUMMARY

Bangladesh's history – pre- and post-independence – is marked by disasters due to myriad natural and other hazards. The country's proximity to the Bay of Bengal exposes it to tropical cyclones that form over the Indian Ocean before moving northward and making landfall in South Asia. Storms are the disaster the country most frequently experiences. Bangladesh's river delta terrain and monsoon climate also combine to pose a considerable flood hazard, which is compounded by storm surge. Floods are the second most frequent disaster to hit the country. Other significant hazards include landslides (often associated with storms and floods), earthquakes, extreme temperature events, and epidemics.

Climate change is already exacerbating Bangladesh's exposure to climate hazards. While Bangladesh's average temperature has increased on pace with the global average temperature, the country's maximum temperatures are increasing more swiftly and are already bringing record-breaking heat waves in a concerning trend that is anticipated to continue, to the detriment of human health and agricultural production. Climate change is also projected to expose a greater area of the country to tropical cyclones. The good news is that Bangladesh has made incredible progress in preparing for tropical cyclones and has drastically reduced its death toll from hundreds of thousands of people decades ago to dozens of people in recent years. However, there remain challenges as the more vulnerable survivors of storms face loss of livelihoods and risk being pushed further into poverty by multiple, frequent disasters.

Bangladesh's scientists and authorities are also aware that the country must prepare for earthquakes. While it has experienced small to moderate quakes, the area has not seen a massive earthquake in more than a century. Dhaka and other urban areas are at serious risk if a major quake occurs because unplanned urbanization and building construction do not adhere to the earthquake preparedness code. A survey found

that an earthquake of magnitude 7.0 or greater that strikes Dhaka would result in the collapse of tens of thousands of buildings.¹

Many of Bangladesh's disaster risks are interrelated. Earthquake risks are increased by urbanization. Climate change is partially contributing to urbanization, as rural-urban migration increases when people affected by climate disasters, including flooding, lose their livelihoods and see moving to the city as their best option. Within this context, disaster risks exacerbated by climate change are a major challenge to the country's continued poverty alleviation and human and economic development. Frequent disasters, simultaneous or successive, are hitting vulnerable populations the hardest. These groups do not have the opportunity to recover from the last disaster before the next one hits. A considerable number of the most vulnerable people in Bangladesh are the nearly one million Rohingya refugees who are not citizens but whose future is entwined with their host country.

Bangladesh is well aware of the cross-cutting nature of disaster challenges and is striving to take a coordinated approach. Under the central National Disaster Management Council (NDMC), headed by the Prime Minister, and the Ministry of Disaster Management and Relief (MoDMR), there is a set of disaster management committees at different administrative levels – i.e., district, upazila, and union; each committee consists of representatives of government, non-government organizations (NGO), and community and vulnerable groups. The disaster management system is legalized by the Standing Orders on Disaster (SOD) and the Disaster Management Act. These two documents specify the roles and responsibilities of each committee in all stages of disasters. The District, Upazila, and Union Disaster Management Committees are responsible for local level disaster management, including initiatives that are related to Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR).²

COUNTRY OVERVIEW

Bangladesh (“Land of the Bengals”) has achieved progress in disaster management and economic development since fighting for and gaining independence in 1971. The country has emerged with improved preparedness from numerous tropical cyclones, beginning with the 1970 cyclone, which was the world’s deadliest on record and contributed to the formation of Bangladesh as a country.

Fronting the Bay of Bengal with low-lying terrain, Bangladesh is exposed to tropical cyclones and monsoon flooding. Storms and floods are the most frequent hazards, but the country is also at risk of earthquake, riverbank erosion, landslide, saltwater intrusion, drought, tsunami, lightning strikes, arsenic contamination of wells, human-induced hazards, and health hazards. Bangladesh is also highly vulnerable to climate change, which is likely to bring increased extreme weather events, soil salinization, rising sea levels, and erosion.³ Like most countries, Bangladesh was heavily impacted by the Coronavirus Disease 2019 (COVID-19) pandemic; it reported more than 2 million cases, 29,000 deaths, and considerable economic impact,⁴ although macroeconomic stability has returned.⁵ Significant progress has been made in disaster risk management, but DRR and CCA remain strong priorities.

History

The area covered by modern Bangladesh was the scene of various migrations, including of Dravidian, Indo-Aryan, Mongol-Mughul, Arab, Persian, Turkic, and European peoples. In approximately 1200 BCE, Muslim invaders supplanted Hindu and Buddhist dynasties and converted most of the population of the eastern areas of Bengal to Islam. Islam has played a crucial role in the region’s history and politics ever since. In the 16th century, Bengal was absorbed into the Mughul Empire. From the 15th to 18th centuries, the Portuguese, Dutch, French, and British reached the region. By the 19th

century, the British, largely through the British East India Company, extended their influence beyond Calcutta and northwesterly up the Ganges River Valley.⁶ When the British Crown took control of the region and created the Raj in India (1858–1947), the territory of modern-day Bangladesh was included.⁷

When British colonial rule over India ended in 1947, Partition occurred along religious lines – Muslim-majority Pakistan and Hindu-majority India. However, West Pakistan (modern-day Pakistan) and East Pakistan (modern-day Bangladesh) were separated by the whole of India. Besides religion, East Pakistan had little in common with West Pakistan, which had a different culture and whose people spoke a different language. The Bengali speakers in East Pakistan opposed West Pakistan’s efforts to impose Urdu as the national language and resented the West’s domination of the central government. This resentment peaked when Cyclone Bhola struck East Pakistan on 12 November 1970. Considered the deadliest cyclone in recorded history, it killed more than 300,000 people in what is today Bangladesh.⁸ The lackluster response to the disaster by the central government in West Pakistan was compounded by that government’s refusal to recognize the landslide election victory of the Awami League, which had campaigned ahead of the December polls on the issue of East Pakistan’s autonomy. On 27 March 1971, Sheikh Mujibar Rahman declared Bangladesh’s independence from Pakistan, an announcement that marked the beginning of a brutal nine-month war that saw devastating violence, including Pakistan’s Army systematically sexually assaulting 200,000–400,000 Bangladeshi women and girls. With India supporting the Bengali nationalists against Pakistan, Bangladesh became an independent state on 11 January 1972.⁹

Sheikh Mujibur Rahman became the first leader of independent Bangladesh. Under his economic policies, the country experienced

economic crisis amidst inflation and scarcity, which were exacerbated in 1974 by severe floods that devastated the grain crop and led to an estimated 28,000 famine deaths.¹⁰ Rahman was assassinated in a coup in November 1975, and martial law was imposed. Major-General Zia ur-Rahman came to power. His policies were generally anti-India and pro-Pakistan, and he strengthened the military and bureaucracy, emphasized food production, and initiated economic cooperation with neighbors, a policy that would lead to the establishment of the South Asian Association for Regional Cooperation (SAARC) in 1985. However, in 1981, Zia was assassinated, and in 1982, General Hussain Muhammad Ershad took power in a coup and suspended the constitution and political parties.¹¹ Ershad lifted martial law and reinstated the constitution in 1986, but in 1987, he declared a state of emergency after opposition demonstrations and strikes. Severe flooding in 1988 left tens of millions of people homeless, and poor economic conditions in the late 1980s increased pressure on Ershad, who stepped down in 1990 after weeks of massive anti-government protests.

In 1991, the country returned to a parliamentary system of government and Begum Khaleda Zia, widow of President Zia ur-Rahman, became Prime Minister after her Bangladesh Nationalist Party (BNP) gained a parliamentary majority in elections. Khaleda reinstated parliamentary government, shifting power away from the presidency. She advanced economic and educational reforms, but the Awami League and other opposition parties led strikes against the BNP government. Khaleda's tenure was also hampered by a 1991 tropical cyclone that killed more than 130,000 people and triggered an international humanitarian response, including the U.S. military's Operation Sea Angel. In 1996, Khaleda bowed to public pressure and resigned six weeks after winning elections, which had been boycotted by Awami League voters and saw low voter turnout. In subsequent elections in 1996, the Awami League gained power under the leadership of Sheikh

Hasina Wazed, the daughter of Sheikh Mujibur Rahman. During Sheikh Hasina's first tenure as Prime Minister, anti-government demonstrations remained common, and the BNP regularly boycotted parliament. In 2001, the BNP regained the majority and led a coalition government. Political crises from 2006 through 2008 resulted in the leaders of both major parties being briefly detained. In 2007, a state of emergency was declared, numerous politicians were detained on suspicion of corruption, and a military-backed caretaker government took control. During this period, Cyclone Sidr struck Bangladesh in November 2007, caused more than 3,400 deaths and 55,000 injuries, and highlighted the need for increased disaster preparedness.¹² In 2008, the Awami League won a landslide victory, and in 2009, Sheikh Hasina returned to power.¹³

In the last decade or more, the economy has continued to develop, but Bangladesh's poorest people constantly face setbacks from frequent disasters stemming from natural hazards as well as industrial accidents. High-profile accidents included the 2012 Tazreen Factory fire, which killed 117 people, and the 2013 collapse of the Rana Plaza factory building that killed more than 1,100 people, including many women garment workers.¹⁴ Bangladesh also hosts an estimated 960,539 Rohingya refugees, primarily in Cox's Bazar in the southeast.¹⁵ While waves of Rohingya refugees have fled over the border multiple times since 1978, the majority of the current refugees arrived in Bangladesh in 2017, after fleeing Myanmar following military operations that targeted Rohingya communities with systemic sexual violence, assaults, and killings. They remain unable to safely repatriate to Myanmar, and their restricted living and camp security situation is of increasing concern. Sheikh Hasina remains Prime Minister as of 2023, and the political situation is still volatile.

Culture and Demographics

Bangladesh's rich culture has developed from its various communities and religions. Islam is

a primary cultural and religious influence along with regional customs, although Buddhism and Hinduism also played a critical role in influencing the country's culture.

Bengali culture flowered in the 19th and 20th centuries during the Bengal Renaissance, which marked an awakening in culture, artistry, and intellect in tandem with challenges to colonialism. Important literature of the time includes the works of the Nobel Prize-winning poet Rabindranath Tagore (1861-1941) and national poet Kazi Nazrul Islam (1899-1976). Tagore often wrote from a multicultural perspective and celebrated the concept of Hindu-Muslim unity. Nazrul Islam used his poetry during colonial rule to encourage critical thinking and nationalist sentiment.¹⁶ Renowned Bengali writers, scientists, filmmakers, musicians, artists, and researchers all contributed to the Bengal Renaissance, with cultural influences manifesting in the nation's dance, music, literature, architecture, and even clothing.

Muslim, Hindu, and Christian holidays are among the festivals celebrated in the country. National holidays include Independence Day and Language Movement Day. Folk theater is common in villages, often during harvest time or at melas (village fairs). There are a wide variety of folk dances, and Indian influence can be seen in classical dance. Folk arts include weaving and needlework.¹⁷

Ethnic Makeup

The majority ethnicity is Bengali, an ethnolinguistic group that speaks dialects of Bangla; Bengalis comprise over 98% of the population. Bangladesh's Bengali people are mostly Sunni Muslims, in contrast with India's Bengalis, who primarily follow Hinduism. Bengali roots can be traced to multiple communities that entered the region over many centuries; they include the Vedda from Sri Lanka, Mediterranean peoples who spoke Indo-European languages, and peoples of Arab, Turkish, and Persian descent.¹⁸

Approximately 1.8% of the population, or 1.6 million people, are indigenous Adivasis, according to the 2011 census, although some

community representatives claim the actual figure is significantly higher. The majority of Adivasis live in the northern and southeastern plains and in the Chittagong Hill Tracts, where they are also referred to as Jumma. Chakmas, Marma, and Tripura are the largest Adivasi groups. The government recognizes 50 ethnic groups, but it does not recognize the concept of indigenous peoples.¹⁹

Biharis are a small minority group of approximately 300,000 people who primarily live in and around the capital city, Dhaka. Biharis are the non-Bengali citizens of former East Pakistan; many remain stranded in camps in Bangladesh although many others have assimilated into the Bengali population. The Bihari minority are Urdu-speaking Muslims, generally Sunni, who migrated from the Indian states of Bihar and West Bengal at Partition in 1947. They have long been discriminated against for their perceived allegiance to Pakistan during the independence war. Many Biharis also live in India and Pakistan, where they are also called "stranded Pakistanis." They were stateless for decades after independence, as neither Pakistan nor Bangladesh agreed to grant them citizenship. A 2008 Supreme Court ruling recognized the right of Biharis to Bangladeshi nationality.²⁰

Almost a million Rohingya are currently living in refugee camps in Cox's Bazar. Rohingya fled persecution in Myanmar in multiple waves of displacement occurring in 1978, 1992, 2016, and 2017. The majority of Rohingya currently in Bangladesh arrived after August 2017, when Myanmar military operations in Rakhine State led to more than 700,000 Rohingya fleeing across the border. Most Rohingya desire to eventually return to Myanmar, but they do not deem conditions to be safe for repatriation. Rohingya in Bangladesh do not have freedom of movement or access to formal work or education.²¹

Key Population Centers

The largest city in Bangladesh is the capital, Dhaka, which is also one of the most densely populated cities in the world. Dhaka city alone has more than 12 million residents.²² However,

the population of the combined municipalities of the Greater Dhaka area is 22,478,116, per 2022 data.²³ In comparison, in 1971, when Bangladesh gained independence, Dhaka had a population of 1.5 million.²⁴ Greater Dhaka is a megacity that has experienced dramatic growth that has outpaced planning in some areas.²⁵ The city is surrounded by rivers and tributaries. To the north is the Buriganga, to the west is the Turag, to the north is the Tongi Khal, and to the east is the Balu. Since 2000, growth has been particularly rapid along the Buriganga and the Balu rivers to the north and east. The urban spread into flood zones and natural wetlands is a concern. An estimated 6 million people now live in flood zones in Dhaka.²⁶ Figure 1 reveals the urban growth over three decades in satellite views of Dhaka on 19 February 1988 and 20 March 2022.²⁷

Chattogram, formerly Chittagong, is the capital of the division of the same name in southeastern Bangladesh. It is the second largest city with a population of more than 2.5 million people and hosts the largest port in the country. It is a major communications center and the financial center of southeastern Bangladesh. Domestically, it is linked by rail and road with Dhaka, Comilla, and Feni, by air with Dhaka

and Cox's Bazar, and internationally by air with Kolkata, Muscat, and Dubai. The area's principal industries include cotton and jute milling, tea and match manufacturing, chemical production, and engineering works. Chattogram is the site of an iron and steel mill and a large oil refinery, linked by a large-capacity pipeline to an offshore terminal. The city has an export-processing zone, branch offices of many foreign firms and banks, several special economic zones, and various manufacturing establishments that extend about 16 kilometers (km; 10 miles) to the north and northeast.²⁸

Rajshahi is the third largest city, with an estimated population of more than 760,000. It is the capital of Rajshahi Division, located near the Padma River in central western Bangladesh near the border with India's West Bengal state. It is an industrial center that produces silk, matches, timber, and processed agricultural products. Historically a center for Buddhist learning, it now hosts the Varendra Research Museum, unique for its focus on the region's history and culture and collection of artefacts relating to Hindu, Buddhist, and Muslim heritage.²⁹

Khulna is the fourth largest city, with a population of more than 660,000, and it is the capital of Khulna Division. Located in

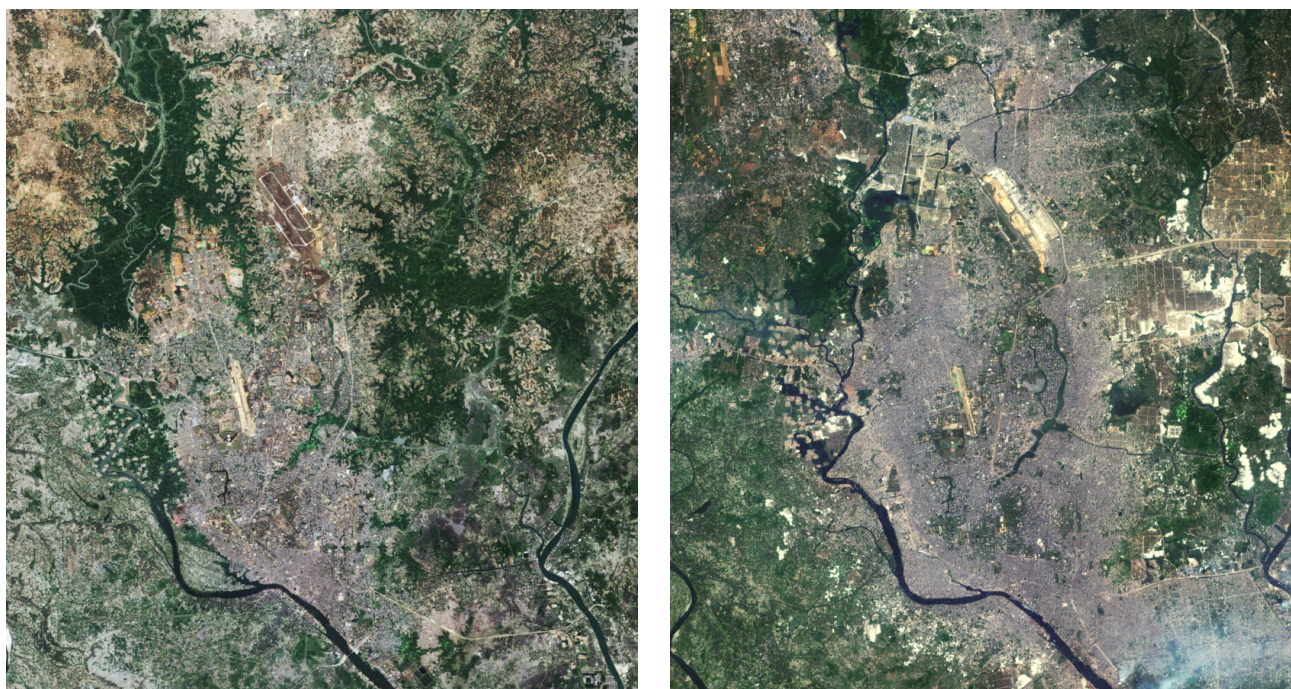


Figure 1: Dhaka on 19 February 1988 (left) and 20 March 2022 (right)

southwestern Bangladesh, it lies along the Bhairab River in the delta of the Padma River, the main channel of the greater Ganges (Ganga) River. It is an important river port and center of trade and vegetable production, and it is connected by riverboat, road, and rail to regional cities. Khulna has textile, paper, and board mills as well as match and newsprint factories, all of which are supplied with forest products from the Sundarbans region.³⁰

Sylhet is the fifth largest city, with more than 520,000 people, and it is the capital of Sylhet Division. It is located in northeastern Bangladesh along the Surma River and is the most important town in the Surma River Valley. Sylhet is well known for its tea, as it is where the country's commercial tea production first began. The region still has more than 100 tea estates. It also produces fertilizer and liquefied petroleum (propane) gas. There are several handicraft cottage industries, including mat weaving and bamboo work. The majority of British Bangladeshis hail from this area.³¹ Historic sites include the Shah Jalal Mosque and the tombs of several Muslim saints.³²

Bangladesh's other large cities are each home to fewer than half a million people; they include Mymensingh, Barisal, Rangpur, Comilla, and Narayanganj.³³

Language

Bengali (or Bangla) is the national language. By one count, Bangladesh is home to 39 languages, including several varieties of Bengali,³⁴ which belongs to the Indo-Aryan group of languages and is related to Sanskrit. Approximately 98% of Bangladeshis speak Standard Bengali or one of the many Bengali dialects as their first language. The two Bengali styles are Sadhubhasa (elegant or genteel language) and Chaltibhasa (current or colloquial language). Sadhubhasa is a literary style that retains many words derived from Sanskrit and that was used for all printed matter until the 1930s. It was shaped by early Bengali poetical works. Chaltibhasa is the colloquial style that serves as the standard medium of informal

spoken and written discourse and is now the basic form used for contemporary literature. It is based on the cultivated form of the dialects of Kolkata (Calcutta) and neighboring small towns on the Bhagirathi River. Four main Bengali dialects approximately align with the ancient political divisions of Radha (West Bengal proper), Pundra or Varendra (northern parts of West Bengal and Bangladesh), Kamrupa (northeastern Bangladesh), and Bangla (the dialects of the rest of Bangladesh). Two cities, Sylhet and Chattogram, have developed dialects that are mostly unintelligible to other speakers of Bengali. The Bengali script is derived from Brahmi, one of the two ancient Indian scripts. Bengali is written from left to right, with no capital letters.³⁵

Indigenous minority groups have their own languages and dialects, which are non-Indo-Aryan languages and are each often spoken by only a few thousand people. Most minority languages belong to the Tibeto-Burman language family and are spoken in the India–Myanmar–Bangladesh borderlands. Sak and Mru are two endangered languages spoken in the Chittagong Hill Tracts in southeastern Bangladesh. The ways of life and cultures of many of the Tibeto-Burman groups in the Chittagong Hill Tracts have been under threat for several decades.³⁶ Other Tibeto-Burman languages are spoken by communities in eastern, northern, and southeastern Bangladesh, and some of these languages are Chak, A'Tong, Koch, Garo, Megam, Pangkhua, Tripuri languages, Chin languages, and Rakhine or Marma. Some Austroasiatic languages used in Bangladesh include Khasi, Koda, Mundari, Pnar, Santali, and War-Jaintia. Two Dravidian languages, Kurukh and Sauria Paharia, are spoken by indigenous communities living in the western parts of Bangladesh.

English is widely used in government administration, educational institutions, courts, business, and media, though it has no official status. English is spoken more in urban centers and among educated groups.³⁷ As a Muslim-majority country, many people in Bangladesh are familiar with Arabic, the language of the Quran,

although it is not conventionally spoken.

Religion

Most of the people of Bangladesh follow Islam. Muslims started arriving in the area at the beginning of the 13th century, but it was not until after the 1890s that Muslims started becoming a demographic majority. Of Bangladesh's people, 89.1% are Muslim, 10.0% are Hindu, and 0.9% follow some other faith, according to 2013 data.³⁸ The vast majority of Bangladeshi Muslims are Sunni, the main branch of Islam. There are a small number of Muslims who follow Shi'a Islam, the second largest branch, and they are primarily descendants of immigrants from Iran. Roman Catholics and Buddhists constitute less than 1% of the population.³⁹

A 1988 constitutional amendment made Islam the official religion of the country, but it also proclaimed freedom of religion.⁴⁰ Religious minorities have experienced vandalism and attacks of their temples, killing of religious priests, and discrimination in the education system.⁴¹

Vulnerable Groups

Vulnerable groups are addressed here as groups of people who, due to their social circumstances, are likely to suffer more adverse impacts from natural disasters, crises, and economic shocks than other groups in the community. The groups covered below are not comprehensive but highlight some groups with heightened social vulnerabilities. Factors enhancing vulnerabilities are often cross-cutting; thus, these categories should not be viewed as isolated silos.

Refugees

An estimated 960,539 Rohingya refugees live in Bangladesh.⁴² Most refugees arrived after August 2017, when the Myanmar military started targeting Rohingya communities in operations that included systemic sexual violence, assaults, and killings.⁴³ Previous waves of Rohingya refugees fled over the border to Bangladesh, notably in 1991-1992, 2012-2015, and 2016,

following other targeted violence.⁴⁴ They remain unable to safely repatriate to Myanmar, and their restricted living and security situation is of increasing concern. Most reside in Cox's Bazar, but as of 2022 the government has moved some 28,000 Rohingya to Bhasan Char, a silt island that emerged in 2006 in the Bay of Bengal.⁴⁵ Human rights groups have expressed concerns about restrictions keeping the refugees in camps, and particularly for Rohingya relocated to Bhasan Char as they cannot leave the island.

Rohingya are particularly vulnerable as neither Myanmar nor Bangladesh recognizes them as citizens; thus, they are stateless, a status that exacerbates their lack of legal protections. The Kutupalong camp in Cox's Bazar is now among the largest refugee camps in the world. Camp safety and security is a growing concern after recent fires that were intentionally set by criminal gangs vying for control of camp territory.⁴⁶ Government restrictions on refugees and aid groups have tightened after local communities living on the margins of a massive aid operation raised grievances. The likelihood of safe repatriation plummeted even lower following the February 2021 military coup in Myanmar. The coup was followed by nationwide civil disobedience, and it reignited conflicts with various ethnic minority groups in Myanmar's border regions; it created new and worsened existing humanitarian crises.⁴⁷

Women

Bangladesh has made significant progress on several gender indicators, including gender parity in primary and secondary education. The maternal mortality rate has decreased by more than two-thirds since 2000 and continues to decline. The country has also advanced regulations for protecting women's rights and privileges. Progress has expanded in women's participation in the labor force, due to more women receiving education. However, women's workforce participation tends to be limited to low-paying sectors. Three million women are employed in the ready-made garment sector, Bangladesh's largest export industry. More

women are working in small and medium enterprises, but they face large finance gaps despite government initiatives.⁴⁸

Gender-based violence (GBV) and child marriages are common and increased during the COVID-19 pandemic. Approximately 73% of women ever married in Bangladesh have experienced some form of partner violence in their lifetime.⁴⁹ The government has not passed a sexual harassment law or made amendments to the discriminatory rape law in spite of promises. Instead, the government hurriedly approved an amendment to allow for the death penalty for rape to quiet protests that followed several gang-rape cases in recent years. Prime Minister Sheikh Hasina committed to ending marriage for girls under age 15 by 2021, but a special provision remained in effect that allows for child marriage in “special cases” with permission of their parents and a court.⁵⁰ Family law is usually subject to religious law, which is often biased against women. Sons and daughters do not have equal rights to inherit assets from their parents. Women and men do not have equal rights as surviving spouses to inherit assets.⁵¹ Women’s groups have been a key force in advocating for protections against violence and securing equal rights and opportunities.

Children

Children and youth comprise a large portion of Bangladesh’s population, with 56.9 million children aged 17 years or younger (33% of the population). Progress has been made in some areas, including child mortality rates. The mortality rate of children under 5 years of age has declined to 29 deaths per 1,000 live births in 2020,⁵² below the global under-5 mortality rate of 38 deaths per 1,000 live births in 2021.⁵³ However, among children under 5 years of age, 44% have not had their birth registered. Approximately 11.3% of children ages 5-17 years are engaged in child labor, hazardous work, or both. Bangladesh has the 8th highest prevalence of child marriage in the world and the highest prevalence in Asia. Among women aged 20-24 years, 51.4% were married before 18 years of age,

15.5% were married before 15 years of age, and 24% gave birth before 18 years of age. Bangladesh has an 85.85% primary school completion rate and a 64.24% secondary school completion rate. Among children under 5 years of age, 9.8% experience malnutrition, 28% experience stunting or low height for age, and 9.8% experience wasting or low weight for height.⁵⁴

Children living in poverty, particularly street children, are among the country’s most vulnerable people. It is difficult to get an accurate count of the number of children living on the street in open public spaces. The 2022 Survey on Street Children captured a quick count to produce a sampling frame for their survey and documented 24,860 children aged 0-17 years living in street situations, but it cautioned that this cannot be taken as the total number of street children in the country. An estimated 82.9% of street children face abuse or harassment by pedestrians, and 49.8% were subjected to violence at their place of work.⁵⁵

People Living in Poverty

Bangladesh has made incredible progress in economic development and reducing poverty levels in recent decades. Its progress in alleviating poverty has been recognized by the World Bank.⁵⁶ The national poverty rate has fallen in both rural and urban areas, although the speed of poverty reduction was much slower in urban areas.⁵⁷ In 2019, an estimated 20.5% of the population lived below the national poverty line, compared to 80% living below the poverty line in 1971 when Bangladesh gained independence. In 2021, 4% of the employed population had less than US\$1.90 purchasing power parity/day.⁵⁸ The COVID-19 pandemic was a significant setback that pushed more people into poverty, particularly during lockdowns. People living in poverty often experience poorer health outcomes due to a range of reasons, including more hazardous working conditions. Tea pickers are at higher risk of facing exploitation and marginalization. About 74% of Bangladeshi tea workers live in poverty, according to a 2018 government survey. Often hailing from ethnic

minorities, the majority of workers on the country's 167 tea estates live in extreme poverty.⁵⁹ Tea garden workers in Bangladesh are mainly women who have limited access to education for their children and who are prone to dire health risks.⁶⁰ Bangladesh's tea pickers also have the world's highest rate of leprosy.⁶¹

According to 2022 data, 35 million people still live below the poverty line and have remained poor since 1990 despite the poverty rate halving in the last three decades. Experts pointed out that poverty should not be measured just by lack of income. "Income-based poverty measurement will not eliminate the actual poverty. We have to find out about multidimensional poverty," said Qazi Kholiqzaman Ahmad, chairman of the Institute for Inclusive Finance and Development and the poverty-alleviation organization Palli Karma-Sahayak Foundation. Mustafa K Mujeri, chairman of the Center for Inclusive Development Dialogue (CIDD), said, "It's true that poverty is in constant decline. The government has taken initiatives to solve this problem. But poverty is not only measured by 'lack of income', rather it includes the shortage of choice, opportunity, and lack of being heard." Professor Salma Akhter, CIDD trustee, pointed out that legal, administrative, and other social institutions do not usually work equally to protect the rights of ethnic minorities and transgender people. This relates to recommendations in the Bangladesh Poverty Watch Report to integrate poverty alleviation into broader inclusive development strategies that address cross-cutting issues including inclusive growth, reducing income and social inequality, financial inclusion of the marginalized, accessing quality education, health, nutrition, and other basic services, adopting appropriate macroeconomic policy, addressing marginal groups or regions, and implementing initiatives at the local level.⁶²

Persons Living with Disabilities

As per Government-defined categories of disability, among Bangladesh's population, 2.80% have at least one disability; rates are slightly

higher among males (3.29%) than females (2.34%) and among rural communities (2.92%) than among urban ones (2.45%). By type of disability, physical disability accounts for the highest percentage (1.19% of the population), while all other types have percentages less than 1%; these other types include autism or autism spectrum disorders, mental illness leading to disability, visual disability, speech disability, intellectual disability, hearing disability, cerebral palsy, Down Syndrome, deaf-blindness, and multiple disabilities. More than 18% of persons living with disabilities report using assistive devices. The cause and reinforcement of disability and poverty are interrelated. Poor nutrition, dangerous working and living conditions, limited access to healthcare, poor hygiene, bad sanitation, inadequate information about causes of impairment, war and conflict, and natural disasters help create and can reinforce disabilities.⁶³ Inclusion of persons living with disabilities and organizations representing or including them is a key factor in ensuring that this vulnerable group has access to information regarding hazards and emergencies and the opportunity to contribute to their communities' plans for preparing and responding.

Ethnic or Religious Minorities

Religious minorities often face targeted harassment or violence, despite Bangladesh's constitution stipulating freedom of religion. Hindus, who comprise about 10% of Bangladesh's population, have repeatedly come under attack. The Bangladeshi human rights group Ain o Salish Kendra reported at least 3,679 attacks on the Hindu community from 2013 to 2021; attacks included vandalism, arson, and targeted violence. Authorities do not always investigate and prosecute such violence. In October 2021, an angry mob attacked a Hindu temple in Comilla, after a photo showing the Quran placed on the knee of a Hindu deity was posted on social media during the Hindu holy festival of Durga Puja. In follow-on attacks, mobs torched dozens of Hindu homes and vandalized temples and statues throughout the country.⁶⁴

Ethnic minorities constitute approximately 1.25% of Bangladesh's population. There are approximately two million people from 27 officially recognized ethnic minority groups falling into two broad categories: groups that reside in the Chittagong Hill Tracts (CHT) in the southeastern Chattogram (formerly Chittagong) Division, and groups that reside in the northern divisions, often referred to as plainland ethnic groups. Most ethnic groups in the CHT are Buddhist, while in the plains most are Christian. In 1977, ethnic minorities in the CHT launched a violent insurgency over land and autonomy, ending with a 1997 peace accord that recognized their special status. Indigenous groups and activists say the communities experience human rights violations and disparities, and attacks and land disputes still occur.⁶⁵ Plainland ethnic minorities suffer land deprivation due to non-enforcement of land laws and regulations that prohibit the transfer of land from ethnic minority groups to others without prior permission, resulting in displacement, migration, loss of livelihood, and loss of cultural heritage preservation of ethnic minority groups.⁶⁶ A 2020 focus group study of the Santals, Garos, Khasis, and Manipuris ethnic groups in the northern divisions of Rajshahi, Rangpur, Mymensingh, and Sylhet found that:

- The key concern of plainland ethnic communities is the preservation of their land.
- Plainland ethnic groups continue to face social ostracism and discrimination from mainstream Bengali society.
- Many plainland ethnic groups face difficult living conditions, including poor housing, unsafe drinking water, and insecurity.
- Government services and benefits are poor or absent in some areas with large ethnic minority populations.
- Plainland ethnic communities feel unrepresented and ignored by the political system.⁶⁷

Lesbian, Gay, Bisexual, Transgender, Queer+ (LGBTQ+)

Sexual orientation is complex and not always openly discussed. Among sexual and gender

minorities in Bangladesh, only Hijras can openly express their identity. Hijras are born male or intersex but identify as female and dress in traditionally female clothing. They have a more widely accepted cultural role in Bangladesh and other South Asian countries and for centuries have performed positive rituals in society. However, homosexuality is not accepted and same-sex intercourse is prohibited under Section 377 of Bangladesh's legal code, which provides for a maximum punishment of life imprisonment. People deemed Hijras avoid this punishment because they are commonly perceived as intersex, not transgender. While Hijras were recognized in 2013 as "third gender," that legal recognition was partially based on a conception of handicap or disability. In 2013, Hijras who pursued government-offered employment had to take medical tests, with many discharged afterward as the government deemed them as men who impersonated Hijras.⁶⁸ In an interview-based study, LGBTQ+ people said they faced violence, harassment, and bullying; feared the police; had low self-esteem and could not freely express their sexual identity. In another study, which was the first large survey of gay men, lesbians, and bisexuals in Bangladesh, 54% lived in fear that others would find out about their sexual orientation; over 40% faced mental stress due to their sexuality; 41% reported discrimination; and 60% had never sought legal assistance for crimes committed against them. Survey respondents reported commonly experiencing bullying, blackmail, physical assault, or sexual violence.⁶⁹

Economics

In the five decades since independence, Bangladesh's economy has grown tremendously. Nonetheless, it faces significant challenges. The country went from being one of the poorest nations in the world in 1971 to lower-middle income status in 2015. Poverty declined from 41.9% in 1991 to 13.5% in 2016, based on the international poverty line of US\$2.15/day.⁷⁰ Human development outcomes also improved in many dimensions, including life expectancy, which rose by more than 50%, and infant

mortality, which declined by almost 90%. Notably, when Bangladesh reached a per capita income of US\$2,227 in 2021, it surpassed India in that measure.⁷¹

Bangladesh produces energy through thermal and hydroelectric plants and has developed natural gas reserves both onshore and in the Bay of Bengal. The country's industries include the production of garments, textiles, iron and steel, ceramics, petroleum products, natural gas, pharmaceuticals, fabricated metal products, and cement, and the processing of tea, sugar, jute, and tobacco. The garment industry comprised more than 80% of exports in the fiscal year ending in 2017. Bangladesh's ready-made garment exports were valued at US\$28 billion in 2020.⁷² Women comprise a majority of garment workers and earn minimum wage, about US\$80 per month, while factory supervisors are usually men. The government forecasts that by 2025, Bangladesh's factories will produce 10% of the world's apparel.

As recently as 2021, agriculture, forestry, and fisheries accounted for about 11.6% of Gross Domestic Product (GDP) and employed an estimated 37% of the labor force.⁷³ Subsistence farming is also widespread. Rice is the most widely cultivated crop, and jute is the biggest earner among agricultural exports. Wheat, pulses, oilseeds, sugarcane, fruits, tobacco, tea, and potatoes are also important crops. The small timber industry includes rubber trees, bamboo, and hardwoods such as teak. The most common livestock are cattle and buffalo, which are used both for work and as sources of meat, leather, and dung. Freshwater fish are commonly raised in ponds.

Travel and tourism services only made up about 1.7% of total GDP in 2020. Cultural attractions include Muslim mosques and Hindu and Buddhist temples. Bangladesh is home to three United Nations Educational, Scientific, and Cultural Organization (UNESCO) World Heritage sites, two cultural and one natural – the Historic Mosque City of Bagerhat, the ruins of the Buddhist Vihara at Paharpur, and the Sundarbans national park. Bangladesh's underdeveloped infrastructure has hindered the growth of a tourism sector that could potentially

rival that of other Asian countries.⁷⁴

The economy faced considerable headwinds in late 2022 due to the global economic slowdown because Bangladesh's economy is closely integrated into the global economy on three fronts. First, it is the second-largest clothing exporter, behind China. Second, a large Bangladeshi diaspora sends remittances home; remittances hit a record US\$22.07 billion in 2021. Third, the government relies on imported fuel to generate electricity. All of these sectors were hard hit by the combination of the COVID-19 pandemic and Russia's invasion of Ukraine, and Bangladesh felt significant negative impacts.⁷⁵

In 2022, the government took an early step of requesting assistance from the International Monetary Fund (IMF) after the country's foreign currency reserves slumped to under US\$30 billion, and the country and lender reached a January 2023 agreement for a US\$4.7 billion IMF loan. The garment industry, which had experienced successful growth, may face future challenges from lower-cost producers. Other export industries also face growth challenges. Bangladesh has a complicated business bureaucracy, uneven customs duties, and is not a member of any major regional trade pact. Its business environment is ranked 15th out of 17 Asian countries,⁷⁶ based on the Economist Intelligence Unit's business environment rankings, which measure the attractiveness of doing business in 82 countries using 91 indicators.⁷⁷ Nonetheless, the country is considered on track to graduate from the UN Least Developed Countries list in 2026.⁷⁸

Government

The government of Bangladesh is a parliamentary representative democracy with a multi-party system. The Prime Minister (PM) is the head of government, which exercises executive power. The President is the head of state and generally performs a limited representative and civic role,⁷⁹ though presidential powers may be expanded during a caretaker government to facilitate a transition to a new government. The parliament elects the

President, who serves a five-year term with a two-term limit. The president appoints the leader of the legislative majority party or coalition as Prime Minister; there is no term limit for prime ministers. The Prime Minister selects the cabinet, who are then appointed by the President.⁸⁰

The legislative branch comprises a unicameral Parliament, formally named Jatiyo Shangsad (House of the Nation). It has 350 members, of whom 300 are elected from 300 single-seat constituencies. The remaining 50 seats are reserved for women, who are elected based on a proportional party representation system that allocates the women's seats to parties based on the number of unrestricted seats won. After the 2018 general election, women held 73 out of the 350 seats, comprising 20.9% of Parliament.⁸¹ The provision for 50 reserved women's seats is currently set to continue through 2039. Each term of Parliament is five years.⁸² General elections were last held on 18 December 2018. The next general elections were set for late 2023, but in December 2022, Prime Minister Sheikh Hasina announced that they would be held in January 2024.⁸³

The judicial branch is a legacy from when Bangladesh was part of Pakistan, which owed its court system's origins to the system under the British Raj. The Supreme Court is divided into the Appellate Division and High Court Division.⁸⁴ Judges from the High Court may go on circuit part of the year to hear cases from lower courts in other parts of the country. Lower courts include district courts, sessions courts, and several types of magistrate courts, which handle the majority of criminal cases. While the 1972 Constitution mandated a complete separation of the judicial and executive branches, the power of the Supreme Court was reduced in later years. Supreme Court and High Court judges may be removed from office by the President upon the recommendation of the Supreme Judicial Council, which was created in 1977.⁸⁵

Bangladesh is divided into eight administrative divisions, each named after the division's capital: Barishal (Barisal), Chattogram

(Chittagong), Dhaka, Khulna, Mymensingh, Rajshahi, Rangpur, and Sylhet.⁸⁶ The newest division, Mymensingh, was created in 2015 from the northern part of Dhaka Division.⁸⁷ A large-scale administrative reorganization of local government occurred in the 1980s and 1990s to decentralize power. It resulted in the administrative structure of divisions (currently eight) parceled into districts called zila (more than 60), sub-divided into upazila and thana (more than 500), and further partitioned into villages (tens of thousands).⁸⁸

Citizenship is primarily acquired by descent, requiring at least one parent to be a citizen of Bangladesh. Citizenship can also be acquired by marriage, and in select circumstances dual citizenship may be granted for limited countries.⁸⁹

Environment

Bangladesh's environment of low-lying river delta terrain, location next to the Bay of Bengal, and monsoon climate are directly related to the climate hazards that it most frequently faces.

Geography

Bangladesh has a total area of 148,460 square kilometers (km²; 57,321 square miles), including 130,170 km² (50,259 square miles) of land.⁹⁰ The land is mostly flat alluvial plain, though it is hilly in the northeast and southeast. Most of the country is situated on deltas of large rivers that flow from the Himalayas. The Ganges River unites with the Jamuna River, which is the main channel of the Brahmaputra River, and later joins the Meghna River to flow into the Bay of Bengal. The Ganges and Brahmaputra Rivers, as well as smaller tributaries, crisscross the country. The low-lying delta plains, which comprise most of the landscape, do not rise more than 11 meters (m; 35 feet) above sea level. The capital, Dhaka, is less than 8 m (25 feet) above sea level.⁹¹ The only hilly areas in Bangladesh's topography are in the northeastern tea-growing regions of Sylhet and the southeastern forest regions of the Chittagong Hill Tracts. The country's average elevation is 85 m (279 feet).⁹²

The river delta topography is a major factor in the climate hazards, particularly flooding, that the population confronts. The southern region features a huge expanse of marshy deltaic mangrove forest called the Sundarbans, depicted in Photo 1.⁹³ The Sundarban Reserve Forest is the largest contiguous mangrove forest in the world and was designated a UNESCO World Heritage Site in 1997.⁹⁴



Photo 1: Southern Bangladesh's Sundarbans, the World's Largest Mangrove Forest

Borders

Bangladesh shares land borders with Myanmar (Burma) and India. To the southeast, Bangladesh and Myanmar share a short 271-km (168-mile) border. India partially surrounds Bangladesh to the west, north, and east, and they share 4,142 km (2,574 mile) of border.

Bangladesh has 580 km (360 miles) of coastline along the Bay of Bengal.⁹⁵

In March 2012, a maritime border dispute between Bangladesh and Myanmar was resolved with the decision of the International Tribunal for the Law of the Sea.⁹⁶

In 2015, Bangladesh and India signed some 20 agreements to swap land to resolve the status of 111 Bangladeshi and 51 Indian small enclaves where residents were without hospitals, schools, courts, or travel privileges. Most residents

decided to remain, accept a citizenship change, and await the arrival of infrastructure and administration.⁹⁷ The only remaining enclave is Dahgram–Angarpota, a Bangladesh enclave barely 200 m (656 feet) inside Indian territory but connected to the rest of Bangladesh by a tiny strip of land known as the Tin Bigha Corridor.⁹⁸

Climate

Bangladesh has a humid and warm monsoon climate and frequently experiences heavy rainfall and tropical cyclones. The country experiences an average temperature of 26°Celsius (C; 79°Fahrenheit [F]), but temperatures can range between 15°C and 34°C (59°F and 93°F) throughout the year. The warmest months, April through September, usually coincide with the rainy season, with maximum temperatures generally in the mid-30s C (low to mid-90s F). The winter months of December through February are colder and drier. January is the coolest month, with high temperatures averaging in the mid-20s C (mid- to upper 70s F). Bangladesh receives an average of about 2,200 millimeters (mm; 87 inches [in]) of rainfall per year, with the northeastern border regions receiving up to 5,000 mm (197 in) of rainfall annually. Humidity peaks during the monsoon season from June to October, although conditions remain generally humid throughout the year.⁹⁹

Tropical cyclones have typically made landfall in Bangladesh once every two to three years and bring not just high wind speeds but also heavy rainfall and storm surges, which contribute to flooding. The conditions of lowest atmospheric pressure occur in June and July, the storm season. However, storms of very high intensity often occur early in the summer, April to May, and late in the monsoon season, September to October, and sometimes as late as November. Since the early 18th century, more than 1,000,000 people have been killed in such storms, some 815,000 of them in just three storms occurring in 1737, 1876, and 1970.¹⁰⁰

DISASTER OVERVIEW

The country has made significant progress in disaster preparedness and risk mitigation in recent decades. Declining death tolls across Bangladesh's historic cyclones reflect the progress made. In 1970, Cyclone Bhola killed 300,000 people in the territory that would become independent Bangladesh. In 1991, Cyclone Marian killed 139,000 people and left millions homeless, a crisis that would elicit a large international relief effort with foreign military assets, including the U.S. DoD Operation Sea Angel.¹⁰¹ In 2007, Cyclone Sidr killed more than 3,400 people and also triggered a large international disaster response, including the U.S. military's Operation Sea Angel II.¹⁰² Death tolls from cyclones in more recent years have been drastically reduced to the mere dozens, as Bangladesh has implemented lessons learned – e.g., building more storm shelters and evacuating massive amounts of people in coordination with early warning systems. As more people survive the storms, challenges shift to focusing on loss of livelihoods and economic damage. While not included in natural hazard discussions, Bangladesh also grapples with human-induced accidents and industrial incidents such as the Rana Plaza collapse and fires deliberately set in refugee camps by armed gangs.¹⁰³

Climate change poses an ongoing, formidable challenge that is already exacerbating the risk Bangladesh faces from climate hazards. The government has made strides to better understand disaster risk in order to effectively prepare. The MoDMR and Ministry of Housing and Public Works cooperated with development partners to conduct a seismic risk assessment from 2007 to 2020 for 12 major cities. The government also conducted a nationwide Multi-Hazard Risk and Vulnerability Assessment from 2014 to 2017 and that covered flood, cyclone, landslide, health, drought, and technological hazards.¹⁰⁴

Climate Change

Bangladesh is already contending with the effects of climate change. The country's location on the Bay of Bengal exposes it to frequent tropical cyclones, the majority of its land area is a low-lying river delta that is vulnerable to flooding, and the majority of the population is at risk of more days of extreme heat.

Projected average temperature rises in Bangladesh are broadly in line with the global average, an increase ranging from 1.0°C to 3.6°C (1.8-6.5°F) by the end of the century. However, rises in minimum and maximum temperatures are projected to be higher than the change in average temperature and are concentrated in the period December–March. Increased frequency of prolonged high heat is a major threat to human health and living standards in Bangladesh, particularly in urban environments and for outdoor laborers. The range of average temperature increase is based on the lowest-emission and highest-emission Representative Concentration Pathway (RCP) scenarios. RCPs describe possible trajectories for carbon dioxide emissions and the resulting atmospheric concentration. There are four commonly used RCPs (2.6, 4.5, 6.0, and 8.5), which were developed based on their end-of-century “radiative forcing” – a measure of the combined effect of greenhouse gases, aerosols, and other factors that can influence climate to trap additional heat.¹⁰⁵ RCP2.6 is the most optimistic scenario and indicates a 2.6 watts per meter squared (W/m^2) forcing increase relative to pre-industrial conditions. RCP8.5 is the most pessimistic of the four scenarios and indicates an 8.5 W/m^2 forcing increase.¹⁰⁶ RCP2.6 projects a rise of 1.0°C (1.8°F) above the 1986–2005 baseline by 2100, while RCP8.5 projects a rise of 3.6°C (6.5°F).

