CFE-DM

BRUNEI DARUSSALAM

Disaster Management Reference Handbook

April 2026



CENTER FOR EXCELLENCE IN DISASTER MANAGEMENT & HUMANITARIAN ASSISTANCE
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Acknowledgements

CFE-DM would like to thank the following people for their knowledge and support in developing this resource:

Colonel David Bradley, U.S. Army Attaché to Singapore and Defense Attaché to Brunei

Commander Bert Bratton, Chief, U.S. Military Group, U.S. Embassy Bandar Seri Begawan

Front Cover

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Other references may cite this publication using the following format:
CFE-DM. Title. Year. Date Accessed. URL

April 23, 2026 (20260423v3.0)

ISBN 978-1-955429-75-7

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Letter from the Director

Brunei Darussalam, while often regarded as being at low risk for major natural disasters, faces evolving and complex challenges due to its unique geographic and environmental conditions. Its extensive coastline exposes the nation to the long-term threat of coastal flooding. Moreover, Brunei's vulnerability to heavy, unpredictable rainfall with the potential for flooding and landslides remain a significant concern, requiring constant vigilance and preparedness.

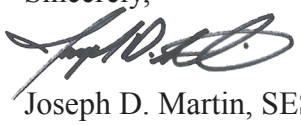
In response to these challenges, Brunei has demonstrated remarkable leadership and commitment to disaster risk reduction and management. Over the past two decades, the country has institutionalized robust national processes through the National Disaster Management Centre (NDMC) and fostered a culture of resilience and proactive collaboration among government ministries, security forces, and civil society. This whole-of-government approach ensures that Brunei is not only prepared to respond to emergencies, but also to mitigate risks before they escalate.

Brunei's active engagement within the Association of Southeast Asian Nations (ASEAN) further strengthens its disaster management capabilities. Through ASEAN's established mechanisms and tools, Brunei participates in unified, coordinated responses to regional disasters, sharing expertise and resources to protect lives and livelihoods across Southeast Asia. The NDMC's cooperation with international partners enhances Brunei's access to cutting-edge technology, early warning systems, and best practices in disaster management.

The enduring partnership between Brunei and the United States is exemplified by annual bilateral military exercises, such as Cooperation Afloat Readiness and Training (CARAT). These shared activities build trust, interoperability, and mutual understanding, ensuring that both nations' armed forces are ready to work side by side in times of crisis. Such collaboration is not only a testament to our shared commitment to safety and security but also a vital asset as Brunei continues to strengthen its disaster management capabilities.

As we look to the future, it is clear that effective disaster management requires ongoing adaptation, innovation, and international cooperation. The updated Brunei Darussalam Disaster Management Reference Handbook serves as a baseline of understanding of Brunei Darussalam's approach to disaster risk and response management, including the roles of key responders and partners. This publication is intended to serve as a source of information for individuals preparing for immediate deployment or disaster-related trainings and engagements alongside Bruneian partner responders.

Sincerely,



Joseph D. Martin, SES
Director

About the Center for Excellence in Disaster Management & Humanitarian Assistance

Overview

The Center for Excellence in Disaster Management & Humanitarian Assistance (CFE-DM) is a United States (U.S.) Department of War (DoW, also known as Department of Defense) 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 non-governmental 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

Resilient Joint Forces, Allies, and Partners that are fully prepared to respond across the spectrum of humanitarian crises.

Mission

CFE-DM builds crisis response capacity in US, Allies and Partner militaries across the Indo-Pacific to save lives before, during, and after emergencies.

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EXECUTIVE SUMMARY

Brunei Darussalam (hereafter "Brunei") is a small, high-income, absolute monarchy on the northwest coast of Borneo Island in Southeast Asia. Its centralized governance model, substantial fiscal resources, and well-institutionalized disaster management framework enable effective responses to the country's primary hazards – flooding and landslides.

Brunei's strong domestic response capacity and low overall disaster risk mean that international assistance is rarely required domestically. The most frequent hazard is flooding, driven by the Northeast Monsoon from December through March. Recurring flood impacts include temporary displacement of residents, road closures along critical arteries, damage to homes, disruption to water and drainage infrastructure, and restricted emergency access. Landslides, often triggered by prolonged rainfall, can damage critical infrastructure and lead to disruptions to water supply, health care, education, and business. Although the direct impacts of individual floods or landslides may be minimal, their cumulative impact nationally and over time can be considerable and begin to erode coping capacity.

Brunei rarely requires international assistance after hazard events, as most incidents are managed effectively through national and district-level resources. There is a well-institutionalized disaster management system anchored by the Disaster Management Order of 2006, which established the National Disaster Council (NDC) and the National Disaster Management Centre (NDMC). The system follows a structured three-tiered response model, escalating from District Disaster Management Committees (DDMC) at the local level, through national coordination by the NDMC, to international assistance, when required.

The Royal Brunei Armed Forces (RBAF), Royal Brunei Police Force (RBPF), and Brunei Fire and Rescue Department (BFRD) provide critical operational support, while the NDMC coordinates whole-of-government response efforts. The RBAF plays a critical supporting role in domestic and regional disaster response operations within a civilian-led national response framework. Civil-Military Cooperation Platoons within RBAF battalions are frequently deployed for on-the-ground assistance, including transportation, logistics, engineering support, and debris clearance.

The three-tiered disaster management system provides a structured escalation pathway from local to international response. If district and national resources prove insufficient, Tier 3 activates international assistance, mostly via the Association of Southeast Asian Nations (ASEAN).

Brunei is an active and committed participant in ASEAN's disaster management frameworks, including the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) and the "One ASEAN, One Response" policy. The NDMC serves as Brunei's national focal point for ASEAN disaster management communication and coordination. Brunei works with other member states through the ASEAN Coordinating Centre for Humanitarian Assistance on disaster management (AHA Centre) and use the ASEAN Standard Operating Procedure for Regional Standby Arrangements and Coordination of Joint Disaster Relief and Emergency Response Operations (SASOP).

Brunei Darussalam presents a unique disaster management context characterized by low overall risk to large-scale disasters, strong domestic response capacity, and active regional engagement. However, structural vulnerabilities, including geographic discontinuity, economic dependence on hydrocarbons, food import reliance, and the needs of marginalized populations, require ongoing attention from planners and policymakers. This handbook provides the foundational knowledge necessary to support effective planning, coordination, and engagement with Brunei's disaster management system.

COUNTRY OVERVIEW

Brunei is a small, hydrocarbon-rich Southeast Asian state of approximately 455,000 people, nearly 80% of whom reside in urban areas, primarily in Brunei-Muara District. The country's equatorial climate, low-lying coastal plains, river systems, and monsoonal rainfall patterns contribute to seasonal flooding and landslides. High forest cover and peat swamp ecosystems increase wildfire risk during dry periods. Strong centralized governance under an absolute monarchy, substantial fiscal reserves from oil and gas revenues, and a comprehensive welfare system significantly mitigate disaster risk. However, localized flood exposure, aging infrastructure in low-lying areas, and dependence on migrant labor create structural vulnerabilities. Furthermore, Brunei's economic reliance on the oil and gas sector exposes the country to economic instability amidst global efforts to transition toward zero-carbon economies.

Geography and Environment

Brunei benefits from limited geographic scale, allowing emergency services to deploy quickly across affected areas.

Brunei occupies 5,765 square kilometers (km²; 2,226 square miles [mi²]) of territory on the northwest coast of Borneo Island. The country consists of two physically separated territories with part of Malaysia's Sarawak between them; Brunei and Malaysia share 266 km (165 mi) of land borders.[1] The country is divided into four districts: Brunei-Muara, Belait, Tutong, and Temburong. The eastern Temburong district is an exclave surrounded by Malaysia and the South China Sea, a situation that creates a geographic discontinuity that can complicate logistics and transportation planning during emergencies. The population concentrates in the north, on the western side of Brunei Bay, in and around the capital of Bandar Seri Begawan in the Brunei-Muara district.[2] Figure 1 shows a map of Brunei.[3]

With approximately 161 km (100 mi) of coastline, Brunei occupies a strategic position along the South China Sea[4] of which Brunei Bay is an inlet into which the Brunei River flows after passing through Bandar Seri Begwan. Rivers include the Belait, Tutong, and Brunei in the western part of the country and the Pandaruan and Temburong in the east.[5] The coast features a wide, tidal, and swampy plain.[6] Large expanses of freshwater and peat swamps are found in poorly drained lowlands of the Belait and Tutong rivers, while mangrove swamps are common along the lower riverine reaches and sheltered coastal areas.[7]

Topography varies from low-lying coastal plains and river basins to forested interior



Figure 1: Map of Brunei

highlands. The terrain in western Brunei is predominantly hilly lowland, below 91 meters (m; 299 feet [ft]) above sea level, but it does rise in the hinterland to about 300 m (984 ft). Southern areas of Brunei's Temburong District are predominantly rugged mountain terrain, rising to 1,850 m (6,070 ft) above sea level at Brunei's highest point, Bukit Pagon. Brunei's flat coastal areas have been cleared for agriculture, human habitation, and commerce, while the interior is dominated by dense rainforest with a total forest area of 380,000 hectares (ha; 939,000 acres).[8] About 41% of the total land area is designated as protected forest reserve.[9] About three-fifths of the country is covered with virgin tropical rainforest, and another one-fifth is under secondary forest.[10]

Brunei has an equatorial climate characterized by a uniform high temperature, high humidity, and heavy rainfall. The coastal area in Brunei-Muara, at lower altitudes, has temperatures ranging from 20°C to 36°C (68°F to 97°F). The north of the Tutong District has a hot tropical climate while the south is relatively less warm, and temperatures range from 22°C to 32°C (72°F to 90°F). Belait District is mainly flat and has slightly warmer temperatures at 25-37°C (77-99°F). The hilly Temburong District has average temperatures ranging from 18°C to 29°C (64°F to 84°F).[11] Since 1970, the country's mean temperature has increased by 1.25°C (2.25°F), with the warmest year recorded in 2019.[12] In 2019, Brunei also recorded new highs for both daily rainfall and forest fires. Figure 2 from the World Bank shows the temperature and precipitation dynamics throughout a 12-month period in Brunei.[13]

Annual average rainfall varies from 2,500 millimeters (mm; 98 inches [in]) on the coast to 7,500 mm (295 in) in the interior.[14] The El Niño-Southern Oscillation is a primary driver of interannual variability in precipitation. In Brunei, the warm El Niño phase tends to suppress rainfall activity, with increasing air temperature and low relative humidity. Heatwaves tend to occur during El Niño episodes.[15] The cool La Niña phase is associated with wetter than normal conditions in Brunei.[16]

Weather is also influenced by the seasonal northeast and southwest monsoons. The December through March northeast monsoon brings rainfall, with December and January being the wettest period. The southwest monsoon season runs from June through September, and during this period, atmospheric conditions tend to be more stable, resulting in fewer occurrences of thunderstorms and winds that generally blow from the southwest.[17] The southwest monsoon is also associated with the development of tropical storms over the Northwest Pacific Ocean and the South China Sea; although these systems develop far from Brunei, their proximity and intensity have the potential to influence local weather conditions.[18]

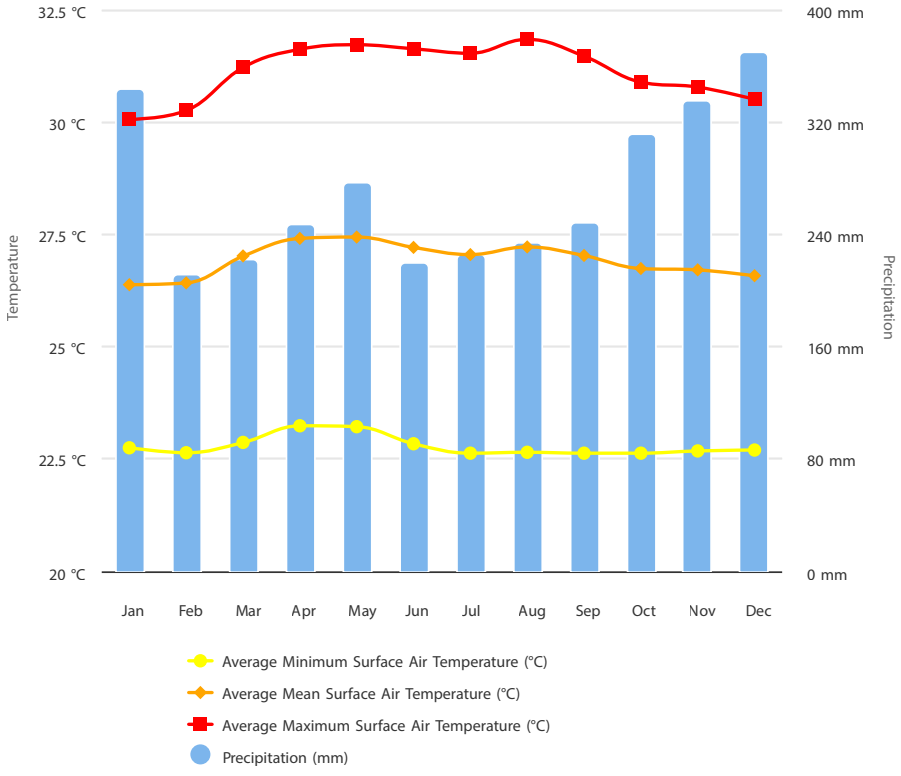


Figure 2: Average Temperature and Precipitation in Brunei (1991-2020)

Society and Demographics

In 2024, Brunei's population was estimated at 455,500,[19] an increase from 386,800 in 2010 and showing an average annual growth rate of 1.1%. Population density is roughly 79 people per km² (204 people per mi²).[20] Most residents live in urban areas, particularly in Bandar Seri Begawan in the Brunei-Muara District. About 79% of Brunei's population lives in urban areas,[21] and approximately 75% of people live in coastal areas.[22] The rural population is concentrated in the Tutong and Temburong districts. Figure 3 illustrates Brunei's population by district, as sourced from the Government of Brunei.[23] The population is relatively young, with a median age of 32.4 years.[24] In 2023, the age distribution of the population was: 0-14 years (9.5%); 15-64 years (83%); and 65 years and older (7.5%).[25]

The official core of Bruneian identity is "Melayu Islam Beraja" (MIB, Malay Islamic Monarchy). The Bruneian-drafted Independence Declaration of 1984 proclaims that Brunei "shall forever be a sovereign, democratic and independent Malay Muslim Monarchy." MIB contains three major components: Melayu (Malay culture and values as the traditionally predominant culture in the country); Islam (as the official and traditional religion of the country); and Beraja (monarchy as the traditional system of government).[26] Despite the Malay cultural predominance, the population

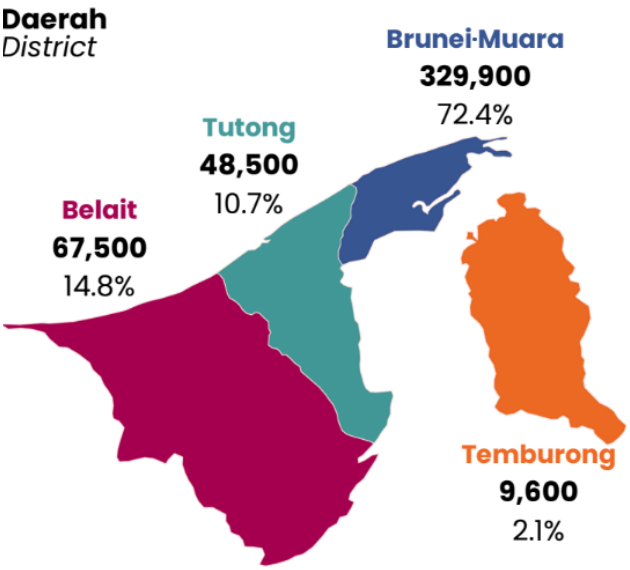


Figure 3: Brunei's Population, by District

is ethnically diverse. Malays make up approximately two-thirds of the population, and there are significant Chinese (less than 10%) and other communities.[27]

The Brunei Nationality Act of 1961 names seven "indigenous groups of the Malay race" – Belait, Bisayah, Brunei, Dusun, Kedayan, Murut, and Tutong. Indigenous groups, referred to as the Bumiputera, qualify automatically for citizenship. The Bumiputera are entitled to official privileges, including land ownership, access to certain types of employment, easier access to higher education, and better job opportunities in the civil service.[28] An additional 15 communities are also considered to be indigenous but lack automatic citizenship rights; they include Dayaks (sea), Dayaks (land), Kalabits, Kayans, Kenyahs (including Sabups and Sipengs), Kajangs (including Sekapans, Kejamans, Lahanans, Punans, Tajongs, and Kanowits), Lugats, Lisums, Melanaus, Penans, Sians, Tagals, Tabuns, and Ukits.[29]

The forested uplands of Brunei's interior are sparsely populated by indigenous peoples, who practice shifting agriculture. The Malays are distributed in the riverine and coastal villages and towns throughout the country. The Chinese are concentrated in the urban areas.[30]

Communities are defined within the territorial framework of village and mukim (subdivision of districts). Members of a community tend to be related through kinship or ethnic ties. They often look out for each other, and members actively organize cultural events as a means of preserving community traditions and heritage. Community leaders are considered the eyes and ears of the government in their village or mukim, and they are expected to pay close attention to impoverished families, single mothers, orphans, elders, those with special needs, and victims of natural disasters.[31]

Standard Malay is Brunei's official language, but the Brunei Malay dialect is more widely spoken by about two-thirds of the population.[32] English is also widely used, with the Brunei Constitution stating that an English version shall be provided for all official documents.[33] Indigenous minority languages include Belait,

Bisaya, Iban, and Tutong. In general, Bruneians are bilingual in Malay and English to various degrees of competency.[34]

Vulnerable Groups

Some groups are more vulnerable to the shocks of a disaster, often due to social constraints, roles, and resources. Vulnerability may vary from one society to the next and can be compounded by multiple factors. Pre-existing social structures heighten vulnerability, already socioeconomically and physically disadvantaged groups have fewer resources to enable them to recover. The categories below are not meant to be viewed alone but are intended to provide additional context to consider crisis impacts. Brunei has traditionally struggled to ensure minority rights, and MIB ideology overtly limits the role of non-Muslims and non-Malays in social structures. Some progress has been made to address integration and protection of children, women, and people living with disabilities, although integration is incomplete.

Women

Protection for women and girls is codified in Brunei's laws, such as the Women and Girls Protection Act, Children and Young Persons Act, provisions in the Penal Code, the Unlawful Carnal Knowledge Act, Sharia Penal Code (SPC) Order 2013, and the Islamic Family Law Act. However, in accordance with the government's interpretation of the Quran and Islamic (sharia) law, Muslim women and men are accorded different rights. Secular civil law permits female citizens to own property and other assets, including business properties. Non-citizen husbands of female citizens may not apply for permanent resident status until they reside in the country for a minimum of seven years.

