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Front Cover

View of the Chao Phraya River in Bangkok by Hillary M. Forden.

Disclaimer

This handbook has been prepared in good faith based on resources available at the time of publication. Information was gathered from the public domain, from local and government sources, as well as from subject matter experts. Where possible, a link to the original electronic source is provided in the endnote (reference) section at the end of the document. While making every attempt to ensure the information is relevant and accurate, the Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DM) does not guarantee or warrant the accuracy, reliability, completeness, or currency of the information in this publication. Each handbook is a working document and will be updated periodically as new and significant information becomes available. We hope that you find these handbooks informative, relevant, reliable, and useful in understanding disaster management and response. We welcome and appreciate your feedback to improve this document and help fill any gaps to enhance its future utility. For feedback, comments, or to request a printed copy please email cfe.dmha.fct@pacom.mil. Please visit our website to download copies of this publication and other products (https://www.cfe-dmha.org). All parts of this publication may be reproduced, stored in retrieval systems, and transmitted by any means without the written permission of the publisher.

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Letter from the Director

Thailand is an important U.S. ally in Southeast Asia and through the partnership our two countries cooperate to address a range of regional challenges including natural and man-made disasters. One of the key aspects of the bilateral partnership is steadily increasing military interoperability. For decades the U.S. and Thailand have held joint military exercises, including co-hosting Exercise Cobra Gold, the Indo-Pacific region's largest annual multinational military exercise. The 40th Exercise Cobra Gold was held in Thailand in August 2021; it featured virtual and in-person events with service members from seven participating nations as well as observers and participants from other nations. The 2021 iteration emphasized joint military training, civic action, humanitarian assistance, and disaster relief.

The focus on disaster relief comes at a time when climate change is intensifying Thailand's natural hazard risks ranging from severe storms and floods, to heatwaves and drought. Rising sea levels are expected to worsen the impact of storms and flooding and lead to permanent inundation in some areas of the country. Low-lying Bangkok City is forecasted to become one of the world’s worst affected capitals alongside Jakarta and Manila.

To address these challenges, the Royal Government of Thailand (RTG) is strengthening the country’s disaster management system built over the past forty years. The RTG has continued to strengthen the country’s legal framework, policies, and operational systems for disaster risk management and disaster response. A robust network of Non-Government Organizations, charities, academic institutions, business and private enterprises, and community and citizen-led networks further bolster the state’s disaster management system. This Thailand Disaster Management Reference Handbook offers an operational understanding of both the country’s disaster management capability and information on demographics, hazards, climate risks, organizational structure for disaster management, laws and policies, infrastructure, and other areas vital to a comprehensive disaster management knowledge base. It is hoped that individuals and organizations planning for or executing a disaster response operation in Thailand will benefit from this information to support the country’s responders and affected communities in their times of need.

Sincerely,

Joseph D. Martin, SES
Director
About the Center for Excellence in Disaster Management & Humanitarian Assistance

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

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

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

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EXECUTIVE SUMMARY

Thailand is exposed to flooding, landslides, drought, earthquakes, tsunamis, heat waves, forest fires, and epidemics. Thailand is also exposed to technological hazards such as chemical accidents. Flooding is the natural hazard with the most significant impact on human life, livelihoods, and the economy for the country. The occurrence of droughts has increased in recent years due to the effects of the El Niño-Southern Oscillation (ENSO) cycle, which brings drier-than-average rainfall conditions. Drought has adversely impacted the country’s agriculture sector, which employs around one third of the country’s workforce.

Thailand’s disaster management system has been built over the past four decades, with the enactment in 1979 of the Civil Threat Prevention Act as the country’s first comprehensive disaster management law. In 2002, the Royal Thai Government (RTG) established the Department of Disaster Prevention and Mitigation (DDPM) under the Ministry of Interior (MOI), as the lead agency for Disaster Risk Management (DRM) and disaster response. In 2004, the Indian Ocean Tsunami had a catastrophic impact on Thailand’s southern coastal communities. Following the disaster, the RTG further developed its disaster management system. In 2007, the RTG enacted the Disaster Prevention and Mitigation Act (DPM Act 2007) as the main statutory framework for DRM and disaster response. Additional regulations and a periodically updated National DRM Plan, which provides a blueprint for the country’s DRM and response planning, support the legislation. In addition to the government-led system, a vast network of Non-Government Organizations (NGO), charities, academic institutions, business and private enterprises, and community and citizen-led networks support the country’s disaster management capabilities.

Climate change is intensifying the natural hazards that Thailand faces, such as severe storms, flooding, and drought. Thailand’s agricultural sector stands to be impacted the most by climate-related hazards arising from changes in carbon dioxide availability, precipitation, temperature, and water scarcity. Experts estimate that loss of farmland value and output alone could exceed US$94 billion under a high-emissions scenario by 2050.

Sea level rise is another significant climate change risk for the country. Rising sea levels are expected to worsen the impact of storms and flooding and lead to permanent inundation in some areas of the country. Bangkok City, which stands only 1.5 meters (4.92 feet) above sea level, is expected to become one of the world’s worst affected cities alongside Jakarta and Manila.

The RTG recognizes climate change is a major challenge for the country, affecting livelihoods, economic growth, and the achievement of sustainable development. Since 2007 the RTG has incorporated climate change into its national economic and social development plans. Climate change is addressed at the highest level under the country’s National Strategy 2018-2037, an overarching framework for sustainable development. The RTG has also developed the Climate Change Management Master Plan 2015-2050, which sets out mitigation, adaptation, and capacity building targets. Moreover, at the 26th United Nations (UN) Climate Change Conference of the Parties (COP26) held in 2021, Thailand pledged to reduce greenhouse gas emissions by 20% by 2030, or by 40% with further financial and technological assistance.

Looking forward, key areas of priority for Thailand’s DRM include water sustainability to meet current demands, addressing the high levels of poverty among vulnerable groups to strengthen resiliency, broadening the engagement of communities and schools in Disaster Risk Reduction (DRR) and strengthening the role of local governments in connecting national development priorities to locally-led action and resilience building.
COUNTRY OVERVIEW

Thailand is located in mainland Southeast Asia and shares a border with Myanmar (also known as Burma) to the west, Laos to the northeast, and Cambodia to the southeast, as well as Malaysia in the south. Over the past four decades, Thailand has achieved remarkable economic and social progress, transitioning to an upper middle-income country in 2011. Since 2003, Thailand has been an international aid donor providing technical cooperation and training assistance. Thailand is a founding member of the Association of Southeast Asian Nations (ASEAN) and has been a U.S. treaty ally since 1954.

History

Thailand, known as Siam until 1939, is one of the only countries in Southeast Asia never colonized by a European power. Thailand was invaded by the Burmese Empire in the 1800s during the Burmese-Siamese wars and was occupied by Japan during World War II.

In 1954, Thailand became a U.S. treaty ally; it sent troops to Korea and later fought along the U.S. in Vietnam. In 2022, the Kingdom is in the sixth year of the reign of King Maha Vajiralongkorn (Rama X), who ascended to the throne in October 2016 following the end of the seven-decade reign of his father, Rama IX. Rama X is the tenth king of the Chakri Dynasty established in 1782, though the Thai monarchy has its roots much farther back in the Sukhothai Kingdom established in 1238. Thai kings ruled with absolute authority until the 1932 revolution during the reign of King Rama VII, which transformed Thailand into a constitutional monarchy.

Thailand has experienced 12 successful coups since the 1932 revolution. The most recent took place in May 2014 when the Royal Thai Army (RTA) under General Prayut Chan-o-cha seized power in the wake of the court-ordered removal of Prime Minister (PM) Yingluck Shinawatra just a few weeks earlier (Yingluck is the younger sister of former PM Thaksin Shinawatra, who was himself removed in a coup in 2006). General Prayut led as PM under the National Council for Peace and Order (NCPO) for the next five years until elections were held in March 2019. On 5 June 2019 Prayut was approved as PM by Thailand’s parliament.

Culture and Demographics

Thailand’s population is estimated to be 70 million people in 2021, with an average annual rate of increase of 0.3%. The last population census was completed in 2010 and counted 65,981,659 persons residing in Thailand including 32,355,032 males and 33,626,627 females. The sex ratio is 96 males per 100 females.

Thailand has experienced a substantial fertility decline since the 1960s largely due to the nationwide success of its voluntary family planning program. The contraceptive prevalence rate increased from just 14% in 1970 to 58% in 1981 and has remained around 80% since 2000. Due to the country’s low fertility rate, increasing life expectancy, and rising ageing population, Thailand will face growing labor shortages. The median age of the population is 39 years, with a male median age of 37.8 and a female median age of 40.1 years.

The working age population in 2021 is about 70.2% of the population, and people over 65 years make up 13.5% of the population. The proportion of the population under 15 years has shrunk dramatically and is 16.3% in 2021, while it is expected that the elderly population will continue to grow.

In 2019, Thailand’s Human Development Index (HDI) value was 0.77 (on a 10-point scale with 1 being lowest human development and 10 being highest human development). This score places the country in the high human development category – positioning it at 79 out of 189 countries assessed.
and 2019, Thailand’s HDI value increased from 0.577 to 0.777, as shown in Figure 1, reflecting a 34.7% rise. Between 1990 and 2019, Thailand’s life expectancy at birth increased by 6.9 years, mean years of schooling increased by 3.4 years, and expected years of schooling increased by 6.6 years. Thailand’s Gross National Income (GNI) per capita increased by about 153.4% between 1990 and 2019.

**Language**

The official language is Thai, which is spoken by 90.7% of the population. Other languages include Malay and Burmese. English is becoming a major secondary language.

**Religion**

The majority of the population identify as Buddhist (94.6%), followed by Muslim (4.3%) and Christian (1%). Other religions comprise less than 0.1% of the population. A negligible portion of the population follows no religion (less than 0.1%).

**Vulnerable Groups**

Thailand’s National Disaster Risk Management Plan 2015-2020 (National DRM Plan) defines a vulnerable group as a group of people who have limited capacity in coping with disasters and who require special attention and assistance. Such groups include but are not limited to children, the elderly, persons with disability, persons suffering from serious illness, persons in exile, refugees, aliens, etc. In the event of emergencies, persons with disabilities, patients with special healthcare needs, the elderly, children, and women will be prioritized for evacuations. A new plan, for the period 2021-2026 has been prepared but has not yet been approved by the Cabinet at the time of writing.

**Children**

In Thailand, children and families living in unstable situations due to discrimination, poverty, and lack of education and opportunity are more vulnerable to the impacts of both natural and human-made disasters. During floods, children are at risk of drowning deaths and water borne diseases. Drought and water stress can cause a fall in household incomes,
under nutrition, and stunting. The Coronavirus Disease 2019 (COVID-19) pandemic has pushed families without adequate safety nets, access to paid work, and access to infrastructure, into crisis, adversely impacting the wellbeing of children.\textsuperscript{36} Under Thailand's National DRM Plan, children are given priority in the event of a disaster-related evacuation and are required to be evacuated with their family as a group.\textsuperscript{37} NGOs, such as Save the Children, are working to help disaster-affected children and families in disaster preparedness and risk reduction efforts.\textsuperscript{38}

\textbf{Elderly}

Thailand has the third most rapidly ageing population in the world. In 2021, Thailand will transition to an “aged” society, with those over 60 years of age accounting for 20\% of the population.\textsuperscript{39} By 2040, Thailand’s population over 60 is expected to increase to 25\%, and by 2050 the figure will be 37\%.\textsuperscript{40} In a disaster, older adults are usually more severely injured, have prolonged hospital length of stay, lower physical quality of life and psychological well-being, are slower to recover, and have a higher death rate compared with the younger groups.\textsuperscript{41} In Thailand, the elderly have lower levels of disaster preparedness due to lack of awareness and comprehensive plans, and older people are also more likely to be living with a form of disability affecting their daily activities. Under Thailand’s National DRM Plan, the elderly are given priority in the event of a disaster-related evacuation.\textsuperscript{42}

\textbf{Persons with disability}

Around 3\% of Thailand’s population (a little over 2 million people) have a disability card. The top three conditions for disability are mobility disabilities (about 50\%), hearing impairments (around 18\%), and visual impairments (approximately 10\%). Other disabilities include physical impairments, psychological disorders, autism, and learning disabilities. Nearly 52\% of the disabled population of Thailand are over 60, around 42\% are 15–60 years of age, and almost 2\% are 14 years or younger. The intersection of having a disability with other vulnerability factors such as advanced age, ill-health, or poverty, can make people living with a disability particularly vulnerable to disasters.\textsuperscript{43} In 2007, Thailand enacted the Persons with Disabilities Empowerment Act, which provides individuals who encounter limitations through an impairment the right to receive legal or personal assistance, sign language interpreters, medical services, house modifications for better accessibility, and education free of charge. In addition, qualifying individuals may receive tax exemptions, cheaper public transportation fees, loans without interest for self-employment, and a monthly allowance of 800 baht (US$23.93).\textsuperscript{44} Under Thailand’s National DRM Plan, people with a disability are given priority in the event of a disaster-related evacuation.\textsuperscript{45}

\textbf{Poverty-affected populations}

The nexus between poverty and disaster means that those segments of the population living below the poverty line or who are highly vulnerable to poverty, are among the most adversely affected by hazards due to limited resources to prepare for, cope with, and recover from the impact of disasters. Recurrent exposure to disasters also affects the long-term stability of household economies, as can be seen in the increasing debt held among the Thai population.\textsuperscript{46} In 2020, 1.5 million people in the country were estimated to have fallen into poverty because of the COVID-19 pandemic. The World Bank defines the poverty line at a daily income of US$5.50 (165 baht) per person. Thailand’s poor totaled 3.7 million people in 2019, rising to an estimated 5.2 million people in 2020. However, this figure is expected to decline to 5 million in 2021, due to the government’s COVID-19-focused economic recovery efforts.\textsuperscript{47}

\textbf{Refugees, migrants, and aliens}

Persons who are in exile, refugees, and aliens are defined as members of a vulnerable group for the purpose of Thailand’s DRM Plan and, as such, require special attention and assistance. One particularly vulnerable group is conflict-affected people from Myanmar living in Thailand.
who have limited pathways to legal status and therefore face barriers to services as well as threats of abuse and exploitation. This population includes 99,800 refugees from Myanmar who are living in nine temporary shelters along the Thai-Myanmar border. In addition, this vulnerable population includes migrant workers, many of whom are conflict-affected people from Myanmar, and urban based refugees and asylum seekers mostly in Bangkok and the surrounding urban areas. A study aimed at understanding how a DRR and preparedness lens can inform human trafficking prevention used the context of the humanitarian response to the 2011 floods in Thailand; it found that migrants experienced challenges prior to the floods with unregulated markets, barriers in language and economic status, and discrimination. Meanwhile, children from migrant and Thai families were more vulnerable following the floods. Children were perceived to be at increased risk due to separation from their parents, school closure, and exposure to unfamiliar adults.

Economics

Thailand has achieved remarkable economic progress in the past four decades, with sustained strong economic growth and significant poverty reduction. This has facilitated Thailand’s transition from a low-income to an upper middle-income country in less than a generation. Thailand’s economy grew at an average annual rate of 7.5% in the boom years of 1960-1996 and 5% during 1999-2005 following the Asian Financial Crisis (1997-1998). The IMF estimates Thailand’s Gross Domestic Product (GDP) stands at US$538.7 billion (April 2021), making it the largest economy in mainland Southeast Asia, second largest in ASEAN, and larger than some members of the Group of Twenty (G20).

Today, Thailand’s economy is mainly driven by its agriculture, industrial and services, and tourism sectors. The agricultural sector remains the backbone of the country’s labor force. In 2017, out of the 37.2 million people who were employed, 10.63 million were working in agriculture. While the share of agricultural employment has decreased significantly since 2012, during which 14.87 million people worked in the sector, agriculture remains the unofficial safety-net for many and helps to absorb those unemployed during financial crises and times of lower economic growth. Moreover, labor force mobility is common in Thailand, and those engaged in self-employment (or those dependent on seasonal wages) often switch to farm work in cropping and harvesting season.

On 22 September 2021, the RTG issued the 13th National Economic and Social Development Plan for 2023 to 2027. The plan includes five key goals:

- Restructuring of production into an economy based on innovation that aligns with technology trends and global trade, including promoting research and innovation;
- Developing people/human resources to have the ability and quality of life suitable for the new world, including building essential skills for the 21st century;
- Creating a society of opportunity and fairness by reducing social inequality and increasing welfare for the people and for the underprivileged;
- Creating sustainability for the country by taking into account the environment and ecosystem, solving environmental problems, and strengthening industry and the green economy;
- Preparing the country to cope with risks and changes in a new global context by developing transportation infrastructure throughout the country and upgrading government services with digital systems in all dimensions.

The 13th National Economic and Social Development is an overarching framework for Thailand’s sustainable development and is legally binding on current and future Thai governments.
Government

Thailand is a parliamentary democracy with a constitutional monarchy. The King is the Head of State. The head of government is the prime minister, who nominates a Council of Ministers (cabinet) that is approved by the monarch. The 2017 Constitution—Thailand’s 20th since 1932—established an elected Lower House of 500 Members of Parliament (MP) and an appointed Upper House of 250 Senators. The first Senate will sit for a five-year term and includes six ex-officio military leaders and 244 members appointed by the previous National Council for Peace and Order (NCPO)-government and endorsed by the King. Although the Lower House retains primacy in most legislative matters, the Senate joins the Lower House in votes for the Prime Minister and on legislation relating to Constitutional reform and Thailand’s 20-year National Strategy, which is legally binding on current and future Thai governments. Following parliamentary elections on 24 March 2019, a majority coalition in the elected Lower House returned Prayut Chan-o-cha as PM with the backing of the Upper House. The next Lower House elections are scheduled for 2023.

Thailand’s sub-national administration comprises three tiers: central, provincial (and districts), and local administration (or sub-districts). Thailand is divided into 76 provinces and the Bangkok Metropolitan Region as a special administrative unit. Table 1 is a summary of the sub-agencies under the Department of Local Administration and the Local Government Organizations (LAOs) in Thailand.

Sub-national governance is further organized around six distinct regions: North, East, West, South, Central, and Northeast. A provincial governor, an appointed position under the MOI heads each of the provinces, while the Bangkok Metropolitan Administration, the authorized body for Bangkok administration, is headed by the Bangkok governor, elected by popular vote among the registered voters of Bangkok. Moreover, each province is divided into districts and Tambons (sub-units of districts), governed by district mayors (a bureaucratic position under MOI). Local administrative units (LGU), established as per the Decentralization Act of 1999, comprises Provincial Administrative Organizations (PAO), Tambon Administrative Organizations (TAO), and municipal bodies.

Thailand has a civil law system with some common law influences. The highest court in the country is the Supreme Court of Justice, comprising the court president, six vice presidents, and 60-70 judges. The court is further divided into ten divisions. In addition, the Constitutional Court of the Kingdom of Thailand currently exercises its jurisdiction on the provision of the Constitution of 2017 and consists of the President and eight Justices approved by the Senate and appointed by the King. Furthermore, the Supreme

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<td>Internal Bureau</td>
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Table 1: Department of Local Administration Sub-Agencies and Local Government Organizations
Administrative Court has the authority and duty to perform judicial review of the legality of administrative acts. The court has the authority to try and adjudicate cases involving disputes between an administrative or State official and a private individual, or between an administrative agency and a State official.60

**Environment**

**Geography**

Thailand is located in the center of mainland Southeast Asia bordering the Andaman Sea and the Gulf of Thailand, southeast of Myanmar (Burma). The country covers an area of 513,120 square kilometer (sq. km) (198,116.74 square miles (sq. mi)). Its geographical coordinates are 15 00 N, 100 00 E. Thailand’s highest elevation point is Doi Inthanon at 2,565 m (8,415 ft.) and its lowest point is the Gulf of Thailand. The mean elevation is 287 m (941.6 ft.).61

**Borders**

Thailand shares a 2,416 km (1,501.23 miles (mi)) border with Myanmar to the west; a 1,845 km (1,146.43 mi) border with Laos to the northeast; a 817 km (507.66 mi) border with Cambodia to the southeast, and a 595 km (369.72 mi) border with Malaysia in the south. Thailand further borders the Andaman Sea and the Gulf of Thailand, southeast of Myanmar.62 A map of Thailand is shown in Figure 2.63

**Climate**

Located in the tropical climate zone, Thailand experiences two monsoonal seasons – the southwest monsoon and northeast monsoon. Warm humidity arising from the Indian Ocean during the southwest monsoon brings abundant rainfall over the country starting in May. Conversely, cold and dryer conditions brought by the northeast monsoon, starting in October, cause temperatures to drop in higher attitudes, but also bring abundant rain along the eastern coastline of the southern region. The Inter Tropical Convergence Zone (ITCZ) brings large amounts of rainfall, and tropical cyclones can occur from May onwards.64

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**Figure 2: Map of Thailand**
Climate Change

Climate change will lead to greater climate variability and exacerbate natural hazards in Thailand, such as heavy rainfall, floods, and droughts. In addition, sea level rise will adversely impact the country’s coasts, although coastal erosion is more prevalent in the Gulf of Thailand than the Andaman Sea coast. Coastal erosion will affect local fishing communities as well as major seaports and industrial estates situated along the country’s coastline.

Studies of climate change in Thailand have observed increased temperatures and precipitation since the middle of the 20th century. Increases in daily maximum, mean, and minimum temperatures between 1970 and 2006 have been observed in some studies. Between 1955 and 2009, average annual temperatures in Thailand have increased by 0.95°C (1.71°F), significantly more than the global average of 0.69°C (1.24°F) during the same period. Additionally, sea levels in the Gulf of Thailand have risen approximately 3-5 millimeters (mm) (0.11-0.19 inches) annually, compared to the global average of 0.7 mm (0.027 inches) per year between 1993 and 2008. While precipitation has not shown significant change over the period of 1955-2014, Bangkok, the northeastern provinces, and the Gulf region have experienced increased rainfall.

Climate Change Future

The World Bank’s multi-model predictive analysis for Thailand’s climate future suggests mean average temperature will increase by 1.4-1.8°C (2.5-3.24°F) by the 2060s, and 3.0-3.8°C (5.4-6.84°F) by the 2090s. The projected rate of warming is similar in all seasons, but more rapid in the northern, interior regions of the country than in the southern, coastal regions. With regards to precipitation, the World Bank’s analysis shows a range of changes in precipitation for Thailand, with projected change
ranging between 28% to 74% by the 2090s. The maximum increase is projected for the month of November and the February to May season.\textsuperscript{76}

Thailand’s agricultural sector stands to be impacted the most by climate-related hazards due to the country’s location in the tropics where agricultural productivity is particularly vulnerable.\textsuperscript{77} Changes in carbon dioxide availability, precipitation, and temperatures can have a direct effect on crop productivity. Water resource availability and seasonality, soil organic matter transformation, soil erosion, changes in pest and disease profiles, the arrival of invasive species, and decline in arable areas due to the submergence of coastal lands and desertification are expected to have an indirect impact on agriculture production. Thailand is a major exporter of rice and cassava, the farming of which employs large segments of the population. Climate change impact on the agriculture sector is projected to have significant economic consequences. Some experts have estimated that loss of farmland value and output alone could exceed US$94 billion under a high-emissions scenario by 2050 due to changes in temperature and precipitation.\textsuperscript{78}

Sea level rise will exacerbate the impact of storms and flooding and lead to permanent inundation in some areas of the country. Bangkok City, which stands only 1.5 m (4.92 ft.) above sea level, is expected to become one of the world’s worst affected cities alongside Jakarta and Manila.\textsuperscript{79} Land loss from sea level rise will impact sustainable land use for economic activities in tourism, import and export sectors, and industrial zones. Significant amounts of Thailand’s critical infrastructure are located in areas likely to be adversely impacted by climate change.\textsuperscript{80}

**Climate Change Response**

Thailand ranks 67 out of 181 countries on the Notre Dame Global Adaptation Initiative (ND-GAIN) Index. The ND-GAIN Index ranks 181 countries using a score, which calculates a country’s vulnerability to climate change and other global challenges, as well as their readiness to improve resilience. The more vulnerable a country is the lower their score, while the more ready a country is to improve its resilience the higher their score.\textsuperscript{81} Figure 3 shows a summary of Thailand’s ND-GAIN Index rank and score including Thailand’s ND-GAIN ranking since 1995.\textsuperscript{82}

The RTG recognizes climate change is a major challenge for the country, affecting livelihood, economic growth, and the achievement of sustainable development. Since 2007, the RTG has incorporated climate change into its national economic and social development plans. Climate change is addressed at the highest level under Thailand’s National Strategy 2018-2037, an overarching framework for sustainable development.\textsuperscript{83} The Climate Change Management Master Plan 2015-2050 outlines climate change mitigation, adaptation, capacity building, and cross-cutting issues. Thailand has also set energy targets under the Power Development Plan (PDP 2018 Revision 1 2018-2037), the Alternative Energy Development Plan (AEDP 2018-2037), and the Energy Efficiency Plan (EEP 2011-2020). In addition, the Environmentally Sustainable Transport System Plan promotes a road-to-rail modal shift for both freight and passenger transport. The Waste Management Roadmap promotes waste-to-energy technologies. In 2016, Thailand introduced a vehicle tax scheme to promote low carbon vehicles.\textsuperscript{84} Furthermore, the Ministry of Energy has drafted the National Energy Plan 2022 with the goal to promote clean energy and reduce carbon dioxide emissions to zero by 2065.\textsuperscript{85}

Thailand has developed a National Adaptation Plan to provide a framework towards a climate-resilient society with a focus on water management, agriculture and food security, tourism, health, natural resource management, and human settlement and security.\textsuperscript{86}

At the 2021 UN COP26 held in Glasgow, United Kingdom, nations agreed on the Glasgow Climate Pact, which states that carbon emissions will have to fall by 45% by 2030 to achieve the goal of keeping global temperature rise to no
Floods

Thailand has extremely high exposure to flooding, including riverine, flash, and coastal flooding. Thailand also has exposure to hazards related to tropical cyclones. Flooding is the natural hazard with the most significant impact on human life, livelihoods, and the economy as shown in Figure 4. The World Bank Group (WBG) and the Asian Development Bank (ADB) in their 2021 Climate Risk Country Profile of Thailand estimate that the number of people affected by extreme river flooding could rise by over 2 million people by 2035-2044, and coastal flooding could affect a further 2.4 million people by 2070-2100.

Thailand experiences two monsoonal seasons, the southwest monsoon which generates warm humidity from the Indian Ocean and heavy rainfall from May; and the northeast monsoon, which brings cold and dryer conditions and abundant rainfall starting around October (more recently November). Tropical cyclones can be expected from May onwards. In addition,


**Droughts**

Thailand experiences significant drought exposure, with drought becoming more severe in recent years.\(^{104}\)

Droughts often occur in two distinct periods: between June and September following a delay in the onset of rainfall, or due to low precipitation during the dry season between October and May. The occurrence of drought in Thailand is increasingly associated with the ENSO cycle, which brings drier-than-average rainfall conditions.\(^{105}\) For example, between 2006 and 2010, Thailand experienced longer dry spells in the middle of the rainy season and more intense rain afterwards. Similarly, between 2015 and 2016, Thailand experienced a series of recurring, prolonged droughts, which caused water levels to drop to critical levels in reservoirs nationwide.\(^{106}\)

However, drought risks are also largely correlated with human activities. Areas covered by water reservoirs and extensive irrigation facilities suffer less from the impact of water scarcity during droughts than areas with less coverage. In addition, water demand can lead to water scarcity. In the North, higher water demand for rice cultivation during the dry seasons, combined with limited irrigation infrastructure, can exacerbate water scarcity.\(^{107}\)

Landslides in Thailand generally occur during extreme rainfall. The hilly areas in the North and South of Thailand, with its steep and mountainous terrain, are highly vulnerable to landslides triggered by heavy rain.\(^{102}\)

Anthropogenic stressors from land-use to land clearing, cultivation, and deforestation contribute to damages in soil surfaces and reduced absorption capacity, making areas with high rates of ongoing soil erosion and loss of vegetative cover more vulnerable to landslides.\(^{103}\)

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*Figure 4: Impact of Flooding on Deaths, Injuries, and Economic Costs from 2011 to 2019*
Earthquake

Thailand is located on 14 active fault lines, which extend through 22 provinces. Although seismic activity is possible throughout the country, the risk of earthquakes is high in the Northwestern region, as shown in Figure 5. The last recorded earthquake occurred in the northernmost province of Chiang Rai in May 2014 and was 4.6 magnitudes. The epicenter of the earthquake was 9 km (5.6 mi) deep in Mae Lao district. And although aftershocks were felt across three districts (Mae Lao, Phan, and Mueang districts) no damage was caused.