Bangladesh already deals with flooding hazards, which are anticipated to be exacerbated with climate change. The number of people exposed to an extreme river flood is expected to grow by 6–12 million by the 2040s, and the number of people facing coastal inundation could grow by 2–7 million by the 2070s, unless significant adaptation measures are taken. Tropical cyclones, associated storm surges, and extreme rainfall are predicted to worsen flash, river, and coastal flooding, which will endanger lives, infrastructure, and the economy. The livelihoods of people living in the coastal zone, including many of the poorest communities, are under threat from saline intrusion and natural resources degraded by climate change-linked factors. However, it is not only coastal zones that will face climate impacts, as there are areas of climate vulnerability across the country. The combination of rising temperatures, saline intrusion, increased drought frequency, flooding, and waterlogging, will affect food production, and the agricultural sector will potentially face reduced yields.¹⁰⁷

Global modelling and local evidence all suggest that women, people living in poverty, and other marginalized groups are likely to suffer disproportionately in a changing climate, which will worsen social inequalities. One example is that male members of coastal households in Bangladesh are out-migrating temporarily or permanently, partially due to the ongoing

climate crisis. Such out-migration is a significant exacerbating factor in reduced farm productivity. The women in households left behind in coastal villages are not only exposed to the negative impacts of the climate crisis but also face the challenges of maintaining a farming livelihood on their own.¹⁰⁸

The following climate change scenarios for sea level rise, extreme heat, and tropical cyclone-exposed areas in Bangladesh were developed by the Pacific Disaster Center (PDC Global) based on the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report Leading Consensus model and using RCP8.5, the highest-emission projection akin to a worst-case scenario. Figure 2 shows a year 2050 projection of areas exposed to the probabilistic inundation from saltwater floods caused by sea level, tides, and coastal flooding combining to raise the ocean high enough to spread over adjacent land. Figure 3 shows a projection of significantly more areas exposed to extreme heat in 2050. Figure 4 shows areas projected to be exposed to tropical cyclone winds in 2050; the additional areas represent an additional 9.5 million people.¹⁰⁹

There has been recent progress in disaster risk management on the national level, but CCA and DRR are still critical priorities as the livelihoods, health, and well-being of millions of people in Bangladesh are at risk with anticipated climate change.

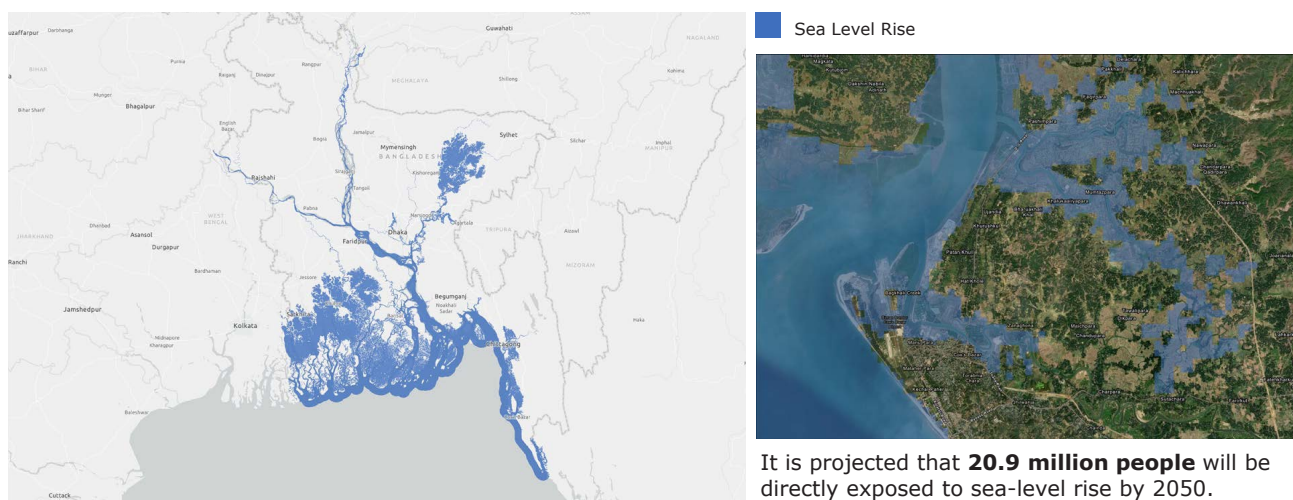
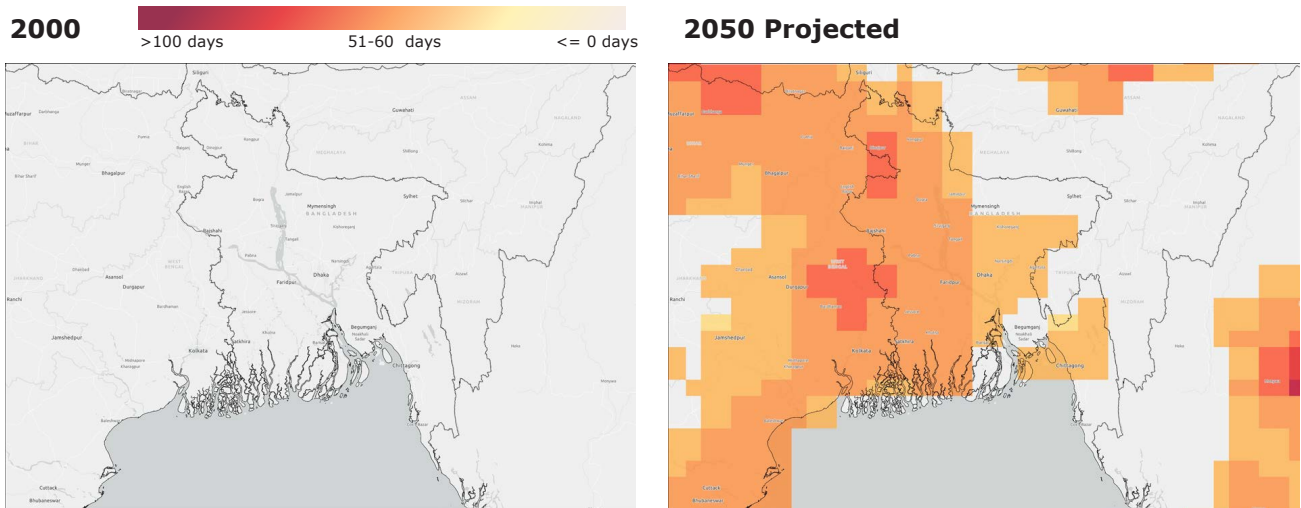


Figure 2: Projected Sea Levels in Bangladesh in 2050, Based on RCP8.5

It is projected that **20.9 million people** will be directly exposed to sea-level rise by 2050.

Extreme Heat

An area exposed to 30 or more days with the maximum temperature above 95°F / 35°C for the year



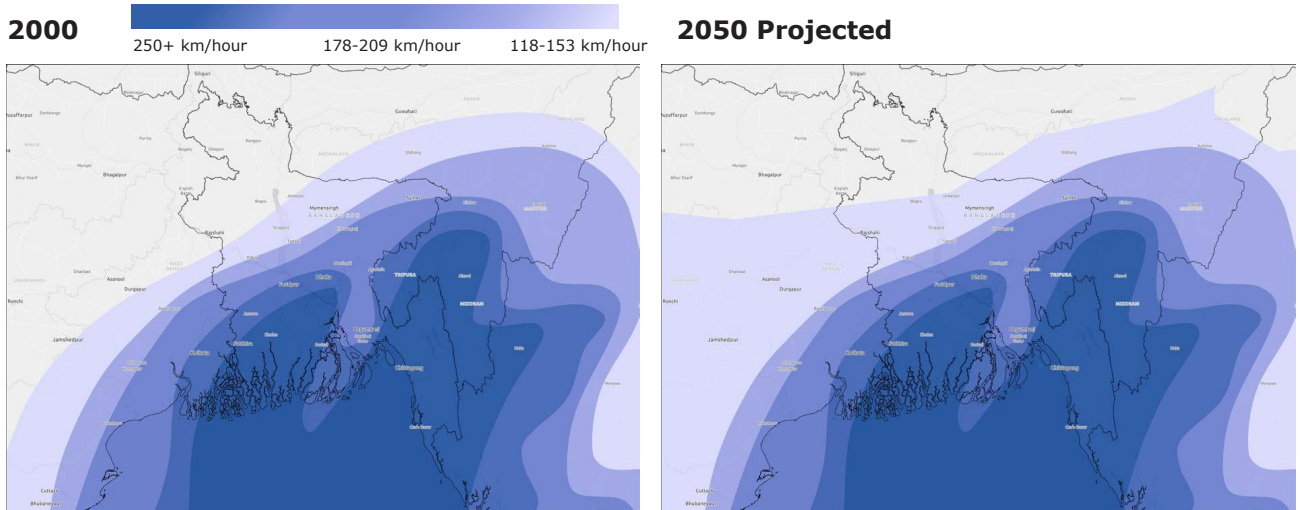
In 2000 there was **no population** exposed to extreme heat.

It is projected the exposed population to extreme heat will increase to **129.3 million people** by 2050.

Figure 3: Projected Areas Exposed to Extreme Heat in 2050, Based on RCP8.5

Tropical Cyclones

An area exposed to tropical cyclone wind intensity based on past storm activity and projected storm paths.



In 2000 there was **127.9 million people** exposed to tropical cyclones.

It is projected that the exposed population to tropical cyclones will increase to **137.4 million** by 2050.

Figure 4: Projected Areas Exposed to Tropical Cyclones in 2050, Based on RCP8.5

Hazards

Bangladesh is particularly exposed to storms, including tropical cyclones, floods, extreme heat, and drought due to its geographic location along the Bay of Bengal, where numerous storms form annually and make landfall across South Asia's coast. Most of Bangladesh's land features the low-lying terrain of river deltas, which are susceptible

to flooding. Figure 5 shows the average annual occurrence of natural hazards in Bangladesh for the period 1980-2020, during which there were 129 storms (42.3%), 81 floods (26.56%), 28 epidemics (9.18%), and 24 extreme temperature events (7.87%).¹¹⁰

Tropical Cyclones

Approximately 60% of global deaths caused

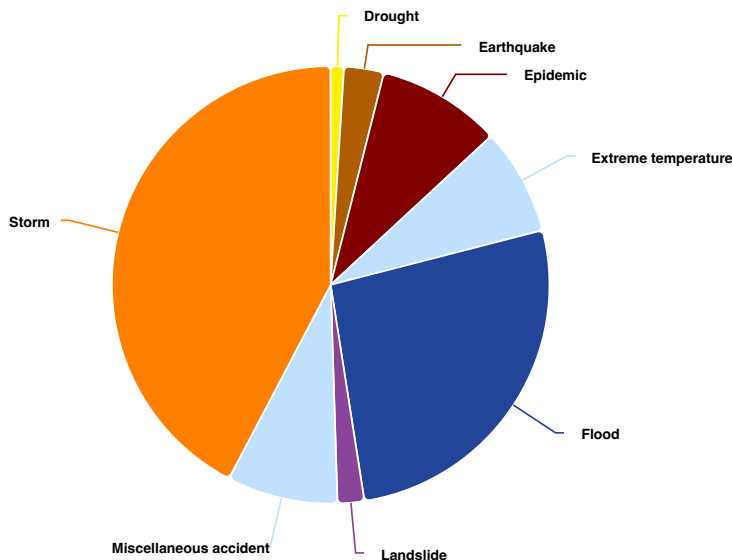


Figure 5: Average Annual Occurrence of Natural Hazards in Bangladesh, 1980-2020

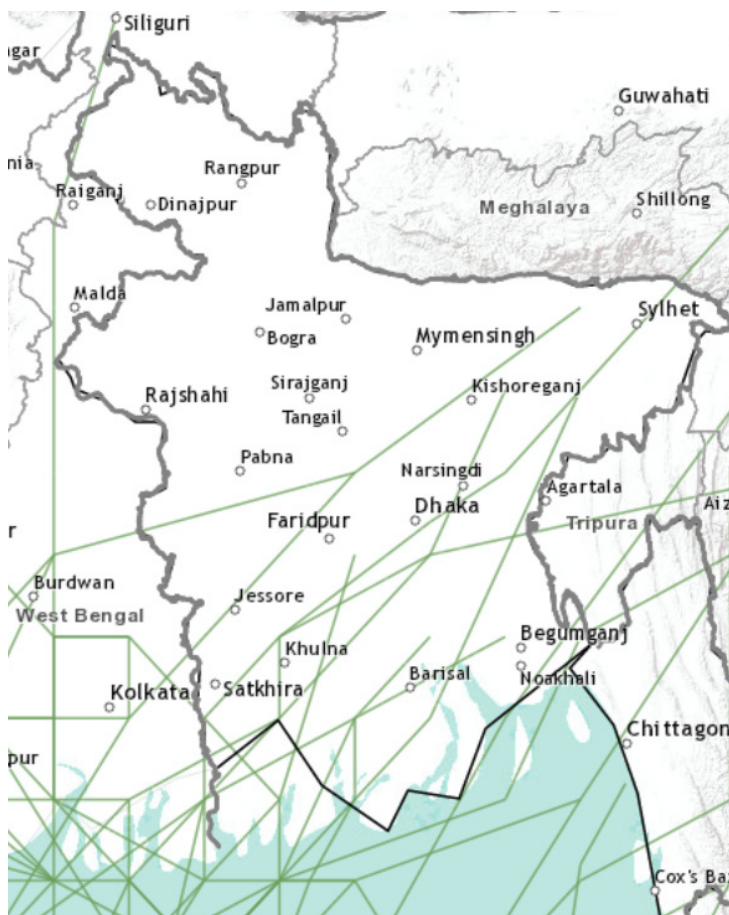


Figure 6: Historic Cyclone Tracks in Bangladesh, 1969-2009

by cyclones in the last 20 years occurred in Bangladesh.¹¹¹ The tropical cyclone hazard is classified as high, according to the information that is currently available and that indicates that there is more than a 20% chance of potentially damaging wind speeds in the next 10 years.¹¹² Figure 6 shows historical cyclone tracks across Bangladesh for the period 1969-2009.¹¹³

Flooding

A combination of geography (as the drainage area for three huge river systems originating in China, India, and Nepal), high rainfall, flat topography, and extreme climate variability makes Bangladesh vulnerable to floods.

Floods affect a greater portion of the population than any other natural hazard in Bangladesh. Floods and riverbank erosions affect approximately one million people in the country annually. Once every three to five years, up to two-thirds of the country is inundated by floods.¹¹⁴ Bangladesh is considered at high risk for river, urban, and coastal floods, which means that each type of flood is expected to occur at least once in the next 10 years with potentially damaging and life-threatening effects.¹¹⁵

Extreme Heat

The extreme heat hazard is classified as high, which signifies that prolonged exposure to extreme heat, resulting in heat stress, is expected to occur at least once in the next five years.¹¹⁶ Dhaka saw its hottest day in 58 years on 16 April 2023 when the temperature reached 40.6°C (105.1°F), a temperature that caused road surfaces to melt. “It is unusual. Almost the entire country was under cover of a heat wave. It is a new experience and also alarming at the same time,” said Md. Bazlur Rashid, a meteorologist with the Bangladesh Meteorological Department. Heat waves

usually sweep over western Bangladesh, but the 2023 heatwave also extended to new areas in the southwest. Urban areas are particularly affected by the heat due to the “heat island” effect, where the built-up environment magnifies the heat. A 2021 study found that Bangladesh’s biggest cities – Dhaka, Chattogram, Rajshahi, Khulna, Barishal, and Sylhet – witnessed an increase in average daytime and nighttime temperatures from 2000 to 2019.¹¹⁷ Agricultural experts warn that heat waves could threaten the rice crop. In 2021, heat shock ruined 21,000 hectares (52,000 acres) of rice crops across Bangladesh,¹¹⁸ as part of the worst April heat wave recorded in Asian history; Pakistan, India, Nepal, and Bangladesh all saw temperatures topping 40°C (104°F) over many days. Meteorologists warned that heat waves like this one are becoming more common.¹¹⁹

Drought

Seasonal droughts in Bangladesh most commonly affect the northwestern region, which receives less rainfall than the rest of the country. These droughts have a devastating impact on crops and, therefore, also affect the food security of subsistence farmers.¹²⁰ The water scarcity hazard for Bangladesh is classified as medium, which denotes up to a 20% chance that droughts will occur in the next 10 years.¹²¹

Earthquake

Bangladesh is in a seismically active and high-risk region. The northern and eastern regions of the country are particularly susceptible to earthquakes.¹²² The earthquake hazard is classified as medium, which indicates that there is a 10% chance of potentially damaging earthquake shaking in the next 50 years.¹²³ While Bangladesh has not experienced a major earthquake in recent years, it has in the past, with one of the largest known to have occurred in 1762 with a magnitude of 8.5 - 8.8.¹²⁴ The country has occasionally experienced moderate earthquakes,¹²⁵ and experts say a larger earthquake is imminent, although they cannot predict whether it will be in days or decades.

Two likely epicenters for a major earthquake in Bangladesh would be along the Dauki Fault, which stretches from Sunamganj to Jafalong in the Sylhet region, and along the subduction zone that stretches from the hilly parts of Sylhet to Cox’s Bazar. “No major earthquake shook both areas for a long time, resulting in force condensing near the fault plates. A major earthquake at least to 8.2-magnitude may shake the area anytime now as the India Plate [tectonic plate] is being thrust under the Burma Plate,” stated Dr. Syed Humayun Akhter, former professor of geology at Dhaka University.

Dhaka is considered to face especially serious risk should a major earthquake occur because of unplanned urbanization and buildings constructed without following the earthquake preparedness code. A joint survey conducted by the MoDMR’s Comprehensive Disaster Management Programme and the Japan International Cooperation Agency (JICA) in 2009 found that at least 72,000 buildings in Dhaka city would completely collapse and more than 135,000 buildings would be damaged if an earthquake of magnitude 7.0 or greater struck Dhaka.¹²⁶

History of Natural Disasters

The following is a list of natural disasters in Bangladesh in the last 10 years.

2023 May – Tropical Cyclone Mocha

Tropical Cyclone (TC) Mocha made landfall in southeastern Bangladesh and in neighboring Myanmar on 14 May with maximum sustained winds up to 250 km per hour (155 miles per hour). Bangladesh’s National Disaster Response Coordination Centre (NDRCC) reported that 414,170 people evacuated to 7,040 shelters in 14 coastal districts. Significant damage to thousands of refugee shelters and camp facilities as well as host communities in Cox’s Bazar district was reported. As of 15 May, the UN reported that nearly 430,000 people had been affected, more than 2,000 homes were destroyed, and more than

10,600 houses were damaged across Chattogram Division. Rohingya refugee camps in the Cox's Bazar area were severely affected. Overall, damage occurred in four districts, 26 upazilas, and 99 unions. There were no human deaths reported although injuries were reported.¹²⁷

2022 May – Floods

Heavy monsoon rains starting in mid-May 2022 in northeastern Bangladesh caused flash floods that altogether affected more than 6 million people, including almost 460,000 people who were evacuated to 1,432 safety centers. Millions of people were marooned in Sylhet Division, which was inundated by rains and upstream waters. An estimated 94% of Sunamganj and over 84% of Sylhet were submerged, according to the Flood Forecasting and Warning Centre (FFWC). Other affected districts included Moulivazar, Habiganj, Netrakona, and Brahmanbaria. The Army, Navy, Fire Service, and local authorities combined their efforts to evacuate affected people.¹²⁸ Government authorities and humanitarian partners distributed relief items. The Humanitarian Coordination Task Team (HCTT) worked closely with partners to assess the situation and provide support to the government-led response.¹²⁹

2021 July-August – Floods and Landslides

Cox's Bazar experienced over 1,300 mm (51 in) of rainfall between 27 July and 1 September 2021; over 200 mm (7.5 in) fell in just two days, 27-28 August. The Inter Sector Coordination Group reported 542 monsoon-related incidents in the region's refugee camps; these events were primarily windstorms, slope failures, and flooding. Of the 11,675 damaged shelters that were verified by partners, residents of 9,133 of them received emergency shelter kits while 2,542 households were not eligible for the assistance. Approximately 75% of the shelters were damaged due to windstorms, and the rest were impacted by landslides and flooding. Refugees were provided with bamboo, tarpaulins, rope, and jute bags for repair work.¹³⁰ The COVID-19 vaccination campaign for Rohingya refugees

continued despite the weather.¹³¹

Northern Bangladesh also experienced flooding caused by heavy rainfall starting in late August 2021. The most affected districts were Kurigram, Lalmonirhat, Tangail, Rajbari, Sartiatpur, and Bogura, according to the NDRCC. More than 40,000 households were affected, 7,759 hectares of agricultural land were damaged, and more than 200 houses were destroyed. The MoDMR allocated rice and cash support to affected districts, while local and national organizations provided food relief items to affected families. People with urgent shelter needs moved to higher ground as rural roads were inundated, communication was disrupted, and livelihoods were affected. As a result of flooding, there were increased concerns about negative coping mechanisms, malnutrition among girls and women, forced labor, child marriage, and protection and reproductive health issues.¹³²

2021 May – Tropical Cyclone Yaas

TC Yaas first made landfall on 26 May 2021 over eastern India before it moved into southern Bangladesh.¹³³ The storm occurred during a lunar eclipse, which caused abnormal 1.8-2.4 m (6-8 feet) tidal waves across coastal districts including Bhola, Patuakhali, Satkhira, Khulna, Bagerhat, Jhalokathi, Barguna, Barisal, and Pirojpur. Embankments were breached, large areas were flooded, and people were displaced. Three deaths were reported by the Directorate General of Health Service (DGHS) and the Health Emergency Operation Centre. TC Yaas affected approximately 1.3 million people and damaged around 26,000 houses, 16,183 latrines, and 1,986 water points in nine coastal districts in Bangladesh. The cyclone also damaged an estimated 39% of cropland and affected 3,599 hectares of prawn and pisciculture areas. Many of the areas affected by TC Yaas had still been recovering from TC Amphan, which struck in May 2020.¹³⁴

2020 July-August – Floods and Landslides

Monsoon rains started in July 2020 and affected Lalmonirhat, Kurigram, Gaibandha,

Nilphamari, Naogaon, Rangpur, Sirajganj, Bogra, Jamalpur, Tangail, Netrokona, Rajbari, Faridpur, Madaripur, Manikganj, Feni, Sunamganj, and Sylhet across northern, northeastern, and southeastern Bangladesh, per the NDRCC report issued on 17 July. An estimated 2.4 million people were affected, and 548,816 families lost their houses.¹³⁵ By late August, flooding due to heavy rains and high tides in the southwestern region marooned 100,000 people in Satkhira District where houses, fish farms, betel vines, and vast croplands were also damaged. In Cox's Bazar, the Rohingya refugee camps were affected by heavy rains and winds; more than 109,312 people were affected, including more than 8,900 displaced, 41 injured, and 14 killed.¹³⁶

2020 May – Tropical Cyclone Amphan

On 20 May 2020, TC Amphan made landfall over India and Bangladesh. In Bangladesh, 26 people were killed, approximately 2.6 million people were affected, 205,368 houses were damaged, and 55,767 houses were destroyed across 19 districts. Additionally, 40,894 latrines, 18,235 water points, 32,037 hectares of crops and vegetables, 18,707 hectares of fish cultivation area, 440 km (273 miles) of roads, and 76 km (47 miles) of embankments were damaged.¹³⁷ TC Amphan severely affected the livelihoods of at least 1 million people and destroyed houses and infrastructure, including irrigation facilities. The cost of damage to housing, infrastructure, fisheries, livestock, and crops was estimated to be at least US\$130 million, with the most affected areas in the southwest, including Khulna, Jessore, Satkhira, Bagerha, Pirojpur, Barguna, Patuakhali, Bhola, and Noakhali districts.¹³⁸

Although TC Amphan did not directly strike Cox's Bazar, it still brought heavy rain and strong winds that affected close to 6,000 Rohingya refugees in the refugee camps. The Bangladesh Cyclone Preparedness Programme (CPP) raised three flags as an alert sign for refugees in the camps; this signal marked the highest alert level the refugees had seen for a cyclone since most of them first fled to Bangladesh from Myanmar in 2017. In the camps alone, over 1,252 shelters were partially damaged, 159 shelters were

destroyed, and 144 households were temporarily displaced.¹³⁹

2019 October – Tropical Cyclone Matmo/Bulbul

TC Matmo/Bulbul first made landfall in India before crossing into Bangladesh's southwestern coastal region in the early morning hours of 10 November 2019. In Bangladesh, 8 people died, 15 fishermen went missing, and at least 30 people were injured. More than 17,000 houses were damaged, and river embankments were breached in Barguna District, Barisal Division.¹⁴⁰ Nationally, at least 722,674 people were affected, more than 150,000 houses were damaged, and at least 117,795 hectares of crops were affected.¹⁴¹

2019 June-July – Monsoon Floods

The monsoon season officially started on 17 June 2019. By 19 July, continuous monsoon rains had impacted several districts in the northern, northeastern, and southeast parts of the country where they triggered flooding and landslides and caused the deaths of 37 people. More than 4.7 million people were affected, and at least 135,600 houses were damaged. The Jamuna River broke its banks on 16 July and inundated at least 40 villages from which it displaced more than 200,000 people. Rescue and aid operations were hampered by road and communication interruptions caused by floods and landslides. Shortages of food and drinking water resulted in an outbreak of water-borne diseases in several areas.¹⁴² The Rohingya refugee camps had experienced monsoon-related incidents from April, before the official start of the monsoon season. By 20 June, around 290 refugees had been affected by landslides or erosion, wind, storm, rain, and fires.¹⁴³

2019 May – Tropical Cyclone Fani

TC Fani made landfall over India on 3 May 2019 before it moved onward to Bangladesh where the storm killed at least 17 people.¹⁴⁴ Approximately 13,000 houses were damaged, with government-provided humanitarian assistance delivered to affected families. As TC Fani had intensified into a severe cyclonic storm, early evacuation orders probably prevented

more than 1.6 million fatalities in Bangladesh alone.¹⁴⁵ Bangladesh national authorities had ordered the evacuation of 19 coastal districts and opened 3,868 evacuation shelters.¹⁴⁶ Crops on 330 acres were destroyed while those on 52,728 acres were partially affected. In Cox's Bazar, 144 refugee households representing 646 people were affected by the storm.¹⁴⁷

2018 May-July – Floods and Landslides

Pre-monsoon rains started on 18 April 2018 near Cox's Bazar. From 14 to 21 May, in the Rohingya refugee camps, over 50 households and more than 150 individuals were affected by landslides and windstorms. Between 22 and 30 May, 503 refugees in camps were relocated to safer areas, as more than 660 people were affected by weather-related incidents, including landslides. More than 25,000 people had been relocated within the camps to safer areas or to facilitate construction and improvement works. From 11 to 18 June, monsoon rains triggered flooding and landslides in the Rohingya refugee camps; they affected 9,000 individuals and displaced more than 2,000 people. Small-scale landslides, floods, and high winds damaged structures, bridges, culverts, drainage channels, and access roads as well as water points, latrines, and other facilities in Ukhia and Teknaf. Between 2 and 7 July, monsoon rains affected 4,830 people in the Rohingya refugee camps as landslides, flooding, and wind damage also displaced 1,370 people. Heavy rains from 23 to 25 July triggered landslides and flooding throughout Cox's Bazar, with 463 mm (18 in) of rainfall recorded in less than 24 hours on 25 July, the second highest recorded rainfall in one day for the district. On 25-26 July, nearly 60 incidents of landslides, winds, floods, and waterlogging were reported in all settlements, with 445 shelters damaged.¹⁴⁸ Heavy monsoon rains triggered landslides and flooding on 25 July in southeastern Bangladesh, where they killed five children near Cox's Bazar and Ramu and displaced 1,000 people. Approximately 21,000 Rohingya refugees in the camps were relocated because their shelters were threatened by landslides.¹⁴⁹

2017-2019 – Diphtheria

Diphtheria outbreaks were reported in December 2017 among Rohingya refugees in the camps in Cox's Bazar.¹⁵⁰ The government of Bangladesh, with the support of the United Nations Children's Fund (UNICEF), World Health Organization (WHO), and GAVI, the Vaccine Alliance, launched a vaccination campaign against diphtheria and other preventable diseases for Rohingya children aged six weeks to six years and who were living in the temporary settlements near the Myanmar border.¹⁵¹ By October 2019, there had been 8,827 total reported diphtheria cases, including 308 confirmed, 2,757 probable, and 5,762 suspected cases. A total of 45 deaths were reported due to diphtheria from the beginning of the outbreak. Among the total reported cases, only 226 were reported from the Bangladesh host community.¹⁵²

2017 August – Floods

One-third of Bangladesh was flooded following heavy monsoon rains, marking the worst floods in four decades, per the MoDMR. Monsoon rains triggered flooding in five divisions, 31 districts, 176 upazilas, and 1,173 unions; in all, some 6.9 million people were affected. National authorities confirmed 114 people died and 197,416 people were temporarily displaced to 703 community shelters. As a result of the extensive floods, 77,272 houses were destroyed and 524,375 were partially damaged. The worst-affected districts included Gaibandha, Dinajpur, Kurigram, Jamalpur, Nilphamari, and Sirajganj. Approximately 9,000 km (5,590 miles) of roads, 100 km (62 miles) of rail lines, and 500 bridges and culverts were damaged. Around 714 km (443 miles) of embankments were also washed away.¹⁵³

2017 June – Landslides

Landslides started on 13 June 2017 and resulted in 160 people dead, 187 people injured, and 6,000 houses destroyed along with damage to other key infrastructure. It was the worst landslide-related disaster since 2007. It affected approximately 80,000 people across Bandarban,

Chittagong, Cox's Bazar, Khagrachari, and Rangamati districts; 34,000 people were considered severely impacted after they lost houses, belongings, basic necessities, livelihoods, and food stocks.¹⁵⁴

2017 May – Tropical Cyclone Mora

TC Mora made landfall in Bangladesh on 30 May 2017. It killed six people and injured 136 people. The cyclone affected nearly 3.3 million people, and it damaged or destroyed approximately 52,000 houses, leaving 260,000 people in possible need of shelter. Cox's Bazar District was heavily hit, with approximately 17,000 residences damaged. Six Rohingya refugee settlements in the area were severely affected; in these areas, up to 70% of shelters as well as latrines, clinics, and other infrastructure were damaged. TC Mora also significantly affected northern Rakhine state in Myanmar.¹⁵⁵

2016 July – Floods and Landslides

Monsoon-induced floods began on 22 July 2016 and had affected 4.2 million people in at least 19 districts by September. The flooding killed 42 people, many of whom were drowned children. Nearly 7,400 people sought refuge in 69 flood shelters as approximately 250,000 houses were destroyed or damaged.¹⁵⁶ The districts of Jamalpur, Kurigram, Sirajgonj, Tangail, and Gaibandha were hardest hit and accounted for more than 70% of the affected people.¹⁵⁷ The flooding wiped out entire villages and crops, sending farmers deeper into debt.

2016 May – Tropical Cyclone Roanu

One week after it struck Sri Lanka as a tropical storm, TC Roanu made landfall in Bangladesh on 21 May 2016. The storm caused the deaths of at least 27 people and affected 1.3 million people in Bangladesh. It brought windspeeds of over 100 km/hour (62 miles/hour), heavy rain, and storm surges that peaked at 2.7 m (8.9 feet). Due to early warning systems, half a million people were evacuated to shelters, a decision that very likely saved lives.¹⁵⁸

2015 July – Tropical Cyclone Komen

A monsoon depression over the Bay of Bengal intensified into TC Komen on 29 July 2015. The center of the storm made landfall on 30 July along the coast of southeastern Bangladesh between Hatiya and Sandwip islands. The storm affected Cox's Bazar, Chittagong, Bandarban, Noakhali, Feni, and Bhola districts. TC Komen led to the deaths of at least seven people, including two children, and it left 38 people missing and a number of people injured. Thousands of houses were damaged or destroyed. Many houses were flooded, power supply was disrupted, and the communication system collapsed in some places. Low-lying areas were inundated with 1.5-1.8 m (5-6 feet) of water. Crops were damaged and shrimp projects flooded.¹⁵⁹ The storm came on the heels of floods and landslides in the area the previous month.

2015 June – Floods and Landslides

Torrential rains started on 24 June 2015. They triggered flash floods and landslides in the low-lying areas in the southeastern districts of Cox's Bazar, Bandarban, and Chittagong. The floods inundated hundreds of villages, caused the deaths of at least 19 people, and stranded over 200,000 people. The Bangladesh Red Crescent Society (BDRCS) provided over 2,000 families (approximately 10,000 people) in Cox's Bazar and Bandarban with search and rescue services, first aid, and dry and cooked food. BDRCS collaborated with the World Food Programme (WFP) to distribute biscuits to 30,000 families in Cox's Bazar.¹⁶⁰

2015 April – Earthquake

The 7.8-magnitude earthquake and strong aftershocks that devastated Nepal on 25-26 April 2015 also caused casualties and damage in India, China, and Bangladesh. In Bangladesh, five people were killed and 100 people were injured in Dhaka, Rajshahi, and Sylhet Divisions.¹⁶¹ Across Bangladesh, 23 buildings were damaged in Dhaka, Narayanganj, Gazipur, Gopalganj, Feni, Sylhet, Rangpur, Gaibandha, Rajshahi, Naogaon, and Bogra.¹⁶²

2014 August – Floods

Continuous rainfall started on 13 August 2014 in north and northeastern Bangladesh and, combined with the onrush of waters from upstream, caused flash floods in low-lying and densely populated areas. Floods caused the deaths of at least nine people. By September, the floods had displaced more than 275,000 people (57,000 families), including more than 31,000 families whose homes were inundated and destroyed. Overall, more than 3 million people were impacted. The most affected districts included Brahmanbaria, Nilphamari, Lalmonirhat, Kurigram, Rangpur, Gaibandha, Jamalpur, Mymensingh, Naogaon, Sirajganj, Sunamgonj, and Sylhet.¹⁶³

2013 May – Tropical Cyclone Mahasen

After TC Mahasen struck Sri Lanka, it made landfall in southern Bangladesh's Patuakhali District on 16 May 2013; it affected almost 1.5 million people and killed 17 people in Bangladesh alone. A reported 26,577 houses were completely damaged, and 124,428 houses were partially damaged in nine affected districts. Large tracts of standing crops were damaged, and numerous fishponds and fish culture operations were washed away. Patuakhali, Bhola, and Barguna were among the most severely affected districts. Before the cyclone struck, a total of 956,672 people were evacuated into 3,296 cyclone shelters located in 15 coastal districts.¹⁶⁴

2013 March – Severe Local Storm

On 22 March 2013, a tornado tore through more than a dozen rural villages in Brahmanbaria District in eastern Bangladesh; in a 15-minute period, the storm killed at least 26 people, severely injured 388 people, and affected 1,633 families. The tornado destroyed more than 1,400 houses and damaged more than 100 others.¹⁶⁵

2012 December – Cold Wave

A cold wave started in mid-December 2012 in the northern districts of the sub-Himalayan regions of Bangladesh. The minimum

temperature at Dinajpur fell to 3.2°C (37°F) on 9 January 2013, the lowest temperature in four decades. The cold wave claimed more than 72 lives¹⁶⁶ as it led to an increase in pneumonia and diarrheal patients, mostly among children and the elderly. The low temperatures also caused crop and other natural resource losses. The cold followed a season during which the northern communities had been affected by floods three times and, thus, were left with limited financial resources to purchase materials to deal with the cold.¹⁶⁷

Country Risk

Risk calculation takes into account exposure to hazards, vulnerability, and coping capacity. Addressing these elements is important in reducing and mitigating disaster risk. Various indices emphasize structural or institutional risk while others emphasize hazards or losses (human and economic). Regardless of emphasis, disaster risk calculations use some form of the equation:

$$\text{Disaster Risk} = (\text{Hazard} \times \text{Vulnerability}) / \text{Capacity}^{168}$$

Taken from the UN Office for Disaster Risk Reduction (UNDRR) glossary, definitions will help clarify this formula:

- **Capacity** - The combination of strengths, attributes, and resources available within an organization, community, or society to manage and reduce disaster risks and strengthen resilience.
- **Disaster risk** - The potential loss of life, injury, or destroyed or damaged assets, which could occur to a system, society, or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability, and capacity.
- **Hazard** - A process, phenomenon, or human activity that may cause loss of life, injury, or other health impacts, property damage, social and economic disruption, or environmental degradation.
- **Vulnerability** - The conditions determined by physical, social, economic, and

environmental factors or processes, which increase the susceptibility of an individual, a community, assets, or systems to the impacts of hazards.¹⁶⁹

In general, the goal of indexing risk is to inform decision makers and DRR and CCA practitioners of the level of risk to and underlying capacity of the target community. The various risk calculation models support proactive crisis management frameworks and are helpful for prioritizing allocation of resources and for coordinating actions focused on anticipating, mitigating, and preparing for humanitarian emergencies.

INFORM Risk Profile

INFORM is a collaboration of the Inter-Agency Standing Committee (IASC) Reference Group on Risk, Early Warning, and Preparedness with the European Commission. It is a multi-stakeholder forum for developing shared, quantitative analysis relevant to humanitarian crises and disasters. The Joint Research Center of the European Commission is the scientific lead. There are three operational dashboards – i.e., INFORM Risk, INFORM Severity, and INFORM Climate Change.

- INFORM Risk is an open-source risk assessment for humanitarian crises and disasters. It can support decisions about prevention, preparedness, and response.
- INFORM Severity is a way to measure and compare the severity of humanitarian crises and disasters globally. It can help develop a shared understanding of crisis severity and ensure all those affected get the help they need.
- INFORM Climate Change is an upgraded INFORM Risk Index that includes climate and socio-economic projections with results intended to inform policy choices across climate mitigation, climate adaptation, disaster risk reduction, sustainable development, and humanitarian assistance.¹⁷⁰

The **INFORM Risk** Index measures the risk of humanitarian crises and disasters in 191

countries. The INFORM model is based on the standard dimensions of risk: Hazards and Exposure, Vulnerability, and Lack of Coping Capacity. The first dimension measures the natural and human hazards that pose the risk. The second and third dimensions cover population factors that can mitigate against or exacerbate the risk. The Vulnerability dimension considers the strength of individuals and households relative to a crisis while the Lack of Coping Capacity dimension considers factors of institutional strength.¹⁷¹

The INFORM model is split into different levels to provide a quick overview of the underlying factors leading to humanitarian risk. INFORM gives each country a risk score of 1-10 (1 being the lowest and 10 the highest) for each of the dimensions, categories, and components of risk, as well as an overall risk score.¹⁷² The higher the score the more at risk a country is. In the 2023 INFORM Risk Index, Bangladesh had an overall risk score of 5.5/10, which INFORM categorizes as the “High” risk class and lands the country as the 29th most at-risk country in the Index. The Hazards and Exposure dimension score takes into account a combination of both natural and human hazards, and Bangladesh rated 6.3/10 or 37th most at-risk of 191 countries. The Vulnerability dimension score was 5.5/10 or 37th, and the Lack of Coping Capacity dimension score was 4.9/10 or 73rd of 191. Physical exposure to flooding at 10/10 was the greatest threat in the Hazards and Exposure dimension, with Uprooted People measuring at a 7.7/10 for the Vulnerability dimension and Governance rated 7/10 in the Lack of Coping Capacity dimension. The INFORM dashboard for Bangladesh (2023) is shown in Figure 7.¹⁷³

Based on 2022 baseline INFORM assessments (whose index scores were slightly different than the 2023 scores in the preceding paragraph) and projections of climate change influences on major hazards, the **INFORM Climate Change** tool suggests that Bangladesh will remain highly exposed to various natural hazards while its coping capacity and vulnerability will remain fairly constant. The conclusion is that the country will be required to continue to build

its DRR/CCA institutional capacity just to keep pace with hazards that are influenced by climate change.¹⁷⁴ The index examines the country’s potential experience under two Representative Concentration Pathways (RCP) – 4.5 and 8.5 – and it projects out to the years 2050 and 2080. The RCPs are used to describe the amount of greenhouse gases in the atmosphere at a specific point and allow modelers to consider emissions scenarios and their impacts out to the year 2100. The most commonly used RCPs for international modelling are RCPs 2.6, 4.5, 6.0, and 8.5. RCP 4.5 is an intermediate pathway where emissions are limited but not stringently and result in a surface temperature rise of 1.1-2.6°C (1.98-4.68°F) by 2100. RCP 8.0 is one of the pathways that considers almost no limitations of greenhouse gas emissions, and most projections expect it to lead to a surface temperature rise of 2.6-4.8°C (4.68-8.64°F) by 2100.¹⁷⁵

Bangladesh is also one of the dozen countries or regions that has an Index for Risk Management (INFORM) at a more granular level that provides a sub-national risk profile for both Districts (second administrative level) and upazilas or thanas (third administrative level). As in the national profile, the sub-national

indicators are divided into three categories: Hazards and Exposure, Vulnerability, and Lack of Coping Capacity. The subnational INFORM risk index (2022) for Bangladesh gathered data from 64 Districts and 553 upazilas or thanas. A total of 89 indicators were indexed in a collaborative process including the MoDMR and the Bangladesh Bureau of Statistics. The following three steps were used:

- Partnership and Collaboration - A Technical Expert Group of 13 representatives from relevant government ministries and departments, academia, and civil society, chaired by MoDMR
- Localization and Development - Using available data, the global INFORM components were localized, keeping the dimensions and categories fixed; categories were agreed upon with the key stakeholders
- Promotion and Update - The localized INFORM risk index is available at the global INFORM website, Humanitarian Data Exchange, and ReliefWeb Response, and further interactive maps produced are published in a national risk platform

Figures 8, 9, and 10 show some of the

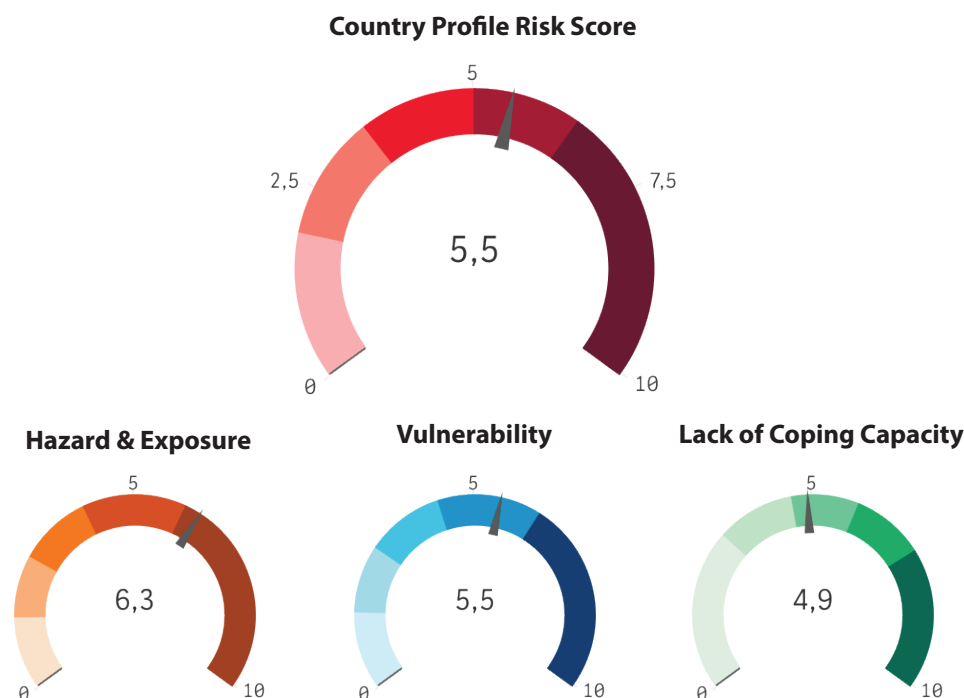


Figure 7: INFORM Risk Index, Bangladesh (2023)

conclusions of the sub-national risk profile. The INFORM Risk Distribution 2022: District charts show the distribution of districts across the risk levels and lists the top 15 most at-risk districts. The map of INFORM Risk by upazila or thana also shows the concentration of highest risk areas in the northern and southern reaches of the country. Finally, the INFORM Risk dashboard for Dhaka district shows the particular Hazards, Vulnerabilities, and Coping Capacity challenges that prevail in that specific district.¹⁷⁶

World Risk Report

The WorldRiskReport by Bündnis Entwicklung Hilft strives to raise awareness of disaster risk among the global public and political decision-makers and to provide practitioners with data to promote faster orientation to complex situations – i.e., societies experiencing disasters. This effort stems from the perception that disaster risks are not solely determined by the occurrence, intensity, or duration of extreme events. Social factors, political conditions, and economic structures play an important role in turning these events into crises. Thus, this index is based on the assumption that every society can take precautions – e.g., effective disaster preparedness and management – to reduce the impact of extreme events and lower the risk of disasters.

The WorldRiskReport calculates the level of risk a country faces based on a formula of exposure to hazards and vulnerability. It provides an assessment of the risk that countries will confront disasters but does not indicate probabilities for the emergence of disasters, nor does it forecast the timing of future disasters. This index uses 100 indicators that include risk, hazard exposure, vulnerability, and coping capacity (as defined above), and adds two others:

- **Susceptibility** - The disposition to suffer damage in the event of extreme natural events. Susceptibility relates to structural characteristics and frameworks of societies.
- **Adaptation** - A long-term process that also includes structural changes and comprises measures and strategies that address and try to deal with future negative impacts

of natural hazards and climate change. Analogous to “lack of coping capacity,” the lack of adaptive capacities is included in the Index.

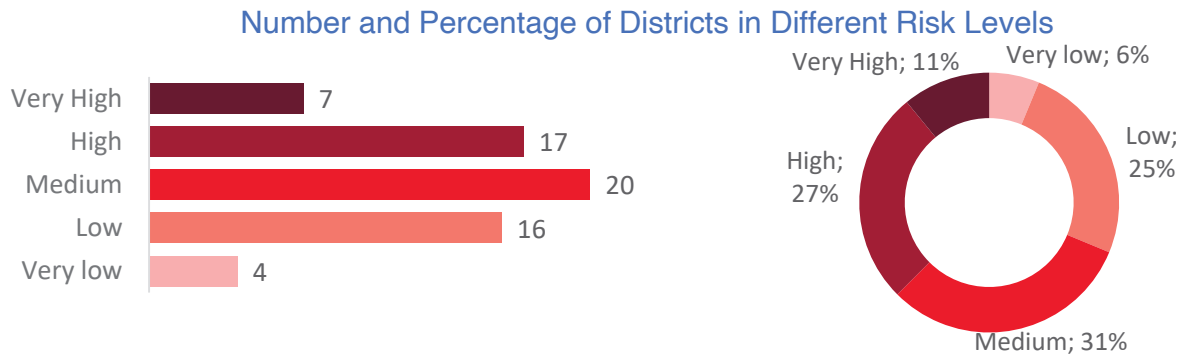
In the 2022 WorldRiskReport, Bangladesh ranked 9th most at risk of 192 countries. Bangladesh’s total Index score was 27.90 (on a scale of 0-100 wherein the lower the number the less risk a country faces), putting it in the “very high” risk class. The component scores were:

- Exposure: 16.57 (very high)
- Vulnerability: 46.97 (very high)
- Susceptibility: 36.81 (very high)
- Lack of Coping Capacity: 59.18 (very high)
- Lack of Adaptive Capacity: 47.58 (medium)

For comparison, Bangladesh’s score puts it far above both the regional (Asia) and sub-regional (South Asia) medians of 5.93 and 5.93. As one of the top 10 most at-risk countries in the world, according to this Index, Bangladesh is among seven Asian countries (of 47) to break the top 10 while eight Asian countries belong to the lowest risk class and two are in the 10 least at-risk countries. Thus, Bangladesh and its fellow high-risk countries help propel Asia into second most at risk position among all global regions.