LGBTI Community

In Brunei, Lesbian, Gay, Bisexual, Transgender, and Intersex (LGBTI) people, Muslim or not, experience social pressure to conform to Islamic guidelines on behavior. Many have expressed fear that openly expressing their sexual or gender identity will bring shame on their families. The SPC imposes criminal liability and punishes "indecent dressing" and cross dressing. Extramarital sex and sodomy are punishable by stoning to death under SPC. Additionally, any form of lesbianism is punishable by up to 40 strokes with whips and up to 10 years in prison.[35] The penalties limit the participation of LGBTI people in society. Some movies are censored or not shown at cinemas, often because of LGBTI content.[36]

Stateless People and Minorities

Since independence in 1984, non-Malays have been disadvantaged when applying for citizenship. The 1961 Nationality Act laid out eligibility to register as a Bruneian national. Proficient knowledge of the Malay language, examination by a Language Board on the Malay language, good character, and the oath of allegiance were requirements, with the language standards being an obstacle to non-Malay people gaining citizenship. Applicants failing to meet these requirements are deemed stateless but may receive permanent residency. Stateless people who are not registered as permanent residents are not given government-issued identity documentation, and this lack is a barrier to accessing health care, education, and employment. Brunei citizens accounted for 76.1% of the population, while permanent residents and temporary residents account for 5.8% and 18.1%, respectively.[37]

Islam is the dominant religion, while Christians and Buddhists form significant minority groups, alongside non-Muslim ethnic communities like the Dusun, Bisaya, Belait, and Murut, who uphold traditional beliefs. The Christian community is the largest religious minority. Despite governmental commitments to religious harmony, strict laws prohibit proselytization and restrict religious practices. The Dusuns historically practiced animism, but many have converted to Islam and Christianity.

There are government restrictions on cultural events. Authorities restrict traditional Chinese New Year lion dance performances to Chinese temples, Chinese school halls, and private

residences of Chinese association members. All public musical or theatrical performances require prior approval by a censorship board composed of officials from the Prime Minister's Office, the Ministry of Home Affairs, and the Ministry of Religious Affairs.[38]

Foreign Workers

There are about 100,000 migrant workers in Brunei. However, the overall number of migrant workers, including unregistered workers, is potentially higher. Reports indicate there are approximately 25,000 to 30,000 people from Indonesia employed primarily as domestic workers and in service industries; approximately 23,000 people from the Philippines are employed as domestic workers or in semi-skilled and skilled roles; approximately 10,000 to 15,000 people from Malaysia are mostly in semi-skilled and skilled roles; and approximately 15,000 to 26,000 people from Bangladesh work mainly in construction and agriculture.[39]

Government

Brunei is an absolute monarchy in which the Sultan exercises executive power. Citizens do not have the ability to choose their government. The Sultan rules through hereditary birthright. Heirs to the throne must be legitimate, male, Muslim, and appointed by the Council of Succession. Under law, it is an offense to challenge the royal family's authority.[40] The Government of Brunei assures continuing public support for the current form of government by providing economic benefits such as subsidized food, fuel, and housing; free education and medical care; and low-interest loans for government employees.

His Majesty Sultan Haji Hassanal Bolkiah Mu'izzaddin Waddaulah, the Sultan and Yang Di-Pertuan of Brunei Darussalam[41] serves as the Supreme Executive Authority and holds the positions of Prime Minister, Defence Minister, Finance and Economy Minister, and Foreign Affairs Minister.[42] This concentration of executive roles produces a highly centralized governance structure with direct implications for disaster management.

The Sultan is advised by a 13-member cabinet, as well as a Religious Council, Privy Council, and Legislative Council.[43] All Councils are appointed by the Sultan; while they have consultative rights, the Sultan is not required to act on their advice.[44]

While the country is a constitutional sultanate, in 1962 the then ruler invoked an article of the constitution that allows him to assume emergency powers. The Sultan has renewed the emergency powers every two years.[45] Political authority and control rest entirely with the Sultan. The Preamble of the Constitution states that it is the product of the exercise of the Sultan's prerogatives. The provisions of the Constitution can be changed or revoked freely by the Sultan. Under the Constitution, members of the Legislative Council can introduce a bill, but the bill only becomes law when the Sultan has assented, signed, and sealed the bill with the Seal of the State.[46]

Brunei operates a legal system based on English common law and Islamic law. Islam is enshrined in the constitution as the state religion, with separate Islamic courts overseeing family matters for Muslims. In 2014, Brunei became the first country in East Asia to adopt sharia, established in parallel with pre-existing common law. Despite maintaining a dual legal system, recent decades have seen the gradual strengthening of sharia, culminating in the full implementation of the SPC Order in 2019.[47] The introduction of the SPC introduced the possibility of corporal and capital punishments including, under certain evidentiary circumstances, amputation for theft and death by stoning for offenses including sodomy, adultery, and blasphemy. However, these forms of punishment require higher standards of proof than the common-law-based penal code.[48]

Brunei's constitution does not specifically provide for judicial independence, but in practice, the court system operates without government interference. Brunei's legal system includes two parallel systems: one based on common law and the other based on Islamic law.

The common law judicial system is presided over by the Supreme Court, which comprises the Court of Appeal and the High Court.[49]

The Legislative Council (Majlis Mesyuarat Negara Brunei), composed primarily of appointed members with little independent power, provides a forum for limited public discussion of proposed government programs, budgets, and administrative deficiencies. Council members serve 5-year terms at the pleasure of the Sultan.[50] The unicameral Legislative Council has a flexible makeup and size, with up to 45 seats. Up to 30 seats are appointed, with up to 15 representatives from the country's four districts: Brunei and Muara (up to 7 members), Belait (up to 3 members), Tutong (up to 3 members), and Temburong (up to 2 members).[51]

Local Administration

With its capital at Bandar Seri Begawan, Brunei is divided into four administrative districts – Belait, Brunei-Muara, Temburong, and Tutong. The four districts' heads, along with counterparts from three municipal boards, manage local concerns, particularly concerns or disputes among communities that cannot be resolved by village heads who are selected by village residents. These concerns lie primarily in welfare and well-being, since all services of public safety, education, health, housing, transport, sanitation, culture, utilities, and economic development are handled by the central government.[52]

Each of the four District Officers is assisted by a district council, which is largely appointed. The District Officer is appointed by the national government and executes the internal planning and strategies of the district organization. The districts are subdivided into 39 units, mukim, which are further subdivided into kampung (villages). Each mukim is headed by a Penghulu, and the head of the village is the Ketua Kampung. Both Penghulu and Ketua Kampung are elected from selected nominees approved by the government and are directly responsible to the District Officer.[53]

The elected village heads play an important role in bridging and conveying government policies to the local community. The Penghulu and Ketua Kampung are well-informed about their community members and can guide the community under their respective villages; this guidance is especially true for vulnerable groups, who they could report to the relevant authorities for immediate attention and care. With the establishment of the Councils of Village Consultation around the country by the government under the auspices of the Ministry of Home Affairs, the aims of the councils are also to involve all the communities in promoting values of shared responsibility towards the realization of caring society. One grassroot level initiative is the "One product One village" program, where each village produces one competitive staple product as a business to gain sales revenue to improve the standard of living for the residents of that village.[54]

A grassroots tier exists for local administration, led by elected Penghulus and Ketua Kampungs. They are charged with local welfare and may be answerable to District Officers of the Village Consultative Councils. They must be Muslim and approved by the government.

Economic Profile

Brunei enjoys a relatively high standard of living with an annual per capita gross domestic product (GDP) of US$33,153 (2024).[55] Figure 4 shows World Bank data for Brunei's GDP per capita between 1965 and 2024.[56] The government provides access to services for all citizens, but the country's collective wealth rests on revenue from the continued export of oil and gas. Substantial revenue from overseas investment supplements income from domestic hydrocarbon production. These two revenue streams provide a comfortable quality of life for Bruneians by regional standards. Citizens are not required to pay taxes, and they have access to free education through the university level, free medical care, and subsidized housing and car fuel. The Brunei dollar (BND) is pegged to the Singapore dollar, and both currencies are accepted in both countries.[57]

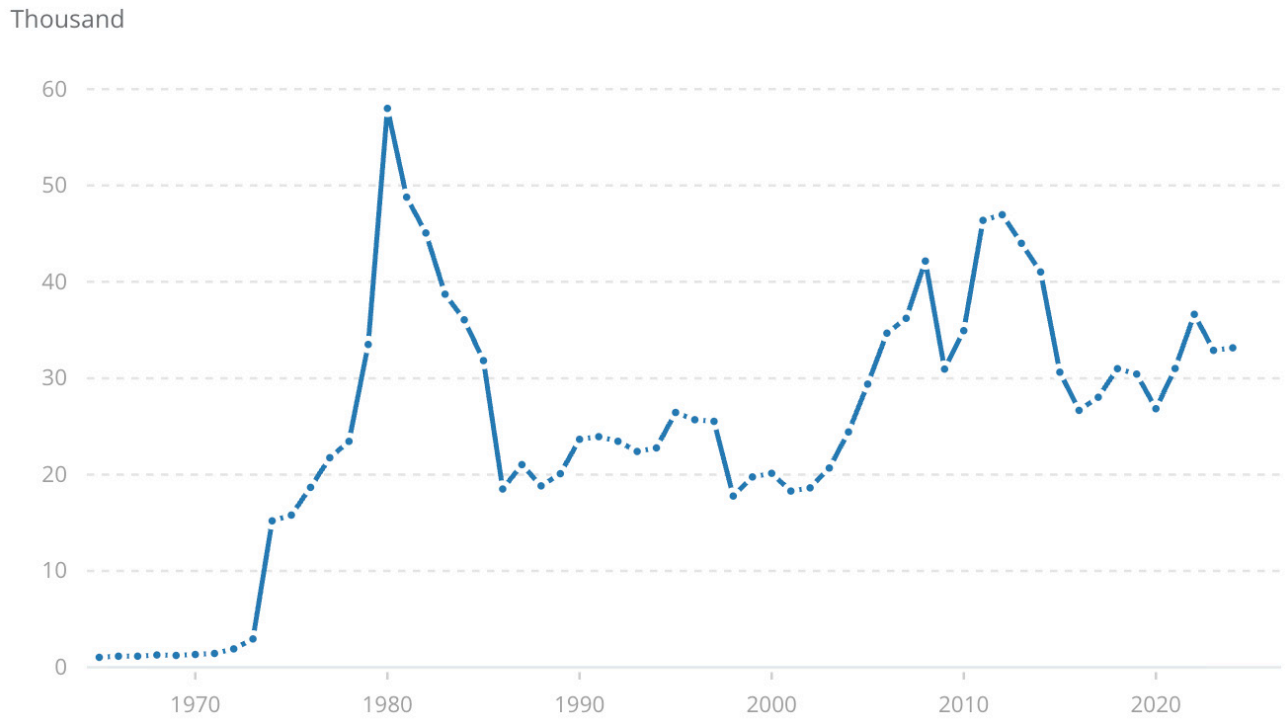


Figure 4: Brunei's GDP Per Capita (1965-2024)

Brunei is an active member of ASEAN and has free trade agreements with Australia, India, Japan, New Zealand, People's Republic of China (PRC), and South Korea. Brunei acceded to the General Agreement on Tariffs and Trade (GATT) in 1993 and became a World Trade Organization member in 1995.[58] In 2017, Brunei announced the creation of its first Free Trade Zone, Terunjing Industrial Park, between two main highways near Brunei International Airport and Muara Port.

Brunei's economy is gradually diversifying, although it is still dominated by the oil and gas sector. The industry is the largest contributor (66.9%) to the country's GDP, followed by the services sector at 32% and the agriculture, forestry, and fishery sector at 1.1%.[59] This hydrocarbon dominance makes Brunei highly exposed to swings and shocks in the global energy market. A long-term decline in the global demand for fossil fuels, combined with the transition to net-zero-carbon emissions, could make the country's economic path unsustainable. Brunei's high per capita GDP, driven by its oil and gas sector, provides strong fiscal resources for disaster response and resilience-building, but its limited economic diversification and reliance on imported food and essential goods heighten vulnerability to supply chain disruptions during hazard events.

The combined upstream oil and gas sector and downstream petrochemical industry account for approximately 90% of exports and 95% of GDP.[60] Table 1 shows Brunei's oil and gas production and total trade between 2019-2022.[61]

Brunei Shell Petroleum (BSP), a joint venture owned in equal shares by the Brunei Government and the Royal Dutch/Shell group of companies, is the chief oil and gas production company. It also operates the country's only refinery. BSP and four sister companies – including Brunei Shell's Liquefied Natural Gas, which produces liquefied natural gas (LNG) – constitute the largest employer after the government. Some 90% of Brunei's LNG output is sold to Japan under a long-term agreement renewed in 1993. Since 1995, Brunei has supplied more than 700,000 tons of LNG to the Korea Gas Corporation as well. A small amount of natural gas is used for domestic power generation.[62]

The wealth generated by hydrocarbons continues to play a crucial role in developing other areas of the economy. However, the

	2019	2020	2021	2022
Oil: Average Oil production (Thousand Barrels / Day)	121	110	106.6	92
Gas: Average Natural Gas Production (Thousand Barrels of Oil Equivalent / Day)	240	231	213.5	196
Total Exports (US$ Millions)	6,600.84	5,372.5	7,975.4	11,015.6
Total Imports (US$ Millions)	1,711.4	1,936.2	4,214.4	6,002.4

Table 1: Brunei Oil Production and Trade (2019-2022)

sector's assets are located in highly exposed coastal areas; thus, private sector involvement in disaster management and business continuity planning is essential for economic resilience.

The country's non-petroleum industries include manufacturing, construction, agriculture, forestry, fishing, and services.[63] In efforts to diversify away from oil and gas and promote sustainable economic growth, Brunei has implemented several long-term strategies:

- The Vision 2035 Strategy focuses on diversifying the economy, enhancing private sector growth, and fostering investments in non-oil sectors.
- The 2021 Economic Blueprint by the Ministry of Finance and Economy outlines five key areas for economic diversification: downstream oil and gas, food, tourism, information and communications technology (ICT), and services, a strategic shift towards reducing economic dependencies on hydrocarbons.

Since 2002, the government has worked to develop Brunei as an international offshore financial center as well as a center for Islamic banking.[64] The small domestic banking sector includes both conventional and Islamic banking.[65] The country is also keen to develop small and medium enterprises and has established a technology incubator to encourage the development of ICT industry.[66] Additional promotion is going toward eco-tourism to take advantage of the nearly 70% of Brunei's territory that remains tropical rainforest. Brunei is a participant and seeks to take a leadership role in the trilateral (with Malaysia and Indonesia) "Heart of Borneo" conservation initiative that seeks to ensure landscape connectivity and promote sustainable and traditional land use and forest management.[67]

Total employment of Bruneians aged 15 years and older was estimated at 202,365 in 2021. Agriculture accounted for 2% of total employment, industry for 20.8%, and services for 77.3% in 2019.[68] The public sector, which is the main employer of most citizens and residents, no longer absorbs the growing numbers of young people entering the workforce each year. The oil and gas sector that makes up about half of the economy and over 90% of export earnings, employs less than 3% of the workforce.[69] A key challenge to reducing unemployment, especially among young Bruneians, is to improve the matchup of skills learned in school to employers' needs as the country expands its private, non-fossil fuels sectors. In 2016, the Department of Labor introduced an improved Foreign Workers License process with stricter policies to create more employment opportunities for Brunei citizens.[70]

Brunei relies heavily on foreign labor in lower-skill and lower-paying positions, with approximately 25% of the labor force coming from abroad to fulfill specific contracts.[71] The largest percentage of foreign employees work in construction, followed by wholesale and retail trade, with the balance serving in professional, technical, administrative, and support roles. The government regulates foreign labor out of concern it might disrupt Brunei's society. Work permits for foreigners are issued only for short periods and must be continually renewed. Despite these restrictions, the estimated 100,000 foreign temporary residents of Brunei make up a significant portion of the work force.

DISASTER PROFILE

Brunei faces relatively low overall risk of large-scale disasters due to its geographic location, small population, and strong capacity for self-sufficient disaster response. However, the country is exposed to key natural hazards. Recurrent hydrometeorological hazard events, particularly flooding and landslides, present seasonal operational challenges that test the resilience of communities, infrastructure, and emergency management systems. Floods are the most frequent and impactful hazard, and landslides periodically disrupt lives and livelihoods. Brunei lies outside the primary typhoon belt and experiences low seismic activity, though minor offshore earthquakes have been recorded. Haze from regional forest fires and local peat fires periodically degrades air quality and poses public health concerns.

Hazards

Brunei has a low risk of large-scale natural disasters. Floods occur in the rainy season, but the country is not located in a typhoon path. While the country's hazard profile is relatively limited, it does experience floods, landslides, and storms. Flooding and landslides are the two most frequent natural hazard events and are common during the northeast monsoon, generally October through January. December and January are typically the wettest months and can see high-intensity rainfall that can lead to flash flooding in low-lying and flood plain areas, especially in the Tutong and Belait Districts.

Biological Hazards

Biological hazards can have severe consequences for public health, food security, and biodiversity. Chikungunya, dengue, hantavirus, leptospirosis, and tuberculosis are all common in Brunei.[72] The country has four government hospitals, 16 health centers, and 64 primary healthcare facilities. However, healthcare facilities are not evenly distributed among Brunei's four districts, and citizens in rural districts may be far from healthcare services.[73]

Brunei has experienced infectious disease outbreaks, including:

- Enterovirus 71 outbreak (2006): 1,681 cases; 3 deaths[74]
- H1N1 Influenza (2009): over 142 cases[75]
- Endemic vector-borne diseases such as dengue and chikungunya

The Coronavirus Disease 2019 (COVID-19) pandemic forced improvements in the public health emergency management system. The total number of confirmed cases was less than 150, and there were 3 deaths. The Ministry of Health implemented strict regulations to control the spread of disease.[76]

Drought and Forest Fire

The risk of drought is generally considered low, but it is not absent. Drought periods associated with El Niño events increase wildfire risk, particularly in peat-rich swamp forests. The 1998 regional drought associated with strong El Niño conditions affected Borneo Island and contributed to forest fires and haze. Photo 1 shows RBAF providing aerial support to fire fighting.[77]

Two types of wildfires are prevalent in Brunei: peatland fires (underground fires) and



Photo 1: Royal Brunei Armed Forces Assistance for Forest Fire

forest fires (surface fires). Peatland fires are particularly challenging to combat and pose a greater threat as they generate hazardous smoke plumes and reduce the soil's ability to absorb carbon.[78]

Brunei is also vulnerable to transboundary haze originating from fires in neighboring Indonesia and Malaysia. Haze is atmospheric obstruction by dry particles that are sufficiently small to remain suspended in the air for long periods of time, and they give a pearly quality to the daylight. Haze can lead people to suffer from difficulty breathing, persistent cough, chest pain, watery eyes, and nose or throat irritation.