Tsunami

The 2004 Indian Ocean Tsunami, which hit Thailand’s southern coast, was the greatest natural disaster in the country’s history. On 26 December 2004, a powerful undersea earthquake struck off the coast of Sumatra island, Indonesia. The magnitude 9.1 quake ruptured a 1,448 km (900 mi) stretch of fault line where the Indian and Australian tectonic plates meet. The quake caused the ocean floor to suddenly rise by as much as 40 m (131.23 ft.), triggering a massive tsunami.

The tsunami impacted six provinces along the Andaman Coast of Thailand, leaving more than 8,000 people dead, one-third of whom were foreigners. It affected 407 villages and completely destroyed 47, including well-known tourist destinations. Vulnerable fishing communities, ethnic groups, migrant workers, and workers in the tourism industry bore the brunt of the disaster. Communities were destroyed and livelihoods lost, and survivors including children bore the psychological trauma of the disaster. The impact on the environment included damage to coral reefs and marine and coastal habitats, and saline intrusion affected water quality and agricultural land. The total financial impact of the tsunami is estimated at more than US$2 billion, making Thailand the second most affected country in financial terms after Indonesia.

Thailand has strengthened its tsunami
warning system including warning towers, a network of detection buoys in the sea, and a public announcement system. However, the system requires further maintenance and upkeep to stay operational.\textsuperscript{114}

**Heat waves**

Thailand regularly experiences high maximum temperatures, with an average monthly maximum of 31.6°C (88.88°F), and an average maximum of 35.1°C (95.18°F) in April, the hottest month of the year. Heat waves, defined as a period of three or more days where the daily temperature is above the long-term 95th percentile, have occurred in Thailand.\textsuperscript{115} In May 2016, Thailand experienced the highest temperature over the longest period in 65 years.\textsuperscript{116} Exposure to future heat waves is higher in the southern region than the northern region. The World Bank and ADB in their 2021 Climate Risk Profile of Thailand predicted that by the 2080s, Thailand will experience very significant increase in the number of days with temperatures higher than 35°C (95°F).\textsuperscript{117}

**Forest fires**

During the dry season (November to May), forest fires are a regular occurrence in the northern region of Thailand. Climate-induced higher temperatures and water shortages are exacerbating forest fires. The government’s zero-burn policy, prohibiting traditional controlled burning in forests, contributes to more fuel in the forest and more expansive fires.\textsuperscript{118} Forest fires can create significant air pollution, with some parts of northern Thailand measuring 40 times above international standards in terms of hazardous air quality.\textsuperscript{119} In 2020, northern Thailand experienced one of the worst fire seasons in recent history. Local residents, who normally would rely on the creeks on the mountains to serve as a fire barrier and a source of water to douse the flames, found that the creeks had dried up long before the official hot season began.\textsuperscript{120}

**Epidemics**

In addition to the ongoing impact of the COVID-19 pandemic in Thailand, the country is exposed to vector-borne diseases such as Middle East Respiratory Syndrome (MERS), Zika virus, tuberculosis, and dengue. Malaria risks are high at the borders of Myanmar, Malaysia, Cambodia, and Laos.\textsuperscript{121} Thailand’s COVID-19 response has been effective. As of 3 December 2021, Thailand had a total of 2,130,641 COVID-19 cases, and 20,880 deaths since the first confirmed case in the country was reported on 13 January 2020.\textsuperscript{122} Thailand’s response to COVID-19 demonstrates strong public health interventions, community engagement, and effective governance, which helped to limit local transmission of the virus. The country’s response reflects 40 years of investment in, and political commitment to, strong primary healthcare services, universal health coverage, and public health preparedness for pandemics.\textsuperscript{123}

**Chemical accidents**

Although rare, Thailand has been affected by chemical accidents. For example, in July 2021 a massive explosion at a chemical factory on the outskirts of Bangkok killed at least one person, injured dozens more, and damaged around 70 homes. The factory produced expandable polystyrene foam, which is highly flammable. Residents nearby were evacuated as a precaution, and other residents were warned against drinking potentially contaminated rainwater and to close doors and windows to avoid inhaling fumes.\textsuperscript{124} Other chemical related explosions causing death or injury have occurred in Chiang Mai in 2014 and in 1999.\textsuperscript{125}

**History of Natural Disasters**

The following is a list of natural disasters in Thailand in the past ten years.

**Floods – December 2021**

From 23 November to 3 December 2021, heavy rain caused floods and flash floods and resulted in rivers overflowing in nine provinces
in southern Thailand. More than 44,300 households were affected across the provinces of Phetchaburi, Prachuap Khiri Khan, Chumphon, Surat Thani, Nakhon Si Thammarat, Krabi, Phatthalung, Songkhla, and Trang.\(^{126}\)

**Tropical Storm Dianmu – October 2021**

Tropical Storm Dianmu brought heavy rain, which caused flooding across 27 provinces in northeastern and central Thailand and affected 58,977 households. Some of the affected areas had already seen flooding earlier in the same month after a period of heavy rain from 16 September brought by the Southwest Monsoon.\(^{127}\)

**Floods and landslides – August 2021**

A low-pressure cell located over southern Vietnam together with the Southwest Monsoon that prevails over the Andaman Sea and the Gulf of Thailand, brought heavy rains from 27-31 August. This caused flash floods in 10 provinces (Tak, Kamphaeng Phet, Nakhon Ratchasima, Prachinburi, Chon Buri, Rayong, Chanthaburi, Sa Kaeo, Singburi, and Samut Prakan), impacting 65,088 households and an estimated 325,440 persons.\(^{128}\)

**Floods – November-December 2020**

Heavy rain from 21 November to 4 December brought floods and triggered landslides in southern Thailand. Over 300,000 households across 67 districts in the seven southern provinces of Thailand were affected (Surat Thani, Krabi, Nakhon Si Thammarat, Trang, Phatthalung, Songkhla, and Yala). Landslides were reported in several districts of Yala and Narathiwat. A team from the RTA was deployed to make repairs to a severely damaged bridge in Than To District, Yala Province.\(^{129}\)

**Floods – December 2020**

Floods in southern Thailand impacted 300,000 households. At least eight people died in flash floods in Nakhon Si Thammarat province.

**Floods – October 2020**

Heavy rain caused flooding, landslides, and storm damage in 28 provinces. One fatality was reported, and 25,546 households were affected. In Nakhon Ratchasima, one of the affected provinces, water discharge from the Lam Phra Phloeng Dam swamped areas of Pak Thong Chai district. This was followed by the collapse of the walls of the Hin Ta Ngo reservoir, which caused further flooding in Pak Thong Chai.

**Tropical Storm Sinlaku – August 2020**

Heavy rain caused flooding in the northern provinces, including in Nan (224 households affected), Nong Bua Lam Phu (250 households affected), and Loei province, which was the most affected with 680 homes damaged across three districts (Muang, Chiang Khan, and Pak Chom). The Mekong River in Chiang Khan district of Loei province rose by 70 centimeters (cm) (27.5 inches).\(^{130}\)

**Floods – June-July 2020**

During June to July 2020, the influence of Tropical Storm Nuri in the upper South China Sea combined with the Southwest Monsoon over the Andaman Sea and mainland Thailand, caused severe weather including wind, storms, high waves, and heavy rain, which affected several provinces in northern, central, and eastern Thailand. The worst hit was Lampang province, where 108 households were affected, and Pathum Thani province, with 100 households affected. Other affected provinces were Phetchabun, Nakhon Ratchasima and Chon Buri. Heavy rain triggered flash flooding in Nong Phai district in Phetchabun province damaging 50 homes. Flooding also affected Ko Sichang, Chon Buri Province. Strong winds caused damage in the northern provinces of Phayao, Uttaradit, Leoi, Udon Thani, and Kalasin and the southern province of Surat Thani. Over 300 homes were damaged in total, with 1,600 people affected.\(^{131}\)
**Drought – 2020**
In 2020, Thailand experienced its worst drought in 40 years. In 2019, the monsoon season, which usually runs from May to October, arrived two weeks late and ended three weeks early, leaving Thailand with less rainfall than usual. This contributed to a drought, which dried up farms, threatened electricity supply from hydropower dams, and caused economic loss of 46 billion Thai Baht (equivalent to approximately US$1,359,378,660) or 0.27% of GDP.

**Tropical storm and tropical depression – August 2019**
Tropical Storm Podul and Tropical Depression Kajiki caused widespread flooding which affected 32 provinces, 184 districts, 836 sub-districts, 7,293 villages, and 419,988 households. Forty-one people were killed, 23,000 evacuated, and 418,000 affected. At least 4,000 houses and 325,000 ha of crops were destroyed. The most impacted province was Ubon Ratchathani, as shown in Photo 1.

**Tropical Storm Pabuk – January 2019**
On 4 January 2019, Tropical Storm Pabuk made landfall in the province of Nakhon Si Thammarat in southern Thailand. Three people died, one person went missing, and over 200,000 people were affected. Nakhon Si Thammarat was the hardest hit province, with almost 180,000 residents in 23 districts affected by the storm. Other affected provinces include Pattani, Surat Thani, Songkhla, Chumphon, Yala, Phatthalung, and Narathiwat. Almost 35,000 people were evacuated from their homes in Nakhon Si Thammarat and around 10,000 in Pattani, Surat Thani, and Songkhla.

**Flash floods – December 2018**
Heavy rain caused flooding in several southern provinces of Thailand including in Nakhon Si Thammarat. One person died and one person was reported missing. Flooding and heavy rain affected 377 villages across 17 districts in Nakhon Si Thammarat province. Soldiers and rescue workers carried out evacuations in Muang.

Photo 1: Floods in Ubon Ratchathani, August 2019
Drought – 2015 and 2016

Thailand was hit by severe droughts in 2015 and 2016, particularly in the upper-middle part of the country, causing irrigation problems in many areas. The drought affected 22 provinces. The situation was so severe that at the Ubolrat dam in northeastern Thailand steps were taken to use “dead storage,” being the last 1% in the bottom of the reservoir.

Floods – November 2017

Floods occurred in 23 provinces as a result of a tropical depression that also affected parts of Vietnam. Several rivers in Thailand overflowed, including the Yom, Nan, Chao Phraya, Tha Chin, Chi, and Mun rivers. Discharge from the Chao Phraya Dam also caused flooding for communities downstream. More than 120,000 households were affected across 78 districts of the 23 provinces. At least 10 people died.

Floods – October 2016

Heavy rain caused flooding in 14 Central, North, and Northeastern provinces. Three were killed in Nakorn sawan province, large areas of farmland were submerged, and 27,000 houses inundated. Furthermore, flooding affected up to 61 districts, 358 communities, and 2,087 villages. 68,000 houses have been damaged by floodwater among the 14 affected provinces.

Floods – June 2016

Heavy rain caused flooding in 36 areas of Bangkok City. The flooding brought traffic to a standstill and forced some schools and businesses to close. Although the rain was short lived, the rainfall was as much as 200 mm (7.87 in), which was, at the time, the highest level for over 25 years.

Country Risks

Country Risk Profile

Risk calculation takes into account exposure to hazards, vulnerability, and institutional coping capacity, all of which are important factors in DRM. The Index for Risk Management (INFORM) Global Risk Index (GRI) measures the risk of humanitarian crisis and disasters in 191 countries. The INFORM GRI supports a proactive crisis management framework. INFORM GRI is helpful for establishing an objective allocation of resources for disaster management as well as for coordinating actions focused on anticipating, mitigating, and preparing for humanitarian emergencies. The INFORM GRI model is based on risk concepts published in scientific literature with three dimensions of risk: Hazards & 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.\textsuperscript{148}

The INFORM GRI model is split into different levels to provide a quick overview of the underlying factors leading to humanitarian risk. INFORM gives each country a risk score of 1-10 (1 being the lowest and 10 the highest) for each of the dimensions, categories, and components of risk, as well as an overall risk score.\textsuperscript{149} The higher the score the more at risk a country is to disasters.

According to the 2022 INFORM GRI, Thailand had an overall risk of 3.8/10, which INFORM categorizes within the “medium” risk class. The Hazards and Exposure dimension score takes into account a combination of both natural and human hazards, and Thailand rated 4.6/10. Thailand’s Vulnerability dimension score was 3/10, and the Lack of Coping Capacity dimension score was 3.9/10. Physical exposure to floods, at a score of 8.8/10, was the highest risk in the Hazards & Exposure dimension, with uprooted people measuring at 5.5/10 risk for the vulnerability dimension. Institutional capacity was rated 5.1/10 in the Lack of Coping Capacity dimension. Figure 6 graphically depicts Thailand’s risk scores across the three dimensions (Hazard & Exposure, Vulnerability, Lack of Coping Capacity), the main categories within those dimensions, and selected indicators.\textsuperscript{150}

![Figure 6: INFORM RISK Index](image-url)
ORGANIZATIONAL STRUCTURE FOR DISASTER MANAGEMENT

Disaster management in Thailand has evolved from a historically civil defense posture and emergency management orientation. The first comprehensive disaster management law was the Civil Threat Prevention Act passed in 1979. The law covered all hazards including fires, wind, storms, floods, military air attacks, and terrorism. Following the 2004 Indian Ocean tsunami, which had a catastrophic impact on Thailand’s southern coastal region, the RTG further developed a systematic and comprehensive disaster management policy that incorporates all disasters in addition to military threats. The RTG enacted the Disaster Prevention and Mitigation Act (DPM Act 2007), effective 7 September 2007, which sets out the main statutory framework for DRM and disaster response in Thailand.

In addition to the government-led system, a vast network of NGOs, charities, academic institutions, business and private enterprises, and community and citizen-led networks support the country’s disaster management capabilities.

Lead Government Agencies in Disaster Response

Thailand’s disaster management system is comprised of policy-level and operational-level agencies. At the policy-level, the inter-ministerial National Disaster Prevention and Mitigation Committee (NDPMC), chaired by the Prime Minister or Deputy Prime Minister, is the top policy body for DRM. The Department of Disaster Prevention and Mitigation (DDPM) under the MOI is the secretariat for the NDPMC. In addition, the National Safety Council is responsible for national safety policy.

At the operational-level the following agencies are responsible for responding to a disaster:

- National Disaster Command Headquarters;
- Central Disaster Management Center;
- Provincial Disaster Management Centers;
- Bangkok Metropolitan Disaster Management Center;
- District Disaster Management Centers;
- Pattaya City Disaster Management Center;
- Municipal Disaster Management Center;
- Subdistrict Administrative Organization disaster Management Center.

Figure 7 depicts the disaster management chain of command, chain of communication, and key responsibilities of both policy-level and operational-level agencies.

National Disaster Prevention and Mitigation Committee (NDPMC)

The NDPMC is the lead DRM policymaking body chaired by the Prime Minister or designated Deputy Prime Minister. The Director General of the DDPM is the Secretary. The NDPMC consists of around 34 members and various sub-committees. The inter-ministerial sub-committees provide technical and managerial support for the implementation of activities. Figure 8 depicts the composition of the NDPMC.

The NDPMC leads on disaster management policy development in four priority areas:
1. Improve and promote DRR by boosting the efficiency of disaster prevention and preparedness. Reduce the impacts of disasters by creating safe communities and promoting community involvement in improving disaster management practices to build resilience and foster adaptation to the effects of disaster events towards sustainable development;
Figure 7: Disaster Management Chain of Command, Chain of Communication, and Key Responsibilities
ORGANIZATIONAL STRUCTURE FOR DISASTER MANAGEMENT

Since 2002, the DDPM under the MOI has been the lead agency for DRM in Thailand.\(^\text{160}\) The DDPM is responsible for all disaster- and accident-related administration that used to be under the supervision of the Civil Defense Division of the Department of Local Administration of the MOI and the National Safety Council, Office of the Permanent Secretary of the Office of the Prime Minister.\(^\text{161}\) The DDPM comprises one central office with 16 bureaus and units, 18 regional centers, and provincial offices in 76 provinces (apart from Bangkok, which has a self-administered DRM unit under the Bangkok Metropolitan Administration). In addition, the Disaster Prevention and Mitigation Academy of the DDPM provides trainings and capacity building.

2. Synergize multi-sectorial partnership efforts to develop and enhance the capacities necessary for more effective, efficient, and coherent emergency management; for equitable, timely, and impartial distribution of relief supplies to disaster victims; and to mitigate disaster impacts;

3. Develop a disaster recovery system that ably handles the demand for recovery assistance by disaster victims in a timely and impartial manner and the needs for rapid rehabilitation and reconstruction of disaster devastated areas to its former state or building back better and safer;

4. Develop and promote standards on international cooperation for DRR between and among partnerships and networks at both national and international levels to increase effectiveness and efficiency.

\[\text{Department of Disaster Prevention and Mitigation (DDPM) of the MOI}\]

The NDPMC Composition

Figure 8: NDPMC Composition

- Permanent Secretary for Defense
- Permanent Secretary for Social Development and Human Security
- Permanent Secretary for Agriculture and Cooperatives
- Permanent Secretary for Transportation and Communication
- Permanent Secretary for Natural Resources and Environment
- Permanent Secretary for Information and Communication Technology
- Permanent Secretary for Public Health
- Direct-General for Royal Thai Police
- Supreme Commander
- Commandant of Royal Thai Army
- Commandant of Royal Thai Navy
- Commandant of Royal Thai Air Force
- Director-General of National Security Council
- Not more than five city planning and disaster prevention and mitigation experts.
The DDPM has the mandate to undertake the following responsibilities:

- Formulate policy, guidelines, and measures on disaster prevention and mitigation;
- Study, analyze, research, and develop systems on disaster prevention, disaster warning, and disaster mitigation;
- Develop information technology on disaster prevention and mitigation;
- Promote community participation in disaster management activities;
- Build disaster risk awareness;
- Provide training to build capacity and improve skills on disaster management and disaster relief;
- Promote, support, and implement programs to assist disaster victims and disaster recovery;
- Direct and coordinate operations to assist disaster victims in large-scale disasters;
- Coordinate with domestic and international agencies/organizations.\(^{164}\)

**National Safety Council of Thailand (NSCT)**

The National Safety Council of Thailand (NSCT) was created in 1982 and is responsible for responding to human-made and technological disasters. The primary functions of the NSCT are to help mitigate traffic accidents, chemical and work-related accidents, accidents

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**Photo 2: DDPM of the Thailand MOI**

**Figure 9: Organizational Chart of the DDPM**
in private residences and public settings, and to mitigate fires in high-rise buildings. The Prime Minister chairs the NSCT, and the DDPM is a member and the secretariat of the NSCT.165

**Provincial Disaster Prevention and Mitigation Committees (PDPMC)**

At the provincial level, the governor is responsible for DRM within the province and serves as the chairperson of the Provincial Disaster Prevention and Mitigation Committee (PDPMC) of their province. Each PDPMC has three chairpersons including the deputy governor, the commander of the army circle or commander of the provincial army-base or their representative, and the provincial administrator. In addition, other members may include representatives from provincial government services appointed by the provincial governor, seven representatives from local administration, including two persons from municipalities and five persons from the Tambon administration (the local government unit in a sub-district of a province), and representatives from public charities.166 The provincial chief officer of the DDPM or provincial representative from the DDPM serves as a secretary to the PDPMC.167

The governor as the head of the PDPMC has the following responsibilities with regards to DRM:

- Formulating the Provincial Disaster Risk Management Plan (Provincial DRM Plan) in accordance with the National DRM Plan;
- Overseeing and training all volunteers of local administration in the province;
- Overseeing all local administration on preparing for disaster prevention and mitigation equipment, materials, vehicles, and other related hardware for their own use in accordance with the Provincial DRM Plan;
- Operate as a government service unit at the local administration level to provide basic support to disaster-affected people, and other activities related to disaster prevention and mitigation;
- Support local administrations on activities related to disaster prevention and mitigation;
- Perform other duties as may be required by the Commander in Chief or the Central Director.168

**Bangkok Metropolitan Administration (BMA) Disaster Prevention and Mitigation Committee**

The Bangkok Metropolitan Administration (BMA) disaster risk management mission includes the provision of immediate and long-term disaster relief and emergency assistance. BMA undertakes various tasks to fulfill this mission, including emergency evacuation support; disaster sheltering; distribution of food and basic daily necessities; the provision of public health services; conducting efforts to restore peace and order, communications system management, and public utility services; undertaking action necessary to deal with disaster incidents, and to procure disaster-related supplies, equipment, and services in conformity with the BMA DRM Plan. The BMA is required to prepare an annual operating budget to cover its DRM mission.169

**Disaster Relief and Emergency Response**

Different authorities, depending on the level of risk, may declare a disaster event in Thailand. For small-scale and medium-scale disasters (level 1 and 2) the provincial incident commander (provincial governor) or if the disaster is in Bangkok, the Bangkok Metropolitan Incident Commander (Chief Executive of the BMA), may declare an emergency. For a large-scale disaster (level 3) the national incident commander is the Minister of the Interior. In the event of a catastrophic disaster (level 4), the Prime Minister or Deputy Prime Minister as assigned by the Prime Minister is the National Incident Commander.170 Table 2 shows the authorities that can declare a disaster, and Figure 10 shows the chain of command, chain of communication, and areas of responsibility of key agencies under the National DRM Plan.171
Figure 10: Thailand Disaster Response Structure
ORGANIZATIONAL STRUCTURE FOR DISASTER MANAGEMENT

• Promoting and supporting cooperation between public and private agencies and neighboring provinces through mutual aid agreement/the mutual sharing of personnel, equipment, and other resources for disaster risk management;
• Perform other functions and responsibilities as assigned by relevant authorities.  

**Bangkok Metropolitan Disaster Management Center (BMDMC)**

The Bangkok Metropolitan Disaster Management Center (BMDMC) is tasked with directing, controlling, and coordinating DRM efforts within its jurisdiction. The BMDMC is also responsible for developing an action plan based on its vulnerability and exposure to specific hazards in line with the Bangkok Metropolitan DRM Plan and provides technical assistance and support for the implementation of DRM activities. Furthermore, the BMDMC functions as an emergency response unit when an actual disaster occurs within its jurisdiction. The governor of the BMA is the incident commander for the BMDMC. The BMDMC functions as an emergency response unit when an actual disaster occurs within its jurisdiction.

**District Disaster Management Centers (DDMC)**

District Disaster Management Centers (DDMC) are responsible for directing, providing support for, and coordinating disaster management efforts of local administrative organizations located in its jurisdiction, as well as performing any function as assigned by the provincial governor or by the PDMC. The chief district officer heads the DDMC as the district incident commander and

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
<th>Person Legally Authorized to Make Declaration of Disaster Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Small-Scale Disaster</td>
<td>Provincial Incident Commander/Bangkok Metropolitan Incident Commander</td>
</tr>
<tr>
<td>2</td>
<td>Medium-Scale Disaster</td>
<td>Provincial Incident Commander/Bangkok Metropolitan Commander</td>
</tr>
<tr>
<td>3</td>
<td>Large-Scale Disaster</td>
<td>National Incident Commander</td>
</tr>
<tr>
<td>4</td>
<td>Catastrophic-Scale Disaster</td>
<td>The Prime Minister or Deputy Prime Minister when assigned by the Prime Minister</td>
</tr>
</tbody>
</table>

Table 2: Authorities Who Can Declare a Disaster
is supported by the deputy district chief, superintendent of the district police station, representative of the Ministry of Defence, district chief medical officer, executives of Local Government Organizations (LAO) in the district, representative of the chief officer of the government agency committee affiliated with the central administration department located in district locality, representatives from district education institutions, representatives from charitable organizations working in the district, etc.

The DDMCs are responsible for the following DRM activities:

- Developing the District DRM Plan and other relevant plan for the purpose of directing, coordinating, and providing support for disaster management efforts of the LAO, in accordance with the Provincial DRM Plan;
- Setting forth guidelines to be observed by district and LAOs;
- Undertaking disaster risk management and disaster preparedness activities as well as undertaking post-disaster recovery interventions;
- Monitoring and conducting disaster situation analysis and assessment. When a disaster actually occurs, or is very likely in its jurisdiction, the DDMC is required to make recommendations to the district incident commander in the context of setting up the district emergency operation center to take responsibility for the command and control of incidents;
- Collecting data and establishing a data bank of disaster related resources required to carry out DRM activities within district jurisdiction;
- Performing other functions and responsibilities as assigned by the provincial governor or the PDMC.  

**Pattaya City Disaster Management Center**

The Pattaya City Disaster Management Center (Pattaya DMC) is responsible for directing, providing support for, and coordinating DRM efforts within Pattaya City. The Pattaya City DMC also functions as an emergency response unit during an actual disaster. In addition, the Pattaya DMC is responsible for developing the Pattaya City DRM Action Plan in line with the provincial DRM Plan and the district DRM Plan. Furthermore, the DMC provides support and assistance to the provincial incident commander and the district incident commander as required, including the provision of disaster-related assistance and support to neighboring or adjacent local administrative organizations upon their requests. The mayor of Pattaya City is the local government incident commander.  

**Municipal Disaster Management Centers**

There are three types of municipalities in Thailand: city municipality, town municipality, and sub-district municipality. Each has its own disaster management center (DMC). The municipal DMC is responsible for directing, providing support for, and coordinating DRM efforts within the respective municipal jurisdiction. The DMC also functions as an emergency response unit during an actual disaster. The DMC provides support to the provincial incident commander and district incident commander, including the provision of assistance and support to neighboring or adjacent local administrative organizations upon their requests. The municipal mayor is the local government incident commander.

**Armed Forces Role in Disaster Relief**

The Royal Thai Armed Forces (RTArF) is comprised of three branches, the Royal Thai Army (RTA), Royal Thai Navy (RTN), and Royal Thai Air Force (RTAF). The Ministry of Defence (MOD) manages the administration of the RTArF.

The RTArF Headquarters (formerly Supreme Command Headquarters) is the main operational component of the MOD. It acts as the Supreme Command Unit of the RTArF with the mission to prepare the branches for combat readiness to defend the Kingdom. The Commander-in-Chief of each of the armed forces is directly responsible
to the Supreme Commander. Although the three branches are equal under law, the RTA is the dominant armed service. Senior army officers have traditionally held key positions in the high command structure and cabinets of military regimes. However, senior officers from the navy, air force, and police are occasionally appointed to a few key ministries.\textsuperscript{177}

Since 1954, Thailand has implemented a conscription system for males 21 years and older through a public lottery held annually in April. Men who draw a red card during a lottery in their local neighborhood are conscripted to serve in one of the armed services for two years. If a black card is drawn, then the individual is exempt.\textsuperscript{178} In 2021, Thailand launched a voluntary military enlistment program, a development in step with removing military conscription, a move which has gained public support in recent years.\textsuperscript{179}

The National DRM Plan establishes the following responsibilities for the RTArF under the MOD:

- To provide support and provide assistance to national efforts for disaster prevention and to address disaster situations in conformity with Article 8 (3) of the Ministry of Defence Administrative Arrangements Act B.E. 2551 (2008);
- To disseminate information and disaster warnings to DMCs in the locality and the civilian government agencies located in the areas at risk, in case of imminent threat of war or airstrike or sabotage actions.\textsuperscript{180}

The MOD oversees two offices for disaster response:

- Office of the Permanent Secretary for Defence (OPSD) Disaster Relief Center (DRC)
- RTArF Disaster Relief Center (DRC)

The OPSD DRC is in charge of the policy and procedures associated with RTArF deployments for humanitarian assistance missions on behalf of the MOD DRC. The OPSD DRC coordinates with multiple government agencies and civilian organizations to develop policies and guidelines. It also oversees disaster-related activities, activates and integrates military assets and resources into the disaster response, implements the unification of disaster management, and maintains effective command and control. Figure 11 shows the MOD DRC organizational structure.\textsuperscript{181}

The RTArF DRC is comprised of one DRC for each of the branches of the military and a DRC at Headquarters.

