

# BRUNEI DARUSSALAM



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## 1. NATIONAL PROFILE

### 1.1 General<sup>1,2,3</sup>

The small country of Brunei Darussalam, officially the Nation of Brunei, the Abode of Peace, is situated at 4° 30' N, 114° 40' E on the northwestern edge of the island of Borneo, an island which is also a part of Indonesia and Malaysia. Apart from its coastline with the South China Sea, it is completely surrounded by the state of Sarawak, Malaysia; and it is separated into two parts by the Sarawak district of Limbang. It is the only sovereign state completely on the island of Borneo



During the 19th century the Bruneian Empire began to decline. In 1888, Brunei became a British protectorate; independence was achieved in 1984. The following decades saw significant economic growth, and Brunei has been remodeled into an industrialized nation. The country benefits from its extensive petroleum and natural gas fields and this tax-free haven's citizens enjoy one of the highest (per capita) GDPs in the world. Politically, the same family has ruled the country of Brunei for over six centuries, and its legal system is based on English common law, with Islamic shariah law overruling in certain instances.

## 1.2 Physiography<sup>1</sup>

**Total Area:** 5,765 sq km

**Land:** 5,265 sq km

**Water:** 500 sq km

**Land boundaries:** total 381 km

**Border countries:** Malaysia 381 km

**Coastline:** 161 km

## 1.3 Climate<sup>4</sup>

The climate of Brunei is tropical equatorial. The average annual temperature is 26.1 °C (79.0 °F), with the April–May average of 24.7 °C (76.5 °F) and the October–December average of 23.8 °C (74.8 °F).

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Mean maximum (°C)	25.8	24.8	27.2	27.1	27.5	27.1	28.4	28.3	28.0	26.5	24.4	24.0	<b>28.3</b>
Mean minimum (°C)	22.1	22.0	22.5	23.9	23.9	24.7	24.1	24.3	25.3	23.1	22.2	23.6	<b>26.2</b>
Average rainfall (mm)	278	138	113	200	239	214	229	216	258	320	329	343	<b>2877</b>

## 1.4 Socio-economic Profile<sup>1,5,9</sup>

Brunei has a small well-to-do economy that depends on revenue from natural resource extraction but encompasses a mixture of foreign and domestic entrepreneurship, government regulation, welfare measures, and village tradition. Crude oil and natural gas production account for 60% of GDP and more than 90% of exports. Per capita GDP is among the highest in Asia, and substantial income from overseas investment supplements income from domestic production. For Bruneian citizens the government provides for all medical services and free education up to the university level. The government of Brunei has been emphasizing through policy and resource investments its strong desire to diversify its economy both within the oil and gas sector and to new sectors.

<b>Socio-economic indicators</b>		
GDP: Gross domestic product (million current US\$)	2011	16360
GDP per capita (current US\$)	2011	40301.0
GNI: Gross national income per capita (current US\$)	2011	40496.0
Population (million)	2014	0.42
Urban (% of population)	2014	76.72
Sex ratio (males per 100 females)	2012	101.9
Life expectancy at birth (females/males, years)	2010-2015	84.3/79.9
Adult literacy rate (% ages 15 and older)	2014	95.4
Expenditure on education (% of GDP)	2014	3.27

## 1.5 Administrative Setup<sup>3</sup>

Brunei is divided into four districts (*daerahs*) and 38 sub districts (*mukims*). The daerah of Temburong is physically separated from the rest of Brunei by the Malaysian state of Sarawak.

No.	District	Capital	Population (2011 census)	Area (km <sup>2</sup> )
1.	Belait	Kuala Belait	60,744	2,724
2.	Brunei-Muara	Bandar Seri Begawan	279,924	571
3.	Temburong	Pekan Bangar	8,852	1,304

4.	Tutong	Pekan Tutong	43,852	1,166
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## **2. DISASTER RISK PROFILE<sup>6</sup>**