Extreme Heat

Brunei has experienced episodes of excessive heat, with maximum daily temperatures reaching 35°C (95°F) or higher for at least three consecutive days. While not historically recorded as disaster-level events, rising temperatures increase heat-related health risks. Extreme heat can lead to heat-related illnesses, reduced productivity, and stress on energy systems due to increased cooling demands.

In May 2025, Brunei experienced excessive hot weather conditions in several areas of the country.

Flooding

Flooding is the most frequent and operationally significant hazard in Brunei, which experiences flash floods, river floods, tidal flooding, and localized flooding.[79] Belait and Tutong Districts are prone to river flooding, and Temburong experiences tidal flooding. However, Brunei-Muara has recorded the highest number of flooding events.[80] Heavy rainfall during the northeast monsoon (December–March) routinely results in riverine flooding and flash floods, particularly in low-lying settlements along the Tutong, Belait, and Brunei Rivers.[81] Figure 5 show the high susceptibility flood zones for riverine flooding in Brunei.[82]

December and January are typically the wettest months. Annual rainfall averages 2,500 mm (98 in) along the coast and may exceed 7,500 mm (295 in) in interior highlands. High-intensity rainfall over short periods contributes



Figure 5: Riverine Flood Hazard Zone

to rapid runoff and flash flooding, especially in areas with tidal backflow effects. Flooding is also influenced by La Niña conditions, which increase rainfall intensity. During a La Niña event, sea surface temperatures over the tropical Pacific Ocean become cooler than average, and the easterly trade winds strengthen. This shift intensifies the Walker circulation (the atmospheric loop created by trade winds) and shifts tropical rainfall westward toward Brunei. During a strong La Niña in 2010, Brunei recorded its wettest year on record.

Torrential rains during the monsoon seasons (December-March and June-September) have caused flooding, landslides, and road closures. In previous years, the Tutong River has flooded and caused substantial property damage in low-lying areas.[83]

Recurring impacts include:

- Temporary displacement of residents
- Road closures (notably the Muara-Tutong Highway)
- Traffic congestion and restricted emergency access
- Damage to homes in riverine communities
- Silt deposition requiring cleanup operations
- Disruption to water and drainage infrastructure

Landslides

Landslides occur in conjunction with prolonged rainfall, particularly in hilly terrain and areas with altered drainage patterns. While Brunei does not experience large catastrophic slope failures, localized landslides can damage infrastructure. Landslides occur in hilly and forested areas, particularly in the Temburong District and areas with steep slopes. The monsoon season, which brings rainfall, can increase landslide risks, with rain soaking loose soil and turning it into mud on unstable slopes.[84]

In January 2026, a landslide severed a major water pipeline in Tutong. It caused widespread water supply disruption in Brunei-Muara District. This event illustrates cascading infrastructure vulnerability rather than direct human casualties.

Disasters by Numbers

The following assessment of data is intended to support planning for potential disaster responses by characterizing the most common hazard types, their seasonal clustering, geographic distribution, and any observable trends in frequency or severity.

The Centre for Research on Epidemiology of Disasters (CRED) maintains an international disaster database (EM-DAT) that classifies disasters as events resulting in 10 or more deaths, affecting 100 or more people, or triggering a declared state of emergency.[85] Using this dataset, zero disasters were recorded in Brunei between 2000 and January 2026.

Brunei's disaster statistics are limited in global databases such as EM-DAT due to low mortality and lack of international assistance requests. Most hazard events tend to be localized and result in minimal loss of life; for example, flooding events displace households and cause infrastructure damage but rarely lead to fatalities. The low mortality rate means that Brunei's hazard events do not meet the threshold for inclusion in EM-DAT. Most flood events:

- Affect dozens to several hundreds of households
- Result in limited injuries
- Rarely meet EM-DAT inclusion thresholds

While not severe enough to be considered "disasters," there were 207 flood incidents reported in 2022. In 2021, 77 landslides were reported, and in 2019, 1,655 forest fires were reported.[86]

The ASEAN Disaster Information Network (ADINet) holds a repository of hazards and disasters information from the region. The AHA Centre verifies and validates submitted information to ensure accuracy of the data inputs and will also add new information when relevant and necessary. ADINet has been recording disaster information in the region since the AHA Centre was operational in 2012.

Brunei's disaster data in ADINet for the last ten years is limited to two events: flash floods in June 2018 and flash floods and landslides in December 2017. Both events have no data

provided for the total number of dead or affected persons or the costs of damages but it does report that the December 2017 floods displaced 94 people.[87]

Economic loss data is not systematically published in open-source international datasets. This lack of publicly available quantified loss data represents a transparency gap rather than absence of impact.

Explanations for data gaps include:

- Small-scale, localized events
- Strong domestic response preventing escalation
- No frequent declarations of national emergency
- No routine international appeals for assistance

Statistical absence should not be interpreted as hazard absence. However, without comprehensive data records, it is difficult to analyze trends. While Brunei's disaster data is limited overall and entirely absent from EM-DAT, this circumstance reflects the country's unique context, characterized by low mortality hazards, self-sufficient disaster response mechanisms, and limited reporting practices.

Recent Disasters

Over the past decade, Brunei has experienced a consistent pattern of flooding, rainfall-induced landslides, localized structural damage, and isolated forest fires. While most events remain small in geographic scale, they impose recurring socioeconomic impacts on households, transport networks, and community infrastructure. This section provides a short synopsis of larger-scale hazard events occurring in the past 10 years.

January 2026 – Heavy Rainfall, Flash Flooding, and Landslides

Beginning on 8 January 2026, prolonged rainfall triggered widespread flooding across multiple districts:[88]

- Tutong – Homes and roads in low-lying villages were inundated
- National Transport Disruptions – The Muara–Tutong Highway experienced long traffic queues, as slow-moving vehicles navigated waterlogged sections of road[89]
- Roadside drainage systems were overwhelmed, causing ponding

Heavy rains also triggered a landslide at Luagan Kelompang Islamic Cemetery in Kampong Sinaut; it displaced large volumes of soil and damaged burial areas. Another landslide on 30 January cut a main water pipeline in Batang Mitus, Tutong.[90]

January 2025 – Floods

In January 2025, heavy rain led to flooding in Tutong, with disaster relief assistance delivered by the RBAF,[91] as shown in Photo 2, sourced from the Brunei Ministry of Defence.[92]

September 2023 – Floods

A localized but intense rainfall event caused flash flooding in rural areas of Tutong District. Residential areas experienced water intrusion that damaged property and possessions. Smallholder farms reported loss of seedlings and soil erosion.[93]

November 2022 – Floods

According to the Tutong District Office, continuous rains caused the Tutong River to overflow in several areas of the district.[94] Floods affected more than 700 people, and damaged over 200 houses in several villages, while some roads were impassable.[95]



Photo 2: RBAF Personnel Assist Residents in Flooded Areas of Tutong District

May 2022 – Forest Fire

On 3 and 4 May 2022, BFRD fought a forest fire near Universiti Brunei Darussalam. Firefighters were assisted by a Royal Brunei Air Force helicopter that dropped "water bombs." The fire scorched about 90 ha (222 acres) of government land in several patches of forest, accessible only through a local public housing development.[96] Firefighters faced a challenge in reaching the fires, which were some 3 km (1.86 mi) into the forest; they had to use heavy equipment and had difficulty in locating water sources.[97]

January 2022 – Floods

Continuous heavy showers from 26 January 2022 caused flash floods that left roads in some areas submerged. Several accidents were reported due to hazardous conditions as people were beginning their morning commutes. A shopping outlet basement car park in Mentiri, areas in Jalan Ong Sum Ping and the Old Airport, and interiors of restaurants were impacted by the flash floods.[98]

November 2021 – Floods

Heavy rains in early November 2021 caused flooding and landslides in some areas of Belait District. Among the badly affected areas were lowlands in Kampung Rampayoh, where roads that connect the main road and a bridge at the village were damaged.[99]

September 2021 – Floods

Heavy rain caused flooding in lowland areas of Tutong and left several residential areas and main roads inaccessible, particularly around the areas of Kampung Layong.[100]

May 2021 – Floods

Heavy rains in early May 2021 caused flooding and landslides in some parts of Tutong and Kuala Belait. Among those badly affected were people in Hassanal Bolkiah Mosque in Tutong and Pekan Seria Mosque in Kuala Belait.[101]

January 2021 – Floods

Heavy downpours caused flooding in lowland areas and left several residential areas and main roads inaccessible, particularly in Tutong.[102]

November 2019 – Floods

Flooding struck Tutong District during the first two weeks of December 2019. Heavy rain on 7 December caused rising water and affected 47 families, but evacuations were not required. Twelve houses were flooded in several villages. The downpour also triggered two landslide incidents. Seven main roads were inundated and inaccessible to most cars, and flooded roads blocked access to homes. Military units helped some residents evacuate from their homes. Tutong officials set up eight temporary shelters with space for 290 people and provided boat transportation for affected residents.[103]

March 2019 – Forest Fires

Forest fires raged across Brunei-Muara from 15 to 18 March 2019, amid a prolonged dry period. Flames destroyed more than 161 ha (398 acres) of forest, according to the BFRD, which said the fires were concentrated in areas with hilly terrain that restricted responders' ability to transport water and equipment. Strong winds also exacerbated the situation by causing the flames to spread rapidly. No injuries or damage to property were reported.[104]

May-June 2018 – Floods

During late May and early June 2018, Brunei experienced heavy downpours that led to flash floods in lowland areas. The BFRD reported that several roads in Tutong District were affected by floods.[105]

December 2017 – Floods

Heavy rains and strong winds caused flash floods and landslides, which were knock-on effects of Tropical Storm Kai-Tak in the South China Sea. Tutong District was the worst affected area, where 0.5 m (1.6 ft) of water inhibited transportation access and inundated residential areas.[106] Temburong was also affected, with nearly 100 flood victims in that district.[107]

DISASTER MANAGEMENT POLICY, PLANNING, AND RESPONSE

Brunei has established a comprehensive and institutionalized framework for disaster management. It is anchored by the Disaster Management Order of 2006. At the strategic level, the NDC, chaired by the Minister of Home Affairs, provides policy direction and oversight, while the NDMC serves as the operational arm responsible for coordinating preparedness, response, recovery, and mitigation efforts. Brunei employs a three-tiered response system, escalating from DDMCs through national coordination by the NDMC to international assistance when required. The RBAF, RBPF, and BFRD provide critical support at the tactical level. Brunei's strong economic resources enable self-sufficient responses to most hazard events, while active engagement with regional and international frameworks and partnerships with the AHA Centre reflect the country's commitment to cooperation and collective resilience building.

National Disaster Management System

The foundation of Brunei's national disaster management system is the Disaster Management Order of 2006, the primary legal instrument governing disaster risk reduction and emergency response. The Order established the institutional architecture for a coordinated national response. It mandated the creation of the NDC and the NDMC.[108] It also provided the legal basis for the government to institutionalize disaster management and disaster risk reduction initiatives at all levels.[109]

The Order provided the foundation for the development of the Disaster Management Strategic Policy Framework (DMSPF), which serves as the overarching policy document guiding Brunei's approach to disaster risk reduction and resilience building.[110]

The DMSPF articulates a comprehensive, all-hazard, whole-of-government approach to disaster management. Aligned with Brunei's National Vision 2035, the Sendai Framework for Disaster Risk Reduction 2015–2030, and AADMER, the DMSPF ensures that national actions reflect global and regional best practices in disaster risk reduction. Its policy goal is to promote community resilience and economic sustainability through disaster risk reduction. It envisions a community that understands its roles in disaster management arrangements and embraces the principle that disaster management is everyone's responsibility.

The DMSPF identifies seven priority programs

1. Disaster research
2. Policy and governance
3. Disaster risk assessment and monitoring
4. Disaster prevention, mitigation, and adaptation
5. Disaster preparedness
6. Disaster response and immediate relief
7. Disaster recovery[111]

The DMSPF was launched alongside the Basic Public Safety Handbook: A Guide to Emergency Preparedness and Mitigation. This reference document was intended to enhance public understanding of safety measures and response actions during emergencies and was developed in collaboration with key government agencies, including the RBAF, RBPF, Emergency Medical Ambulance Services, BFRD, and the Department of Schools under the Ministry of Education.[112]

At the operational level, the National Standard Operating Procedures (NaSOP) outlines the agreed procedures for relevant stakeholders in preparedness and response measures in accordance with the scope and scale of the disaster. The NaSOP is a compendium of standard operating procedures (SOP) for the whole nation. It includes preparedness measures, response operations, and disaster

recovery procedures for all respective agencies.

The NaSOP promotes an organized, systematic, and coordinated response and does not overrule any existing agency-level SOP; instead, it serves as guidance and a reference framework for multi-agency response.[113] The NaSOP integrates the Incident Command System to guide agencies in ensuring a coordinated and effective disaster response.[114]

In times of national emergency, the NaSOP requires the Information Department of the Prime Minister's Office to take the lead for risk communication and to coordinate with other relevant agencies and stakeholders. Public communication is done using multiple channels and platforms – e.g., press releases to mainstream media, government websites, and social media channels.

National Government Structure and Lead Agencies

At the strategic level, the NDC (known locally as Majlis Bencana Kebangsaan), established in 2006, is the highest authority responsible for policy and strategic direction in disaster management. The NDC is chaired by the Minister of Home Affairs, with two deputy chairs: the Minister of Culture, Youth and Sports, and the Minister of Development. Its membership comprises the Permanent Secretaries of all Ministries, the Commander of the RBAF, and the Commissioner of the RBPF.[115]

Under the Disaster Management Law, the NDC is tasked with 10 functions:

- Develop a strategic policy framework for disaster management in Brunei
- Ensure effective disaster management is developed and implemented
- Ensure that regional and international arrangements related to disaster management are established and maintained
- Identify resources that may be used for disaster operations
- Provide reports and recommendations to the Sultan about disaster management and disaster operations
- Prepare plans
- Exercise or perform other functions under the law
- Decide on assistance to be provided to any country or territory relating to disaster operations
- Decide on assistance offered by any country, territory, organization, or individual
- Exercise or perform any function incidental to any function mentioned in the law[116]

At the operational level, the NDMC, housed within the Ministry of Home Affairs, serves as the Secretariat of the NDC and is the lead government agency for whole-of-nation action across the full spectrum of disaster management. The NDMC is tasked with three core functions:

- Help the NDC exercise its functions
- Advise and make recommendations to the NDC on matters relating to disaster management
- Perform other functions as determined by the NDC

Central to the NDMC's operational capacity is the Disaster Command Centre (DCC), which is staffed 24 hours-a-day, 7 days-a-week to support operations, planning, and logistics. The DCC serves as the national-level nerve center during emergencies. It works with districts, national leaders, and international partners as required by the scope and scale of an emergency.[117] Figure 6 shows the key government organizations involved in DM in Brunei.

Brunei employs a three-tiered disaster management system that provides a structured escalation pathway from local to international response. Figure 7 shows the tiered response system.

At Tier 1, the DDMC draws on resources managed at the district level. Each of Brunei's four administrative districts has a DDMC and a District Emergency Operations Centre (DEOC), established under the purview of respective District Offices.

When an incident exceeds the capacity of the DDMC, or when it affects two or more districts, management escalates to Tier 2, the national