The Royal Thai Police (RTP) is integrated into the disaster management system. However, the mandate for the RTP during disasters does not extend beyond law enforcement and maintaining...
public order. The RTP falls under the direct command of the Prime Minister. The National DRM Plan states the RTP shall perform the following duties in a disaster response under the relevant director:

- To keep the peace and maintain law and order with a view to ensure the safety of people who still live in disaster-stricken areas as well in the nearby areas;
- To prevent and suppress crime through implementing relevant control measures and enforcing the laws;
- To manage dead bodies after disasters, conduct dead human body identification, search for missing persons, and conduct repatriation;
- To direct the traffic flow in disaster affected areas and in the nearby areas;
- To be prepared for rapid deployment of highly specialized teams to support emergency operations and management effort, which includes a search and rescue team, demining team, canine search team, etc.;
- To support the National Disaster Command Headquarters and local DMCs’ efforts in managing disastrous situation through providing personnel, vehicles, equipment, and other resources.\(^\text{182}\)

### Disaster Management Partners

#### Multilateral and Bilateral Partners

In 2003 Thailand transitioned from being an aid recipient to an aid donor.\(^\text{183}\) Thailand advanced to an upper middle-income country in 2011.\(^\text{184}\) Thailand continues to cooperate with multilateral and bilateral partners on areas of national strategic priority and regional cooperation including DRM efforts. Table 3 shows some of the multilateral and bilateral partners involved in disaster-related activities in Thailand.\(^\text{185, 186, 187, 188, 189, 190, 191, 192}\)

<table>
<thead>
<tr>
<th>Multilateral and Bilateral Partners</th>
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<tbody>
<tr>
<td>The Asian Development Bank (ADB) Country Partnership Strategy for Thailand (2021-2025) focuses on two main objectives: 1) strengthening competitiveness and connectivity by supporting new engines of growth through digital technologies, start-up ecosystems, transformative shifts in agriculture, smart cities, and low-carbon societies. It will also seek to strengthen economic, social, and geographic connectivity within Thailand and the region; 2) strengthening resilience and sustainability through building inclusive climate and disaster resilience, enhance environmental sustainability, and strengthen regional public goods in both urban and rural areas. More information can be found at the ADB’s website: <a href="https://www.adb.org/countries/thailand/main">https://www.adb.org/countries/thailand/main</a></td>
</tr>
<tr>
<td>A new Thailand–World Bank Group Country Partnership Framework (CPF) FY2019-2022 is currently being implemented to support Thailand’s 20 Year National Strategy (2017-2036) that is focused on six objectives: 1) improving the business environment through promotion of competition and innovation; 2) strengthening fiscal and economic institutions; 3) enhancing the quality of infrastructure investments; 4) addressing climate change and water resources management; 5) promoting quality education; 6) supporting inclusion of vulnerable groups, particularly in the fragile, conflict-affected areas of Southern Thailand. More information can be found at the World Bank’s website: <a href="https://www.worldbank.org/en/country/thailand">https://www.worldbank.org/en/country/thailand</a></td>
</tr>
</tbody>
</table>

Table 3: Multilateral and Bilateral Partners Involved in Disaster-Related Activities in Thailand
The Australian Government Department of Foreign Affairs and Trade (DFAT) supports regional development assistance programs focused on human trafficking, labor rights, health, disaster management, and economic integration, that includes the cooperation of Thailand. Australia also provides some support to Thailand as part of efforts to strengthen the capacity of regional organizations such as ASEAN and Asia-Pacific Economic Cooperation (APEC). In 2019, Australia became a Joint Development Partner to the Thai-led Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy (ACMECS) to assist with development needs in the Mekong sub-region. Australia is also working closely with Thailand to implement the Mekong-Australia Partnership, launched in November 2020. For more information about Australia-Thailand cooperation see DFAT’s website: https://www.dfat.gov.au/geo/thailand/thailand-country-brief

Thailand graduated from USAID assistance in 1995, and in 2003 USAID opened a regional mission in Bangkok that serves the Asia-Pacific. Drawing upon Thai expertise, USAID works on cross-border issues of concern to Thailand and the region. The bulk of USAID activities in Thailand address transnational challenges through regional programs, including support to ASEAN, the APEC forum, the Lower Mekong Initiative, and other regional forums. These efforts are leading to greater regional economic integration and cooperation on issues of mutual interest to the United States and Thailand. More information can be found at USAID’s website: https://www.usaid.gov/thailand

The Delegation of the European Commission to Thailand was opened in 1979. Starting from 1 December 2009 with the Lisbon Treaty entering into force, the Delegation of the European Commission was transformed into the Delegation of the European Union (EU) to Thailand. The Delegation in Bangkok is one of over 140 EU Delegations around the world. The Delegation’s mandate includes the following: to promote the political and economic relations between Thailand and the EU by maintaining extensive relations with governmental institutions and by increasing awareness of the EU, its institutions, and its programs; to inform the public of the development of the EU and to explain and defend individual EU policies; and to participate in the implementation of the EU’s assistance programs. More information about EU-Thailand cooperation can be found on the EU website: https://eeas.europa.eu/delegations/thailand_en

Table 3: Multilateral and Bilateral Partners Involved in Disaster-Related Activities in Thailand (cont.)
The Japan International Cooperation Agency (JICA) focuses on three priority areas in Thailand: 1) sustainable development of the economy and coping with a maturing society; 2) coping with common issues in ASEAN countries; and 3) providing support for third countries. In order to intensify international competitiveness, JICA continues to assist development of infrastructure and supports development of human resources for industries, which can contribute to enhancing productivity and to creating value-added goods and services. In terms of the environment, JICA supports various efforts at the local and national level and also cooperates with Thailand to address climate change. In addition to these activities, JICA continues efforts with Thailand to tackle problems related to development, such as the ageing issue. More information about Japan-Thailand cooperation can be found at JICA’s website: https://www.jica.go.jp/thailand/english/index.html.

The Global Facility for Disaster Risk Reduction and Response (GFDRR) provides analytical and technical assistance and capacity building to help vulnerable nations improve resilience and reduce risk. GFDRR produces knowledge products focused on national DRM and disability inclusive DRM in Thailand. More information can be found at GFDRR’s website: https://www.gfdrr.org/thailand.

The United Nations (UN) works together with the RTG and people of Thailand to support inclusive and sustainable development, based on national priorities and plans. The UN Country Team consists of 21 UN agencies that have specific programs and activities being carried out in Thailand.

The UN Country Team in Thailand signed the UN Partnership Framework (UNPAF) 2017-2021 with the RTG in July 2017. The UNPAF describes the collective response of the UN system to national development priorities. The UNPAF 2017-2021 articulates outcomes (results to be achieved) for five years and UN agencies’ responsibilities that are agreed by the Government. The outcomes in the UNPAF are linked to the 12th National Economic and Social Development Plan for 2017-2021. In September 2021, the RTG released the 13th National Economic and Social Development Plan for 2023-2027, and it is anticipated the UNPAF will be updated to address the targets. See UN in Thailand website for more information: https://thailand.un.org/en/about/about-the-un.

Table 3: Multilateral and Bilateral Partners Involved in Disaster-Related Activities in Thailand (cont.)
National and International NGOs, charities, and academic institutions

Following the 2004 Tsunami, around 393 organizations responded (of the total 291 were domestic organizations). In Thailand, a wide range of national and international NGOs, non-profit organizations, charities, academic institutions, and businesses and private sector enterprises are involved in supporting DRM and disaster response efforts. Table 4 shows some of the international and national NGOs, charities, and academic institutions working on disaster-related activities in Thailand.

The Asian Disaster Preparedness Center (ADPC) is an international organization that works to build the resilience of people and institutions to disasters and climate change impacts in Asia and the Pacific. Established in 1986, it provides comprehensive technical services to countries in the region across social and physical sciences to support sustainable solutions for risk reduction and climate resilience. ADPC supports countries and communities in Asia and the Pacific in building their DRR systems, institutional mechanisms, and capacities to become resilient to numerous hazards, such as floods, landslides, earthquake, cyclones, droughts, etc. The ADPC is governed by its nine founding member countries comprising Bangladesh, Cambodia, China, India, Nepal, Pakistan, the Philippines, Sri Lanka, and Thailand. The ADPC has its headquarters in Bangkok, Thailand. More information can be found at the ADPC’s website:  https://www.adpc.net/igo/Default.asp

The Adventist Development and Relief Agency (ADRA) in Thailand provides disaster relief response, for example, distributing food and water to families impacted by Tropical Storm Podul in September 2019. For more information see ADRA’s website:  https://adrathailand.org/

CARE’s work in Thailand began in 1979, initially responding to the Cambodian refugee influx along Thailand’s borders. The Raks Thai Foundation (the local name of CARE in Thailand) became a member of CARE International in January 2003, becoming the first CARE member from a developing country. Today, Raks Thai’s work focuses on: environment and natural resources; health and HIV/AIDS; livelihoods and micro-enterprise development; education; and disaster preparedness and emergency response. For more information see CARE’s website:  https://stage.care-international.org/where-we-work/thailand

| **Table 4: International NGOs, National NGOs, and Charities Involved in Disaster-Related Activities** |
Oxfam in Thailand has been working with partners at the local and national levels to build an enabling environment for sustainable agricultural production of food and income security (including land reform, forest and coastal resources management, and climate change adaptation) since 2001. Oxfam’s work in Thailand focuses on the following priorities: the development of model communities to provide evidence and impetus for scaling up; strengthening community organizations and networks to scale up and increase local influencing; support for national level influencing by community organizations and networks aimed at government and public agencies as well as limited private sector engagement; research and investigations by national level research institutions to support policy and legislative advocacy. More information about Oxfam’s work in Thailand can be found at Oxfam International’s website: https://www.oxfam.org/en/what-we-do/countries/thailand

### Rajaprajanugroh Foundation

The Rajaprajanugroh Foundation was established after a typhoon devastated the southern province of Nakhon Si Thammarat in 1962. King Bhumibol Adulyadej mobilized a nationwide appeal through the mass media to provide relief for the storm’s victims. Money left over from relief efforts formed the working capital for a relief foundation, which was registered on 23 August 1963. The Rajaprajanugroh Foundation was established to provide relief to victims of natural and other disasters. In April 2021, King Maha Vajiralongkorn accepted the Rajaprajanugroh Foundation under his royal patronage. Under the National Plan the Foundation has the following responsibilities: to provide disaster relief and emergency assistance to disaster affected people nationwide; to provide educational assistance, scholarship, and assistance to care for orphans and destitute children whose families have been affected by disaster; to provide support to DRM efforts nationwide; and to provide relief assistance to people who have suffered or encountered hardships.

### Ruamkatunyu Foundation

The Ruamkatunyu Foundation is a nonprofit organization with a long history of emergency response in Thailand. The Foundation performs several functions such as first aid, rescue, firefighting, body collection, and food distribution. It also has facilities and equipment necessary for disaster response such as 40 emergency and body collecting vans, three ambulances, firefighting trucks and equipment, and equipment for search and rescue in a flood disaster. More information about the Foundation can be found on the Foundation’s Facebook page: https://www.facebook.com/ruamkatanyufoundation/

Table 4: International NGOs, National NGOs, and Charities Involved in Disaster-Related Activities (cont.)
ORGANIZATIONAL STRUCTURE FOR DISASTER MANAGEMENT

Save the Children

Save the Children’s work in Thailand focuses on DRR and humanitarian response. Save the Children works to help disaster-affected children and families prepare better for future disasters and is implementing a DRR program in four disaster-prone provinces of Thailand based on its experiences in the 2004 Tsunami. Save the Children produced a child-friendly DRR booklet, ’Alert Little Tun’ to teach children to be aware of and prepare for disaster risks in flood-prone areas. Save the Children supports disaster-affected children to have access to nutritious food, clean water, safe spaces to play and learn, and health services. Due to its coordinated and effective emergency relief assistance, the RTG views Save the Children as a trustworthy disaster response partner. With strong partnerships with Thailand’s corporate sector, Save the Children also prepositions stocks of essential relief items ready to be mobilized at any time.

The Thai Network for Disaster Resilience (TNDR) is a project implemented by the Thailand Disaster Preparedness Foundation (TDPF). The TNDR is a group of academics focused on disaster management from at least 16 leading education institutions in Thailand as shown in Figure 12. Its mission is to strengthen Thailand’s risk and disaster management capability through an Innovation, Collaboration, Communication, and Capacity Building approach, referred to as ICCC. “Innovation”— to promote and encourage the implementation of technological innovations for disaster risk reduction such as the Disaster Expert Inventory of Thailand. “Collaboration”—to integrate cross disciplinary studies through joint research projects. “Communication”— for example through online webinar or using digital media tactics. “Capacity Building”—developing and conducting training programs for government, private sector, and other stakeholders. More information about the TNDR can be found at its website: https://tndr-tdpf.info/

The Thai Red Cross Society (TRCS) is a national charitable organization undertaking humanitarian activities in keeping with the fundamental principles of the International Red Cross and Red Crescent Movement. TRCS’s work in Thailand is focused on four key areas: medical and health services, disaster preparedness and response, blood transfusion services, and quality of life promotion. More information about TRCS can be found on the TRCS website at: https://english.redcross.or.th/

The World Vision Foundation of Thailand is a Christian charitable organization and a global network partner of World Vision. The Foundation’s main project is the Child Sponsorship Program. In addition, the Foundation also supports children to be protected from disasters through the operation ‘Safe school in Thailand,’ and to establish a disaster prevention network in communities.

Table 4: International NGOs, National NGOs, and Charities Involved in Disaster-Related Activities (cont.)
**The International Red Cross and Red Crescent Movement**

*International Committee of the Red Cross*

The International Committee of the Red Cross (ICRC) is a private, independent humanitarian organization, headquartered in Geneva, Switzerland. The ICRC bases its activities on the provisions of International Humanitarian Law, and it is neutral in politics, religion, and ideology. The ICRC assists with the protection of civilian victims of armed conflict and internal strife and their direct results. Within these roles, it may take any humanitarian initiative as a neutral and independent intermediary. More information can be found at ICRC’s website: [https://www.icrc.org/en](https://www.icrc.org/en)

*International Federation of Red Cross and Red Crescent Societies*

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

The IFRC’s Country Cluster Delegation for Thailand, Cambodia, Laos, and Vietnam is based in Bangkok, Thailand. The Cluster Delegation coordinates international humanitarian and...
development assistance to the National Societies in the four Mekong countries and supports them to become stronger local humanitarian actors. The four countries face common challenges and emerging risks including rapid urbanization, climate change, rising inequalities, migration, health risks, gender discrimination, and now COVID-19.

The IFRC also supports the National Societies to leverage their auxiliary role and influence regional, national, and subnational processes to ensure more effective laws and policies for climate, DRM, and emergency preparedness and response, including for public health emergencies. This is done to make communities safer, facilitate humanitarian assistance, and to improve the protection and inclusion of the most vulnerable when faced with crisis. The focus areas are: (1) Climate and environmental crises; (2) Evolving crises and disasters; (3) Growing gaps in health and wellbeing; (4) Migration; and (5) Values, power, and inclusion. More information about IFRC’s work can be found on its website: https://www.ifrc.org/

Thailand Red Cross Society
The Thai Red Cross Society (TRCS) operates as the primary humanitarian organization in Thailand. TRCS was founded in 1893 and was formally recognized by the ICRC in 1920. TRCS was recognized as a member of the IFRC the following year, in 1921. Today, the TRCS is a national charitable organization undertaking humanitarian activities in keeping with the fundamental principles of the International Red Cross and Red Crescent Movement. The Society’s work in Thailand is focused on four key areas: medical and health services (as shown in Photo 3), disaster preparedness and response, blood transfusion services, and quality of life promotion.

TRCS is designated as a primary responder under Thailand’s disaster management system, and the role and functions of the TRCS are included in the National DRM Plan. Additionally, the national mandate requires that the TRCS maintain frequent contact with the Thai military through their active involvement in exercises, conferences, and other events intended to enhance relationships and to promote understanding and discussions.

The administration of the TRCS includes His Majesty King Vajiralongkorn as Royal Patron of the Society, Her Majesty Queen Sirikit the Queen Mother as President, and Her Royal Highness Princess Maha Chakri Sirindhorn as Executive Vice President. The TRCS Council is responsible for controlling and supervising the activities of the TRCS. The Council is comprised of the President of the Council, the Executive Vice President, and 25 members, as well as 12 representatives of the Provincial TRCS Chapters in 12 regions. The Council holds at least three meetings a year.

The TRCS Executive Committee is comprised of the Executive Vice President, the Secretary General, the Treasurer, and four members of the Disaster Relief Center (DRC) Council who are appointed by the Executive Vice President. The Committee is responsible for controlling and supervising the activities of the TRCS. The Council is comprised of the President of the Council, the Executive Vice President, and 25 members, as well as 12 representatives of the Provincial TRCS Chapters in 12 regions. The Council holds at least three meetings a year.

The TRCS Executive Committee is comprised of the Executive Vice President, the Secretary General, the Treasurer, and four members of the Disaster Relief Center (DRC) Council who are appointed by the Executive Vice President. The Committee is responsible for supervising the activities of TRCS that have been assigned by the Council. It is also authorized to give approval in lieu of the Council at times when the Council does not hold a meeting. The Committee holds meetings once a month.

The TRCS Management Committee is comprised of the Secretary General of TRCS, the Treasurer, Assistant Secretaries General, and
the directors of all the bureaus of the TRCS. The Committee is responsible for conducting all the activities of TRCS according to the Acts, rules, and regulations of the Council and the Executive Committee. It is authorized to give consent in lieu of the Executive Committee in matters specified in the regulations of the Executive Committee and other regulations issued by the Executive Committee. The Management Committee holds a meeting once every month. Figure 13 is an organizational chart of the TRCS.

In 2020, vulnerable Thai households experienced a spike in humanitarian need due to the outbreak of COVID-19 in the early part of the year and periodic heavy rainfall throughout the country between August and December that led to persistent flooding and flash flooding. Many communities were isolated by the COVID-19 pandemic and severe weather.

With support from USAID’s Bureau for Humanitarian Assistance (USAID/BHA) and the IFRC, TRCS distributed more than 415,287 COVID-19 relief kits (as of 15 December 2021)—including food and essential water, sanitation, and hygiene items—to people in 73 provinces in Thailand as shown in Figure 14.

IFRC and TRCS facilitated their humanitarian relief efforts through a mobile application called Phonphai, developed with USAID/BHA support. In collaboration with 19 government disaster response agencies in Thailand, including the DDPM, the Ministry of Public Health, and the Department of Public Works, TRCS ordered and processed relief kits using Phonphai, and coordinated with frontline responders and community members to deliver them to vulnerable households. Healthcare volunteers in rural communities are also using Phonphai to support vulnerable people in quarantine at home to conduct primary health screenings. Volunteers are able to order relief kits through Phonphai that are then delivered directly to households in need. More information about TCRS’s work can be found at its website: https://english.redcross.or.th/

U.S. Government Agencies in Thailand

U.S. Embassy Bangkok

The U.S. and Thailand established relations in 1818 and signed a Treaty of Amity and Commerce in 1833, formalizing diplomatic relations. The Treaty of Amity and Commerce of 1833 began a partnership that has developed and strengthened over time. In 2012, the U.S. and Thailand signed a Joint Vision statement reaffirming their defense alliance. Today the U.S. and Thailand cooperate on a wide range of programs across a vast range of issues, including education and culture, public health, business and trade, democracy, as well as security and military cooperation.

U.S. Embassy Bangkok contact information:
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Bangkok, Thailand 10330
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U.S. Consulate General Chiang Mai

The U.S. Consulate General in Chiang Mai provides services to American citizens, assists with non-immigrant visa adjudication, and promotes educational and cultural exchanges, environmental partnerships, and efforts to combat trafficking in persons. Outside of Bangkok, the U.S. Consulate General in Chiang Mai is the sole U.S. consular presence. Staff from the Department of State, the Drug Enforcement Administration, and the U.S. Air Force’s Technical Application Center are stationed in Chiang Mai associated with the Consulate.

U.S. Agency for International Development, Regional Development Mission for Asia (USAID/RDMA)

Thailand graduated from USAID assistance in 1995, and in 2003 USAID opened a regional mission in Bangkok that serves the Asia-Pacific. Drawing upon Thai expertise, USAID works on cross-border issues of concern to Thailand and the region. The bulk of USAID activities in Thailand address transnational challenges
Figure 13: Thai Red Cross Society (TRCS) Organization Chart

Figure 14: Summary of TRCS COVID-19 Relief Assistance
through regional programs, including support to ASEAN, the APEC forum, the Lower Mekong Initiative, and other regional forums. These efforts are leading to greater regional economic integration and cooperation on issues of mutual interest to the United States and Thailand.221

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**Joint US Military Advisory Group Thailand (JUSMAGTHAI)**
The Joint United States Military Advisory Group Thailand (JUSMAGTHAI) was established on 22 September 1953. The Chief of JUSMAGTHAI also serves as the Senior Defense Official and Defense Attaché to Thailand. As a Security Cooperation Organization, JUSMAGTHAI supports a variety of missions to include a robust Joint Combined Bilateral Exercise Program (averaging over 60 exercises a year), foreign military sales, and humanitarian demining missions. JUSMAGTHAI is located on a RTArF military compound approximately 2 km (1.24 mi) from the U.S. Embassy.222

**Armed Forces Research Institute of Medical Sciences (AFRIMS)**
The mission of the U.S. Army Medical Directorate of the Armed Forces Research Institute of Medical Sciences (USAMD-AFRIMS) is to conduct state of the art medical research and disease surveillance to develop and evaluate medical products, vaccines, and diagnostics to protect U.S. Department of Defense (DoD) personnel from infectious disease threats—many of which also endanger the men, women, and children of Southeast Asia. First formed following the 1958 cholera epidemic as the Southeast Asia Treaty Organization (SEATO) Cholera Research Project, AFRIMS’ scope was broadened in 1960 with a mandate to contribute to the eradication of other infectious diseases. USAMD-AFRIMS resides at the RTA Medical Center in Bangkok and is a directorate of the Walter Reed Army Institute of Research (WRAIR) under the U.S. Army Medical Research and Material Command (USAMRMC).223

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Website: http://www.AFRIMS.org
E-mail: afrims@afrims.org

**Centers for Disease Control (CDC)**
CDC has worked closely with the Thailand Ministry of Public Health for more than 35 years, strengthening local capacity to detect, prevent, and control diseases. HIV/AIDS, emerging infectious diseases, influenza, tuberculosis, malaria, non-communicable diseases, and refugee and migrant health are the main focus of its work in Thailand and the Southeast Asia region. CDC programs also improve public health workforce skills in areas like laboratory, epidemiology, and management science. USAID is an important partner in HIV/AIDS, malaria, tuberculosis, and emerging infectious disease control.224 The CDC in Thailand is located on the Ministry of Public Health campus in Nonthaburi.
ORGANIZATIONAL STRUCTURE FOR DISASTER MANAGEMENT

USTDA regional activities with Thailand participation includes:
• ASEAN Regional Disaster Management, Mitigation, and Response Technologies Workshop
• Regional Disaster Communications Management Reverse Trade Mission
• Regional Tsunami Response and Disaster Preparedness Workshop
• Regional Emergency Management Conference

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Laws, Policies, and Plans on Disaster Management

Thailand’s disaster management framework includes the following laws, policies, and plans:
• Disaster Prevention and Mitigation Act of 2007 (DPM Act 2007);
• National Disaster Risk Management Plan 2015-2020 (National DRM Plan);
• Provincial and District DRM Plans;
• DRM Annual Action Plans.

Table 5 summarizes the scope and purpose of the key legal and policy instruments that make up Thailand’s disaster management framework. 226

Disaster Prevention and Mitigation Act 2007

The Disaster Prevention and Mitigation Act of 2007 (DPM Act 2007), effective 7 September 2007, set outs the main statutory framework for DRM and disaster response in Thailand. The

For more information see the CDC’s website: https://www.cdc.gov/globalhealth/countries/thailand/default.htm

USTDA's regional office is located in Bangkok and maintains a year-round open window to consider customized technical assistance requests from Thai entities through their grant facility and partnership building programs.

Example of USTDA activities in Thailand include:
• Thailand Last-Mile Early Warning System & ICT Modernization Project Technical Assistance
• Thailand Disaster Warning Systems Integration and Capacity Development Technical Assistance
• Thailand Integrated River and Wetlands Management System Feasibility Study
• Thailand Flood Forecasting and Warning System Feasibility Study
• Thailand Flood Control Solutions Reverse Trade Mission
• Thailand National Meteorological Center Training Grant

U.S. Government Agencies in Thailand

U.S. Trade and Development Agency (USTDA)
U.S. Trade and Development Agency (USTDA) has provided support for Thailand’s disaster management infrastructure and capacity building. This includes over $5.25 million in grants to the RTG, as well as inclusion of Thai officials in regional training activities and missions to the U.S. featuring relevant technologies and best practices (see some examples listed below). For example, USTDA’s technical assistance helped with the setup of Thailand’s National Disaster Warning Center (NDWC) and hazard monitoring system in 2005-2007. 225 USTDA is working with DDPM under a new grant for the Last-Mile Early Warning Communications Pilot & Information, Communication and Technology (ICT) Modernization Technical Assistance (currently pending RTG clearances).

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E: sapichatthanapath@ustda.gov
E: indopacific@ustda.gov
The National Disaster Risk Management Plan 2015-2020 (National DRM Plan) is a blueprint for DRM, DRR, emergency management, disaster recovery, and international cooperation. It also outlines a process for implementation, including promoting a common understanding of key principles and concepts, applying an integrated and coordinated approach, allocating resources for implementation, and monitoring and evaluation.

The National DRM Plan outlines four key policy areas:

1. Disaster Prevention and Mitigation Act (2007)
3. DPM Act 2007

The law covers three major categories of disasters: 1) man-made and natural disasters, 2) disasters resulting from air raids during wartime, and 3) disasters resulting from sabotage or a terrorist attack. The law establishes the National Disaster Prevention and Mitigation Committee (NDPMC) as the top policy body for DRM. The law also establishes the Department of Disaster Prevention and Mitigation (DDPM) under MOI as the secretariat for the NDPMC. The DPM Act 2007 is supported by the following six regulations:

1. Ministerial Regulation Prescribing Criteria and Method for Permissible Compensation Payable to Person(s) Injured While Performing Disaster-Related Duties Assigned B.E. 2554 (2011);
2. Regulation of MOI on Criteria for Appointment of Disaster Prevention and Mitigation Officials and Their Performance of Assigned Duties B.E. 2553 (2010);
3. Regulation of MOI on Civil Volunteer Affairs B.E. 2553 (2010);
4. Regulation of MOI on Disaster Prevention and Mitigation Official Uniforms, Insignia,
5. Regulation of MOI on Criteria for Issuance of Reference and Verification Letter to Disaster Affected People or Owner or Possessor of Property for Establishing Entitlement to Disaster Relief Assistance or Other Services B.E. 2552 (2009);
6. Notification of Department of Disaster Prevention and Mitigation on Disaster Affected People Verification Form.

Table 5: Key Laws, Policies, and Plans, and Implementing Authorities

<table>
<thead>
<tr>
<th>Implementation</th>
<th>Plan/Policy</th>
<th>Scope</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Disaster Prevention and Mitigation</td>
<td>Disaster Prevention Mitigation Act (2007)</td>
<td>National, Provincial, District, Sub-District, Local Community</td>
<td>Aims to streamline disaster management systems of Thailand by clarifying roles and coordination among stakeholders. Includes provisions for DRR.</td>
</tr>
<tr>
<td>Department of Disaster Prevention and Mitigation and Other Agencies</td>
<td>National Disaster Prevention and Mitigation Plan (2015-2020)</td>
<td>National, Provincial, Local</td>
<td>Outlines strategic focus areas for DRM interventions, aligned with the Sendai Framework for Disaster Risk Reduction. Intended to cater for all levels of the government, alongside relevant stakeholders.</td>
</tr>
<tr>
<td>Sub-District Administration Unit</td>
<td>DRM Action Plan (updated annually)</td>
<td>Local</td>
<td>Guides the implementation of risk management activities at the local level. Intended for the respective sub-district authorities.</td>
</tr>
<tr>
<td>Provincial Authorities</td>
<td>Provincial and District Disaster Prevention and Mitigation Plans</td>
<td>Provincial</td>
<td>Guides the implementation of DRM activities at the provincial level, implemented by province governance and supporting stakeholders.</td>
</tr>
</tbody>
</table>
1. Improving and promoting disaster risk reduction by means of boosting the efficiency of disaster prevention, preparedness, and reducing disaster impacts through creating safe communities and promoting community and local involvement in improving disaster management practices in order to build resilience and foster adaptation to the effects of disaster events towards sustainable development;

2. Synergizing multi-sectorial partnerships’ efforts to develop and enhance the capacities necessary for more effective, efficient, and coherent emergency management as well as for equitable, timely, and impartial distribution of relief supplies to disaster victims and mitigating disaster impacts;

3. Developing disaster recovery system that ably handles the demand for recovery assistance of disaster victims in a timely and impartial manner and the needs for rapid rehabilitation and reconstruction of disaster devastated areas to previous state or building back better and safer;

4. Developing and promoting the standards on international cooperation for disaster risk reduction between and among partnerships and networks at both national and international levels to be more efficient and effective.  