In terms of Exposure, Bangladesh is well above the medians for Asia (1.60) and South Asia (1.60) in a reflection of the country’s exposure to cyclones, drought, earthquakes, fire, flood, landslide, and tsunami. In the Vulnerability dimension, the country is also above both the medians for Asia (21.99) and South Asia (27.54); this element incorporates Susceptibility, Lack of Coping Capacity, and Lack of Adaptive Capacity. Under Susceptibility, Bangladesh is above the medians for Asia (15.87) and South Asia (27.17) due, in part, to lower social and economic development. In the Lack of Coping Capacity dimension, the country is also above the medians for Asia (12.98) and South Asia (55.38) due to its regular experience of natural disasters that erodes the country’s ability to rebuild its human and economic resources before the next emergency. Finally, on the Lack of Adaptive Capacity score, Bangladesh sits above the median

INFORM Risk Distribution 2022: District



15 Top Risk Prone Districts

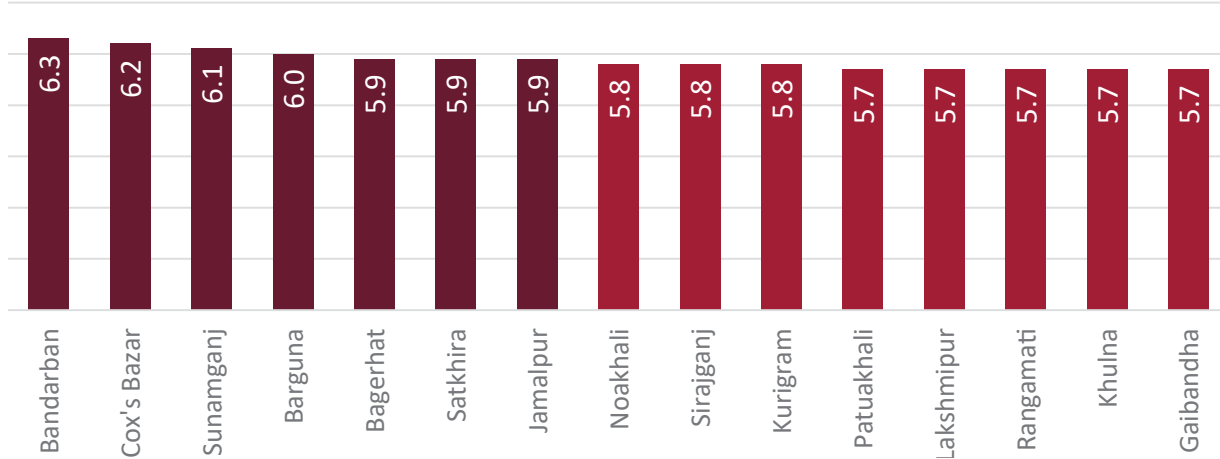


Figure 8: Bangladesh Sub-National (District) INFORM Risk Distribution

Country Profile Risk Score

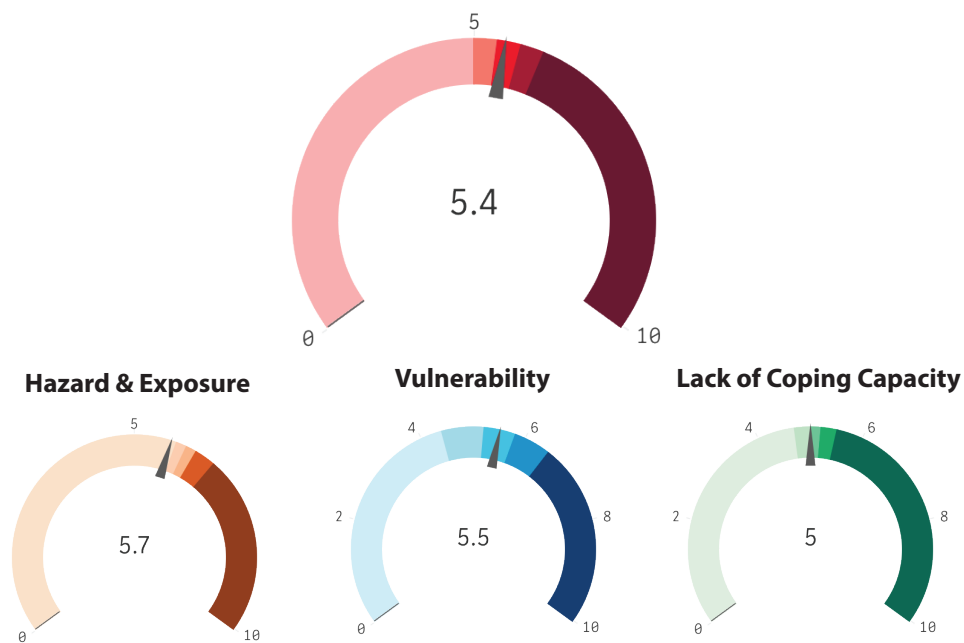
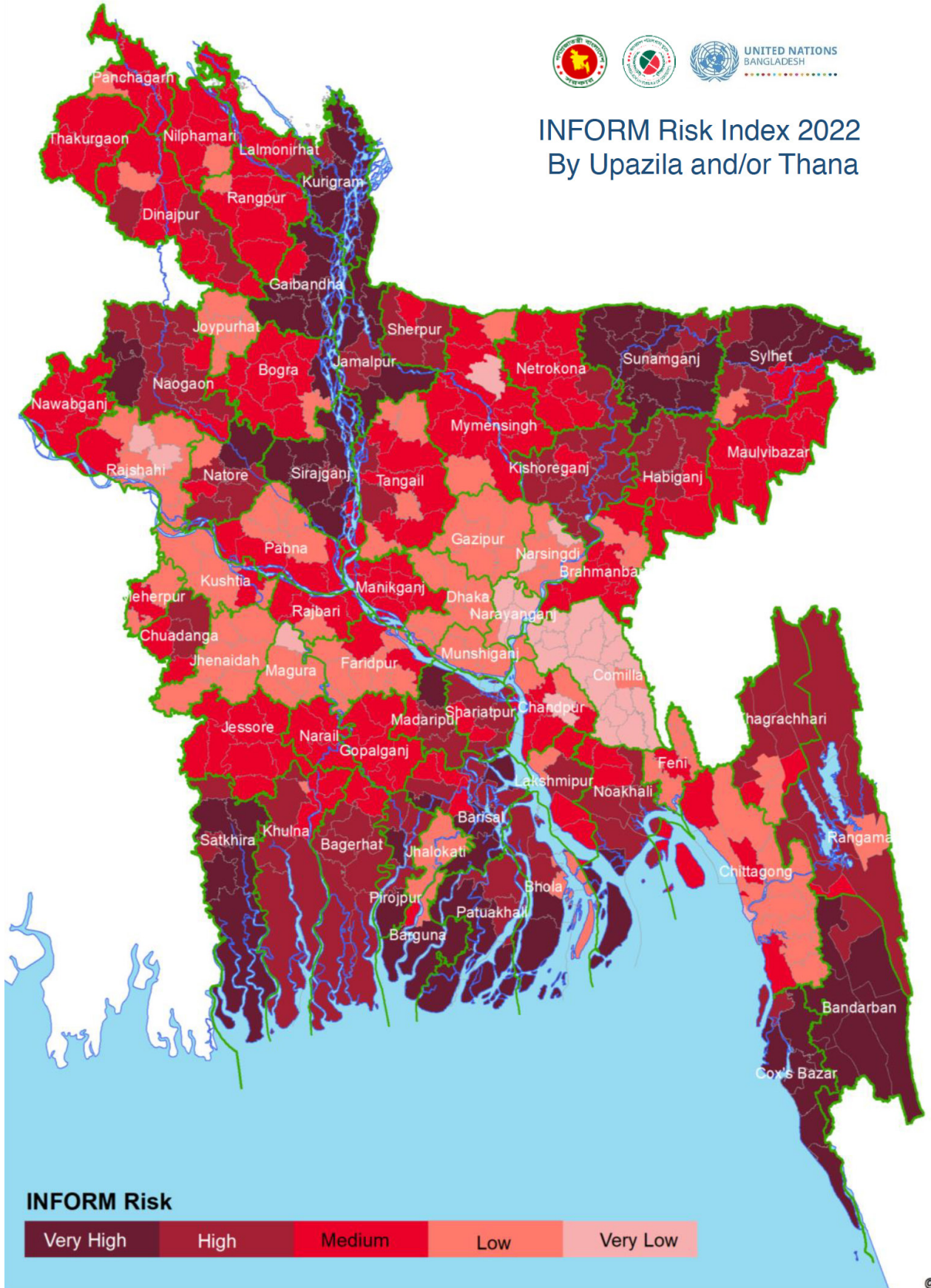


Figure 9: INFORM Risk Profile for Dhaka District



INFORM Risk Index 2022 By Upazila and/or Thana



@2022

Figure 10: Bangladesh INFORM Risk by Upazila or Thana

for Asia (43.77) but is the median for South Asia (47.58) in a reflection of its efforts to incorporate DRR and CCA into education and investment in research and institutional capacity although it still experiences shortfalls in health and capital to meet challenges.¹⁷⁷

Global Climate Risk

The Global Climate Risk Index (CRI) developed by Germanwatch analyzes impacts of extreme weather in terms of both fatalities and economic loss. The index is based on the Munich Re (a re-insurance company) NatCatSERVICE databases, among the most complete databases in the world in these categories of loss. The CRI examines disaster impacts in both absolute terms (i.e., number of fatalities and losses in U.S. dollars) and in comparative, relative terms (i.e., losses per 100,000 inhabitants and losses as a percentage of GDP) that allow analysts to set events and their impacts alongside each other to assess how a given country or community used its strengths or struggled due to its weaknesses in the face of an extreme event. The countries ranking highest on the CRI experience either frequent smaller-scale weather events or rare but extraordinary events. In sum, the CRI allows DRR and disaster management practitioners to consider how climate change will impact exposures and vulnerabilities. The two different CRI measures – most impacted countries in a single year and most impacted countries over 20 years – offer analysts an opportunity to tease apart the effects of rare but major events versus frequent, cumulative events.

The major events examined by the CRI are tropical cyclones (typhoons). The key takeaway is that countries with high exposure to such storms – either frequent small ones or rare massive ones – will be preparing for less predictable, potentially less frequent, but probably more powerful typhoons under climate change scenarios. The CRI cites various DRR and CCA efforts in countries exposed to hydrometeorological hazards, and it points to initiatives that pool risk for disaster risk management and financing solutions. Germanwatch also points to the CRI findings as

a clear reason to improve global climate change financing programs to ensure that the most affected countries – many of which are also least developed states – do not experience worsening development outcomes because of disaster losses. The CRI cites outcomes from the COVID-19 pandemic as examples of how simultaneous or consecutive disasters can erode resiliency in the absence of international solidarity funding.

In the 2021 CRI, based on single-year (2019) data, Bangladesh ranks 13th most affected of 180 countries. It experienced three large cyclones - Gani, Matmo, and Bulbul – that year, and it experienced the 7th most total fatalities, 29th most fatalities per 100,000 inhabitants, 20th greatest monetary loss, and 28th greatest financial loss as a percentage of GDP. Regular experience of storms is also reflected in the 20-year ranking, in which Bangladesh ranks 7th most affected of 180 countries. It experienced significant human and material losses in absolute and comparative terms over the period, earning it ranks of 9th and 13th for most average fatalities per year and average financial losses per year, respectively. At the same time, its average fatalities per 100,000 inhabitants and average losses per unit GDP over the period both come in at 37th highest, a rank that suggests that Bangladesh keeps down its losses in comparison to other countries despite still experiencing losses. The country may not experience a serious weather event in any single year, but it has experienced extreme weather that caused significant fatalities and damage 185 times during the 20-year window used for this assessment. The CRI does note important shifts in Bangladesh's ability to mitigate its exposure and that may be paying dividends by holding down losses. It has established a dense network of small cyclone shelters, early warning systems, evacuation plans, reforestation schemes, and increased communication and has, thereby, reduced cyclone-related mortality by more than 100-fold over 40 years. Indeed, the country went from 500,000 cyclone deaths in 1970 when the Bhola cyclone struck to 4,234 cyclone deaths in 2007 when Cyclones Akash and Sidr hit the country.¹⁷⁸

ORGANIZATIONAL STRUCTURE FOR DISASTER MANAGEMENT

The National Disaster Management Council (NDMC), headed by the Prime Minister, provides direction for disaster management, including DRR, mitigation, preparedness, response, and recovery. Several sectoral agencies carry out functional and hazard-specific planning and execution responsibilities.¹⁷⁹ The Ministry of Disaster Management and Relief

(MoDMR) has responsibility for coordinating national disaster management efforts across all agencies in the country. MoDMR has a coordinating and facilitating role as “Secretariat” to NDMC.¹⁸⁰ The NDMC and the MoDMR are both depicted in Figure 11 along with various other committees.¹⁸¹

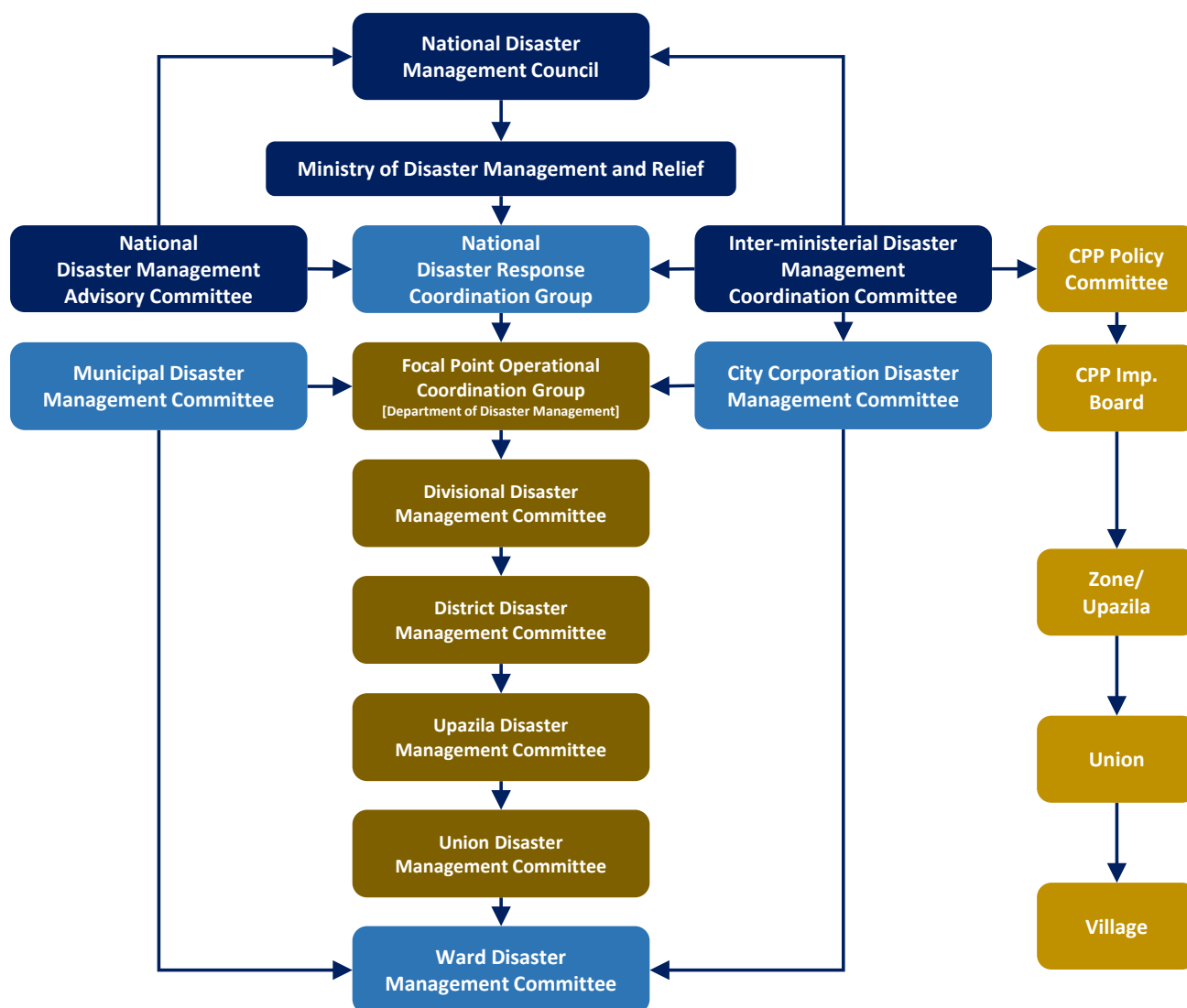


Figure 11: Disaster Management Structure in Bangladesh

Lead Government Agencies in Disaster Response

MoDMR has responsibility for coordinating national disaster management activities, and the NDMC is the supreme body for providing overall direction. Other key national disaster management institutions include the Inter-Ministerial Disaster Management Coordination Committee (IMDMCC), the National Disaster Management Advisory Committee (NDMAC), the National Platform for Disaster Risk Reduction, the Earthquake Preparedness and Awareness Committee, and the Focal Point Operation Coordination Group of Disaster Management. There are also Disaster Management Committees (DMC) at sub-national

levels (district, sub-districts, union, municipal, and ward levels).¹⁸²

The NDMC and IMDMCC coordinate disaster-related activities at the national level. A series of interrelated institutions, at both national and sub-national levels, function to ensure effective planning and coordination of DRR and emergency response management,¹⁸³ as seen in Figure 12.¹⁸⁴

Disaster Relief and Emergency Response

When a disaster strikes in Bangladesh, there is a well-established set of guidelines and relationships that are brought to bear to deliver relief to affected communities. While the national government’s NDMC and MoDMR retain overall control, local governments and

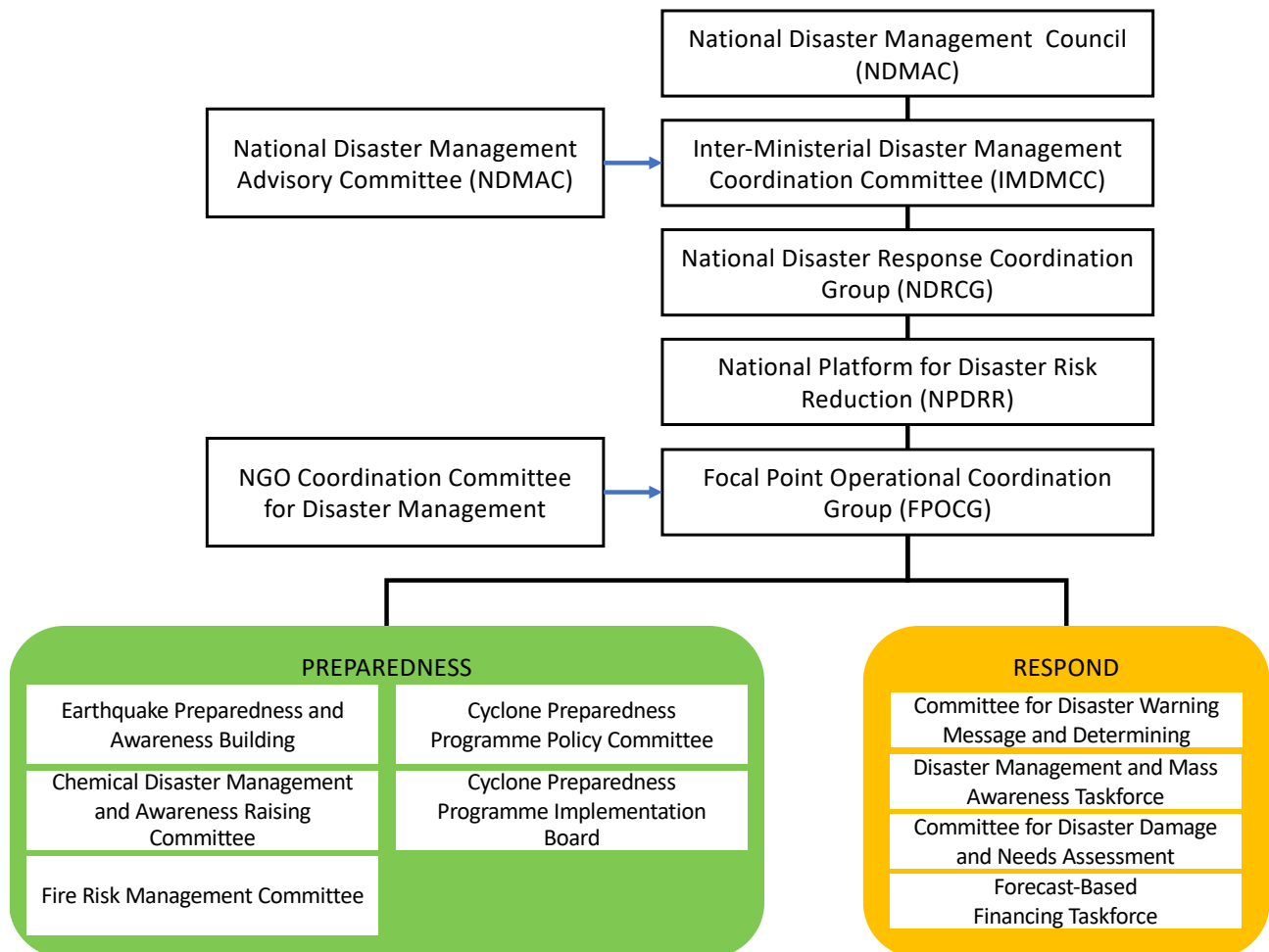


Figure 12: Disaster Management Committees at the National Level

their NGO and civil society partners are the front-line responders to whom support from the national government and partners is directed. The Armed Forces, international Red Cross-Red Crescent Movement, UN system agencies, and development partners have all participated in past response and participate in preparedness work for future disasters.

Armed Forces Role in Disaster Relief

The Armed Forces are an essential player in a disaster situation or anticipated deadly situation. Indeed, at the national, strategic level, Force Goal 2030 is the government's attempt to modernize the Armed Forces and employ them in humanitarian frontlines instead of politically turbulent domains.¹⁸⁵ In the event that the Armed Forces are needed, the National Disaster Response Coordination group submits a recommendation to the Government for Armed Forces involvement. The Government may also give directives to the Armed Forces to provide necessary assistance to civil administration in pre-disaster or emergency response activities.¹⁸⁶

The Armed Forces Division (AFD) will take on specific risk reduction functions and emergency response functions before, during, and after various stages of disaster preparedness and response. For example, the AFD is responsible for the preparedness of units of the Army, Air Forces, and Navy for assisting in search and rescue, evacuation, and humanitarian assistance programs. The AFD also maintains communication with the National Emergency Operation Centre (NEOC), which is coordinated by the MoDMR during a disaster response and maintains coordination with civilian administrations and authorities under the Incident Management System.

AFD will also establish a control room and duty officer of the coordination cell of the Prime Minister's Office, NEOC, and NDRRC of the MoDMR. The NEOC will function round the clock for operating and monitoring emergency response activities. During an alert or warning stage, the Navy is responsible for establishing a disaster control room in the Naval Headquarters

and maintaining communications with the Director of Naval Operations and the control rooms of the Bangladesh Army and Air Forces.

The Armed Forces may deploy at the request of the Government to assist civilian authorities in response, humanitarian assistance, and rehabilitation activities. Army and Air Force aircraft may be utilized to assess damage, loss, and needs.¹⁸⁷ During emergency phases, Army engineer unit watercraft can play a key role in response, especially rescue, as they did after the Sunamgonj and Sylhet floods of 2022. These types of assets are readily available as their units are generally stationed throughout the country and their watercraft are mobile and lightweight and can more easily get to remote, flood-affected areas. The Navy and Coast Guard water units are mostly deployed in coastal areas where they maintain watercraft in readiness for rescue operations,¹⁸⁸ and the Air Forces ensure aircraft are ready for emergency rescue operations. Additional information on the Armed Forces and the AFD can be found in the MoDMR's Standing Orders on Disaster (SOD) 2019.¹⁸⁹

Disaster Management Partners

Apart from the government, there are various partners working in disaster management and response in the country. These include various national and local NGOs, civil society organizations, community-based organizations, Red Cross and Red Crescent societies, UN agencies, and development partners. At the local level, DMCs play a vital role in disaster risk management.¹⁹⁰

The UN in Bangladesh - also known as the UN Country Team (UNCT), Bangladesh - is made up of 23 UN agencies, funds, and programs, as well as the UN Information Centre, convened under the UN Resident Coordinator. The UNCT is the UN's highest level inter-agency coordination and decision-making body in Bangladesh. The UNCT drives activities at the country-level and allows for all UN entities with activities in-country to work as a team in formulating common positions on strategic issues, and it ensures coherence in action and advocacy in close coordination and cooperation

with the Government of Bangladesh and the broader development community.¹⁹¹

Disaster management partners in Bangladesh include but are not restricted to the following:

ActionAid, Aid Comilla, Asian Development Bank (ADB), Assistance for Social Organization and Development (ASOD), Bangladesh Red Crescent Society (BDRCS), BRAC, Bolipara Nari Kalyan Somity (BNKS), CARE, Caritas Bangladesh, Catholic Relief Services (CRS), Centre for Participatory Research and Development (CPRD), Christian Aid, Concern Worldwide, Dhaka Ahsania Mission (DAM), Food and Agriculture Organization of the United Nations (FAO), Friendship, Gana Unnayan Kendra (GUK), Habitat for Humanity, HelpAge, International Organization for Migration (IOM), Islamic Relief, Mahideb Jubo Somaj Kallayan Somity (MJSKS), Manab Mukti Sangstha (MMS), Muslim Aid, National Development Programme (NDP), Oxfam, Plan International, RDRS Bangladesh, Save the Children, Shelter Box, SKS Foundation, Solidarités International, Terre des hommes (TDH), UNICEF, UN Development Programme (UNDP), UN Office for Project Services (UNOPS), UN Population Fund (UNFPA), United Purpose, World Food Programme (WFP), WHO, and World Vision.¹⁹²

The International Red Cross and Red Crescent Movement

International Committee of the Red Cross

The International Committee of the Red Cross (ICRC) is an independent humanitarian organization, headquartered in Geneva, Switzerland. The ICRC bases its activities on the provisions of International Humanitarian Law, and it is neutral in politics, religion, and ideology. The ICRC assists with the protection of civilian victims of armed conflict and internal strife and their direct results. Within these roles, it may take any humanitarian initiative as a neutral and independent intermediary.¹⁹³

International Federation of Red Cross and Red Crescent Societies

The International Federation of Red Cross and

Red Crescent Societies (IFRC) is a humanitarian organization that provides assistance and promotes humanitarian activities carried out by the National Societies, with a view to preventing and alleviating human suffering. IFRC was founded in 1919 and includes 192 National Societies. The IFRC carries out relief operations to assist victims of disasters and combines this with development work to strengthen the capacities of its member National Societies.¹⁹⁴

Bangladesh Red Crescent Society

The BDRCS was established by Presidential Order in 1973 and is an auxiliary to public authorities for disaster management and humanitarian emergencies. The national mandate based on the Presidential Order and SOD is to support the government's emergency response initiatives, particularly plans and programs for disaster preparedness. BDRCS is mandated to engage with the most vulnerable communities and to proactively incorporate measures to mitigate the impact of disasters and climate change spanning DRR, livelihoods, and health. BDRCS is a pioneer in its remote community-based disaster risk management interventions, forecast-based action for flood and cyclone response, and ongoing work on heatwaves. Having partnership and cooperation with numerous organizations and governmental entities and its nationwide organizational and volunteer network, BDRCS is able to work in community resilience, DRR, and CCA.¹⁹⁵

In recent years, BDRCS has been involved in the following responses and activities:

- Response after TC Mocha, Amphan, etc.
- Fire responses in Dhaka and in Chattogram
- COVID-19 Operations
- Flood response and recovery in 2017, 2019, 2020, and 2022
- Implementation of Coastal Disaster Risk Reduction Programme
- Implementation of Community Resilience, Disaster Preparedness, and Anticipatory Actions
- Implementation of Coastal City Resilience and Extreme Heat Action project
- Cocurricular activities at schools and colleges

- to develop leadership and volunteerism
- Providing Restoring Family Links services

BDRCS has been an implementer of the Cyclone Preparedness Programme (CPP) since 1972. It has also provided humanitarian services among remaining Myanmar refugees who have been in camps since 1992 and among Forcibly Displaced Myanmar Nationals (FDMN), present since 2017. BDRCS, in collaboration with the Directorate-General for European Civil Protection and Humanitarian Aid Operations and Red Cross Red Crescent Partners, has been implementing Pilot Programmatic Partnership to support urban, rural, and camp communities in reducing their vulnerabilities by strengthening local disaster management capacities.¹⁹⁶

U.S. Government Agencies in Bangladesh

The United States Agency for International Development (USAID) program in Bangladesh is the agency's largest in Asia. It oversees a large humanitarian assistance portfolio that addresses portions of the Rohingya refugee crisis as well as providing important food security and health programs. The USAID program also provides strategic democracy and governance, basic education, economic growth, and environmental activities.¹⁹⁷

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Laws, Policies, and Plans on Disaster Management

Various national laws, policies, and plans are the foundation for disaster management in Bangladesh. They offer strategies for the management of risks and consequences, community involvement, and integration of structural and non-structural measures to reduce risk. In addition, this suite of legal and strategic documents emphasize the importance of dedicated financial resources for disaster management activities at all levels of government and society and of inclusion of marginalized communities in planning for and responding to disasters.

Disaster Management Act, 2012

Bangladesh's legal basis for all disaster management activities, including DRR, is the Disaster Management Act of 2012. It aims to substantially reduce disaster risk with appropriate interventions and explicitly seeks "coordinated, object-oriented, and strengthened" disaster management. The Act directs the building up of institutions to ensure effective management of all hazards, and it established the NDMC and renamed MoDMR's Relief and Rehabilitation Division the Department of Disaster Management (DDM). Moreover, the Act provides the legal impetus for formalization of local DMCs and groups, including at the city, district, upazila, and other levels. The law mandates the foundation of both National and District Disaster Management Funds.¹⁹⁸

Disaster Management Policy (2015)

The main purpose of the Policy is to formulate and implement hazard-specific strategies based on assessments of major risks. It lays out initiatives to ensure good governance for disaster risk management (DRM) and the participation and accountability of all concerned stakeholders.¹⁹⁹ The Policy also provides a definition of the national perspective on DRR and emergency management.²⁰⁰ It provides detailed guidance about community-based risk

reduction, rapid response management, and rehabilitation activities.²⁰¹

Standing Orders on Disaster (rev. 2019)

Initially introduced in the 1980s and revised several times, the Standing Orders on Disaster (SOD) details the roles and responsibilities of cabinet ministries, committees, and other organizations in DRR and emergency management, and it lays out actions required to implement Bangladesh's disaster management model. The objective is to ensure that every individual at every level understands their duties and responsibilities regarding disaster management and how to accomplish those duties. The SOD requires all government ministries, departments, and agencies to prepare action plans and standard operating procedures for assessing risk, needs, and impacts.²⁰² The 2019 SOD revision laid out specific platforms and offices for coordination, including civil-military coordination and the use of the humanitarian cluster system. The Appendices to the SOD provide guidelines, forms, and templates for tasks.²⁰³

National Plan for Disaster Management (2021-2025)

The National Plan for Disaster Management (NPDM) is a strategic document that provides the overall guidelines for relevant sectors and DMCs to prepare for and implement their roles. The NPDM 2021-2025 has, at its core, goals for Bangladesh's government and non-government stakeholders to take actions that will save lives and reduce economic losses at every stage in the disaster management cycle from DRR through response and recovery. The latest iteration builds on international DRR frameworks and lessons learned from domestic disaster events. It lays out 34 targets to be met in partnership with relevant stakeholders. The formulation of the 2021-2025 NPDM built on its predecessors (2010-2015 and 2016-2020). NPDM 2016-2020 reflected the global shift from relief-based disaster response to proactive DRR with an emphasis on capacity strengthening. NPDM

2021-2025, then, further builds on national, regional, and global frameworks including the Government of Bangladesh's Delta Plan 2100 and 8th 5-Year Plan, the Sendai Framework, the Asia Regional Plan for Implementation of the Sendai Framework, and, finally, the Dhaka Declaration 2015 Plus for Disability Inclusive Disaster Risk Management. The NPDM 2021-2025 timeline includes three program periods:

- 2021 was a preparatory year, and many actions were continuations of existing programs
- 2022-2023 was planned for initiation of new actions in addition to existing actions begun during the previous period
- 2024-2025 will include more initiatives and the culmination of growth in institutional capacity based on actions of the preceding stages

Many of the core targets will continue to be implemented until 2030 as the current NPDM places DRM within the context of rapid urbanization and climate change, and the Plan is flexible and adaptive in recognition of the changing nature of risks in Bangladesh.²⁰⁴

8th Five-Year Plan

Bangladesh's government lays out its expectations and priorities for economic and social development in five-year plans. The 8th Five-Year Plan (8FYP) covers the period 2020-2025. In sections that address shoring up disaster management, 8FYP considers legal, institutional, and financial ways to ensure that the country can fully understand the risks it confronts, mobilize to reduce or mitigate those risks, and respond when disaster strikes. Core efforts include:

- The development of a forward-looking legal framework to facilitate effective implementation of actions defined in the SOD
- More training to enhance the knowledge and skills of stakeholders and greater incentives for better performance, such as rewarding Union Disaster Management Committees, their members, and volunteers for exemplary

- service
 - Resources for Union Disaster Management Committees to ensure better implementation of the SOD; the government will ensure provisions for the Disaster Contingency Fund at the union level to be utilized for awareness activities and developing mechanisms for early warning, search and rescue, and shelter management
 - Deliver resources to agencies and participants in early warning systems
 - A Ministry of Planning-led technical team will undertake a rigorous risk accounting and determine the baseline, benchmarks, and targets that will improve Bangladesh's resilience against natural disasters and various manifestations of climate change
5. Develop effective institutions and equitable governance for in-country and transboundary water resources management.

The 8FYP commits the government to developing a comprehensive policy and multi-level institutional framework on integration of DRR and CCA to address the losses and damage from both extreme events and slow-onset processes. As part of these efforts, the Ministry of Planning is expected to lead a policy body with the Ministry of Environment, Forest, and Climate Change and the MoDMR to serve as a knowledge hub and to provide expertise in DRR and CCA.²⁰⁵

Delta Plan 2100

Approved in 2018, the Bangladesh Delta Plan (BDP) 2100 is the planning framework for the country to invest in its Delta region not only for short- and medium-term socio-economic development but also for the sustainable management of water, ecology, the environment, and land resources in the context of their interaction with natural disasters and climate change. There are five specific goals:

1. Ensure safety from floods and climate change-related disasters
2. Enhance water security and efficiency of water usage
3. Ensure sustainable and integrated river system and estuary management
4. Conserve and preserve wetlands and

ecosystems and promote their wise use

Policymaking and strategic direction of BDP 2100 falls to the Delta Governing Council, chaired by the PM. The Minister of Planning is the Vice-Chair, and members include the Ministers or State Ministers of Agriculture; Disaster Management and Relief; Finance; Fisheries and Livestock; Food; the Environment, Forest, and Climate Change; Land; Shipping; and Water Resources. DDM is MoDMR's implementing agency for BDP 2100 projects.²⁰⁶ At the start of its implementation period, government estimated that BDP 2100 would cost US\$23.23 billion with an estimated US\$4.65 billion required for the 2018-2040 period.²⁰⁷

National Adaptation Plan 2022

The main objectives of the National Adaptation Plan (NAP) are to reduce vulnerability to the impacts of climate change by building adaptive capacity and resilience and by adapting new and existing policies and programs, especially development strategies. The NAP focuses on planning, budgeting, and financial tracking because of the immense costs Dhaka bears for disaster response every year.²⁰⁸ The government spends 6-7% of the annual budget every year on CCA, with more than 75% financed from domestic sources. This burden is expected to increase along with rising frequency of extreme events, driven by climate change. One estimate is that by 2050, the annual cost of adapting to or recovery from tropical cyclones and storm surges will sit at US\$55.17 billion, and annual recurrent expenditures will be US\$112 million, costs that will erode the country's ability to spend on general welfare, income generation projects, and poverty reduction programs.²⁰⁹

Based on the latest climate change projections under three different scenarios and extensive consultations at local and national level, the NAP identified 90 high priority and 23 moderate priority interventions with a total investment cost

of US\$230 billion over a 27-year implementation period (2023-2050). The plan provides detailed analysis of climate risk and vulnerability projections and subsequent adaptation strategies, mobilization of internal and external sources of finance, institutional structures, and a monitoring and evaluation mechanism. The process of developing the NAP also had two peripheral projects – i.e., documenting locally-led adaptation options and nature-based solutions and priorities, and developing of a training manual used for an initial batch of 200 public officials trained on integration of CCA into project development processes. The training manual was then shared with ministries and all upazila leaders.²¹⁰

Disaster Management Communications

The NPDM 2021-2025 recognized shortfalls in understanding risk and in early warning systems (EWS), the latter of which builds on the former. Among the priority actions for the period of the plan are upgrading and strengthening national awareness of hazards among communities, institutions, and the media. Programs under consideration involve including community members in hazard mapping, risk assessments, and risk-informed planning as well as using modern communications technology for improved weather and climate monitoring, prediction, and forecasting. The NPDM calls for special attention to be paid to awareness raising and data products on earthquakes given the country’s minimal recent experience with seismic hazards compared to the regular occurrence of cyclones and floods.²¹¹ More recently, in its mid-term review of progress toward the Sendai Framework targets, MoDMR noted that the government did complete a Multi-Hazard Risk and Vulnerability Assessment (2014-2017) for the whole country. The major outcome of the assessment was to identify institutional gaps and to prioritize DRR and adaptation options for institutions. The Assessment itself was also an opportunity to share existing information, data,

and resources.²¹²

The SOD promotes use of the Communication with Communities (CwC) model of issuing warnings and disseminating information over the course of the disaster management cycle. Given the SOD’s focus on ensuring that all people at all levels understand their roles and responsibilities, it emphasizes that disaster management practitioners must engage at-risk and affected communities early and consistently to ensure the most effective DRR and disaster response. Beyond national-level strategies and investments in the scientific and policy underpinnings of EWS, the SOD’s CwC elements demand that disaster managers ensure they document and adhere to the local context, incorporate at-risk and affected communities into planning and execution, and promote and act on feedback from the community.²¹³

Early Warning Systems

An effective EWS ensures that accurate, reliable, actionable, and understandable information reaches those who need it in a timely manner so they can take action to protect themselves and others, their assets, and their livelihoods.

In its mid-term review of progress toward the Sendai targets, MoDMR noted that meteorological observation and forecast systems have expanded. In addition, disaster-related information and warning mechanisms have undergone improvement with the participation of local media and agencies. Indeed, the country receives recognition from international organizations and media for the scope of its EWS, which includes weather monitoring equipment, communication systems, and a comprehensive network of volunteers. For dissemination, the EWS uses TV and radio broadcasts, push messages via mobile phone networks, targeted SMS/text notifications, and a helpline, which people can call to listen to pre-recorded voice messages; volunteers are often the only resources that can cover the “last mile” that reaches people without mobile phone or radio coverage.²¹⁴

Nominally, responsibility for data and

information that can trigger the EWS for various hazards lies with technical agencies. Cyclone, storm, drought, and cold or heat wave fall under the Bangladesh Meteorological Department (BMD). River and flash floods fall to the Flood Forecasting and Warning Centre (FFWC). Epidemic advisories come from the Director-General of Health Services (DGHS).²¹⁵ Under the SOD, the Committee for Speedy Dissemination of Special Weather Bulletin / Disaster Warning Message and Determining Strategy includes membership not only from MoDMR's DDM but also from the National Press Club, Bangladesh Television, and Bangladesh Betar (Radio), alongside representatives of BMD, FFWC, the CPP, Drought Forecasting Centre, Geological Survey of Bangladesh, Bangladesh Space Research and Remote Sensing Organization, AFD, telecoms, and natural resources departments. The Committee is responsible primarily for determining methods and strategies for disaster-related message dissemination and for improvement of forecasts and warnings for floods, flash floods, landslides, precipitation, storms, and other events.²¹⁶

The country has built an advanced forecasting system for cyclones and more than 5,500 inclusive, multi-purpose cyclone shelters, discussed later. Improvements in weather forecasting and cyclone tracking using scientific tools help provide accurate warning for coastal communities. Together, these tools provide reliable early warning information and safe evacuation places. Advances have also been made in flood early warning with lead-time expanding from 24–48 hours in 2005 to 3–5 days as of 2022. Flood and cyclone early warning mechanisms have both improved due to installation of Interactive Voice Response, which allows any individual to dial 1090 (toll free) to receive weather forecast and warning messages 24 hours-a-day, every day. Community FM radio is present in hazard-prone areas to deliver updated weather and warning information.²¹⁷

Bangladesh also participates – along with 20 other member-states – in the Regional Integrated Multi-Hazard Early Warning System (RIMES)

for Africa and Asia, an inter-governmental institution that aims to provide early warning of tsunami and hydro-meteorological hazards throughout Southeast Asia and the Indian Ocean region.²¹⁸ In addition to supporting member-states' development of their own EWS, RIMES provides to all member-states' national meteorological and tsunami warning centers localized and customized severe weather information, deep-sea monitoring, and earthquake and tsunami alerts.²¹⁹ As a member-state, Bangladesh has taken advantage of RIMES capacity to build out flood forecasting technology, and it continues to participate in projects to build community-based response plans, share information and warnings regarding Bay of Bengal cyclone tracks, develop seismic risk maps, and begin to understand the long-term climate risk for the whole region of South Asia.²²⁰

Cyclone Preparedness Programme (CPP)

A devastating cyclone struck what would become Bangladesh in November 1970. The high winds and tidal waves that hit Patuakhali, Bhola, and Noakhali districts killed hundreds of thousands of people. Among the failures cited at the time were institutional weaknesses in terms of early warning and public awareness. Following the storm, the UN General Assembly assigned the League of Red Cross and Red Crescent Societies (now the IFRC) to take measures to reduce the damage caused by cyclones in the coastal areas of the then East Pakistan. The result of the League work was the CPP. Early activities focused on 23 sub-districts of Chattogram, Noakhali, and Bakerganj (Barishal). By August 1972, more than 19,000 volunteers were selected, and wireless radio communication among Dhaka, regional offices, and coastal sub-districts was established. Radio workshops were set up in Dhaka, Chattogram, and Barishal to keep signaling devices in operation. Alongside the volunteer training base and radio communications system, the country built earthen forts along the coast; these forts would provide the basic structures for cyclone

evacuation shelters. Based on concerns about the sustainability of a foreign-managed and -funded project, in 1973, the government took over costs of the CPP and ensured that it would be managed jointly by the Government and Bangladesh Red Cross Society (now the Bangladesh Red Crescent Society, BDRCS).²²¹ In 1985, the Government introduced the first SOD, which, along with other provisions, included the specific functions of the CPP with various actions to be taken at different stages of a storm and at all levels from the community to the national government.

CPP is the only organization responsible for warnings in coastal areas of Bangladesh.²²² It works with different international and national organizations such as Save the Children USA, the World Bank, and UNICEF, as well as its former founding agency, IFRC. Moreover, through BDRCS, the American Red Cross provides support for repairing radio stations, establishing or replacing new HF and VHF sets, creating a volunteer database, and establishing online communication.²²³ As of 2022, the CPP's 80,000 volunteers, who provide the "last mile" of EWS coverage, use a tiered flag system, displayed in central marketplaces or village squares, to communicate the severity of a coming storm. They also patrol neighborhoods with megaphones to disseminate warnings, and they will go door-to-door by foot or motorcycle to ensure that the information reaches everyone, including those who are homebound, illiterate, or without access to a mobile phone. In addition, the area covered by CPP shelters has expanded; although they are dedicated to serving as shelters in times of emergency, these structures also serve as community centers, schools, or other gathering places.²²⁴

Flood Early Warning

The FFWC generates flood-related early warning messages in cooperation with BMD and MoDMR's DDM. In many instances, these warnings do not reach at-risk communities in remote areas, and there is a lack of location-specific impact-based flood EWS reaching local audiences.²²⁵ Among the various projects

undertaken by stakeholders, the government's National Resilience Programme is working toward a people-centered, science-based flood EWS in the model of the CPP. As it develops, the Flood Preparedness Programme (FPP) will expand within flood-prone areas following a validation and socialization process. A key obstacle in the FPP is a deficit of trust among Bangladesh and its neighbors who are also riparian states on major cross-border rivers; this lack of trust disrupts information sharing and, therefore, stalls risk assessments that could feed flood early warnings. The Ganges basin is a particular concern due to the prevalence of existing disputes and restrictions on the availability of data and information as countries are often hesitant to share any kind of hydrological information.²²⁶

The Bangladesh Water Development Board, Access to Information Programme, and Google launched a partnership in 2021 to bring the Google Flood Forecasting Initiative to Bangladesh. On its Google Maps-based platform, the initiative covers more than 40 million people in Bangladesh and has been working to extend flood forecasting to the whole country. On the Maps app, users can see a visual overview of data and information on the water levels of current flooding and can get a description of the situation containing specific guidance. Color-coded maps indicate flooded areas, and a click on the map will open a larger, more detailed view, where users can zoom in to understand water levels in specific regions. The feature can be used from any neighborhood across the country by searching for 'flooding' and the name of an affected location on Search or Maps.²²⁷

Landslide Early Warning

In 2021, the country inaugurated a new warning system that can predict landslides with up to a five-day lead time, enough to give vulnerable communities time to prepare. This landslide EWS developed from a partnership between the UN FAO and the Bangladesh government. It uses satellite imagery, rainfall levels, and meteorological data to predict

landslide events and warn residents via email or phone. It was rolled out in Cox's Bazar, an area of significant landslide risk, in May 2021 and replaced a warning system that could make predictions only hours ahead of a potential slide. According to the FAO, the past two decades have seen landslides claim 700 lives in the Chittagong Hill districts that include Cox's Bazar.²²⁸

Climate Early Warning

Given the long-term threat climate change poses for Bangladesh, there are initiatives to integrate long-range climate predictions with forecasting regarding immediate threats not only so that Bangladesh's at-risk and affected communities can take action to avoid loss of life and livelihoods but also to make decisions regarding relocation and resilient development.

The Massachusetts Institute of Technology and Bangladesh's BRAC are developing a Climate Resilience Early Warning System Network (CREWSnet). The first CREWSnet test area is western Bangladesh. The system intends to combine the most recent climate forecasting and socioeconomic analysis with innovative resilience services to drive informed decisions about adaptation and relocation to minimize loss of life, livelihoods, and property from climate change-influenced hazards.²²⁹ The project is based on the fact that climate change is shifting the threat posed by hazards. Impacted communities may not have sufficient information on climate change projections, and they, therefore, cannot make risk-informed decisions regarding recovery or preparedness.²³⁰ The early stages of the system are based on open-source climate and economic impact forecasts, with effects predicted at the 10-km (6.2-mile) scale. In the initial stages of the roll-out, the CREWSnet team is sharing these forecasts at household, community, and regional levels to inform 10 million people in six communities in western Bangladesh.²³¹

Information Sharing

Understanding how to overcome the information challenges that civilian and

military agencies experience during a typical disaster response mission is important. Sharing information is critical since no single responding entity, NGO, international governmental organization, assisting country government, or the host government can be the source of all the required information.²³² Collaboration, information sharing, and networking have been the backbone of successful disaster response and preparation. Disseminating information not only to those in-country and threatened by disaster but also to those responding to assist in the emergency has been crucial to timely, efficient, and effective disaster response. There are many resources, stakeholders, and components to consider before, during, and after a natural disaster. This section will discuss country-specific, humanitarian, regional, government, and U.S. DoD information sources.

Bangladesh Information Sources

Ministry of Disaster Management and Relief

MoDMR is the focal point for execution of the disaster management cycle. Via the Ministry website, responders can find situation reports and other updates. Key details are also collated and disseminated by MoDMR's National Disaster Response Coordination Center (NDRCC), the effective national emergency operations center. The Ministry has developed a mobile phone app – Disaster Alert for BD (Android only), home screen shown in Figure 13²³³ – that, when downloaded, allows users to send and respond to appeals for rescue in times of emergency. It delivers volunteers' and requesters' contact information and location when a volunteer accepts a request. The app contains additional information, such as current disaster alerts and "Do and Don't" checklists for different disasters. Finally, users can find emergency contacts for local authorities, hospitals, shelters, and relief centers.