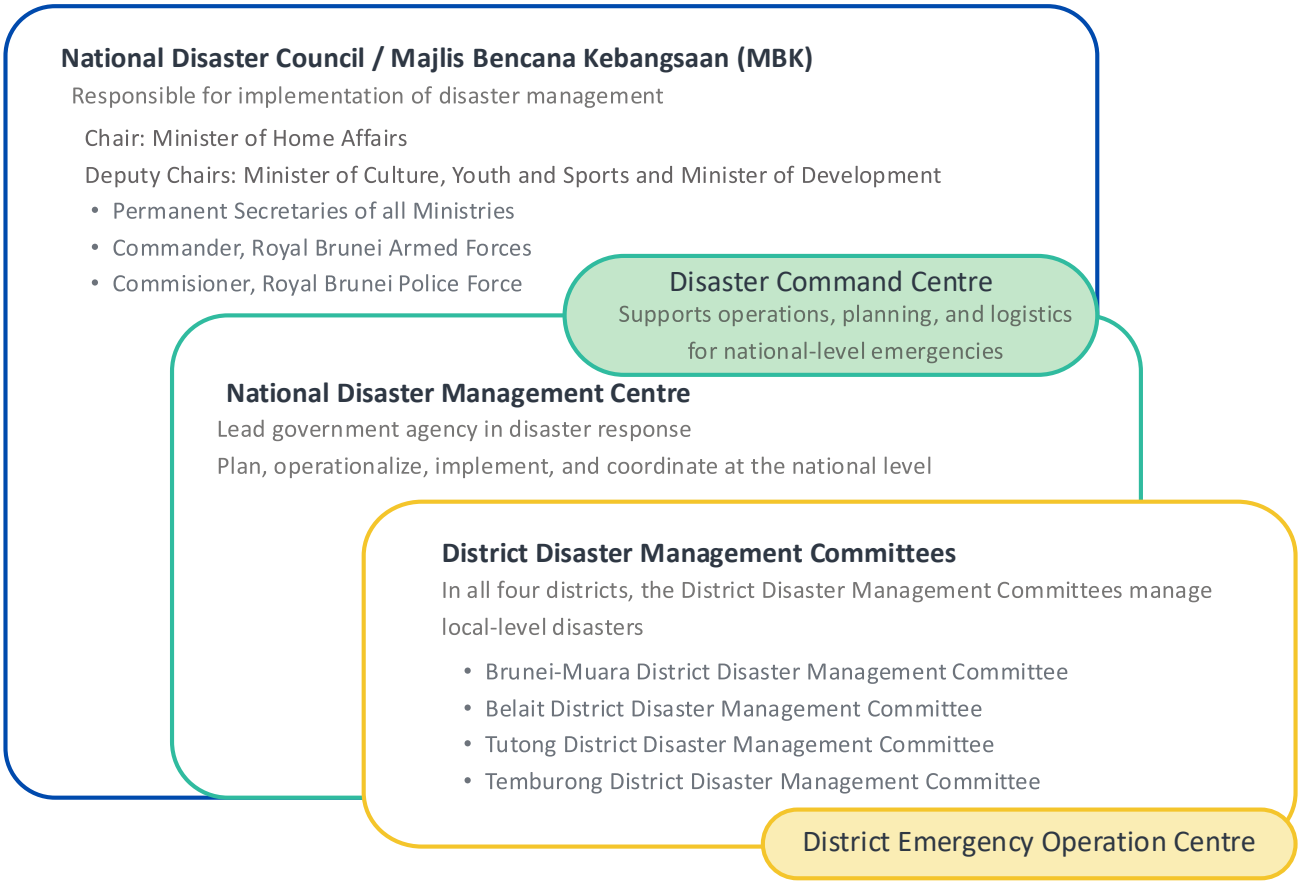


Figure 6: Government Disaster Management Agencies

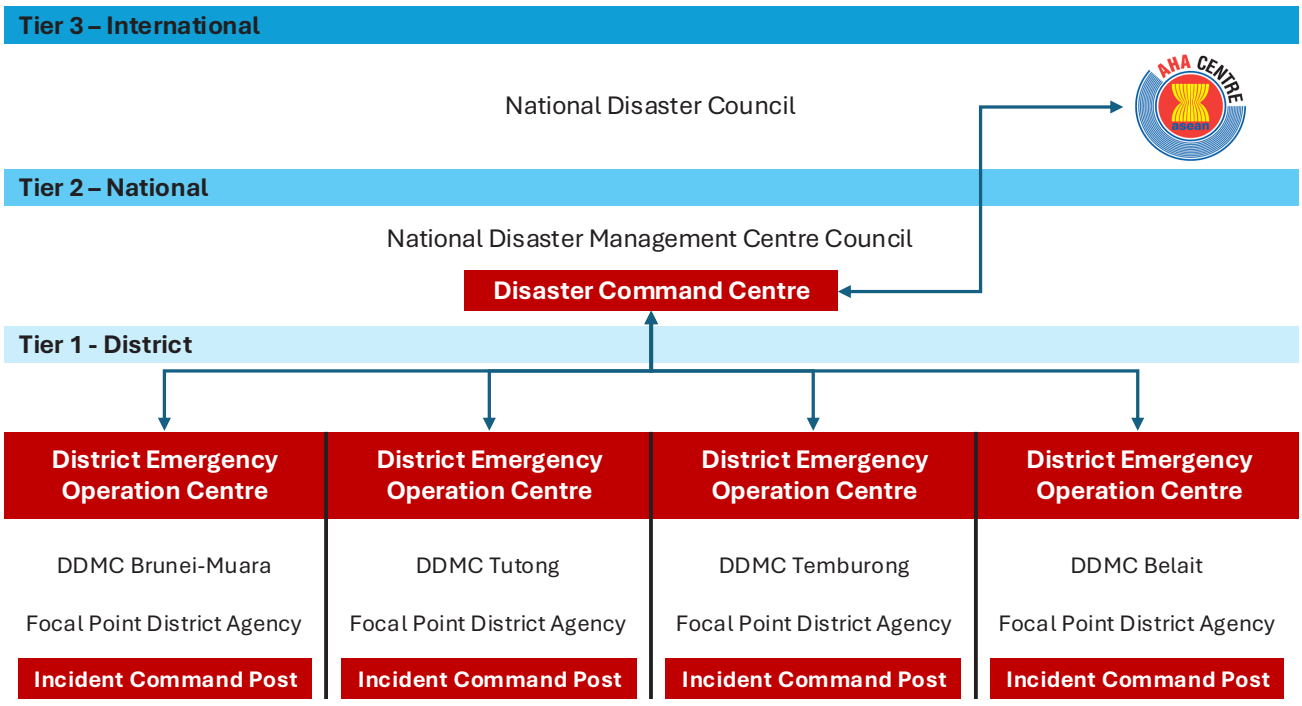


Figure 7: Brunei's Tiered Response System

level, where the NDMC assists the DDMCs by coordinating and mobilizing national resources.

If national resources and expertise prove insufficient, Tier 3, the international level, is activated, with international assistance sought through the AHA Centre.[118] The NDMC works closely with the AHA Centre. The NDMC Director sits on the AHA Centre governing board, and the NDMC is Brunei's national focal point for ASEAN disaster management communication and coordination.

Brunei's disaster management system is characterized by a robust multi-agency coordination framework that integrates government agencies, non-governmental organizations, the private sector, and civil society. The BFRD and the RBPF are heavily involved in emergency response, with the RBPF providing critical support through last-mile early warning alerts for at-risk populations and managing traffic control and cordons to allow firefighters to operate safely and unhindered. The RBAF play a supporting role in disaster response; they contribute resources and expertise to boost preparedness and response capabilities.

Several agencies are responsible for early warning systems, including the Brunei Darussalam Meteorological Department, which monitors and forecasts weather and issues warnings or advisories ahead of potential emergencies. Other agencies with early warning responsibilities include the Ministry of Health, the Department of Agriculture and Agrifood, the Marine Department, the Fisheries Department, and the Department of Environment and Recreation. The Public Works Department (PWD), under the Ministry of Development, is responsible for public infrastructure such as roads, water supply, drainage, sewerage, flood mitigation/management, coastal protection, landslide management, water resources management, and building services.[119]

The Ministry of Finance and Economy oversees the budget for managing landslide areas in collaboration with the PWD. The Ministry of Home Affairs budget generally includes funding intended for disaster-related operations, including purchasing equipment for personnel to manage disaster response efforts; covered purchases include tarpaulins, pumps, and personal gear to support services for residents. The budget also covers preparations for temporary evacuation centers.[120]

Subnational and Local Implementation

Disaster management responsibilities are decentralized through a district-level framework anchored in the NDMC. Each of the country's four administrative districts maintains a DDMC and a DEOC, which together serve as the primary mechanisms for subnational coordination of preparedness, response, and recovery.

The DDMCs are chaired by the respective District Officers and serve as the core liaison bodies between national authorities and local stakeholders. Operating under the guidance of the NDMC, each DDMC is tasked with overseeing disaster preparedness, response, and recovery efforts at the local level, managing district-level resources, and implementing localized disaster management plans.

The decentralized structure allows for tailored responses to the unique hazards and vulnerabilities of each district. Brunei-Muara, the most urbanized district, focuses on mitigating urban flooding and biological hazards, while Temburong, characterized by its hilly terrain and dense forests, prioritizes landslide prevention and community access during emergencies. Tutong and Belait, with their extensive river basins and coastal zones, face recurring challenges from flooding and coastal erosion that require district-specific preparedness and response strategies.

The DEOCs function as coordination hubs during emergencies. They facilitate communication among local authorities, community organizations, and national agencies to ensure a streamlined and effective response.

In an effort to enhance the management of flooding and ensure logistical and manpower allocations are effective and timely, the NDMC, District Offices, and BFRD drafted the

Incident Command Post (ICP) Activation Plan in November 2022. The plan aims to serve as a guideline for the DDMC to activate an ICP during flooding events.[121]

Community-based Disaster Risk Management

Since 2010, the NDMC has implemented a series of community-based initiatives aimed at enhancing local capacity and resilience.

During January 2026 flooding, the coordinated efforts of the Tutong DDMC and NDMC allowed for deployment of NDMC boats. In addition to the deployment of members and staff under the DDMC, the Tutong District Department, Community Development Department, RBAF, and Disaster Preparedness Coordinators (DPC) Tutong members went to flooded areas to distribute food.[122] The NDMC also worked in close cooperation with the Tutong District Office, relevant agencies, villagers, and the DPC volunteers to carry out unified landslide work.

The Tutong 2026 effort illustrated the importance of community-based disaster risk management (CBDRM), where the active involvement of villagers and volunteers is a key pillar in accelerating the mitigation and recovery process. Through synergy between the government and the public, this step ensures that affected areas can be restored according to set safety standards and provide peace of mind to locals affected by the event.[123]

The CBDRM program, introduced with support from the Asian Disaster Reduction Center, engages communities in disaster preparedness and risk reduction activities. As of 2025, the program reached over 1,642 participants, including local leaders, volunteers, and residents.[124] CBDRM workshops focus on raising awareness of disaster risk, promoting self-reliance, and equipping communities with the knowledge and skills needed to respond effectively to emergencies.

These efforts are complemented by the School-Based Disaster Risk Management (SBDRM) program, which aims to promote a culture of disaster preparedness and response in schools. The program involves developing disaster preparedness plans, conducting drills and exercises, and promoting awareness-raising activities among students and staff. The program has involved over 1,000 teachers and students in disaster preparedness education.[125] By integrating disaster risk reduction into school curricula, the SBDRM program fosters a culture of safety and resilience among younger generations.

In addition to these programs, the DPC Course, launched in 2019, has trained 118 individuals to assist authorities in disaster preparedness and response.[126] These coordinators act as liaisons between local communities and government agencies, ensuring that disaster management efforts are inclusive and community-driven.

Civil-Military Coordination in Disaster Response

Brunei takes a whole-of-nation approach to disaster management, and its stakeholders, including the national military, work for close collaboration and coordination.

The Angkatan Bersenjata Diraja Brunei (Royal Brunei Armed Forces, RBAF) are made up of the Land Force (RBLF), Navy (RBN), and Air Force (RBAirF). RBAF's defined mission is to safeguard Brunei's sovereignty, deter threats, support civil authority when called upon, and foster strong relations with the community.[127] A 2021 Defence White Paper examined how the Ministry of Defence and RBAF must adapt to continue to defend Brunei, its sovereignty, and territorial integrity, and it highlighted that defense personnel and assets must be prepared for disaster response.[128] The RBAF supports civilian-led efforts during national crises. The civil-military coordination framework is guided by national policies and practices that emphasize interoperability, both domestically and regionally, through partnerships with ASEAN and other international actors.

The RBAF operates within a structured framework for both domestic and regional Humanitarian Assistance and Disaster Relief (HADR) operations. Domestically, the RBAF

serves as a crucial component of a civilian-led national response system. The RBAF is mobilized when an incident exceeds the capacity of civilian agencies or affects multiple districts, with the NDMC coordinating the deployment of these national resources. For localized incidents, the RBAF coordinates directly with the DDMC of the affected jurisdiction to ensure a targeted response.

This structure has been evident during recent floods. In January 2025 in Tutong District, RBAF personnel worked in collaboration with the local DDMC.[129] The Civil-Military Coordination Platoon of the Second Battalion RBLF deployed to provide transportation to residents in flooded areas where residential areas and main roads were inaccessible. In January 2026, the Second Battalion RBLF again provided transportation assistance to evacuate residents in Tutong District and delivered ration supplies. In Belait District, the Third Battalion RBLF coordinated with BFRD to conduct relief efforts at Suri Seri Begawan Hospital by providing sandbags and canvas sheets to prevent floodwater from entering the building.[130] Photo 3, sourced from the Brunei Ministry of Defence, shows the RBAF providing assistance following floods.[131]

Key RBAF units and assets involved in HADR operations include:

- Civil-Military Cooperation Platoons: These specialized units, found within RBAF battalions like the Second and Third Battalion RBLF, are frequently deployed for on-the-ground assistance. They have been involved in clearing debris after strong winds and providing transportation during floods.
- Mobility and Logistics Assets: The RBAF utilizes assets such as 4-ton trucks for transporting residents and supplies in flooded areas.
- Naval Assets: RBN possesses offshore patrol vessels, such as the Darussalam-class, and landing craft that can be used for transporting personnel and heavy equipment.
- Engineering and Medical Support: The RBAF maintains combat engineer and military medical assets that can be deployed for disaster relief, and they rehearse through participation in regional exercises.



Photo 3: RBAF Assisting Following Floods

Regionally, Brunei is an active participant in ASEAN's collaborative military efforts, particularly through the ASEAN Militaries Ready Group on Humanitarian Assistance and Disaster Relief (AMRG on HADR). The AMRG was created to establish a quick, coordinated, and collective military response to disasters within the region. The AMRG's Concept of Operations involves six phases: Disaster Preparedness, Pre-deployment, Deployment, Response, Transition, and Re-deployment. The SOP outlines specific response time goals, such as deploying search and rescue teams within 48 hours. Coordination is facilitated through Liaison Officers deployed to the affected state's coordination centers. Photo 4 shows representatives from RBAF, the Malaysian Armed Forces, and Indonesian Armed Forces reviewing disaster scenarios and relief efforts during the ASEAN Defence Ministerial Meeting-Plus Experts' Working Group on humanitarian assistance and disaster response.[132]

While the specific inventory of troops and equipment Brunei has pledged to the AMRG is not publicly detailed, its commitment is demonstrated through active participation in the framework's development and in regional exercises,



Photo 4: RBAF Supporting Multi-National Exercises

such as:

- ASEAN Defence Ministers' Meeting (ADMM)-Plus HADR and Military Medicine Exercise (2013): Brunei co-hosted this inaugural event, which brought together over 3,000 personnel from 18 nations. During this exercise, the RBAF and Singapore Armed Forces jointly constructed a modular shelter.
- ASEAN Solidarity Exercise (ASEX) 2023: Brunei deployed a warship for this first-ever ASEAN-only joint military drill, which focused on non-combat scenarios including HADR and maritime security.
- The RBAF also joins bilateral and multilateral exercises such as the United States' Pacific Angel, focusing on search and rescue and HADR capacity building.

The RBAF has demonstrated its expeditionary HADR capabilities through real-world assistance to neighboring countries. Following Severe Tropical Storm Kristine in 2024, the RBAirF deployed a C-295 aircraft to transport relief supplies to the Philippines, a fellow ASEAN member state. Then, after a massive earthquake struck another fellow ASEAN member state, Myanmar, in March 2025, a joint effort between Brunei's Ministry of Defence, Ministry of Foreign Affairs, Ministry of Culture, Youth and Sports, and NDMC delivered aid via the RBAirF's C295MW aircraft.[133]

RBAF cooperates with its regional counterparts and the AHA Centre to deliver and distribute relief items after a major disaster strikes any of Brunei's fellow ASEAN member states. After Typhoon Haiyan struck the Philippines in 2013, Brunei sent personnel to the hard-hit city of Tacloban to assist AHA Centre personnel. Relief items from Brunei were also transported to the Philippines by RBAF by air and sea. RBAirF's CN235 aircraft delivered relief aid, which was handed over by an official from the NDMC and the Senior Superintendent of the BFRD. The RBN delivered 35 tons of humanitarian goods via the KDB Darulaman patrol vessel. Relief goods were received by a representative of the AHA Centre.[134]

International / Regional Organizations

Brunei actively participates in global and regional disaster management frameworks and aligns its national policies with international principles to enhance disaster risk reduction and emergency response capabilities. Through partnerships with organizations such as the AHA Centre and adherence to frameworks like the Sendai Framework for Disaster Risk Reduction 2015–2030, Brunei demonstrates its commitment to fostering resilience and regional solidarity. This section explores Brunei's engagement with international and regional organizations and highlights how these partnerships shape its disaster management strategies and coordination mechanisms.

The NDMC is Brunei's focal point in the ASEAN Committee on Disaster Management (ACDM), which is composed of the heads of the national disaster management agencies of the ASEAN member states. The NDMC also actively cooperates with other regional centers such as the Asian Disaster Reduction Center, the Asia Disaster Preparedness Center, the Pacific Tsunami Warning Center, and the Pacific Disaster Center. Finally, the NDMC is an active participant in United Nations (UN)

bodies such as the UN Office for Disaster Risk Reduction (UNDRR) and the UN Office for the Coordination of Humanitarian Affairs (UN OCHA).[135]

Brunei's disaster management policies are informed by the Sendai Framework for Disaster Risk Reduction 2015–2030, a global blueprint for reducing disaster risks and enhancing resilience. The Sendai Framework emphasizes four priorities: understanding disaster risk, strengthening disaster governance, investing in risk reduction, and enhancing disaster preparedness for effective response and recovery. Brunei integrates these priorities into the DMSPF, which aligns with the Sendai Framework's goals and the Sustainable Development Goals (SDG), particularly SDG 13 (Climate Action) and SDG 11 (Sustainable Cities and Communities). The Asia Regional Plan for Implementation of the Sendai Framework further guides Brunei's efforts by ensuring that its actions reflect regional best practices in disaster risk reduction.

Regional Collaboration

At the regional level, Brunei is a signatory to AADMER, a binding agreement that entered into force in 2009. AADMER serves as the policy backbone for ASEAN's collective disaster management efforts. It provides a foundation for regional cooperation, coordination, technical assistance, and resource mobilization. Brunei's commitment to AADMER is evident in its active participation in initiatives such as the ASEAN Community Vision 2045: "Our Shared Future" and the ASEAN Declaration on One ASEAN One Response (OAOR). The OAOR Declaration emphasizes ASEAN's collective response to disasters within and outside the region to foster a unified approach to humanitarian assistance.

Brunei's engagement with the ASEAN-ERAT further underscores the country's dedication to regional disaster management. Established in 2007, ASEAN-ERAT supports the national disaster management agencies of affected ASEAN member states by conducting rapid needs assessments, facilitating relief assistance, and coordinating on-site operations. Brunei has deployed ASEAN-ERAT members in six missions, including responses to Typhoon Haiyan (Philippines, 2013), the Central Sulawesi Earthquake and Tsunami (Indonesia, 2018), and Tropical Cyclone Mocha (Myanmar, 2023), among others. These deployments have provided invaluable lessons that Brunei applies domestically to enhance its disaster preparedness and response strategies.

Hosting the 11th ASEAN-ERAT Induction Course in 2019 and participating in ASEAN Regional Disaster Emergency Response Simulation Exercises (ARDEX) further highlight Brunei's role in refining regional response capacities.

Brunei's NDMC works closely with the AHA Centre, headquartered in Jakarta, Indonesia, to strengthen regional disaster management mechanisms. The AHA Centre provides training, technical assistance, and coordination support, enabling Brunei to enhance its disaster response capabilities. The ASEAN Disaster Risk Management Capacity Building Program and the ASEAN Standards and Certification for Disaster Management Specialists are key initiatives supported by the AHA Centre to foster professional development and interoperability among ASEAN member states.

Brunei's cooperation with neighboring countries further enhances its disaster management capabilities. In August 2025, the NDMC hosted the 4th Bilateral Meeting with Malaysia's National Disaster Management Agency (NADMA). It focused on strengthening strategic cooperation and establishing a Disaster Management Working Group (DMWG). This partnership aims to improve joint operational coordination and enhance regional preparedness, reflecting Brunei's commitment to fostering collaboration with its ASEAN neighbors.

Other Disaster Management Partners

Brunei's disaster management system is supported by a network of international and regional actors, including non-governmental organizations (NGO), bilateral partners, and

multilateral frameworks. These partnerships play a vital role in enhancing Brunei's capacity for disaster preparedness, response, and recovery, particularly during large-scale emergencies. While Brunei is not at high risk of disasters, its active engagement with external partners ensures that it can mobilize resources and expertise effectively when needed, both domestically and regionally. This section explores the contributions of key partners, coordination frameworks for disaster response, and the processes for requesting and managing external aid.