The National Plan sets out four key strategies for DRM:

- Strategy 1: Focusing on disaster risk reduction;
- Strategy 2: Applying integrated emergency management system;
- Strategy 3: Strengthening and enhancing the efficiency of sustainable disaster recovery;
- Strategy 4: Promoting and strengthening international cooperation on disaster.

Figure 15 depicts Thailand’s DRM strategy under the National DRM Plan. The five-year plan is regularly revised, and a 2021-2026 plan has been prepared and is pending approval by the RTG Cabinet.

Provincial and District Disaster Prevention and Mitigation Plans

To support the realization of the National DRM Plan, PDMCs and the BMADMC have developed Provincial DRM Plans, implemented through a budget allocation for DRM from the national budget. Likewise, the district DMCs are responsible for the development of the district DRM plan, to support the respective provincial DRM plan.

DRM Action Plans

To support implementation of the provincial DRM plan, the provincial DMC is responsible for preparing district multi-hazard specific DRM action plans pursuant to the provincial DRM plan. For example, the BMA is required to develop an action plan based on its vulnerability and exposure to specific hazards in line with the BMA DRM plan.

Other Disaster-Relevant Legal Instruments

A number of different legal instruments are relevant to different types of hazards in Thailand. Table 6 is a summary of the key laws, regulations, and directives, supporting specific hazard DRM in the country.

Disaster Management Communications

Early Warning Systems

There are numerous initiatives and technology-based mechanisms in place in Thailand to improve the coverage and delivery of early warning for a range of hazards. The National Disaster Warning Center (NDWC) plays a key role in monitoring all hazard risks. The Thai Meteorological Department (TMD) plays an important role in monitoring hydro-meteorological hazards from day-to-day weather forecasts to longer-term seasonal forecasts and storm tracking. The Earthquake Observation Division of the TMD monitors seismic activities with its network of automatic earthquake monitoring stations around the country. The Department of Water Resources’ Early Warning
**Target**
1. To avoid hazards and their potential impacts through the reduction of disaster vulnerability and exposure along with enhancing and strengthening national and local preparedness in the face of potential disasters.
2. To put in place measures/guidelines towards efficient disaster prevention, preparedness, and disaster impact reduction.

**Disaster Risk Reduction Strategy**

**Strategy 1**  Developing standardized tools for conducting disaster risk assessment

**Strategy 2**  Developing and systematizing robust disaster risk reduction measures

**Strategy 3**  Promoting and encouraging every part of society at every level to develop code of practice for disaster risk reduction

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**Target**
1. To apply resilience-focused and standard-based approaches to national disaster risk management practices, and ensuring overall readiness to deal with disaster in a coordinated and integrated manner
2. To cultivate a lifelong learning culture and boost the natural disaster resilience of all sectors of society with the aim to give individuals a better understanding of the way to participate actively in the design and implementation of their community DRM
3. To encourage general public engagement in cultivating and maintaining a robust safety culture and disaster-resilient society

**Strategy for Integrated Emergency Management Efforts**

**Strategy 1**  Developing and maintaining emergency management standards

**Strategy 2**  Developing emergency response support system

**Strategy 3**  Strengthening disaster relief system and operational guidelines

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**Target**
1. To develop and institutionalize the systems and mechanisms for addressing disasters in conjunction with relevant national agencies and international cooperation organizations
2. To develop the national standards on disaster risk management and interlink them with those at regional, sub-regional, and inter – regional levels

**Strategy to promote international cooperation on disaster risk management**

**Strategy 1**  Developing and establishing a coordination mechanism/system for unified humanitarian assistance

**Strategy 2**  Uplifting the standards in core areas of humanitarian response

**Strategy 3**  Promoting and encouraging exchanges of experiences, knowledge and good practices on disaster risk management

**Strategy 4**  Strengthening institutional and technical capacity at national level to take leadership role in disaster risk management

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**Target**
1. To ensure that the emergency management efforts are conducted in a systematic, standardized, unified, integrated and multisectoral manner to increase efficiency and effectiveness of such efforts.
2. To ensure the rapid, timely and fair provision of disaster relief and emergency assistance to disaster affected people.
3. To mitigate and minimize potential loss of human lives and physical property of disaster affected people.

**Figure 15: Disaster Risk Management Strategy**
<table>
<thead>
<tr>
<th>Type of Disaster</th>
<th>Main Disaster Risk Management Legislation</th>
<th>Law/Regulation/Notification/Directives Supporting Disaster Risk Management Efforts</th>
<th>Other Law/Regulation/Notification/Directives Applicable to All Types of Disaster</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1.2) Ministerial Regulation on Stipulation of Criteria for Granting Permission for Retrofitting Existing Buildings to Improve Seismic Resistance Capacity B.E. 2555 (2012)</td>
<td>-item 3.6.2 (1.3) – (1.8), (1.10), (1.11)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.3) Ministerial Regulation on Stipulation of Criteria for Earthquake Resistance Design of Structures B.E. 2550 (2007)</td>
<td>-item 3.6.2 (2.1) – (2.3)</td>
</tr>
<tr>
<td>Floods</td>
<td>Disaster Prevention and Mitigation Act B.E. 2550 (2007) and its six subordinate regulations.</td>
<td>2.1) State Irrigation Act B.E. 2485 (1942)</td>
<td>-item 3.6.2 (3) – (4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.2) The Navigation in Thai Waters Act B.E. 2456 (1913)</td>
<td>-item 3.6.2 (6) (6.1)- (6.11), (6.18) should be applied to manage disaster as the case may be</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.3) Royal Decree on Provision of Financial Assistance to People Affected By Floods B.E. 2555 (2012)</td>
<td></td>
</tr>
<tr>
<td>Fire</td>
<td>Disaster Prevention and Mitigation Act B.E. 2550 (2007) and its six subordinate regulations.</td>
<td>3.1) Building Control Act B.E. 2522 (1979)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.2 Occupational Safety, Health an Environment in Work Place Act B.E. 2554 (2011)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.3) Ministerial Regulation on Stipulation of Category of Buildings and Security System Therein to Be Used for Operating Evening Entertainment Business B.E. 2555 (2012)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>3.4) Ministerial Regulation on Permitting the Use of Building for Operating Theatrical Business, Category of Theatrical Premise and Security System Installed Therein and the Permit Fee B.E. 2550 (2007)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.5) Ministerial Regulation on Stipulation of Type and Category of Buildings that Owner or Possessor or Business Operator Necessary to Arrange Liability as Required by Law to Life, Body, and Property of Third Parties B.E. 2548 (2005)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.6) Notification of Department of Energy Business on Criteria and Method For Provision of Damage Insurance to Person Injured or Died As a Result of Operations of Regulated Business Category 3 B.E. 2549 (2006)</td>
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<td></td>
<td></td>
<td>Etc.</td>
<td></td>
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</tbody>
</table>

Table 6: Summary of Key Laws, Regulations, and Directives Relevant to Specific Hazard DRM
<table>
<thead>
<tr>
<th>Type of Disaster</th>
<th>Main Disaster Management Legislation</th>
<th>Law/Regulation/Notification/Directives Supporting Disaster Risk Management Efforts</th>
<th>Other Law/Regulation/Notification/Directives Applicable to All Types of Disaster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Hazards/Hazards Associated with Hazardous Substances</td>
<td>Disaster Prevention and Mitigation Act B.E. 2550 (2007) and its six subordinate regulations.</td>
<td>4.1) Hazardous Substance Act B.E. 2535 (1992)</td>
<td>Guides the implementation of DRM activities at the provincial level, implemented by province governance and supporting stakeholders.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.2) Atomic Energy for Peace Act B.E. 2504 (1961)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>4.3) Firearms, Ammunition, Explosives, Fireworks, and the Equivalent of Firearms Act B.E. 2490 (1947)</td>
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<tr>
<td></td>
<td></td>
<td>Etc.</td>
<td></td>
</tr>
<tr>
<td>Maritime Disasters</td>
<td></td>
<td>5.1) The Navigation in Thai Waters Act B.E. 2456 (1913)</td>
<td></td>
</tr>
<tr>
<td>- Maritime Accident</td>
<td></td>
<td>5.2) Authorizing Naval Officials to Suppress Specified Maritime Offences Act B.E. 2490 (1947) and Addendum</td>
<td></td>
</tr>
<tr>
<td>- Sea Rescue</td>
<td></td>
<td>5.4) Increasing the Authority of Police to Prevent and Suppress Maritime Offences Act B.E. 2496 (1953)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.5) The Enhancement and Conservation of the National Environmental Quality Act B.E. 2535 (1992)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>5.6) Public Administration Act B.E. 2534 (1991) and Addendum</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.7) Regulation of the Prime Minister office on Prevention and Elimination of Maritime Oil Pollution B.E. 2547 (2004)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.8) Notification of Marine Department No. 477/2543 (2000) Regarding Criteria For the Safe Transportation of Petroleum and Chemical Products</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>6.2) Public Health Act B.E. 2535 (1992)</td>
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<td></td>
<td></td>
<td>Etc.</td>
<td></td>
</tr>
</tbody>
</table>

Table 6: Summary of Key Laws, Regulations, and Directives Relevant to Specific Hazard DRM (cont.)
ORGANIZATIONAL STRUCTURE FOR DISASTER MANAGEMENT

<table>
<thead>
<tr>
<th>Type of Disaster</th>
<th>Main Disaster Risk Management Legislation</th>
<th>Law/Regulation/Notification/Directives Supporting Disaster Risk Management Efforts</th>
<th>Other Law/Regulation/Notification/Directives Applicable to All Types of Disaster</th>
</tr>
</thead>
</table>
7.3) Rabies Act B.E. 2535 (1992)  
Etc. | |

Table 6: Summary of Key Laws, Regulations, and Directives Relevant to Specific Hazard DRM (cont.)

System (EWS) monitors rainfall volumes and water levels in real-time to be utilized in flashflood and landslide alerts.\(^{238}\)

**National Disaster Warning Center (NDWC)**

The NDWC was formed in 2007 in the aftermath of the 2004 Tsunami, which killed or resulted in the disappearance of more than 8,000 people in Thailand. The NDWC was designed to process information on seismic activity in the region and issue warnings, particularly for tsunamis that may hit the country’s Andaman Sea coastline. The NDWC put in place 79 warning towers in coastal provinces and launched a U.S.-funded deep-sea buoy in the Indian Ocean to detect tidal waves as shown in Figure 16.\(^{239}\)

At the time of its establishment, the NDWC was under the oversight of the Prime Minister’s Office and the Meteorological Department of the Ministry of Information and Communication Technology.\(^{240}\) Since 2016, the NDWC has been under the authority of the DDPM of the MOI.\(^{241}\) The NDWC is responsible for analyzing disaster information from both domestic and international sources, evaluating the potential impact of the disaster, and issuing warning to the public. It is also required by law to provide recommendations on loss reduction, risk avoidance and evacuation, and disaster relief to government officials and related agencies so that they have information to help potentially-affected populations.\(^{242}\) Figure 17 depicts the NDWC’s concept of operation and Figure 18 is a depiction of the NDWC’s role in Thailand’s disaster EWS.\(^{243}\)

Before the 2004 Tsunami, Thailand did not have early warning systems in place for tsunami hazards, although the RTG started shifting its emphasis on relief and rehabilitation in 2002 to a more proactive approach of mitigation and disaster preparedness.\(^{244}\) Few countries in the affected region had EWS and support tools at that time. Following the tsunami, Thai officials created the NDWC to strengthen the national tsunami and earthquake warning system. The NDWC, in partnership with the U.S. Trade and Development Agency (USTDA) and USAID, contracted the Pacific Disaster Center (PDC) to help automate the dissemination of disaster information in support of early warning. This resulted in the development of a multi-hazard early warning and decision support tool known as “ThaiAWARE”, which is based on the DisasterAWARE platform.\(^{245}\)
Figure 17: NDWC Concept of Operation

Figure 18: NDWC’s Role in Thailand Disaster EWS
**Thai Meteorological Department (TMD)**

The responsible agency for flood and storm warnings in Thailand is the TMD. TMD was created and has been authorized to perform the following five duties:

- To supply weather forecasts for the entire country and publicize disaster warnings to fulfill the requirement from administration and management in natural disaster mitigation;
- To build the people’s awareness toward natural disasters; enable them to perform correct surviving practices; and reduce effects from natural disasters by using modern technologies together with IT services;
- To become the meteorological IT data and service center at the national level for users in any ventures;
- To improve and develop the TMD’s research works;
- To strengthen the TMD’s roles in international cooperation concerning meteorology and environment with the purpose of profound comprehension on the changing world situation.

Hazard warnings can be found on the TMD website: [https://www.tmd.go.th/list_warning.php](https://www.tmd.go.th/list_warning.php)

**Earthquake Observation Division of the TMD**

The Earthquake Observation Division of the TMD monitors seismic activities with a network of automatic earthquake monitoring stations, ground acceleration stations, stations for measuring the earth's crusts, and sea level measurement stations. More information can be found on the Earthquake Observation Division's webpage: [https://earthquake.tmd.go.th/](https://earthquake.tmd.go.th/)

**Community-level EWS**

At the community level, EWS have been developed for the purposes of delivering alerts to the ‘last mile’ with a focus on flash flooding and landslides. In hilly areas and riverbank checkpoints, rain gauges have been installed to provide the community with information as soon as signs of potential landslides are detected.

Volunteer networks and designated individuals with the responsibility to disseminate alerts in communities have been established since 2012 across the country with the support of the Department of Water Resources (DWR), DDPM, TMD, and local administrative units.

Some regions have also received support from international assistance partners to improve local EWS. For example, in southern Thailand, the United Nations Development Programme (UNDP) and the ADPC have worked with the DDPM to implement a community-based multi-hazard warning system. Sea-level gauge stations located at Ko Taphao, Ko Miang, and Similian Islands (alongside numerous other multi-purpose gauges) are improving the capacity to monitor sea levels and storm surges, to improve the accuracy of tsunami detection, and climate change monitoring.

**Dissemination of Warning Messages**

Under Thailand’s National DRM Plan, there are five levels of disaster warning. Figure 19 depicts the color codes and description of the level of warning and action required by the general public.

**Information Sharing**

Understanding how to overcome the information challenges that civilian and military agencies experience during a typical disaster response mission is important. Knowing what the available humanitarian assistance and disaster response (HADR) resources are will assist Joint Task Force leaders and staff during mission planning. Sharing information is critical since no single responding entity, NGO, International Governmental Organization (IGO), assisting country government, or the host government can be the source of all the required information.

Collaboration, information sharing (IS), and networking have been the backbone of successful disaster response and preparation. Disseminating information not only to those in-country and threatened by disaster, but also to those responding to assist in the emergency...
Humanitarian Information Sources

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

UN OCHA’s ROAP seeks to optimize the speed, volume, and quality of humanitarian assistance and coordinates emergency preparedness and response in the world’s most disaster-prone region in support of national governments. ROAP covers 41 countries, partnering with them for coordinated and effective international responses to emergency situations.

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

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

ReliefWeb

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

Website: https://reliefweb.int/

PreventionWeb

PreventionWeb is provided by the UN Office for Disaster Risk Reduction (UNDRR formerly UNISDR) to consolidate disaster risk reduction information into an online, easy to understand platform.

Website: https://www.preventionweb.net/english/

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

IFRC is the world’s largest humanitarian organization, comprised of its 192-member National Societies, a secretariat in Geneva, Switzerland, and over 60 delegations around the world. The IFRC carries out relief operations to

Figure 19: Disaster Warning Levels for the General Public

has been crucial to timely, efficient, and effective disaster response. Recent technology has advanced to aid predicting and alerting of disasters around the world, which has resulted in early warning and evacuation measures as well as opportunities to react and prepare for incoming threats to countries. The following are some of the ways in which information regarding DRM and response are shared. Managing information is central to the overall mechanisms within disaster preparedness and response. There are many resources, stakeholders, and components to consider with IS before, during, and after a natural disaster. This section will discuss country-specific, humanitarian, regional, government, and DoD information sources.

Thailand Information Sources:

Thai Red Cross Society (TRCS)

The TRCS is designated as a primary responder under Thailand’s disaster management system, and the role and functions of the TRCS are included in the National DRM Plan. Additionally, the national mandate requires that the TRCS maintain frequent contact with the Thai military through their active involvement in exercises, conferences, and other events intended to enhance relationships and to promote understanding and discussions.252 Website: https://english.redcross.or.th/
assist victims of disasters and combines this with development work to strengthen the capacities of its member National Societies. IFRC’s work focuses on four core areas: promoting humanitarian values, disaster response, disaster preparedness, and health and community care. Website: https://media.ifrc.org/ifrc

International Committee of the Red Cross (ICRC)
ICRC is an impartial, neutral, and independent organization whose exclusively humanitarian mission is to protect the lives and dignity of victims of armed conflict and other situations of violence and to provide them with assistance. It also works to prevent suffering by promoting and strengthening humanitarian law and universal humanitarian principles. ICRC, together with IFRC and the 192 Red Cross Red Crescent Societies, make up the Red Cross Red Crescent Movement. Website: https://www.icrc.org/en

Humanitarian Response
Humanitarian Response is a platform providing the humanitarian community a means to aid in coordination of operational information and related activities. Website: https://www.humanitarianresponse.info

Global Disaster Alert and Coordination System (GDACS)
GDACS is a cooperation framework between the United Nations, the European Commission, and disaster managers worldwide to improve alerts, information exchange, and coordination in the first phase after major sudden-onset disasters. Website: https://www.gdacs.org/alerts/

Virtual OSOCC
The Virtual On-Site Operations Coordination Centre (OSOCC) is a real-time online coordination tool for disaster response professionals from urban search and rescue (USAR) teams, national authorities, as well as regional and international organizations at a global level. Website: https://vosocc.unocha.org/
The latest alerts can be found here: http://www.gdacs.org/Alerts/default.aspx
To subscribe: http://www.gdacs.org/About/contactus.aspx

Consider other information resources, such as:

Think Hazard!
ThinkHazard! is an online tool that provides a general overview of the hazards for a given location that should be considered in project design and implementation to promote disaster and climate resilience. The tool highlights the likelihood of different natural hazards affecting project areas (very low, low, medium, and high), provides guidance on how to reduce the impact of these hazards, and where to find more information. The hazard levels provided are based on published hazard data, provided by a range of private, academic, and public organizations. Information is provided on Thailand regarding hazards, country assessments, projects, early warning systems, and other resources. Website: http://thinkhazard.org

Humanitarian Country Teams (HCT)
HCT is a strategic and operational decision-making and oversight forum established and led by the Humanitarian Coordinator in each country. It is generally comprised of representatives from UN agencies including the International Organisation for Migration (IOM), international NGOs, and the IFRC as well as the respective National Society in the country. During a disaster response, HCTs often produce a Situation Report (SitRep), usually in conjunction with OCHA.
Most HCT SitReps can be found through ReliefWeb: https://reliefweb.int/

Humanitarian Data Exchange (HDX)
HDX is an open platform for sharing data across crises and organizations launched in 2014 with the goal of centralizing humanitarian data for easy access and analysis. HDX is managed by
ORGANIZATIONAL STRUCTURE FOR DISASTER MANAGEMENT

OCHA’s Center for Humanitarian Data in The Hague.
Website: https://data.humdata.org/

Regional Information Sources

Association of Southeast Asian Nation (ASEAN) Coordinating Centre for Humanitarian Assistance on disaster management (AHA Centre)
The AHA Centre is an intergovernmental organization which aims to facilitate cooperation and coordination among ASEAN Member States and with the UN and international organizations for disaster management and emergency response in the ASEAN region.
The ASEAN Disaster Information Network (ADINET) is a repository of information concerning hazards and disasters that have occurred in the region. The platform is open to the public and allows for members of the public to submit information about any hazard and disaster to the AHA Centre. The AHA Centre will verify and validate submitted information as well as adding new information from its sources. ADINET has been recording disaster information in the region since the AHA Centre became operational in 2012.
Website: https://ahacentre.org/disaster-information-management/

Changi Regional HADR Coordination Centre (RHCC)
Changi RHCC was launched in September 2014 to support the military of a disaster-affected state in coordinating assistance with assisting foreign militaries. It aims to provide open, inclusive, and flexible platforms that allow both regional and extra-regional militaries to work together effectively in a multinational disaster response. Changi RHCC manages the OPERA CIS web portal to broadcast the updated situation status of multinational military responses to disasters to minimize duplication and gaps in the provision of foreign military assistance.
Website: https://www.changirhcc.org/
To subscribe to RHCC Weekly and Spot Reports, email: Changi_RHCC@defence.gov.sg

U.S. Government (USG) Sources

U.S. Agency for International Development (USAID)
USAID is committed to responding to crises around the world to help people and places most in need. They aim to:
• Promote Global Health
• Support Global Stability
• Provide Humanitarian Assistance
• Catalyze Innovation and Partnership
• Empower Women and Girls

USAID produces a monthly newsletter called USAID Newsletter which is available digitally at https://www.usaid.gov/news-information/newsletter.
More information and updates from USAID are available via their blog, IMPACT, at https://blog.usaid.gov/ and on Facebook, Instagram, Twitter, and YouTube.
Website: https://www.usaid.gov/

USAID’s Bureau for Humanitarian Assistance (BHA) is responsible for leading and coordinating the U.S. Government's response to disasters overseas. BHA responds to an average of 75 disasters in 70 countries every year. BHA fulfills its mandate of saving lives, alleviating human suffering, and the reduction of the social and economic impact of disasters worldwide in partnership with USAID functional and regional bureaus and other U.S. government agencies. BHA works with the international population to assist countries to prepare for, respond to, and recover from humanitarian crises.25

USAID/BHA products include situation reports and maps, which are available via email mailing lists as well as Reliefweb.org. Information products (HA Updates/Fact Sheets, etc.) are also available on USAID.gov (https://www.usaid.gov/humanitarian-assistance)
For BHA updates on a disaster response, ask the BHA representative for the respective DoD Geographic Combatant Command to add you
Importantly, APAN’s technology team has been supporting HADR operations for over 15 years. APAN has played an integral role in the success of disaster responses, such as the 2015 California Wildfire Response and the 2013 Typhoon Haiyan Response in which they provided organizations and militaries a centralized location to share information, increase situational awareness, and decrease response time and duplicated efforts for best practices in HADR services.

Website: [https://www.apan.org/](https://www.apan.org/)

Note: The Multinational Communications Interoperability Program (MCIP) has an APAN site used in planning exercises and real world HADR information sharing.

**Joint Typhoon Warning Center**

JTWC provides advanced warning for U.S. Government agencies and organizations in relevant areas.

Website: [https://www.metoc.navy.mil/jtwc/jtwc.html](https://www.metoc.navy.mil/jtwc/jtwc.html)

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

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

Website: [https://apcss.org/](https://apcss.org/)

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

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

Website: https://www.cfe-dmha.org/
Facebook: https://facebook.com/cfedmha
Twitter: https://twitter.com/cfedmha

Disaster Management Reference Handbooks are available for download at: https://www.cfe-dmha.org/DMHA-Resources/Disaster-Management-Reference-Handbooks

CFE-DM Disaster Information Reports are available for download at: https://www.cfe-dmha.org/Publications/Reports

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

COVID-19 Information Sharing Sources

Johns Hopkins Coronavirus Resource Center
The John Hopkins University (JHU) provides two key resources on COVID-19 information:
- JHU Coronavirus Resource Center provides a Daily COVID-19 Data in Motion report, which shares critical data on COVID-19 from the last 24 hours. Website: https://coronavirus.jhu.edu/
- Data repository operated by the JHU Center

for Systems Science and Engineering (JHU CSSE) and supported by ESRI Living Atlas Team and the Johns Hopkins University Applied Physics Lab (JHU APL). Website: https://github.com/CSSEGISandData/COVID-19

INFORM's COVID-19 Risk Index

The INFORM COVID-19 Risk Index is a composite index that identifies “countries at risk from health and humanitarian impacts of COVID-19 that could overwhelm current national response capacity, and therefore lead to a need for additional international assistance.”

Figure 20 shows the INFORM COVID-19 Risk Formula.

The INFORM COVID-19 Risk Index primarily concerned with structural risk factors, i.e., those that existed before the outbreak. It can be used to support prioritization of preparedness and early response actions for the primary impacts of the pandemic and identify countries where secondary impacts are likely to have the most critical humanitarian consequences.

The main scope of the INFORM COVID-19 Risk Index is global and regional risk-informed resource allocation, i.e., where comparable understanding of countries’ risk is important. It cannot predict the impacts of the pandemic in individual countries. It does not consider the mechanisms behind secondary impacts - for example how a COVID-19 outbreak could increase conflict risk.

Website: https://data.humdata.org/dataset/inform-covid-19-risk-index-version-0-1-4

<table>
<thead>
<tr>
<th>Risk Dimension</th>
<th>INFORM COVID-19 Risk</th>
<th>Risk Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard &amp; Exposure</td>
<td>P2P</td>
<td>Geometric Average</td>
</tr>
<tr>
<td>Analysis</td>
<td>WaSH</td>
<td>Population</td>
</tr>
</tbody>
</table>

Figure 20: INFORM COVID-19 Risk Formula
The 2019 World Economic Forum’s (WEF) Global Competitiveness Report ranked Thailand 40th out of 141 countries globally for economic competitiveness. Thailand’s overall competitiveness is based on a ranking at 71 out of 141 countries for quality of infrastructure. Thailand’s transport infrastructure received a score of 53 out of 100 (with 0 being the worst, and 100 being the best). Thailand is assessed to have relatively good road connectivity, quality of road infrastructure and efficiency of air transport services. Table 7 is a summary of Thailand’s scores and ranking among 141 countries globally for quality of transport infrastructure.

Thailand’s utility infrastructure received a score of 78.9 out of a 100 due to broad electricity access (100% of the population) and quality of electricity supply (98.1% of output), but relatively poor quality of drinking water with 52.7% of the population exposed to unsafe drinking water. Table 8 is a summary of Thailand’s scores and ranking among 141 countries globally for quality of utility infrastructure.

Thailand is investing around 1.9 trillion baht (approximately US$56 billion) under the Transport Infrastructure Development Plan 2015-2022 and Urgent Transport Action Plan 2015. Key infrastructure projects include: 1) intercity rail network development, 2) public transportation network development to solve traffic problems in Bangkok and its suburbs, 3) increase of highway capacity to connect the country’s key production bases with those of neighboring countries, 4) marine transport network development, and 5) enhancement of air transport service capacity.

**Airports**

Thailand has 11 international airports, with the majority operated by Airport of Thailand Public Limited Company (AOT). The Samui International Airport is privately owned and operated by Bangkok Airways, and the U-Tapao International Airport in the Eastern Special Development Zone is operated by the Royal Thai Navy.

Table 10 is a summary of the international airport locations, International Air Transport Association (IATA)/International Civil Aviation Organization (ICAO) Codes, maximum runway length and runway surface, and websites for the airports, where available.

**Domestic Airports**

Thailand has around 29 domestic airports operated by the Thailand Department of Airports (DOA), with the exception of Sukhothai Airport and Trat Airport, which are privately owned and operated by Bangkok Airways.

Table 11 is a summary of the domestic airport locations, IATA/ICAO Codes, maximum runway length and runway surface, and websites for the airports, where available.

**Seaports**

Thailand has a total coastline of 3,219 km (2,000 mi). The major seaports in Thailand are located in the following areas:

- Bangkok or Klong Toey;
- Laem Chabang;
- Map Ta Phut;
- Prachuap Port;
- Si Racha.