NDRRC Tel: 880-2-5510-1115 or 880-2-5510-1161

Email: ndrcc@modmr.gov.bd

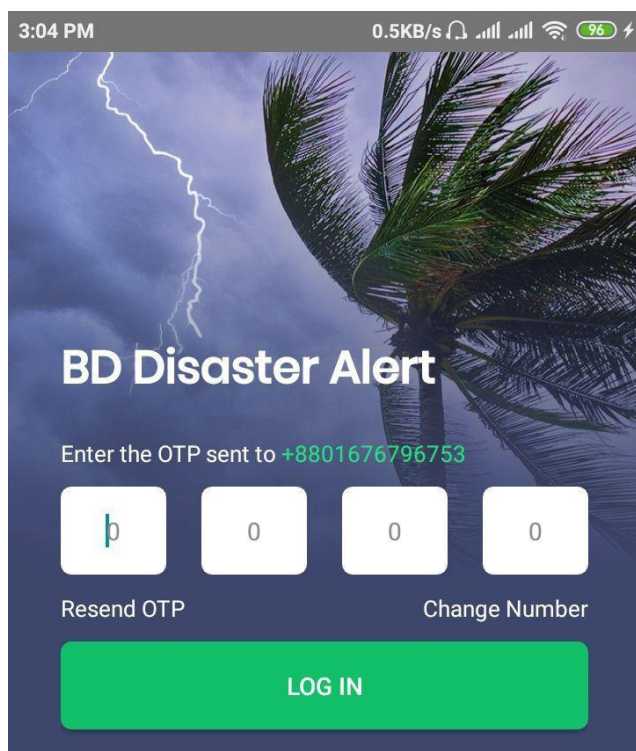


Figure 13: MoDMR's Disaster Alert for BD App

Bangladesh Meteorological Department

BMD's home page maintains current weather and forecast information with dedicated sections for severe weather. It also updates forecasts and warnings via social media.

Web: <https://live4.bmd.gov.bd/>

Facebook: [bmd.gov.bd](https://www.facebook.com/bmd.gov.bd)

Bangladesh Red Crescent Society

BDRCS posts updates on emergencies and operations on its website and its social media accounts.

Tel: 880-2-4831-0188

Email: info@bdracs.org

Web: bdracs.org

Facebook: [bdredcrescent](https://www.facebook.com/bdredcrescent)

Twitter: [@BDRCS1](https://twitter.com/BDRCS1)

Shongjog MSP

The Shongjog Multi-Stakeholder Platform is both a training and networking tool and a platform for exchanging critical messages before, during, and after a disaster. It uses British Government funding to build humanitarian communications capacity in Bangladesh

by bringing together representatives of international, regional, national, and local humanitarian organizations. As of 2023, it has delivered CwC training to 250 humanitarian practitioners from 110 organizations operating in Bangladesh. Membership is open to any organization that works on disaster management in Bangladesh, regularly contributes to the system, runs programs, or utilizes funds. Government agencies with a CwC mandate under the SOD are expected to participate, and other organizations that can represent diverse perspectives or have access to and influence over community networks and systems are welcome as members.

Web: <http://www.shongjog.org.bd/>

Facebook: [commisaid](https://www.facebook.com/commisaid)

Twitter: [@CDACN](https://twitter.com/CDACN)

YouTube: [cdacnetwork](https://www.youtube.com/channel/UCdACN)

Humanitarian Information Sources

UN Office for the Coordination of Humanitarian Affairs (OCHA) Regional Office for Asia and the Pacific (ROAP)

UN OCHA's ROAP seeks to optimize the speed, volume, and quality of humanitarian assistance, and it coordinates emergency preparedness and response throughout the region in support of national governments. ROAP covers 41 countries with whom it partners for coordinated and effective international responses to emergency situations.

Website: <https://www.unocha.org/roap>

For OCHA situation reports, click on "Subscribe" button on bottom of page.

Twitter: [OCHAAsiaPac](https://twitter.com/OCHAAsiaPac)

ReliefWeb

ReliefWeb is a service of UN OCHA. It consolidates information and analysis from organizations, countries, and disasters for the humanitarian community.

A subsection of ReliefWeb is ReliefWeb Response (RW Response). It aggregates operational content from other humanitarian action platforms to provide an authoritative

source of information. The goal is to ensure that humanitarians can share, find, and re-use critical information quickly and efficiently.

Website: <https://reliefweb.int/>

RW Response: <https://response.reliefweb.int/>

PreventionWeb

PreventionWeb is provided by UNDRR to consolidate disaster risk reduction information into an online, easy to understand platform.

Website: <https://www.preventionweb.net/>

International Federation of Red Cross and Red Crescent Societies (IFRC)

IFRC is the world's largest humanitarian organization, comprised of 192 National Societies, including BDRCS, a secretariat in Geneva, Switzerland, and over 60 delegations around the world. The IFRC carries out relief operations to assist victims of disasters and combines this with development work to strengthen the capacities of the National Societies. IFRC's work focuses on four core areas: promoting humanitarian values, disaster response, disaster preparedness, and health and community care.²³⁴ The IFRC Country Office in Bangladesh and sub-office in Cox's Bazar support BDRCS' branches, staff, and volunteers. In recent years, the IFRC has supported BDRCS through an average of two Disaster Response Emergency Fund or Emergency Appeal operations per year, mainly in relation to cyclones and floods.²³⁵

Website: <https://media.ifrc.org/ifrc> and <https://go.ifrc.org/>

International Committee of the Red Cross (ICRC)

ICRC is an impartial, neutral, and independent organization whose exclusively humanitarian mission is to protect the lives and dignity of victims of armed conflict and other situations of violence and to provide them with assistance. It also works to prevent suffering by promoting and strengthening humanitarian law and universal humanitarian principles.²³⁶ ICRC works closely with BDRCS and has key programs assisting displaced Rohingya in the Cox's Bazar area.²³⁷

Website: <https://www.icrc.org/en>

Facebook: @ICRC

Twitter: @ICRC

Global Disaster Alert and Coordination System (GDACS)

GDACS is a cooperation framework among the UN, the European Commission, and disaster managers worldwide to improve alerts, information exchange, and coordination in the first phase after major sudden-onset disasters.

Website: <https://www.gdacs.org/alerts/>

Virtual OSOCC

The Virtual OSOCC is a real-time online coordination tool for disaster response professionals from urban search and rescue teams, national authorities, and regional and international organizations.

Website: <https://vosocc.unocha.org/>

The latest alerts can be found here: <https://www.gdacs.org/Alerts/default.aspx>

To subscribe: <https://www.gdacs.org/About/contactus.aspx>

ThinkHazard!

ThinkHazard! is a website that provides detailed information on a country. Information is provided on Bangladesh regarding hazards, country assessments, projects, EWS, and other resources.

Website: <https://thinkhazard.org>

Humanitarian Country Teams (HCT)

HCT is a strategic and operational decision-making and oversight forum established and led by the Humanitarian Coordinator in each country. It is generally comprised of representatives from UN agencies including the IOM, international NGOs, and the IFRC and the National Red Cross/Crescent Society. During a disaster response, HCTs often produce a Situation Report (SitRep), usually in conjunction with OCHA.

Most HCT SitReps can be found through

ReliefWeb: <https://reliefweb.int/>

Humanitarian Data Exchange (HDX)

HDX is an open platform for sharing data across crises and organizations. Launched in 2014 with the goal of centralizing humanitarian data for easy access and analysis, HDX is managed by OCHA's Center for Humanitarian Data in The Hague.

Website: <https://data.humdata.org/>

Regional Information Sources

Changi Regional HADR Coordination Centre (RHCC)

Changi Regional Humanitarian Assistance and Disaster Relief (HADR) Coordination Centre was launched in September 2014 to support the military of a disaster affected state in coordinating assistance with assisting foreign militaries. It aims to provide open, inclusive, and flexible platforms that allow both regional and extra-regional militaries to work together effectively in a multinational disaster response. Changi RHCC manages the OPERA CIS web portal to broadcast the updated situation status of multinational military disaster responses to minimize duplication and gaps in the provision of foreign military assistance. As a member-state of the Association of Southeast Asian Nations (ASEAN) Regional Forum, Bangladesh is a stakeholder in Changi RHCC's information sharing and coordination activities.

Website: <https://www.changirhcc.org/>

To subscribe to RHCC Weekly and Spot Reports, email: Changi_RHCC@defence.gov.sg

U.S. Government Sources

U.S. Agency for International Development (USAID)

USAID is committed to responding to crises around the world to help people and places most in need. They aim to:

- Promote Global Health
- Support Global Stability
- Provide Humanitarian Assistance
- Catalyze Innovation and Partnership
- Empower Women and Girls

USAID produces a monthly "USAID Newsletter," available digitally: <https://www.usaid.gov/news-information/newsletter>. More information and updates from USAID are available on Facebook (@USAID), Instagram (@usaid), Twitter (@usaid), and YouTube (USaidVideo).

Website: <https://www.usaid.gov/>

USAID's Bureau for Humanitarian Assistance (BHA)

The Bureau for Humanitarian Assistance (BHA) is responsible for leading and coordinating the U.S. Government response to disasters overseas. BHA responds to an average of 75 disasters in 70 countries every year. BHA fulfils its mandate of saving lives, alleviating human suffering, and reducing the social and economic impact of disasters worldwide in partnership with USAID functional and regional bureaus and other U.S. government agencies. BHA works with the international population to help countries prepare for, respond to, and recover from humanitarian crises.²³⁸

USAID/BHA products include SitReps and maps, which are available via email mailing lists as well as via ReliefWeb. Information products are also available on USAID.gov (<https://www.usaid.gov/humanitarian-assistance>)

For BHA updates on a disaster response, ask the BHA representative for the respective DoD Geographic Combatant Command to add you to the email list, if you have a U.S. government email address:

- BHA.INDOPACOM@usaid.gov
- BHA.SOUTHCOM@usaid.gov
- BHA.NORTHCOM@usaid.gov
- BHA.AFRICOM@usaid.gov
- BHA.SOCOM@usaid.gov
- BHA.CENTCOM@usaid.gov
- BHA.EUCOM@usaid.gov

Pacific Disaster Center

Pacific Disaster Center (PDC) has trademarked an early warning and decision support system called DisasterAWARE®. DisasterAWARE® is primarily for disaster management practitioners and senior decision

makers. It supports DRR and best practices throughout all phases of disaster management from early warning to multi-hazard monitoring. It has a collection of scientifically verified, geospatial, data and modeling tools to assess hazard risks and impacts. A restricted version of DisasterAWARE is the EMOPS (Emergency Operations) system, which is specifically for the disaster management community, including government agencies and humanitarian assistance organizations serving at local, state, federal, and regional levels.²³⁹

PDC also provides a public version, Disaster Alert, which offers open access to a world map documenting 18 hazard types.²⁴⁰ Disaster Alert also has a free, early-warning app to receive customizable, maps-based, visual alerts regarding active hazards. The app offers a global notification system covering natural and man-made hazards. It is available on both iPhone and Android.²⁴¹

Website: <https://www.pdc.org/> and <https://www.pdc.org/disasteraware/>

Emergency Operations (EMOPS) system (request account): <https://disasteraware.pdc.org>

All Partners Access Network (APAN)

APAN is the Unclassified Information Sharing Service for the U.S. DoD. APAN provides the DoD and mission partners community space and collaboration tools to leverage information to effectively plan, train, and respond to meet their business requirements and mission objectives. APAN's technology team has been supporting HADR operations for over 15 years.²⁴² APAN has played an integral role in the success of disaster responses, such as the 2015 California Wildfire Response and the 2013 Typhoon Haiyan Response in which they provided organizations and militaries a centralized location to share information, increase situational awareness and decrease response time and duplicated efforts for best practices in HADR services.²⁴³

Website: <https://www.apan.org/>

Joint Typhoon Warning Center

JTWC provides advanced warning for U.S.

Government agencies and organizations.
Website: <https://www.metoc.navy.mil/jtwc/jtwc.html>

Daniel K. Inouye Asia-Pacific Center for Security Studies (DKI-APCSS)

DKI-APCSS is a U.S. DoD institute that addresses regional and global security issues by inviting military and civilian representatives of the U.S. and Asia-Pacific nations to its program of executive education and workshops.

Website: <https://dkiapcss.edu/>

The Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM)

The CFE-DM is a U.S. DoD organization established by the U.S. Congress in 1994 and is a direct reporting unit to USINDOPACOM. CFE-DM provides training and education to help U.S. and foreign military personnel navigate complex issues in disaster management and humanitarian assistance. They produce country focused disaster management reference handbooks, after action reports, best practices, and lessons learned for advancement in response coordination. CFE-DM also works to improve cross-coordination, reduce duplication of efforts, and promote U.S. involvement in civil-military consultations and dialogues with relevant humanitarian and disaster response parties such as UN OCHA and the Changi RHCC. CFE-DM provides resources and updates at its website, as well as via their Facebook (cfedmha) and Twitter (@cfedmha) accounts.

Website: <https://www.cfe-dmha.org/>

Disaster Management Reference Handbooks are available for download at: <https://www.cfe-dmha.org/Publications/Disaster-Management-Reference-Handbooks>

Civil-Military Coordination in Foreign Disaster Relief Missions: Best Practices for Information Sharing is available here: <https://www.cfe-dmha.org/Publications/Best-Practices-Pamphlets>

INFRASTRUCTURE

Given significant economic growth in recent decades, Bangladesh has worked hard to ensure that transport, schooling, communications, and utilities infrastructure reach even the most remote areas of the country, so all Bangladeshis share in the country’s progress. Investments in the coming years will focus on ensuring that the transport and electric power networks are not only connected to neighboring countries but integrate more resilience against disruption by hazards such as flooding, storms, and landslides. School facilities, too, are at increasing risk as climate change influences the hazards already looming over Bangladesh, and involvement of school students and their families in risk assessments and emergency planning are expected to improve outcomes by reducing loss of school days and reconstruction costs.

Transport

Large sections of the transport network are vulnerable to disruption by hazards such as flooding, storms, and landslides.

Passenger and freight transport within Bangladesh relies heavily on roads. Together, roads and inland water transport carry more than 90% of total domestic traffic. Major infrastructure projects have improved

connections across all modes of transport in recent years – e.g., the Padma bridge connecting southern districts to Dhaka and the country’s first metro-rail services, Uttara–Agargaon. However, shortfalls in institutions, investment, maintenance, and law enforcement within the transport sector mean inefficiencies and safety-related losses. Local government, metropolitan, and city governing bodies are responsible for road and bridge development while national agencies dominate rail and maritime ports.

As it continues to try to build regional interconnections, Bangladesh is working on various transport links with China, India, and Myanmar. The most mature connections link India’s central regions with its northeastern provinces via Bangladesh.

Airports

There are 14 airports in the country. Only 10 are in general use; they include the Dhaka, Chattogram, and Sylhet international airports alongside seven regional ones.²⁴⁴ Table 1 provides details of the country’s key airports.²⁴⁵ Four short take-off and landing airports are available for use in times of crisis.²⁴⁶ The Civil Aviation Authority builds, maintains, and supervises airports and regulates air traffic. The national flag carrier, Biman, flies to 26 international and

Airport	IATA/ICAO Code	Runway Length	Surface
International			
Hazrat Shahjalal International Airport (Dhaka)	DAC / VGZR	3,200 × 46 m (10,500 × 150 feet)	Asphalt / Concrete
Shah Amanat International Airport (Chattogram)	CGP / VGEG	2,940 × 46 m (9,646 × 150 feet)	Concrete / Asphalt / Bitumen-Bound Macadam
Osmani International Airport (Sylhet)	ZYL / VGSY	2,950 m (9,678 feet)	Asphalt
Domestic			
Barisal	n/a / VGBR	1,827 × 30 m (5,995 × 100 feet)	Asphalt
Comilla (for emergency use)	CLA / n/a	1,650 m (1,025 feet)	n/a
Cox’s Bazar	n/a / VGCB	2,743 × 38 m (9,000 × 125 feet)	Bituminous Concrete
Jessore	n/a / VGJR	2,438 × 46 m (8,000 × 150 feet)	Asphalt
Rajshahi (Shah Makhдум Airport)	n/a / VGRJ	1,829 × 30 m (6,000 × 100 feet)	Asphalt
Syedpur	n/a / VGSD	1,829 × 30 m (6,000 × 100 feet)	Asphalt
Tejgaon (Air Force Base)	n/a / VGTJ	2,839 × 30 m (9,315 × 98 feet)	Asphalt

Table 1: Codes and Runway Lengths for Bangladesh’s Airports

eight domestic destinations. Several international carriers also serve Dhaka.²⁴⁷

Staff at the Dhaka and Chattogram airports did undergo specific training to prepare them to effectively coordinate and handle the massive influx of emergency supplies that would be expected to flood the country after any major natural disaster. A global joint initiative between international shipping company DHL and the UNDP saw more than 20 airport staff and government officials at both airports trained in 2011 to manage emergency operations, assess local requirements, and create detailed contingency plans.²⁴⁸ A follow-on training or refresher would be required to ensure new staff are prepared.

Biman provides ground handling facilities to all airports and is approved by the Civil Aviation Authority to be the sole ground handler for all foreign carriers' flights. It has appropriate ground handling equipment and an experienced workforce capable of handling all types of aircraft. Cargo storage facilities at Dhaka's international airport are under considerable strain just to handle routine import-export cargo, and it would strain to handle a huge influx of humanitarian cargo. To address this shortfall, the government has decided to allocate land for a "Humanitarian Staging Area" at Purbachal, some 15 km (9.3 miles) southeast of the airport. The WFP Bangladesh and MoDMR will develop and manage the facility and will allow humanitarian organizations and NGOs to use it for managing humanitarian cargo. Plans include connecting the area to road networks including with a direct connection to the airport.²⁴⁹

Seaports

Some 90% of Bangladesh's import-export trade moves by sea.²⁵⁰ Chattogram and Mongla ports operate under their respective port authorities, regulated by the Ministry of Shipping.²⁵¹ Payra port is partially operational while Matarbari seaport is under construction.²⁵² Chattogram caters to 95% of external sea-borne trade movements, 97% of container traffic,²⁵³ and 100% of petroleum products for the country.²⁵⁴

There are two inland container depots. The major depot is at Pangaon, 30 km (19 miles) south of Dhaka on the Buriganga River; Pangaon is linked to Chattogram by three container ships, each with a 120-twenty-foot equivalent unit (TEU) capacity. The second inland depot is located at Kamlapur in southern Dhaka, adjacent to the railway, and it plays a minor role. Most container cargo travels by road between Dhaka and Chattogram.²⁵⁵

Chattogram Port

Latitude: 22.3091° N

Longitude: 91.8018° E

The principal port of Bangladesh, Chattogram (or Chittagong) port was initially founded in 1887 on the right bank of the Karnafuli River, 9 nautical miles from the shore of the Bay of Bengal.²⁵⁶ During Fiscal Year 2022, the port handled 11.8 million tons of cargo, 3.25 million TEU of containers, and 4,231 ships.²⁵⁷ Before planned improvements in 2023, the port could handle vessels of 8.5-9.2 m (27.9-30.1 feet) draught and 190 m (623 feet) maximum length overall (LOA). Capacity at any one time is 6,000 TEU of containers, 60,000 metric tons of general cargo, or 2,000 cars. There are 31 berths. Overall container storage capacity is 38,917 TEU across 22 storage yards and a total of 900 reefer points. There are 14 × 40-ton quay gantry cranes and 2 × 84-ton harbor cranes as well as 21 × 44-ton rubber-tired gantry cranes; other mobile handling equipment is available.²⁵⁸

In 2017 and again in 2022, Chattogram port served as an entry point for humanitarian cargo arriving in Bangladesh from the United Nations Humanitarian Response Depot (UNHRD) in Malaysia. In 2017, 1,472 tons of food, clothing, and medical items were transshipped at the port for distribution in Cox's Bazar to tens of thousands of Rohingya refugees.²⁵⁹ Then, in 2020, at the beginning of the COVID-19 pandemic, the UNHRD sent 19 containers with 30 Mobile Storage Units, 12 generator sets, a forklift, water tank, lighting equipment, and furniture to support implementing partners,

WFP and IOM, which were working in and around Cox's Bazar.²⁶⁰

Mongla Port

Latitude: 22.50° N
Longitude: 89.59° E

Situated at the confluence of the Possur and Mongla Nulla rivers, Mongla (formerly Chalna) port is 71 nautical miles upstream of the Bay of Bengal where it is well-protected by the Sundarbans mangrove forest. The port is connected by river and road to the country's northern areas. Anchorages and loading/unloading facilities can host 33 ships at any one time.²⁶¹ Mongla's capacity as of 2022 was 10 million tons of general cargo, 100,000 TEU of containerized cargo, and 20,000 cars.²⁶² The port can accommodate vessels up to 225 m (738 feet) LOA with varying drafts among the 34 berths. Several of the berths are either privately managed or dedicated to cement or petroleum products. There are five berths that handle both general cargo and container ships of up to 5 m (16.4 feet) draught.²⁶³

Payra Port

Latitude: 21.9896° N
Longitude: 90.2781° E

Payra port was inaugurated in 2013 to develop trade in the central regions of the country. Over the short term, the Payra Port Authority oversaw offloading of cargos from motherships and transport of them to the hinterlands through river routes.²⁶⁴ The port's first terminal, Charipara, is on the 75-km (46.6-mile) Ravanabad channel in Patuakali district; it can accommodate three mother vessels of up to 200 m (656 feet) LOA. From March 2023, the port reached full operational status when it was handed control of a 10.5-m (34.4-foot) deep,²⁶⁵ 16-m (52.2-foot) wide channel serving container and other terminals. The port handles grains, cement, fertilizer, and other bulk cargo transported onward to Dhaka through internal waterways.²⁶⁶

Matarbari Port

Latitude: 21.70° N
Longitude: 91.87° E

Matarbari deep-sea port, in Cox's Bazar, is expected to be operational by 2026 when it will be able to serve vessels over 8,000 TEU in capacity. The new port, just 34 nautical miles from Chattogram port, is expected to relieve some congestion at the country's main port. As of 2023, construction of the channel, which is 250-m (820-foot) wide, 18.5-m (60.7-foot) deep²⁶⁷ and 15-km (9.3-mile) long, was complete.²⁶⁸ Two breakwaters are also complete, and tenders are out for construction of various jetties and other facilities.²⁶⁹ In the second phase of construction, the port will have three jetties ready for container handling and four to six jetties for multipurpose use by 2028 with a capacity of 2.8 million TEU and 2.5 million tons of cargo per year. After the completion of the final stage, slated for 2035, the port will have the capacity to handle 4.8 million TEU of containers and 16-38 million tons of bulk cargos.²⁷⁰

Roads

The Roads and Highways Department (RHD) of the Ministry of Road Transport and Bridges manages approximately 21,000 km (13,000 miles) of road and 4,659 bridges. RHD also operates 161 car ferries at 81 crossings, 13 of which are on national highways, 11 on regional highways, and 57 on feeder roads. The Local Government Engineering Department (LGED) oversees the remaining 302,000 km (187,600 miles) of roads,²⁷¹ at least half of which are dirt.²⁷² More than half of the entire road network is exposed to flooding and other natural disasters.²⁷³ A map of Bangladesh's primary (red), secondary (orange), and tertiary (yellow) roads is shown in Figure 14.²⁷⁴

Traffic safety is a significant problem, even when weather and road conditions are normal. More than 3.4 million vehicles are present on roadways, not counting three-wheelers and other locally-built motor vehicles.²⁷⁵ According to police, 5,088 people were killed and 4,709 people

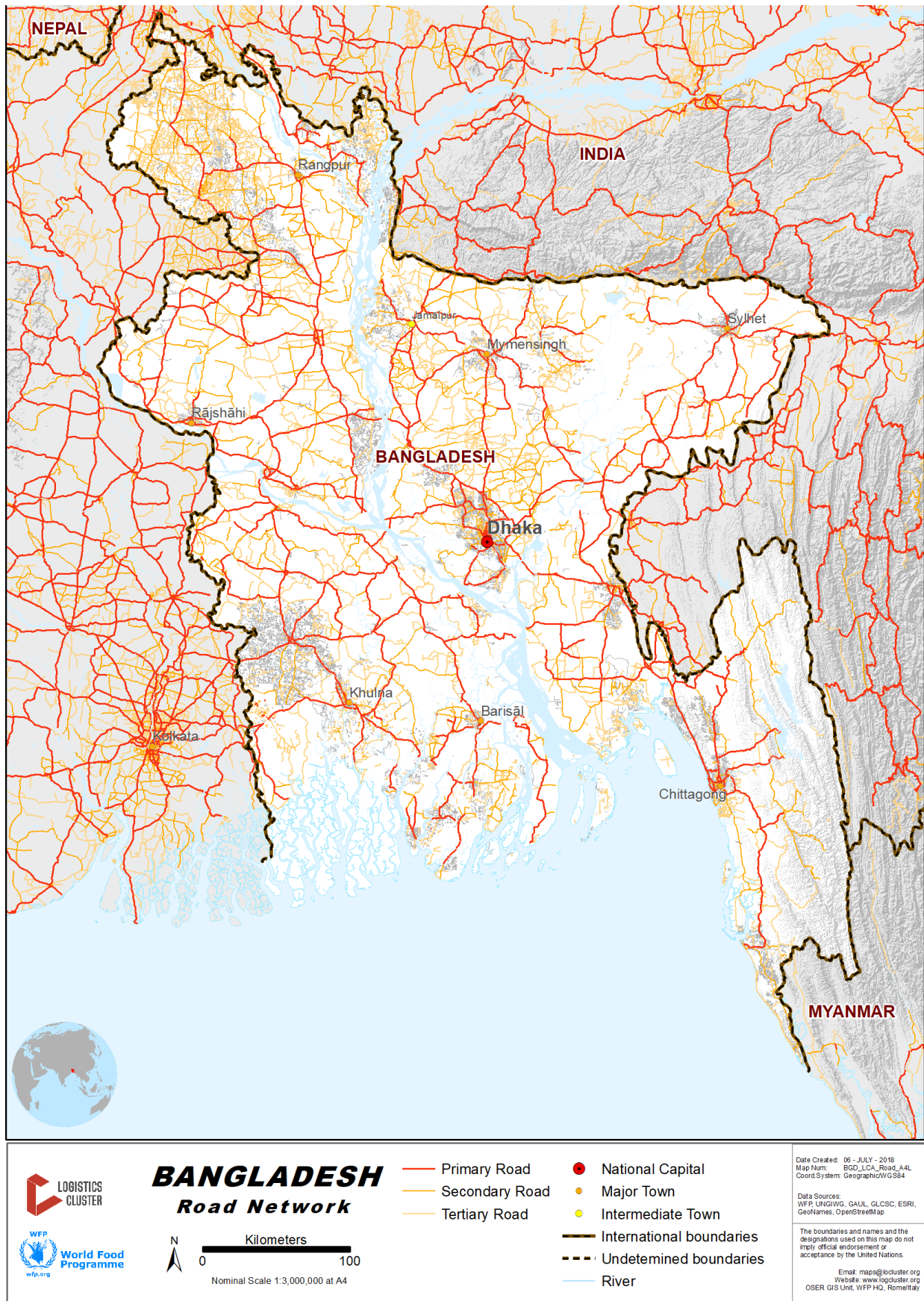


Figure 14: Roads of Bangladesh

were injured in 5,472 road accidents in 2021; the figures for 2020 were 3,918 killed, 3,826 injured, and 4,198 accidents, and for 2019, they were 4,138 killed, 4,411 injured, and 4,147 accidents. By September 2022, police had reported 3,512 people killed and 3,754 injured in 4,119 road accidents for the year to date.²⁷⁶ Traffic in Bangladesh moves on the left-hand side of the road, as in Japan and Australia.

Bangladesh has the potential to become a transport and transshipment center serving regional traffic among Bhutan, China, India, Nepal, and Myanmar. With the opening of the Bhangabandhu Bridge over the Jamuna River and the Padma Bridge over the Padma River, the Dhaka–Chattogram transport corridor and other strategic transport corridors can facilitate trade. Bangladesh's roads would be critical components linking the Chattogram and Mongla ports to northeastern India, Bhutan, and Nepal. Bangladeshi national highways are all 2-lane and are congested. They were also built based on an axle-load limit of 8.2 tons compared with a 10.2-ton axle load limit in India, Nepal, and Bhutan. India has now adopted 12-ton axle load limits. In addition to these differing limits, most trucks used in neighboring countries are overloaded and could be problematic if they were to move along Bangladesh's road network. Already, 70-80% of all overland trade between Bangladesh and India passes through the Benapole/Petropole border point despite narrow, congested roads.²⁷⁷

Railways

The Ministry of Railways' Bangladesh Railways operates a 2,935-km (1,824-mile) network with 440 stations; it serves Chattogram, Sylhet, Khulna, Mymensingh, Bogra, Rajshahi, and Dinajpur, all from Dhaka. There is a connection to India's Kolkata.²⁷⁸ The railway network is shown in Figure 15.²⁷⁹ Bangladesh Railways operates a fleet of 300 diesel locomotives, half of which were acquired more than 20 years ago and have exceeded their expected life. Bangladesh Railways also operates 1,577 passenger coaches and 8,689 freight wagons.²⁸⁰

There are major obstacles to rail network expansion. First, there are three different gauges in use throughout the country – 659 km (409 miles) of broad gauge, 1,808 km (1,123 miles) of meter gauge, and 409 km (254 miles) of dual gauge. Second, there are few rail bridges across the Jamuna River (Brahmaputra), which divides the rail network into Western and Eastern Zones of operations.²⁸¹ Third, there are three sleeper types and tracks of varying conditions. What is more, soft, generally alluvial, ground conditions increase the cost of rail construction.²⁸²

Rail freight has been vastly outcompeted by the expansion of the country's road network that carries goods and people to all corners of Bangladesh. Nonetheless, Bangladesh Railways does have a key role in transporting containers that use the country's inland ports. The Kamapur (Dhaka) Inland Container Depot allows clearance of container traffic.²⁸³ Another Inland Container Depot is slated for Dhirasram, Joydevpur, Gazipur. Construction is planned to begin in 2024. Dhirasram is designed to handle 500,000 TEU yearly.²⁸⁴ Meanwhile, Pangaon Inland Container Depot is connected by rail and road and is a hub between Dhaka and India's South Bengal through Benapole Land Port. Pangaon has 180 m (591 feet) of 26-m (85-foot) wide jetty and 55,000 m² (592,000 square feet) of yard. The terminal has a storage capacity of 3,500 TEUs of containers and can handle 116,000 TEU of containers annually.²⁸⁵

Waterways

Inland water transport is the cheapest mode of transport but has long been highly unregulated with few resources allocated by the government. Nonetheless, given its many kilometers of navigable river, the country has recently worked to develop its rivers as part of multi-modal freight and passenger transport. In times of emergency, long-range transport of relief items is unlikely to use inland waterways, but local distribution to remote areas may have to rely on small boats and rivers.

The total length of rivers in Bangladesh is estimated at 24,000 km (258,333 miles), of which

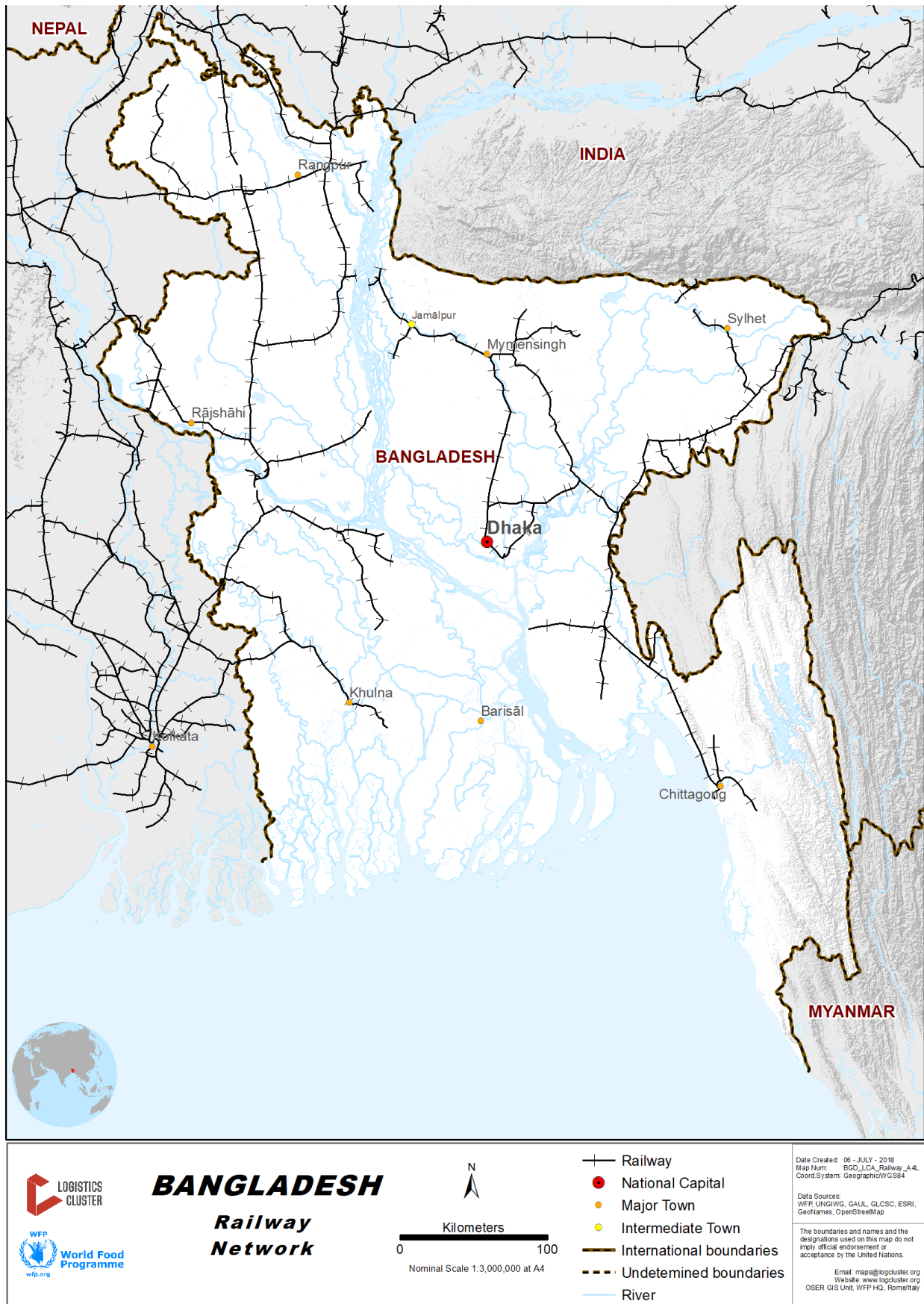


Figure 15: Railways of Bangladesh

6,000 km (3,728 miles) are accessible for movement of modern mechanized vessels during the monsoon season and 3,900 km (2,423 miles) are navigable year-round. Figure 16 shows the major rivers that cross Bangladesh.²⁸⁶

River transportation is cheap and preferred by many in southern regions, and the Padma, Burigandha, and Meghna rivers are commonly used by vessels of more than 1,000 tons. Trans-boundary river shipments do occur with India at the Khulna and Comilla river crossings.²⁸⁷ Several hundred thousand smaller, traditional vessels play a key role as a rural mode of transport. Inland ports and other facilities include 11 inland ports, 23 coastal island ports, 133 launch stations, and more than 1,000 minor landing points located in rural areas.²⁸⁸ The Ministry of Shipping's Bangladesh Inland Water Transport Authority (BIWTA) is responsible for maintenance of river ports and channels while state-owned Bangladesh Inland Water Transport Corporation (BIWTC) provides passenger and cargo services in inland waterways and coastal areas.²⁸⁹

Key river ports

- Ashugonj River Port in eastern Bangladesh on the Meghna River, a regional transshipment center linking Bangladesh and India, is a terminal for fertilizers, chemicals, and power plants, and it hosts several warehouses and shipyards.
- Dhaka River Port on the Buriganga has a potential emergency WFP handling capacity



Figure 16: Rivers and Waterways of Bangladesh

of 500 metric tons per month. Most of the cargo discharged at the port is bulk – e.g., construction materials and food grains. Dhaka river port has a fuel depot with a capacity of 60 metric tons. The port has six berths and 10 anchorages, all with a draught of 3.66 m (12 feet) and the ability to accommodate vessels of 220-240 m (720-790 feet) LOA. There are shore cranes and covered and open storage.

- Narayanganj River Port on the Shitalakhya can handle up to 55 metric tons of cargo monthly. Most cargo is coal ash from power plants along with some construction material and food grains. There is a fuel depot with a capacity of 75 metric tons. Loading and discharge operations at the port are outsourced and unorganized. The port can

handle vessels with a draught of 3.66 m (12 feet) and that are 180-220 m (590-720 feet) LOA. There is one 2-metric ton shore crane and some covered and open storage.

- Khulna River Port on the Bhairab River can handle 2,500 metric tons of cargo monthly. There are four berths and six anchorages all with a draught of 3.66 m (12 feet) and the ability to handle vessels 150-280 m (492-919 feet) LOA. There is no handling equipment or storage space.
- Chandpur River Port on the Dakatia River can handle 6.5 metric tons of cargo monthly with a potential to handle significantly more emergency cargo if augmented. There are three berths and five anchorages with a draught of 3.66 m (12 feet) and the ability to handle vessels 110-120 m (350-390 feet) LOA. There is no handling equipment and minimal, open-air storage with no covered storage.
- Barisal River Port on the Arialkhan has a total capacity of 11 metric tons per month, a capacity that, with augmentation could reach 500 metric tons per month to support emergency relief. The port has five berths and eight anchorages with a draught of 3.66 m (12 feet) and the ability to welcome vessels 190-200 m (623-656 feet) LOA.²⁹⁰

Warehouses in main ports are usually built by BIWTA and leased to a port operator or another private entity. A port operator or a private developer may be authorized to build its own warehouse as well as jetties and to benefit from a reduced lease fee. Public jetties (101 in eight main ports) are mostly used for passengers while private jetties (178 in five main ports) are used for cargo.²⁹¹

Schools

Before the COVID-19 pandemic disrupted the 2020 school year, Bangladesh had achieved high net enrollment for elementary education, topping 90% in 2019 compared with 60% in the mid-1980s. The adult literacy rate had also surged from 35% in 1991 to 73% in 2017. In a bid

to consolidate progress and improve outcomes, the Bangladesh government adopted reforms in 2010; these reforms introduced one year of compulsory preschool and extended the length of compulsory, free education through Grade Eight. The four remaining years, secondary education, are not compulsory, and there are tuition fees. Despite these reforms, the education sector confronted sustained headwinds even before the pandemic as government worked to build thousands of schools, including in remote rural areas, to ensure sufficient teacher training, and to stem dropout rates that had neared 20% of elementary pupils and topped 40% of girls leaving before completing Grade Ten.

The national Ministry of Education (MOE) oversees secondary and tertiary education while the Ministry of Primary and Mass Education (MPME) covers both primary schooling and outreach to out-of-school children and adults. MOE centralizes policy for the eight Division Boards of Intermediate and Secondary Education while MPME works through hundreds of local field offices throughout the country. There is a separate, nationwide board for religious Muslim schools, madrasahs, and a Technical Education Board that develops curricula and administers graduation examinations in technical and vocational education and training (TVET).

The school year runs January to December. The language of instruction in primary and some secondary levels is Bangla although English is introduced as a subject in primary school. Bangla and English are used in higher education. Secondary students can select from general, religious, and technical streams of education with specializations in business, humanities, science, or other tracks. Although they enroll less than 10% of secondary school pupils, TVET programs are crucial for filling the ranks of Bangladesh's working-class jobs. Polytechnic institutes offer 2-4-year diplomas in disciplines such as engineering, marine technology, nursing, allied health fields, agriculture, or hospitality. Madrasahs are either independent schools devoted to Islamic study (13,000 schools) or state-regulated institutions that teach the

standard school curriculum in addition to religious studies (9,300 schools); as of 2015, the official count of madrasah students was 3.8 million, mostly males.

The MOE's most recent count of higher education institutions found nearly 3,000 of them, mostly affiliated with Bangladesh's National University (NU), which operates as a network that enrolls 2.8 million students in 2,300 predominantly private colleges. There are an additional 44 public and 103 private universities.²⁹²

Disaster Risk Reduction in the Education Sector

Disruption of children's education is common in Bangladesh when floods and cyclones damage school buildings, educational materials, and roads, thereby impeding access to school facilities. Thus, DRR in the education sector encompasses both building resilience in the sector to lessen disruptions to education and building DRR into curricula to allow the entire school community – children included – to integrate lessons learned into other parts of their lives. From 1994, the National Curriculum and Textbook Board has assimilated hazards and disaster management tasks in the education curriculum from Grade Five through Grade Twelve in the expectation that such school-based learning will eventually involve families and communities in DRR; subsequent surveys have found that women who participated in formal schooling in the past 25 years have some disaster management exposure and can help their communities make choices during disaster events.²⁹³ More recent textbook subjects include practical aspects such as tree planting, earthquake and fire drills, First Aid, school and community risk assessments, and a feedback/complaint process.²⁹⁴ In 2013, the key directorates under MOE and MPME along with MoDMR's DDM jointly developed a framework for DRR and Education in Emergencies (EiE). The framework targets three outcomes: safe learning facilities, school disaster management, and risk reduction and resilience

education. While the first outcome is related to facilities and infrastructure, the second seeks to maintain safe learning environments and planning for educational continuity in times of disaster, where EiE fits in, and the third targets reductions in household, school, and community vulnerability.²⁹⁵

In 2015, under MoDMR's Comprehensive Disaster Management Programme (CDMP), DRR and CCA in the education sector underwent additional pilot projects:

- Elementary Grades (3-8) - Curriculum development and extra-curricular activities, to include textbooks developed by MPME, Primary Training Institute, and Directorate of Primary Education
- Secondary Grades (9-12) - Curriculum development and extra-curricular activities, to include textbooks developed by the MOE, teacher training colleges, NU, Secondary and Higher Secondary Boards, and the Technical Education Department
- Tertiary – Revision and inclusion of DRR and CCA in existing curricula/courses, introduction of under-graduate and graduate degrees focused on disaster management, and e-learning, reference books, and reading materials²⁹⁶

Most recently, during 2021 and 2022, the CPP attempted to extend the “last mile” approach to schoolchildren by initiating the Prostoot or “learning through playing” program in some secondary schools. The schools run dedicated disaster preparedness days, where they do evacuation simulations. Children also learn basic First Aid and form disaster management teams.²⁹⁷

Alongside the formal government curricula and in-school plans, NGOs have long run community DRR and CCA programming that focuses on children and school days in the expectation that knowledge and practices will spread to the community. Key among these developments was the 2017 release of Save the Children Bangladesh's Bangla-language textbooks for Grades One through

Five. However, these types of stand-alone DRR textbooks are rarer than textbooks that integrate DRR into lessons on geography, history, or social studies.²⁹⁸

Bangladesh's experience with COVID-19 disruptions to the education sector serve as an experience that many – in Bangladesh and elsewhere – are examining to understand ways to improve DRR in the education sector. The MOE and MPME had, before the COVID-19 pandemic, developed the EiE framework to plan for disaster response. Much of this plan could be applied, particularly in terms of the processes to respond; however, the National Response and Recovery document observed that the education system was not prepared for such a significant crisis and recognized the need for a nationwide coordinated approach rather than a series of ad hoc initiatives that prevailed at the start of the response.²⁹⁹

The COVID-19 pandemic severely disrupted the school system. Schools were closed from March 2020 through September 2021, and a UNICEF study in 2021 found that two-thirds of Bangladesh's 36.5 million students across all levels of education had not been reached by the government's remote education programming.³⁰⁰ Another study found that Bangladesh's heavily classroom-based education system meant that most students had no past experiences with technology-based online education. Moreover, socio-economic and technological limitations meant unstructured and disorganized efforts by both students and teachers.³⁰¹ Early on in the pandemic, the Government put in place educational TV programming for primary and secondary students. However, only 56% of households have access to a TV. To bridge this gap, the UN Educational, Science, and Cultural Organization (UNESCO) Capacity Development for Education Programme supported the Government to roll out a nationwide radio-based distance learning program for primary students. The "Ghore Bose Shikhi" programs launched in August 2020. Finally, the Government launched a toll-free hotline to offer students a way to interact with teachers. A group of eight teachers

were tasked with answering incoming calls and providing students with clarifications and lesson feedback.³⁰²

Although students bore the brunt of education gaps during the pandemic, a UNESCO study also found shortfalls in the way the government-led education sector response supported teachers. One survey found that teachers cited a lack of directives on how to act, and most teachers tried to manage new delivery processes with little support. Another key issue is that 65% of primary school teachers are female, and they will have confronted an additional challenge during pandemic shutdowns as they – as other females worldwide – experienced a boost in their family and household duties that cut into dedicated time to work supporting students or to take part in training.³⁰³

Founded under MoDMR's DDM, the National Disaster Management Research and Training Institute is tasked with research and capacity building on DRR and CCA. In addition to offering targeted training for Bangladesh's existing disaster managers, the Institute allows the country to train new disaster management professionals to fill out the ranks of government agencies and to deliver expertise and practical information via NGOs and corporate bodies. DDM runs "training-the-trainer" courses at the Institute.³⁰⁴ Beyond this institution, under MoDMR's CDMP, tertiary education institutions became partners and stakeholders in the learning strategy to ensure the country has sufficient disaster management professionals to provide a labor and expertise base for on-going DRR and CCA. Table 2 describes the focal point for each CDMP partner that has incorporated DRR in the education system; these focal points conduct research, deliver various course and degree programs, and ensure integration of DRR themes in other programs' curricula and course materials.³⁰⁵

Communications

The Bangladesh Telecommunication Regulatory Commission (BTRC) is the regulatory body responsible for overseeing

University	Program Notes
University of Dhaka	There are three focal departments: Institute of Disaster Management and Vulnerability Studies, Department of Geography and Environment’s Centre for Disaster Studies, and Department of Disaster Science and Climate Resilience. The University of Dhaka delivers a professional certificate course, a diploma course, and a Masters in Disaster Management.
University of Rajshahi	Institute of Environmental Science is the focal point with professional certificate courses, a diploma course, and Masters in Disaster Management.
Jahangirnagar University	There are two focal departments: Department of Environmental Science and Department of Geography and Environment; they offer undergraduate and graduate courses in Disaster Management.
Bangladesh Agricultural University, Mymensingh	There are three focal departments: Department of Environmental Science, Graduate Training Institute, and Department of Agricultural Extension Education. They oversee a professional certificate course in Disaster Management.
Khulna University	There are three focal disciplines: Environmental Science, Urban and Rural Planning, and Biotechnology and Genetic Engineering; they deliver a Professional Certificate course, a Diploma course, and a Masters in Disaster Management.
Patukhali Science and Technology University	Department of Environmental Science and Disaster Management is the focal point with a Professional Certificate course, a Bachelor of Science and a Master’s degree in Disaster Management.
Mawlana Bhashani Science and Technology University, Tangail	Department of Environmental Science and Resource Management is the focal point with a professional Certificate course.
Shahjalal University of Science and Technology, Sylhet	Department of Environmental Engineering is the focal point with a professional Certificate course.
North South University	Department of Environmental Science and Management offers graduate and post-graduate programs on disaster management and environmental development issues.
Independent University Bangladesh, Dhaka	Department of Environmental Science and Management is the focal point for undergraduate and graduate certificate courses. The University also offers a Master of Science (M.Sc) in Climate Change and Development in collaboration with the International Centre for Climate Change and Development.
BRAC University, Dhaka	Post-Graduate Programme in Disaster Management is the focal point for research and the Masters in Disaster Management.

Table 2: Universities Offering DRR and CCA Education in Bangladesh

telecommunications and any related information and communications technology (ICT) issues. Established under the Bangladesh Telecommunications Act of 2001 (amended, 2010), BTRC acts as an auxiliary of the Ministry of Post and Telecommunications, which is responsible for the regulation of the telecommunications sector.³⁰⁶ The Ministry of Information and Broadcasting (MIB) is the lead institution establishing policies that govern media outlets and individual journalist behaviors. MIB issues licenses that allow media organizations to begin legal operations while BTRC assumes the lead technical role for assigning frequencies to radio and TV broadcasters.³⁰⁷

The ICT sector has benefited from government efforts to expand fiber-optic networks into ever more remote areas. Thus, internet usage is rapidly increasing despite lingering challenges with quality and speed of access. According to the Bangladesh Association

of Software and Information Services, over 1,500 software and information technology companies are registered in the country. The ICT sector, excluding telecoms, employs some 1 million professionals.³⁰⁸ Despite growing economic reliance on telecommunications for business, the government has partially restricted internet and communication services during protests, elections, and tense political moments. At the same time, the mass media sector is said to be struggling as the state attempts to control and regulate media, newsrooms fall behind the digital transformation, and partisan ownership structures drive censorship.