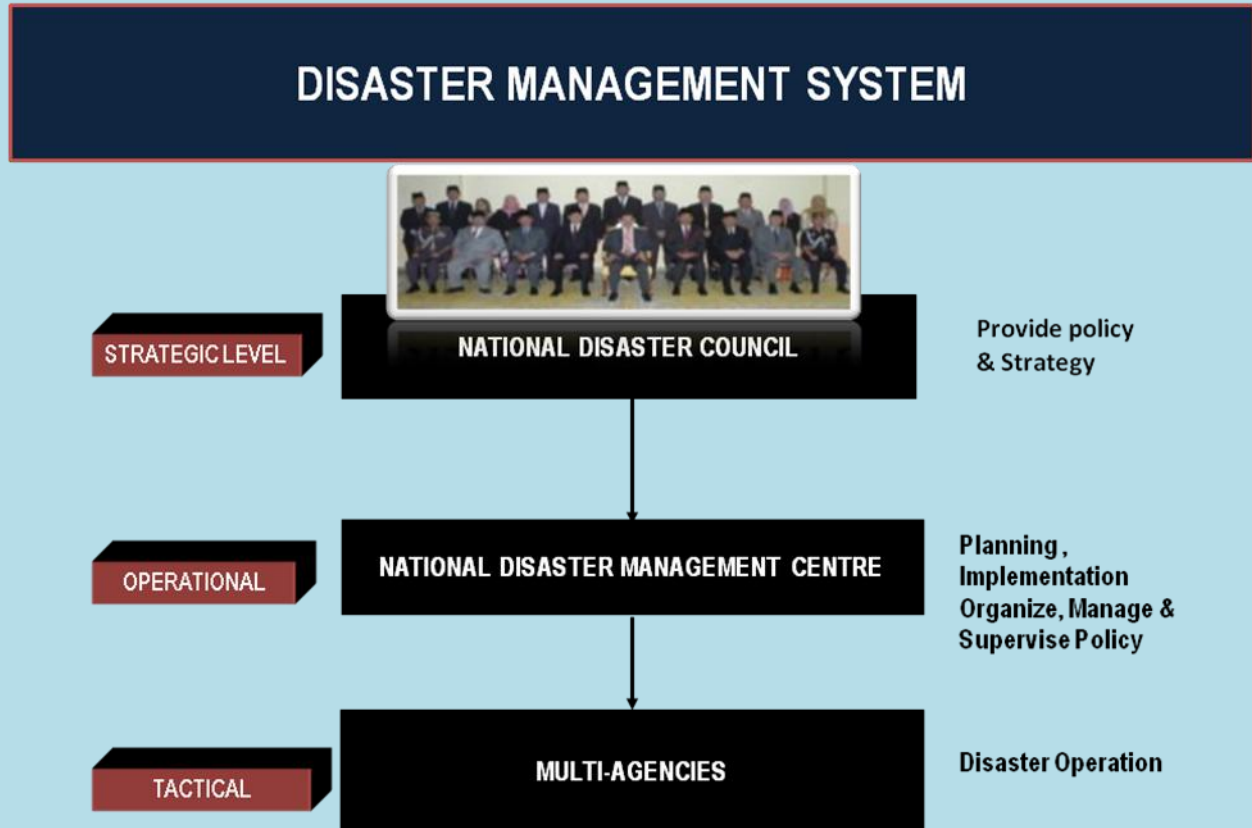
The State of Brunei Darussalam is located in maritime Southeast Asia on the island of Borneo bordering Malaysia. Brunei consists of mainly lowland and mountainous rainforests. 97% of the populations live in the lowland western region. The climate can be described as tropical. As it is located facing the South China Sea, is prone to various disasters. Though Brunei Darussalam is free from major natural disasters such as earthquake, volcanic eruptions and typhoons, it experiences thunderstorms, monsoon flood, mamade disaster, landslides and forest fires/hazes. Floods and landslides are the most prevalent hazards. Brunei's flood-prone or hilly areas are at risk of landslides.

### **Major Disasters witnessed by Brunei Darussalam (since 1960)**

1. 1962 – Major Flood
2. 1980s - Fires in Water Village
3. 1987 - Rasau Gas blow-out in Belait District
4. 1991 - Poor Air quality resulting from Mount Pinatubo eruption in the Philippines
5. 1998 – Regional haze
6. 1999 - Flash Flood during La Nina
7. 2008 – Temburong Flash Flood
8. 2009 – Extensive Flash Flood in Brunei Muara / Tutong and Belait District
9. 2010 – Influenza A (H1N1)

### 3. INSTITUTIONAL SETUP<sup>7</sup>

The disaster management system of Brunei Darussalam is described as under:



Source: presentation of Director, NDMC, Brunei Darussalam (June 2010)

#### 3.1 National Disaster Management Center

The government of Brunei Darussalam established the National Disaster Management Centre (NDMC) under the Disaster Management Order (DMO) in August 2006. The role of NDMC is to ensure safety and wellbeing of the people by encompassing all aspects of disaster management i.e. prevention, mitigation, preparedness, response and recovery through policies, strategies and practices implemented guided by the international, regional and national drivers.

The NDMC has developed strategies to enhance the mechanism for response and preparedness with the main objective of building disaster-resilient communities. NDMC has enhanced the efficiency and effectiveness in disaster response and recovery mechanism in the country.