United Nations

Brunei is covered by the UN's Multi-Country Office (MCO) in Malaysia. The MCO's mandate is to support Brunei, Malaysia, and Singapore in their paths to achieving the 2030 Agenda, including the SDGs. The Office of the UN Resident Coordinator engages with the Government of Brunei to ensure a coordinated approach between UN entities and the country's authorities. In 2016, the Government created a multi-stakeholder Special Committee for the Implementation of the SDGs; it comprises senior officials from relevant ministries and agencies to facilitate the inclusion of SDG indicators in development plans and to ensure and monitor the implementation of the SDGs in line with national priorities. The cornerstone of these development plans is Brunei's Wawasan (Vision) 2035.[136]

Among the UN entities resident at the MCO and that may be involved in any emergency response in Brunei are the International Organization on Migration (IOM / UN-Migration), UN Development Programme (UNDP), the UN Population Fund (UNFPA), the Office of the High Commissioner on Refugees (UNHCR), UN Children's Fund (UNICEF), World Food Programme (WFP), and the World Health Organization (WHO).

Local Action

Volunteerism has grown as a social effort, often under the auspices of the Ministry of Culture, Youth and Sports. In 2021, the Ministry signed a memorandum of understanding with Baiduri Bank to develop and roll out the Mengalinga Volunteer Mobile Application, which provides a platform for event organizers and NGOs to share volunteering opportunities for those who are interested.[137]

The Council on Social Welfare (MKM, Majlis Kesejahteraan Masyarakat) is among the largest NGOs operating in Brunei. It is funded by donors who include major businesses and private foundations, and it conducts a variety of poverty alleviation and relief activities. While the main thrust of work is to assist needy residents of Brunei via food, administrative direction, or help financing schooling, MKM also offers temporary help to fire victims and victims of natural disasters.[138]

The Brunei Red Crescent Society (BDRCS) plays critical roles in volunteer mobilization, first aid, shelter support, and public education.[139] Originally established in 1948 as a branch of the British Red Cross, it was admitted to the International Federation of Red Cross and Red Crescent Societies in its current form in 1997. While Brunei's low disaster risk limits the scope of traditional emergency response activities, the BDRCS provides vital services tailored to the country's context. These services include blood donation campaigns, national health awareness initiatives, youth mobilization and training, road safety promotion, first aid delivery, and coordination with public health authorities on pandemic preparedness and response.

These organizations coordinate closely with DDMCs and the NDMC during disaster response, especially in managing relief distribution and supporting evacuation center operations. Community organizations also contribute to preparedness through outreach campaigns aligned with national messaging on fire safety, flood awareness, and emergency reporting procedures. These partnerships play a vital role in enhancing Brunei's capacity for disaster preparedness, response, and recovery, particularly during large-scale emergencies.

CRITICAL INFRASTRUCTURE FOR DISASTER MANAGEMENT

Brunei has well developed infrastructure. Successive 5-year development plans support sustained construction and maintenance; the current long-term development plan is Brunei Vision 2035 or Wawasan Brunei 2035. Developed infrastructure generally aligns with national aims and earns the country recognition for the accomplishments of its well-educated and highly-skilled people against international standards. Widespread and accessible infrastructure, from transportation to telecommunications, also facilitates Brunei's disaster warning, preparedness, and response capabilities.

Transportation

Transportation infrastructure is robust. Brunei International Airport is the main airport for international aviation departures and arrivals. Muara Port is the largest and most significant seaport for trade. Smaller ports primarily serve the oil and gas sectors or facilitate river transport. The road network is robust, and private vehicles are widely used.

Airports

The country's main airport is Brunei International Airport, which is near Bandar Seri Begawan. It is the only point of entry and departure for international passengers on commercial air transport, and it has the largest air cargo facilities in the country. Anduki Airfield, a domestic terminal, is primarily a heliport, operated by BSP with flights serving offshore oil platforms. There are various additional helipads for hospital, military, and resort use throughout the country.

Brunei International Airport

Brunei International Airport serves as the home base for the national carrier, Royal Brunei Airlines.[140] The airport is located approximately 8 km (5 mi) north of Bandar Seri Begawan[141] and is operated by the Department of Civil Aviation. The airport has an international terminal with a capacity of 2 million passengers annually, a cargo terminal with a capacity of 50,000 tons of cargo, and a royal terminal.[142] Upgrades are underway to enhance terminal efficiency.[143] The airport can accommodate aircraft up to the Boeing 787 and Airbus A320 series.[144]

Rimba Air Base

Rimba Air Base is located within the Brunei International Airport's area and is the main base for the RBAirF. The air base is located opposite the main runway, which is shared between Rimba Air Base and Brunei International Airport.

Anduki Airfield

Anduki Airfield is a heliport and airstrip located in Seria. It primarily operates industrial helicopter flights for the oil and gas sector to serve offshore oil platforms.[145] It is operated by BSP,[146] which primarily operates twin-engine, medium-sized S-92 and AW139 helicopters. Among BSP's four S-92 helicopters are three passenger aircraft and one search-and-rescue aircraft.[147] Anduki Airfield does not accommodate cargo traffic, and terminals are limited to one small building for arrivals and departures.[148]

Temburong

Temburong District has no airport aside from helipads. The nearest airport is in Malaysia; Limbang Airport is near the town of Limbang in Malaysia's Sarawak State, situated between Borneo's two portions. The Malaysian airport has a 1,500-m (4,921-ft) runway and is 26 km (16 mi) from Temburong District's administrative center, Bangar.[149]

Table 2 summarizes details of the two airports in Brunei.[150]

Airport	Location	IATA/ICAO Codes	Runway Details
Brunei International Airport	Bandar Seri Begawan, Brunei-Muara District 4°56'39" N 114°55'42" E	**IATA:** BWN **ICAO:** WBSB	**Direction:** 03/21 **Length:** 3,658 m (12,000 ft) **Surface:** Asphalt **Elevation:** 22 m (73 ft)
Anduki Airfield (Heliport)	Seria, Belait District 04°38'12" N 114°22'52" E	**ICAO:** WBAK	**6 Helipads:** asphalt/concrete **Direction:** 05/23 **Length:** 820 m (2,690 ft) **Surface:** Asphalt **Elevation:** 2 m (7 ft)

Table 2: Airports in Brunei

Heliports

Brunei has helipads in various locations throughout the country:

- Anduki (WBAK), Anduki/Seria, Belait District
- Bangar (AG11327), Bangar, Temburong District
- Brunei International (BWN WBSB), Bandar Seri Begwan, Brunei-Muara District
- Istana Nurul Iman (AG11328), Bandar Seri Begawan, Brunei-Muara District
- Kuala Belait (AG11329), Kuala Belait, Belait District
- Muara (AG11330), Muara, Brunei-Muara District
- Pulau Muara Besar (AG11331), Pulau Muara Besar, Brunei-Muara District
- RIPAS Hospital (AG11332), Bandar Seri Begawan, Brunei-Muara District
- Sengkurong (AG11333), Sengkurong, Brunei-Muara District
- Seria Hospital (AG11335), Seria, Belait District
- Seria (AG11334), Seria, Belait District
- Shell Panaga (AG11336), Panaga, Belait District
- Tumasek (AG11337), Bandar Seri Begawan, Brunei-Muara District
- Tutong (AG11338), Tutong, Tutong District
- Ulu Ulu Resort (AG11339), Ulu Ulu, Temburong District[151]

Brunei Department of Civil Aviation requirements for heliports are available at: *https://www.dca.gov.bn/BARs/BAR%2014/BAR%2014%20Volume%20II%20Heliports.pdf*

Seaports

The Maritime and Port Authority of Brunei Darussalam (MPABD) is the governing body responsible for the management, administration, and security of maritime and port affairs.[152] As part of the Digital Economy Masterplan 2025, MPABD is digitizing the country's services across all seaports, from customs to cargo handling, to enable ships, agents, and logistics players to operate on a single digital platform. Significant actions taken to improve port efficiency include the 2025 launch of the Maritime Single Window, a centralized digital platform to collect and exchange information with ships when they call at ports; the objective is to streamline procedures to clear the arrival, stay, and departure of ships.[153] The Maritime Single Window has reduced port-call processing from days to less than 24 hours.

MBAPD has also improved navigational predictability by conducting hydrographic surveys at Muara and Kuala Belait for accurate data on water depth, underwater topography, and submerged objects, as well as a phased rollout of the Vessel Traffic Management System, with full compliance scheduled for March 2026. Feasibility studies aim to increase throughput and explore free ports and free trade zones.[154] Brunei authorities operate one free trade zone, the Pulau Muara Besar Export Zone, which is part of Muara Port.[155]

Port of Muara

The Port of Muara is Brunei's largest seaport. It is located in Muara Town, about 28 km (17 mi) from Bandar Seri Begawan, and there are good road connections. The port

handles an annual container throughput of around 330,000 twenty-foot equivalent units (TEU). The container terminal is undergoing expansion with the aim of providing the port an annual container capacity of 500,000 TEU by 2027.[156] Cargo includes raw material, cement container goods, vehicles, construction machinery, livestock, and perishable items. The port's Serasa Ferry Terminal is a hub for passenger ferries departing to Labuan, a small offshore island that is Malaysian territory.[157]

The Container Terminal has a berth 250 m (820 ft) long, with a draft of 12.5 m (41 ft) alongside. Its freight station covers 5,000 m^2 (53,820 ft^2), and equipment includes 145 reefer point sockets, two quay cranes with a 40-ton lifting capacity, 6 reach stackers, 5 side loader forklifts, and 12 trailers.[158]

The Conventional Terminal handles non-containerized cargo, which includes vehicles, livestock, break bulk, and palletized cargo. It has a linear berth of 611 m (2,005 ft) with a draft of 12.5 m (41 ft). There is a transit warehouse of 1,203 m^2 (12,949 ft^2) and an open-sided storage warehouse of 1,600 m^2 (17,222 ft^2). There are also three transit sheds measuring 1,970 m^2 (21,205 ft^2), 1,782 m^2 (19,181 ft^2), and 3,298 m^2 (35,499 ft^2), two 4,000-ton cement silos, and an open storage yard of 5 ha (12.4 acres). The cruise ship center is also housed in the conventional terminal zone, where facilities include a lounge, currency exchange, cafe, convenience shop, and recreation rooms.[159]

Figure 8 depicts the layout of Muara Port.[160]

Port of Kuala Belait

The Port of Kuala Belait is a river port located on the east side of Sungai Belait in an offshore oil field. The port is primarily used by BSP. It annually handles approximately 200,000 TEU of containerized cargo. The berth length overall is 60 m (197 ft) with a draft of 3.1 m (10 ft) alongside.[161]

Port of Tanjong Salirong

The river port of Tanjong Salirong, Brunei-Muara District, supports regional trade. It facilitates the import and export of goods relating to the energy sector and frequently serves BSP as well as local fishing fleets.[162] Main trade routes serve Malaysia, PRC, Singapore, Thailand, and Vietnam.[163]

Port of Lumut

The Port of Lumut, also known as Lumut Maritime Terminal Sdn Bhd, is located in Liang in the Belait District. It is a commercial river port with two terminals, Lumut Maritime

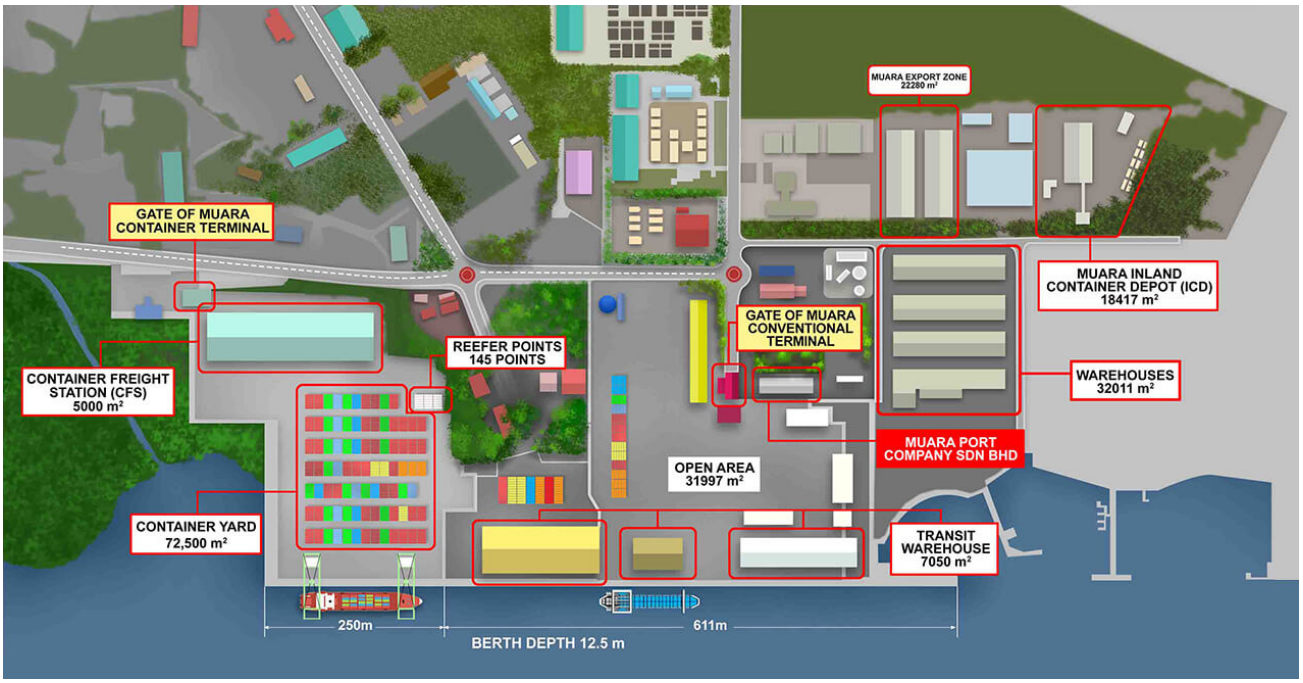


Figure 8: Muara Port Layout

Terminal and Lekir Bulk Terminal. More than 500 vessels call on the port annually. Main cargo includes breakbulk, dry bulk, liquid bulk, and roll-on/roll-off. The length overall is 286 m (938 ft) with a draft of 14.9 m (48.9 ft) alongside.[164]

Roads

Brunei's transport system is dominated by its highway network, with approximately 5,100 km (3,169 mi) of roads. The network is formed around the coastal highway backbone, which runs from the southwest to the northeast linking coastal towns, including Kuala Belait, Seria, Lumut, Sungai Liang, Tutong, Jerudong, and Muara Port. Key linking roads connect the coastal highway to inland towns, including Bandar Seri Begawan, in Brunei-Muara District, as well as more remote inland areas.

The exclave of Temburong is connected by road to mainland Brunei by the Sultan Haji Omar 'Ali Saifuddien Bridge, which opened to public on 17 March 2020. Also known as Temburong Bridge, it spans 26.3 km (16.3 mi) across Brunei Bay and reduced the commute time to less than 30 minutes. Before the opening of the bridge, travelers had to take a 45-minute boat ride across the bay or drive 2 hours through Malaysia's Limbang District, Sarawak State, and multiple border checkpoints to reach the capital.[165]

Private cars are the main mode of transport for Brunei's people. There were 648 vehicles per 1,000 residents in 2024, more than double the Asia-Pacific average of 317. The country's road network is designed for light-duty vehicles, which comprise about 91% of the fleet.

Access to the road network remains high even in rural areas. An estimated 99% of the rural population lives within 2 km (1.2 mi) of an all-weather road.

Public transport is minimal. In urban centers, only 20% of residents have convenient access to public transport.

Extreme weather causes around US$4.2 million in average annual loss to transport infrastructure, and the road network suffers the greatest damage. Bridges and tunnels bear 31% of the financial damage, although they constitute only 2% of the transport infrastructure.[166]

Brunei's roads are vulnerable to climate disruption. The country ranks 183rd out of 208 countries in the National Road Vulnerability Index; this ranking indicates a relatively high vulnerability to disruptions in road transport due to climate hazards. The highest rank of 1 indicates the fewest disruptions to trips after climate hazards due to sufficient network redundancy.[167] As the study focused on disruptions to intra-country travel and regional connectivity, countries deemed resilient had redundant road networks, while vulnerable road systems tended to be in mountainous, small-island, and low-income countries. Although Brunei does not necessarily reflect those characteristics, its small area, long coastline, and separate exclave make it challenging to build redundancy into the road network.[168] Coastal roads, including the Muara–Tutong Highway, are vulnerable to flooding.[169] Also vulnerable are roads near rivers, as areas in the Pasai and Mulaut areas experienced Bunut River overflows.[170]

Railways

There is no public railway.[171]

A small industrial railway is privately owned by Brunei LNG to serve its LNG plant in Lumut.[172] Two small, flame-proof, electric-battery railcars operate on the railway, which extends along a 4.5-km (2.8-mi) jetty that protrudes into the sea for tankers to dock at the end.[173]

Malaysia is conducting a feasibility study on the Trans-Borneo Railway project as part of its 13th Malaysia Plan, a strategic development plan covering 2026-2030. The project proposes to connect Borneo's Malaysian states, Indonesia, and Brunei via railway.[174]

Navigable Waterways

Brunei has approximately 290 km (180 mi) of navigable waterways. The waterway network is primarily used in the proximity of Kampong Ayer, which is a prominent water village comprised of traditional structures built on

stilts and located across the Brunei River from Bandar Seri Begawan. While Kampong Ayer is also accessible by road, water taxis operate throughout the day, and they carry passengers and low volumes of goods between Kampong Ayer and Bandar Seri Begawan.[175] Photo 5 shows Brunei's water taxis along the Brunei River, linking the Bandar Seri Begawan's waterfront to Kampung Ayer.[176]



Photo 5: Water Taxis in Brunei

Water transport is also utilized among remote villages in Brunei's rural interior, where there are fewer reliable road connections. Waterways are important in providing for a direct journey between the districts of Brunei-Muara and Temburong.

The Belait, Tutong, and Brunei Rivers are in the western part of the country, and the Pandaruan and Temburong Rivers are in the eastern part. Brunei's rivers generally flow northward to the South China Sea.[177] The largest river is the Belait, which is near the southwestern border with the Malaysian state of Sarawak; it flows southeast-to-northwest through swampy terrain for about 32 km (20 mi) before discharging into the South China Sea at the town of Kuala Belait.[178] The Belait, Brunei, and Tutong are navigable, were traditionally a primary means of transport, and currently remain a significant transport links.[179]

Communications

Brunei has an enhanced early warning system (EWS) for alerting the public and relevant agencies to hazard events. The country also has a well-developed communications infrastructure, which facilitates dissemination of advisories and alerts via mobile applications, texts (SMS), and emails. It also ranks high in digital connectivity. Among the population, there is near universal use of mobile cellular phones and the internet. Mass media are strictly controlled, and sensitive topics are not reported on.[180] However, widespread use of communication technologies facilitates person-to-person information sharing, as well as disaster early warning dissemination.