Telephones

Fixed-line subscriptions: 587,476
 Mobile subscriptions: 181,021,227

Mobile phone usage vastly outstrips landline use. There are fewer than 1 landline subscription per 100 inhabitants but an estimated 107 mobile

lines per 100 inhabitants, as of 2021.³⁰⁹

Bangladesh Telecommunications Company Limited (BTCL) is the legacy landline telephone operator and holds various service licenses, including the public switch network, the international gateway, interconnection exchange, national telecommunications transmission network, and various internet elements, including internet protocol telephony service. BTCL delivers all landlines and continues to lose customers due to expansion of the mobile network, the high cost of landline calls, and public dissatisfaction.³¹⁰

Some estimates report that Bangladesh has mobile voice and data coverage over 99% of the country, mostly via wireless networks.³¹¹ Users have four options for mobile connections. At the end of June 2022, GrameenPhone had the largest market share at nearly 46%; it was followed by Robi with nearly 30% of the market, and Banglalink with 21%. State-owned TeleTalk holds the remainder of market share. In December 2021, TeleTalk launched 5G service in some areas of Dhaka, Savar, and Gopalganj. GrameenPhone, Robi, and BanglaLink also acquired 5G spectrum in March 2022, and the BTRC instructed service providers to start test runs within six months.³¹² In terms of hardware, more than 95% of Bangladeshi mobile telephone users have Android handsets, and fewer than 4% use Apple handsets.³¹³

The telecom sector experienced an explosion in mobile data usage during the COVID-19 pandemic, a time when many consumers were being forced to curb spending. The demand on data grew so swiftly that Bangladesh came close to running out of bandwidth; at the start of 2020, Bangladesh was consuming around 900 Gigabits per second (Gbps) on average, well below the 2,642 Gbps capacity of its submarine cables, but usage ballooned to over 2,300 Gbps during the pandemic. Bangladesh began planning to add 7,200 Gbps capacity when the SEA-ME-WE-6 submarine cable goes into service in mid-2024. In the meantime, the sudden upsurge in downloads forced the state-run Bangladesh Submarine Cable Company Limited to scramble

for alternatives. One upshot was premium prices paid at an auction for spectrum in the 1800 and 2100 Megahertz bands, most of which goes to LTE services.³¹⁴

The country is currently served by the SeaMeWe-4 and SeaMeWe-5 fiber-optic submarine cable systems that provide links to Europe, the Middle East, and Asia; there are six satellite earth stations.³¹⁵

Internet Access

Internet users: 124.21 million (75% of population)

In May 2022, BTRC reported that 113.21 million people could access the internet via mobile phone service providers, which began offering faster 4G technology for mobile networks in February 2018. The remaining 11 million internet users obtain service through a traditional internet service provider (ISP).

Government programs have sought to develop and expand ICT networks. Launched in 2010, the National E-Government Network Project aims to provide networks to thousands of government offices and schools. The project is nearing completion and will ensure that internet providers and government institutions can bring high-speed broadband internet to over 68,000 villages and millions of subscribers. In January 2022, the government announced plans to connect every village with fiber-optic cable by 2025. Another project undertaken by BTCL in February 2021 aims to expand the company's internet protocol network, an expansion that would pave the way for greater rural broadband connection and eventual 5G implementation. As part of the government's Digital Bangladesh program, more than 8,200 Union Digital Centers were established as of November 2021; they were intended to provide low-cost internet access to government and non-government service portals and related e-services for low-income and other underserved communities, such as rural women and people with disabilities.

According to Ookla, a global internet consultancy, median mobile internet speeds

were 13.95 megabits per second (Mbps) in 2023, while median fixed broadband speeds were 34.85 Mbps.³¹⁶ After years of stagnating speeds, in November 2021, the BTRC indicated it was considering increasing the minimum speed thresholds for mobile internet and fixed broadband internet connections to 15 Mbps and 20 Mbps, respectively. Still, poor infrastructure sometimes hampers connectivity for internet users. Moreover, many lower-income people in rural areas and women either cannot afford quality internet or are blocked by their families from mobile handset ownership.

Although the government manages the fiber-optic infrastructure connecting Bangladesh with international undersea cables, the majority of the gateways and internet exchange points are privately owned and managed. As of June 2022, the BTRC reported 34 licensed International Internet Gateways and 127 licensed ISPs operating nationwide. It showed an additional 491 ISPs operating at the division and district levels and 2,221 ISP businesses at the subdistrict level.

The Ministry of Post and Telecommunications has, on occasion, reported restrictions or technical disruptions to internet access in accordance with law enforcement agencies during periods of civil unrest. The process for restricting internet content lacks transparency, and there is no independent appeals process in place for blocked websites or content removal orders. The government periodically asks private companies to remove content. Facebook, Google, and TikTok all reported restricting access to hundreds of items in the second half of 2021; requests sought removal of content that violated local laws such as defamation, government criticism, and religious offense. The BTRC censors content primarily by issuing informal orders to domestic service providers, which are legally bound by their license and operations agreements to cooperate.

While Bangladesh's marginalized groups are inadequately represented in the mainstream media, the popularity of social media and news websites has brought new voices to the

fore. However, the blocking of social media platforms and communications apps has at times threatened the diversity of online content, though many people use virtual private networks to bypass blocking. Media outlets, social media platforms, blogs, and websites represent diverse interests. For example, sexual and gender minority people have turned to online platforms as a safe space to express their opinions and experiences in response to broad discrimination. Other marginalized groups, such as religious minorities, have been the targets of offline violence due to mis- and disinformation spread on social media platforms.

In Bangladesh, individuals are frequently penalized for online activities that are protected under international human rights standards. The government does not regularly disclose the number of arrests made under the Digital Security Act (DSA, 2018). According to research by the Centre for Governance Studies, over 2,200 people faced DSA charges in the period from January 2020 to February 2022, including 69 online journalists. Rights organization Ain O Salish Kendra identified over 1,100 DSA cases lodged in 2021 against online activists, journalists, and alleged government critics. According to free media advocacy group Article 19, 40% of cases filed under the DSA were lodged for slander or for making indecent comments about the prime minister, other ministers, or other influential people. Data from the government's Cyber Crime Tribunal shows that nearly 2,000 cases were filed under the DSA between October 2018 and October 2020. One survey found that most complaints were filed by Awami League activists against critics of the party's leaders.³¹⁷

Mass Media

As of 2020, Bangladesh had licensed 45 private television channels, 28 FM and 32 community radio stations, 1,248 daily newspapers, and more than 100 online news portals.³¹⁸ However, not all license holders operate functioning media outlets, and the economic impact of the COVID-19 pandemic alone saw 250 newspapers

shutter after they were unable to pay their staff.³¹⁹

Television is the most popular medium for information and entertainment,³²⁰ and a 2021 survey found that 75% of Bangladeshis prefer to get their news from TV.³²¹ However, there are gender differences with nearly two-thirds of women reporting that they rely on TV news versus one-third of men doing so. This reflects gender disparities in mobile telephone ownership that allows men easier and more consistent online access.³²² Television reaches more than 50 million people across the country. This reach represents a mix of state- and privately-owned channels, many of which are distributed via cable or satellite systems. State-owned Bangladesh Television (BTV) broadcasts across various media,³²³ and it is the sole television station to have national terrestrial coverage.³²⁴ The government also owns Bangladesh Betar, the major national radio channel. There are some private FM radio news channels.³²⁵ Newspapers in both Bangla and English remain common; most are privately-owned and outspoken on political issues.³²⁶ Despite the popularity of radio and newspapers, social media retains the second spot for where Bangladeshis get their news; newspapers were the first choice of only 8% of respondents to a 2021 survey of news consumers. Prothom Alo, a Bangla-language hard-copy and on-line daily paper, is the single most commonly mentioned outlet when people are asked where they consume news and what news outlet they trust.³²⁷

Journalists and media outlets report facing many forms of pressure, including frequent lawsuits, harassment, and serious or deadly physical attacks. Journalists have been arrested or physically assaulted for critical reporting on the government. The 2018 DSA allows the government to conduct searches or to arrest individuals without a warrant and criminalizes various forms of online speech.³²⁸ Regulatory constraints affect the ability of online outlets to publish. As of September 2020, based on an amendment to the 2017 National Online Media Policy, broadcasters and newspapers must register their online portals separately from the

rest of their businesses. The government set the registration fee for new sites at BDT10,000 (US\$114) and the annual renewal fee at BDT5,000 (US\$57). As of October 2021, the MIB reported it had approved a total of 259 online outlets, with 2,000 applications under process.³²⁹

Post

Bangladesh Post falls under the Ministry of Post and Telecommunications, Division of Posts and Telecommunications. It delivers postal and financial services across the country with the ability to deliver documents and parcels anywhere in the country in 3-5 days³³⁰ via its 8,500 post offices.³³¹ The service is divided into five geographic “circles,” each of which has its own Postmaster-General.³³² As part of a Division-wide effort to digitize postal services, in 2017, Bangladesh Post launched its digital wallet, Daak Taka; not only will it allow all Bangladeshis to use their standard postal banking online, but it was expected to extend banking services to unbanked people across the country.³³³ Major shippers FedEx, DHL, and UPS deliver international parcels to Bangladesh.

Utilities

The extension of electric power, water, and sewerage services in Bangladesh has been a challenge due to the remoteness of some communities. However, under their respective government agencies, electrification and safe water initiatives have made progress. As of 2022, the government reported 100% electrification although some of that power was based on small solar projects that were not grid connected. Meanwhile, also in 2022, more than 1.8 million people still lacked access to an improved water source and 36 million lack improved sanitation as the country continues to struggle with arsenic- and saltwater-contaminated groundwater.

Power

Given sustained economic growth, Bangladesh has also seen strong and sustained growth in demand for energy, particularly

electric power. For many years, there were near constant blackouts and load-shedding due to a lack of generation capacity, and from 2009, the government launched a massive drive to boost generation as well as transmission and distribution networks.³³⁴ More recently, in 2014, the Sustainable and Renewable Energy Development Authority (SREDA) was established, and the Power System Master Plan (PSMP, 2016) emphasizes increasing renewable energy. However, actual renewable electricity generation targets are conservative – i.e., adding 1,000 Megawatts (MW) of solar photovoltaic (PV) and 400 MW of wind generation by 2030. With World Bank funding, Bangladesh’s Scaling-up Renewable Energy Project was set to expand solar electricity generation by setting up a large solar PV farm in Feni, Chattogram, by 2024.³³⁵

Institutionally, the Ministry of Power, Energy, and Mineral Resources (MPEMR) governs the sector via two divisions – i.e., the Power Division and the Energy and Mineral Resources Division. A secretary leads each division. The Power Division is charged with overseeing electricity generation, transmission, and distribution, to include all generation by all sources, ranging from natural gas and coal to hydropower. Along with SREDA, the Power Cell (a think tank),

Energy and Power Research Council (EPRC), and the Electrical Advisor and Chief Electrical Inspector (EA & CEI) are the Power Division’s administrative and research bodies. Figure 17 shows the organizational structure of the Power Division.³³⁶

Under the Power Division, electricity generation is handled by a combination of state-owned companies – the Bangladesh Power Development Board (BPDB), Ashuganj Power Station Company Limited (APSC), North West Zone Power Generation Company Limited (NWZPGC), Electricity Generation Company of Bangladesh (EGCB), Rural Power Company Limited (RPCL), and Coal Power Generation Company Bangladesh Limited (CPGCBL) – alongside various independent power producers (IPP) and small independent power producers (SIPP). Either BPDB or the Bangladesh Rural Electrification Board (BREB) purchase all generated electricity. The Power Grid Company of Bangladesh (PGCB) has sole responsibility for transmission. It was formed under a restructuring process to ensure the national power grid can operate more efficiently and expand in a balanced manner. Six distribution companies then deliver the electricity to the end user. All distribution agencies are state-owned;

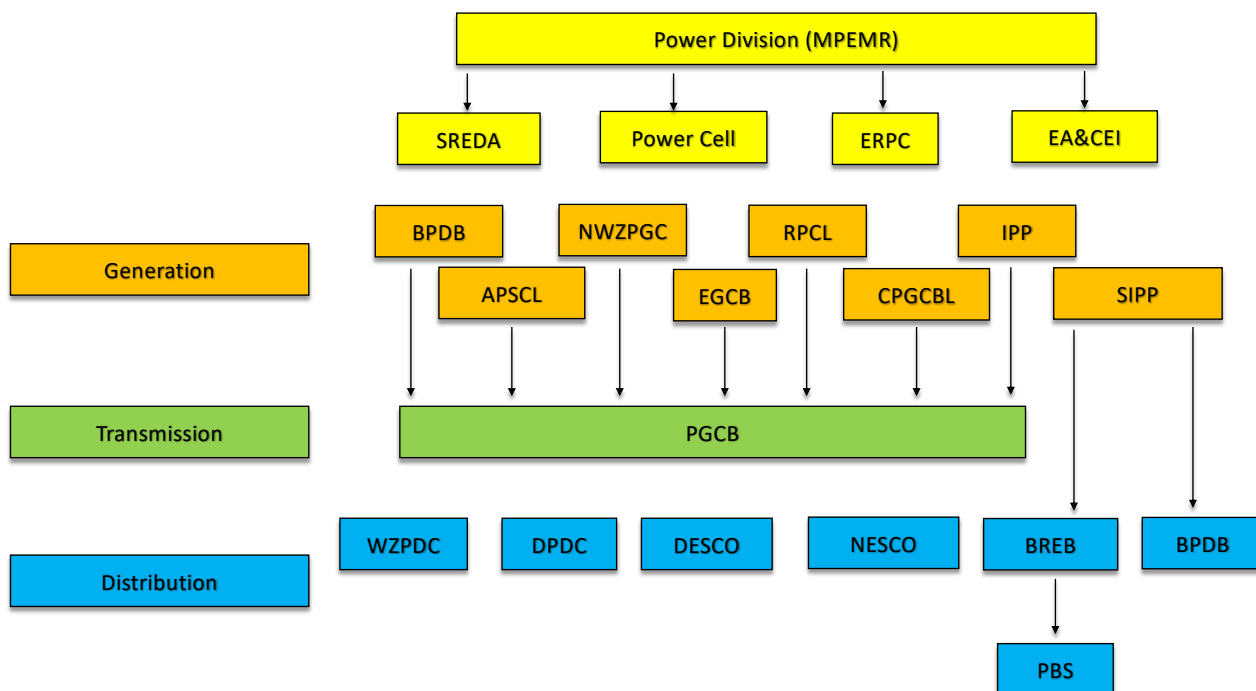


Figure 17: Organizational Structure of the Power Division of MPEMR

they include West Zone Power Distribution Company (WZPDC), Dhaka Power Distribution Company (DPDC), Dhaka Electric Supply Company Limited (DESCO), and Northern Electric Supply Company (NESCO), as well as the BREB, which distributes electrical power to rural areas, including via Palli Bidyut Samity (PBS), which are local customer cooperatives.³³⁷

Electrical generation capacity increased from 5 gigawatts (GW) in 2009 to around 25.5 GW in 2022, and the government claimed in March 2022 that 100% of the population had access to electricity. Nonetheless, the reliability and quality of electricity vary considerably due to failing efficiency at thermal plants, transmission and distribution network losses, and a pervasive mismatch between what types of fuels are available and what fuel is needed by the country's plants.³³⁸ Indeed, an October 2022 grid failure that cut power to 75-80% of customers was related to the global energy market squeeze that led to an inability of one-third of the country's 77 natural gas-fired plants to acquire sufficient gas.³³⁹ Moreover, demand continues to outstrip generation; in 2019, maximum demand was 13,044 MW while the maximum peak generation was 12,893 MW.³⁴⁰ As of 2020, natural gas accounted for 53.8% of generation capacity, and liquid fuels (furnace oil or diesel) accounted for 33.5% of installed capacity. The share of gas in actual generation fluctuates as global prices change, and gas has been known to account for as much as 71.82% of generation.³⁴¹

There is one nuclear power project underway. The first phase of Rooppur Nuclear Power, in Pabna District, is designed to provide 1,200 MW; a second phase will provide another 1,200 MW when complete.³⁴² In 2011, Bangladesh signed an agreement with Russia to build the plant, and in 2017, construction finally began at Rooppur, 140 km (87 miles) west of Dhaka. Although construction has progressed, as of early 2023, the Bangladesh government made clear that completion, originally slated for 2023, will be delayed at least until mid-2024.³⁴³ The Government recently shortlisted eight sites for a second nuclear power plant. Of the eight sites,

four are in Khulna, close to the Sundarbans, and the other four are at Mazher Char, Barguna; Gangamati, Patuakhali; Boyar Char, Noakhali; and Muhurir Char, Feni.³⁴⁴

There are three shifts underway in the country's electricity generation landscape. First, while natural gas has long been the primary fuel driving Bangladesh's electricity sector, the country is in the midst of a planned shift away from domestic natural gas and toward imported liquified natural gas (LNG). The first floating storage and regasification unit (FSRU) was established in Moheshkhali, Cox's Bazar, in 2018, and the addition of a second FSRU boosted the country's LNG import capacity to 28.32 million cubic meters (1,000 million cubic feet) per day. There are plans for two more regasification terminals.

Two additional shifts are planned, one to introduce more solar and wind generation and the other to import more electricity directly from neighbors. On the renewables front, less than 1% of all on-grid electricity supply is generated by renewables despite more than 4 million solar home systems installed across the country, and cost is one of the key obstacles to wider uptake.³⁴⁵ In fact, the single biggest renewable electricity resource is the 230-MW Kaptai hydropower plant in the southeast; it dates to the 1960s.³⁴⁶ There has been some interest in micro-hydropower plants, the first of which, a 10-kilowatt (kW) plant, was established in Bandarban to meet the energy demand of 140 households and a temple; a 50-kW plant was later constructed by the government in Barkal Upazila, Rangamati.³⁴⁷ The most common renewable source of overall energy is biofuel, 97% of which goes to household usage, mostly cooking.³⁴⁸

In terms of electricity imports, in 2013, Bangladesh began cross-border electricity imports from Baharampur (India) to Bheramara (Bangladesh) via a 400 kilovolt (kV) double circuit line that allows Bangladesh to import 500 MW. The second initiative was through the 47-km (29-mile) double circuit transmission line linking the Suryamaninagar in India's Tripura State to Bangladesh's Comilla station. Initially,

100 MW of electricity was imported via this second line, but in March 2016, the country started importing a further 60 MW through it.³⁴⁹ By 2021, Bangladesh was importing 8,103 GW-hours of electricity, up from 2,256 GW-hours in the first year of import. Total imports are expected to increase by 138% to 2,760 MW in the coming years, and the government plans to meet 15% of demand by imports by 2041. Future imports can be expected from Nepal and Bhutan.³⁵⁰

Beyond the cross-border lines noted above, there are 10,436 km (6,485 miles) of transmission lines and 401,000 km (249,000 miles) of distribution lines. PGCB has been working to improve and extend lines, but significant work still needs to be done to enhance the handling capacity and reach of the grid transmission lines. The government plans to ensure there are 36,870 km (22,900 miles) of transmission lines by 2041 when the country is expected to produce 60,000 MW of electricity. Of the total grid transmission lines, 16,655 km (10,350 miles) will be 132 kV while 9,717 km (6,038 miles) will be 230 kV, 1,740 km (1,080 miles) will be 400 kV, and 796 km (495 miles) will be 765 kV.³⁵¹

Water and Sanitation

Water and sewerage service in major metropolitan areas of Dhaka, Chattogram, Rajshahi, and Khulna is handled by government-owned Water and Sewerage Authority (WASA) – i.e., Dhaka WASA (DWASA), Chattogram WASA (CWASA), Khulna WASA (KWASA), and Rajshahi WASA (RWASA). Water supply and sanitation services outside the WASA areas are operated by the respective city corporations or other local administration under the oversight of the Department of Public Health Engineering (DPHE), under the Local Government Division of the Ministry of Local Government, Rural Development, and Cooperatives. DPHE is responsible for water supply and sanitation in rural and urban areas. In urban areas, DPHE solely or jointly with the municipal corporations or pourashava is responsible for water supply and sanitation services. DPHE is

responsible for assisting the pourashavas and city corporations through infrastructure development and technical assistance, and it assists local government institutions in the operation and maintenance of the water supply and sanitation infrastructure and services. Finally, DPHE is responsible for human resource development for the water system.³⁵²

Some 90% of the population relies on groundwater, and the country ranks sixth in the world for countries with the largest estimated annual groundwater extraction. Bangladesh Water Development Board, under the Ministry of Water Resources, has drafted a strategy for aquifer recharge amidst studies that suggest that by 2030, groundwater levels in the greater Dhaka area may drop by 3-5 m (9.8-16.4 feet) per year, approximately 70% faster than the current rate. Most of the population has access to basic drinking water, but there are significant challenges with many sources showing either bacterial or chemical contamination and increasing incidence of seawater intrusion, resulting from climate change-related hazards. Testing suggests that 1.12 million of the country's 4 million wells are contaminated with arsenic. As of 2022, more than 1.8 million people still lacked access to an improved water source and 36 million lack improved sanitation.³⁵³ UNICEF reports that 17% of the population spends 30 minutes to one hour and 6% spend 1-3 hours walking long distances to collect water every day. The burden of this collection falls overwhelmingly on women and girls; women do 85% of water collection, and girls do 4.7% of the work.³⁵⁴

A WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation, and Hygiene report in 2021 found that 103 million Bangladeshis lack safely managed sanitation facilities. Moreover, 61.7 million people do not have access to basic hygiene, and 107 million Bangladeshis do not have basic handwashing facilities with soap and water at home. An earlier household survey in 2019 found that nearly 49% of rural households still use some type of non-flush latrine.³⁵⁵

HEALTH

Bangladesh has seen steady progress in economic development in recent decades, but with this development have come rapid social transitions. Among the impacts of growing economic wealth are a rise in average life expectancy and increasing urbanization. As of 2023, the average life expectancy was nearly 75 years, and over 40% of the country's residents resided in urban areas with predictions suggesting that half the population will live in urban areas by 2050. Continued growth and interconnection with the global economy are likely to bring more shifts in people's lives, including greater exposure to processed foods, more sedentary lifestyles, and changes to the ways in which Bangladeshis access health care. The country confronts additional health risks associated with natural disasters and climate change.

Health Care System Structure

A mix of public and private providers delivers health care with the Ministry of Health and Family Welfare (MOHFW) as the main coordinating and regulatory agency. MOHFW is divided into the Health Services Division and the Medical Education and Family Welfare Division. The Health Services Division is responsible for policy regarding health-related matters, management, maintenance of nursing care, and health financing. The Medical Education and Family Welfare Division develops policy regarding medical education, family planning, and registration of birth and deaths. In each administrative division of the country, a divisional director monitors health care activities, and in each divisional headquarters, there is an infectious disease hospital and one or more medical college(s) with its own hospital. At the district level, the civil surgeon is the chief health care manager responsible for delivering secondary and primary care. In each

district, there is a district hospital, managed by a superintendent. Some district headquarters have medical colleges with attached hospitals, medical assistant training schools, and nursing training institutes.

The Directorate General of Health Services (DGHS) is one of ten implementing agencies under MOHFW. It has more than 100,000 officers and staff members to oversee or deliver services in the national-, divisional-, district-, upazila-, union-, and ward-level facilities. DGHS has more than 2,000 primary-level facilities (not counting community clinics, discussed later) and 271 secondary and tertiary facilities; across these facilities, there are more than 66,000 beds. Private hospitals and clinics registered with DGHS number more than 5,500 alongside more than 9,500 registered private diagnostic centers. The private hospitals have nearly 95,000 beds.³⁵⁶

Most health care for rural populations is provided through the public system of district hospitals, upazila health complexes, union sub-centers, and community clinics. Local government institutions (city corporations and municipalities) are responsible for providing primary health care in cities. Many primary health care projects are managed by NGOs. In fact, at least 10 city corporations and four municipalities outsource health service projects to NGOs through the Urban Primary Health Care Project. Finally, alternative private provider options include traditional medicine practitioners – e.g., homeopaths or kobiraj, the latter of whom practice Ayurveda; these practitioners are more common in rural and poor communities.³⁵⁷

The Community Clinic (CC) is the lowest tier health facility and was conceived as a one-stop service outlet for health, family planning, and nutrition services with duties related to health education, health promotion, treatment of minor ailments and injuries, immunization, ante- and post-natal care, and screening for noncommunicable diseases (NCD) with referrals

as appropriate. There are more than 13,000 CCs,³⁵⁸ each of which is intended to serve about 6,000 people. The program of CCs relies on community input and management. They are built on land donated by the community and are managed jointly by the community and Government through Community Groups, which comprise 13-17 members who represent different sectors of the community. In addition, there are three Community Support Groups to support the Community Groups of each CC. At least one-third of members of both Community Groups and Community Support Groups must be female. Each CC has a Community Healthcare Provider who oversees the Community-based Healthcare Plan.³⁵⁹

Health Strategies and Surveillance

The 4th Health, Population, and Nutrition Sector Programme (HPNSP) 2017–2022 was developed to help move the country toward the Sustainable Development Goals (SDG) for 2030. This program laid out objectives, strategies, and activities to advance the country toward universal health coverage with a focus on accessibility and governance. The Country Cooperation Strategy (CCS) for the WHO Country Office for Bangladesh for 2020–2024 aligns with the HPNSP as well as other government plans. The four strategic priorities and their underlying program items are:

1. Enhance efforts to ensure more people benefit from universal health care
 - Governance and stewardship
 - Human resource for health
 - Digital health
 - Quality of care
 - Financial protection
2. Promote healthy lifestyles, prevent risk factors, and protect people from emerging and re-emerging diseases
 - NCDs
 - Communicable diseases

3. Creating an enabling environment for healthy life and well-being
 - Health and nutrition status of mothers, newborns, children, and adolescents
4. Strengthen health system resilience to protect health and mitigate effects of health emergencies, including disease outbreaks, and manage effects of climate change
 - Environmental health and climate change
 - Emergency preparedness and response
 - Disease and nutrition surveillance, laboratory support, and case management
 - International Health Regulations Core Capacity
 - Anti-microbial resistance containment
 - Nutrition
 - Food safety³⁶⁰

The Multi-Sectoral Action Plan for Prevention and Control of Non-Communicable Diseases 2018-2025 is a blueprint for investments and operations to address NCD control and prevention across government and other stakeholders. The action plan employs a “health in all policies” approach to engage actors outside the health sector to tackle and influence public policies on shared risk factors, such as tobacco use, diet, physical activity, alcohol use, and exposure to poor quality air. The targets are in line with the WHO Southeast Asia regional NCD targets for 2025 and, therefore, with the SDGs, of which target 3.4 is “by 2030, to reduce by one-third premature mortality from noncommunicable diseases through prevention and treatment and promote mental health and well-being.” There are four action areas under the plan: 1) advocacy, leadership, and partnerships; 2) health promotion and risk reduction; 3) health system strengthening for early detection and management of NCDs and their risk factors; and 4) surveillance, monitoring and evaluation, and research.³⁶¹

Given the expected impacts of future natural disasters and climate change-influenced events, Bangladesh has begun integrating public health planning into the National Adaptation

Plan (NAP) although the integration of health data into the climate-informed health early warning system is incomplete due in part to shortcomings in the national health data platform and in part to capacity challenges in the MOHFW Climate Change Health Promotion Unit. Nonetheless, the country does have tools for and agencies tasked with addressing both health emergencies and health during disasters. The Institute of Epidemiology, Disease Control, and Research (IEDCR) is the focal institute under the DGHS for disease surveillance and outbreak investigation. As the National Rapid Response Team (NRRT), the IEDCR responds to any unusual health events or diseases on an emergency basis. It has five laboratories, one each for virology, parasitology, microbiology, entomology, and “One Health,” which is a multi-disciplinary approach to the health challenges that arise from the human-animal ecosystem interface. In 2017, the public health emergency operations center (PHEOC) stood up at IEDCR offices.³⁶² As the nexus of the NRRT, the IEDCR also guides and supervises District and Upazila Rapid Response Teams for responses to outbreaks in their respective areas.

The IEDCR conducts sentinel site surveillance, as well as community-based, mobile phone-based, event-based, and web-based disease surveillance throughout the country. It is the National Influenza Center (NIC) of Bangladesh and one of more than 100 NICs worldwide that form WHO’s Global Influenza Surveillance and Response System. The IEDCR conducts sentinel site-based influenza surveillance for which samples are collected and tested. By this work, the institute contributes to the selection of influenza vaccine strains by sharing specimens with WHO’s collaborating centers quarterly. As the NIC, the IEDCR regularly submits data to WHO’s FluNet and FluID websites, and it publishes newsletters to disseminate findings from influenza surveillance. In addition to WHO, IEDCR collaborates on influenza surveillance with the U.S. Centers on Disease Control and Prevention (CDC).

IEDCR’s disease-specific surveillance tasks

cover various viruses and bacterial infections. Surveillance of Nipah virus transmission is conducted to identify outbreaks and to characterize the conditions and risk factors for transmission. In Nipah season (December to March), serum samples are collected from encephalitis cases and are tested for antibodies. Encephalitis cases may also be tested by IEDCR for Japanese encephalitis to generate representative data for policymakers and to monitor the impact of vaccination. The IEDCR has been conducting leptospirosis surveillance in 10 sentinel sites since January 2019 in collaboration with the U.S. CDC’s Bacterial Special Pathogen Group. The sentinel site personnel were trained on protocols, and rapid diagnostic test kits were supplied. The IEDCR has also developed capacity to conduct polymerase chain reaction testing for leptospirosis. The IEDCR had been conducting cholera surveillance in 22 sentinel sites since May 2016. The sentinel sites include medical colleges, specialized institutes, district-level hospitals, and upazila health complexes. Since 2017, the IEDCR has been conducting antimicrobial resistance (AMR) surveillance with technical support from the U.S. CDC and WHO. The objective of this surveillance is to discover the status of AMR in selected bacterial species in specific specimens, and findings are reported regarding AMR of *Enterococcus*, *Klebsiella*, *Pseudomonas*, *Salmonella*, *Shigella*, *Staphylococcus*, *Vibrio cholerae*, *Escherichia coli*, and *Acinetobacter*.

The IEDCR’s event-based surveillance is intended to enhance early detection of pathogens that may have public health importance. This system focuses on respiratory diseases and has the potential to detect human outbreaks of various coronaviruses, avian influenza, and other emerging and re-emerging respiratory pathogens. The goal of this surveillance is to ensure that health care facilities recognize respiratory events early and report potential emerging respiratory threats promptly.

The IEDCR started a web-based disease surveillance system using open-source software to collect data from 493 upazila-level health

facilities on a weekly basis; as of 2020, the system covered 10 diseases and conditions – i.e., acute encephalitis syndrome, acute watery diarrhea, COVID-19, cutaneous anthrax, chikungunya, chickenpox, dengue, fever (other than dengue and chikungunya), jaundice, and respiratory tract infections. The slate of diseases can change and were most recently selected in 2020 after a series of workshops with experts.³⁶³

Health authorities have developed health emergency plans for Hazrat Shahjalal International Airport and Chattogram and Mongla ports. In 2019, the All-hazard Public Health Emergency Contingency Plan for Hazrat Shahjalal Airport was revamped to deliver guidelines to follow during pandemics or other outbreaks. Not only was the plan tested in a November 2019 simulation exercise, but it was also swiftly tested in real time when the COVID-19 pandemic erupted. The exercise allowed DGHS authorities to evaluate response mechanisms at this port of entry, and the event brought together Civil Aviation, Biman Airlines, the Fire Service, police, customs and immigration agents, WHO, IOM, and others. Also in 2019, in collaboration with WHO, DGHS conducted training for Chattogram and Mongla port health workers and other staff to improve health screening procedures. This recent training meant that these two ports were among the first in the world to receive WHO authorization to issue ship sanitation certificates and exemptions once the COVID-19 pandemic was declared.³⁶⁴

Communicable Diseases

Bangladesh is burdened with various communicable diseases. It continues to struggle with Hepatitis A and E, tuberculosis (TB), and typhoid fever. Moreover, there is a high risk of two mosquito-borne diseases, dengue fever and malaria, in some parts of the country. Rabies remains a concern, as does leptospirosis. The country also saw significant spread of COVID-19 during the global pandemic, and it has the fifth highest number of leprosy cases in the world although that disease appears limited to tea

estates in Sylhet.

The DGHS' Communicable Disease Control (CDC) program has the mandate to control or eliminate communicable diseases in Bangladesh. In general, the CDC program focuses on strengthening disease surveillance and capacity for detection, management, prevention, and control of communicable diseases. In addition, the program to prevent international disease spread includes detection, assessment, notification, and reporting of public health events that may be of international concern. The specific CDC objectives included reaching zero malaria deaths by 2022 and eliminating malaria in the country by 2025 while also achieving filaria-free and kala-azar-free status and eliminating rabies by 2022.³⁶⁵ The government has also committed to eliminating leprosy by 2030 but has fallen short in collecting data or budgeting for needed interventions.³⁶⁶ Among the CDC's non-disease specific tasks is preventing and controlling Aedes mosquito-transmitted viral diseases, including dengue, chikungunya, and Zika; to do so it must work with communities to disrupt mosquito breeding habitats.

To combat communicable and vector-borne diseases, the country launched the Expanded Programme on Immunization (EPI) in 1979. The initial slate of vaccinations targeted TB, diphtheria-pertussis-tetanus, polio, and measles. From 1985, the EPI incorporated a Universal Child Immunization program for rural and urban areas, and all target groups were reached by 1990. The country began its Polio Eradication and Elimination of Maternal and Neonatal Tetanus efforts in 1995. It achieved the status of having eradicated polio in 2000. The Hepatitis B Vaccine was introduced into the EPI program in 2003, and the measles-rubella vaccine was introduced in 2012. Updated polio formulations were added to the EPI in 2015, 2016, and 2017, and the tetanus vaccine formula was updated in 2019. As of 2020, the EPI targeted 95% full vaccination coverage of children and 90% coverage in each district.³⁶⁷

Coronavirus Disease 2019

From 3 January 2020 to 6 April 2023, there were 2,038,053 confirmed cases of COVID-19 with 29,446 deaths in Bangladesh. As of 4 April 2023, the country’s health authorities had administered a total of 358,465,956 vaccine doses.³⁶⁸ Bangladesh’s DGHS further added that 150,608,831 people (88% of the population) had received a first dose of vaccine, 137,139,339 (81%) had received the second dose, 67,395,241 (39%) the third dose, and 3,148,988 (1.7%) received a fourth dose.³⁶⁹ Figure 18 shows Bangladesh’s epidemiological curve of daily new confirmed COVID-19 cases for over three years of the pandemic.³⁷⁰

The first case of COVID-19 detected in Bangladesh was on 8 March 2020, and the first COVID-related death came on 18 March 2020.³⁷¹ To curb the spread of the virus, the government declared a 10-day general “holiday” from 26 March 2020; that general closure was extended through 30 May after which economic activities resumed on a limited scale. In addition to taking public health measures, the government announced a package of support programs to help poor and vulnerable households with cash transfer and food programs. Movement restrictions continued through early August 2020.³⁷² During this time, the country’s health authorities set up separate COVID-19 units in all local hospitals and constructed COVID-19 treatment units in available spaces and buildings.

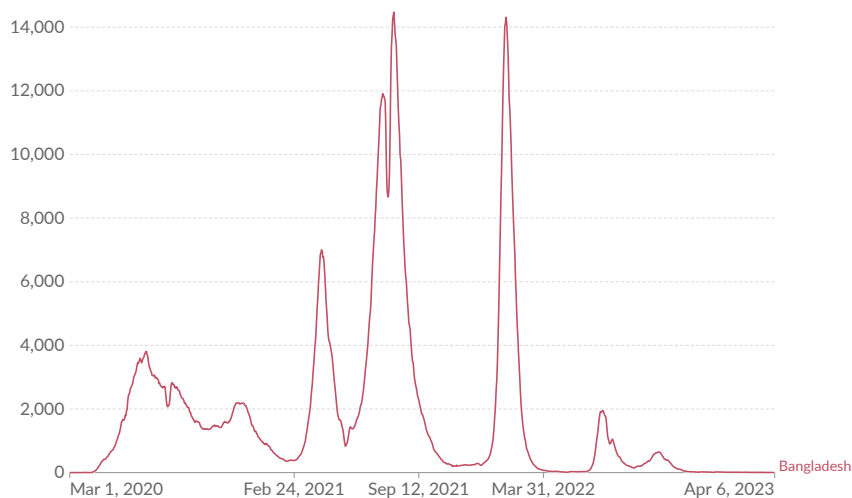
When vaccines became available, Bangladesh signed up to the COVID-19 Vaccines Global Access (COVAX) initiative and signed separate agreements with vaccine producers around the world. The health department started the registration process for vaccines for the public by creating a national portal,

SURAKKHA, and created a Vaccine Deployment Plan.³⁷³ From July 2020, Director General of DGHS had been in communication with GAVI, the Vaccine Alliance, to express and underscore Bangladesh’s desire to secure the COVID-19 vaccines through COVAX. Due to its planning, Bangladesh was among the first to be able to send its deployment plan to COVAX administrators and to give emergency use authorization to a vaccine, COVISHIELD, from the Serum Institute of India. Given the limited global COVID-19 vaccine supply early on, Bangladesh adopted an age-based prioritization policy that started from the 55 years and older age-group. From February 2021, it used a two-pronged delivery plan with both hospital-based vaccination and outreach conducted by nurses, community health workers, and NGO staffers.

In the early stages of the pandemic, IEDCR was the first body to build COVID-19 testing capacity in the country, and it developed the guidelines for case investigation, quarantine, and localized containment. It was the body initially tasked with contact-tracing every case and trained 3,000 of the country’s health care personnel in contact tracing and case investigation; it trained an additional 2,000 laboratory personnel in testing procedures. As the national reference laboratory, IEDCR

Daily new confirmed COVID-19 cases

7-day rolling average. Due to limited testing, the number of confirmed cases is lower than the true number of infections.



Source: WHO COVID-19 Dashboard



CC BY

Figure 18: Daily Confirmed COVID-19 Cases, Bangladesh

supported the country's entire system by managing testing and test collection from the door-to-door level up through the national bodies for whom it conducted sero-epidemiology studies, vaccine efficacy studies, and genome sequencing.³⁷⁴

Dengue

Dengue viruses spread to people through the bite of an infected *Aedes* (*Ae. aegypti* or *Ae. albopictus*) mosquito. These mosquitoes typically lay eggs near standing water or in containers that hold water, like buckets, bowls, animal dishes, discarded tires, and flowerpots. They live both indoors and outdoors near people and bite during the day and night. About one in four people infected with dengue will get sick, and symptoms can be either mild or severe. Severe dengue can be life-threatening within a few hours and often requires care at a hospital. Mild symptoms of dengue can be confused with other illnesses that cause fever, aches and pains, or a rash. The most common symptom of dengue is fever with any of the following: eye pain, headache, muscle pain, rash, bone pain, nausea/vomiting, or joint pain. Symptoms typically last 2–7 days, and most people will recover after about a week. There is no specific medication to treat dengue; rather, treatment focuses on alleviating symptoms and may include rest, taking acetaminophen (paracetamol) for fever and pain relief, and hydration. About one in 20 people who get sick will develop severe dengue, which can result in shock, internal bleeding, and even death. Warning signs of severe dengue usually begin in the 24–48 hours after the fever has broken, and they may include belly pain or tenderness, vomiting, bleeding from the nose or gums, vomiting blood, blood in the stool, or feeling tired, restless, or irritable.³⁷⁵

What is today Bangladesh recorded its first case of dengue in the 1960s, and assessments of the growth of dengue cases since 2010 link it to regional rainfall patterns and higher temperatures. Bangladesh's climate conditions are becoming more favorable for mosquito breeding and, therefore, for dengue transmission.

Between June and November 2022, Bangladesh experienced its second largest and most widespread dengue outbreak since 2000 (the largest was in 2019 with over 100,000 cases). All eight divisions of the country were affected. Between 1 January and 20 November 2022, MOHFW reported 52,807 dengue cases and 230 related deaths. The median age among all cases was 25 years with males accounting for 60% of the cases. The most affected division was Dhaka (70.6% of cases and 60.4% of deaths). In part, the high incidence of dengue cases during 2022 was linked to unusually heavy rainfall, accompanied by high temperatures and high humidity, all of which fueled an increased mosquito population throughout Bangladesh.³⁷⁶

Filariasis

Lymphatic filariasis is a parasitic infectious disease caused by filarial nematodes or roundworms (*Wuchereria bancrofti*), transmitted from person to person by mosquitoes; the *Culex quinquefasciatus* mosquito is the main vector in Bangladesh. The adult filarial worms live in the human lymphatic system. The female nematodes produce millions of tiny microfilariae, which are ingested by the mosquito when it bites an infected person; the mosquito can then pass on the parasites to the next person it bites. In infected people, the adult nematodes produce inflammation, including episodes of acute adenolymphangitis - recurrent attacks of fever associated with inflammation of the lymph nodes and or lymph vessels – as well as chronic swelling, especially in the lymph nodes (lymphedema), which may progress into irreversible stages and elephantiasis. Chronic disease symptoms start appearing in adolescence, increase in frequency and severity with age, and reach maximum levels in adults and the elderly. The disease is diagnosed through clinical examination and laboratory tests. Diethylcarbamazine and ivermectin are the most common anti-filaria drugs used for individual treatment.

Northern districts of Bangladesh have the highest incidence of filariasis infection.

For 20 years, MOHFW has run a task force on elimination. In addition to mapping and assessing risk across the country, the task force laid out treatment programs. By 2014, all districts had been through various rounds of mosquito control, and hundreds of millions of treatment courses had been delivered. Only Rangpur district continued to show high rates of infection as of 2020. Treatment is available for chronic filariasis patients at health facilities in the district, sub-district, and union level as well as in CCs. Each health facility is also equipped to train lymphedema patients on self-care.³⁷⁷

Hepatitis

Of the five hepatitis viruses, Bangladesh experiences spread of the A and E types. Both are liver infections, caused by the hepatitis A virus (HAV) and hepatitis E virus (HEV), respectively. Hepatitis A is vaccine-preventable. No vaccine for hepatitis E is currently available. HAV is very contagious and is found in the stool and blood of people who are infected while HEV is found in the stool of an infected person. Both spread when someone unknowingly ingests the virus — even in microscopic amounts — through close personal contact with an infected person or through eating contaminated food or drink. HAV generally spreads through contaminated food while, in developing countries, people most often get hepatitis E from drinking water contaminated by feces from people infected with the virus.

Symptoms of hepatitis A can last up to two months and include fatigue, nausea, stomach pain, and jaundice. Most people with hepatitis A do not have long-lasting illness. Symptoms of hepatitis E can include fatigue, poor appetite, stomach pain, nausea, and jaundice. However, many people with hepatitis E, especially young children, have no symptoms. Except for the rare occurrence of chronic hepatitis E in people with compromised immune systems, most people recover fully from the disease without any complications.³⁷⁸

As the major risk factors for HAV infection include poor sanitation and hygiene, lack of safe water, living with an infected person, and other

close contact, most of Bangladesh's population is exposed to HAV during childhood when the disease tends to be asymptomatic and provides life-long protection. A recent survey found an anti-HAV antibody prevalence of nearly 70% and that took in both people who had been infected and those who had been vaccinated.³⁷⁹ The most common and problematic result of hepatitis E is acute jaundice, but only genotypes 1 and 2 (of four) are known to cause epidemics, during which the most impacted populations are pregnant women, who have particularly poor outcomes with case fatality risk as high as 65%. Hepatitis E is the leading cause of acute jaundice in Bangladesh and may be responsible for up to 25% of maternal mortality. A report using samples from 2015-2016 found that up to 20% of Bangladeshis may carry the antibodies that indicate a previous HEV infection. There have been no recent, officially declared hepatitis E epidemics.³⁸⁰

Kala-azar

Also known as visceral leishmaniasis, kala-azar is caused by 20 species of protozoan parasites transmitted by the bite of infected female phlebotomine sandflies, which feed on blood to produce eggs. Although only a small fraction of people infected by parasites causing leishmaniasis will eventually develop the disease, the toll taken by the disease tends to be higher among people who suffer from malnutrition, displacement, poor housing, a weak immune system, and lack of financial resources. Kala-azar is fatal if left untreated in over 95% of cases. It is characterized by irregular bouts of fever, weight loss, enlargement of the spleen and liver, and anemia. Post-kala-azar dermal leishmaniasis is usually a sequel of visceral leishmaniasis that appears as a rash, usually on the face, upper arms, and trunk. It usually appears six months to one or more years after kala-azar has apparently been cured.

Diagnosis combines clinical signs with parasitological or serological tests. The disease is treatable and curable but requires an immunocompetent system because

medicines will not get rid of the parasite from the body; there is a high risk of relapse if immunosuppression occurs. All patients diagnosed with kala-azar require prompt and complete treatment. Given the complexity of treatment, prevention and control also require many tools, among which are anti-leishmanial medicines and vector control, which can include insecticide spray, use of insecticide-treated nets, environmental management, and personal protection.³⁸¹

During a 2012 survey, 100 upazilas in 26 districts were identified as kala-azar endemic areas under the National Kala-azar Elimination Program, which then succeeded in eliminating kala-azar as a public health concern in 2016 across identified areas. Still, each year 100-200 cases of kala-azar and post-kala-azar dermal leishmaniasis are identified, but deaths within six months of diagnosis have been reduced to the low single digits each year.³⁸²

Leptospirosis

The bacteria that cause leptospirosis spread through the urine of infected animals. These bacteria can get into water or soil and can survive there for weeks to months. Humans can become infected through contact with urine (or other body fluids, except saliva) from infected animals or through contact with water, soil, or food contaminated with the urine of infected animals. The bacteria can enter the body through skin or mucous membranes (eyes, nose, or mouth), especially if the skin is broken from a cut or scratch. Drinking contaminated water can also cause infection. Outbreaks of leptospirosis are usually caused by exposure to contaminated water, such as floodwater. Person to person transmission is rare. Leptospirosis symptoms comprise a range that can be mistaken for other diseases. They include high fever, headache, chills, muscle aches, vomiting, jaundice, red eyes, abdominal pain, diarrhea, and rash. Some infected persons may have no symptoms at all. The time between a person's exposure to a contaminated source and becoming sick is two days to four weeks. Illness usually begins

abruptly with fever and other symptoms. Leptospirosis may occur in two phases; after the first phase (with fever, chills, headache, muscle aches, vomiting, or diarrhea) the patient may recover for a time but become ill again. If a second phase occurs, it is more severe; the person may have kidney or liver failure or meningitis. The illness lasts from a few days to three weeks or longer. Without treatment, recovery may take several months, and the infection can be fatal.³⁸³

Long monsoon seasons, frequent flooding, stagnant water, high temperatures, humidity, and the density of animal and human population means Bangladesh is an ideal setting for zoonotic transmission of *Leptospira* bacteria. However, there is no coordinated leptospirosis protocol in Bangladesh, and a high number of people present at hospitals with fevers of unknown origin, which are a top cause of morbidity in the country. Nonetheless, thousands of studies have found that leptospirosis can be found throughout the country in urban and rural areas with notable increases in infections during the monsoons.³⁸⁴

Malaria

Malaria is caused by a parasite that commonly infects female *Anopheles* mosquitos, which feed on humans. Four kinds of malaria parasites infect humans: *Plasmodium falciparum*, *P. vivax*, *P. ovale*, and *P. malariae*. Only *Anopheles* mosquitoes can transmit malaria, and they must have been infected through a previous blood meal taken from an infected person. When a mosquito bites an infected person, it takes in a small amount of blood containing malaria parasites. About one week later, when the mosquito takes its next blood meal, these parasites mix with the mosquito's saliva and are injected into the person being bitten.