The Klong Toey or Bangkok Port is located on the west side of the Chao Phraya River and can handle approximately 1.5 million twenty-foot equivalent units (TEU) per annum. Laem Chabang is Thailand’s main container port and can handle about 11.1 million TEU/year. The port covers an area of around 2,536 acres. The
<table>
<thead>
<tr>
<th>Transport infrastructure</th>
<th>WEF Score</th>
<th>WEF Score range</th>
<th>Ranking (out of 141)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road connectivity</td>
<td>80</td>
<td>1-100 (best)</td>
<td>54</td>
</tr>
<tr>
<td>Quality of road infrastructure</td>
<td>4.4</td>
<td>1-7 (best)</td>
<td>55</td>
</tr>
<tr>
<td>Railroad density</td>
<td>8.7</td>
<td>km/1000 square km</td>
<td>55</td>
</tr>
<tr>
<td>Efficiency of train services</td>
<td>2.8</td>
<td>1-7 (best)</td>
<td>75</td>
</tr>
<tr>
<td>Airport connectivity</td>
<td>670,386.8</td>
<td>Not available</td>
<td>9</td>
</tr>
<tr>
<td>Efficiency of air transport services</td>
<td>5</td>
<td>1-7 (best)</td>
<td>48</td>
</tr>
<tr>
<td>Liner shipping connectivity</td>
<td>48</td>
<td>0-100 (best)</td>
<td>35</td>
</tr>
<tr>
<td>Efficiency of seaport services</td>
<td>4.1</td>
<td>1-7 (best)</td>
<td>73</td>
</tr>
</tbody>
</table>

Table 7: Transport Infrastructure Scores and Ranking under 2019 WEF Global Competitiveness Index

<table>
<thead>
<tr>
<th>Transport infrastructure</th>
<th>WEF Score</th>
<th>WEF Score range</th>
<th>Ranking (out of 141)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity access</td>
<td>100</td>
<td>% of population</td>
<td>2</td>
</tr>
<tr>
<td>Electricity supply quality</td>
<td>5.8</td>
<td>% of output</td>
<td>31</td>
</tr>
<tr>
<td>Exposure to unsafe drinking water</td>
<td>52.7</td>
<td>% of population</td>
<td>107</td>
</tr>
<tr>
<td>Reliability of water supply</td>
<td>5.2</td>
<td>1-7 (best)</td>
<td>60</td>
</tr>
</tbody>
</table>

Table 8: Utility Infrastructure Scores and Ranking under 2019 WEF Global Competitiveness Index

<table>
<thead>
<tr>
<th>Transport</th>
<th>Government Department /State Enterprise</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airport</td>
<td>The Airports of Thailand Public Company Limited (AOT)</td>
<td><a href="http://www.airportthai.co.th/main/en">http://www.airportthai.co.th/main/en</a></td>
</tr>
<tr>
<td>Seaports</td>
<td>MOT, Port Authority of Thailand (PAT)</td>
<td><a href="http://www.port.co.th/cs/internet/internet/History.html">http://www.port.co.th/cs/internet/internet/History.html</a></td>
</tr>
<tr>
<td>Railway</td>
<td>State Railway of Thailand (SRT)</td>
<td><a href="http://www.railway.co.th/">http://www.railway.co.th/</a></td>
</tr>
</tbody>
</table>

Table 9: Transport Authorities in Thailand
## International Airports

<table>
<thead>
<tr>
<th>Airport Name</th>
<th>Location</th>
<th>IATA/ICAO Code</th>
<th>Maximum Runway Length</th>
<th>Runway Surface</th>
<th>Notes/Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suvarnabhumi Airport</td>
<td>Bangkok (Bang Phli, Samut Prakan) 37 km (23 mi)</td>
<td>BKK/</td>
<td>4,000 m (13123.36 ft)</td>
<td>Asphalt</td>
<td>Website: <a href="https://www.bangkokairportonline.com/">https://www.bangkokairportonline.com/</a></td>
</tr>
<tr>
<td>Don Mueang International Airport</td>
<td>Bangkok 25 km (15.5 mi)</td>
<td>VTBS</td>
<td>3,700 m (12,139 ft)</td>
<td>Asphalt</td>
<td>Website: <a href="https://www.donmueangairport.com/">https://www.donmueangairport.com/</a></td>
</tr>
<tr>
<td>Chiang Mai International Airport</td>
<td>Chiang Mai 6 km (3.7 mi)</td>
<td>DMK/</td>
<td>3,400 m (11,154.86 ft)</td>
<td>Asphalt</td>
<td>Website: <a href="https://www.chiangmaiairportonline.com/">https://www.chiangmaiairportonline.com/</a></td>
</tr>
<tr>
<td>Mae Fah Luang Chiang Rai International Airport</td>
<td>Chiang Rai 8 km (5 mi)</td>
<td>VTBD</td>
<td>3,000 m (9,842.52 ft)</td>
<td>Asphalt</td>
<td>Website: <a href="https://www.chiangraiairport.com/">https://www.chiangraiairport.com/</a></td>
</tr>
<tr>
<td>Hat Yai International Airport</td>
<td>Songkhla 41 km (25.5 mi)</td>
<td>CNX/</td>
<td>3,050 m (10,006.56 ft)</td>
<td>Asphalt/Concrete</td>
<td>Website: <a href="https://www.airportthai.co.th/en/contact-aot/hat-yai-international-airport/">https://www.airportthai.co.th/en/contact-aot/hat-yai-international-airport/</a></td>
</tr>
<tr>
<td>Phuket International Airport</td>
<td>Phuket 32 km (20 mi)</td>
<td>VTCC</td>
<td>3,000 m (9,842.52 ft)</td>
<td>Concrete</td>
<td>Website: <a href="http://phuket.thailandairportshub.com/th/category-view/airport-information">http://phuket.thailandairportshub.com/th/category-view/airport-information</a></td>
</tr>
<tr>
<td>Samui International Airport</td>
<td>Samui Island</td>
<td>CEI/</td>
<td>2,100 m (6,889.76 ft)</td>
<td>Unknown</td>
<td>Privately owned and operated by Bangkok Airways. Website: <a href="https://www.samuiairportonline.com/">https://www.samuiairportonline.com/</a></td>
</tr>
<tr>
<td>Krabi International Airport</td>
<td>Krabi 12 km (7.5 mi)</td>
<td>VTCT</td>
<td>3,000 m (9,842.52 ft)</td>
<td>Unknown</td>
<td>Website: <a href="https://www.airports.go.th/th/download/324.html">https://www.airports.go.th/th/download/324.html</a></td>
</tr>
<tr>
<td>Surat Thani International Airport</td>
<td>Surat Thani 30 km (18.6 mi)</td>
<td>HDY/</td>
<td>3,000 m (9,842.52 ft)</td>
<td>Asphalt</td>
<td>Website: <a href="https://minisite.airports.go.th/suratthani/content1820.html?Action=view&amp;DatalD=197">https://minisite.airports.go.th/suratthani/content1820.html?Action=view&amp;DatalD=197</a></td>
</tr>
<tr>
<td>Udon Thani International Airport</td>
<td>Udon Thani</td>
<td>VTSS</td>
<td>3,048 m (10,000 ft)</td>
<td>Concrete</td>
<td>Website: <a href="https://minisite.airports.go.th/udonthani/about2567.html">https://minisite.airports.go.th/udonthani/about2567.html</a></td>
</tr>
<tr>
<td>U-Tapao International Airport</td>
<td>Rayong 48 km (30 mi)</td>
<td>HKT/</td>
<td>3,500 m (11,482.94 ft)</td>
<td>Concrete</td>
<td>Managed by the Royal Thai Navy. The airport is one of the key infrastructure projects of the Eastern Special Development Zone (ECC).</td>
</tr>
</tbody>
</table>

*Table 10: International Airports*
<table>
<thead>
<tr>
<th>Airport Name</th>
<th>Location</th>
<th>IATA/ICAO Code</th>
<th>Maximum Runway Length</th>
<th>Runway Surface</th>
<th>Notes/Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lampang Airport</td>
<td>Lampang 1.5 km (1 mi)</td>
<td>LPT/VTCL</td>
<td>1,975 m (6479.66 ft)</td>
<td>Asphalt</td>
<td>Website: <a href="https://minisite.airports.go.th/lampang/">https://minisite.airports.go.th/lampang/</a></td>
</tr>
<tr>
<td>Nan Nakhon Airport</td>
<td>Nan 3.5 km (2 mi)</td>
<td>NNT/VTCN</td>
<td>2100 m (6889.76 ft)</td>
<td>Asphalt</td>
<td>Website: <a href="https://minisite.airports.go.th/lampang/">https://minisite.airports.go.th/lampang/</a></td>
</tr>
<tr>
<td>Mae Hong Son Airport</td>
<td>Mae Hong Son</td>
<td>HGN/VTCH</td>
<td>2,000 m (6561.68 ft)</td>
<td>Asphalt</td>
<td>Website: <a href="https://minisite.airports.go.th/maehongson/">https://minisite.airports.go.th/maehongson/</a></td>
</tr>
<tr>
<td>Pai Airport</td>
<td>Mae Hong Son 106 km (66 mi)</td>
<td>PYY/VTCI</td>
<td>900 m (2952.76 ft)</td>
<td>Asphalt</td>
<td>Website: <a href="https://minisite.airports.go.th/pai/">https://minisite.airports.go.th/pai/</a></td>
</tr>
<tr>
<td>Phitsanulok Airport</td>
<td>Phitsanulok 7.5 km (4.6 mi)</td>
<td>PHS/VTTP</td>
<td>3,000 m (9,842.52 ft)</td>
<td>Unknown</td>
<td>Website: <a href="https://minisite.airports.go.th/phitsanulok/">https://minisite.airports.go.th/phitsanulok/</a></td>
</tr>
<tr>
<td>Phrae Airport</td>
<td>Phrae 2.7 km (1.7 mi)</td>
<td>PRH/VTCP</td>
<td>1,500 m (4921.26 ft)</td>
<td>Asphalt</td>
<td>Website: <a href="https://minisite.airports.go.th/phrae/">https://minisite.airports.go.th/phrae/</a></td>
</tr>
<tr>
<td>Tak Airport</td>
<td>Tak 17.6 km (11 mi)</td>
<td>TKT/VTPT</td>
<td>1,500 m (4921.26 ft)</td>
<td>Unknown</td>
<td>Website: <a href="https://minisite.airports.go.th/tak/">https://minisite.airports.go.th/tak/</a></td>
</tr>
<tr>
<td>Phetchabun Airport</td>
<td>Phetchabun 32.5 km (20.2 mi)</td>
<td>PHY/VTBP</td>
<td>2,100 m (6,889.76 ft)</td>
<td>Unknown</td>
<td>Website: <a href="https://minisite.airports.go.th/phetchabun/">https://minisite.airports.go.th/phetchabun/</a></td>
</tr>
<tr>
<td>Ubon Ratchathani International Airport</td>
<td>Ubon Ratchathani</td>
<td>UBP/VTUU</td>
<td>3,000 m (9,842.52 ft)</td>
<td>Unknown</td>
<td>Website: <a href="https://minisite.airports.go.th/ubonratchathani/about1617.html">https://minisite.airports.go.th/ubonratchathani/about1617.html</a></td>
</tr>
<tr>
<td>Khon Kaen Airport</td>
<td>Khon Kaen 8km (5 mi)</td>
<td>KKC/VTUK</td>
<td>3,050 m (10,006.5 ft)</td>
<td>Asphalt</td>
<td>Website: <a href="https://minisite.airports.go.th/khonkaen/about1430.html">https://minisite.airports.go.th/khonkaen/about1430.html</a></td>
</tr>
<tr>
<td>Loei Airport</td>
<td>Loei 5km (3 mi)</td>
<td>LOE/VTUL</td>
<td>2,100 m (6,889.76 ft)</td>
<td>Unknown</td>
<td>Website: <a href="https://www.airports.go.th/th/download/324.html">https://www.airports.go.th/th/download/324.html</a></td>
</tr>
<tr>
<td>Roi Et Airport</td>
<td>Roi Et 13.5 km (8.4 mi)</td>
<td>ROI/VTUV</td>
<td>2,100 m (6,889.76 ft)</td>
<td>Unknown</td>
<td>Website: <a href="https://minisite.airports.go.th/roiet/about2277.html">https://minisite.airports.go.th/roiet/about2277.html</a></td>
</tr>
<tr>
<td>Buriram Airport</td>
<td>Buriram 30 km (18.6 mi)</td>
<td>BFV/VTUO</td>
<td>2,100 m (6,889.76 ft)</td>
<td>Unknown</td>
<td>Website: <a href="https://www.airports.go.th/th/download/324.html">https://www.airports.go.th/th/download/324.html</a></td>
</tr>
<tr>
<td>Nakhon Phanom Airport</td>
<td>Nakhon Phanom 18 km (11 mi)</td>
<td>KOP/VTUW</td>
<td>2,500 m (8,202.01 ft)</td>
<td>Unknown</td>
<td>Website: <a href="https://www.airports.go.th/th/download/324.html">https://www.airports.go.th/th/download/324.html</a></td>
</tr>
<tr>
<td>Sakon Nakhon Airport</td>
<td>Sakon Nakhon 10 km (6.2 mi)</td>
<td>SNO/VTUI</td>
<td>2,600 m (8,530.18 ft)</td>
<td>Asphalt</td>
<td>Website: <a href="https://minisite.airports.go.th/sakonnakhon/about1705.html">https://minisite.airports.go.th/sakonnakhon/about1705.html</a></td>
</tr>
<tr>
<td>Nakhon Ratchasima Airport</td>
<td>Nakhon Ratchasima 32 km (20 mi)</td>
<td>NAK/VTUQ</td>
<td>2,100 m (6,889.76 ft)</td>
<td>Asphalt</td>
<td>Website: <a href="https://minisite.airports.go.th/nakhonratchasima/about294.html">https://minisite.airports.go.th/nakhonratchasima/about294.html</a></td>
</tr>
</tbody>
</table>

Table 11: Domestic Airports
Sriracha Harbour Deep Seaport was the first port in Thailand able to accommodate vessels up to 100,000 deadweight tonnage (dwt). The location of Sriracha Harbour ensures that it is accessible and fully usable for 95% of the year. Map Ta Phut is the main facility for regasifying Liquified Natural Gas (LNG).

A new deep-sea port is being constructed in the Dawei Special Economic Zone. In 2008 Thailand and Myanmar signed a memorandum of understanding (MOU) to develop the Dawei Special Economic Zone, followed by another MOU in 2012. On 30 January 2015, Japan agreed to participate in the project to provide financial and technical assistance, and will have equal partnership in the investment with Thailand and Myanmar. The Dawei Special Economic Zone deep-sea port will have a capacity to hold 250 million tons of cargo, within an economic zone covering some 200 sq. km (77.22 sq. mi).

The Port Authority of Thailand (PAT) governs seaports and river ports. The PAT is a public utility state enterprise under the general supervision of the MOT. The main duties of PAT...
are as follows:
- providing services and facilities to vessels and cargo;
- conducting dredging operations and maintenance of the bar channels and basins;
- supervising stevedoring, handling, moving, storing, and delivering of cargo;
- cooperating and coordinating with other government agencies concerned and international ports;
- developing the organization to cope with economic changes.286

Waterways
Thailand has 4,000 km (248.54 mi) of waterways, with 3,701 km (2,299.66 mi) navigable by boats with drafts up to 0.9 m (2.95 ft.).287 The three major river ports are:
- Chiang Saen Port;
- Chiang Khong Port;
- Ranong Port.288

The Chiang Saen Port is situated alongside the Mekong River at Chiang Saen District, Chiang Rai province, and covers an area of around 3.6 acres. The port can handle 120,000 tons per year. The Chiang Khong Port is situated at Chiang Khong sub-district, of Chiang Rai province. The port upgraded the efficiency of import-export services and promotes border trade with Laos, and Myanmar. The port can handle 15,000 tons per year. Moreover, the Ranong Port is situated on the eastern bank of the Kra Buri River, Pak Num sub-district, Muang district, Ranong province, and covers an area of about 126 acres. It has a container berth that is able to accommodate one cargo vessel of 12,000 DWT at a time. The PAT also governs river ports.289

Roads
Thailand has one of the most extensive road transportation networks in all of Southeast Asia with more than 390,026 km (2,42350.92 mi) of roads, of which 384,176 km (2,38715.9 mi) or 98.5% is concrete or asphalt paved. Of this total, 66,266 km (41,175.783 mi) forms a national highway network connecting each region of the country.290

All major cities in Thailand are accessible by land, with all-weather highways and intercity roads linking them to the road network covering the whole country, as well as the Asian Highway and the road networks of neighboring countries at border crossings.291 The Greater Mekong area road network includes the southern economic corridor connecting Thailand, Cambodia, and Vietnam; the east-west economic corridor linking Myanmar, Thailand, Laos, and Vietnam; the north-south economic corridor which runs from southern China through Laos, and Myanmar, and into Thailand; and the southern coastal economic corridor also connecting Thailand, Cambodia, and Vietnam.292

The following are basic highway rules in Thailand:
- The Thai highway network follows left-hand lane traffic rules;
- A single digit number indicates one of the major highways connecting Bangkok to outlying regions;
- A two-digit number indicates a main highway for a particular region;
- A three-digit number indicates a secondary highway;
- A four-digit number indicates an intra-province highway connecting the provincial capital to outlying districts, or to important sites in the province.293

Mass Transit System
Thailand's mass transit system includes buses, trains, and boats.294 Bangkok has approximately 250 bus lines providing service for a total of 5,000 km (3106.86 mi) in every area of Bangkok and its suburbs. The Bus Rapid Transit (BRT) system in Bangkok opened on 29 May 2010 with a total distance of 15.9 km (9.88 mi) with 12 stations between Sathon to Ratchaphruek. In the provinces, hundreds of private operators service Bangkok-suburb routes and other routes nationwide. There are three main bus terminals: the Northern and Northeastern Terminal, the Southern Terminal, and the Eastern Terminal.295
Within Bangkok, the Bangkok Transit System (BTS) or Skytrain is the raised metro system operated by Bangkok Mass Transit System Public Company. The structure encompasses two lines with a collective distance of 36.3 km (22.5 mi) and 30 stations. The Sky Trains connect to the subway or the Mass Rapid Transit (MRT) system. Currently, the MRT in Bangkok comprises four lines totaling 84.9 km (52.7 mi). Two private corporations operate the system under separate concession contracts. Bangkok Metro Public Company operates the underground blue line with a distance of 20 km (12.4 mi) and 18 stations. State Railway of Thailand (SRT) operates the airport rail link, totaling 28.5 km (17.7 mi) and 8 stations.\textsuperscript{296}

**Railways**

Thailand's rail system spans 4,952 km (3,077 mi) of railways that constitute a vital link in the transportation chain.\textsuperscript{297} About 84 km (52.2 mi) is standard gauge, and 4,043 km (2,512.2 mi) is narrow gauge.\textsuperscript{298} SRT under the MOT is responsible for building, operating, and maintaining Thailand’s railway tracks.

There are various railway projects in planning. According to Thailand’s Board of Investment, the government plans to develop four high-speed train routes by 2022, through public-private partnerships (PPP). The four routes comprise about 1,039 km (645.6 mi) of high-speed rail, connecting Bangkok with the provinces of Nakhon Ratchasima, Rayong, Hua Hin, and Phitsanulok as shown in Figure 21.\textsuperscript{299}

In March 2021 Thai transport authorities and Chinese construction corporations signed a construction agreement to build the first phase of the Thailand-China High Speed Rail, signal a step forward for the long-awaited rail project linking the two countries. The first 250 km (155.34 mi) connecting Bangkok and Nakhon Ratchasima (also known as Korat), in northeastern Thailand, is expected to be completed and open to traffic in 2026. The railway project will eventually connect Kunming city in China’s southwestern Yunnan province with Bangkok.\textsuperscript{300}

Another planned project is the Bangkok-Chiang Mai High-Speed Railway Project also known as the Northern High-Speed Railway. The high-speed railway will be built alongside the current Northern Line in Thailand. Japan has proposed building the railway in partnership with Thailand, and the line will be similar to Japan’s well-known Shinkansen bullet train.

The length of the railway would be 670 km (416.32 mi) with 12 stations. The top speed will be 300kph (186.41 mph), and the trip will take about three and a half hours. For comparison, the current line is 755 km (469.13 mi), and the journey takes from 11 hours to 14 hours and 20 minutes.\textsuperscript{301}

At the same time, the MOT is considering decommissioning the central Hua Lamphong Railway Station in the heart of Bangkok’s Chinatown. The proposal aims to ease traffic congestion and will make the new Bang Sue Grand Station the capital’s main train terminus.\textsuperscript{302}
Schools

The Ministry of Education (MOE) in Thailand is responsible for promoting and overseeing the provision of education at all levels, including basic and higher education, as well as non-formal and informal education. Formal education is divided into two levels: basic and higher education. Basic education in Thailand refers to six years of primary education (Grades 1-6), three years of lower secondary (Grades 7-9) and three years of upper secondary education (Grades 10-12). Vocational education comprises three tiers: upper secondary level leading to lower vocational certificates; post-secondary level leading to higher vocational certificates; and tertiary vocational education leading to bachelor's degrees. Higher education is provided at a diploma or associate degree level, ranging from bachelor's degrees to doctoral degrees. Figure 22 shows Thailand's formal and non-formal or informal education system.

Since 2009, the MOE has implemented a 15-year free basic education program. The program covers tuition, uniform, textbooks, learning materials, and extra-curricular activities free of charge for pre-primary, primary (elementary) and secondary pupils in public schools. The National Policy on Educational Provision for Disadvantaged Children (2005) ensures that this policy applies equally to Thai and non-Thai citizens, including stateless children and children of migrants and ethnic minorities who lack relevant registration documents for citizenship verification. Promoting universal and quality education is a strategy for Thailand to overcome the middle-income trap and is seen as a key strategy to promote Thailand’s transition to a high-income economy.

Disaster Risk Reduction in the Education Sector

Since 2007, the Office of the Basic Education Commission (OBEC) under the MOE has been working with DDPM and other organizations to promote school safety. In 2011, Thailand committed to improve the safety of 32,000 schools as part of the UN One Million Safe Schools and Hospitals Campaign.

A standing order for mainstreaming DRR in education has been issued that emphasized the production and dissemination of textbooks and teachers' guides, and the training of teachers on disaster education. This is reinforced by the country's Compulsory Action Plan as stated in their Strategic National Plan for Disaster Risk Reduction, which requires the provision of knowledge on hazards and DRR at all educational levels.

The Thailand School Safety Network (TSSN) is jointly led by UNICEF in Thailand, the MOE and OBEC to promote coordination, collaboration, and mutual capacity building among the network members, towards implementation of the Comprehensive School Safety Framework (CSSF) in Thailand. The CSSF is an initiative of the ASEAN Safe School Initiative (ASSI). The CSSF has three pillars, which Thailand is implementing and includes: safe school facilities, school disaster management, risk reduction and resilience education. Members of TSSN include: DDPM, OBEC and MOE, UNICEF, UNDRR, Plan International, Save the Children, World Vision, Raks Thai Foundation, Right to Play, Thailand Red Cross Society, and IFRC. Since 2012, TSSN has convened bi-monthly meetings. One of TSSN's outputs is the DRR Teacher Manual that is now used by teachers nationwide.

Communications

Fixed line and Cellular Mobiles

Mobile cellular usage in Thailand continues to rise, while fixed landline subscription declines. In 2020, mobile cellular subscription was 167 out of 100 people in Thailand, a rise from 106.74 out of 100 people in 2010 and 46.56 out of 100 people in 2005. Whereas, fixed line subscription in 2020 is at 7.17 out of 100 people, down from the peak rate of 14.38 out of 100 people in 2017. Thailand's top mobile service provider is Advanced Info Service (AIS), followed by True Corporation and Total Access Communication. The major state-run agencies, CAT Telcom and TOT, plan to merge to become the National Telecom (NT) company.
Internet Access

Internet access in Thailand continues to widen. In 2020, 16.62 out of 100 people have fixed broadband subscriptions representing 77.85% of the population with internet access. Ten years ago, this rate was 4.84 out of 100 people or 22.4% of the population. In addition, in 2020 there are 133,183 secure internet servers being used in Thailand.

Thailand was the first country in Southeast Asia to launch commercial 5G services. In February 2020, AIS won the bid at auction to the spectrum required to set up 5G infrastructure, with 23 licenses. TRUE Corporation and Total Access Communication received 17 and two licenses, respectively. The state-run agencies, CAT Telecom and TOT (which will merge as the NT company) won a combined six licenses.

Post

The postal service is operated by the Thailand Post Company, which has a comprehensive network of over 1,200 post offices and 16 postal centers in Bangkok and the provinces. Thailand Post offers a comprehensive range of services including financial services and retail services. International shipping services, FedEx and UPS, are available in Thailand.

Mass Media

The government and military control nearly all the national terrestrial television networks and operate many of Thailand’s radio networks. Multichannel TV, via cable and satellite, is widely available. In 2014, there were more than 60 stations in and around the capital. In 2017, there were 26 digital TV stations in Bangkok.
broadcasting nationally, with six terrestrial TV stations in Bangkok broadcasting nationally via relay stations. Two of the six stations are owned by the military, and the other four are government-owned or controlled, or leased to private enterprise. All are required to broadcast government-produced news programs twice a day. The main electricity provider is the state-owned Electricity Generating Authority (EGAT), which is responsible for generating, transmitting, and wholesaling electricity. EGAT generated about 33% of Thailand’s total electricity supply at the end of 2019. EGAT further oversees the balance of the supply and demand in the transmission system and controls and administers all the electricity generated in provincial areas from those power plants connected with its high-voltage transmission lines and high-voltage substations. EGAT is the only organization that can purchase or resell wholesale electricity to other distributors. In addition, two retail distributors, the Metropolitan Electricity Authority (MEA) and the Provincial Electricity Authority (PEA), are responsible for distributing and providing low-voltage electricity. In 2019 MEA accounted for 28% of the market and serves the Bangkok area. PEA accounted for 71% of the market and serves the provinces of Nonthaburi and Samut Prakan.

In 2020, electrical consumption decreased in almost all sectors of the economy, particularly business and industry, due to the impact of the COVID-19 virus outbreak on exports and tourism. However, in the household sector, electricity usage rose by 7% due to increased usage of air conditioning to combat higher temperatures, coupled with COVID-19 lockdown measures. Thailand is highly dependent on energy imports. Thailand is collaborating with its neighbors to develop new sources of energy, including renewable sources. Thailand also seeks to improve infrastructure to reduce the cost of transport and to improve efficiency. The Thailand Power Development Plan 2018-2037 was approved by the Cabinet on 30 April 2019, and further updated in 2020 as “PDP 2018 rev.1”. It focuses on three priority areas:

- Energy Security: coping with the increasing power demand in alignment with the National Economic and Social Development Plan and taking into account fuel diversification;

Social Media

Facebook is the most popular social network. In 2021, Facebook had 51 million users (more than 70% of the population). The next most popular social media site is YouTube with 37.3 million viewers, followed by Facebook’s chat function Messenger with 37 million users. In 2017, it was reported that Thailand was among the top ten countries in the world in terms of social media usage. Thailand ranked eighth in the world in terms of Facebook usage. And the peak time for Facebook use in Thailand is in the evening from 18:00 to 23:00 hours.

Utilities

Power

Thailand has near universal access to electricity, with 99.9% of the population accessing electricity in 2019. Thailand’s
- Economy: maintaining an appropriate cost of power generation for long-term economic competitiveness;
- Ecology: lessening the carbon dioxide footprint of power generation and focusing on renewable energy sources.  

**Water and Sanitation**

In Thailand only 26% of the population in 2020 is using safely managed sanitation services and 52.7% of the population are exposed to unsafe drinking water. The percentage of people using safely managed sanitation services is slightly higher in urban areas, at 29.6% of the population, compared to 22% in rural areas.

Thailand’s water resources have diminished over the years due to disappearing wetlands, corroding watersheds, and pollution. Although wetlands used to be abundant in Thailand, in 2020 only two percent of the original wetlands existed. Water shortages are a potential threat to Thailand’s future. Flooding has also been just as detrimental to Thailand’s water supply as have repetitive droughts. Standing water from floods poses serious threats that can be harmful to health.

Management of the water sector is an ongoing challenge for the RTG. In 2013, the UN Special Rapporteur on the human right to safe drinking water and sanitation noted that rivers and other resources of water in Thailand are being polluted by the discharge of untreated human waste and called on the RTG to establish an independent water and sanitation regulator and to take prompt action to fully realize the human rights to water and sanitation for all.