NDMC has taken two pronged approach to enhance capacity building in disaster response:

- (i) formulation of Strategic National Action Plan (SNAP) for Disaster Risk Reduction; and
- (ii) formulation of National Standard Operating Procedures (NaSOP) for response.



Source: presentation of Director, NDMC, Brunei Darussalam (june 2010)

# Brunei Disaster Management Priorities

<b>1</b>	<b>Enhance Disaster Risk Reduction Mechanisms</b>
	Ensure that Disaster Risk Reduction (DRR) measures are implemented in accordance with Hyogo Framework for Actions (HFA).
<b>2</b>	<b>Build Multi-Sectoral Disaster Management Capacity</b>
	Obtain a capacity in managing all different type of disaster through a strong cooperation and coordination among different stakeholders.
<b>3</b>	<b>Increase Community Awareness and Preparedness</b>
	Promote an understanding of DRR concept at the community level and build up the community disaster preparedness.
<b>4</b>	<b>Upgrade NDMC Staff Competence Level</b>
	Develop officer and staff competence level for effective implementation of National Disaster Management Plan (NDMP), and ASEAN Agreement of Disaster Management and Emergency Response (AADMER)

SNAP is a comprehensive and cohesive plan of action aimed at building the capacity of both government and non-government institutions in promoting disaster risk reduction.

The NaSOP outlines the agreed procedures that must be followed by all agencies involved in a disaster operation. Through NaSOP's concerted and coordinated approach, it is hoped that responses to disasters in Brunei Darussalam will be more effective. For the NaSOP to be constantly updated and streamlined into responder agencies' standard operating procedures, NDMC is periodically reviewing its content through testing such as table-top and simulation exercises.

## 3.2 The Improvement of the national disaster management system

Prior to the establishment of NDMC, national response to disasters was on an ad-hoc basis where committees were formed to manage various disasters may it be weather related or man induced. In the last decade, the need for a more institutionalized approach to managing disaster was becoming more apparent so



that all aspects of disaster management are taken into consideration such as through the following sectors:

### **i. Early Warning**

Currently, early warnings are undertaken by many relevant agencies such as the Meteorological Services of the Department of Civil Aviation, Ministry of Health, Department of Agriculture and Agrifood, Marine Department, Fisheries Department, Department of Environmental and Recreation and many more. These bodies or departments have put in place policies and strategic planning to improve the management of disasters through effective early warning systems.

The Meteorological Services for instance is currently upgrading its weather forecasting capabilities. It has recently installed an advanced and high resolution Weather Radar and forecast integrated system which will further enhance Brunei Darussalam's capacity in monitoring and issuing severe weather warnings well in advance. Furthermore, a Low-Level Windshear Alert System allow the department to detect wind shears and micro-bursts, localized columns of sinking air, which can be hazardous to low-lying aircraft taking off and landing at the Brunei International Airport. Other projects in the pipelines also include a system to detect air turbulences as high as 16 kilometer above ground known as the System for Wind Profiling Echo Registering. The department also planned to replace the climate database system, to update the effectiveness and capability in collecting or archiving weather and climate forecast data for higher quality and more reliable data, in accordance with the WMO's standards.

The (University Brunei Darussalam)UBD/IBM Centre is currently working an early warning system for floods that will increase warning times from the one hour to 18 hours. By feeding LIDAR (Light Detecting and Ranging) data into their state-of-the-art IBM Blue Gene supercomputer, the Centre can come up with a model that predicts which areas will experience flash flooding.

## **ii. Structural Mitigation Projects**

In 2011, the Department of Drainage and Sewerage (DDS) of the Public Works Department revealed that work on a new building to maintain the national drainage and irrigation network as well as the sewerage network at a cost of \$3.9 million. The new building will also accommodate the National Hydrology Centre which aimed to maximize the value of hydrometric data within the country. It will be responsible for any matters pertaining to water as its work-scope covers the state of the nation's surface water resources to meet planning and development requirements. Apart from that, the Centre will also provide better record on flooding statistics to aid government response in the future through flood forecasting and real time flood information via 34 radio-transmitting hydrological readers (telemetric units).

## **iii. Enhancing Response**

The Ministry of Defence has also linked with the subsidiary company of CAE – Presagis – who will supply state-of-the-art modeling and simulation software and services that would enable the Royal Brunei Armed Forces to assess Brunei Darussalam's capacity and capability as well as plan for the future in addressing various forms of threats. The technology will pave the way for the armed forces to create scenarios where relevant departments are able to identify gaps in techniques and address flaws not limited only to the area of defence. This new equipment has the flexibility and versatility to be used by other public-interest areas ranging from Brunei's natural disaster management to infrastructure development.