For most people, symptoms begin 10 days to four weeks after infection, although a person may feel ill as early as seven days or as late as one year later. *P. vivax* and *P. ovale* can occur again (relapsing malaria) because some parasites can remain dormant in the liver for several months and up to four years after a person is bitten by an infected mosquito. Symptoms include fever and

flu-like illness, including shaking chills, headache, muscle aches, and tiredness. Nausea, vomiting, and diarrhea may occur. Malaria may cause anemia and jaundice because of the loss of red blood cells. If not promptly treated, the infection can become severe and may cause kidney failure, seizures, mental confusion, coma, and death. Malaria can be cured with prescription drugs. The type of drugs and length of treatment depend on the type of malaria, where the person was infected, their age, and how sick they are at the start of treatment. Although malaria can be treated, effective antimalarial drugs are also available as prophylaxis. For travelers going to a malaria-endemic area, they usually should start their prophylaxis course before travelling.³⁸⁵

In the past decade, Bangladesh has made considerable effort and progress toward reducing the risk of malaria. As of 2022, 90% of cases in the country were in Khagrachhari, Rangamati, and Bandarban districts of the Chittagong Hill Tracts in the country's southeast. The remainder of the "low endemic" risk districts are Chattogram and Cox's Bazar as well as eight northeastern districts.³⁸⁶ Figure 19 shows areas (shaded) that still see malaria infections.³⁸⁷

The National Malaria Elimination Program in partnership with BRAC spearheads the elimination agenda, of which the principal strategy is phased elimination and work to prevent the introduction or re-introduction of artemisinin-resistant strains, which are present in areas east of the Chittagong Hill Tracts in Myanmar and the Mekong region as well as in India. This strategy is underpinned by laboratory

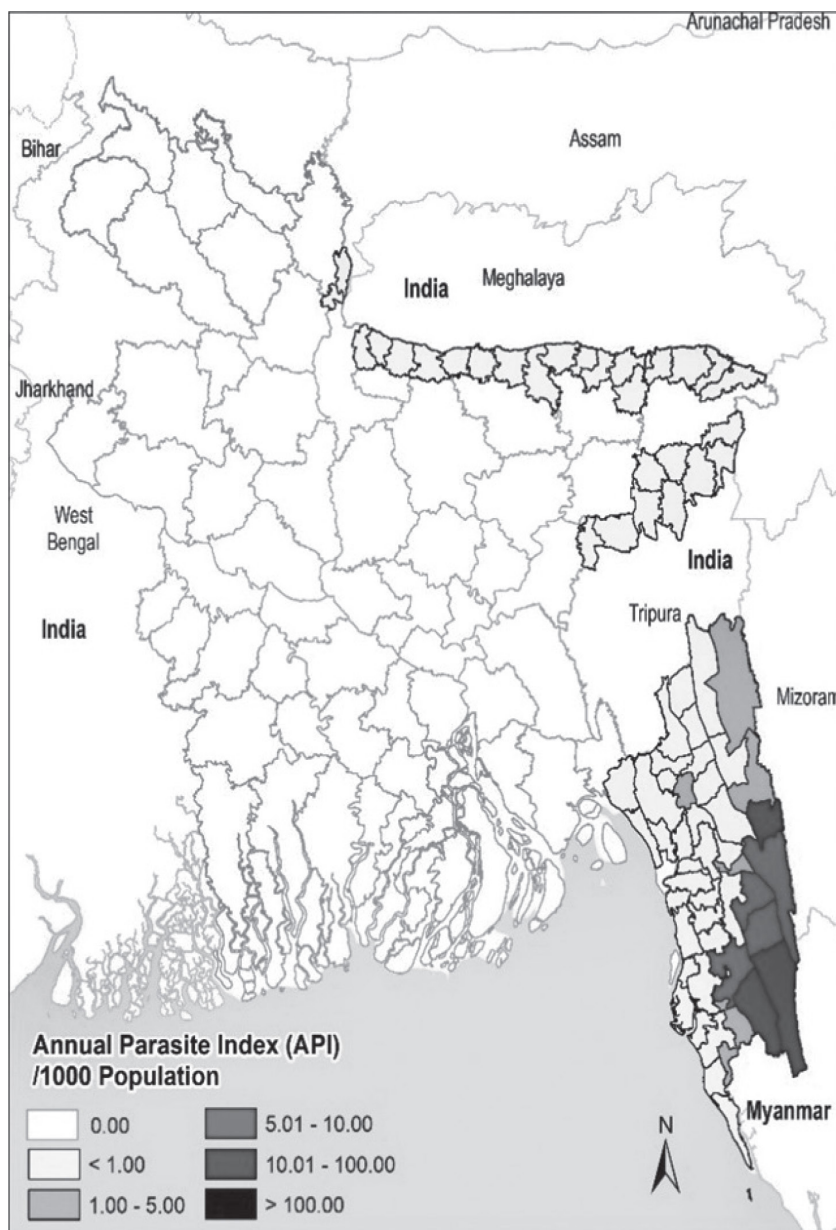


Figure 19: Districts of Bangladesh where Malaria Remains Endemic

testing and data to direct both treatment resources and interventions to disrupt mosquito habitats and breeding. Nonetheless, Bangladesh is aware of the potential for climate change to halt progress against malaria by expanding mosquito-habitable areas of the country.³⁸⁸

Rabies

Rabies is a fatal but preventable viral disease. It can spread to people if they are bitten or scratched by a rabid animal. The rabies virus infects the central nervous system. If a person does not receive the appropriate medical care

after a potential rabies exposure, the virus can cause disease in the brain, resulting in death. Preventing bites and knowing what to do after contact are critical. Any mammal can get rabies. Leave all wildlife alone, including injured animals. People who have come into contact with a rabid animal must get prompt, appropriate medical care as rabies in humans is 100% preventable even after exposure. Someone who is bitten, scratched, or unsure must talk to a health care provider about post-exposure prophylaxis (PEP). PEP consists of a dose of human rabies immune globulin (HRIG) and rabies vaccine given on the day of the rabies exposure; this course is followed by a dose of vaccine given again on days 3, 7, and 14. For people who have never been vaccinated against rabies previously, PEP should always include administration of both HRIG and rabies vaccine. People who have been previously vaccinated or are receiving pre-exposure vaccination for rabies should receive only vaccine. People cannot transmit rabies to other people unless they themselves are sick with rabies. PEP protects people from developing rabies, and therefore exposing others.³⁸⁹

Rabies is endemic in dogs in Bangladesh. It is a disease that clinicians are required to notify through the chain of health authorities. As recently as 2019, nearly 1,000 cases were reported in people, and 160,000 PEP courses were given annually.³⁹⁰ A collaboration among the Ministries of Health, Fisheries and Livestock, Local Government, and Education has, nonetheless, seen the country reduce the number of cases by 50% annually in recent years; the collaboration involves a combination of dog vaccinations, awareness programs, and PEP availability. A key aspect of the program is the establishment of 300 Animal Bite Management Centres at the national, district, and upazila levels; each of these centers has a supply of HRIG and vaccine. In 2021, only 40 cases of rabies in humans were reported.³⁹¹

Tuberculosis

TB is caused by *Mycobacterium tuberculosis*. The bacteria usually attack the lungs, but TB bacteria can attack any part of the body. Not

everyone infected with TB bacteria becomes sick. As a result, two TB-related conditions exist: latent TB infection and TB disease. If not treated properly, TB disease can be fatal. TB bacteria spread through the air from one person to another. When a person with TB disease of the lungs or throat coughs, speaks, or sings, the bacteria can get into the air, and people nearby may breathe in these bacteria and become infected. When a person breathes in TB bacteria, the bacteria can settle in the lungs and begin to grow. From there, they can move through the blood to other parts of the body. TB disease in the lungs or throat can be infectious while TB in other parts of the body is usually not infectious. People with TB disease are most likely to spread it to people they spend time with every day – i.e., family members, friends, and coworkers. Symptoms of TB disease depend on where in the body the TB bacteria are growing. TB disease in the lungs may cause a bad cough that lasts three weeks or longer, pain in the chest, coughing up blood or sputum, weakness or fatigue, weight loss, no appetite, chills, fever, and night sweats. Overall, 5-10% of infected persons who do not receive treatment for latent TB infection will develop TB disease at some time in their lives. For people with weak immune systems, the risk of developing TB disease is much higher than for people with normal immune systems. Bacille Calmette-Guérin is a vaccine for TB disease, but it does not always protect people from getting TB.³⁹²

Bangladesh is one of the world's 30 high-TB-burden countries with annual incidence of 361,000 cases. About 38,000 people die annually in Bangladesh due to TB. The National Strategic Plan for TB Control 2021–2025 was developed in line with the Global End TB Strategy. The national strategy focuses on increased treatment coverage, sustaining treatment success rate, increasing case detection of multi-drug resistant-TB and child TB, TB preventive treatment, and sustained financial support to deliver quality services. The National Tuberculosis Control Programme and MOHFW work with WHO on this strategy.³⁹³

Typhoid

Typhoid fever is a life-threatening illness caused by *Salmonella Typhi* bacteria. The disease spreads through sewage contamination of food or water and through person-to-person contact. People who are ill pass the bacteria in their stools. Others then can ingest the bacteria if they drink water contaminated by or eat food rinsed in water contaminated by sewage; the bacteria can also be passed if someone eats food or drinks a beverage that has been touched by a person who is shedding the bacteria and who has not washed their hands thoroughly. Once in the body, the bacteria can multiply and spread into the bloodstream, causing typhoid fever. Symptoms generally include a sustained fever of 39–40°C (102–104°F), stomach pains, weakness, headache, diarrhea or constipation, cough, loss of appetite, and rash. Treatment involves antibiotics although resistance to antibiotics is increasing. People who do not get appropriate antibiotic treatment may have fever for weeks or months and may develop other health problems that can lead to death. Even if symptoms seem to go away, infected people can still pass the bacteria to others. Vaccination is recommended for travelers to Bangladesh. Typhoid vaccines are not 100% effective, and travelers should still practice safe eating and drinking habits to prevent infection. Moreover, typhoid vaccines lose effectiveness over time, and they require a booster every 2-5 years.³⁹⁴

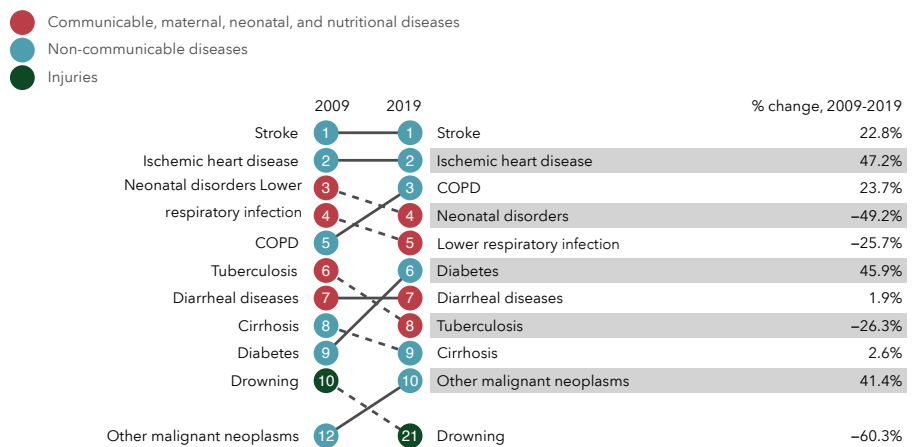
Bangladesh has an incidence rate of 252 typhoid cases per 100,000 people annually. Poor communities lacking clean food, water, and adequate sanitation are prone to outbreaks. Multiple climate factors like increased rainfall, river levels, and temperature have been shown to increase typhoid distribution, and Bangladesh is severely impacted by these factors.³⁹⁵

Non-Communicable Diseases

Every year since 2015, the estimated number of deaths from NCDs as a percent of total deaths has been 65-70% (with COVID-19 deaths excluded), and the burden of NCDs is expected to continue to rise in Bangladesh due to the growing elderly population, rapid urbanization, and lifestyle factors such as tobacco use, alcohol consumption, physical inactivity, and unhealthy diets.³⁹⁶ The major NCDs that affect Bangladeshis are cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes. Injuries, including from traffic collisions, and drowning also contribute to the NCD burden.³⁹⁷ Figure 20 shows the top ten causes of total deaths in 2019 and the percent change between 2009 and 2019.³⁹⁸

Approximately 70% of the population relies on the primary health care system for treatment. This system's nationwide infrastructure, broader service coverage, and cost-effective interventions make it a key component to addressing the rising burden of NCDs. The Government has adopted several strategies and action plans to strengthen the primary health care system to address the rising burden of NCDs by introducing community-based and facility-led NCD management initiatives in line with the

What causes the most deaths?



Top 10 causes of total number of deaths in 2019 and percent change 2009-2019, all ages combined

See related publication: [https://doi.org/10.1016/S0140-6736\(20\)30925-9](https://doi.org/10.1016/S0140-6736(20)30925-9)

Figure 20: Top Ten Causes of All Deaths (2019) and Percent Change (2009-2019) for Bangladesh

WHO Package of Essential Non-communicable Disease Interventions for Primary Health Care.³⁹⁹ The goal of the DGHS' Non-communicable Disease Control program is to reduce mortality and morbidity through control of risk factors and improving health service delivery. The objectives are:

- Develop and strengthen capacity for surveillance of NCDs and their consequences and risk factors, as well as the impact of public health interventions
- Promote the development and implementation of effective, integrated, sustainable, and evidence-based public policies for NCDs, risk factors, and determinants
- Foster, support, and promote social and economic conditions that address the determinants of chronic NCDs and empower people to increase control over their health and to adopt healthful behaviors
- Strengthen the capacity and competencies of the health system for integrated early detection, management, and control of the risk factors of NCDs

In 2012, the Government launched “NCD Corners” at every upazila health complex to address major NCDs – i.e., hypertension, diabetes, chronic obstructive pulmonary disease, and cancers. The 300 established NCD Corners provide preventive care through building awareness, screening for risk factors and diseases, early detection, treatment, and referral at the primary care level. Despite successes in some areas, some NCD Corners lack appropriate staffing.

Cervical and breast cancers are significant contributors to the NCD burden and are the most common cancers among Bangladeshi women. Along with its maternal-child programs, MOHFW has made a significant push into early detection of these cancers with all districts developing detection plans in cooperation with Bangabandhu Sheikh Mujib Medical University and the UN Population Fund (UNFPA). At the upazila level, there are more than 300 centers

specializing in cervical and breast examinations; when additional mother-child welfare centers and college hospitals are considered, there are upwards of 500 centers providing these exams. Now with an over 4% positivity rate for cervical screenings, the challenge is moving those women into appropriate follow-on treatment. There are only 25 medical college and district hospitals available as referral centers for follow-on testing and treatment.⁴⁰⁰

Mental health conditions affect nearly 17% of adults and 14% of children. The most common single mental health condition is depression, which affects an estimated 7% of adults.⁴⁰¹ Suicide is a major public health problem with a higher incidence among females than males. Suicides account for six deaths out of every 100,000. The government passed the National Mental Health Act in 2018 that emphasizes the provision of caring services to mental health patients, protecting their rights, rehabilitation, and overall welfare. The formulation of the National Strategic Plan on Mental Health in line with the National Mental Health Policy reflects the action points in the WHO Mental Health Action Plan of 2013–2020.⁴⁰² Underlying challenges remain, however. Widespread social stigma, limited human resource capacity, and a lack of formal initiatives hinder efforts to address mental health problems. Community- and union-level facilities are crucial components in supporting rehabilitation of mental health patients because they can help fight stigmatization. At the same time, district hospitals are the main facilities where mental health treatment services exist; district hospitals host Community Mental Health Teams who provide specialized support to upazila centers.⁴⁰³

Training for Health Professionals

The country has an imbalance within the health workforce with only 0.6 nurses for every doctor whereas the international standard is three nurses per doctor. Overall, there are 8.3 doctors, nurses, and midwives for every 10,000

people in Bangladesh, far below the target 44.5 per 10,000 under the SDGs. At the district level, workforce needs can be acute with one recent survey finding that there are an average of 75 openings for nurses and 35 openings for physicians in district hospitals.⁴⁰⁴ The DGHS reported that its 2020 workforce included 26,791 doctors; the Directorate is allotted 32,841 slots for doctors.⁴⁰⁵

Health workforce development in the country predominantly involves institutional education before entering service.⁴⁰⁶ Since 2010, the number of medical and nursing colleges and nursing institutes has increased substantially, and authorities introduced the National Quality Assurance Scheme for medical schools and an accreditation system for nursing and midwifery institutions. Nonetheless, a 2017 survey found that only about one-half of medical colleges had submitted reports required under the Scheme.⁴⁰⁷ As of 2020, there were five medical universities and 109 medical colleges alongside the armed forces' six medical colleges. In addition, there were 39 post-graduate medical teaching institutions. For nursing students, there are 60 institutions offering the basic (baccalaureate-level) course, 41 offering post-graduate nursing courses, four offering a specialized nursing diploma, and 183 offering a nursing or midwifery diploma. Upwards of 60 institutes offer courses in non-traditional medicine, and there are more than 200 medical assistant training schools.⁴⁰⁸

A significant number of training courses and

workshops are held annually.⁴⁰⁹ For example, the U.S. CDC conducts the Field Epidemiology Training Program (FETP) to develop a pool of professionals who can respond to diseases with global epidemic and pandemic potential. Bangladesh's IEDCR started Field Epidemiology Training Program, Bangladesh (FETP,B) in 2012 with technical support from the U.S. CDC and under the direction of the MOHFW Secretary of the Health Services Division. The program has two levels: FETP,B Advanced (2 years) and FETP,B Frontline (2 months). Government medical doctors, doctors from the army medical corps, and government veterinary surgeons are recruited for the FETP,B Advanced course where they join outbreak investigations and emergency responses, surveillance data analysis, and public health program evaluation. FETP,B Frontline trains 20 medical doctors and 10 veterinary surgeons in each batch; they complete their training on surveillance projects and emergency response. During the course of the COVID-19 pandemic, 91% of medical graduates of the FETP,B Advanced and 74% of medical graduates of the FETP,B Frontline were involved in pandemic response in some way, including staffing the hotline, management and follow-up of quarantined people, case investigation and contact tracing, and training 3,000 health care workers on case investigation and contact-tracing. FETP,B fellows can be deployed in any part of the country for public health emergency responses within 24 hours.⁴¹⁰

WOMEN, PEACE, AND SECURITY

The Women, Peace, and Security (WPS) agenda encompasses efforts to increase women's meaningful participation in the promotion of peace and security through conflict prevention and resolution, peace negotiation, peacebuilding, peacekeeping, humanitarian response, relief aid, and economic recovery and development. The WPS agenda gained global visibility with United Nations Security Council Resolution (UNSCR) 1325, adopted in October 2000. It affirmed the important role women play in promoting and maintaining peace and security. The WPS agenda has since expanded with the adoption of additional related UNSCRs: 1820 (2009); 1888 (2009); 1889 (2010); 1960 (2011); 2106 (2013); 2122 (2013); 2242 (2015), 2467 (2019), and 2493 (2019). These resolutions together address various issues of gender and security, including the need to stop gender-based violence and to promote women's roles in conflict resolution, recovery, and peacebuilding. The WPS agenda has also broadened to include applying a gendered perspective to humanitarian assistance, disaster management, DRR, and climate security for more equitable participation to address humanitarian needs and benefit the entirety of a society over the longer term.

Bangladesh held a non-permanent seat on the UN Security Council at the time of UNSCR 1325's passage, and it was a vocal proponent of the resolution. In terms of national plans and policies, the SOD lays out detailed action points for various ministries and departments to integrate gender assessments into activities; the revised Bangladesh Climate Change Strategy and Action Plan recognizes gender concerns, and Bangladesh was one of the first countries to produce a Climate Change and Gender Action Plan, in 2013. The National Women's Development Plan explicitly recognizes the importance of women's role in disaster management and climate action. However, these

policy instruments require concrete action and financing. The country delivered its National Action Plan on Women, Peace, and Security (NAP WPS) 2019-2022 in November 2019. The NAP sought three outcomes:

- **Prevention:** Strengthen social cohesion and raise awareness to prevent all forms of conflict, violent extremism, and gender discrimination
- **Participation:** Increase women's meaningful participation in decision making on peace and security, including peace building, peacekeeping missions, and preventing violent extremism
- **Protection, relief, and recovery:** Protect women's safety and well-being as well as their rights and engage women in humanitarian assistance and disaster relief policies and programs with an aim to address their specific needs and utilize their unique expertise.⁴¹¹

In 2022, government decided to extend the implementation of the NAP WPS through 2025.⁴¹²

Bangladesh has acceded to the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) and its optional protocols as well as other international instruments to reduce gender-based violence and ensure that women are integrated into national development plans. An additional focus of Bangladesh's commitment to the WPS agenda is on its UN peacekeeping role. The country seeks to increase the participation of women peacekeepers and has deployed an all-female police unit as well as female combat pilots among other roles.⁴¹³ Photo 2 shows an all-female police unit arriving for service in Port-au-Prince, Haiti, in 2010.⁴¹⁴

Two indices compare Bangladesh's progress in closing the gender gap in education,



Photo 2: Bangladesh Formed Police Unit Arrives in Haiti

health, economic participation, and political empowerment. In the World Economic Forum's 2022 Global Gender Gap Report, Bangladesh scored 0.714 (on a scale where 0.00 means complete inequality and 1.00 means gender parity has been achieved). This earned the country a rank of 71st of 146 countries assessed and where a rank of 1 denotes the country that has closed the greatest amount of its gender gap.⁴¹⁵ Meanwhile, the Georgetown University Institute for WPS report for 2021/2022, ranked Bangladesh 152 of 170 countries in a similar system wherein a first place ranking indicates the greatest progress toward closing the gender gap and the 170th place indicates the least progress toward closing the gender gap. The country's overall score in the Georgetown index was 0.594 (or nearly 60% of the gender gap closed).⁴¹⁶

The World Economic Forum report assesses progress toward parity in four dimensions: Economic Participation and Opportunity, Educational Attainment, Health and Survival, and Political Empowerment. Bangladesh earned the following scores:

- Economic: 0.427 or 141st of 146 countries
- Education: 0.923 or 123rd of 146 countries
- Health: 0.962 or 129th of 146 countries
- Politics: 0.546 or 9th of 146 countries⁴¹⁷

For the purposes of examining Bangladeshi women's involvement in the economy, the Georgetown index's indicators on "financial

inclusion," "employment," and "mobile phone use" are important. Financial inclusion scores are the percentage of women ages 15 years and older who report having an individual or joint account at a bank or other financial institution or who report using a mobile money service. Employment scores are the percentage of women ages 25 years and older who are employed. Mobile phone use scores are the percentage of women ages 15 years and older who report using a mobile phone to make and receive personal calls. Bangladesh's scores on these indicators are 35.8 for financial inclusion, 35.2 for employment, and 85.9 for mobile phone use. This compares with regional (South Asia) scores of 64.8 for financial inclusion, 23.3 for employment, and 61.7 for mobile phone use. South Asia was the worst performing region in the 2021/2022 index in what the authors assessed reflected high levels of legal discrimination, intimate partner violence, and discriminatory norms that disenfranchise women, often coupled with low levels of inclusion. Fewer than one woman in four in the region is in paid work. The index includes the following countries in the "South Asia" grouping: Afghanistan, Bangladesh, Bhutan, India, Iran, Maldives, Nepal, Pakistan, and Sri Lanka.⁴¹⁸

As both the World Economic Forum and Georgetown indices reveal, the country falls well short of the global average in all economic indicators, not only in women's labor force participation rates and wage equality, but also

in terms of the percentage of legislators, senior officials, managers, or professional and technical workers who are women. This economic shortcoming contrasts with Bangladesh's high educational and health outcomes. With more than 92% of the gender gap closed on literacy rates and parity reached in primary and secondary education enrollment, only enrollment in tertiary education, where only 72% of the gender gap has been closed, is holding the country back. On the health front, women are outliving men, and nearly 95% of the gender gap on sex at birth has been closed. With progress on these fronts, it is all but certain that economic exclusion is linked to a lack of advocacy for women's inclusion at the political level. Indeed, the picture on politics is ambiguous. The country does rank first for years with a female head of state (28.31 years) versus years with a male head of state (21.69 years). However, women hold only 20% of national parliamentary seats and only 8% of national ministerial portfolios.⁴¹⁹

To dig further into this political picture, in the national Parliament, 50 seats (of 350) are allotted to women, who are elected by political parties based on their overall share of elected seats. However, for the 300 seats not allocated to women, men are far likelier to be selected as candidates, and women are often relegated to their parties' "women's wing." Still, women lead both main political parties.⁴²⁰ Sheikh Hasina (sitting PM and leader of the Awami League party) and Khaleda Zia (a former PM and leader of the Bangladesh Nationalist Party) have been the faces of Bangladeshi politics for more than 25 years. Still, observers point out that these two leaders come from political families and do not reflect the way most women in the country live. Even within the parties, it is common for party committees to reject applications from their female members to run for general seats (those not allocated specifically for women)⁴²¹ or for local posts. As of 2021, there were only 44 women in local leadership positions compared with 5,541 men.⁴²²

The Representation of the People Order set by the Election Commission in 2008 required

parties to give women 33% of positions on their committees by 2020. An analysis of the ruling Awami League central executive committee for 2022–2025 found that out of 78 members, only 18 (23%) are women, including PM Sheikh Hasina. Of the 502 members of the central executive committee of the Bangladesh Nationalist Party, the main opposition, only 69 (14%) are women. In the Jatiya Party, only 45 out of 365 members (12%) of the central executive committee are women, and across all 39 political parties registered, women's participation is negligible. Still, as of 2023, the Election Commission has taken no punitive action; rather, it proposed to extend the deadline to 2030. Moreover, after the Commission's request that all parties submit complete reports on the matter of gender representation by 2022, none complied.⁴²³

The government itself recognizes that harmful and discriminatory practices like child marriage, abandonment, dowries, and gender-based violence persist due, in part, to practices rooted in traditional social norms that value boys over girls. Violence takes place at home, in the workplace, and in public places.⁴²⁴ A key example is the scourge of acid attacks on women. The Acid Survivors Foundation (ASF), an NGO that opened an office in Dhaka in the late 1990s, says that acid violence can be perpetrated by various people and for various reasons,⁴²⁵ including but not limited to family feuds, dowry demands or disputes, land disputes, spurned marriage or sexual proposals, preventing a husband from divorcing, or refusing a husband a second marriage. Legal redress is time-consuming and expensive, as is the medical treatment for acid burns; so acid violence against men and women can be used to ruin families.⁴²⁶ Bangladesh passed its first law banning acid attacks in 2002, and it later introduced the death penalty as a punishment for the crime. As a result, acid attacks fell from 494 incidents in 2002 to 59 in 2015,⁴²⁷ and they had fallen even further to 19 in 2019. However, 2020 saw an uptick, and that year, ASF reported that at least 600 cases of acid violence were still under trial across the courts system. However, legal rights group, Ain

O Salish Kendra says that frequently enough information cannot be gathered for filing cases. Indeed, ASF reports that between 2002 and 2019, there were 2,169 acid attack cases filed, but only 199 cases ended in convictions with 2,000 suspects acquitted due to a lack of evidence. The Government reported that, as of 2020, none of the 14 people who were convicted and who were given a sentence of capital punishment was executed.⁴²⁸

Substantial challenges to further progress include lagging implementation of laws and social acceptance of abusive practices and behaviors, in addition to the society-wide issues of poverty and insecurity. Women still face labor force discrimination and are more prone to under-employment and exclusion from the formal financial system, making them more vulnerable to abusive labor practices, wage theft, and peremptory dismissal from employment when a crisis occurs.⁴²⁹ For example, among the key issues that the 2021/2022 Georgetown WPS index noted was the impact of the COVID-19 pandemic on women's employment globally. The pandemic triggered major reversals in rates of paid employment. Bangladesh was among the 20 countries that saw the largest relative (women's versus men's) employment decrease between 2016 and 2020; the percentage of Bangladeshi women in formal, paid employment fell from above 60% to below 40% over that period. As domestic violence escalated internationally during COVID-19 lockdowns along with the financial stressors associated with work loss, the Bangladeshi government included gender-based violence interventions under essential health services and community engagement activities related to the pandemic. For example, even during lockdowns, the National Trauma Counseling Center of the Ministry of Women and Children Affairs (MOWCA) continued to provide legal and psychosocial counseling online and by mobile phone. While women may have been able to continue to access support, their losses of jobs and financial autonomy are thought to have been deep and set back progress significantly.⁴³⁰ Photo 3 shows a former

housewife in Khulna who, after the pandemic undermined her husband's wages, launched her own business, raising poultry; she had to seek financing from a local women's organization since she was unable to secure a bank loan.⁴³¹



Photo 3: Khulna Woman Earns Extra Household Income by Raising Chickens

The core targets set in Bangladesh's 7FYP included more equitable participation in tertiary education and TVET, reducing income inequality, and increasing social protection spending as a portion of GDP. Among the indicators tracked from the 7FYP in preparing the 8FYP, the Government noted that it continued to fall short in increasing the percentage of parliament seats held by women, had seen a fall in the percentage of women ages 20-24 years who had been married before age 18 years from 65% in 2011 to 51.4% in 2019 although it targeted 30%, and had seen minimal change in the ratio of male to female students in tertiary education or in the percentage of female teachers in primary, secondary, and tertiary levels of education. The Government has undertaken some programs through MOWCA aimed at preventing child marriage and promoting adolescent health, creating awareness among not only children but also their parents and community leaders regarding the harmful effects of child marriage, dowries, and "Eve teasing" (public sexual harassment or sexual assault of women by men). 8FYP also noted that the Government needs to strengthen implementation of CEDAW and other gender-related laws to prevent child marriage, prevent social violence,

and eliminate discrimination, all of which remain major challenges.⁴³²

As of 2020, Bangladesh had one of the highest rates of child marriage in the region; more than half of Bangladeshi girls (52.3%) were married before the age of 18 years. A 2015 report by the Bangladesh Bureau of Statistics indicated that child marriage was more common in Bengali, Muslim communities and that women with no education were more likely to be married as children. A 2017-2018 national Demographic and Health Survey found that 58.9% of women aged 20-24 were married before 18 years of age but that the median age at first marriage among women aged 20–49 rose from 15.3 years in 2007 to 16.3 years in 2017. In 2019, UNICEF reported that child marriage remained widely accepted with 51.4% of women aged 20-24 years first married before age 18 years, and 15.5% first married before age 15 years.⁴³³ Thus, rates of child marriage appear to be stubbornly constant.

The practice of girl-child marriage is a major impediment to women's health, empowerment, and gender equality in Bangladesh whose government has committed to eliminating child marriage by 2030 and, toward this effort, enacted the 2017 Child Marriage Restraint Act that stipulated harsher penalties and included several preventative measures against child marriage. However, the law also incorporated key elements that advocates criticize as potentially having the opposite impact on child marriage rates. Specifically, the law allows marriage before the legal age (18 years) under “special circumstances” – e.g., if the marriage is deemed to serve “the best interest of the minor” – but the law does not offer details or suggest any minimum age for such marriage. Moreover, the law lays out punishment for filing false complaints and could, therefore, deter people from reporting a child marriage to local authorities.⁴³⁴

The political and social foundations of women's equitable treatment in society need to be laid and strengthened if Bangladesh's women are to make strides in economic opportunity and participation. Without good data on women's labor force participation and the burden they

continue to feel at home, accurately assessing movement on women's inclusion is difficult. Several key evidence pieces were generated in 2022 to shed light on challenges and solutions to gender equality in Bangladesh. The Bangladesh Bureau of Statistics published its first Time Use Survey, which will prove critical in translating 8FYP commitments into action as the Survey brings visibility to the burden of women's unpaid work and an analysis to inform the design and adoption of necessary laws, policies, and programs to promote women's empowerment within households, workplaces, and society.⁴³⁵ In the 2023 World Bank Women, Business, and the Law snapshot of how well Bangladesh's economy integrates women, the country scored 49.4 out of 100. The index covers 190 economies and considers the life cycle of a working woman by asking 35 questions consolidated into eight indicators that are then averaged; 100 represents the highest possible score. In the index, data refer to the laws and regulations that are applicable to Dhaka, as the main business city. Different rules may apply in other jurisdictions.

One area where Bangladesh's women are at parity with their male counterparts in the working world is in mobility; the World Bank index gave Bangladesh a perfect 100 score based on the fact that women and men have equal legal right to choose where they live, to travel outside their homes, to apply for a passport, and to travel outside the country. However, when it comes to laws affecting women's decisions to work, laws affecting women's pay, constraints related to marriage, laws affecting women's work after having children, constraints on women starting and running a business, gender differences in property and inheritance, and laws affecting the size of a woman's pension, the country suffers significant shortfalls. One of the lowest scores in the World Bank index for Bangladesh is on the indicator measuring laws affecting women's work after having children; the country nets a score of 20 out of 100 as there is no legal requirement to offer paid maternity leave, nor are there laws or provisions promoting or requiring paternity leave or any paid parental leave for that matter.

Indeed, dismissal of pregnant workers is not prohibited.⁴³⁶

Despite the headwinds that Bangladeshi women face in getting their voices heard at the household, village, district, or national level, there have been improvements in their integration into DRR and CCA.

Bangladesh's women are highly vulnerable to the impacts of natural and man-made hazards, but they also provide critically important resilience and adaptation knowledge and labor. These contributions are typically poorly recognized in mainstream policy making even though they may be recognized at the household or village level. Prevailing social norms can marginalize women from formal DRR and disaster response decision-making processes and actions, increasing their vulnerability. However, women's experience from various activities at household and community levels, as well as the amount of time they devote to the village atmosphere, makes them a valuable source of knowledge about a range of issues linked to natural resources and hazards. They possess experience in conservation and sustainable resource management; however, women own less than 10% of land in Bangladesh, and only 5% of women receive agricultural assistance from Government agencies. Thus, women in general lack the formal resources that men have to bolster their households' resilience before or after a disaster event. In a 2020 survey of communities in a flood-prone district in the country's central northwest, both men and women pointed to women who had undergone formal primary and secondary education as having been key informers to their villages regarding how to behave in the wake of flooding; this included how to treat contaminated wells and whether or not to go to public shelters. Moreover, survey respondents indicated how women's responsibilities increase during disasters as they not only maintain their housekeeping and caregiving duties but also provide key elements of continuity and resilience such as working outside the home to bring in extra income or to complete time-sensitive farm work. Respondents

also underscore that during floods, theft and robbery increase; while men may be away at markets or seeking cash employment to help their households recover, women around the house are the primary guardians of a family's goods and, therefore, are exposed to potential theft and violence.⁴³⁷

Most notably, the CPP has helped Bangladesh decrease the death toll from extreme weather events as it uses a multi-layered EWS consisting of weather monitoring equipment, communication systems, and a network of volunteers, half of whom are women. The CPP allows community volunteers access to mobile phone SMS / text alerts regarding potentially dangerous weather systems; they can then track those systems via social media and other messaging services that link them to both scientific agencies and other volunteers. This information gives them the opportunity to inform their neighbors and make choices for their own households, including when and where to evacuate. Each village's volunteers are responsible for making sure that everyone in the community is aware of the latest weather risk warnings. They use a tiered flag system, displayed in the central marketplace or village square, to communicate the severity of the storm. They also patrol streets with megaphones to disseminate the warning, and they may go door-to-door to ensure that the information reaches everyone. Potentially more important is the social role these volunteers play as storms often take an inordinate toll on Bangladeshi women who choose not to evacuate in the belief that their place is in the home or out of a fear of gender-based violence in overcrowded shelters. CPP's women volunteers work to address these beliefs and to quell fears that women will be embarrassed or compromised by sleeping in the same room as strangers. An additional benefit is that becoming a volunteer can elevate the social standing of women, giving them a role in a society that might otherwise relegate them solely to the domestic sphere; they can help make shelters and relief processes safer and more responsive to women's needs.⁴³⁸

CONCLUSION

Bangladesh is among the world's countries most affected by climate-related hazards. In recent years, it has suffered major cyclones that leave many Bangladeshis dead, displaced, and without livelihoods. It regularly experiences large and small events that, over time, erode its capacity to respond and build back better. Nonetheless, after major historic disasters, Bangladesh has developed institutions and systems designed to reduce human and material losses. Indeed, Bangladesh's investments in cyclone shelters, early warning systems, evacuation plans, reforestation schemes, and improved communication have offered it the ability to mitigate its exposure over the past 40 years.

This progress is reflected in the declining death tolls from cyclones. In 1970, Cyclone Bhola killed 300,000 people in the territory that became Bangladesh. In 1991, the death toll from Cyclone Marian, while still substantial, declined significantly to 139,000 people.⁴³⁹ In 2007, Cyclone Sidr was another major cyclone that wreaked havoc but killed 3,400 people.⁴⁴⁰ Additionally, the gender ratio of tropical cyclone fatalities narrowed considerably from Cyclone Bhola in 1970, when women victims outnumbered men 14 to 1, to Cyclone Sidr in 2007, when the ratio of female to male deaths dropped to 5 to 1.⁴⁴¹

Bangladesh has implemented legal, institutional, and cultural programs to reduce disaster risk with a focus on coordinated management of hazards. The National Disaster Management Council and MoDMR sit at the top of the national structure although the Disaster Management Act (2012) also lays a legal foundation for local disaster management committees and groups. The Disaster Management Policy and SOD also lay out the roles and responsibilities of the various Ministries, committees, and other organizations, all required to implement Bangladesh's disaster management model. Finally, the NPDM 2021-

2025 builds on lessons learned to lay out targets to be met to ensure the country can meet the challenges of a changing environment.

Among the key areas where the country needs to make progress, according to the NPDM 2021-2025, are understanding risk and EWS. Communities, institutions, and the media are being asked to participate in hazard mapping, risk assessments, and risk-informed planning and to explore uses of modern communications technology for improved monitoring, prediction, and forecasting to feed information to potentially impacted communities. While meteorological observation and forecast systems have expanded, volunteers are often the only resources that can cover the "last mile" that reaches people without mobile phone or radio coverage. Indeed, the flagship Cyclone Preparedness Programme (CPP) has 80,000 volunteers, who ensure that information reaches everyone. Over the longer-term, replicating volunteer involvement in action to confront climate change-influenced hazards may prove difficult without significant financing.

Bangladesh has worked hard to ensure that transport, schooling, communications, and utilities infrastructure reach even the most remote areas of the country such that all Bangladeshis share in the country's progress. Investments in the coming years will focus on ensuring that the transport and electric power networks are not only connected to neighboring countries but integrate more resilience against disruption by hazards such as flooding, storms, and landslides. As it stands, large sections of the transport network are vulnerable to disruption by hazards such as flooding, storms, and landslides, and the electric power generation and distribution infrastructure are vulnerable not only to storms and flooding but also to global oil and gas market disruptions. Finally, the country will face challenges ensuring access and reliability of health services as risks associated with natural disaster and climate change shift Bangladeshis' lives, livelihoods, and health.

APPENDICES

DoD DMHA Engagements in the Past Five Years (FY 2018-2023)

The list below describes the DMHA Engagements that the U.S. DoD has had with Bangladesh in the last five years.

Disaster Response Exercise and Exchange (DREE), October-November 2022

The annual Disaster Response Exercise and Exchange (DREE), co-hosted by U.S. Army Pacific (USARPAC) and Bangladesh's AFD, was held in Dhaka, Bangladesh, from 30 October to 2 November 2022. A total of 358 participants from 124 organizations and 27 countries participated. The 2022 DREE came after the 50th anniversary of bilateral relations between Bangladesh and the United States, and, according to the U.S. Embassy in Dhaka, the DREE is a "great example" of how the relationship has grown. The Bangladesh AFD, the MoDMR, and USARPAC organized the exercise. Brigadier-General Husain Muhammad Masihur Rahman, Director General of the Operations and Plans Directorate of the AFD; Mohammed Kamrul Hasan, Secretary of the MoDMR; Lieutenant-General Waker-Uz-Zaman, Principal Staff Officer of the AFD; Dr. Mohammed Enamur Rahman, a member of parliament (MP) and state minister in MoDMR; and Brigadier-General Mark A. Crosby, Assistant Adjutant General-Air for the Oregon National Guard delivered remarks during the opening ceremony. The 2022 exercise focused on best practices for emergency preparedness, especially on preparation for earthquakes. Multiple countries shared knowledge under the theme "Resilience through Preparedness." The Oregon National Guard's Crosby said the DREE helps develop relationships and disaster response capabilities in the region. Started in 2010, the annual Bangladesh DREE is a key component of USARPAC's Pacific Resilience. It

is a comprehensive effort focusing on building multilateral interoperability for disaster response among the U.S., Bangladesh, and regional partners. The DREE also identifies areas to increase preparation and reduce risk. Day two of the event included academic discussions on landslides caused by earthquakes, infectious diseases during incidents, and tsunami preparation. Further, Chief Master Sergeant Denise Phillips of the Oregon National Guard spoke on gender equity and inclusion of women during disasters. In his closing remarks, Major-General Reginald Neal of USARPAC highlighted that this was the "first time we've fully integrated women into all aspects of the response." He also noted that integrating women generates "a fully integrated response to build operational readiness." Day three included a comprehensive tabletop exercise (TTX) to familiarize participants with an earthquake scenario and with their roles and responsibilities. The Pacific Resilience series of events supports USINDOPACOM's civil-military integration and HADR capabilities.⁴⁴² CFE-DM participated in the 2022 Bangladesh DREE with a presentation on ShakeAlert®, the earthquake EWS currently being deployed in the western United States.⁴⁴³

CARAT Bangladesh, December 2021

As part of the 27th annual Cooperation Afloat Readiness and Training (CARAT) series, CARAT Bangladesh 2021 concluded on 9 December, following nine days of virtual, in-person, and at-sea engagements that enhanced collaboration between the Bangladesh Navy and U.S. Navy and focused on shared maritime security challenges of the region. The exercise focused on the full spectrum of naval capabilities. The at-sea phase in the Bay of Bengal saw U.S. Navy assets along with ships and aircraft from the Bangladesh Navy focus on divisional tactics. Other focus areas included surface warfare, replenishment-at-sea, search and rescue, a gunnery exercise, and exchanges between Explosive Ordnance

Disposal technicians. Virtual subject matter expert exchange events featured a variety of joint training opportunities, including maritime aviation, maritime domain awareness, a WPS symposium, and explosive ordnance disposal and mine countermeasures. The intergovernmental organization personnel from the UN Office on Drugs and Crime provided training through their Global Maritime Crime Programme, and the Bali Process Regional Support Office provided subject matter expertise on combatting people smuggling and human trafficking by sea.⁴⁴⁴

Disaster Response Exercise and Exchange (DREE), October 2021

A three-day DREE held by U.S. and Bangladesh military forces in cooperation with Bangladesh disaster management officials emphasized aspects of disaster management during the COVID-19 pandemic. The Bangladesh AFD, MoDMR, and USARPAC jointly organized the exercise, which ran 26-28 October 2021. The 2021 exercise built practical knowledge about international tools for disaster management, mutual understanding, and coordination among stakeholders, finalized draft guidelines for the Disaster Incident Management Team, and shared experience and lessons about disaster management under the theme “Resilience through Preparedness.” The Bangladesh DREE is part of USARPAC’s HADR initiative, Pacific Resilience, which started in 2010. The DREE is a comprehensive effort focusing on building multilateral interoperability for disaster response between the United States and Bangladesh and on identifying areas to increase preparation and risk mitigation. Because of the COVID-19 pandemic, the 2021 DREE

was a TTX. A total of 285 participants from 130 organizations and 37 countries participated. Stakeholders included ministries, NGOs, and INGOs.⁴⁴⁵ Photo 4 shows U.S. Air Force Chief Master Sergeant Denise Phillips, a delegate from the Oregon National Guard, discussing disaster management for gender and vulnerable populations with others attending the 2021 Bangladesh DREE.⁴⁴⁶

SEACAT, August 2021

Maritime forces from 21 Indo-Pacific partner nations, including the U.S., joined with other U.S. agencies and international organizations in the 20th iteration of Southeast Asia Cooperation and Training (SEACAT) both in-person Singapore and virtually on 10 August 2021. SEACAT is a multilateral exercise designed to enhance cooperation among Southeast Asian countries and to provide mutual support and a common goal to address crises, contingencies, and illegal activities in the maritime domain using standardized tactics, techniques, and procedures. The exercise scenarios are designed to encourage countries to use maritime forces to enhance understanding of the operational environment, build capacity for humanitarian support missions, and uphold international laws and norms. The largest iteration to date, the



Photo 4: Participants in 2021 DREE

2021 event included 10 ships and 400 personnel from Australia, Bangladesh, Brunei, Canada, France, Germany, India, Indonesia, Japan, Malaysia, Maldives, New Zealand, Philippines, South Korea, Singapore, Sri Lanka, Thailand, Timor-Leste, the United Kingdom, the U.S., and Vietnam. A maritime operations center in the International Fusion Center in Singapore served as a centralized hub for crisis coordination and information sharing. The U.S. inter-agency was represented by the Joint Interagency Task Force West, USINDOPACOM's executive agent for counter-narcotics, and Defense Threat Reduction Agency, the DoD's official combat support agency for countering weapons of mass destruction. They provided greater understanding of the operational environment and adherence to established rules, laws, and norms across the joint environment. For the first time, international organizations and NGOs played a role in SEACAT through scenario injects designed to simulate real world situations that enhance understanding and adherence to accepted rules, laws, and norms. Participants included the UN Office on Drugs and Crime, European Union Critical Maritime Route Wider Indian Ocean, and ICRC.⁴⁴⁷

CARAT, November 2019

The U.S. and Bangladesh navies concluded CARAT Bangladesh with a closing ceremony at the School of Maritime Warfare and Tactics in Chattogram, Bangladesh, on 7 November 2019. CARAT, an annual exercise, is designed to address shared maritime concerns and strengthen partnership. Bangladesh Navy Commodore M. Anwar Hossain, who presided over the ceremony, said that CARAT provided both navies an opportunity to achieve mutual maritime security goals. The exercise included training in a range of capabilities including diving, engineering, aviation, hydrography, maritime domain awareness, and maritime law. Sailors from both the U.S. and Bangladesh attended a community outreach event at Ashar Alo School for Children with Special Needs in Chattogram, where they toured the

facility, met with students, and saw a concert. CARAT Bangladesh was the final exercise of the 25th Anniversary CARAT Season. CARAT strengthens partnerships between regional navies and enhances maritime security cooperation throughout the Indo-Pacific. It builds upon other naval engagements in South Asia, Southeast Asia, and the Pacific Islands including Pacific Partnership, Maritime Training Activity Malaysia, Maritime Training Activity Sama Sama (Philippines), Pacific Griffin with Singapore, and SEACAT.⁴⁴⁸

Disaster Response Exercise and Exchange (DREE), October 2019

The Bangladesh MoDMR and AFD along with USARPAC hosted a DREE from 27 through 31 October 2019. Twenty countries, government agencies, and NGOs compared best practices for disaster relief. The DREE culminated in an exercise simulating a large-scale earthquake response. DREEs help develop relationships and disaster response capabilities. DREE 2019 in Bangladesh was the biggest to date in the country, in terms of scope and participation. The Oregon National Guard's participation was a key component as it had been a state partner with Bangladesh for more than 10 years and has experience preparing for earthquakes. The Bangladesh DREE has grown substantially and informs many smaller exchanges and more specific training with Oregon. One participant said the simulated earthquake scenario was particularly relevant for the Oregon State Partnership Program (SPP) team. Lieutenant-Colonel Evan Hessel, deputy director of the Oregon National Guard SPP and the commander of the 741 Brigade Engineer Battalion and 102nd Oregon Chemical, Biological, Radiological, Nuclear, and Explosive Enhanced Response Force Package, said, "Similarly to Bangladesh, Oregon is situated on a fault zone, in our case the Cascadia subduction zone. Also similar to Bangladesh, our subduction zone is considered to be overdue for an earthquake. So we really have a lot of things that we can share."⁴⁴⁹

CARAT, November 2018

The U.S. and Bangladesh navies kicked off exercise CARAT 2018 in Chattogram on 4 November 2018. Sailors and Marines across five ships, including a guided missile frigate and patrol craft from the Bangladesh Navy, and a maritime patrol aircraft and dry cargo ship from the U.S. Navy, conducted a series of cooperative evolutions ashore and at-sea to allow the navies to work together in ensuring maritime security, stability, and prosperity. The sea phase encompassed complex scenarios in the Bay of Bengal to include a tracking exercise aimed at increasing both navies' ability to track and pursue targets through the coordinated deployment of surface ships and maritime patrol aircrafts, division tactics designed to enhance communication as ships sail together in complex maneuvers, and a screening exercise to increase proficiency of ships to defend from potential threats. The shore phase involved symposia across the full spectrum of naval capabilities that provided opportunities for both navies to share knowledge and experiences with each other on subjects ranging from gas turbine maintenance and aviation warfare to medical and legal issues. With a half century of diplomatic relations between the U.S. and Bangladesh, 2018 marked the 24th anniversary of the CARAT exercise series with bilateral engagements between the U.S. and a dozen ally and partner nations including Bangladesh, Brunei, Indonesia, Malaysia, the Philippines, Singapore, Sri Lanka, Thailand, Timor-Leste, and Vietnam.⁴⁵⁰

International/Foreign Relations

Bangladesh seeks to maintain non-aligned, non-interventionist, non-aggressive, non-imperialist, and non-expansionist international relationships. Dhaka maintains a policy of “strategic ambiguity” in not making grand pronouncements or taking sides but, rather, engaging all parties on specific sectors and not allowing that engagement to bleed into other issues. In addition to bilateral relationships, it is a member or associate of regional and global blocs,

such as the South Asian Association for Regional Cooperation, the UN, and the Commonwealth.