Early Warning Systems and Information Sharing

Brunei has been proactive in enhancing EWS as part of its disaster management strategic development. Efforts have focused on structural measures, including enhancement of detection technologies and communication channels to disseminate early warning and large-scale flood mitigation works along coastal areas. Additional work remains to ensure the public knows how to act on alerts from the EWS.

An ASEAN assessment of member states' capacity in multi-hazard EWS was conducted in coordination with Brunei's NDMC, Brunei Darussalam Meteorological Department (BDMD), and other agencies. It found that Brunei has generally achieved capacity in disaster early warning. Remaining challenges, particularly in preparedness and response capabilities and warning communication, relate to consistent action-oriented warnings, further risk assessment of critical infrastructure and social vulnerabilities, and raising public awareness. Figure 9 depicts the ASEAN assessment of Brunei's progress across the following areas: 1) disaster risk knowledge, 2) detection and monitoring, 3) warning dissemination and communication, and 4) preparedness and response capabilities.[181]

According to the assessment, Brunei has had notable successes in the following areas:

1. A strong legislative framework has been developed across the disaster risk knowledge and warning and dissemination

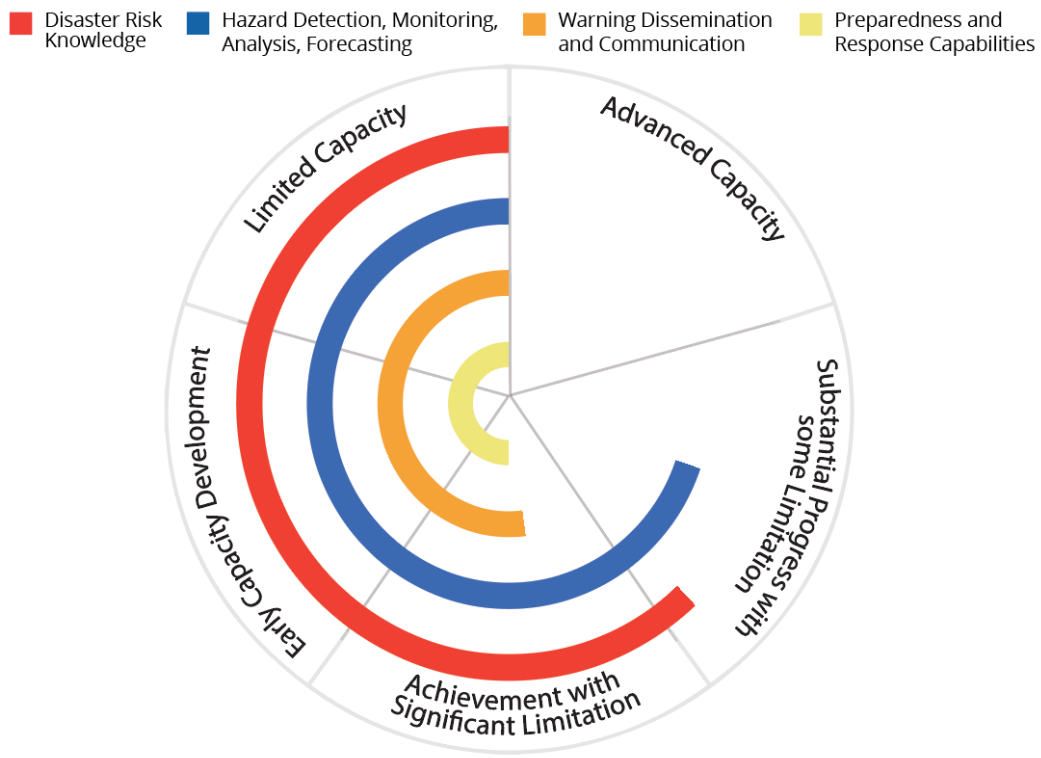


Figure 9: ASEAN Assessment of Brunei's Early Warning System Capacities

components; roles and responsibilities of key agencies and bodies are clearly outlined and understood.
2. The country's warning centers are operational at all times, with appropriate national and international standards implemented by well-trained personnel.
3. Warnings are generated and disseminated in an efficient and timely manner for each of the main types of hazards experienced by Brunei.
4. Brunei works closely with international and regional partners – such as through its membership in the Southeastern Asia-Oceania Flash Flood Guidance (SAOFFG) System – to strengthen its monitoring and early warning network. These partnerships are realized through bilateral and multilateral agreements that support the long-term and sustainable nature of such cooperation.
5. Brunei has established warning communication strategies at the national, subnational, and local levels to ensure coordination across warning issuers and dissemination channels. These strategies include the establishment of networks to receive and disseminate warnings widely in a timely manner.

Remaining early warning gaps that require capacity development include:

1. While cooperation agreements exist, Brunei's internal hazard detection systems require enhancement to reduce reliance on outside partners, especially for tsunamis.
2. Limitations in the assessment of risk include the consideration of critical infrastructure and secondary risks, social vulnerability factors, and vulnerabilities of the economic sector. Developed risk assessments are not systematically utilized to guide EWS planning. For example, designated flood evacuation shelters have been inundated by flood waters and left evacuees stranded and without access to supplies.
3. In recent years, Brunei has dedicated resources to the modernization and enhancement of its detection, monitoring, analysis, and forecasting systems. However, efforts are required for the establishment of interagency protocols for the exchange of monitoring systems data and baseline data, as well as the establishment of

agreements and interagency protocols to ensure consistency of warning language and communication.

4. The country's detection, monitoring, analysis, and forecasting systems provide timely alerts for hazard events. However, warning messages lack the vital guidance to trigger reactions to save lives and livelihoods. There is no evidence that Brunei has established feedback mechanisms or undertakes evaluations of its warning communication strategies to ensure messages are reaching the entire population, nor that communication strategies account for the different risks and needs of subpopulations, and there may be gaps in the communication of warnings.
5. Preparedness and response capabilities in Brunei are in the early stages of development, and they are limited significantly by a lack of public awareness and educational activities and exercises. The country's limited hazard profile has led to public complacency regarding hazards. However, the anticipated increase in risk associated with climate change indicates a need for significant investment in this area in the coming years.[182]

Weather

Brunei's EWS is primarily focused on weather forecasts and severe weather warnings and is largely managed by the BDMD. NDMC relies on a significant amount of information from BDMD. Public alerts are issued instantly via emails, weather mobile applications, and SMS to stakeholder agencies for any preparatory action needed, including informing the community.[183] Furthermore, NDMC's DCC is linked with the AHA Centre's operations center to facilitate cooperation and coordination among ASEAN member states and relevant UN agencies and international organizations engaged in early warning.

In 2023, BDMD unveiled its new Doppler weather surveillance radar system in the official opening of its Weather Radar Building. The upgrade of the weather radar network was in line with the 11th National Development Plan and the Ministry of Transport and Infocommunications Strategic Plan 2025, which aims for 90% accuracy in aviation weather warnings. Aviation weather forecasts are critical for flight operations safety, and increased capacity in this area can also benefit disaster preparedness and early warning capability. The new radar boosted real-time monitoring and analysis of weather developments, improved forecast accuracy, and enabled earlier issuance of advisories and warnings. The new radar features a dual polarization weather radar system that operates using S-band, which is capable of scanning a distance of 250 km (155 mi) with exceptional sensitivity and enables the monitoring of a wide range of weather phenomena with high data quality and high resolution. Accordingly, BDMD also upgraded their mobile application, Brunei WX, with the addition of new features, including animated weather radar imagery that can show locations, intensity, and movement of rainfall.[184]

Flood and Landslide

The flood monitoring system owned by the Department of Drainage Services utilizes internet-of-things technology and has had significant success in monitoring river water level and flow rate in two rivers. Rain gauges nationwide monitor rainfall at monitoring stations and send alerts of abnormally high readings. As of 2023, information was relayed to responding agencies as needed via traditional voice calls. Public alerts are issued immediately via emails, weather mobile apps, and SMS to stakeholders (agencies) for any preparatory or anticipatory action is needed such as informing the community.

Brunei has also developed a flood mitigation strategy that addresses climate change. Accordingly, the government has identified and implemented projects widening and deepening major rivers, developing retention ponds, and installing a drainage pump system.

As part of landslide mitigation efforts, government agencies have implemented projects to enhance community protection and resilience,

including utilizing techniques that include sheet piling retention walls, reinforced earth walls, and other barrier designs.[185]

Earthquake

The Brunei National Seismic Centre (BNSC), which falls under the Geotechnical and Geological Survey Section in the Department of Technical Services of the Public Works Department, monitors, reports and analyzes seismic events and provides updates on seismic activity.[186] It relays information to agencies via text or voice call. The BNSC also tests, reviews, and revises the Tremor, Earthquake, and Tsunami Response Plan, in collaboration with the NDMC. [187]

BDMD's Weather Warning Codes

BDMD uses colored weather warning codes – yellow, orange, and red – to alert the public and relevant agencies about extreme weather conditions, particularly as relates to rain and wind conditions with the potential to cause serious disruption to daily activities and property damage.

Level Yellow:
- Flash floods can occur especially in low-lying areas and near riverbanks
- Heavy rain can reduce visibility
- The road becomes slippery and there is ponding
- Risk of lightning strikes
- Large tree branches can sway due to the wind

Level Orange:
- Large tree branches can break due to strong winds
- Power outages may occur in affected areas
- Signs that are not robust can topple
- Landslides can occur
- Minor damage can occur to the structure of houses due to floods, landslides, or strong winds

Level Red:
- Widespread flooding can occur especially in low-lying areas and near rivers
- Large trees can break or fall due to strong winds
- The risk of landslides is high during continuous heavy rains
- Outdoor activities (including sea activities) are not safe
- Major damage can occur to the structure of a house or building due to floods, landslides, or strong winds

Information Sharing Focal Points

BDMD disseminates weather warnings and advisories through emails, SMS, social media, and the smart phone apps BruneiWX and MW Crowd.[188]

Brunei Darussalam Meteorological Department

Bandar Seri Begawan, Brunei
Tel: +673 238 1342
Facebook: bruneiweather
Instagram: brunei.weather
https://www.met.gov.bn

Telecommunications Infrastructure

Brunei has a high level of digital connectivity due to widespread internet access and usage and availability of broadband mobile network services that surpass global averages. Coverage continues to be extended to rural areas through the government's initiative to activate 5G services nationwide, and about 90% of populated areas have 5G signals.[189]

Cellular Mobile — A total of 554,000 cellular mobile connections were active in the country at the end of 2025. The figure represents 119 % of the population as many people make use of more than one mobile connection, which has been facilitated by the rise of eSIMs in recent years. Some of those connections may only include services such as voice and SMS without access to the internet. The number of mobile connections in Brunei increased by 1.6% from 2024 to 2025. 100% of mobile connections in Brunei are believed to connect via 3G, 4G, or 5G mobile networks.[190] The rollout of 5G has enabled about 90% of populated areas to have

5G signals. In very remote or deep jungle areas, satellite internet can be deployed to provide basic internet and phone service through the service provider Network Integrity Assurance Technologies' VSAT. This is likely to be utilized by ecotourism lodges in Ulu Temburong National Park or offshore fishing platforms.

Internet — Brunei has experienced a significant increase in internet access and social media usage in the last decade. In late 2025, there were 460,000 individuals using the internet for an online penetration rate of 99%.[191] The median fixed internet download speed is 83.14 megabits per second (Mbps) while mobile internet download speed is 184.86 Mbps.[192] In very remote or deep jungle areas, satellite internet can be deployed to provide basic internet and phone service through the service provider Network Integrity Assurance Technologies.[193]

The Ministry of Transport and Infocommunications oversees digital infrastructure. The Authority for Infocommunications Technology Industry is responsible for telecommunication, radio communications, and postal regulation; radio-frequency spectrum planning and management; and ICT industry development.

There are three major telecommunications service providers – Datastream Digital Sdn Bhd (DST), imagine Sdn Bhd, and Progresif Sdn Bhd. They offer prepaid and postpaid plans to subscribers. Unified National Networks Sdn Bhd (UNN) is a wholesale network company that oversees the country's network infrastructure and provides support to service providers.[194]

Mass and Social Media

Mass Media — Brunei's television broadcast media is predominantly Radio Television Brunei, which is state-controlled and broadcasts in Malay and English. Newspapers or news sites include the Borneo Bulletin (English-language daily), Media Permata (Malay language), The Bruneian (English-language business news site) and The Scoop (English-language news sites). Brunei Press (the parent company of Borneo Bulletin and Media Permata) is often owned or controlled by the royal family and or exercises self-censorship when covering politics and religion. Radio Television Brunei also does radio broadcasts in Malay, English, Mandarin Chinese, and Gurkhali. Kristal FM is a private radio station.[195] Malaysian-based Chinese language newspapers, Sin Chew Daily, See Hua Daily and United Daily News, also operate in Brunei and have a strong readership within the Chinese communities in Brunei. Media analysts deem there is little press freedom.[196]

Social Media — There were 300,000 social media user identities, about 64.1% of the population, in 2025. An estimated 85.1% of the population aged 18 and above use social media. Social media sites such as Instagram, X (formerly Twitter), TikTok, and Reddit have become spaces for interactions among Bruneian youths. Reports indicate that youths' social media engagements are a medium for digital civic engagement and social justice, self-expression and influencing culture, and new religious expressions. Information sharing is much less restricted on social media compared to traditional mass media. Yet there is a remarkable lack of contestation on social media, which has been attributed to Brunei's collectivist community practicing self-censorship or cultural sensitivity.[197]

Utilities

Residents of Brunei enjoy near-universal access to the national electric power grid, piped water, and improved sanitation. As a hydrocarbons producer, the country continues to rely heavily on natural gas to generate electricity. Meanwhile, it relies mostly on surface water to meet residential and industrial water needs. Both of these dependencies could prove liabilities in the coming decades as shifts toward low- and zero-carbon economies reduce the attractiveness of natural gas as a feedstock and as shifts in weather patterns bring more prolonged and frequent drought periods.

Power

Brunei has universal electricity access,

with 99.9% of the population having access to electricity from the national grid.[198]

Brunei has three strategic aims for energy security: 1) sustain the upstream oil and gas sector (oil and gas plants, crude oil terminals, etc.); 2) grow the downstream oil and gas sector (exports and domestic energy use); and 3) secure the energy supply for power and fuel.[199] The government is prioritizing power infrastructure development through the Department of Energy as part of its strategy to enhance economic competitiveness and attract foreign investment. This strategy includes expanding generation capacity and strengthening the national electricity grid in ways that will boost generation efficiency from 28% to 50% by 2035. Larger energy goals include becoming "net-zero" by 2050, reducing greenhouse gas emissions by 20% by 2030, and not building new coal power plants.

Electricity is primarily used for heating, cooling, lighting, cooking, and powering devices, appliances, and industrial equipment. Natural gas is the largest feedstock for electricity generation. In 2023, natural gas accounted for 4,419 Gigawatt-hours (GWh), or 78.8% of total generation. It was followed by coal (1,144 GWh or 20.4%), oil (41 GWh or 0.7%), and solar (5 GWh or 0.1%). Electricity consumption per capita was 10.672 Megawatt-hours (MWh) in 2023, having increased 38% from 2000.[200]

Key energy projects are progressing. They include the second phase of Bukit Panggal Power and the construction of a new power plant by Berakas Power Company Sdn Bhd. Both projects utilize energy-efficient combined-cycle technology. Currently, nearly 70% of electricity is generated by single-cycle plants that are old and inefficient. The new plants are expected to be operational between 2027 and 2028. These projects will increase Brunei's total installed power by 35% once complete.[201] Meanwhile, the country's climate policy mandates that by 2035 new plants must have a minimum efficiency of 48% and for 30% of energy use to come from renewable energy, primarily solar.[202]

In October 2023, Brunei experienced one of its worst power outages, which affected public services and businesses in Brunei-Muara, Tutong, and Belait, with some households having their power restored after 15 hours.[203] A faulty 66-kilovolt transmission line was overwhelmed with an unexpected surge in demand combined with inadequate maintenance on aging transmission lines. The discovered deficiencies in the power grid's capacity to handle unexpected demand surges revealed the need for infrastructure improvements such as upgrading transmission lines and enhancing the capacity of power generation facilities through maintenance and modernization.[204] In March 2024, the Department of Electrical Services announced work to ensure electricity supply through alternative sources, including the use of mobile generators, in the event of power disruption.

Water and Sanitation

Water security and sanitation are critical components of Brunei's public health and disaster management framework. With a population that enjoys near-universal access to safe drinking water, Brunei has developed robust systems for water resource management and sanitation. Responsibility for water and sanitation largely falls to the PWD, specifically its subsidiary Department of Water Services.[205] However, the country's reliance on surface water and its vulnerability to hazard events such as flooding, drought, and seawater intrusion pose challenges that require ongoing attention.

Brunei relies predominantly on surface water for its potable water supply, sourced from four main river basins: the Brunei River, Tutong Basin, Belait Basin, and Temburong Basin. These basins collectively provide most of the country's water resources, with the Brunei River serving as a major freshwater source for the western part of the country.

The Temburong, the smallest of the rivers, drains a catchment area of about 430km^2 (166 mi^2). The Belait is the largest basin, with an area of 2,700km^2 (1,042 mi^2). The Belait's lower catchment area comprises an extensive area

of peat swamp forest. The river narrows at the town of Kuala Belait and a sandbar restricts the discharge of water to the South China Sea. Some areas in the upper catchment have been cleared for agriculture. The Tutong basin, which is about 1,300km^2 (500 mi^2) in area, has a complex estuary system formed between two sand spits. The basin also encompasses Brunei's largest lake, the Tasek Merimbun. The Brunei River flows into Brunei Bay. The upper reaches of the river are a major freshwater source, particularly for the western part of the country.[206]

Despite adequate rainfall, developing and maintaining sufficient water resources is difficult. The low-lying coastal plains mean that river water is generally brackish for a considerable distance inland, and the catchments in the coastal zones are inadequate for any major supply scheme. Moreover, the generally adequate supply of rivers can be adversely affected by extended periods of dry weather, and the construction of dams and storage reservoirs is needed to ensure reliable supply during these dry periods. There are four dams: Mengkubau and Tasek Lama in the Brunei-Muara District and Benutan and Ulu Tutong in the Tutong District.[207]

The Department of Water Services is responsible for overseeing the planning, design, and management of the country's water resources. The extraction of raw water from any water source for the purpose of treatment for drinking water supply must be approved by the Department. The aim is to ensure sustainability and adequate resources to meet future demands, which include protection and conservation of existing and potential resources. The Department's Water Services Laboratory provides testing and sampling to ensure water is clean and safe for public use.[208]

Almost the entire population of the country is now served by a reticulated drinking water system with 24-hour continuous supply through pipelines that follow the road networks. The remainder, who are in remote or difficult-to access areas, are provided with drinking water through basic rural water supply systems.