### **3.3 The Integration of Warning System at Regional Levels**

NDMC is Brunei Darussalam's National Focal Point for ASEAN Committee on Disaster Management (ACDM). One of the many significant achievements of the ACDM through the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) is the establishment and operationalization of ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA Centre). The AHA Centre, in general, is established for the purpose of facilitating co-operation and co-ordination among ASEAN member countries, and

with relevant United Nations and international organizations, in promoting regional collaboration in disaster management. Brunei Darussalam, through NDMC and other agencies, remains committed in upholding efforts to enhance the capacity of ASEAN in managing disasters. NDMC at present is working closely with AHA Centre in establishing an integrated information and communication technology (ICT) system to strengthen the operation of the AHA Centre. Connectivity between AHA Centre and all of the ASEAN National Disaster Management Organizations (NDMOs) can assure all necessary data and information to exchange seamlessly and timely during disaster and non-disaster situation.

## **4. INITIATIVES<sup>8</sup>**

### **4.1 Incident Command System (ICS)**

In order to strengthen its capabilities for disaster response management, Brunei Darussalam adopted the Incident Command System (ICS) which is a systematic tool for the command, control and coordination of emergency response in the United States. It standardizes coordination among different government agencies and ensures that the designated responders are adequately trained and capable in different types of emergencies and disaster response. The ICS is implemented in Brunei with the cooperation of the United States Forestry Department.

### **4.2 Community-Based Disaster Risk Management (CBDRM)**

While the ICS focuses on the reactive aspect of disaster management, Brunei Darussalam has also adopted a proactive stance in building its capacity for disaster resilience. Pursuant to this approach, the NDMC has taken a number of initiatives to increase public awareness and community resilience against disasters. It is also actively engaging the communities by conducting outreach programs and activities. Through interactive sessions, the communities are taught on hazards, risks, their vulnerabilities and their capacities to reduce the impact of disasters on the daily lives. The Community-Based Disaster Risk Management (CBDRM) programme was launched in 2010 aimed at creating disaster resilient communities in disaster prone areas by empowering them with knowledge on identifying

hazards, the risks associated with those hazards and how to reduce their vulnerability to the hazards. They are also taught the basic life-saving skills such as fire-fighting and basic first aid – so that they can help each other and be in control of any worse case scenario prior to the arrival of first responders.

NDMC has also launched a school based disaster risk management programme which is being implemented by the Department of Schools, Ministry of Education. Other outreach programs includes National Essay Writing Competition; Workshop on the role of media in disaster and non-disaster situation; Disaster Awareness Radio Quiz; Disaster Awareness Message on Television; and publication of articles concerning Disaster Management in Brunei Darussalam.

### **4.3 Regional and International Commitments to Disaster Response Management**

Brunei Darussalam is an active participant in regional and international initiatives on disaster response management. The NDMC is a focal point in the ASEAN Committee on Disaster Management (ACDM), which is composed of the heads of national agencies responsible for disaster management in ASEAN member countries.

The NDMC is also actively cooperating 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.

The NDMC is also an active participant in United Nations (UN) bodies such as the UN International Strategy for Disaster Reduction (UNISDR) and the UN Office for the Coordination of Humanitarian Affairs (UNOCHA). Through the UNISDR, the NDMC promotes disaster risk reduction in priority areas identified in the Hyogo Framework of Action (HFA). To show its support for the HFA, the NDMC ensures that the five (5) priority actions outlined in the HFA are realized. Brunei Darussalam has also participated in several meetings organized by the UNISDR on disaster risk management.

## References

<sup>1</sup> <https://www.cia.gov/library/publications/the-world-factbook/geos/bx.html>

<sup>2</sup> <http://www.worldatlas.com/webimage/countrys/asia/bn.htm>

<sup>3</sup> <http://en.wikipedia.org/wiki/Brunei>

<sup>4</sup> <http://www.hycalcc.org/index.php?m=content&c=index&a=show&catid=90&id=18>

<sup>5</sup> <http://data.un.org/CountryProfile.aspx?crName=Brunei%20Darussalam>

<sup>6</sup> <https://openknowledge.worldbank.org/bitstream/handle/10986/12628/714530v20ESW0W0AN0appendices0June12.pdf>

<sup>7</sup> <http://www.aipasecretariat.org/wp-content/uploads/2013/07/Brunei-Country-Report-Disaster-Management.pdf>

<sup>8</sup> [http://www.aipasecretariat.org/wp-content/uploads/2011/07/5.third\\_.caucus.report.pdf](http://www.aipasecretariat.org/wp-content/uploads/2011/07/5.third_.caucus.report.pdf)

<sup>9</sup> <http://hdr.undp.org/en/countries/profiles/BRN>