A 2016 factsheet produced by the Netherlands Embassy in Bangkok identified the ongoing need to strengthen Thailand’s legislative and institutional framework for water management. The factsheet acknowledges the RTG’s plans to invest in urgent water management projects, including new canal systems, dredging operations, pumping stations and retention walls. In addition, the RTG will invest in non-structural improvements including relevant agency reorganization, streamlining the line of command during disasters and the establishment of a relief and recovery scheme.

In 2017, the RTG formed the Office of National Water Resources (ONWR) to coordinate water related issues, reporting to the Prime Minister. In September 2018, the National Water Resources Act was enacted to provide for the efficient and effective administration of water resources in respect of the allocation, use, development, management, maintenance, rehabilitation, and conservation thereof as well as rights in water. Under the Act the ONWR is responsible for proposing policies; formulating strategic plans, master plans, and measures; integrating information, plans, projects, and budget; and monitoring and evaluating water resources management.
HEALTH

In 2021, Thailand was ranked fifth overall in the world under the Global Health Security (GHS) Index. Thailand ranked first in Southeast Asia and first among countries in the upper middle-income level. The GHS Index is an assessment and benchmarking of health security and related capabilities across 195 countries. Thailand is among the countries that successfully combatted the COVID-19 in 2020 through strong public health interventions, community engagement, and effective governance. Thailand’s response was a reflection of 40 years of investment in, and political commitment to, strong primary health services, universal health coverage, and public health preparedness for pandemics.

Health Care System Structure

Since 2002, all Thai citizens have access to Universal Health Care (UHC). A migrant health insurance scheme has also been added. The healthcare system in Thailand is publicly dominated; public hospitals account for 78% of all hospitals, and hospitals serving under the Ministry of Public Health (MOPH) account for approximately 67% of all public and private hospitals. Community hospitals, or rural health facilities, are located at the district level providing secondary health services.

The MOPH is the national health authority responsible for formulating and implementing health policy. In addition, autonomous health agencies operate alongside the MOPH, notably the Health Systems Research Institute, the Thai Health Promotion Foundation, the National Health Security Office (NHSO), and the National Health Commission Office (NHCO). MOPH and these independent agencies form a complex interdependent governing structure, while non-state actors and civil society groups also play increasing roles in the health system.

The NHSO is mandated to convene an annual National Health Assembly (NHA), ensuring participatory engagement by all government and non-state actors in formulating health policy through NHA resolutions. The advent of the NHSO has had a major impact in transforming the integrated model of MOPH as purchaser and service provider, to the NHSO as purchaser and MOPH as service provider. Figure 23 shows the organizational structure of Thailand’s health system at the sub-district (Tambon), district, provincial, regional, and central level, and linkages between the MOPH and NHSO.

Health Strategies and Surveillance

Five priority programs were selected in the World Health Organization (WHO) Country Cooperation Strategy for Thailand 2017-2021. The programs cover:

- Antimicrobial Resistance (AMR);
- Global Health Diplomacy (GHD);
- Migrant Health;
- Noncommunicable Diseases (NCD);
- Road Safety.

The burden of AMR in Thailand has been estimated in 2010 to result in 3.24 million days of hospitalization and 38,481 deaths per annum, and to cost 0.6% of national GDP. The Thai National Strategic Plan on AMR (2017–2021), which aims to reduce morbidity, mortality, and the economic impact of AMR, was finalized and endorsed by the Cabinet in late 2016. The plan sets targets for a 50% reduction in AMR morbidity; 20% and 30% reductions in antimicrobial use in humans and animals respectively, and a 20% increase in public knowledge about AMR, including awareness of appropriate use of antimicrobials.

The MOPH and Ministry of Foreign Affairs issued a directive to have the national global health strategic framework (2016–2020) (GHS) approved by the Cabinet in 2016.
GHS aims to ensure health security for Thai people and to sustain and further strengthen global health capacity in Thailand. The GHD program will generate evidence to guide effective implementation of the national GHS.342

The Migrant Health program seeks to address the following issues related to the health of migrant populations in Thailand:

- Linkage of health insurance eligibility to documentation status, with cumbersome administrative procedures, resulting in incomplete coverage and inadequate baseline data to inform policy;
- Multiple stakeholders with high requirement for coordination;
- Sociocultural barriers compounded by limited information on health seeking behavior;
- Limited human resources for migrant health.343

NCDs — such as heart disease, stroke, cancer, diabetes, and chronic lung disease — are the predominant killers in Thailand. NCD risk factors are common in the Thai population: one out of four Thai adults have high blood pressure;
one out of ten have raised blood sugar levels; 40% of adult males smoke; consumption of salt and sugar among Thais exceeds recommended limits; and rates of adult and childhood obesity have dramatically increased in the past decade. To combat NCDs and risk factors, Thailand has adopted nine national targets in line with the global targets.\textsuperscript{344}

Moreover, Thailand has the second highest road traffic fatality rate in the world. Motorcyclists, pedestrians, and bicyclists comprise 83\% of fatalities. While Thailand is a signatory to Decade of Action for Road Safety and has a national plan in place, the country has seen minimal decrease in road traffic mortalities, from 38.1 per 100,000 population in the Second Global Status Report on Road Safety (2013) to 36.2 in the Third report (2015). The lack of progress is related to fragmented management and suboptimal coordination among responsible authorities, fragmented national injury data sources, and poor enforcement of traffic rules. WHO and the RTG will cooperate to strengthen road safety management and coordination, improve national traffic data system, and improve legislation and enforcement.\textsuperscript{345}

Communicable Diseases

Thailand is burdened with the following communicable diseases:

\textbf{HIV/AIDS}

Thailand has one of the highest HIV prevalence rates in Asia and the Pacific.\textsuperscript{346} In 2020, around 500,000 adults and children were estimated to be living with HIV. This represents a decline from the highest estimate of 800,000 adults and children living with HIV in 1999.\textsuperscript{347} Although the epidemic is in decline, prevalence remains high among key affected groups, with young people from key populations particularly at risk. Vulnerable groups include men who have sex with men, sex workers and their clients, transgender people and people who inject drugs. Migrants and prisoners are also more vulnerable to HIV infection than other populations in the country. Notably, Thailand is the first country to effectively eliminate mother-to-child transmissions, with a transmission rate of less than 2\%. In 2018, Thailand began to scale up Pre-exposure Prophylaxis (PrEP) — an antiretroviral treatment taken by HIV-negative people before potential exposure to HIV in order to stop transmission — in order to make it nationally available to people at high risk of HIV, making it a leader in the region. Thailand aims to end AIDS by 2030.\textsuperscript{348}

\textbf{Antimicrobial Resistance (AMR)}

Thailand has been fighting Antimicrobial Resistance (AMR) threats. It is reaching crisis proportions in Thailand and the country has developed a plan to combat it. The Thai National Strategic Plan on AMR (2017–2021) aims to reduce the impact of AMR and increase public knowledge and awareness. As discussed earlier, the plan sets targets for a 50\% reduction in AMR morbidity; 20\% and 30\% reductions in antimicrobial use in human and animal respectively, and a 20\% increase in public knowledge about AMR, including awareness of appropriate use of antimicrobials.\textsuperscript{349}

\textbf{Malaria}

The incidence of malaria has declined over the years, but it still remains a serious threat to the population. The at-risk population in Thailand is about 17 million, or 21\% of the population. The RTG has developed a ten-year National Strategic Plan for Malaria Elimination (2017–2026) with an accompanying 5-year Operational Plan (2017–2021).\textsuperscript{350}

\textbf{Tuberculosis}

Thailand is among the 30 high-burden tuberculosis (TB) countries globally. TB incidence is declining very slowly and is estimated at 176,000 new cases annually. The National Reference Laboratory for TB reported that 510 patients in 2012 had confirmed MDR-TB; however, WHO estimates that there are 2190 annual cases in Thailand. There is a link between the epidemic of HIV infections and the TB situation. TB was detected in 13\% of new
cases of HIV infections, and a major concern is addressing the issues related to HIV-TB co-infection.351

**Coronavirus Disease (COVID-19) Pandemic**

The first confirmed COVID-19 case was reported on 13 January, 2020. The government declared a state of emergency on 26 March 2020 and has subsequently extended the order 15 times. On 30 November 2021, the Prime Minister extended the state of emergency for a further two months until 31 January 2022.352

Thailand's COVID-19 response so far has combined strong public health interventions, community engagement, and effective governance, which helped to limit local transmission in the early phase of the pandemic. The MOPH has led the national response in collaboration with a number of Ministries and Department including the MOI Department of Provincial Administration, and DDPM. The MOH in collaboration with the WHO and other stakeholders conducted a joint review focusing on the nine pillars of the national COVID-19 pandemic response including: 1) Country-level Coordination, Planning and Monitoring, 2) Risk Communication and Community Engagement, 3) Surveillance, Rapid Response Teams, Case Investigation, 4) Points of Entry and Migrant Health, 5) National Laboratory Systems, 6) Infection Prevention and Control in the Community and Healthcare Facilities, 7) Clinical Management, 8) Operational Support and Logistics in Supply Chain and Workforce Management, and 9) Maintaining Essential Services during the COVID-19 Outbreak.353

The review found Thailand had implemented effective and successful prevention and control of COVID-19 in many of the key pillars. Thailand's responses included timely detection of the situation and reporting of confirmed cases, an integrated whole-of-government and whole-of-society approach including engagement of the private sector, surveillance of travelers in quarantine facilities, public health infrastructure, village health volunteers and more than 1,000 disease investigation teams, efficient communication, a variety of two-way communication channels with the public to encourage and measure compliance and delivery of targeted messages, as well as providing surge capacity in health care facilities, i.e., preparation of facilities, beds, wards, equipment and supplies.354

On 17 December 2021, the WHO reports that COVID-19 is still widespread across Thailand, with community transmission in almost every province. Although daily reported cases continue to fall in Southern Thailand, per capita infection rates and positive test rates are still higher than most parts of the country. At the same time, the COVID-19 vaccination rates continue to rise and are at levels that can be expected to significantly reduce levels of severe illness and deaths. However, vaccination rates are still low in some provinces and in some risks groups, including pregnant women.355

On 20 December 2021, Thailand detected its first cases of the Omicron variant and reinstated mandatory quarantine measures for foreign travelers arriving in the country.356

On 21 December 2021, Thailand has 2,196,529 confirmed COVID-19 cases, according to Thailand's Department of Disease Control. As shown in Figure 24, Thailand has recorded 21,440 COVID-19 deaths, and has 2,476 new cases, and 880 serious cases.357

**Non-Communicable Diseases**

Similar to developed countries non-communicable diseases (NCD) have become the main causes of death in Thailand. NCDs have become a critical public health issue for Thailand, contributing to 71% of total deaths in 2014. NCDs are predicted to continue to increase. The highest burden NCDs in Thailand are cancer, cardiovascular diseases, chronic respiratory diseases, and stroke.358

As discussed earlier, road safety is also a critical public health problem in Thailand, despite efforts by the government, WHO, and
other partners to address the issue. According to WHO’s 2015 Global Report, Thailand has the second highest incidence of road traffic fatalities in the world, with 36.2 deaths per 100,000 population per year. Motorcyclists, pedestrians, and bicyclists comprise 83% of fatalities.359

Training for Health Professionals

Thailand has adequate capacity for in-country training of doctors and nurses. Maintaining a stable number of doctors to meet the country’s health needs can be a challenge; however, Thailand has neither a shortage nor a surplus of health personnel. In 2019 the density of physicians was 0.9 per 1000 people, a significant rise from 0.4 per 1000 people in 2016. In the same year, the density of nurses and midwives was 3.2 per 1000 people.360

Thailand has historically seen an unequal distribution of doctors between rural and urban areas, which have had major impacts on access to healthcare for those living in rural communities. The Collaborative Project to Increase Rural Doctors (CPIRD) was implemented in 1994. The government has implemented several other strategies including introducing a mandate where new graduates must work in the MOPH public service (rural hospitals) for the first three years of their careers. Financial incentives and career advancement were also offered for rural district posts.361 There have been improvements in the rural retention of doctors in Thailand as a result of government-led initiatives.362

In Thailand, healthcare professionals have to sit and pass the national examination for a license to practice issued by the Medical or Nursing and Midwifery Councils and conducted by the Center for Medical Competency Assessment and Accreditation. Work permits for employment visas and professional practice are granted after medical or nursing council approval in each country once candidates fulfill the required license examination. Nurses that graduate from Thai schools or schools elsewhere that are recognized by the Council, and who pass the national license examination are granted licenses to practice from the Nursing and Midwifery Council.363

Figure 24: COVID-19 Situation in Thailand on 21 December 2021
WOMEN, PEACE, AND SECURITY

The United Nations Security Council Resolution 1325 (UNSCR 1325), adopted in 2000, reaffirmed the need to implement fully international humanitarian and human rights law that protects the rights of women and girls during and after conflicts. UNSCR 1325 affirms the role of women in the prevention and resolution of conflicts and peacebuilding, and stresses their equal participation and full involvement in all efforts for the promotion of peace and security.364

The Thailand Peace Operations Center (POC) of the RTArF has a mandate to contribute troops to United Nations peacekeeping operations. POC has deployed peacekeeping forces in places such as Timor-Leste, Haiti, and South Sudan as shown in Photo 4.365 The POC supports the empowerment of female peacekeepers in pre-deployment training. Training courses delivered to both male and female troops address gender perspectives, conflict-related sexual violence, and sexual exploitation and abuse. The training courses further addresses the essential role of women peacekeepers. Furthermore, to prevent sexual exploitation and abuse of victims of conflict, Thailand’s peacekeeping units are trained with situational awareness and capability in support of efforts to protect those at risk in conflict zones. Thailand plans to increase deployment opportunities for female personnel, and also maintains several highly skilled female instructors at the POC.366

At home in Thailand, adherence to UNSCR 1325 is seen through the lens of supporting the country’s achievement of the United Nations Sustainable Development Goals (SDG) targets. The RTG supports the Women, Peace, and Security (WPS) Agenda through SDG 5 on gender equality and SDG 16 on peace, justice, and strong institutions and continues to seek opportunities to strengthen its commitments to the SDGs and UNSCR 1325. The government has developed Measures and Guidelines on Women and the Promotion of Peace and

Photo 4: Thai Forces Serving in the United Nations-African Union Mission in Darfur (UNAMID)

In rural areas, many women remain affected by poverty, discrimination, and exploitation. Discriminatory practices against women still exist in many rural areas in Thailand such as unequal employment practices, unfair treatment of women workers, and access to resources.

Moreover, in 2018, 9.3% of women aged 15-49 years reported that they had been subject to physical and/or sexual violence by a current or former intimate partner in the previous 12 months. Also, women and girls aged five years or older spent 11.8% of their time on unpaid care and domestic work, compared to 3.8% spent by men.

The WPS agenda is being advanced in Thailand’s conflict-affected Southern Border Provinces (SBP) with support from both government and non-government actors. The Coordination Center for Children and Women in the Southern Border Provinces (CCWC-SBP) was established by the Southern Border Provinces Administration Center in cooperation with the Ministry of Social Development and Human Security (MSDHS) and in partnership with UN Women and UNICEF after the National Consultation on Women’s Leadership and Peace and Security. The CCWC-SBP is a coordinating mechanism on women and children issues between central and local levels, and among different line Ministries, non-government, and civil society actors.

Looking forward, to further advance the WPS Agenda, important government agencies – such as the National Security Council, the Ministry of Justice, the Ministry of Human Security and Social Development, and the Ministry of Foreign Affairs — need to integrate the WPS agenda into their combined efforts. While there are no explicit actors who oppose the WPS agenda, there is a lack of coordination between governmental institutions and WPS has not been integrated into policies of government agencies responsible for preventing or resolving violent conflict in Thailand.
CONCLUSION

Thailand's disaster management system has been built over the past four decades with the enactment in 1979 of the Civil Threat Prevention Act as the country’s first comprehensive disaster management law. In 2002, the RTG established the DDPM as the lead agency for DRM and disaster response. In 2004, Thailand faced a catastrophic tsunami, which resulted in a high death toll and injuries, and severe damage to livelihoods, the environment, and the economy in southern Thailand. Following the disaster, the RTG further strengthened and systematized its disaster management capabilities. In 2007, the RTG enacted the DPM Act, which sets out the main statutory framework for DRM and disaster response. Additional regulations, and a periodically updated National DRM Plan, which provides a blueprint for the country’s DRM and response planning, support the legislation.

In addition to the government-led system, a vast network of NGOs and charities, academic institutions, business and private enterprises, and community and citizen-led networks support the country's disaster management system. There is a growing emphasis by the government in facilitating meaningful participation by members of the community at all levels to improve DRR efforts and local governments are being called upon to play a greater role in connecting the national-level strategy to locally-led action.

Thailand faces recurring natural hazards that climate change is intensifying, such as severe storms, flooding, landslides, and drought. Thailand's agricultural sector stands to be impacted the most by climate-related hazards arising from changes in carbon dioxide availability, precipitation, temperature, and water scarcity. The agriculture sector, employs almost one third of the country’s working population. Experts have estimated that loss of farmland value and output alone could exceed US$94 billion under a high-emissions scenario by 2050, due to changes in temperature and precipitation. Sea level rise is another significant impact of climate change. Rising sea levels are expected to worsen the impact of storms and flooding and lead to permanent inundation in some areas of the country. Low-lying Bangkok City is expected to become one of the world’s worst affected cities alongside Jakarta and Manila. Land loss from sea-level rise will impact sustainable land use for economic activities, in the tourism, import and expert sectors, and industrial zones. Significant amounts of Thailand's critical infrastructure are located in areas likely to be adversely impacted by climate change.

To address the challenges of climate change and climate-related natural disasters, the RTG has since 2007 incorporated climate change into its national economic and social development plans. Climate change is addressed at the highest level under the country’s National Strategy 2018-2037, an overarching framework for sustainable development. The government has also developed the Climate Change Management Master Plan 2015-2050, which sets outs mitigation, adaptation, and capacity building strategies. Moreover, at the 2021 UN COP26, Thailand pledged to reduce greenhouse gas emissions by 20% by 2030, or by 40% with further financial and technological support.

Looking forward, key areas of priority for DRM includes water sustainability to meet current demands, addressing the high levels of poverty among vulnerable groups to strengthen resiliency, broadening the engagement of communities and schools in DRR efforts, and strengthening the role of local governments in connecting national development priorities to locally-led action and resilience building. Other challenges include promoting better coordination of prevention, mitigation, and preparedness efforts within government, the community, and among relief organizations.
The list below describes the Disaster Management and Humanitarian Assistance (DMHA) Engagements that the U.S. has had with Thailand in the last five years.

Cobra Gold 2021 (CG21) – August 2021
The 40th Cobra Gold exercise (CG21) took place on 3–13 August 2021 in Thailand. CG21 emphasized joint military training, civic action, and humanitarian assistance, and disaster relief. In Sa Kaeo Province, Thai and U.S. military engineers worked together to construct a new multipurpose facility at Baan Mai Thai Pattan School, enabling the school to welcome a growing number of students. The project was part of Cobra Gold’s Engineering Civic Action Program, which utilizes the capabilities of both the U.S. and RTArF to support local communities.

The fourth annual Humanitarian Assistance and Disaster Relief Tabletop Exercise TTX moved to a fully virtual format for the first time ever. From 30 July to 1 August, a total of 54 participants from nine nations discussed civil-military efforts associated with disaster response and assisting those in need. The TTX featured experts from the U.S. and RTG, as well as international organizations such as the UN, ASEAN, and Red Cross and Red Crescent Societies.382

Southeast Asia Cooperation and Training (SEACAT) – August 2021
The 20th annual Southeast Asia Cooperation and Training (SEACAT) exercise took place from 10–20 August 2021. SEACAT is a multilateral exercise that brought together 21 partner nations, interagencies, international and non-government organizations, designed to provide mutual support and a common goal to address crises, contingencies, and illegal activities in the maritime domain using standardized tactics, techniques, and procedures. The largest iteration to date, 21 nations participated, including Australia, Bangladesh, Brunei, Canada, France, Germany, India, Indonesia, Japan, Malaysia, Maldives, New Zealand, Philippines, South Korea, Singapore, Sri Lanka, Thailand, Timor-Leste, United Kingdom, United States, and Vietnam.383

Cooperation Afloat Readiness and Training (CARAT) Exercise – September 2021
The U.S. and Thailand conducted joint naval training during the 27th annual CARAT exercise, which took place 6–10 September 2021. The CARAT Exercise included virtual exercises to mitigate the risk of the ongoing COVID-19 pandemic and at-sea training in the Gulf of Thailand. The two countries demonstrated their ability to work together by practicing helicopter landings and search and rescue exercises and testing communications as ships sailed together in complex maneuvers. The at-sea phase took place in territorial and international waters near Sattahip and Ko Samui, where USS Green Bay (LPD 20) and a P-8A Poseidon aircraft joined with ships and aircraft from Thailand for allied training. Royal Thai Navy ships at-sea included the Naresuan-class frigates HTMS Naresuan (FFG 421), HTMS Taksin (FFG 422), and HTMS Bhumibol Adulyadej (FFG 471). Beginning in 1995, CARAT has built upon other engagements in the Indo-Pacific region. Each CARAT exercise features professional symposia and a robust at-sea phase that increases interoperability. CARAT improves a broad range of naval competencies including search and rescue, humanitarian assistance, and disaster response.384

Cobra Gold 2020 (CG20) – February 2020
The 39th Cobra Gold 2020 (CG20) was conducted from 25 February to 6 March 2020 in Thailand. The U.S and Thailand jointly sponsor
the exercise, which includes participation from seven nations including the U.S., Thailand, South Korea, Japan, Malaysia, Singapore, Indonesia, and other observer nations. CG20 is the largest joint and combined military exercise in Southeast Asia. Conducted annually since 1982, CG prepares participant countries to work together multilaterally across a full spectrum of operations. These operations provide great benefits to interoperability and will contribute to the operational readiness of all the forces involved.  

**CARAT Exercise – June 2019**

The U.S. and Thailand conducted the 25th annual CARAT exercise on 29 May to 8 June 2019. CARAT Thailand featured more than a dozen ships and aircraft from the U.S. and Royal Thai navies engaged in training at-sea and ashore. The 2019 CARAT exercise focused on Maritime Domain Awareness, submarine operations and tactics, and a number of civic projects. Nine countries participated in CG19, including Thailand, the U.S., Singapore, Japan, China, India, Indonesia, Malaysia, and South Korea.

**Cobra Gold-February 2019**

The 38th Cobra Gold Exercise (CG19) took place from 12-22 February 2019 and focused on three major components: a military field training exercise (FTX), humanitarian civic assistance (HCA) to communities, and a humanitarian assistance and disaster relief exercise. Nine countries participated in CG19, including Thailand, the U.S., Singapore, Japan, China, India, Indonesia, Malaysia, and South Korea.

**Cobra Gold-February 2018**

Cobra Gold was held from 13-23 February 2018 with seven participating nations. Cobra Gold is an annual exercise conducted in Thailand that improves the interoperability and strengthens relationships among participating nations. Activities have included disaster response coordination, diving operations, and a number of civic projects. The U.S., Republic of Korea, and Royal Thai Armed Forces worked together on this exercise. During Cobra Gold 2018, the exercise featured U.S.-Thai-Republic of Korea amphibious assault vehicles with coordinated air cover overhead from attack aircraft. Marines from all three nations consolidated their positions on Hat Yao Beach.  

**CARAT – June 2018**

The U.S. Navy and Marine Corps, and Royal Thai Navy held the 24th iteration of the Cooperation Afloat Readiness and Training (CARAT) exercise in Pattaya, Thailand, on 14 June. The multi-nation exercise series is organized in bilateral phases with regional nations and is designed to enhance capabilities in a broad spectrum of naval operations. Additional phases of CARAT took place in Indonesia, Malaysia, Brunei, and Bangladesh.

**Lower Mekong Initiative Disaster Response Exercise & Exchange (LMI DREE)-December 2017**

The LMI DREE is an annual USINDOPACOM sponsored, multi-national exercise intended to enhance cooperation between the governments of Thailand, Cambodia, Lao PDR, Myanmar, Vietnam, and the U.S. in the areas of connectivity, education, energy security, environment, water, food security, agriculture, and health. The December 2017 LMI DREE was a humanitarian assistance and disaster relief exercise that brought together more than 100 disaster management experts.

**Tempest Express-August 2017**

Tempest Express is a USINDOPACOM multilateral exercise co-hosted by the Royal Thai Armed Forces (RTArF) and is designed to create skilled multinational military planners. Tempest Express opening ceremonies began on 22 August 2017 in Bangkok, Thailand. The exercise is also the largest event in the USINDOPACOM’s Multinational Planning Augmentation Team program, and this event included over 120 participants from 21 countries.
Appendices

Multinational Force Standard Operating Procedures (MNF SOP) Workshop - August 2017

The MNF SOP Workshop took place 21-31 August 2017 at the Royal Thai Armed Forces Centre for Strategic Studies in Bang Saen, Chonburi Province, Thailand. The Workshop was collocated with the Tempest Express 2017 exercise. Participants received academic instruction on Multinational Force Standing Operating Procedures (MNF SOP), and practice crisis action planning in scenarios focusing on HADR and Peacekeeping Operations. CFE-DM personnel gave presentations during the Tempest Express’ academic portion, as well as facilitated working groups supporting the MNF SOP.

Disaster Response Regional Architecture Workshop - July 2017

The Asia-Pacific Center for Security Studies (APCSS) and the S. Rajaratnam School of International Studies (RSIS) at the Nanyang Technological University in Singapore (RSIS) cohosted a workshop on “Disaster Response Regional Architectures: Assessing Future Possibilities” in Bangkok, Thailand, from 18-20 July 2017. The co-hosts convened 33 HADR professionals, which included serving military and civilian government officials, educators, and civil society representatives (including CFE-DM and PACOM).

Cooperation Afloat Readiness and Training (CARAT) - May 2017

The 23rd annual Cooperation Afloat Readiness and Training (CARAT) exercise series between the U.S. Navy and the U.S. Marine Corps and the armed forces of nine partner nations. CARAT provides a training venue to address shared maritime security priorities, enhance interoperability among participating forces, and develop sustained naval partnerships with nations in the region. The annual training events ensures forces are ready to operate together and respond effectively to any crisis. Humanitarian assistance and disaster response is just one feature of the training. CARAT 2017 exercise included the Royal Thai Navy and the U.S. Navy and Marine Corps; it took place in Thailand in May 2017.

ASEAN Civil-Military Coordination Workshop - April 2017

The ASEAN Civil-Military Coordination workshop was conducted 4-6 April 2017. It consisted of HADR lectures and two separate breakout groups discussing scenarios in the ASEAN Joint Disaster Response Plan (AJDRP). CFE-DM facilitated working groups discussing national disaster response mechanisms focused on scenarios in the AJDRP. This event served as foundation for an enhanced partnership with the Thailand MOD, including the establishment of a formal partnership agreement, and an expanded role in the 2018 ASEAN Civil-Military Coordination Workshop.

Cobra Gold - February 2017

Cobra Gold began its 36th iteration on 14 February 2017. The focus of the exercise in 2017 was to advance regional security and ensure effective responses to regional crises by bringing together a multinational force in the Indo-Asia-Pacific region to address shared goals and security commitments.

ASEAN Exercise 16-3 - September 2016

Association of Southeast Asian Nations (ASEAN) Exercise 16-3 took place in September 2016 in Chonburi Province, Thailand. This humanitarian assistance and disaster relief exercise brings together forces from 18 nations’ military and government organizations to apply and hone common standard operating procedures and diversify each other’s capabilities to prepare for disasters in the Indo-Asia-Pacific region. The 2016 exercise scenarios included an earthquake induced collapsed building Search and Rescue operation.

Hanuman Guardian - June 2016

Hanuman Guardian is a joint U.S. - Thai exercise focused on military interoperability while providing disaster relief. The exercise provided the Royal Thai and U.S. Armies with
Challenging training scenarios, improve military readiness to respond to crisis and enhance relations. Hanuman Guardian took place at Fort Adisorn, Thailand, in June 2016.394

Cooperation Afloat Readiness and Training (CARAT)-June 2016

CARAT exercise began on 1 June 2016 in Malaysia. CARAT 2016 took place on the ground in Sandakan and in the waters and airspace of the Sulu Sea. While the exercise series remains bilateral, elements of CARAT 2016 included multi-lateral cooperation ranging from observers to training activities. Additional bilateral phases of CARAT occurred from June through November 2016 with Thailand, Bangladesh, Brunei, Cambodia, Indonesia, Philippines, Singapore, and Timor-Leste.