There are four main urban water supply systems. The Brunei-Muara-Tutong System provides supply for two-thirds of the country's population. It uses raw water extracted from the Tutong River through three treatment works. During periods of dry weather, additional water is sourced from the Benutan and Tasek dams. The Temburong and Belait Coastal Systems supply water from their respective rivers and, in the case of the Belait River, a barrage has been provided to prevent contamination of the water source by seawater. The Labi System also serves Belait District by extraction of raw water from the Rampayoh River.[209]

Brunei's sanitation infrastructure is well-developed, with the majority of the population having access to improved sanitation facilities. Urban areas are served by centralized sewerage systems, while rural areas rely on basic sanitation systems. Solid waste is collected and disposed of in landfills, minimizing the risk of contamination to water sources. Agricultural runoff and domestic waste discharges are controlled by the Agriculture Department under the Ministry of Industry and Primary Resources. At present, the only real threat to water supply systems comes from seawater intrusion into estuaries and the low-lying reaches of rivers, but this has been addressed by the construction of barrages.

Despite Brunei's robust water and sanitation systems, hazard events can disrupt water supply and pose health risks. Flooding, particularly in low-lying areas, can contaminate water sources with sediment, agricultural runoff, and domestic waste, increasing the risk of waterborne diseases such as diarrhea, cholera, and typhoid. Seawater intrusion into estuaries and the lower reaches of rivers is another concern, particularly in the Belait and Tutong basins. Barrages have been constructed to address this issue, but extended periods of dry weather can exacerbate the problem.

Health Systems

Brunei has a top-tier healthcare system that provides free medical treatment and medication to citizens. Hospitals and health centers are

available in all four districts. Among current top health challenges are non-communicable diseases (NCD).

The Ministry of Health aims to improve the health of the people through a high-quality, comprehensive healthcare system that is effective, efficient, responsive, affordable, equitable, and accessible to all. The Ministry identifies three strategic priorities:

1. Inculcate 'Health is Everyone's Business'
2. Prevent and control NCDs
3. Deliver excellent services through alignment and consolidation.[210]

Brunei's healthcare infrastructure includes four government hospitals, 16 health centers, and 64 primary facilities, as well as mobile health clinics and medical air services for remote areas.[211] There are 19 physicians per 10,000 people, on average,[212] on par with the global average.[213] The country has a high life expectancy,[214] and the country has dramatically reduced reported infant mortality rates and the under-5 mortality rate.

Brunei has made progress in the control and elimination of communicable diseases. The WHO officially certified the country as having eliminated malaria, measles, and poliomyelitis. Insect-borne diseases remain a concern, with reported instances of dengue and Japanese encephalitis. Infectious diseases present in the country include hand, foot, and mount disease, hepatitis, HIV/ AIDS, and tuberculosis.[215]

NCDs have been the leading cause of death for more than three decades and are estimated to account for approximately 85% of all deaths. Nine of the top 10 causes of deaths are NCDs. Heart disease tops the list, followed by diabetes, stroke, lung cancer, and chronic kidney disease. Obesity is a rising threat to health. By 2050, a projected 75% of adults in the country will be overweight.[216] Table 3 depicts the top 10 causes of deaths in Brunei and how that has changed from 2013 to 2023.[217]

Hospitals in Brunei are vulnerable to several disruptions. The massive electricity blackout of October 2023 affected essential services. Temporary power solutions, such as generators, were deployed to hospitals, schools, and critical facilities to ensure the continuity of vital operations. The government also coordinated with local businesses to prioritize the restoration of power to key sectors, such as food and healthcare services.[218] Disruption to water

Cause	2013 Rank	2023 Rank	Change in Deaths per 100k, 2013-2023
Ischemic heart disease	1	1	▲+14.4
Diabetes	2	2	▲ +12.7
Stroke	3	3	▲ +8.2
Lung cancer	4	4	▲ +6.1
Chronic kidney disease	5	5	▲ +5.5
Lower respiratory infection	6	6	▲ +5.0
Chronic Obstructive Pulmonary Disease	7	7	▲ +5.1
Colorectal cancer	8	8	▲ +5.1
Alzheimer's disease	9	9	▲ +4.8
Breast cancer	10	10	▲ +2.6

Communicable, material, neonatal, and nutritional diseases Non-Communicable diseases

Table 3: Top 10 Causes of Death in Brunei

services has also affected hospitals. A landslide in January 2026 disrupted water supply across Brunei-Muara, spurring hospitals to activate contingency plans to maintain essential hospital services despite low water pressure. The PWD mobilized an emergency response center to deliver water supplies to critical facilities such as hospitals, clinics and mosques, as well as water intake points in residential areas.[219]

Shelter and Housing

Brunei has a low risk of population displacement by natural disasters and strong management capabilities, as the government has promptly provided suitable accommodation for individuals affected by floods over the last decade.[220] Temporary shelters are often set up at community halls to accommodate residents who must evacuate their homes due to flooding.[221] One challenge identified in an ASEAN assessment is that designated flood evacuation shelters have experienced inundation by flood waters, a circumstance leaving evacuees stranded and without access to supplies.[222]

Specific displacement statistics are not officially reported.[223] The Internal Displacement Monitoring Centre reported 140 people were internally displaced due to disasters, primarily floods, during the period 2008-2024.[224] Brunei's public house program significantly contributes to housing security, especially for young families.

There is a mix of public and private sector housing. The Ministry of Development's Housing Development Department managed the National Housing Scheme (RPN, or Skim Perumahan Negara), which is Brunei's flagship public housing program. It was launched in the 1980s to provide affordable homes for citizens and aims to help landless Bruneians become homeowners by subsidizing home prices and offering long-term loans, typically 20-30 years. Homes are built in planned housing estates, often referred to as "modern villages," that include roads, schools, mosques, and utilities. The programs cater primarily to Brunei citizens that are married or have children and fall within designated income brackets. As of July 2024, a reported 31,145 houses and land lots had been constructed and equipped with modern infrastructure under the public housing program.

An additional program is the Landless Indigenous Citizens' Housing Scheme. It operates alongside the RPN and specifically targets indigenous Malay Bruneians to provide them housing options. While no longer active, there was also the historical National Resettlement Scheme, which aimed to relocate residents to land-based homes from Kampong Ayer, the traditional water village.[225] In March 2025, Minister of Development Muhammad Juanda announced plans to launch several small-scale housing programs in rural areas. Construction is targeted for Labi and Sungai Mau in Belait District, as well as Supon Besar and Lamunin-Menengah in Tutong District. Development in those growth centers is an effort of the Ministry of Development.[226]

Vulnerable populations at risk of displacement include trafficked and stateless people. Brunei is a destination and transit country for trafficked persons, and while the government does not fully meet the minimum standards for elimination of trafficking, it is making significant efforts to do so.[227] In 2022, the government of Brunei reported to UNHCR 20,863 stateless persons, but this number is likely to only include stateless persons who are regularized and have a certificate of identity.[228]

Food Security

As a small, resource-rich country, Brunei relies heavily on food imports to meet domestic demand. Therefore, its food system is vulnerable to disruptions caused by global supply chain issues, disasters, and other emergencies. To address these challenges, Brunei has implemented policies and strategies to strengthen food security, including emergency food assistance programs and disaster preparedness measures. It has also undertaken initiatives to increase production in agriculture, fisheries, and livestock, while boosting value chain models to achieve self-sufficiency in rice production. As a result, food availability is stable and undernourishment is low.[229]

The food system is characterized by a high dependence on imports, with approximately 80% of food consumed in the country sourced from international markets.[230] Key imports include rice, poultry, vegetables, and processed foods, primarily from neighboring countries such as Malaysia, Indonesia, and Thailand. Domestic food production is limited, with agriculture contributing less than 1% to the national GDP. Local production focuses on staple crops such as rice, fruits, and vegetables, as well as aquaculture and livestock operations. The government has made efforts to increase self-sufficiency in food production through initiatives such as the Brunei National Agricultural Policy 2016–2025, which aimed to enhance agricultural productivity and reduce reliance on imports.[231]

Since the Sultan's drive for self-sufficiency, Brunei has reached nearly 100% domestic production for certain goods, such as chicken and eggs, and reached 80% domestic production for all seafood products and tropical fruits as of 2020. Photo 6 shows produce at a Brunei market; while much food is imported, the Sultan's drive for self-sufficiency has increased domestic production of tropical fruits.[232]

In doing so, Brunei's government managed to increase food supplies and allow easier and more affordable access to food for the population.[233] This milestone reflects Brunei's sustained investment in modern, high-efficiency farming systems, strong biosecurity measures, and value-added processing. These efforts align with the national Food Industry Roadmap, which outlines the country's vision to strengthen domestic food production while promoting sustainable agriculture and long-term economic diversification.[234]

The Ministry of Primary Resources and Tourism emphasized the need to bolster agri-food and seafood processing industries, to improve output and lay foundations for sustainable economic diversification.[235] The approach to strengthening food production includes modern farming techniques, sustainable aquaculture practices, and improved farming infrastructure to increase capacity and quality. Supporting small and medium enterprises also helps support more robust local supply networks, enabling producers to participate meaningfully in the national food ecosystem. Additional improvements that have been suggested include a more comprehensive national food security network and incentives to support research in irrigation and crop development.[236]

Brunei's disaster management framework includes provisions for emergency food assistance to ensure that affected populations have access to essential supplies during crises. The NDMC coordinates food assistance efforts. During emergencies, the NDMC works with local DDMCs to assess food needs and mobilize resources. Food assistance typically includes necessities such as rice, canned goods, and bottled water, which are distributed to affected households. Assistance is often provided in cash or in kind and is mostly coordinated by the Community Development Department under the Ministry of Culture, Youth and Sports and the District Offices.[237]



Photo 6: Produce at a Brunei Market

CONCLUSION

Brunei is not prone to large-scale disasters, but it does face frequent smaller-scale hazard events. The country frequently deals with heavy monsoon rains, coastal and riverine floods, landslides, and forest fires. While earthquake and tsunami disasters are not common, seismic activity has been recorded and quakes and tsunamis remain a risk. Climate change is likely to exacerbate the country's risk of flooding, as sea level rise and extreme weather events drive coastal erosion and higher storm surge. Due to these projections, Brunei has taken a whole-of-nation approach to disaster management.

The nation's contemporary disaster management structure was shaped by the Disaster Management Order of 2006, which mandated the establishment of the NDC and the NDMC. It also paved the way for the institutionalization of national disaster management and disaster risk reduction initiatives. At the strategic level, the NDC provides policy and strategic direction aligned with national goals on disaster management. At the operational level, the NDMC functions as the national focal agency and coordinates all disaster management phases through a whole-of-nation approach with close cooperation across government agencies, overseeing it all from risk assessment and adaptation to mitigation and recovery.

The tiered disaster management system spans the district level, national level, and, as required, the international level, the latter mostly through the AHA Centre. The national disaster management system utilizes the NaSOP and integrates the incident command system to guide agencies in coordinated disaster response, including risk communication among relevant agencies as well as to the public. To increase community resilience, the NDMC also employs CBDRM and SBDRM.

Along with police and fire and rescue personnel, Brunei's military also supports civilian-led domestic disaster response, particularly following more widespread disasters that exceed the capacity of civilian agencies or affect multiple districts. As seen in 2025 flooding response, RBAF assisted with transporting affected residents, moving supplies, clearing debris, and other tasks, often deploying their civil-military cooperation platoons to provide assistance on the ground following larger disasters.

Brunei participates multilaterally in regional cooperation on disaster management, largely through ASEAN, of which it is an active and contributing member. The country is actively engaged in ASEAN Committee on Disaster Management work, and it chaired the Committee in 2024. The RBAF is actively engaged with ASEAN's AMRG on HADR, which is a significant way that Brunei collaborates in ASEAN military coordination efforts.

Brunei has also contributed to at least six international responses via ASEAN, including to the Philippines following Typhoon Haiyan in 2013, to Indonesia in the wake of the Central Sulawesi Earthquake and Tsunami in 2018, and to Myanmar in 2023 after it was devastated by Tropical Cyclone Mocha.

Brunei has an admirably high level of disaster management capability, which is bolstered by oil resources and economic development, and contributes to its disaster management approach that extends beyond responses to also include attention to risk reduction measures. Brunei is also staying focused on challenges ahead, particularly with coastal vulnerabilities that are projected to increase in the future.

APPENDICES

Risk Indices

Risk calculation takes into account exposure to hazards, vulnerability, and coping capacity. Figure 10 shows an overview of the hazard, vulnerability, and capacity dimensions of disaster risk. Addressing all of 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:

$$\textit{Disaster Risk} = (\textit{Hazard} \times \textit{Vulnerability}) / \textit{Capacity}$$[238]

Taken from the 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.[239]

In general, the goal of indexing risk is to inform decision makers and 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.[240]

The **INFORM Risk Index** is an open-source assessment that supports prevention, preparedness, and response decisions. It measures the risk of humanitarian crises and disasters in 191 countries. The INFORM model



Figure 10: Disaster Risk Components

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.[241] 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.[242] The higher the score the more at-risk a country is. Figure 11 shows the INFORM Risk country profile dashboard for Brunei for 2025.[243]

Brunei had an overall risk score of 2.3/10 in the mid-2025 INFORM Risk Index. INFORM categorizes this in the "Low" risk class, and the score lands Brunei as the 156th most at-risk country out of 191 countries in the Index.

The Hazards and Exposure dimension score takes into account a combination of both natural and anthropogenic hazards, and Brunei rated 1.6/10 or 168 of 191 countries. Physical exposure to Epidemic, at 5.6/10, was the greatest threat in the Hazards and Exposure dimension; it was followed by River Flood at 4.8/10, Coastal Flood at 3.3/10, and Drought at 2.6/10.

The Vulnerability dimension score was 2.9/10, or 130 of 191 countries. Uprooted people as a vulnerable group measured 6.3/10, the highest risk in the Vulnerability dimension.

The Lack of Coping Capacity dimension score was 2.6/10, or 154 of 191 countries. Governance rated 3.1/10 to be the most significant risk in the Lack of Coping Capacity dimension.

U.S. Government Disaster Management Engagement

To build preparedness rather than simply react to large-scale events, U.S. government stakeholders participate in regular engagements for training, information sharing, and capacity strengthening. Among the key stakeholders in Brunei are U.S. Indo-Pacific Command (USINDOPACOM) and its subordinate commands and units.[244]

When a disaster overwhelms the response capacity of an affected country and its international humanitarian partners, the U.S. Government may respond to a request for international assistance. The Chief of Mission (COM) of the U.S. diplomatic mission for the country can issue a Declaration of Humanitarian Need (DHN) that triggers assistance (funding, technical support, or relief items) via the U.S. State Department's internal agency processes. The State Department may provide support by deploying Regional Disaster Advisors, deploying a Disaster Assistance Response Team, standing up a Response Management Team, or delivering food or non-food relief items. Additional support may be in the form of Urban Search and Rescue teams or experts to help manage a chemical, biological, radiological, nuclear, or explosive incident. If civilian capacity is insufficient to meet lifesaving need, the State Department may request U.S. Department of War (DoW) support for unique military capabilities for a set period via an intra-U.S. Government process.[245]

U.S. Country Team

The U.S. and Brunei work closely together on a bilateral and regional agenda. The two countries established diplomatic relations in 1984 when Brunei became fully

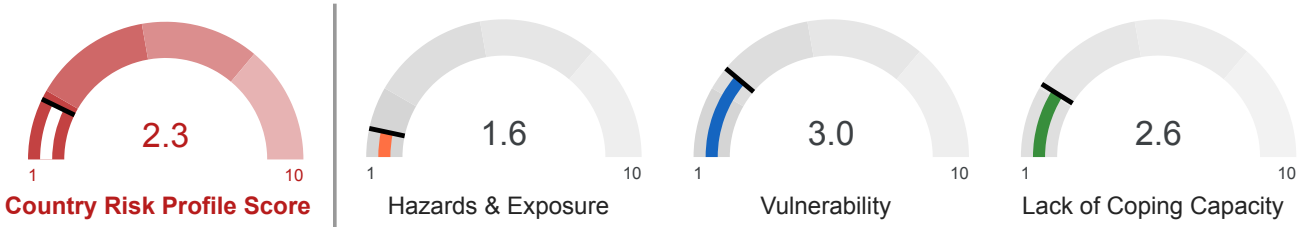


Figure 11: INFORM Risk Country Profile, Brunei (2025)

independent from the United Kingdom. In 1994, a memorandum of understanding on defense cooperation was signed, leading to joint exercises, training, and other security cooperation activities.

In 2011, Brunei and the U.S. held their inaugural Senior Officials Dialogue; it created a new forum for high-level coordination and communication.[246] The contemporary bilateral relationship was bolstered by productive engagement in 2013, when Brunei provided solid leadership as the ASEAN Chair, and cooperation continued during Brunei's 2021 ASEAN Chairmanship. Brunei's armed forces engage in joint exercises, training programs, and other military cooperation with the U.S., with the annual Cooperation Afloat Readiness and Training (CARAT) exercise at the core of the bilateral defense relationship. Bruneian military personnel have attended U.S. military academies, and U.S. military students have attended the Brunei Command and Staff Course.

The U.S. Embassy in Brunei maintains a robust network of more than 500 Bruneian alumni of U.S. government exchange programs and has worked with Bruneian civil society to promote greater mutual understanding and deeper people-to-people ties.[247] The bilateral relationship is bolstered by cultural and academic exchanges, economic cooperation, and shared interests and engagements regarding health, environment, defense, and security.[248]

The U.S. Country Team, led by the COM, coordinates diplomatic engagement, consular services, public diplomacy, and interagency programs. Defense and security cooperation is managed primarily by the U.S. DoW and USINDOPACOM.

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Large-Scale Responses

Brunei is exposed to various natural hazards, but it is not prone to large-scale disasters and has seldom needed foreign disaster assistance from the U.S. or other countries. There are no cases of U.S. government disaster assistance to the country in recent decades.

DoW Disaster Management Engagements

The following list briefly describes the disaster management-focused engagements that the U.S. DoW has had with Brunei in the last five years.

Exercise Pahlawan Warrior – 2022, 2024

Exercise Pahlawan Warrior is a bilateral army-to-army exercise between RBLF and U.S. Army Pacific (USARPAC) to improve readiness and interoperability. It has been conducted three times – 2018, 2022, and 2024. Pahlawan Warrior is one of many exercises conducted as part of USARPAC's Operation Pathways, formerly known as Pacific Pathways, which expands USARPAC engagement in the region by linking multiple military exercises together.