A key facet of the country's international engagement is the role the Bangladesh AFD has played in UN peacekeeping operations since 1988. It has emerged as one of the top troop-contributing and police-contributing countries and not only contributes personnel but also works on the formative stages of missions by helping to craft and build momentum toward bringing women to seats at the table of security agenda construction and promoting the idea that women are not passive agents but must be directly involved.⁴⁵¹

A second major area where Bangladesh has built engagement is climate change. As one of the most vulnerable countries to the impacts of climate change, Bangladesh has sought to become a “Climate Teacher” on mitigation and adaptation. It promotes local scientists' novel technologies and supports Bangladeshi scholars' use of experiential knowledge to effectively fight against climate change.⁴⁵² A member-state of the Climate Vulnerable Forum (CVF), a South-South cooperation venue that advocates for the prioritization of the needs of the most climate-vulnerable communities, it promotes action by the international community, commissions studies to inform climate responses, and builds support for safeguarding the world's most vulnerable people. Bangladesh was the third chair of the CVF (2011-2013), and it used the position to gain adoption of a 14-point CVF declaration regarding the needs of vulnerable countries. The country assumed the chair again for the 2020-2022 session, during which it appointed five CVF thematic ambassadors and launched the “Midnight Survival Deadline for the Climate” to call all nations to deliver on their commitments under the Paris Agreement with revised and enhanced NDCs submitted by midnight on 31 December 2020.⁴⁵³ In July 2021, it also convened the CVF's Vulnerable Twenty (V20) group Climate Vulnerables Finance Summit, which was the first inter-governmental finance summit led by the economies that are systemically vulnerable to the global climate crisis. The Summit goal was to shape global cooperation and South-South

responses for fast-tracked resilience building efforts and to update economic and finance actions and partnerships for the evolving realities of multiple pressures.⁴⁵⁴

Third, a major issue motivating Bangladesh on the global scene as of 2023 is the humanitarian response to the Rohingya crisis. In the face of the Myanmar military's crackdown on unarmed civilians and resulting mass Rohingya flight into Bangladesh, Dhaka opened its border to the forcibly displaced population, but the more than 1 million Rohingya now seemingly interminably present in southeastern Bangladesh put Dhaka in a quandary. Consistent financial and diplomatic support from the international community is required, but no one, including Dhaka, has yet found a diplomatic and durable way out of the crisis that would allow the Rohingya to return to Myanmar.⁴⁵⁵

Despite its efforts at the UN and in other venues to ensure its independence in global action, Bangladesh faces challenges to its non-alignment. India has been the preoccupying external factor for Bangladesh since independence. Due to both geography and historical factors, the two countries are intertwined culturally and economically, and this fact has had repercussions for Bangladesh's modern political landscape with major political players – parties and individuals – seen as more “pro-” or “anti- India” regardless of other policy stances. Nonetheless, this characterization really only means that a government will undertake more or less constructive stances to issues dividing these neighbors – e.g., border demarcation or water sharing.⁴⁵⁶ To a certain extent, the economic opportunities China represents have allowed Dhaka to make a very pragmatic choice in expanding the trade and investment relationship with Beijing in order to address some of the historic hegemony that India had held over Bangladesh. Indeed, some parties in Dhaka had seen improving ties with China as a way to push back against what they perceived as Indian coercion. Nonetheless, there is clear interest in Dhaka in avoiding becoming a pawn in Sino-Indian competition, and Bangladesh

studiously cultivates its political and cultural ties with India even as it bolsters its economic ties with China. The addition of Dhaka's strong ties to the U.S. is a means for Bangladesh to avoid being vulnerable to pressures that India and China could apply. The ways in which this geopolitical competition plays out in Bangladesh is illustrated by the case of COVID-19 vaccines; while China promised many vaccines but delivered only 5 million doses, India's Serum Institute failed entirely to deliver a pre-paid order from Bangladesh. Meanwhile, the U.S. delivered 100 million doses to Bangladesh and earned a boost in positive public perceptions. Concurrently, the U.S. has been open about desiring more commitment to democracy from Bangladesh's political leaders, and there is some concern that Dhaka will simply prefer a “non-meddling” Beijing over a critical U.S. in the coming years.⁴⁵⁷

Bangladesh has traditionally been a trade-deficit country. And the deficit is mostly financed by overseas assistance and remittances sent by Bangladeshi migrant laborers. In the latter part of the 20th century, Bangladesh remained a client of major international banking institutions, and in the 21st century, it has diversified donor countries and organizations with which it agrees to loans. Among the key players involved in economic and development funding for Bangladesh are the Asian Development Bank, Islamic Development Bank, and UN system agencies, as well as Canada, China, European Union countries, India, Japan, Saudi Arabia, South Korea, and the U.S. In general, Bangladesh has long depended significantly on overseas assistance for its economic development.⁴⁵⁸ Indeed, economic policy has been based on export-led growth and import substitution, and Bangladesh's primary foreign currency earnings are from ready-made garments and remittance earnings.⁴⁵⁹

China

Bangladesh's ties with China are strong with signs of alignment mainly lying in economic dimensions. In 2015, China displaced India

as Bangladesh's top overall trade partner.⁴⁶⁰ Bangladesh enjoys duty-free, quota-free access on 97% of exports to China, but bilateral trade is heavily tilted in favor of China with a more than 1,000% gap. Of US\$12.09 billion in bilateral trade in fiscal year 2020, Bangladesh exports to China accounted for US\$600 million while imports from China added up to US\$11.49 billion. Additional Chinese investment is in mega- and fast-track infrastructure.⁴⁶¹ In 2005, the Bangladesh-China Defense Cooperation Agreement highlighted China's commitment to help Bangladesh harness its nuclear energy.⁴⁶² From 2016, Bangladesh joined China's Belt and Road Initiative (BRI), and the two countries upgraded their relationship to a "strategic partnership." In the first five years of BRI investment, Bangladesh saw US\$38.05 billion in Chinese funding in infrastructure.

This level of engagement is a shift from the historic relationship, which originally saw China rejecting Bangladesh's independence out of deference to Beijing's ally, Pakistan. Nonetheless, from the latter 1970s onward, China softened its stance and began engaging with Dhaka, primarily on defense industrial and military-to-military bases. Since the 1980s, the two states' armed forces have regularly held high-level visits and joint exercises. More importantly, China became Bangladesh's top source of military hardware. In the decade 2010-2019, China accounted for 72% of Bangladesh's total arms imports.

Yet all is not rosy in the Sino-Bangladesh relationship. Given the toll taken on Bangladesh from hosting more than 1 million Rohingya refugees, Dhaka is frustrated with Beijing's inability or unwillingness to pressure the Myanmar junta to end that country's conflict in a way that can ease the humanitarian pressure on Bangladesh. Moreover, a long-term threat to Bangladesh is water security as China considers building dams on the upper reaches of the Brahmaputra River, one of Bangladesh's main water sources. As climate change impacts the water cycle, Bangladesh's agriculture, forestry, and fisheries sectors will confront challenges, and any additional pressure due to upstream

damming could trigger conflict, albeit at a local and political scale rather than in terms of state-on-state conflict.⁴⁶³

India

Bangladesh's ties with India require daily maintenance because Indian territory surrounds Bangladesh on three sides. Moreover, they share 54 rivers that require not only water sharing agreements but also shared conservation plans.⁴⁶⁴ The diplomatic relationship covers politics, culture, and trade, and they have generally been friendly after India militarily backed Bangladesh in its independence war and was one of the first countries to recognize Bangladesh's independence and establish diplomatic links immediately in 1971. In recent years, India and Bangladesh signed several instruments to further Bangladesh's socio-economic growth. India is keen to use Chattogram and Mongla ports for movement of goods to and from India, particularly to and from India's northeastern states.⁴⁶⁵ In addition, cross-border cooperation in energy and electricity infrastructure has grown. In 2013, the two countries' PMs inaugurated the interconnection of their electricity grids,⁴⁶⁶ and in 2018, they jointly laid the foundation stone for the India-Bangladesh Friendship Pipeline, which, in 2023, was opened and began to transport 1 million tons per year of diesel from India into Bangladesh.⁴⁶⁷ India is Bangladesh's second largest import trading partner accounting for 14% of total imports whereas Bangladeshi exports to India amount to only 1.7% of Bangladesh's total exports. Imports from India are dominated by food items, and any interruption to this trade due to political tensions would have a negative impact on the entirety of Bangladesh.⁴⁶⁸

Of course, the scale and scope of the bilateral relationship is not viewed entirely positively by all Bangladeshis, and there is strong opposition to some policies and practices. In part, opposition within Bangladesh is related to the perception that India favors the rule of the Awami League over that of any opposition party and that the Awami League uses its

domination of the relationship with India to push through domestic policies disliked by sectors of the Bangladeshi populace.⁴⁶⁹ There is also deep concern in Bangladesh about water access – similar to the concern felt regarding Chinese plans to build dams on the upper reaches of rivers shared by China and Bangladesh. Agreements to ensure both India and Bangladesh can access the waters of the rivers they share have been slow to materialize. Finally, illegal movement across the shared 4,096-km (2,545-mile) border is an irritant in the bilateral relationship. India has often criticized Bangladesh for hosting northeastern separatist militants who can attack into India, and the Indian states bordering Bangladesh have often complained of illegal migration. In exchange, Dhaka has criticized recent Indian citizenship laws that seem crafted to drive out or marginalize Muslims, many of whom share a cultural background with Bangladeshis.⁴⁷⁰

Japan

Japan has been a steady partner of Bangladesh. Since Bangladesh's independence, Japan has maintained cultural and people-to-people ties with the country via artistic exchanges and student scholarships for more than 100 Bangladeshi students to study in Japan every year. While Japan's assistance to Bangladesh began as anti-poverty funding, it has more recently been in the form of grants and technical assistance on development projects.⁴⁷¹ In fact, most recently, Japanese funding became Dhaka's choice for a major deepwater port project – Matarbari – when Bangladesh sought to avoid another front in the competition between Beijing's desire to build a Bay of Bengal deep-sea port and India's opposition to Chinese involvement.⁴⁷² Every year, key high-level officials from both sides pay visits to the other, and this strong government-to-government relationship adds ballast to the trade and economy partnership that sees Japan take in US\$1.2 billion worth of imports – mostly garments and leather – and send US\$2 billion worth of exports – steel and iron, ships, vehicles, and other machinery and appliances – every year.

Overall direct Japanese investment in Bangladesh in 2021 stood at US\$91 million.⁴⁷³

The extent of cooperation in recent years is the result of the Japan-Bangladesh Comprehensive Partnership agreement (2014) that focused on extending bilateral cooperation through defense, economic, and cultural sectors. For Japan, economic cooperation falls largely under the Bay of Bengal Industrial Growth Belt initiative, an economic component of the Comprehensive Partnership. Under this concept, Japan has been encouraging Bangladesh to focus on development that will attract Japan's major private companies. Moreover, in 2022, Japan's ambassador indicated that Tokyo wants to elevate the development partnership to a “strategic level” to include cooperation in defense and security areas. As part of its security backing for Bangladesh, Japan has extended support on Rohingya repatriation while Bangladesh has leant a supportive voice for Japan's candidacy for a seat on the UN Security Council.⁴⁷⁴

Russia

Bangladesh's relationship with Russia is colored by Dhaka's immediate post-independence relationship with the Soviet Union. The Soviet state's backing for Bangladesh's independence has long ensured that Bangladesh's political and intellectual elite retain a soft spot for Moscow and hesitate to criticize its actions. For the past few decades, then, Russia has been one of Bangladesh's major suppliers of arms and military equipment. In 2013, Bangladesh signed a US\$1 billion arms deal with Moscow and procured Metis-M anti-tank missiles. In 2015 and 2016, Bangladesh purchased 16 Yak-130 training aircraft from Russia; also in 2016, Bangladesh purchased six Mi-171SH helicopters. Moreover, Bangladesh is using BTR-80 armored vehicles purchased from Russia for UN peacekeeping missions. Outside the political and defense equipment realm, however, trade with Russia has been stymied by obstacles in banking channels and tariffs, and many exports from Bangladesh reach the Russian market through third countries. In 2020-2021, Bangladesh

exported goods worth US\$665.31 million to Russia and imported goods worth US\$466.70 million.

A bright spot for the bilateral relationship was in 2012, when the two countries signed a Memorandum of Understanding to assist in the development of nuclear power in Bangladesh. In 2013, Russia pledged to build a 2,400-MW nuclear power plant at Rooppur, Pabna district. Some 90% of the total cost would be paid by the Russian government,⁴⁷⁵ and Russia's state-owned Rosatom⁴⁷⁶ is overseeing construction, which started in 2016 with two units expected to be completed by 2024. The first unit is scheduled to go into production in 2022 and the second unit in 2023.⁴⁷⁷ Finally, Moscow is Bangladesh's fourth-largest source of development funding, bolstering sectors like garment manufacturing, agriculture, and fertilizer.

In addition to the historic relationship and Bangladesh's policy of "strategic ambiguity" on international issues, the scale of the bilateral financial relationship goes some way to explaining Dhaka's abstention from the 2 March 2022 UN vote to condemn Russia's invasion of Ukraine.⁴⁷⁸

U.S.

The U.S. is the top destination for Bangladesh's exports and accounts for more than 14% of total exports, mostly garments, by which Bangladesh earns the greatest share of its foreign currency.⁴⁷⁹ It is Bangladesh's third largest overall trading partner, after China and India.⁴⁸⁰ Still, while trade forms a strong basis for the relationship, bilateral ties are all-encompassing, and the U.S. views Bangladesh as a key regional partner on climate, humanitarian action, and security issues.⁴⁸¹ In recent years, the two have intentionally built areas of their relationship as a means to ensure that Dhaka does not become a vassal to either Delhi or Beijing.⁴⁸² All the same, the U.S. has only US\$130.59 million in active military sales since 2010,⁴⁸³ compared to the US\$2.59 billion that Dhaka spent on Chinese military equipment and to Dhaka's US\$1 billion agreement with Moscow. More recently, since the Sino-Indian clash over disputed territory

in the Himalaya, the U.S. has proposed a suite of ways to help modernize Bangladesh's armed forces, including by delivering new airframes and missiles.⁴⁸⁴ And when training and assistance to Bangladesh's armed forces beyond equipment is taken into consideration, since 2005, the U.S. has contributed US\$44 million to support upgrades to enhance Bangladesh's peacekeeping capabilities.⁴⁸⁵

Beyond these economic and military facets, the U.S. has spent US\$8 billion in the 50 years of the formal relationship to improve the lives of Bangladeshis with spending going toward development projects in agriculture and food security, cultivating a modern business environment, adapting to climate change, conserving biodiversity, improving public health and education, preparing for and responding to disasters, and promoting democratic institutions. The U.S. directly finances some of the humanitarian aid going to address the needs of the Rohingya refugees in Bangladesh in hopes of alleviating some of the strain on the host country.⁴⁸⁶

In a sign of the value placed by Dhaka on ties with the U.S., what could have been a difficult episode actually resulted in somewhat stronger ties.⁴⁸⁷ In December 2021, the U.S. levied sanctions on seven current and former top members of the Police Rapid Action Battalion. The sanctions came in response to accusations from human rights groups that the battalion had been killing political opponents and staging gunfights to deny victims due legal process.⁴⁸⁸ These sanctions were unexpected and raised hackles in Bangladesh, which felt that its international image was tarnished.⁴⁸⁹ However, the government actually worked publicly to respond constructively to ensure that U.S. concerns were addressed. Top-level visits between the countries continued apace at the rate of nearly 10 exchanges each year. Moreover, despite Dhaka's maintaining a neutral stance on Russia's invasion of Ukraine, it has applied U.S.-led sanctions on Moscow, including blocking the docking of a U.S.-sanctioned ship in Bangladesh despite that vessel carrying parts of Bangladesh's Russian-built nuclear power plant.⁴⁹⁰

Participation in International Organizations

Bangladesh is a member of, participates in, or cooperates with the following international organizations and agreement frameworks either as a government or via a national NGO or other entity:

ASEAN Regional Forum (ARF), Asian Development Bank (ADB), Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), Colombo Plan (CP), Commonwealth, Conference on Disarmament (CD), Conference on Interaction and Confidence Building Measures in Asia (CICA, observer), D-8 Organization for Economic Cooperation, Food and Agriculture Organization of the United Nations (FAO), Group of 77 (G-77), Inter-Parliamentary Union (IPU), International Atomic Energy Agency (IAEA), International Bank for Reconstruction and Development (IBRD), International Chamber of Commerce (ICC-national committees), International Civil Aviation Organization (ICAO), International Criminal Police Organisation (INTERPOL), International Development Association (IDA), International Federation of Red Cross and Red Crescent Societies (IFRC), International Finance Corporation (IFC), International Fund for Agricultural Development (IFAD), International Hydrographic Organization (IHO), International Labour Organization (ILO), International Maritime Organization (IMO), International Mobile Satellite Organization (IMSO), International Monetary Fund (IMF), International Olympic Committee (IOC), International Organization for Migration (IOM, of the UN), International Organization for Standardization (ISO), International Telecommunications Satellite Organization (ITSO), International Telecommunications Union (ITU), International Trade Union Confederation (ITUC, NGOs), Institute of

Catastrophe Risk Management (ICRM), Islamic Development Bank (IDB), Multilateral Investment Guarantee Agency (MIGA), Non-Aligned Movement (NAM), Organisation for the Prohibition of Chemical Weapons (OPCW), Organisation of Islamic Cooperation (OIC), Permanent Court of Arbitration (PCA), South Asia Cooperative Environment Programme (SACEP), South Asian Association for Regional Cooperation (SAARC), United Nations (UN), United Nations Conference on Trade and Development (UNCTAD), United Nations Educational, Scientific, and Cultural Organization (UNESCO), United Nations High Commissioner for Refugees (UNHCR), United Nations Industrial Development Organization (UNIDO), Universal Postal Union (UPU), World Customs Organization (WCO), The World Federation of Trade Unions (WFTU, NGOs), World Health Organization (WHO), World Intellectual Property Organization (WIPO), World Meteorological Organization (WMO), World Trade Organization (WTO), World Tourism Organization (UNWTO)

UN peacekeeping missions that Bangladesh is contributing personnel to, as of December 2022:⁴⁹¹

- United Nations Mission for the Referendum in Western Sahara (MINURSO) – 6 experts, 20 troops
- United Nations Multi-Dimensional Integrated Stabilization Mission in the Central African Republic (MINUSCA) – 12 experts, 3 police officers, 34 staff officers, 1,381 troops
- United Nations Multi-Dimensional Integrated Stabilization Mission in Mali (MINUSMA) – 279 formed police unit members, 3 police officers, 45 staff officers, 1,335 troops
- United Nations Organization Stabilization Mission in the Democratic Republic of the Congo (MONUSCO) – 10 experts, 180 formed police unit members, 11 police officers, 29 staff officers, 1,598 troops

Force Protection/Pre-Deployment Information

The following information is provided for pre-deployment planning and preparations.⁴⁹² Visit www.travel.state.gov prior to deployments for current information. DoD personnel must review the Foreign Clearance Guide (FCG) for travel to Bangladesh (www.fcg.pentagon.mil). All official travel and personal travel for active-duty personnel must be submitted through an APACS request. Contact information for the Defense Attaché Office can be found in the FCG if you have additional questions.

Passport/Visa

Passports must be valid for six months beyond planned stay in Bangladesh, have at least one blank page, and have a Bangladeshi visa. Travelers must possess an onward or return ticket.

The U.S. State Department strongly recommends obtaining a visa before traveling. Although U.S. citizens are eligible to apply for a tourist visa on arrival, there is no guarantee one will be approved. U.S. citizens born outside the United States may be subject to increased scrutiny or further requirements at the port of entry. Recently, some U.S. citizens have been denied entry into Bangladesh despite believing they had fulfilled the requirements for a visa on arrival. Short-term travelers can be denied entry if they cannot demonstrate sufficient financial liquidity.

Visas must be in a valid passport. In country, travelers may obtain replacement visas at the Department of Immigration and Passports. Replacing a visa, which is required in order to exit the country, may take 3-4 business days. There are penalties for overstaying a visa, and it can be difficult and time-consuming to change immigration status after arrival. Overstay penalties are as follows:

- 1-14 days = 200 Bangladeshi taka / day + US\$160 (or equivalent in Bangladeshi taka) processing fee payable at Hazrat Shahjalal International Airport in Dhaka

- 15-30 days = 500 Bangladeshi taka / day + US\$160 (or equivalent in Bangladeshi taka) processing fee payable at Hazrat Shahjalal International Airport in Dhaka
- 31-90 days = Fine adjudicated and processed at Department of Immigration and Passport Office, 7th Sher-E-Bangla Nagar, Agargaon, Dhaka
- Over 90 days = Potential prosecution by the Department of Immigration and Passport Authority under Article 31 of the Foreigners Act of 1946.

Exit Taxes: When traveling by air, all foreigners except children under the age of 2 years must pay a departure tax. While often included when air tickets are purchased, it may be collected at the airport at the time of departure. The amount varies depending on the destination. If departing by road in a private vehicle, travelers must obtain a road exit permit by contacting the Director General, South Asia Wing, Ministry of Foreign Affairs.

Dual Nationality: U.S.-Bangladeshi dual nationals and their immediate family members are eligible for a “No Visa Required for Travel to Bangladesh” seal. The nearest Bangladeshi Embassy or Consulate can issue this seal in a U.S. passport. Persons who hold both U.S. and Bangladeshi citizenship may not be immediately recognized as U.S. citizens by local authorities and may initially be treated as Bangladeshi citizens.

Customs: Bangladeshi customs authorities may enforce strict regulations concerning temporary import or export of items such as currency, household appliances, alcohol, cigarettes, and weapons. Bangladesh does not allow the exchange of local currency (Bangladeshi taka) for U.S. dollars (cash or traveler’s checks) unless the customer has a ticket for travel outside Bangladesh.

HIV/AIDS: Some HIV/AIDS entry restrictions exist for visitors to and foreign residents of Bangladesh. Please verify this information with the Embassy of Bangladesh before traveling.

Safety and Security

The U.S. government assesses that there remains a credible terrorist threat against foreigners in Bangladesh. U.S. citizens in Bangladesh should take precautions, remain vigilant, and be alert to local security developments. If you observe high-profile police activity, depart the area immediately. Make contingency plans for travel in Bangladesh. Leave emergency contact information with family members outside of Bangladesh and enroll in the Smart Traveler Enrollment Program (STEP).

There have been no significant terrorist attacks in Bangladesh since March 2017, but the country remains a target of several foreign terrorist organizations. Since 2015, ISIS-affiliated terrorists have conducted over 30 attacks that targeted foreigners, religious minorities, and local police/security services. In March 2017, ISIS claimed responsibility for at least three bombings in multiple locations in Bangladesh, including two suicide attacks that targeted security forces near Dhaka's Hazrat Shahjalal International Airport. The third bombing transpired during a police raid against suspected terrorists and killed seven onlookers and injured 40. In July 2016, ISIS attacked a Dhaka restaurant frequented by Westerners; 20 hostages were killed, including a U.S. citizen. Al-Qa'ida in the Indian Subcontinent (AQIS) retains a presence in Bangladesh; the group last conducted attacks in 2015 and 2016 that killed several secular bloggers, publishers, and human rights activists; a U.S. citizen was among the victims.

The following groups, including several on the U.S. government's list of designated Foreign Terrorist Organizations, are active in Bangladesh:

- Islamic State of Iraq and ash-Sham (ISIS), known locally as Jamaat-ul-Mujahideen Bangladesh (JMB or "Neo-JMB")
- Al-Qaeda in the Indian Subcontinent (AQIS), known locally as Ansar al-Islam
- Lashkar-e-Tayyiba
- Indigenous sectarian groups

U.S. government personnel in Bangladesh live, work, and travel under strict security guidelines

and are prohibited from:

- Traveling on foot (walking or running) or biking outside of designated areas and times
- Traveling via non-registered rickshaws outside designated areas and times
- Traveling via commercial ride-share services, public buses, or compressed natural gas autorickshaw (CNG)
- Visiting public establishments outside of designated areas and times without prior notification
- Attending widely publicized large gatherings, including events at international hotels.

Tourism: The tourism industry is nascent and unevenly regulated, and safety inspections for equipment and facilities do not commonly occur. Hazardous areas/activities are often not identified with appropriate signage, and staff may not be trained or certified either by the host government or by recognized authorities in the field. In the event of an injury, appropriate medical treatment is typically available only in/near major cities. First responders are generally unable to provide urgent medical treatment. U.S. citizens are encouraged to purchase medical evacuation insurance.

Natural Disasters: Heavy flooding occurs during the monsoon season (June to October), and 30% of the country may be underwater. Lightning strikes are common during the monsoon season and outdoor activity should be avoided during storms. Landslides can also occur during heavy rains, particularly in the hill tracts area of the Bandarban district in the southeast. Cyclones occur most frequently in the pre-monsoon (April and May) and post-monsoon (October and November) seasons and could include wind speeds of up to 150 km per hour (93 miles per hour) and storm surges of up to 5 m (16.4 feet). Bangladesh is at severe risk from tornadoes. The country is in a zone 2B earthquake fault region, with a moderate probability of damaging ground motion. The overwhelming majority of structures in Bangladesh would not withstand a moderate earthquake. Although earthquakes are more

likely to occur in the north of the country, destruction from an earthquake is expected to be most acute in urban areas. Post-earthquake disaster relief capabilities are extremely limited.

Emergency Contact Information

The Bangladesh government has officially launched the 999 emergency helpline.

Police, fire service, and ambulance services are available from any phone (mobile or fixed line) by dialing 999. The service is monitored and managed by Bangladesh police. Dialing 999 is completely toll free. Dial 999 if:

- someone witnesses a crime
- someone fears for his or her life
- someone is hurt or injured
- someone is in danger
- a fire breaks out
- someone is in urgent need of an ambulance

Emergency services for U.S. citizens are available at all times at the U.S. Embassy:
 U.S. Embassy Dhaka
 Madani Avenue
 Baridhara, Dhaka, 1212
 Tel: 88-2-5566-2000
 Emergency: 88-2-5566-2000; at the recorded message, press “0” to connect with the Embassy Duty Officer
 Fax: 88-2-5566-2907
 Email: DhakaACS@state.gov
 Web: <https://bd.usembassy.gov/>

Currency Information

Bangladesh’s currency is the “taka” (BDT)
 BDT 105.11 = US\$1.00 or BDT1.00 = US\$0.0095
 (as of 22 March 2023)

Travel Health Information

The U.S. Centers for Disease Control and Prevention (CDC) provides guidance that all travelers to Bangladesh should be up to date on routine vaccinations – i.e., Chickenpox

(Varicella), Diphtheria-Tetanus-Pertussis, Flu (influenza), Measles-Mumps-Rubella (MMR), Polio, and Shingles. The following are additional recommendations for travel to Bangladesh. The information in Tables 3 and 4 is taken directly from the CDC website under the Travelers Health Section (<https://wwwnc.cdc.gov/travel/>).⁴⁹³

Health Alerts: At the time of writing this handbook (March 2023), there is one health alert.

Nipah Virus Watch - Level 1, Practice Usual Precautions

In late February 2023, several districts of Bangladesh saw an outbreak of Nipah virus disease. This outbreak was related to the consumption of date palm sap. Travelers to the districts of Naogaon, Rajshahi, Natore, Pabna, Rajbari, Narsingdi, and Shariatpur (all in central and western Bangladesh) should take the following precautions:

- Avoid eating or drinking products that could be contaminated by bats, such as raw date palm sap, raw fruit, or fruit that is found on the ground
- Wash hands often with soap and water
- Avoid contact with sick people who have symptoms such as fever and cough, as well as blood and other body fluids; and
- Avoid contact with fruit bats.

Travelers should seek medical care immediately if they develop fever, headache, cough, sore throat, difficulty breathing, vomiting, drowsiness, or confusion during or after travel (up to 14 days). Travelers should call ahead before going to a health care facility and tell them about having been in an area with Nipah virus.

Disease / Condition	Vaccine or Prophylaxis
COVID-19	All eligible travelers should be up to date with their COVID-19 vaccines.
Cholera	Areas of active cholera transmission are localized to Chattogram and Dhaka. Cholera is rare in travelers. Factors that increase the risk of getting cholera include working with cholera patients and not always following safe food and water precautions while traveling in an area of active cholera transmission. Avoid unsafe food and water and wash hands. When available, a cholera vaccine is recommended for children and adults who are traveling to areas of active cholera transmission.
Hepatitis A	The vaccine is recommended for unvaccinated travelers one year old or older going to Bangladesh. Infants 6-11 months old should also be vaccinated; the dose does not count toward the routine 2-dose series. Travelers allergic to a vaccine component or who are younger than 6 months should receive a single dose of immunoglobulin, which provides effective protection for up to two months depending on dosage given. Unvaccinated travelers who are over 40 years old, immunocompromised, or have chronic medical conditions and who plan to depart to a risk area in less than two weeks should get the initial dose of vaccine and at the same appointment receive immunoglobulin.
Hepatitis B	Vaccination is recommended for unvaccinated travelers younger than 60 years old traveling to Bangladesh. Unvaccinated travelers 60 years and older may get vaccinated before traveling to Bangladesh.
Japanese Encephalitis	<p>Vaccine is recommended for travelers who:</p> <ul style="list-style-type: none"> • are moving to an area with Japanese encephalitis to live • spend long periods of time (one month or more) in areas with Japanese encephalitis; or • frequently travel to areas with Japanese encephalitis. <p>Consider vaccination for travelers who:</p> <ul style="list-style-type: none"> • spend less than a month in areas with Japanese encephalitis but will be doing activities that increase risk of infection – e.g., visiting rural areas, hiking or camping, or staying in places without air conditioning, screens, or bed nets; or • go to areas with Japanese encephalitis and who are uncertain of their activities or how long they will be there. <p>Vaccination is not recommended for travelers planning short-term travel to urban areas or travel to areas with no clear Japanese encephalitis season.</p>
Malaria	CDC recommends that travelers going to certain areas of Bangladesh take prescription medicine to prevent malaria. Depending on the medicine, the traveler may need to start taking the medicine multiple days before departure, as well as during and afterward. Malaria transmission areas in Bangladesh include: Chittagong Hill Tract districts (Bandarban, Khagrachari, and Rangamati); and the districts of Chattogram (Chittagong), Cox’s Bazar, Habiganj, Kurigram, Moulvibazar, Mymensingh, Netrakona, Sherpur, Sunamganj, and Sylhet. There is no malaria transmission in Dhaka.
Rabies	<p>Rabid dogs are commonly found in Bangladesh. People who are bitten or scratched by a dog or other mammal while in Bangladesh may find limited or no rabies treatment available. Consider rabies vaccination before departure if activities mean exposure to dogs or wildlife. Travelers more likely to encounter rabid animals include:</p> <ul style="list-style-type: none"> • Campers, adventure travelers, or cave explorers (spelunkers) • Veterinarians, animal handlers, field biologists, or laboratory workers handling animal specimens; and • Visitors to rural areas. <p>Since children are more likely to be bitten or scratched by a dog or other animals, consider rabies vaccination for children traveling to Bangladesh.</p>
Typhoid	Vaccination is recommended for most travelers, especially those staying with friends or relatives or visiting smaller cities or rural areas.
Yellow Fever	Proof of vaccine is required for travelers arriving from a country with risk of yellow fever virus transmission and if that traveler is ≥1 year of age; this requirement also applies to travelers who have transited an airport located in a country with risk of yellow fever virus transmission.

Table 3: CDC Travel Health Information for Vaccine-Preventable Diseases in Bangladesh

Disease / Condition	Vaccine or Prophylaxis
Avian / Bird Flu	Can be contracted by being around, touching, or working with infected poultry, such as visiting poultry farms or live-animal markets. To avoid infection, avoid domestic and wild poultry.
Dengue	Dengue is caused by a virus spread through mosquito bites. All travelers should prevent mosquito bites by using an appropriate insect repellent, wearing long-sleeved shirts and long pants when outdoors, and sleeping in an air-conditioned room or room with window screens or under an insecticide-treated bed net.
Hantavirus	Contracted by breathing in air or accidentally eating food contaminated with the urine, droppings, or saliva of infected rodents; or from the bite of an infected rodent. Less commonly, hanta can be contracted by being around someone sick with hantavirus. Avoid rodents and areas where they live; avoid sick people.
Leishmaniasis	Transmitted by the bite of sand flies. Travelers should avoid bug bites.
Leptospirosis	Leptospirosis can be contracted by touching urine or other body fluids from an animal infected with leptospirosis, by swimming or wading in urine-contaminated fresh water, from contact with urine-contaminated mud; or by drinking water or eating food contaminated with animal urine. Avoid contaminated water and soil.
Tuberculosis	People can contract TB by breathing in TB bacteria that is in the air from an infected and contagious person coughing, speaking, or singing. To avoid exposure to TB, avoid sick people.
Zika	Zika is spread by mosquito bites; infected pregnant women can spread zika to unborn babies. Avoid bug bites.

Table 4: CDC Travel Health Information for Non-Vaccine-Preventable Diseases in Bangladesh

The following actions can be taken to improve health and safety while traveling:

- Hot coffee or tea
- Pasteurized milk

Eat and Drink Safely

Unclean food and water can cause travelers' diarrhea and other diseases. Reduce the risk by sticking to safe food and water habits.

Eat

- Food that is cooked and served hot
- Hard-cooked eggs
- Fruits and vegetables, you have washed in clean water or peeled yourself
- Pasteurized dairy products

Don't Eat

- Food served at room temperature
- Food from street vendors
- Raw or soft-cooked (runny) eggs
- Raw or undercooked (rare) meat or fish
- Unwashed or unpeeled raw fruits and vegetables
- Unpasteurized dairy products
- "Bushmeat" (monkeys, bats, or other wild game)

Drink

- Bottled water that is sealed
- Water that has been disinfected
- Ice made with bottled or disinfected water
- Carbonated drinks

Don't Drink

- Tap or well water
- Ice made with tap or well water
- Drinks made with tap or well water (such as reconstituted juice)
- Unpasteurized milk

Take Medicine

Talk with your doctor about taking prescription or over-the-counter drugs with you on your trip in case you get sick. If you are going to a high-risk area, fill your malaria prescription before you leave, and take enough with you for the entire length of your trip. Follow your doctor's instructions for taking the pills; some need to be started before you leave.

Prevent Bug Bites

Bugs (like mosquitoes, ticks, and fleas) can spread a number of diseases in Bangladesh. Many of these diseases cannot be prevented with a vaccine or medicine. You can reduce your risk by taking steps to prevent bug bites.

To prevent bug bites:

- Cover exposed skin by wearing long-sleeved shirts, long pants, and hats.

- Use an appropriate insect repellent (see below).
- Use permethrin-treated clothing and gear (such as boots, pants, socks, and tents). Do not use permethrin directly on skin.
- Stay and sleep in air-conditioned or screened rooms.
- Use a bed net if the area where you are sleeping is exposed to the outdoors.

For protection against ticks and mosquitoes:

Use a repellent that contains 20% or more DEET for protection that lasts up to several hours.

For protection against mosquitoes only:

Products with one of the following active ingredients can also help prevent mosquito bites. Higher percentages of active ingredient provide longer protection.

- DEET
- Picaridin (also known as KBR 3023, Bayrepel, and Icaridin)
- Oil of lemon eucalyptus (OLE) or para-Menthane-3,8-diol (PMD)
- IR3535
- 2-undecanone

If you are bitten by bugs:

- Avoid scratching bug bites and apply hydrocortisone cream or calamine lotion to reduce the itching.
- Check your entire body for ticks after outdoor activity. Be sure to remove ticks properly.

Safety and Security

Note that conditions can change rapidly in a country at any time. To receive updated Travel Advisories and Alerts for the countries you choose, sign up at step.state.gov.

Sendai Framework

The Sendai Framework for Disaster Risk Reduction 2015-2030 is the global blueprint and 15-year plan to build the world's resilience to natural disasters.⁴⁹⁴ The Sendai Framework is the successor instrument to the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters.⁴⁹⁵ Adopted at the Third United Nations World Conference on Disaster Risk Reduction in Sendai, Japan, in 2015, the Framework aims to achieve the substantial reduction of disaster risk and losses in lives, livelihoods, and health and in the economic, physical, social, cultural, and environmental assets of persons, businesses, communities, and countries by 2030.⁴⁹⁶

The Framework outlines seven targets and four priorities for action to prevent new and reduce existing disaster risks.

The Seven Global Targets include:

- Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality rates in the decade 2020-2030 compared to the period 2005-2015.
- Substantially reduce the number of affected people globally by 2030, aiming to lower average global figure per 100,000 in the decade 2020 -2030 compared to the period 2005-2015.
- Reduce direct disaster economic loss in relation to global GDP by 2030.
- Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.
- Substantially increase the number of countries with national and local DRR strategies by 2020.
- Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this Framework by 2030.
- Substantially increase the availability of and access to multi-hazard early warning

systems and disaster risk information and assessments to the people by 2030.⁴⁹⁷

The Four Priorities of Action include:

- Understanding disaster risk
- Strengthening disaster risk governance to manage disaster risk
- Investing in disaster reduction for resilience; and
- Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation, and reconstruction.

Figure 21 shows the Sendai DRR Framework.⁴⁹⁸

The government of Bangladesh has made progress in improving disaster management infrastructure in the past half-century, and it now has a robust, proactive framework for DRR, CCA, and sustainable development according to UNDRR and the Asian Disaster Preparedness Center. Moreover, in its Sendai Framework Mid-Term Review, the MoDMR highlighted various areas of progress and lingering shortcomings. Based on the Sendai Framework and taken from the Mid-Term Review and Asian Disaster Preparedness Center-UNDRR Status Report 2020, the following sections highlight key actions taken by and issues that confront Bangladesh going forward.

Priority 1. Understanding Disaster Risk –

Since 2007, Bangladesh has started to build a culture of understanding disaster risk to allow government and communities to undertake initiatives for better preparedness. On this point, risk assessment processes have started. MoDMR and the Ministry of Housing and Public Works with technical cooperation from development partners have conducted seismic risk assessments (2007-2020) for 12 major cities. These assessments were augmented by the National Resilience Programme under the DDM of MoDMR with cooperation from UNDP with risk assessments on four earthquake-prone cities to understand active faults, recurrence periods, infrastructure and buildings, and socio-economic vulnerabilities of the cities along with probable

Chart of the Sendai Framework for Disaster Risk Reduction 2015-2030

Scope and Purpose						
The present framework will apply to the risk of small-scale and large-scale, frequent and infrequent, sudden and slow-onset disasters, caused by natural or manmade hazards as well as related environmental, technological, and biological hazards and risks. It aims to guide the multi-hazard management of disaster risk in development at all levels as well as within and across all sectors						
Expected Outcome						
The substantial reduction of disaster risk and losses in lives, livelihoods, and health and in the economic, physical, social, cultural, and environmental assets of persons, businesses, communities, and countries						
Goal						
Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political, and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience						
Targets						
Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality during 2020-2030 compared to 2005-2015	Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 during 2020-2030 compared to 2005-2015	Reduce direct disaster economic loss in relation to global GDP by 2030	Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030	Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020	Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this framework by 2030	Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030
Priorities for Action						
There is a need for focused action within and across sectors by States at local, national, regional, and global levels in the following four priority areas.						
Priority 1	Priority 2	Priority 3	Priority 4			
Understanding disaster risk	Strengthening disaster risk governance to manage disaster risk	Investing in disaster risk reduction for resilience	Enhancing disaster preparedness for effective response, and to “Build Back Better” in recovery, rehabilitation, and reconstruction			
Disaster risk management needs to be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics, and the environment	Disaster risk governance at the national, regional, and global levels is vital to the management of disaster risk reduction in all sectors and ensuring the coherence of national and local frameworks of laws, regulations, and public policies that, by defining roles and responsibilities, guide, encourage, and incentivize the public and private sectors to take action and address disaster risk	Public and private investment in disaster risk prevention and reduction through structural is non-structural measures are essential to enhance the economic, social, health, and cultural resilience of persons, communities, countries, and their assets, as well as the environment. These can be drivers of innovation, growth, and job creation. Such measures are cost-effective and instrumental to save lives, prevent and reduce losses, and ensure effective recovery and rehabilitation	Experience indicates that disaster preparedness needs to be strengthened for more effective response and to ensure capacities are in place for effective recovery. Disasters have also demonstrated that the recovery, rehabilitation, and reconstruction phase, which needs to be prepared ahead of the disaster, is an opportunity to “Build Back Better” through integrating disaster risk reduction measures. Women and persons with disabilities should publicly lead and promote gender-equitable and universally accessible approaches during the response and reconstruction phases			

Figure 21: UN Sendai Framework for Disaster Risk Reduction 2015-2030

damage and loss from scenario earthquakes, including areas with liquefaction potential.

The government also conducted a Multi-Hazard Risk and Vulnerability Assessment (2014-2017) for the whole country for which it considered various hazards – e.g., flood, cyclone, epidemic, drought, and technological hazards. The major outcome was an identification of institutional gaps, a priority list for DRR, adaptation, and options for institutional measures. The assessment was an opportunity to share information, data, and resources to develop a comprehensive hazard and exposure assessment. It led to the preparation of a “District Wise Risk Atlas” for the whole country. The DDM and focal agencies for various hazard assessments had the opportunity to interact with international research and development agencies who work in hazard and disaster management.

Based on the assessment results, different government departments and development partners took initiatives for capacity building to improve preparedness for earthquakes. Actions included retrofitting critical infrastructure like fire stations, hospitals, and key government buildings and capacity building on retrofitting for the technical officials of the Public Works Department. A key lingering need is enhancing the capacity of the Bangladesh Fire Service. An additional outcome of assessments was for City Master Plans to mark out key areas for which development guidelines ensure resilient construction. Moreover, LGED initiated development interventions in coastal municipalities based on the vulnerability index suggested by the multi-hazard risk assessment initiative.⁴⁹⁹

Despite these mapping and assessment exercises, many of Bangladesh’s existing databases are uncoordinated and unstandardized, mainly focusing on disaster losses and damage, and are hosted by various agencies rather than a central authority. Dhaka WASA, the Directorate of Land Records and Surveys, Bangladesh Forest Department, the Soil Resource Development Institute, and the Agriculture Research Center are among the organizations who maintain comprehensive, spatial and non-spatial

information systems. Since 2010, efforts have been made to combine the existing services through the establishment of the Disaster Management Information Center (DMIC), maintained by MoDMR, to mainstream DRR and improve data management. The role of the DMIC was highlighted in the 2016-2020 National Plan for Disaster Management, but it requires additional investment to strengthen coherence in information sharing among multiple agencies. DMIC does connect ministries, various agencies, and NGOs under an umbrella to collate risk and hazard information to support early warnings, situation reports, and risk analyses, but gaps remain due to regional differences in collection and presentation of consistent data.⁵⁰⁰

Priority 2. Strengthening Disaster Risk Governance to Manage Disaster Risk – Bangladesh has established a robust foundation for efficient and impactful disaster governance. Table 5 shows the four main legal and policy instruments that support institutions and actions.⁵⁰¹

Bangladesh’s “Vision 2021” identified “Effective Disaster Management” as a goal and emphasized seasonal flood and drought mitigation, establishment of an effective early warning and evacuation mechanism, and development of a natural disaster insurance scheme to compensate physical and property damage. The Second Perspective Plan 2021-2041, BDP 2100, and National Sustainable Development Strategy have provisions to implement the NPDM. The Local Government Division with input from MoDMR is revising upazila-level development plans.⁵⁰²

The legal framework is supported by various plans drafted for specific purposes at the sub-national level. The NPDM mandated the elaboration of a Bangladesh Disaster Management Model and the establishment of the DMIC, and each iteration has made steps towards proactive risk reduction, aligned with the Paris Agreement and Sustainable Development Goals. The Dhaka Declaration 2015 and Dhaka Declaration+ (2018) are practical guidelines to ensure inclusion of persons with disabilities in recognizing their

Act/Policy	Feature
Disaster Management Act 2012	Aims to make disaster management activities coordinated, object-oriented, and strong in formulating rules to build infrastructure for resilience.
Standing Order on Disasters (revised, 2019)	Works to make relevant persons understand and perform their duties and responsibilities regarding disaster management at all levels.
National Plan for Disaster Management, 2016-2020 and 2021-2025	Aligned with the priorities of Sendai to fulfill the Framework’s goals. Includes guides for addressing DRR and CAA in all development plans, programs, and policies through assessing climate change risk, emphasizing community-based programs, building public awareness, and improving early warning.
National Adaptation Plan, 2022	Main objectives are to reduce vulnerability to the impacts of climate change by building adaptive capacity and resilience to new and existing policies and programs, especially development strategies.

Table 5: Legal and Policy Instruments for Disaster Management

rights through a people-centered approach.⁵⁰³

Priority 3. Investing in Disaster Risk Reduction for Resilience – Sector-specific provisions are in place to ensure a more comprehensive response to disaster impacts, including the Framework for DRR and EiE, which provides an overview for strengthening disaster resilience through safeguarding and education sector investments. The most recent NPDM further highlighted a need to increase the resilience of the national health system through capacity building and training initiatives, alongside implementation of the WHO’s International Health Regulations (2005).⁵⁰⁴

The Disaster Management (Fund Operation) Rule, 2021 is available for preparing funding mechanisms for DRR, response, and recovery along with CCA. However, a more specific code for DRR and disaster fiscal framework would promote integrating DRR finance through public-private investment and external funding. International cooperation on DRR and CCA has substantially increased through multi-county and multi-donor contribution on capacity building, technology transfer, application of modern technology for weather forecasting, and resilient infrastructure construction.⁵⁰⁵

Bangladesh’s Finance Division under the Ministry of Finance is the agency allocating domestic disaster-related funding across the levels of government; the funding is divided into a DRR fund, an emergency fund for disaster management (district level), a fund for unforeseen incidents, and the Palli Karma-Sahayak Foundation (a microfinance wholesaler, which implements climate resilience).

Additionally, when a funding gap remains, the Economic Relations Division mobilizes a foreign financing mechanism involving multilateral and bilateral partners to cover areas such as infrastructure, procurement of food, sanitation, health care, and education support. The additional Climate Smart Agriculture Investment Plans are a collaboration between the World Bank and the Government of Bangladesh; however, there is limited information available on the financial provisions in place to mobilize and implement this tool.

The Central Bank has a role in disaster risk financing. It operates Climate Risk Funds, In-house Environmental Management, and Green Banking Policies, and it issues Environmental Risk Management Guidelines to other financial institutions. Bangladesh also has two national climate change trust funds (CCTF): the Bangladesh CCTF with US\$ 390 million and the Bangladesh Climate Change Resilience Fund, funded by donors and development partners with overall worth of US\$ 146.4 million (2018). The Bangladesh CCTF, funded entirely by the government, is aimed at strengthening national capacity to cope with climate change impacts guided by the Bangladesh Climate Change Strategy and Action Plan and headed by a trustee board, which holds administrative and directional overview of the Trust Fund. Under the CCTF, projects have been implemented to strengthen infrastructural resilience including the construction of over 6,000 cyclone-resilient homes, over 100 km of riverbank protection, water-control measures, and over 100 km of drainage systems within urban areas to reduce

waterlogging. The Climate Change Resilience Fund acts as a financial mechanism, which allocates 10% of funding for civil society and private sector projects to be directly allocated to building resilience of communities through research and climate-resilient planning.