ASEAN Civil-Military Coordination Workshop-March 2016

This was the first ASEAN Civil-Military Coordination (CMCOORD) Workshop organized by the Ministry of Defence from the Kingdom of Thailand. The three-day workshop emphasized civil–military partnerships in humanitarian assistance and disaster relief. The workshop was organized and managed by the Thailand Ministry of Defence with the intent of making it an actual ASEAN event in the future. The goals of the workshop were to build partnerships and an extended network of disaster management professionals from the public and private sector.

Cobra Gold-February 2016

Thailand and the U.S. co-hosted this large multinational military exercise in Thailand in February 2016. Approximately 1,500 U.S. Marines, 1,000 U.S. Soldiers, 450 U.S. Sailors, 275 U.S. Airmen, and another 300 from small units and commands came together with Royal Thai service members to participate in Cobra Gold 2016.395

International/Foreign Relations

The U.S. and Thailand established relations in 1818 and signed a Treaty of Amity and Commerce in 1833, formalizing diplomatic relations. The Treaty of Amity and Commerce of 1833 began a partnership that has developed and strengthened over time. The U.S. and Thailand remain parties to the 1954 Manila Pact of the former Southeast Asia Treaty Organization (SEATO), which, together with the Thanat-Rusk communiqué of 1962 and the 2020 Joint Vision Statement for the Thai-U.S. Defense Alliance, constitutes the foundation of the U.S.-Thai defense alliance.396 Today the United States and Thailand cooperate on a wide range of program across a vast range of issues, including education and culture, public health, business and trade, democracy, as well as security and military cooperation.

The U.S. partnership with Thailand is bilateral and regional in scope. U.S. support is geared toward promoting regional security and prosperity; infectious disease prevention, treatment, and research; combatting emerging pandemic threats; humanitarian assistance for displaced persons; combatting transnational crime, including conservation crimes; support for civil society; and the promotion of democracy and human rights.397

In 2003, the United States designated Thailand a major non-NATO Ally. Thailand is an important U.S. security ally in Southeast Asia and has a bilateral partnership that continues to increase interoperability among both countries’ militaries.398 Thailand and the U.S. jointly host the Cobra Gold, the Indo-Pacific region’s largest annual multinational military exercise. Since 1950, Thailand has received U.S. military equipment, essential supplies, training, and other assistance in the construction and improvement of facilities. The U.S. has US$2.8 billion in ongoing Foreign Military Sales to Thailand, and the two countries have an annual slate of more than 400 joint military exercises and engagements.399
Thailand is currently the U.S. 19th-largest goods trading partner, with US$48.8 billion in two-way goods trade during 2020. The United States contributed US$17.7 billion of foreign direct investment (FDI) to Thailand in 2019, making it the third-largest foreign investor after Japan (US$70 billion) and Singapore (US$30 billion).

The relationship between the U.S. and Thailand has been strained in the past following the May 2014 coup staged by the Thai military against civilian administration of Yingluck Shinawatra. As a result, the U.S. blocked US$4.7 million in security-related aid. The U.S. has been pushing for democracy and improved human rights in the country, which can create tension. Since then the Thai and U.S. governments have restored bilateral ties; however, Thailand has adopted stronger defense ties with China and Russia after the 2014 coup and after the U.S. suspension of arms sales during recent years.  

China has not criticized Thailand’s coup like Western nations including the U.S. have and as a result have built closer relations with China, who is Thailand’s main trade partner. The Royal Thai Navy has placed US$1 billion in submarines from China and has plans to set up a joint weapons manufacturing facility with China in July 2018 in Thailand. Chinese and Thai militaries participate in overseas joint exercises and joint counter-terrorism exercises. At the same time, Thailand has been neutral in the ongoing conflict between some ASEAN members (Philippines and Vietnam) and China over conflicting maritime claims in the South China Sea.  

Thailand’s foreign policy is oriented towards enhancing Thailand’s role on the global stage, playing a constructive role in the region, strengthening ASEAN solidarity, promoting economic and cultural relations, enhancing international security cooperation, and proactive diplomacy. Currently, Thailand enjoys diplomatic relations with over 190 countries and maintains more than 90 embassies, consulates-general and diplomatic missions abroad. Most recently, Thailand opened an embassy in Astana, Republic of Kazakhstan in 2012.

Participation in International Organizations

Thailand participates in the following international organizations and forums:

- Asian Development Bank (ADB), Asia-Pacific Economic Cooperation (APEC), ASEAN Regional Forum (ARF), Association of Southeast Asian Nations (ASEAN), Bank for International Settlements (BIS), Conference on Interaction and Confidence Building Measures in Asia (CICA), Colombo Plan (CP), East Asia Summit (EAS), Food and Agriculture Organization of the United Nations (FAO), International Atomic Energy Agency (IAEA), International Bank for Reconstruction and Development (IBRD), International Civil Aviation Organization (ICAO), International Chamber of Conference (ICC-national committees), Institute of Catastrophe Risk Management (ICRM), International Fund for Agricultural Development (IFAD), International Finance Corporation (IFC), International Federation of Red Cross and Red Crescent Societies (IFRC), International Hydrographic Organization (IHO), International Labour Organization (ILO), International Monetary Fund (IMF), International Maritime Organization (IMO), International Criminal Police Organisation (INTERPOL), UN International Organization for Migration (IOM), Inter-Parliamentary Union (IPU), International Organization for Standardization (ISO), International Telecommunications Satellite Organization (ITSO), International Telecommunications Union (ITU), International Trade Union Confederation (ITUC-NGOs), Multilateral Investment Guarantee Agency (MIGA), Non-Aligned Movement (NAM), Organisation for the Prohibition of Chemical Weapons (OPCW), Permanent Court of Arbitration (PCA), United Nations (UN), United Nations Conference on Trade and Development (UNCTAD), UN Educational, Scientific, and Cultural Organization (UNESCO), UN High Commissioner for Refugees (UNHCR), UN...
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attacking U.S. citizens abroad. Terrorists are increasingly using less sophisticated methods of attack – including knives, firearms, and vehicles – to more effectively target crowds.

Periodic acts of violence in Thailand remain a concern: For example, in August 2019, several small explosions and related arson events occurred in various locations throughout Bangkok resulting in no deaths but some injuries and minor property damage.

Far Southern Thailand: Periodic violence directed mostly at Thai government interests by a domestic insurgency continues to affect security in the southernmost provinces of Yala, Pattani, Narathiwat, and Songkhla. U.S. citizens are at risk of death or injury due to the possibility of indiscriminate attacks in public places. Martial law is in force in this region. The U.S. government has limited ability to provide emergency services to U.S. citizens in these provinces. Travel to this region by U.S. government employees must be reviewed and approved in advance.

Crime: Common criminal activities include crimes of opportunity, violent crimes, and sexually motivated violence. When traveling alone, exercise caution, stay near other travelers, and ensure friends or family know how to contact you. Taxi and “tuk-tuk” drivers may attempt to charge excessive fares or refuse passengers. You should either request the driver use the meter or agree on the fare beforehand. At the airport use only public transportation from the airport’s official pick-up area, cars from the limousine counters, or a car from your hotel. Rental scams do occur in Thailand. Many rental motorbike, jet ski, and car companies will hold your passport until you pay for real or fictitious damages. We advise against using your passport as collateral. Exorbitant bar tab scams occur in Thailand. Some bars and entertainment venues will charge exorbitant prices for drinks or unadvertised cover charges and threaten violence if you don't pay. Other scams involving gems, city tours, entertainment venues, and credit cards are common, especially in tourist areas.

Force Protection/Pre-Deployment Information

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

Passport/Visa

A passport with 6 months validity from date of entry is recommended. For U.S. citizens, tourist visas are not required if length of stay is less than 30 days. Business travelers, U.S. government employees travelling on official business, teachers, retirees, and those planning to stay longer than 30 days should check with the Royal Thai Embassy about visa requirements.

Safety and Security

Terrorism: Terrorist groups and those inspired by such organizations are intent on
Unvaccinated travelers should avoid nonessential travel to Thailand.

The following actions you can take to stay healthy and safe on your trip include:

**Eat and Drink Safely**
Unclean food and water can cause travelers’ diarrhea and other diseases. Reduce your risk by sticking to safe food and water habits.

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

**Don’t Eat**
- Food served at room temperature
- Food from street vendors
- Raw or soft-cooked (runny) eggs
- Raw or undercooked (rare) meat or fish
- Unwashed or unpeeled raw fruits and vegetables
- Unpasteurized dairy products
- “Bushmeat” (monkeys, bats, or other wild game)

**Drink**
- Bottled water that is sealed
- Water that has been disinfected
- Ice made with bottled or disinfected water
- Carbonated drinks
- Hot coffee or tea
- Pasteurized milk

**Don’t Drink**
- Tap or well water
- Ice made with tap or well water
- Drinks made with tap or well water (such as reconstituted juice)
- Unpasteurized milk

**Take Medicine**
Talk with your doctor about taking prescription or over-the-counter drugs with you on your trip in case you get sick.
Prevent Bug Bites

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

What can I do to prevent bug bites?
- Cover exposed skin by wearing long-sleeved shirts, long pants, and hats.
- Use an appropriate insect repellent (see below).
- Use permethrin-treated clothing and gear (such as boots, pants, socks, and tents). Do not use permethrin directly on skin.
- Stay and sleep in air-conditioned or screened rooms.
- Use a bed net if the area where you are sleeping is exposed to the outdoors.

What type of insect repellent should I use?
- FOR PROTECTION AGAINST TICKS AND MOSQUITOES: Use a repellent that contains 20% or more DEET for protection that lasts up to several hours.
- FOR PROTECTION AGAINST MOSQUITOES ONLY: Products with one of the following active ingredients can also help prevent mosquito bites. Higher percentages of active ingredient provide longer protection.
  - DEET
  - Picaridin (also known as KBR 3023, Bayrepel, and icaridin)
  - Oil of lemon eucalyptus (OLE) or para-menthane-diol (PMD)
  - IR3535
  - 2-undecanone
- Always use insect repellent as directed.

What should I do if I am bitten by bugs?
- Avoid scratching bug bites, and apply hydrocortisone cream or calamine lotion to reduce the itching.
- Check your entire body for ticks after outdoor activity. Be sure to remove ticks properly.

What can I do to avoid bed bugs?

Although bed bugs do not carry disease, they are an annoyance. See our information page about avoiding bug bites for some easy tips to avoid them. For more information on bed bugs, see Bed Bugs.

Safety and Security

Note that conditions can change rapidly in a country at any time. To receive updated Travel Advisories and Alerts for the countries you choose, sign up at step.state.gov.
<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Routine vaccines</strong></td>
<td>Make sure you are up-to-date on all routine vaccines before your trip. Some of these vaccines include</td>
</tr>
<tr>
<td></td>
<td>• Chickenpox (Varicella)</td>
</tr>
<tr>
<td></td>
<td>• Diphtheria-Tetanus-Pertussis</td>
</tr>
<tr>
<td></td>
<td>• Flu (influenza)</td>
</tr>
<tr>
<td></td>
<td>• Measles-Mumps-Rubella (MMR)</td>
</tr>
<tr>
<td></td>
<td>• Polio</td>
</tr>
<tr>
<td></td>
<td>• Shingles</td>
</tr>
<tr>
<td><strong>COVID-19</strong></td>
<td>Everyone five years of age and older should get fully vaccinated for COVID-19 before travel.</td>
</tr>
<tr>
<td><strong>Cholera</strong></td>
<td>There is no longer active cholera transmission and vaccine is not recommended.</td>
</tr>
<tr>
<td><strong>Hepatitis A</strong></td>
<td>Recommended for unvaccinated travelers one year old or older going to Thailand. Infants 6 to 11 months old should also be vaccinated against Hepatitis A. The dose does not count toward the routine 2-dose series.</td>
</tr>
<tr>
<td></td>
<td>Travelers allergic to a vaccine component or who are younger than 6 months should receive a single dose of immune globulin, which provides effective protection for up to 2 months depending on dosage given.</td>
</tr>
<tr>
<td></td>
<td>Unvaccinated travelers who are over 40 years old, immunocompromised, or have chronic medical conditions planning to depart to a risk area in less than 2 weeks should get the initial dose of vaccine and at the same appointment receive immune globulin.</td>
</tr>
<tr>
<td><strong>Hepatitis B</strong></td>
<td>Recommended for unvaccinated travelers of all ages to Thailand.</td>
</tr>
<tr>
<td><strong>Japanese Encephalitis</strong></td>
<td>Recommended for travelers who:</td>
</tr>
<tr>
<td></td>
<td>• Are moving to an area with Japanese encephalitis to live</td>
</tr>
<tr>
<td></td>
<td>• Spend long periods of time, such as a month or more, in areas with Japanese encephalitis</td>
</tr>
<tr>
<td></td>
<td>• Frequently travel to areas with Japanese encephalitis</td>
</tr>
<tr>
<td></td>
<td>Consider vaccination for travelers</td>
</tr>
<tr>
<td></td>
<td>• Spending less than a month in areas with Japanese encephalitis but will be doing activities that increase risk of infection, such as visiting rural areas, hiking or camping, or staying in places without air conditioning, screens, or bed nets</td>
</tr>
<tr>
<td></td>
<td>• Going to areas with Japanese encephalitis who are uncertain of their activities or how long they will be there</td>
</tr>
<tr>
<td></td>
<td>Not recommended for travelers planning short-term travel to urban areas or travel to areas with no clear Japanese encephalitis season.</td>
</tr>
<tr>
<td><strong>Malaria</strong></td>
<td>CDC recommends that travelers going to certain areas of Thailand take prescription medicine to prevent malaria. Depending on the medicine you take, you will need to start taking this medicine multiple days before your trip, as well as during and after your trip. Talk to your doctor about which malaria medication you should take.</td>
</tr>
<tr>
<td><strong>Measles</strong></td>
<td>Infants 6 to 11 months old traveling internationally should get 1 dose of measles-mumps-rubella (MMR) vaccine before travel. This dose does not count as part of the routine childhood vaccination series.</td>
</tr>
<tr>
<td><strong>Rabies</strong></td>
<td>Rabid dogs are commonly found in Thailand. However, if you are bitten or scratched by a dog or other mammal while in Thailand, rabies treatment is often available.</td>
</tr>
<tr>
<td></td>
<td>Consider rabies vaccination before your trip if your activities mean you will be around dogs or wildlife.</td>
</tr>
<tr>
<td></td>
<td>Travelers more likely to encounter rabid animals include</td>
</tr>
<tr>
<td></td>
<td>Campers, adventure travelers, or cave explorers (spelunkers)</td>
</tr>
<tr>
<td></td>
<td>Veterinarians, animal handlers, field biologists, or laboratory workers handling animal specimens</td>
</tr>
<tr>
<td></td>
<td>Visitors to rural areas</td>
</tr>
<tr>
<td><strong>Typhoid</strong></td>
<td>Recommended for most travelers, especially those staying with friends or relatives or visiting smaller cities or rural areas.</td>
</tr>
<tr>
<td><strong>Yellow fever</strong></td>
<td>Required if traveling from a country with risk of YF virus transmission and ≥9 months of age, including transit &gt;12 hours in an airport located in a country with risk of YF virus transmission. See link for list of countries with yellow fever: <a href="https://wwwnc.cdc.gov/travel/yellowbook/2020/travel-related-infectious-diseases/yellow-fever#table423">https://wwwnc.cdc.gov/travel/yellowbook/2020/travel-related-infectious-diseases/yellow-fever#table423</a></td>
</tr>
</tbody>
</table>

Table 12: CDC Information for Vaccine-Preventable Diseases in Thailand
<table>
<thead>
<tr>
<th>Disease</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chikungunya</td>
<td>Mosquito bites can carry chikungunya; there is no prophylaxis. Avoid bug bits.</td>
</tr>
<tr>
<td>Dengue</td>
<td>Mosquito bites can carry dengue; there is no prophylaxis. Avoid bug bits.</td>
</tr>
<tr>
<td>Hantavirus</td>
<td>Hantavirus can be spread by breathing in air or accidentally eating food contaminated with the urine, droppings, or saliva of infected rodents, or bite from an infected rodent. Less commonly, it is spread by being around someone sick with hantavirus (only occurs with Andes virus). To avoid infection, avoid rodents and areas where they live, and avoid sick people.</td>
</tr>
<tr>
<td>Leptospirosis</td>
<td>Leptospirosis can be contracted by touching urine or other body fluids from an animal infected with leptospirosis, swimming or wading in urine-contaminated fresh water, or contact with urine-contaminated mud, or by drinking water or eating food contaminated with animal urine. To avoid infection, avoid contaminated water and soil.</td>
</tr>
<tr>
<td>Tuberculosis (TB)</td>
<td>TB is most commonly contracted when one breathes in TB bacteria that is in the air from an infected and contagious person who has coughed, spoken, or sang. To avoid potential contamination, avoid sick people.</td>
</tr>
<tr>
<td>Zika</td>
<td>Zika is spread by the bite of an infected mosquito or by an infected pregnant woman to her unborn baby. To avoid infection, avoid bug bites.</td>
</tr>
</tbody>
</table>

**Table 13: CDC Information for Non-Vaccine-Preventable Diseases in Thailand**
Sendai Framework

The Sendai Framework is the global blueprint and fifteen-year plan to build the world’s resilience to natural disasters. The information in this section is sourced directly from the Sendai Framework. The Sendai Framework for Disaster Risk Reduction 2015-2030 outlines seven clear targets and four priorities for action to prevent new and reduce existing disaster risks:

The Four Priorities of Action include:

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

The Sendai Framework aims to achieve the substantial reduction of disaster risk and losses in lives, livelihoods, and health and in the economic, physical, social, cultural, and environmental assets of persons, businesses, communities, and countries over the next 15 years. It was adopted at the Third United Nations World Conference on Disaster Risk Reduction in Sendai, Japan in 2015.

The Sendai Framework is the successor instrument to the Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters. Figure 25 shows the Sendai DRR Framework.

The Seven Global Targets include:

Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality rates in the decade 2020-2030 compared to the period 2005-2015.

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

**Scope and purpose**

The present framework will apply to the risk of small-scale and large-scale, frequent and infrequent, sudden and slow-onset disasters, caused by natural or manmade hazards as well as related environmental, technological and biological hazards and risks. It aims to guide the multi-hazard management of disaster risk in development at all levels as well as within and across all sectors.

**Expected outcome**

The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.

**Goal**

Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience.

**Targets**

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

Figure 25: UN Sendai Framework for Disaster Risk Reduction 2015-2030
HFA Country Progress Report

The Hyogo Framework for Action (HFA) was adopted as a guideline to reduce vulnerabilities to natural hazards. The HFA assists participating countries to become more resilient and to better manage the hazards that threaten their development. The levels of progress of the 2013-2015 results of the HFA for Thailand are represented in Figure 26 and Table 14. Table 15 provides an overview of the overall challenges and the future outlook statement from the HFA report. The 2013-2015 report is the most recent HFA report available for Thailand.\textsuperscript{414}

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|}
\hline
Core Indicator* & Indicator Description & Level of progress achieved* \\
\hline
1 & National policy and legal framework for disaster risk reduction exists with decentralized responsibilities and capacities at all levels. & 4 \\
\hline
2 & Dedicated and adequate resources are available to implement disaster risk reduction plans and activities at all administrative levels. & 2 \\
\hline
3 & Community participation and decentralization is ensured through the delegation of authority and resources to local levels. & 4 \\
\hline
4 & A national multi-sectoral platform for disaster risk reduction is functioning. & 4 \\
\hline
\end{tabular}
\caption{Priority for Action #1: Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.}
\end{table}

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|}
\hline
Core Indicator* & Indicator Description & Level of progress achieved* \\
\hline
1 & National and local risk assessments based on hazard data and vulnerability information are available and include risk assessments for key sectors. & 2 \\
\hline
2 & Systems are in place to monitor, archive and disseminate data on key hazards and vulnerabilities. & 2 \\
\hline
3 & Early warning systems are in place for all major hazards, with outreach to communities. & 4 \\
\hline
4 & National and local risk assessments take account of regional / trans-boundary risks, with a view to regional cooperation on risk reduction. & 3 \\
\hline
\end{tabular}
\caption{Priority for Action #2: Identify, assess and monitor disaster risks and enhance early warning.}
\end{table}

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|}
\hline
Core Indicator* & Indicator Description & Level of progress achieved* \\
\hline
1 & Relevant information on disasters is available and accessible at all levels, to all stakeholders (through networks, development of information sharing systems, etc.). & 3 \\
\hline
2 & School curricula, education material and relevant trainings include disaster risk reduction and recovery concepts and practices. & 3 \\
\hline
3 & Research methods and tools for multi-risk assessments and cost benefit analysis are developed and strengthened. & 2 \\
\hline
4 & Research methods and tools for multi-risk assessments and cost benefit analysis are developed and strengthened. & 4 \\
\hline
\end{tabular}
\caption{Priority for Action #3: Use knowledge, innovation and education to build a culture of safety and resilience at all levels}
\end{table}

Table 14: National Progress Report on the Implementation of the HFA
### Priority for Action #4: Reduce the underlying risk factors.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Disaster risk reduction is an integral objective of environment related policies and plans, including for land use natural resource management and adaptation to climate change.</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Social development policies and plans are being implemented to reduce the vulnerability of populations most at risk.</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Economic and productive sectorial policies and plans have been implemented to reduce the vulnerability of economic activities.</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Planning and management of human settlements incorporate disaster risk reduction elements, including enforcement of building codes.</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>Disaster risk reduction measures are integrated into post disaster recovery and rehabilitation processes.</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Procedures are in place to assess the disaster risk impacts of major development projects, especially infrastructure.</td>
<td>3</td>
</tr>
</tbody>
</table>

### Priority for Action #5: Strengthen disaster preparedness for effective response at all levels.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Strong policy, technical and institutional capacities and mechanisms for disaster risk management, with a disaster risk reduction perspective are in place.</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>Disaster preparedness plans and contingency plans are in place at all administrative levels, and regular training drills and rehearsals are held to test and develop disaster response programs.</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Financial reserves and contingency mechanisms are in place to support effective response and recovery when required.</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>Procedures are in place to exchange relevant information during hazard events and disasters, and to undertake post-event reviews.</td>
<td>2</td>
</tr>
</tbody>
</table>

Table Notes:
*Level of Progress:
1 – Minor progress with few signs of forward action in plans or policy
2 – Some progress, but without systematic policy and/ or institutional commitment
3 – Institutional commitment attained, but achievements are neither comprehensive nor substantial
4 – Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities
5 – Comprehensive achievement with sustained commitment and capacities at all levels

Table 14: National Progress Report on the Implementation of the HFA (cont.)
## Future Outlook Area 1: The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction.

| Challenges: | Disaster Risk Reduction (DRR) mainstreaming in the development plan and sector’s plan. |
| Future Outlook Statement: | DRR is mainstreamed into development and sectors’ development plan at national, regional, provincial and local level. Existing mechanisms mandated by law (disaster prevention and mitigation committee) are strengthened. Budget is secured on DRR programs. |

## Future Outlook Area 2: The development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards.

| Challenges: | All sectors and stakeholders should share common understanding on DRR to ensure the seamless linkage between global, national and local framework for action in DRR. |
| Future Outlook Statement: | A shared understanding on DRR is promoted through an agreed strategic communication scheme, including sets of contextualized and user-friendly toolkits and learning kits for each sector and stakeholder groups. |

## Future Outlook Area 3: The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programs in the reconstruction of affected communities.

| Challenges: | The systematic and participatory monitoring and evaluation mechanism and tools for DRR in the country in all phases of disaster risk management. |
| Future Outlook Statement: | A systematic DRR monitoring and evaluation mechanism and tools are developed in a participatory manner to ensure the effectiveness of DRR mainstreaming and DRR implementation in Thailand at all levels |

Table 15: HFA Country Progress Report Future Outlook Areas, Thailand
Country Profile

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

Background

Two unified Thai kingdoms emerged in the mid-13th century. The Sukhothai, located in the south-central plains, gained its independence from the Khmer empire to the east. By the late 13th century, Sukhothai’s territory extended into present-day Burma and Laos. Sukhotai lasted until the mid-15th century. The Thai Lan Na kingdom was established in the north with its capital at Chang Mai. Lan Na was conquered by the Burmese in the 16th century. The Ayutthaya kingdom (14th-18th centuries) succeeded the Sukhothai and would become known as the Siamese Kingdom. During the Ayutthaya period, the Thai/Siamese peoples consolidated their hold on what is present-day central and north-central Thailand. Following a military defeat at the hands of the Burmese in 1767, the Siamese Kingdom rose to new heights under the military ruler TAKSIN, who defeated the Burmese occupiers and expanded the kingdom’s territory into modern-day northern Thailand (formerly the Lan Na kingdom), Cambodia, Laos, and the Malay Peninsula. The kingdom fought off additional Burmese invasions and raids in the late 1700s and early 1800s. In the mid-1800s, Western pressure led to Siam signing trade treaties that reduced the country’s sovereignty and independence. In the 1890s and 1900s, the British and French forced the kingdom to cede Cambodian, Laotian, and Malay territories that had been under Siamese control.

A bloodless revolution in 1932 led to the establishment of a constitutional monarchy. After the Japanese invaded Thailand in 1941, the government split into a pro-Japan faction and a pro-Ally faction backed by the king. Following the war, Thailand became a US treaty ally in 1954 after sending troops to Korea and later fighting alongside the US in Vietnam. Thailand since 2005 has experienced several rounds of political turmoil including a military coup in 2006 that ousted then Prime Minister THAKSIN Chinnawat, followed by large-scale street protests by competing political factions in 2008, 2009, and 2010. THAKSIN’s youngest sister, YINGLAK Chinnawat, in 2011 led the Puea Thai Party to an electoral win and assumed control of the government.

In early May 2014, after months of large-scale anti-government protests in Bangkok beginning in November 2013, YINGLAK was removed from office by the Constitutional Court and in late May 2014 the Royal Thai Army, led by Royal Thai Army Gen. PRAYUT Chan-ocha, staged a coup against the caretaker government. PRAYUT was appointed prime minister in August 2014. Since then, the military-affiliated National Council for Peace and Order (NCPO), led by PRAYUT, has ruled the country. This body drafted a new constitution guaranteeing military sway over Thai politics, which was passed in a national referendum in August 2016. The constitution allows the military to select the entire 250-member Senate and requires a joint meeting of the House and Senate to select the prime minister, effectively giving the military a veto over the top executive by controlling 25% of the House. The NCPO has also restricted civil and political rights and suppressed political opponents. King PHUMIPHON Adunyadet passed away in October 2016 after 70 years on the throne; his only son, WACHIRALONGKON Bodinrathephayawarangkun (aka King Rama X), ascended the throne in December 2016. He signed the new constitution in April 2017. A long-delayed March 2019 election, disputed and widely viewed as skewed in favor of the party aligned with the military, allowed PRAYUT to continue his premiership. The country experienced large-scale pro-democracy protests in 2020.
**Geography**

**Location**
Southeastern Asia, bordering the Andaman Sea and the Gulf of Thailand, southeast of Burma

**Geographic coordinates**
15°00’N, 100°00’E

**Map references**
Southeast Asia

**Area**
- **total**: 513,120 sq km
- **land**: 510,890 sq km
- **water**: 2,230 sq km

**Area - comparative**
About three times the size of Florida; slightly more than twice the size of Wyoming

**Land boundaries**
- **Total**: 5,673 km

**border countries (4)**: Burma 2416 km, Cambodia 817 km, Laos 1845 km, Malaysia 595 km

**Coastline**
3,219 km

**Maritime claims**
- **Territorial sea**: 12 nm
- **Exclusive economic zone**: 200 nm

**Continental shelf**: 200-m depth or to the depth of exploitation

**Climate**
Tropical; rainy, warm, cloudy southwest monsoon (mid-May to September); dry, cool northeast monsoon (November to mid-March); southern isthmus always hot and humid

**Terrain**
Central plain; Khorat Plateau in the east; mountains elsewhere

**Elevation**
- **Highest point**: Doi Inthanon 2,565 m
- **Lowest point**: Gulf of Thailand 0 m
- **Mean elevation**: 287 m

**Natural resources**
Tin, rubber, natural gas, tungsten, tantalum, timber, lead, fish, gypsum, lignite, fluorite, arable land

**Land use**
- **Agricultural land**: 41.2% (2018 est.)
- **Arable land**: 30.8% (2018 est.)
- **Permanent crops**: 8.8% (2018 est.)
- **Permanent pasture**: 1.6% (2018 est.)
- **Forest**: 37.2% (2018 est.)
- **Other**: 21.6% (2018 est.)