20-29 June 2024: USARPAC and RBLF conducted Pahlawan Warrior 24 in Tutong, Brunei. The U.S. Army 3rd Squadron, 4th Cavalry Regiment, 3rd Infantry Brigade Combat Team, 25th Infantry Division (25th ID) and the RBLF's 2nd Battalion participated in the exercise, which consisted of subject matter expert exchanges (SMEE), a 3-day jungle-based field training exercise, live-fire exercise, and a cultural day. Approximately 110 U.S. servicemembers, including soldiers from the Oklahoma National Guard's 700th Support Battalion and 45th Infantry Brigade Combat Team and from the Washington National Guard, participated. The training prepared participants to better respond to natural disasters or other potential crises in the region.[249]

13-23 June 2022: The U.S. and Brunei armies conducted Pahlawan Warrior 22, which opened and closed at Lumut Camp, Brunei.[250] U.S. soldiers attached to the 3rd Cavalry, 4th Squadron, 3rd Infantry Brigade Combat Team,

25th ID, and soldiers from the RBLF went through training on improving jungle skills, military operations in urban spaces, and live firing. A total of 33 U.S. active and National Guard soldiers teamed up with RBLF soldiers in three locations across Brunei.[251]

CARAT Brunei – 2021-2025

The annual CARAT exercise is at the core of the U.S.-Brunei bilateral defense relationship.[252] CARAT is an annual series of bilateral military exercises between the U.S. Pacific Fleet and various South and Southeast Asian nations to enhance regional cooperation, build friendships between nations, and strengthen professional skills. CARAT Brunei began in 1995, and 2025 marking the 30th iteration. A common theme across the CARAT exercise series is the development of cooperative maritime security capabilities in support of peace and stability in maritime regions throughout South and Southeast Asia.

23-30 October 2025: RBAF and the U.S. Navy conducted CARAT Brunei 2025, which included five days of shore-based engagements in Bandar Seri Begawan and two days of sea-phase exercises in the South China Sea. SMEEs covered communications, medical, legal, explosive ordnance disposal, music, diving and salvage, and visit, board, search and seizure operations.[253] Photo 7 shows U.S. Navy and RBAF entering RBAF controlled waters during CARAT Brunei 2025.[254]

18-25 November 2024: The U.S. Navy, U.S. Marine Corps, and RBAF conducted CARAT Brunei 2024. Participants focused on a wide range of training ashore and at sea, including maritime domain awareness, anti-surface warfare, maritime interdiction operations, helicopter interoperability, underwater demolition, and force protection. SMEEs covered cyber security, emission control, force protection, international maritime law, maritime domain awareness, public affairs for HADR, and women, peace and security.[255] Participating U.S. assets include staff from U.S. 7th Fleet, Commander, Task Force (CTF) 72, CTF 73, CTF 74, CTF 75, and CTF 76, Destroyer Squadron (DESRON) 7, Marine Rotational Force – Southeast Asia (MRF-SEA), Naval Special Warfare, the U.S. 7th Fleet Band, and the U.S. Embassy Brunei.[256]

12-19 September 2023: RBAF and the U.S. Navy conducted CARAT Brunei 2023. The exercise included various ashore and at-sea lectures, discussions, and hands-on training, including HADR scenarios, underwater medical tactics, and maritime security operations. The exercise also covered aviation training involving maritime patrol reconnaissance aircraft, which provide the ability to patrol and monitor the exclusive economic zone and assist in search and rescue missions. U.S. Coast Guard national security cutter USCGC Munro (WMSL 755) took part while on rotational deployment to the U.S. 7th Fleet area of operations. Other participating U.S. assets included staff from U.S. 7th Fleet, CTF 76/3, DESRON 7, U.S. Coast Guard Pacific Area, Patrol and Reconnaissance Squadron SIXTEEN (VP-16), and the U.S. Embassy Brunei.[257]

24-31 October 2022: The U.S. and RBN conducted CARAT Brunei 2022. The exercise included an Aviation Sea Phase and an Aviation Ground Phase on Rimba Air Base. Participants mission planned and trained together, shared information and tactics about scenarios, and



Photo 7: U.S. Navy and RBAF during CARAT Brunei 2025

engaged in a final tracking exercise.[258] Seach and rescue operations were covered in both academic and exercise portions.[259] Assets and participants included Independence-variant littoral combat ship USS Charleston (LCS 18) with embarked MH-60S Seahawk, a P-8A maritime patrol and reconnaissance aircraft, Spearhead-class expeditionary fast transport USNS Brunswick (T-EPF 6), Explosive Ordnance Disposal Mobile Unit 5, embarked 11th Marine Expeditionary Unit, Marine Expeditionary Force, DESRON 7, CTF 72, CTF 73, CTF 75, U.S. 7th Fleet, and CTF 71 as the lead planner for CARAT Brunei.[260]

15-19 November 2021: RBAF and the U.S. military conducted CARAT Brunei 2021 virtually for the second year in a row due to the COVID-19 pandemic.[261] The exercise focused on the full spectrum of naval capabilities and featured cooperative evolutions highlighting the ability of Brunei and the U.S. to work together. Virtual SMEEs included vessel interdiction and boarding training, riverine security training, replenishment-at-sea, maritime domain awareness, unmanned aerial vehicles, and anti-terrorism force protection. Personnel from the European Union's Critical Maritime Routes Indo-Pacific (EU-CRIMARIO) initiative provided expertise and facilitation. U.S. assets participating in the exercise included staff from U.S. 7th Fleet, CTF 72, CTF 73, CTF 76, DESRON 7, Special Operations Command Pacific, U.S. Coast Guard Pacific Area, and U.S. Embassy Brunei.[262]

SEACAT — 2021-2025

Southeast Asia Cooperation and Training (SEACAT) is a multilateral, annual exercise designed to strengthen cooperation among Southeast Asian countries and provide mutual support toward a common goal of addressing crises, contingencies, and illegal activities in the maritime domain with standardized tactics, techniques, and procedures. Exercise SEACAT was first established in 2002. Brunei is frequently one of the participating nations with the U.S. Photo 8 shows RBN personnel training to use web-based maritime situational awareness platforms.[263]

6-19 September 2025: The 24th iteration of SEACAT, SEACAT 2025, included not only the U.S. and Brunei but also Bangladesh, Indonesia, Malaysia, Maldives, Philippines, Sri Lanka, Thailand, Timor-Leste, and Singapore. Some 13 RBAF personnel represented Brunei.[264] During the sea phase, participant nations tracked and intercepted a simulated vessel sailing through Southeast Asian waters, enhancing their collective capacity to detect, deter, and counter illicit maritime activity in accordance with international law. Representatives from international organizations, NGOs, and academia also participated in an operation center seminar. This exercise saw the return of SeaVision, a visualization and management tool to correlate multiple data sources. The exercise focused on illicit maritime activities such as smuggling, illegal fishing, and piracy, which are shared concerns among the participating nations.[265]

10-23 August 2024: SEACAT 2024 was conducted among 21 Indo-Pacific partner nations, including the U.S. and Brunei, as well as Australia, Bangladesh, Canada, Fiji, France, Germany, Indonesia, Japan, Malaysia, Maldives,



Photo 8: Royal Brunei Navy Participates in SEACAT 2025

New Zealand, Palau, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand, the United Kingdom, and Vietnam. In-person and at-sea engagements addressed planning, operations, and intelligence, surveillance and reconnaissance. The sea phase included Visit, Board, Search, and Seizure exercises performed by multiple nations aboard a contracted vessel used as a live training venue in a real-world at-sea environment. An information sharing exercise ran concurrently. U.S. Navy participants included staff from COMLOG WESTPAC and personnel from the U.S. 7th Fleet and U.S. Pacific Fleet staffs.[266]

14-25 August 2023: The U.S. and Brunei were among 21 Indo-Pacific partner nations that participated in SEACAT 2023 in Singapore. The exercise included a 3-day maritime security seminar, workshops, and a week-long sea phase that addressed crisis coordination and information sharing.[267] Other participating nations included Australia, Bangladesh, Canada, France, Germany, India, Indonesia, Japan, Malaysia, Maldives, New Zealand, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand, the United Kingdom, and Vietnam. U.S. Navy participants included staff of DESRON 7, a P-8A Poseidon aircraft assigned to Task Force 72, and personnel from Task Force 76/3, Military Sealift Command Far East, U.S. 7th Fleet, and U.S. Pacific Fleet.[268]

17-26 August 2022: SEACAT 2022 was conducted among 21 Indo-Pacific partner nations, including the U.S. and Brunei. This iteration returned to a full-scale, in-person exercise after two years featuring virtual engagements during the COVID-19 pandemic. The exercise included a maritime domain awareness seminar and unmanned vehicle workshop ashore, and a sea phase with boarding operations. Concurrent with the sea phase, a command post exercise at Singapore's Information Fusion Center served as a centralized hub for information sharing. Other participating nations included Australia, Bangladesh, Canada, Fiji, France, Germany, Indonesia, Japan, Malaysia, Maldives, New Zealand, Peru, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand, the United Kingdom, and Vietnam. U.S. Navy participants included staff from DESRON 7, P-8A Poseidon aircraft assigned to Task Force 72, and personnel from Task Force 76, U.S. 7th Fleet, and U.S. Pacific Fleet.[269]

10-20 August 2021: SEACAT 2021 was conducted among 21 partner nations, including the U.S. and Brunei.[270] It involved a command post exercise at Singapore's Changi Naval Base that served as a centralized hub for information sharing in the tracking of simulated vessels of interest. Scenarios were designed to encourage countries to share information to enhance understanding of the operational environment, build capacity for humanitarian support missions, and uphold international laws and norms. Other participating nations included Australia, Bangladesh, Canada, France, Germany, India, Indonesia, Japan, Malaysia, Maldives, New Zealand, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand, Timor-Leste, the United Kingdom, and Vietnam. The exercise included 10 ships and more than 400 personnel. U.S. Navy participants included USS Tulsa (LCS 16), staff of DESRON 7, P-8A Poseidon aircraft assigned to Task Force 72, and personnel from Task Forces 73, 76, U.S. 7th Fleet, U.S. Pacific Fleet, Defense Threat Reduction Agency, and the Joint Inter-Agency Task Force-West. Other organizations included the UN Office of Drugs and Crime (UNODC), EU-CRIMARIO, and Global Fishing Watch.[271]

Additional Resources

This appendix provides additional references, with links, to enable readers to find relevant and contextual information.

International and U.S. Government Sources
U.S. Embassy in Brunei Darussalam https://bn.usembassy.gov/
Travelers' Health U.S. Centers for Disease Control and Prevention https://wwwnc.cdc.gov/travel/destinations/traveler/none/malaysia?s_cid=ncezid-dgmq-travel-single-001
Sendai Framework for Disaster Risk Reduction 2015-2030 United Nations Office for Disaster Risk Reduction https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030 *Outlines targets and priorities for action to prevent new and reduce existing disaster risk.*
European Commission Disaster Risk Management Knowledge Centre INFORM Risk Index https://drmkc.jrc.ec.europa.eu/inform-index
USINDOPACOM Foreign Disaster Response in the Indo-Asia-Pacific April 1991 – January 2024 CFE-DM, U.S. Indo-Pacific Command https://www.cfe-dmha.org/Publications/New-Releases *Contemporary historical synopsis of foreign disasters that U.S. armed forces responded to in the Indo-Pacific*

National Disaster Risk Reduction/Management
Brunei Darussalam National Disaster Management Center NDMC, Pusat Pengurusan Bencana Kebangsaan http://www.ndmc.gov.bn
Brunei Darussalam Meteorological Department (BDMD) http://met.gov.bn
The Midterm Review of the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030: National Voluntary Report - Brunei Darussalam, 2023 https://www.preventionweb.net/publication/brunei-darussalam-voluntary-national-report-mtr-sf

U.S. DoW Training
Humanitarian Assistance Response Training – Disasters (HART-D) Course. CFE-DM, U.S. Indo-Pacific Command https://www.cfe-dmha.org/hart-d *Target Audience: O3-O6, E6-E9, and U.S. DOW civilians who may plan for or execute a Foreign Disaster Response mission or participate in disaster response activities in exercises or security cooperation engagements.*

Regional Resources
AHA Centre Association of Southeast Asian Nations (ASEAN) Center Coordinating Centre for Humanitarian Assistance on disaster management https://ahacentre.org/ *Inter-governmental office to facilitate cooperation and coordination among ASEAN member states and with the UN and international organizations for disaster management and emergency response within the ASEAN region.*
Standard Operating Procedure for Regional Standby Arrangements and Coordination of Joint Disaster Relief and Emergency Response Operations (SASOP), Version 3.0 Association of Southeast Asian Nations (ASEAN) https://ahacentre.org/publication/sasop-v3/ *SOP for ASEAN (of which Thailand is a member-state) disaster standby arrangements and joint ASEAN disaster relief procedures.*
ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Association of Southeast Asian Nations (ASEAN) https://agreement.asean.org/media/download/20220330063139.pdf *First regional legally binding agreement on disaster management, which paved the way for ASEAN SASOP, AHA Centre, and ASEAN-ERAT response teams.*
Asia-Pacific Regional Guidelines for the Use of Foreign Military Assets in Natural Disaster Response Operations ("APC-MADRO Guidelines") The Asia-Pacific Conferences on Military Assistance to Disaster Relief Operations (APC-MADRO) & OCHA https://www.unocha.org/publications/report/world/asia-pacific-regional-guidelines-use-foreign-military-assets-natural-disaster-response *Reference guide for states planning and executing foreign military support for regional disaster response.*
Multinational Force Standing Operating Procedures (MNF SOP) – Annex C: Humanitarian Assistance/ Disaster Relief Multinational Planning Augmentation Team (MPAT), U.S. Indo-Pacific Command https://www.pacom.mil/Portals/55/Documents/J7/MNF%20SOP%20Ver%203.4_14%20FEB%2025_vbf.pdf?ver=4LVTNxMJB8_1xpfxYdARrg%3d%3d (D1 C1/ PDF pg. 883) *Annex on international humanitarian assistance; part of broad standing procedures for regional multinational force operations other than war.*

Acronyms and Abbreviations

°C	degrees Celsius
°F	degrees Fahrenheit
AADMER	ASEAN Agreement on Disaster Management and Emergency Response
ACDM	ASEAN Committee on Disaster Management
ADMM	ASEAN Defense Ministers Meeting
ADRC	ASEAN Disaster Reduction Center
AHA Centre	ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management
AMRG on HADR	ASEAN Militaries Ready Group on Humanitarian Assistance and Disaster Relief
ARDEX	ASEAN Regional Disaster Emergency Response Simulation Exercises
ASEAN	Association of Southeast Asian Nations
ASEAN-ERAT	ASEAN Emergency Response and Assessment Team
BDMD	Brunei Darussalam Meteorological Department
BFRD	Brunei Fire and Rescue Department
BLNG	Brunei Shell's Liquefied Natural Gas
Bru-HIMS	Brunei Health Information and Management System
BSP	Brunei Shell Petroleum
CARAT	Cooperation Afloat Readiness and Training
CBDRM	Community-Based Disaster Risk Management
CES	Combat Engineers Squadron
CIMC	Civil-Military Cooperation
COM	Chief of Mission
CRED	Centre for Research on Epidemiology of Disasters
CTF	Commander, Task Force
DCC	Disaster Command Centre
DDMC	District Disaster Management Committees
DEOC	District Emergency Operations Centre
DESRON	Destroyer Squadron
DMSPF	Disaster Management Strategic Policy Framework
DMWG	Disaster Management Working Group
DoW	U.S. Department of War (also known as Department of Defense)
DPC	Disaster Preparedness Coordinator
DRR	disaster risk reduction
DST	Datastream Digital Sdn Bhd
EEZ	exclusive economic zone
EM-DAT	international disaster database
EU-CRIMARIO	European Union's Critical Maritime Routes Indo-Pacific
EWS	early warning systems
FTX	field training exercise
GATT	General Agreement on Tariffs and Trade
GDP	gross domestic product
GWh	Gigawatt-hours
ha	hectares

HADR	Humanitarian Assistance and Disaster Relief
ICT	information and communications technology
IDR	U.S. Department of State's Office of International Disaster Response
IFRC	International Federation of Red Cross and Red Crescent Societies
in	inches
IOM	International Organization on Migration
JAPEM	Jabatan Pembangunan Masyarakat or Department of Community Development
km/km^2	kilometer(s) / square kilometers
LGBTI	Lesbian, Gay, Bisexual, Transgender, and Intersex
LNG	Liquefied Natural Gas
LO	Liaison Officers
Mbps	Mega bits per second
MCO	UN's Multi-Country Office
MCYS	Ministry of Culture, Youth and Sports
MDA	maritime domain awareness
MEF	Marine Expeditionary Force
MIB	Melayu Islam Beraja or Malay Islamic Monarchy
MKM	Majlis Kesejahteraan Masyarakat or Council on Social Welfare
MM	Military Medicine
MNCC	Multi-National Coordination Centre
MoHA	Ministry of Home Affairs
MPABD	Maritime and Port Authority of Brunei Darussalam
MPRA	maritime patrol reconnaissance aircraft
MWh	Megawatt-hours
NADMA	Malaysia's National Disaster Management Agency
NaSOP	National Standard Operating Procedures
NCD	Noncommunicable Diseases
NDC	National Disaster Council
NDMC	National Disaster Management Centre
NGO	non-governmental organizations
nm	nautical mile
OAOR	One ASEAN One Response
PDC	Pacific Disaster Center
PPP	purchasing power parity
PRB	Parti Rakyat Brunei or Brunei People's Party
PWD	Public Works Department
RAS	replenishment-at-sea
RBAF	Royal Brunei Armed Forces
RBAirF	Royal Brunei Air Force
RBLF	Royal Brunei Land Forces
RBN	Royal Brunei Navy
RBPF	Royal Brunei Police Force
RPN	Skim Perumahan Negara or National Housing Scheme

SAR	search and rescue
SBDRM	School-Based Disaster Risk Management
SDG	Sustainable Development Goals
SEACAT	Southeast Asia Cooperation and Training
SFDRR	Sendai Framework for Disaster Risk Reduction 2015-2030
SMEE	subject matter expert exchanges
SNAP	Strategic National Action Plan
SPC	Sharia Penal Code
TEU	twenty-foot equivalents
UAV	unmanned aerial vehicles
UNDP	UN Development Programme
UNFPA	UN Population Fund
UNHCR	UN Office of the High Commissioner on Refugees
UNICEF	UN Children's Fund
UNN	Unified National Networks Sdn Bhd
UNOCHA	UN Office for the Coordination of Humanitarian Affairs
UNODC	United Nations Office of Drugs and Crime
USAID	U.S. Agency for International Development
USARPAC	U.S. Army Pacific
USINDOPACOM	U.S. Indo-Pacific Command
VBSS	Visit, Board, Search, and Seizure
WFP	World Food Programme
WHO	World Health Organization
WSH	Workplace Safety and Health

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