The insurance sector, dominated by the Sadharan Bima and Jiban Bima corporations, provides life, health, and flood insurance. However, the vast majority of the population has no access to insurance coverage, and general awareness of insurance programs among the population remains low. Millions continue to manage their finances in informal ways, although initiatives such as BRAC have been offering microfinance services such as loans for small enterprise, agriculture, and migrant households to mitigate the situation at the grass-root levels. Forecast-based financing has played a crucial role in addressing the gap between DRR activities and post-disaster response including the unconditional cash approach in an early action initiative.⁵⁰⁶

Priority 4. Enhancing Disaster Preparedness for Effective Response to “Build Back Better”

– Due to the recently improved integrated and strategic disaster management approach, the government’s preparedness and response capacity has increased. However, vis-à-vis the scale of potential disasters, mechanisms remain insufficient. The response mechanism follows a top-down structure, which still supports district, upazila, and union levels in which emergency response committees are established, coordinated through a center in Dhaka when relief activities are required.

The MoDMR, under supervision of the NDMC, coordinates response among institutions and agencies at the national and sub-national levels. Measures have been implemented to empower communities to undertake the management of response and recovery. However, the capacity to provide efficient and timely response remains inadequate due to inefficiencies within the incident command system, which is easily overwhelmed in times of large-scale disasters, and due to low local capacities. Despite the challenges, the

government has improved disaster preparedness and response by investing in cyclone shelters and EWS. The DDM disseminates cyclone warnings via three mechanisms: mobile phone broadcasting, interactive voice response (accessible to anyone by calling), and SMS/text, the last of which is designed for field-level disaster management committees. Flood early warnings are also operational through the FFWC, which disseminates forecasts from national to district levels through email, its website, and mobile phone services. Yet, they do not always reach local stakeholders, the contents are often not understood, and insufficient follow-up of implemented activities are issues hindering the operations. Efforts are underway to modernize the existing hydrometeorological information services with the support of the World Bank. In 2017, the Government signed a US\$113 million financing agreement to improve weather forecasting, EWS, and dissemination of information.

While the future prospects in response and preparedness are positive, managing “Building Back Better” remains as one of the most pressing issues in Bangladesh. A lack of integration of DRR and CCA in housing reconstruction and recovery after Cyclone Sidr saw many government-provided shelters fail within two years when they were hit during Cyclone Aila, which was only two-thirds of the strength of Sidr.⁵⁰⁷ More recently, an initiative was undertaken in 2020 to revise the National Building Code to ensure resilient construction, including of cyclone shelters.

Key obstacles and shortcomings noted in the Mid-Term Review include:

- Coordination among different agencies and department is not strong enough
- A damage and loss calculation methodology is not well-shaped to reach a standard
- There are overlapping DRR initiatives by different agencies in terms of both nature of activities and geographic locations of interventions; and
- Government allocation for DRR is not enough.⁵⁰⁸

Country Profile

The information in the Country Profile section is sourced directly from the CIA World Factbook entry for Bangladesh. Additional numbers on country comparison to the world can be found by going directly to the CIA website (<https://www.cia.gov>). The profile discusses topics including geography, people and society, government, economy, energy, communications, military and security, transportation, terrorism, and transnational issues.⁵⁰⁹

Background

The huge delta region formed at the confluence of the Ganges and Brahmaputra River systems - now referred to as Bangladesh - was a loosely incorporated outpost of various empires centered on the Gangetic plain for much of the first millennium A.D. Muslim conversions and settlement in the region began in the 10th century, primarily from Arab and Persian traders and preachers. Europeans established trading posts in the area in the 16th century. Eventually the area known as Bengal, primarily Hindu in the western section and mostly Muslim in the eastern half, became part of British India. Partition in 1947 resulted in an eastern wing of Pakistan in the Muslim-majority area, which became East Pakistan. Calls for greater autonomy and animosity between the eastern and western wings of Pakistan led to a Bengali independence movement. That movement, led by the Awami League (AL) and supported by India, won the independence war for Bangladesh in 1971. The post-independence AL government faced daunting challenges and in 1975 it was overthrown by the military, triggering a series of military coups that resulted in a military-backed government and subsequent creation of the Bangladesh Nationalist Party (BNP) in 1978. That government also ended in a coup in 1981, followed by military-backed rule until democratic elections occurred in 1991. The BNP and AL have alternated in power since 1991; the one gap in this situation was during a military-backed, emergency caretaker regime that suspended parliamentary elections planned for

January 2007 in an effort to reform the political system and root out corruption. That government returned the country to fully democratic rule in December 2008 with the election of the AL and Prime Minister Sheikh HASINA. In January 2014, the incumbent AL won the national election by an overwhelming majority after the BNP boycotted the election, which extended HASINA's term as prime minister. In December 2018, HASINA secured a third consecutive term (fourth overall) with the AL coalition securing 96% of available seats, amid widespread claims of election irregularities. With the help of international development assistance, Bangladesh has reduced the poverty rate from over half of the population to less than a third, achieved Millennium Development Goals for maternal and child health, and made great progress in food security since independence. The economy has grown at an annual average of about 6% for the last two decades. In 2021 the UN approved a resolution to allow Bangladesh to officially graduate from least-developed-country (LDC) status in 2026, based on World Bank criteria.

Geography

Location

Southern Asia, bordering the Bay of Bengal, between Myanmar (Burma) and India

Geographic coordinates

24 00 N, 90 00 E

Area

total: 148,460 sq km

land: 130,170 sq km

water: 18,290 sq km

country comparison to the world: 94

Area - comparative

slightly larger than Pennsylvania and New Jersey combined; slightly smaller than Iowa

Land boundaries

total: 4,413 km

border countries (2): Burma 271 km; India 4,142 km

Coastline

580 km

Maritime claims

territorial sea: 12 nm

contiguous zone: 18 nm

exclusive economic zone: 200 nm

continental shelf: to the outer limits of the continental margin

Climate

tropical; mild winter (October to March); hot, humid summer (March to June); humid, warm rainy monsoon (June to October)

Terrain

mostly flat alluvial plain; hilly in southeast

Elevation

highest point: Mowdok Taung 1,060 m

lowest point: Indian Ocean 0 m

mean elevation: 85 m

Natural resources

natural gas, arable land, timber, coal

Land use

agricultural land: 70.1% (2018 est.)

arable land: 59% (2018 est.)

permanent crops: 6.5% (2018 est.)

permanent pasture: 4.6% (2018 est.)

forest: 11.1% (2018 est.)

other: 18.8% (2018 est.)

Irrigated land

81,270 sq km (2020)

Major rivers (by length in km)

Brahmaputra river mouth (shared with China [s] and India) - 3,969 km; Ganges river mouth (shared with India [s]) - 2,704 km

Note: [s] after country name indicates river source; [m] after country name indicates river mouth

Major watersheds (area sq km)

Indian Ocean drainage: Brahmaputra (651,335 sq km), Ganges (1,016,124 sq km)

Major aquifers

Indus-Ganges-Brahmaputra Basin

Natural hazards

droughts; cyclones; much of the country routinely inundated during the summer monsoon season

Geography Note

most of the country is situated on deltas of large rivers flowing from the Himalayas: the Ganges unites with the Jamuna (main channel of the Brahmaputra) and later joins the Meghna to eventually empty into the Bay of Bengal

People and SocietyPopulation

167,184,465 (2023 est.)

country comparison to the world: 8

Nationality

noun: Bangladeshi(s)

adjective: Bangladeshi

Ethnic groups

Bengali at least 98.9%, other indigenous ethnic groups 1.1% (2011 est.)

Note: Bangladesh's government recognizes 27 indigenous ethnic groups under the 2010 Cultural Institution for Small Anthropological Groups Act; other sources estimate there are about 75 ethnic groups; critics of the 2011 census claim that it underestimates the size of Bangladesh's ethnic population

Languages

Bangla 98.8% (official, also known as Bengali), other 1.2% (2011 est.)

major-language sample(s): বর্শিব ফ্যাক্টবুক, মনৌকি তথ্যরে অপরহির্ষ উৎস (Bangla)

Religions

Muslim 88.4%, other 11.6% (2020 est.)

Age structure

0-14 years: 25.38% (male 21,587,699/female 20,846,378)

15-64 years: 67.09% (male 54,560,958/female 57,599,478)

65 years and over: 7.53% (2023 est.) (male 5,871,022/female 6,718,930)

Figure 22 shows the population pyramid for Bangladesh. A population pyramid illustrates the age and sex structure of a country's population.⁵¹⁰

Dependency ratios

total dependency ratio: 47.7

youth dependency ratio: 39.1

elderly dependency ratio: 8.6

potential support ratio: 11.6 (2021 est.)

Median age

total: 27.9 years

male: 27.1 years

female: 28.6 years (2020 est.)

country comparison to the world: 143

Population growth rate

0.91% (2023 est.)

country comparison to the world: 99

Birth rate

17.5 births/1,000 population (2023 est.)

country comparison to the world: 85

Death rate

5.5 deaths/1,000 population (2023 est.)

country comparison to the world: 183

Net migration rate

-2.88 migrant(s)/1,000 population (2023 est.)

country comparison to the world: 180

Urbanization

urban population: 40.5% of total population (2023)

rate of urbanization: 2.88% annual rate of change (2020-25 est.)

Major urban areas - population

23.210 million DHAKA (capital), 5.380 million

Chittagong, 955,000 Khulna, 962,000 Rajshahi,

964,000 Sylhet, 906,000 Bogra (2023)

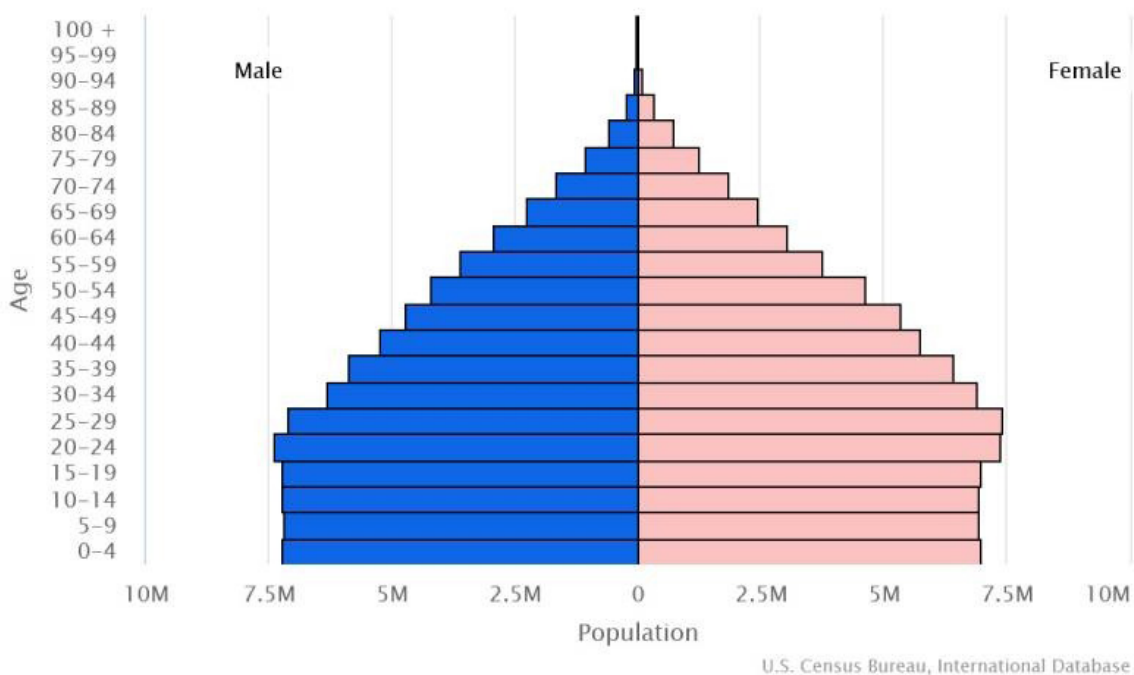


Figure 22: Population Pyramid, Bangladesh (2022)

Sex ratio

at birth: 1.04 male(s)/female
 0-14 years: 1.04 male(s)/female
 15-64 years: 0.95 male(s)/female
 65 years and over: 0.87 male(s)/female
 total population: 0.96 male(s)/female (2023 est.)

Mother's mean age at first birth

18.6 years (2017/18 est.)
 Note: Data represents median age at first birth among women 20-49

Maternal mortality ratio

173 deaths/100,000 live births (2017 est.)
 country comparison to the world: 53

Infant mortality rate

total: 29.58 deaths/1,000 live births
 male: 32.12 deaths/1,000 live births
 female: 26.93 deaths/1,000 live births (2023 est.)
 country comparison to the world: 52

Life expectancy at birth

total population: 74.96 years
 male: 72.8 years
 female: 77.21 years (2023 est.)
 country comparison to the world: 133

Total fertility rate

2.08 children born/woman (2023 est.)
 country comparison to the world: 94

Gross reproduction rate

1.02 (2023 est.)

Contraceptive prevalence rate

62.7% (2019)

Drinking water source

improved: urban: 99% of population
 rural: 98.7% of population
 total: 98.9% of population
 unimproved: urban: 1% of population
 rural: 1.3% of population
 total: 1.1% of population (2020 est.)

Current health expenditure

2.6% of GDP (2020)

Physicians density

0.67 physicians/1,000 population (2020)

Hospital bed density

0.8 beds/1,000 population (2016)

Sanitation facility access

improved: urban: 85.3% of population
 rural: 73.5% of population
 total: 78% of population
 unimproved: urban: 14.7% of population
 rural: 26.5% of population
 total: 22% of population (2020 est.)

HIV/AIDS - adult prevalence rate

(2021 est.) <0.1%

Major infectious diseases

degree of risk: high (2020)
 food or waterborne diseases: bacterial and protozoal diarrhea, hepatitis A and E, and typhoid fever
 vectorborne diseases: dengue fever and malaria are high risks in some locations
 water contact diseases: leptospirosis
 animal contact diseases: rabies

Obesity - adult prevalence rate

3.6% (2016)
 country comparison to the world: 191

Alcohol consumption per capita

total: 0 liters of pure alcohol (2019 est.)
 beer: 0 liters of pure alcohol (2019 est.)
 wine: 0 liters of pure alcohol (2019 est.)
 spirits: 0 liters of pure alcohol (2019 est.)
 other alcohols: 0 liters of pure alcohol (2019 est.)
 country comparison to the world: 185

Tobacco use

total: 34.7% (2020 est.)
 male: 52.2% (2020 est.)
 female: 17.1% (2020 est.)
 country comparison to the world: 17

Children under the age of 5 years underweight
22.6% (2019)
country comparison to the world: 16

Currently married women (ages 15-49)
80.1% (2023 est.)

Child marriage
women married by age 15: 15.5%
women married by age 18: 51.4% (2019 est.)

Education expenditures
2.1% of GDP (2021 est.)
country comparison to the world: 184

Literacy
definition: age 15 and over can read and write
total population: 74.9%
male: 77.8%
female: 72% (2020)

School life expectancy (primary to tertiary education)
total: 12 years
male: 12 years
female: 13 years (2020)

Youth unemployment rate (ages 15-24)
total: 14.7%
male: 12.5%
female: 19.6% (2021 est.)

Environment

Environment - current issues
many people are landless and forced to live on and cultivate flood-prone land; waterborne diseases prevalent in surface water; water pollution, especially of fishing areas, results from the use of commercial pesticides; ground water contaminated by naturally occurring arsenic; intermittent water shortages because of falling water tables in the northern and central parts of the country; soil degradation and erosion; deforestation; destruction of wetlands; severe overpopulation with noise pollution

Environment - international agreements
party to: Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Climate Change-Paris Agreement, Comprehensive Nuclear Test Ban, Desertification, Endangered Species, Environmental Modification, Hazardous Wastes, Law of the Sea, Nuclear Test Ban, Ozone Layer Protection, Ship Pollution, Wetlands
signed, but not ratified: none of the selected agreements

Air pollutants
particulate matter emissions: 58.33 micrograms per cubic meter (2016 est.)
carbon dioxide emissions: 84.25 megatons (2016 est.)
methane emissions: 59.3 megatons (2020 est.)

Climate
tropical; mild winter (October to March); hot, humid summer (March to June); humid, warm rainy monsoon (June to October)

Land use
agricultural land: 70.1% (2018 est.)
arable land: 59% (2018 est.)
permanent crops: 6.5% (2018 est.)
permanent pasture: 4.6% (2018 est.)
forest: 11.1% (2018 est.)
other: 18.8% (2018 est.)

Urbanization
urban population: 40.5% of total population (2023)
rate of urbanization: 2.88% annual rate of change (2020-25 est.)

Revenue from forest resources
0.08% of GDP (2018 est.)
country comparison to the world: 117

Revenue from coal
0.02% of GDP (2018 est.)
country comparison to the world: 42

Major infectious diseases

degree of risk: high (2020)

food or waterborne diseases: bacterial and protozoal diarrhea, hepatitis A and E, and typhoid fever

vectorborne diseases: dengue fever and malaria are high risks in some locations

water contact diseases: leptospirosis

animal contact diseases: rabies

Food insecurity

severe localized food insecurity: due to economic constraints and high prices of important food items - food insecurity is expected to remain fragile, given persisting economic constraints; domestic prices of wheat flour and palm oil, important food items, were at high levels in January 2023; the result of elevated international prices of energy, fuel and food, having been transmitted to the domestic markets (2023)

Waste and recycling

municipal solid waste generated annually: 14,778,497 tons (2012 est.)

Major rivers (by length in km)

Brahmaputra river mouth (shared with China [s] and India) - 3,969 km; Ganges river mouth (shared with India [s]) - 2,704 km

Note: [s] after country name indicates river source; [m] after country name indicates river mouth

Major watersheds (area sq km)

Indian Ocean drainage: Brahmaputra (651,335 sq km), Ganges (1,016,124 sq km)

Major aquifers

Indus-Ganges-Brahmaputra Basin

Total water withdrawal

municipal: 3.6 billion cubic meters (2019 est.)

industrial: 770 million cubic meters (2019 est.)

agricultural: 31.5 billion cubic meters (2019 est.)

Total renewable water resources

1.227 trillion cubic meters (2019 est.)

GovernmentCountry name

conventional long form: People's Republic of Bangladesh

conventional short form: Bangladesh

local long form: Gana Prajatantri Bangladesh

local short form: Bangladesh

former: East Bengal, East Pakistan

etymology: the name - a compound of the Bengali words "Bangla" (Bengal) and "desh" (country) - means "Country of Bengal"

Government type

parliamentary republic

Capital

name: Dhaka

geographic coordinates: 23 43 N, 90 24 E

time difference: UTC+6 (11 hours ahead of Washington, DC, during Standard Time)

etymology: the origins of the name are unclear, but some sources state that the city's site was originally called "dhakka," meaning "watchtower," and that the area served as a watch-station for Bengal rulers

Administrative divisions

8 divisions; Barishal, Chattogram, Dhaka, Khulna, Mymensingh, Rajshahi, Rangpur, Sylhet

Independence

16 December 1971 (from Pakistan)

National holiday

Independence Day, 26 March (1971); Victory Day, 16 December (1971); note - 26 March 1971 is the date of the Awami League's declaration of an independent Bangladesh, and 16 December (Victory Day) memorializes the military victory over Pakistan and the official creation of the state of Bangladesh

Constitution

history: previous 1935, 1956, 1962 (pro-independence); latest enacted 4 November 1972, effective 16 December 1972, suspended March 1982, restored November 1986

amendments: proposed by the House of the Nation; approval requires at least two-thirds majority vote of the House membership and assent of the president of the republic; amended many times, last in 2018

Legal system

mixed legal system of mostly English common law and Islamic law

International law organization participation has not submitted an ICJ jurisdiction declaration; accepts ICCt jurisdiction

Citizenship

citizenship by birth: no

citizenship by descent only: at least one parent must be a citizen of Bangladesh

dual citizenship recognized: yes, but limited to select countries

residency requirement for naturalization: 5 years

Suffrage

18 years of age; universal

Executive branch

chief of state: President-Elect Mohammad Shahabuddin CHUPPI (since 13 April 2023); CHUPPI ran unopposed; he will be inaugurated on 24 April 2023

head of government: Prime Minister Sheikh HASINA Wazed (since 6 January 2009)

cabinet: Cabinet selected by the prime minister, appointed by the president

elections/appointments: president indirectly elected by the National Parliament for a 5-year term (eligible for a second term); election last held on 7 February 2018 (next to be held by 2023); the president appoints as prime minister the majority party leader in the National Parliament

election results: 2018: President Abdul HAMID (AL) reelected by the National Parliament

unopposed for a second term; Sheikh HASINA reappointed prime minister as leader of the majority AL party following parliamentary elections in 2018

Legislative branch

description: unicameral House of the Nation or Jatiya Sangsad (350 seats; 300 members in single-seat territorial constituencies directly elected by simple majority vote; 50 members - reserved for women only - indirectly elected by the elected members by proportional representation vote using single transferable vote; all members serve 5-year terms)

elections: last held on 30 December 2018 (next to be held in December 2023)

election results: percent of vote by party - NA; seats by party as of February 2022 - AL 299, JP 27, BNP 7, other 10, independent 4; composition - men 277, women 73, percent of women 20.9%

Judicial branch

highest court(s): Supreme Court of Bangladesh (organized into the Appellate Division with 7 justices and the High Court Division with 99 justices)

judge selection and term of office: chief justice and justices appointed by the president; justices serve until retirement at age 67

subordinate courts: civil courts include: Assistant Judge's Court; Joint District Judge's Court; Additional District Judge's Court; District Judge's Court; criminal courts include: Court of Sessions; Court of Metropolitan Sessions; Metropolitan Magistrate Courts; Magistrate Court; special courts/tribunals

Political parties and leaders

Awami League or AL [Sheikh HASINA]

Bangladesh Jamaat-i-Islami or JIB [Shafiqur RAHMAN]

Bangladesh Nationalist Front or BNF [S. M. Abul Kalam AZAD]

Bangladesh Nationalist Party or BNP [Tarique RAHMAN, acting chairperson; Khaleda ZIA]

Bangladesh Tariat Federation or BTF [Syed Nozibul Bashar MAIZBHANDARI]

Jatiya Party or JP (Ershad faction) [Rowshan ERSHAD]
 Jatiya Party or JP (Manju faction) [Anwar Hossain MANJU]
 Liberal Democratic Party or LDP [Oli AHMED]
 National Socialist Party (Jatiya Samajtantrik Dal) or JSD [Hasanul Haque INU]
 Workers Party or WP [Rashed Khan MENON]

International organization participation

ADB, ARE, BIMSTEC, C, CD, CICA (observer), CP, D-8, FAO, G-77, IAEA, IBRD, ICAO, ICC (national committees), ICRM, IDA, IDB, IFAD, IFC, IFRCS, IHO, ILO, IMF, IMO, IMSO, Interpol, IOC, IOM, IPU, ISO, ITSO, ITU, ITUC (NGOs), MIGA, MINURSO, MINUSMA, MONUSCO, NAM, OIC, OPCW, PCA, SAARC, SACEP, UN, UNAMID, UNCTAD, UNESCO, UNHCR, UNIDO, UNISFA, UNIFIL, UNMIL, UNMISS, UNOCI, UNWTO, UPU, WCO, WFTU (NGOs), WHO, WIPO, WMO, WTO

Diplomatic representation in the US

chief of mission: Ambassador Muhammad IMRAN (since 12 December 2022)
 chancery: 3510 International Drive NW, Washington, DC 20008
 Tel: 1-202-244-0183
 Fax: 1-202-244-2771; [1] (202) 244 7830
 Email address: mission.washington@mofa.gov.bd
 Web: <http://www.bdembassyusa.org/>
 Consulate(s) general: Los Angeles, New York

Diplomatic representation from the US

chief of mission: Ambassador Peter HAAS (since 15 March 2022)
 embassy: Madani Avenue, Baridhara, Dhaka - 1212
 mailing address: 6120 Dhaka Place, Washington DC 20521-6120
 Tel: 880-2-5566-2000
 Fax: 880-2-5566-2907
 Email address: DhakaACS@state.gov
 Web: <https://bd.usembassy.gov/>

Flag description

green field with a large red disk shifted slightly to the hoist side of center; the red disk represents the rising sun and the sacrifice to achieve independence; the green field symbolizes the lush vegetation of Bangladesh

National symbol(s)

Bengal tiger, water lily; national colors: green, red

National anthem

name: "Amar Shonar Bangla" (My Golden Bengal)

lyrics/music: Rabindranath TAGORE

Note: adopted 1971; Rabindranath TAGORE, a Nobel laureate, also wrote India's national anthem

National heritage

total World Heritage Sites: 3 (2 cultural, 1 natural)

selected World Heritage Site locales: Bagerhat Historic Mosque (c); Ruins of the Buddhist Vihara at Paharpur (c); Sundarbans (n)

Economy

one of the fastest growing economies; significant poverty reduction; COVID-19 adversely impacted female labor force participation and undermined previously stable financial conditions; looking to diversify beyond clothing industry; fairly low government debt; new taxation law struggling to increase government revenues

Real GDP (purchasing power parity)

\$1.001 trillion (2021 est.; data are in 2017 dollars)
 \$936.113 billion (2020 est.; data are in 2017 dollars)

\$904.912 billion (2019 est.; data are in 2017 dollars)

country comparison to the world: 27

Real GDP growth rate

6.94% (2021 est.)

3.45% (2020 est.)

7.88% (2019 est.)

country comparison to the world: 59

Real GDP per capita

\$5,900 (2021 est.; data are in 2017 dollars)

\$5,600 (2020 est.; data are in 2017 dollars)

\$5,500 (2019 est.; data are in 2017 dollars)

country comparison to the world: 165

GDP (official exchange rate)

\$329.545 billion (2020 est.)

Inflation rate (consumer prices)

5.55% (2021 est.)

5.69% (2020 est.)

5.59% (2019 est.)

country comparison to the world: 169

Credit ratings

Fitch rating: BB- (2014)

Moody's rating: Ba3 (2012)

Standard & Poor's rating: BB- (2010)

Note: The year refers to the year in which the current credit rating was first obtained.

GDP - composition, by sector of origin

agriculture: 14.2% (2017 est.)

industry: 29.3% (2017 est.)

services: 56.5% (2017 est.)

GDP - composition, by end use

household consumption: 68.7% (2017 est.)

government consumption: 6% (2017 est.)

investment in fixed capital: 30.5% (2017 est.)

investment in inventories: 1% (2017 est.)

exports of goods and services: 15% (2017 est.)

imports of goods and services: -20.3% (2017 est.)

Agricultural products

rice, potatoes, maize, sugar cane, milk, vegetables, onions, jute, mangoes/guavas, wheat

Industries

jute, cotton, garments, paper, leather, fertilizer, iron and steel, cement, petroleum products, tobacco, pharmaceuticals, ceramics, tea, salt, sugar, edible oils, soap and detergent, fabricated metal products, electricity, natural gas

Industrial production growth rate

10.29% (2021 est.)

country comparison to the world: 27

Labor force

70.961 million (2021 est.)

Note: extensive migration of labor to Saudi Arabia, Kuwait, UAE, Oman, Qatar, and Malaysia
country comparison to the world: 8

Labor force - by occupation

agriculture: 42.7%

industry: 20.5%

services: 36.9% (2016 est.)

Unemployment rate

5.23% (2021 est.)

5.41% (2020 est.)

4.44% (2019 est.)

Note: about 40% of the population is underemployed; many persons counted as employed work only a few hours a week and at low wages

country comparison to the world: 85

Youth unemployment rate (ages 15-24)

total: 14.7%

male: 12.5%

female: 19.6% (2021 est.)

country comparison to the world: 119

Population below poverty line

24.3% (2016 est.)

Gini Index coefficient - distribution of family income

32.4 (2016 est.)

country comparison to the world: 134

Household income or consumption by percentage share

lowest 10%: 4%

highest 10%: 27% (2010 est.)

Budget

revenues: \$25.1 billion (2017 est.)

expenditures: \$33.5 billion (2017 est.)

Budget surplus (+) or deficit (-)

-3.2% (of GDP) (2017 est.)
country comparison to the world: 137

Public debt

33.1% of GDP (2017 est.)
33.3% of GDP (2016 est.)
country comparison to the world: 163

Taxes and other revenues

7% (of GDP) (2020 est.)
country comparison to the world: 214

Fiscal year

1 July - 30 June

Current account balance

-\$15.563 billion (2021 est.)
\$1.193 billion (2020 est.)
-\$2.949 billion (2019 est.)
country comparison to the world: 201

Exports

\$49.386 billion (2021 est.)
\$38.476 billion (2020 est.)
\$44.961 billion (2019 est.)
Note: Data are in current year dollars and do not include illicit exports or re-exports.
country comparison to the world: 65

Exports - partners

United States 15%, Germany 14%, United Kingdom 8%, Spain 7%, France 7% (2019)

Exports - commodities

clothing, knitwear, leather footwear (2019)

Imports

\$85.303 billion (2021 est.; data are in current year dollars)
\$56.776 billion (2020 est.; data are in current year dollars)
\$64.234 billion (2019 est.; data are in current year dollars)
country comparison to the world: 49

Imports - partners

China 31%, India 15%, Singapore 5% (2019)

Imports - commodities

refined petroleum, cotton, natural gas, scrap iron, wheat (2019)

Reserves of foreign exchange and gold

\$46.166 billion (31 December 2021 est.)
\$43.172 billion (31 December 2020 est.)
\$32.697 billion (31 December 2019 est.)
country comparison to the world: 46

Debt - external

\$50.26 billion (31 December 2017 est.)
\$41.85 billion (31 December 2016 est.)
country comparison to the world: 67

Exchange rates

taka (BDT) per US dollar -
85.084 (2021 est.)
84.871 (2020 est.)
84.454 (2019 est.)
83.466 (2018 est.)
80.438 (2017 est.)

EnergyElectricity access

electrification - total population: 83% (2019)
electrification - urban areas: 93% (2019)
electrification - rural areas: 77% (2019)

Electricity

installed generating capacity: 18.461 million kW (2020 est.)
consumption: 76,849,877,000 kWh (2019 est.)
exports: 0 kWh (2019 est.)
imports: 6.786 billion kWh (2019 est.)
transmission/distribution losses: 9.537 billion kWh (2019 est.)

Electricity generation sources

fossil fuels: 98.6% of total installed capacity (2020 est.)

nuclear: 0% of total installed capacity (2020 est.)

solar: 0.6% of total installed capacity (2020 est.)

wind: 0% of total installed capacity (2020 est.)

hydroelectricity: 0.8% of total installed capacity (2020 est.)

tide and wave: 0% of total installed capacity (2020 est.)

geothermal: 0% of total installed capacity (2020 est.)

biomass and waste: 0% of total installed capacity (2020 est.)

Coal

production: 1.016 million metric tons (2020 est.)

consumption: 9.345 million metric tons (2020 est.)

exports: 0 metric tons (2020 est.)

imports: 8.329 million metric tons (2020 est.)

proven reserves: 293 million metric tons (2019 est.)

Petroleum

total petroleum production: 13,500 bbl/day (2021 est.)

refined petroleum consumption: 122,500 bbl/day (2019 est.)

crude oil and lease condensate exports: 0 bbl/day (2018 est.)

crude oil and lease condensate imports: 21,600 bbl/day (2018 est.)

crude oil estimated reserves: 28 million barrels (2021 est.)

Refined petroleum products - production

26,280 bbl/day (2015 est.)

country comparison to the world: 86

Refined petroleum products - exports

901 bbl/day (2015 est.)

country comparison to the world: 108

Refined petroleum products - imports

81,570 bbl/day (2015 est.)

country comparison to the world: 63

Natural gas

production: 28,629,927,000 cubic meters (2019 est.)

consumption: 31,268,968,000 cubic meters (2019 est.)

exports: 0 cubic meters (2021 est.)

imports: 2,639,041,000 cubic meters (2019 est.)

proven reserves: 126.293 billion cubic meters (2021 est.)

Carbon dioxide emissions

96.18 million metric tonnes of CO₂ (2019 est.)

from coal and metallurgical coke: 16.538 million metric tonnes of CO₂ (2019 est.)

from petroleum and other liquids: 18.535 million metric tonnes of CO₂ (2019 est.)

from consumed natural gas: 61.107 million metric tonnes of CO₂ (2019 est.)

country comparison to the world: 44

Energy consumption per capita

9.917 million Btu/person (2019 est.)

country comparison to the world: 155

Communications

Telephones - fixed lines

total subscriptions: 587,476 (2021 est.)

subscriptions per 100 inhabitants: 0 (2021 est.)

less than 1

country comparison to the world: 87

Telephones - mobile cellular

total subscriptions: 181,021,227 (2021 est.)

subscriptions per 100 inhabitants: 107 (2021 est.)

country comparison to the world: 9

Telecommunication systems

general assessment: Bangladesh's economic resurgence over the last decade took a battering in 2020 and 2021 as a result of the Covid-19 pandemic; the country had been on track to move off the United Nation's Least Developed Countries list by 2026, however the crisis may have pushed that back a few years; the telecommunications sector experienced a set of challenges, with mobile data usage exploding at

the same time as many consumers were being forced to curb their spending in other areas; the demand on data grew so large and so rapidly that Bangladesh came close to running out of bandwidth; at the start of 2020, Bangladesh was consuming around 900Gb/s on average, well below the 2,642GB/s capacity of its submarine cables; this ballooned to over 2,300Gb/s during the pandemic; Bangladesh was looking forward to adding 7,200Gb/s capacity when the SEA-ME-WE-6 submarine cable goes into service in mid-2024, but the sudden upsurge in downloads is forcing state-run company Bangladesh Submarine Cable Company Limited (BSCCL) to scramble to find alternatives before the country's internet supply is maxed out; the increased demand during the Covid-19 crisis also put pressure on the country's existing mobile networks, already under strain as a result of strong growth in the mobile broadband market coupled with significant untapped potential for mobile services in general across the country; this led to premium prices being paid at auction for spectrum in the 1800MHz and 2100MHz bands, most of which will be used to enhance and expand LTE services; a 5G spectrum auction had been anticipated for 2020, but low interest from the MNOs in going down that path when there are still so many areas waiting for LTE access means that 5G will likely be deferred until 2023 (2021)

domestic: fixed-line teledensity remains less than 1 per 100 persons; mobile-cellular telephone subscribership has been increasing rapidly and now exceeds 107 per 100 persons; mobile subscriber growth is anticipated over the next five years to 2023 (2021)

international: country code - 880; landing points for the SeaMeWe-4 and SeaMeWe-5 fiber-optic submarine cable system that provides links to Europe, the Middle East, and Asia; satellite earth stations - 6; international radiotelephone communications and landline service to neighboring countries (2019)

Broadcast media

state-owned Bangladesh Television (BTV) broadcasts throughout the country. Some channels, such as BTV World, operate via satellite. The government also owns a medium wave radio channel and some private FM radio broadcast news channels. Of the 41 Bangladesh approved TV stations, 26 are currently being used to broadcast. Of those, 23 operate under private management via cable distribution. Collectively, TV channels can reach more than 50 million people across the country.

Internet country code

.bd

Internet users

total: 41,172,346 (2020 est.)
percent of population: 25% (2020 est.)
country comparison to the world: 24

Broadband - fixed subscriptions

total: 10,052,819 (2020 est.)
subscriptions per 100 inhabitants: 6 (2020 est.)
country comparison to the world: 19

Transportation

National air transport system

number of registered air carriers: 6 (2020)
inventory of registered aircraft operated by air carriers: 30
annual passenger traffic on registered air carriers: 5,984,155 (2018)
annual freight traffic on registered air carriers: 63.82 million (2018) mt-km

Civil aircraft registration country code prefix

S2

Airports

total: 18 (2021)
country comparison to the world: 137

Airports - with paved runways

total: 16

over 3,047 m: 2

2,438 to 3,047 m: 2

1,524 to 2,437 m: 6

914 to 1,523 m: 1

under 914 m: 5 (2021)

Airports - with unpaved runways

total: 2

1,524 to 2,437 m: 1

under 914 m: 1 (2021)

Heliports

3 (2021)

Pipelines

2,950 km gas (2013)

Railways

total: 2,460 km (2014)

narrow gauge: 1,801 km (2014) 1.000-m gauge

broad gauge: 659 km (2014) 1.676-m gauge

country comparison to the world: 66

Roadways

total: 369,105 km (2018)

paved: 110,311 km (2018)

unpaved: 258,794 km (2018)

country comparison to the world: 20

Waterways

8,370 km (2011) (includes up to 3,060 km of main cargo routes; network reduced to 5,200 km in the dry season)

country comparison to the world: 18

Merchant marine

total: 468

by type: bulk carrier 48, container ship 6, general cargo 140, oil tanker 144, other 130 (2021)

country comparison to the world: 43

Ports and terminals

major seaport(s): Chattogram (Chittagong)

container port(s) (TEUs): Chattogram (Chittagong) (3,214,548) (2021)

river port(s): Mongla Port (Sela River)

Military and Security

Military and security forces

Armed Forces of Bangladesh (aka Bangladesh Defense Force): Bangladesh Army, Bangladesh Navy, Bangladesh Air Force; Ministry of Home Affairs: Border Guard Bangladesh (BGB), Bangladesh Coast Guard, Rapid Action Battalion (RAB), Ansars, Village Defense Party (VDP) (2022)

Note: The Armed Forces of Bangladesh are jointly administered by the Ministry of Defense (MOD) and the Armed Forces Division (AFD), both under the Prime Minister's Office; the AFD has ministerial status and parallel functions with MOD; the AFD is a joint coordinating headquarters for the three services and also functions as a joint command center during wartime; to coordinate policy, the prime minister and the president are advised by a six-member board, which includes the three service chiefs of staff, the principal staff officer of the AFD, and the military secretaries to the prime minister and president

Note: The RAB, Ansars, and VDP are paramilitary organizations for internal security; the RAB is a joint task force founded in 2004 and composed of members of the police, Army, Navy, Air Force, and Border Guards seconded to the RAB from their respective units; its mandate includes internal security, intelligence gathering related to criminal activities, and government-directed investigations

Military expenditures

1.1% of GDP (2022 est.)

1.2% of GDP (2021 est.)

1.3% of GDP (2020)

1.4% of GDP (2019)

1.4% of GDP (2018)

country comparison to the world: 122

Military and security service personnel strengths

information varies; approximately 165,000 total active personnel (135,000 Army; 15,000 Navy; 15,000 Air Force) (2022)

Military equipment inventories and acquisitions

much of the military's inventory is comprised of Chinese- and Russian-origin equipment, with a smaller mix from a variety of other suppliers; in recent years, China has been the leading provider of arms to Bangladesh; as of 2022, Bangladesh was undertaking a large defense modernization program (2022)

Military service age and obligation

16-21 years of age for voluntary military service; Bangladeshi nationality and 10th grade education required; officers: 17-21 years of age, Bangladeshi nationality, and 12th grade education required (2022)

Military deployments

1,375 Central African Republic (MINUSCA); 1,625 Democratic Republic of the Congo (MONUSCO; plus about 190 police); 120 Lebanon (UNIFIL); 1,100 Mali (MINUSMA; plus about 280 police); 1,600 South Sudan (UNMISS); 180 Sudan (UNISFA) (2022)

Military Note

The military's chief areas of focus are border, economic exclusion zone, and domestic security; the Army maintains a large domestic security presence in the Chittagong Hills area where it conducted counterinsurgency operations against tribal guerrillas from the 1970s until the late 1990s; since 2009, the military has been in a force-wide expansion and modernization program known as Forces Goal 2030 (2022)

Maritime threats

The International Maritime Bureau reports the territorial waters of Bangladesh remain a risk for armed robbery against ships; there were no attacks reported in 2021 as opposed to four ships that were boarded in 2020

TerrorismTerrorist group(s)

Harakat ul-Jihad-i-Islami/Bangladesh; Islamic State of Iraq and ash-Sham in Bangladesh (ISB); al-Qa'ida; al-Qa'ida in the Indian Subcontinent (AQIS)

Transnational IssuesDisputes - international

Bangladesh-Burma: Burmese border authorities are constructing a 200 km (124 mi) wire fence designed to deter illegal cross-border transit and tensions from the military build-up along border. Bangladesh-India: Bangladesh referred its maritime boundary claims with Burma and India to the International Tribunal on the Law of the Sea; Indian Prime Minister Singh's September 2011 visit to Bangladesh resulted in the signing of a Protocol to the 1974 Land Boundary Agreement between India and Bangladesh, which had called for the settlement of longstanding boundary disputes over un-demarcated areas and the exchange of territorial enclaves, but which had never been implemented.

Refugees and internally displaced persons

refugees (country of origin): 957,951 (Burma) (2023)

IDPs: 427,000 (conflict, development, human rights violations, religious persecution, natural disasters) (2021)

stateless persons: 929,606 (2022)

Illicit drugs

transit country for illegal drugs produced in neighboring countries; does not manufacture precursor chemicals with the exception of sulphuric acid, hydrochloric acid, and toluene

Acronyms and Abbreviations

°	Degree(s) – of temperature (Celsius [°C] or Fahrenheit [°F]) or of latitude and longitude (North, South, East, and West)
\$	dollars (U.S.)
AFD	Armed Forces Division
AMR	antimicrobial resistance
APAN	All Partners Access Network
ASEAN	Association of Southeast Asian Nations
ASF	Acid Survivors Foundation
BCE	Before Common Era (formerly B.C.)
BDP	Bangladesh Delta Plan or Bangladesh Taka
BDRCS	Bangladesh Red Crescent Society
BHA	Bureau for Humanitarian Assistance (of USAID)
BIWTA	Bangladesh Inland Water Transport Authority
BIWTC	Bangladesh Inland Water Transport Corporation
BMD	Bangladesh Meteorological Department
BNP	Bangladesh Nationalist Party
BPDB	Bangladesh Power Development Board
BREB	Bangladesh Rural Electrification Board
BRI	Belt and Road Initiative
BTCL	Bangladesh Telecommunications Company Limited
BTRC	Bangladesh Telecommunication Regulatory Commission
BTV	Bangladesh Television
BWDB	Bangladesh Water Development Board
CARAT	Cooperation Afloat Readiness and Training
CC	Community Clinic
CCA	climate change adaptation
CCS	Country Cooperation Strategy
CCTF	climate change trust fund
CDC	Centers on Disease Control and Prevention (of the U.S.) or Communicable Disease Control of MOHFW
CDMP	Comprehensive Disaster Management Programme
CPRD	Centre for Participatory Research and Development
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
CFE-DM	Center for Excellence in Disaster Management and Humanitarian Assistance
CHT	Chittagong Hill Tracts
CIDD	Center for Inclusive Development Dialogue
COVAX	COVID-19 Vaccines Global Access
COVID-19	Coronavirus Disease 2019
CPP	Cyclone Preparedness Programme
CREWSnet	Climate Resilience Early Warning System Network

CRI	Climate Risk Index
CVF	Climate Vulnerable Forum
CwC	Communication with Communities
DDM	Department of Disaster Management (of MoDMR)
DGHS	Directorate General of Health Services
DMHA	Disaster Management and Humanitarian Assistance
DMIC	Disaster Management Information Center
DoD	Department of Defense (of the U.S.)
DPHE	Department of Public Health Engineering
DREE	Disaster Response Exercise and Exchange
DRM	disaster risk management
DRR	disaster risk reduction
DSA	Digital Security Act
EIE	Education in Emergencies
EPI	Expanded Programme on Immunization
EWS	early warning systems
FAO	Food and Agriculture Organization (of the UN)
FDMN	Forcibly Displaced Myanmar National
FETP,B	Field Epidemiology Training Program, Bangladesh
FFWC	Flood Forecasting and Warning Centre
FPP	Flood Preparedness Programme
FSRU	floating storage and regasification unit
FYP	Five-Year Plan
Gbps	Gigabits per second
GBV	gender-based violence
GDP	Gross Domestic Product
GW	gigawatt
HADR	Humanitarian Assistance and Disaster Relief
HAV	hepatitis A virus
HCT	Humanitarian Country Teams
HCTT	Humanitarian Coordination Task Team
HEV	hepatitis E virus
HPNSP	Health, Population, and Nutrition Sector Programme
HRIG	human rabies immune globulin
IASC	Inter-Agency Standing Committee
ICRC	International Committee of the Red Cross
ICT	information and communications technology
IEDCR	Institute of Epidemiology, Disease Control, and Research
IFRC	International Federation of Red Cross and Red Crescent Societies
IMDMCC	Inter-Ministerial Disaster Management Coordination Committee
IMF	International Monetary Fund

APPENDICES

in	inch(es)
INFORM	Index for Risk Management
IOM	International Organization for Migration
IPCC	Intergovernmental Panel on Climate Change
ISP	internet service provider
JICA	Japan International Cooperation Agency
km / km ²	kilometer(s) / square kilometer(s)
kV	kilovolt
kW	kilowatt
LGBTQ+	Lesbian, Gay, Bisexual, Transgender, Queer+
LGED	Local Government Engineering Department
LNG	liquified natural gas
LOA	length overall
m / m ²	meter(s) / square meter(s)
mm	millimeter(s)
Mbps	megabits per second
MIB	Ministry of Information and Broadcasting
MoDMR	Ministry of Disaster Management and Relief
MOE	Ministry of Education
MOHFW	Ministry of Health and Family Welfare
MOWCA	Ministry of Women and Children Affairs
MP	member of parliament
MPEMR	Ministry of Power, Energy, and Mineral Resources
MPME	Ministry of Primary and Mass Education
MW	Megawatt
NAP	National Adaptation Plan
NAP WPS	National Action Plan on Women, Peace, and Security
NCD	non-communicable disease
NDMC	National Disaster Management Council
NDMAC	National Disaster Management Advisory Committee
NDRRC	National Disaster Response Coordination Center (of MoDMR)
NEOC	National Emergency Operation Centre
NGO	non-governmental organization
NIC	National Influenza Center
NPDM	National Plan for Disaster Management
NRRT	National Rapid Response Team
NU	National University
OCHA	Office for the Coordination of Humanitarian Affairs (of the UN)
PDC	Pacific Disaster Center
PEP	post-exposure prophylaxis
PHEOC	public health emergency operations center

PM	Prime Minister
PSMP	Power System Master Plan
PV	photovoltaic
RCP	Representative Concentration Pathways
RHCC	Changi Regional HADR Coordination Centre
RHD	Roads and Highways Department
RIMES	Regional Integrated Multi-Hazard Early Warning System
ROAP	Regional Office for Asia and the Pacific (of UN OCHA)
SAARC	South Asian Association for Regional Cooperation
SDG	Sustainable Development Goals
SEACAT	Southeast Asia Cooperation and Training
SMS	short message service (or text messaging)
SOD	Standing Orders on Disaster
SPP	State Partnership Program (of the U.S. National Guard)
SREDA	Sustainable and Renewable Energy Development Authority
TB	tuberculosis
TC	Tropical Cyclone
TEU	twenty-foot equivalent unit
TTX	tabletop exercise
TVET	technical and vocational education and training
U.S.	United States
UN	United Nations
UNCT	United Nations Country Team
UNDP	United Nations Development Programme
UNDRR	United Nations Office for Disaster Risk Reduction
UNESCO	United Nations Educational, Science, and Cultural Organization
UNFPA	United Nations Population Fund
UNHRD	United Nations Humanitarian Response Depot
UNICEF	United Nations Children's Fund
UNOPS	United Nations Office for Project Services
UNSCR	United Nations Security Council Resolution
USAID	United States Agency for International Development
USARPAC	United States Army, Pacific
USINDOPACOM	Indo-Pacific Command (of the U.S. DoD)
W/m ²	watts per meter squared
WASA	Water and Sewerage Authority
WFP	World Food Programme (of the UN)
WHO	World Health Organization
WPS	Women, Peace, and Security

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