**Irrigated land**
64,150 sq km (2012)

**Major lakes (area sq km)**
- **Salt water lake(s)**: Thalesap Songkhla - 1,290 sq km

**Major rivers (by length in km)**
- Mekong (shared with China [s], Burma, Laos, Cambodia, and Vietnam [m]) - 4,350 km
- Salween (shared with China [s] and Burma [m]) - 3,060 km
- Mun - 1,162 km

**note** – [s] after country name indicates river source; [m] after country name indicates river mouth
Major watersheds (area sq km)
Indian Ocean drainage: Salween (271,914 sq km)
Pacific Ocean drainage: Mekong (805,604 sq km)

Population distribution
Highest population density is found in and around Bangkok; significant population clusters found throughout large parts of the country, particularly north and northeast of Bangkok and in the extreme southern region of the country.

Natural hazards
Land subsidence in Bangkok area resulting from the depletion of the water table; droughts

Geography - note
Controls only land route from Asia to Malaysia and Singapore; ideas for the construction of a canal across the Kra Isthmus that would create a bypass to the Strait of Malacca and shorten shipping times around Asia continue to be discussed

People and Society

Population
69,480,520 (July 2021 est.)

Nationality

Noun: Thai (singular and plural)
Adjective: Thai

Ethnic groups
Thai 97.5%, Burmese 1.3%, other 1.1%, unspecified <.1% (2015 est.)

Note: data represent population by nationality

Languages
Thai (official) only 90.7%, Thai and other languages 6.4%, only other languages 2.9% (includes Malay, Burmese); note - data represent population by language(s) spoken at home; English is a secondary language of the elite (2010 est.)

Religions
Buddhist 94.6%, Muslim 4.3%, Christian 1%, other <0.1%, none <0.1% (2015 est.)

Demographic profile
Thailand has experienced a substantial fertility decline since the 1960s largely due to the nationwide success of its voluntary family planning program. In just one generation, the total fertility rate (TFR) shrank from 6.5 children per woman in 1960s to below the replacement level of 2.1 in the late 1980s. Reduced fertility occurred among all segments of the Thai population, despite disparities between urban and rural areas in terms of income, education, and access to public services. The country’s “reproductive revolution” gained momentum in the 1970s as a result of the government’s launch of an official population policy to reduce population growth, the introduction of new forms of birth control, and the assistance of foreign non-government organizations. Contraceptive use rapidly increased as new ways were developed to deliver family planning services to Thailand’s then overwhelmingly rural population. The contraceptive prevalence rate increased from just 14% in 1970 to 58% in 1981 and has remained about 80% since 2000. Thailand’s receptiveness to family planning reflects the predominant faith, Theravada Buddhism, which emphasizes individualism, personal responsibility, and independent decision-making. Thai women have more independence and a higher status than women in many other developing countries and are not usually pressured by their husbands or other family members about family planning decisions. Thailand’s relatively egalitarian society also does not have the son preference found in a number of other Asian countries; most Thai ideally want one child of each sex.

Because of its low fertility rate, increasing life expectancy, and growing elderly population, Thailand has become an aging society that will face growing labor shortages. The proportion of the population under 15 years of age has
shrunk dramatically, the proportion of working-age individuals has peaked and is starting to decrease, and the proportion of elderly is growing rapidly. In the short-term, Thailand will have to improve educational quality to increase the productivity of its workforce and to compete globally in skills-based industries. An increasing reliance on migrant workers will be necessary to mitigate labor shortfalls.

Thailand is a destination, transit, and source country for migrants. It has 3–4 million migrant workers as of 2017, mainly providing low-skilled labor in the construction, agriculture, manufacturing, services, and fishing and seafood processing sectors. Migrant workers from other Southeast Asian countries with lower wages – primarily Burma and, to a lesser extent, Laos and Cambodia – have been coming to Thailand for decades to work in labor-intensive industries. Many are undocumented and are vulnerable to human trafficking for forced labor, especially in the fisheries industry, or sexual exploitation. A July 2017 migrant worker law stiffening fines on undocumented workers and their employers, prompted tens of thousands of migrants to go home. Fearing a labor shortage, the Thai Government has postponed implementation of the law until January 2018 and is rapidly registering workers. Thailand has also hosted ethnic minority refugees from Burma for more than 30 years; as of 2016, approximately 105,000 mainly Karen refugees from Burma were living in nine camps along the Thailand-Burma border. Thailand has a significant amount of internal migration, most often from rural areas to urban centers, where there are more job opportunities. Low- and semi-skilled Thais also go abroad to work, mainly in Asia and a smaller number in the Middle East and Africa, primarily to more economically developed countries where they can earn higher wages.

**Age structure**

0–14 years: 16.45% (male 5,812,803/female 5,533,772)

15–24 years: 13.02% (male 4,581,622/female 4,400,997)

25–54 years: 45.69% (male 15,643,583/female 15,875,353)

55–64 years: 13.01% (male 4,200,077/female 4,774,801)

65 years and over: 11.82% (male 3,553,273/female 4,601,119) (2020 est.)

**Dependency ratios**

Total dependency ratio: 41.9

Youth dependency ratio: 23.5

Elderly dependency ratio: 18.4

Potential support ratio: 5.4 (2020 est.)

**Median age**

Total: 39 years

Male: 37.8 years

Female: 40.1 years (2020 est.)

**Population growth rate**

0.26% (2021 est.)

**Birth rate**

10.25 births/1,000 population (2021 est.)

**Death rate**

7.66 deaths/1,000 population (2021 est.)

**Net migration rate**

-0.03 migrant(s)/1,000 population (2021 est.)

**Population distribution**

Highest population density is found in and around Bangkok; significant population clusters found throughout large parts of the country, particularly north and northeast of Bangkok and in the extreme southern region of the country.
Urbanization

Urban population: 52.2% of total population (2021)

Rate of urbanization: 1.43% annual rate of change (2020-25 est.)

Major urban areas - population
10.723 million BANGKOK (capital), 1,417 Chon Buri, 1,324 million Samut Prakan, 1,182 million Chiang Mai, 979,000 Songkla, 975,000 Nothaburi (2021)

Sex ratio

at birth: 1.05 male(s)/female
0-14 years: 1.05 male(s)/female
15-24 years: 1.04 male(s)/female
25-54 years: 0.99 male(s)/female
55-64 years: 0.88 male(s)/female
65 years and over: 0.77 male(s)/female

total population: 0.96 male(s)/female (2020 est.)

Mother’s mean age at first birth
23.3 years (2009 est.)

Maternal mortality ratio
37 deaths/100,000 live births (2017 est.)

Infant mortality rate
Total: 6.58 deaths/1,000 live births
male: 7.2 deaths/1,000 live births
female: 5.92 deaths/1,000 live births (2021 est.)

Life expectancy at birth
Total population: 77.41 years

HIV/AIDS - adult prevalence rate
1% (2020 est.)
### HIV/AIDS - people living with HIV/AIDS
500,000 (2020 est.)

### HIV/AIDS - deaths
12,000 (2020 est.)

### Major infectious diseases

**Degree of risk:** very high (2020)

**Food or waterborne diseases:** bacterial diarrhea

**Vector borne diseases:** dengue fever, Japanese encephalitis, and malaria

### Environment - current issues
Air pollution from vehicle emissions; water pollution from organic and factory wastes; water scarcity; deforestation; soil erosion; wildlife populations threatened by illegal hunting; hazardous waste disposal

### Environment - international agreements


**Signed, but not ratified:** none of the selected agreements

### Air pollutants

**Particulate matter emissions:** 26.23 micrograms per cubic meter (2016 est.)

**Carbon dioxide emissions:** 283.76 megatons (2016 est.)

**Methane emissions:** 86.98 megatons (2020 est.)

### Climate
Tropical; rainy, warm, cloudy southwest monsoon (mid-May to September); dry, cool northeast monsoon (November to mid-March); southern isthmus always hot and humid

---

**Male:** 4.6%

**Female:** 5.9% (2020 est.)

### Education expenditures
3% of GDP (2019)

### Literacy

**Definition:** age 15 and over can read and write

**Total population:** 93.8%

**Male:** 95.2%

**Female:** 92.4% (2018)

### School life expectancy (primary to tertiary education)

**Total:** 15 years

**Male:** 15 years

**Female:** 16 years (2016)

### Unemployment, youth ages 15-24

**Total:** 5.2%
Land use
Agricultural land: 41.2% (2018 est.)
Arable land: 30.8% (2018 est.)
Permanent crops: 8.8% (2018 est.)
Permanent pasture: 1.6% (2018 est.)
Forest: 37.2% (2018 est.)
Other: 21.6% (2018 est.)

Urbanization
Urban population: 52.2% of total population (2021)
Rate of urbanization: 1.43% annual rate of change (2020-25 est.)

Revenue from forest resources
Forest revenues: 0.34% of GDP (2018 est.)

Revenue from coal
Coal revenues: 0.03% of GDP (2018 est.)

Major infectious diseases
Degree of risk: very high (2020)
Food or waterborne diseases: bacterial diarrhea
Vector borne diseases: dengue fever, Japanese encephalitis, and malaria

Waste and recycling
Municipal solid waste generated annually: 26,853,366 tons (2015 est.)
Municipal solid waste recycled annually: 5,128,993 tons (2012 est.)
Percent of municipal solid waste recycled: 19.1% (2012 est.)

Major lakes (area sq km)
Salt-water lake(s): Thalesap Songkhla - 1,290 sq km

Major rivers (by length in km)
Mekong (shared with China [s], Burma, Laos, Cambodia, and Vietnam [m]) - 4,350 km;
Salween (shared with China [s] and Burma [m]) - 3,060 km; Mun - 1,162 km
Note – [s] after country name indicates river source; [m] after country name indicates river mouth

Major watersheds (area sq km)
Indian Ocean drainage: Salween (271,914 sq km)
Pacific Ocean drainage: Mekong (805,604 sq km)

Total water withdrawal
Municipal: 2.739 billion cubic meters (2017 est.)
Industrial: 2.777 billion cubic meters (2017 est.)
Agricultural: 51.79 billion cubic meters (2017 est.)
Total renewable water resources
438.61 billion cubic meters (2017 est.)

Government
Country name
Conventional long form: Kingdom of Thailand
Conventional short form: Thailand
Local long form: Ratcha Anachak Thai
Local short form: Prathe Tha
Former: Siam
Etymology: Land of the Tai [People]”; the meaning of “taĭ” is uncertain, but may originally have meant “human beings,” “people,” or “free people

Government type
Constitutional monarchy

Capital

Name: Bangkok

Geographic coordinates: 13 45 N, 100 31 E

Time difference: UTC+7 (12 hours ahead of Washington, DC, during Standard Time)

Etymology: Bangkok was likely originally a colloquial name, but one that was widely adopted by foreign visitors; the name may derive from “bang ko,” where “bang” is the Thai word for “village on a stream” and “ko” means “island,” both referencing the area’s landscape, which was carved by rivers and canals; alternatively, the name may come from “bang makok,” where “makok” is the name of the Java plum, a plant bearing olive-like fruit; this possibility is supported by the former name of Wat Arun, a historic temple in the area, that used to be called Wat Makok;

Krung Thep, the city’s Thai name, means “City of the Deity” and is a shortening of the full ceremonial name: Krungthermahanakhon Amonrattanakosin Mahintharayutthaya Mahadilokphop Noppharatratchathaninburirom Udomratchaniwetmahasathan Amonphimanawatansathit Sakkathattiyawitsanukamprasit; translated the meaning is: City of angels, great city of immortals, magnificent city of the nine gems, seat of the king, city of royal palaces, home of gods incarnate, erected by Vishvakarman at Indra’s behest; it holds the world’s record as the longest place name (169 letters)

Administrative divisions
76 provinces (changwat, singular and plural) and 1 municipality* (maha nakhon); Amnat Charoen, Ang Thong, Bueng Kan, Buri Ram, Chachoengsao, Chai Nat, Chaiyaphum, Chanthaburi, Chiang Mai, Chiang Rai, Chon Buri, Chumphon, Kalasin, Kamphaeng Phet, Kanchanaburi, Khon Kaen, Krabi, Krung Thep* (Bangkok), Lampang, Lamphun, Loei, Lop Buri, Mae Hong Son, Maha Sarakham, Mukdahan, Nakhon Nayok, Nakhon Pathom, Nakhon Phanom, Nakhon Ratchasima, Nakhon Sawan, Nakhon Si Thammarat, Nan, Narathiwat, Nong Bua Lamphu, Nong Khai, Nonthaburi, Pathum Thani, Pattani, Phangnga, Phatthalung, Phayao, Phetchabun, Phetchaburi, Phichit, Phitsanulok, Phra Nakhon Si Ayutthaya, Phrae, Phuket, Prachin Buri, Prachuap Khiri Khan, Ranong, Ratchaburi, Rayong, Roi Et, Sa Kaeo, Sakon Nakhon, Samut Prakan, Samut Sakhon, Samut Songkhram, Saraburi, Satun, Sing Buri, Si Sa Ket, Songkhla, Sukhothai, Suphan Buri, Surat Thani, Surin, Tak, Trang, Trat, Ubon Ratchathani, Udon Thani, Uthai Thani, Uttaradit, Yala, Yasothon

Independence
1238 (traditional founding date; never colonized)

National holiday
Birthday of King WACHIRALONGKON, 28 July (1952)

Constitution
History: many previous; latest drafted and presented 29 March 2016, approved by referendum 7 August 2016, signed into law by the king 6 April 2017

Amendments: proposed as a joint resolution by the Council of Ministers and the National Council for Peace and Order (the junta that has ruled Thailand since the 2014 coup) and submitted as a draft to the National Legislative Assembly; passage requires majority vote of the existing Assembly members and presentation to the monarch for assent and countersignature of the prime minister

Legal system
Civil law system with common law influences
**International law organization participation**
Has not submitted an ICJ jurisdiction declaration; non-party state to the ICCt

**Citizenship**

**Citizenship by birth:** no

**Citizenship by descent only:** at least one parent must be a citizen of Thailand

**Dual citizenship recognized:** no

**Residency requirement for naturalization:** 5 years

**Suffrage**
18 years of age; universal and compulsory

**Executive branch**

**Chief of state:** King WACHIRALONGKON, also spelled Vajiralongkorn, (since 1 December 2016); note - King PHUMIPHON Adunyadet, also spelled BHUMIBOL Adulyadej (since 9 June 1946) died 13 October 2016

**Head of government:** Prime Minister PRAYUT Chan-ocha (since 25 August 2014); Deputy Prime Ministers PRAWIT Wongsuwan (since 31 August 2014), WITSANU Kruea-ngam (since 31 August 2014), SUPHATTHANAPHONG Phanmichao (since August 2020), CHURIN Laksanawisit (since November 2019), ANUTHIN Chanwirakun (since November 2019), DON Pramudwinai (since August 2020)

**Cabinet:** Council of Ministers nominated by the prime minister, appointed by the king; a Privy Council advises the king

**Elections/appointments:** the monarchy is hereditary; the House of Representatives and Senate approves a person for Prime Minister who must then be appointed by the King (as stated in the transitory provision of the 2017 constitution); the office of prime minister can be held for up to a total of 8 years

**Note:** PRAYUT Chan-ocha was appointed interim prime minister in August 2014, three months after he staged the coup that removed the previously elected government of Prime Minister YINGLAK Chinnawat; on 5 June 2019 PRAYUT (independent) was approved as prime minister by the parliament - 498 votes to 244 for THANATHON Chuengrungrueangkit (FFP)

**Legislative branch**

**Description:** bicameral National Assembly or Rathhasapha consists of:
Senate or Wuthissapha (250 seats; members appointed by the Royal Thai Army to serve 5-year terms)
House of Representatives or Saphaphuthan Ratsadon (500 seats; 375 members directly elected in single-seat constituencies by simple majority vote and 150 members elected in a single nationwide constituency by party-list proportional representation vote; members serve 4-year terms)

**Elections:** Senate - last held on 14 May 2019 (next to be held in 2024)

House of Representatives - last held on 24 March 2019 (next to be held in 2023)

**Election results:** Senate - percent of vote by party - NA; seats by party - NA; composition - men 224, women 26, percent of women 10.4%

House of Representatives - percent of vote by party - PPRP 23.7%, PTP 22.2%, FFP 17.8%, DP 11.1%, PJT 10.5%, TLP 2.3%, CTP 2.2%, NEP 1.4%, PCC 1.4%, ACT 1.2%, PCP 1.2%, other 5.1%; seats by party - PTP 136, PPRP 116, FFP 81, DP 53, PJT 51, CTP 10, TLP 10, PCC 7, PCP 5, NEP 6, ACT 5, other 20; composition - men 421, women 79, percent of women 15.8%; note - total National Assembly percent of women 14%

**International law organization participation**
Has not submitted an ICJ jurisdiction declaration; non-party state to the ICCt

**Citizenship**

**Citizenship by birth:** no

**Citizenship by descent only:** at least one parent must be a citizen of Thailand

**Dual citizenship recognized:** no

**Residency requirement for naturalization:** 5 years

**Suffrage**
18 years of age; universal and compulsory

**Executive branch**

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**Cabinet:** Council of Ministers nominated by the prime minister, appointed by the king; a Privy Council advises the king

**Elections/appointments:** the monarchy is hereditary; the House of Representatives and Senate approves a person for Prime Minister who must then be appointed by the King (as stated in the transitory provision of the 2017 constitution); the office of prime minister can be held for up to a total of 8 years

**Note:** PRAYUT Chan-ocha was appointed interim prime minister in August 2014, three months after he staged the coup that removed the previously elected government of Prime Minister YINGLAK Chinnawat; on 5 June 2019 PRAYUT (independent) was approved as prime minister by the parliament - 498 votes to 244 for THANATHON Chuengrungrueangkit (FFP)

**Legislative branch**

**Description:** bicameral National Assembly or Rathhasapha consists of:
Senate or Wuthissapha (250 seats; members appointed by the Royal Thai Army to serve 5-year terms)
House of Representatives or Saphaphuthan Ratsadon (500 seats; 375 members directly elected in single-seat constituencies by simple majority vote and 150 members elected in a single nationwide constituency by party-list proportional representation vote; members serve 4-year terms)

**Elections:** Senate - last held on 14 May 2019 (next to be held in 2024)

House of Representatives - last held on 24 March 2019 (next to be held in 2023)

**Election results:** Senate - percent of vote by party - NA; seats by party - NA; composition - men 224, women 26, percent of women 10.4%

House of Representatives - percent of vote by party - PPRP 23.7%, PTP 22.2%, FFP 17.8%, DP 11.1%, PJT 10.5%, TLP 2.3%, CTP 2.2%, NEP 1.4%, PCC 1.4%, ACT 1.2%, PCP 1.2%, other 5.1%; seats by party - PTP 136, PPRP 116, FFP 81, DP 53, PJT 51, CTP 10, TLP 10, PCC 7, PCP 5, NEP 6, ACT 5, other 20; composition - men 421, women 79, percent of women 15.8%; note - total National Assembly percent of women 14%
Judicial branch

**Highest courts:** Supreme Court of Justice (consists of the court president, 6 vice presidents, 60-70 judges, and organized into 10 divisions); Constitutional Court (consists of the court president and 8 judges); Supreme Administrative Court (number of judges determined by Judicial Commission of the Administrative Courts)

**Judge selection and term of office:** Supreme Court judges selected by the Judicial Commission of the Courts of Justice and approved by the monarch; judge term determined by the monarch; Constitutional Court justices - 3 judges drawn from the Supreme Court, 2 judges drawn from the Administrative Court, and 4 judge candidates selected by the Selective Committee for Judges of the Constitutional Court, and confirmed by the Senate; judges appointed by the monarch serve single 9-year terms; Supreme Administrative Court judges selected by the Judicial Commission of the Administrative Courts and appointed by the monarch; judges serve for life

**Subordinate courts:** courts of first instance and appeals courts within both the judicial and administrative systems; military courts

**Political parties and leaders**

Action Coalition of Thailand Party or ACT [TAWEESAK Na Takuathung (acting); CHATUMONGKHON Sonakun resigned June 2020]
Chat Phatthana Party (National Development Party) [THEWAN Liptaphanlop]
Chat Thai Phatthana Party (Thai Nation Development Party) or CTP [KANCHANA Sinlapa-acha]
New Economics Party or NEP [MINGKHWAN Sangsuwan]
Move Forward Party or MFP (formed from the disbanded Anakhot Mai Party) [PHITHA Limcharoenrat]
Phalang Pracharat Party or PPP [PRAWIT Wongsuwan]
Phumchai Thai Party (Thai Pride Party) or PJT [ANUTHIN Chanwirakun]
Prachachat Party of PCC [WAN Muhamad NOOR Matha]
Prachathipat Party (Democrat Party) or DP [CHURIN Laksanawisit]
Puea Chat Party (For Nation Party) or PCP [SONGKHRAM Kitletpairot]
Puea Thai Party (For Thais Party) or PTP [CHONLANON Sikaew]
Puea Tham Party (For Dharma Party) [NALINI Thawisin]
Seri Ruam Thai Party (Thai Liberal Party) or TLP [SERIPHISUT Temiyawet]
Thai Forest Conservation Party or TFCP [DAMRONG Phidet]
Thai Local Power Party or TLP [collective leadership]
Thai Raksa Chat Party (Thai National Preservation Party) [PRICHAPHON Phongpinit]

**Note:** as of 5 April 2018, 98 new parties applied to be registered with the Election Commission in accordance with the provisions of the new organic law on political parties

**International organization participation**

ADB, APEC, ARF, ASEAN, BIMSTEC, BIS, CD, CICA, CP, EAS, FAO, G-77, IAEA, IBRD, ICAO, ICC (national committees), ICRM, IDA, IFAD, IFC, IFRC, IHO, ILO, IMF, IMO, IMSO, Interpol, IOC, IOM, IPO, ISO, ITSO, ITU, ITUC (NGOs), MIGA, NAM, OAS (observer), OIC (observer), OIF (observer), OPCW, OSCE (partner), PCA, PIF (partner), UN, UNAMID, UNCTAD, UNESCO, UNHCR, UNIDO, UNMOGIP, UNOCI, UNWTO, UPU, WCO, WFTU (NGOs), WHO, WIPO, WMO, WTO

**Diplomatic representation in the US**

**Chief of mission:** Ambassador MANATSAWI Sisodaphon (since 17 February 2021)
National anthem

Name: “Phleng Chat Thai” (National Anthem of Thailand)

Lyrics/music: Luang SARANUPRAPAN/Phra JENDURIYANG

note: music adopted 1932, lyrics adopted 1939; by law, people are required to stand for the national anthem at 0800 and 1800 every day; the anthem is played in schools, offices, theaters, and on television and radio during this time; “Phleng Sanlasoen Phra Barami” (A Salute to the Monarch) serves as the royal anthem and is played in the presence of the royal family and during certain state ceremonies

Economy

Economic overview
With a relatively well-developed infrastructure, a free-enterprise economy, and generally pro-investment policies, Thailand is highly dependent on international trade, with exports accounting for about two thirds of GDP. Thailand’s exports include electronics, agricultural commodities, automobiles and parts, and processed foods. The industry and service sectors produce about 90% of GDP. The agricultural sector, comprised mostly of small-scale farms, contributes only 10% of GDP but employs about one third of the labor force. Thailand has attracted an estimated 3.0-4.5 million migrant workers, mostly from neighboring countries.

Over the last few decades, Thailand has reduced poverty substantially. In 2013, the Thai Government implemented a nationwide 300 baht (roughly $10) per day minimum wage policy and deployed new tax reforms designed to lower rates on middle-income earners. Thailand’s economy is recovering from slow growth during the years since the 2014 coup. Thailand’s economic fundamentals are sound,
with low inflation, low unemployment, and reasonable public and external debt levels. Tourism and government spending - mostly on infrastructure and short-term stimulus measures – have helped to boost the economy, and The Bank of Thailand has been supportive, with several interest rate reductions. Over the longer-term, household debt levels, political uncertainty, and an aging population pose risks to growth.

**Credit ratings**

- **Fitch rating:** BBB+ (2013)
- **Moody’s rating:** Baa1 (2003)
- **Standard & Poors rating:** BBB+ (2004)

**GDP - composition, by sector of origin**

- **Agriculture:** 8.2% (2017 est.)
- **Industry:** 36.2% (2017 est.)
- **Services:** 55.6% (2017 est.)

**GDP - composition, by end use**

- **Household consumption:** 48.8% (2017 est.)
- **Government consumption:** 16.4% (2017 est.)
- **Investment in fixed capital:** 23.2% (2017 est.)
- **Investment in inventories:** -0.4% (2017 est.)
- **Exports of goods and services:** 68.2% (2017 est.)
- **Imports of goods and services:** -54.6% (2017 est.)

**Agricultural products**
Sugar cane, cassava, rice, oil palm fruit, rubber, maize, tropical fruit, poultry, pineapples, mangoes/guavas

**Industries**
Tourism, textiles and garments, agricultural processing, beverages, tobacco, cement, light manufacturing such as jewelry and electric appliances, computers and parts, integrated circuits, furniture, plastics, automobiles and automotive parts, agricultural machinery, air conditioning and refrigeration, ceramics, aluminum, chemical, environmental management, glass, granite and marble, leather, machinery and metal work, petrochemical,
Budget surplus (+) or deficit (-)
-3.5% (of GDP) (2017 est.)

Public debt
41.9% of GDP (2017 est.)
41.8% of GDP (2016 est.)

note: data cover general government debt and include debt instruments issued (or owned) by government entities other than the treasury; the data include treasury debt held by foreign entities; the data include debt issued by subnational entities, as well as intragovernmental debt; intragovernmental debt consists of treasury borrowings from surpluses in the social funds, such as for retirement, medical care, and unemployment; debt instruments for the social funds are sold at public auctions.

Taxes and other revenues
15.2% (of GDP) (2017 est.)

Fiscal year
1 October - 30 September

Current account balance
$37.033 billion (2019 est.)
$28.423 billion (2018 est.)

Exports
$258.42 billion note: data are in current year dollars (2020 est.)
$323.88 billion note: data are in current year dollars (2019 est.)
$328.58 billion note: data are in current year dollars (2018 est.)

Exports - partners
United States 13%, China 12%, Japan 10%, Vietnam 5% (2019)
Unemployment, youth ages 15-24

Total: 5.2%
Male: 4.6%
Female: 5.9% (2020 est.)

Energy

Electricity access

Electrification - total population: 100% (2020)

Electricity - production
181.5 billion kWh (2016 est.)

Electricity - consumption
187.7 billion kWh (2016 est.)

Electricity - exports
2.267 billion kWh (2015 est.)

Electricity - imports
19.83 billion kWh (2016 est.)

Electricity - installed generating capacity
44.89 million kW (2016 est.)

Electricity - from fossil fuels
76% of total installed capacity (2016 est.)

Electricity - from nuclear fuels
0% of total installed capacity (2017 est.)

Electricity - from hydroelectric plants
8% of total installed capacity (2017 est.)

Electricity - from other renewable sources
16% of total installed capacity (2017 est.)

Crude oil - production
228,000 bbl/day (2018 est.)

Crude oil - exports
790 bbl/day (2015 est.)
Telecommunication systems

General assessment: high-quality system, especially in urban areas; mobile and mobile broadband penetration are on the increase; FtTh has strong growth in cities; 4G-LTE available with adoption of 5G services; seven smart cities with aim for 100 smart cities by 2024; one of the biggest e-commerce markets in Southeast Asia; fixed-broadband and mobile marketplace on par with other developed Asian markets; development of Asian data center underway; Internet connectivity supported by international bandwidth to Singapore, Malaysia, and Hong Kong, and terrestrial cables with neighboring countries; two more submarine cables under construction with anticipated landings in 2022; government restricts Internet and freedom of press, with additional constraints in response to pandemic-related criticism in 2020; importer of broadcasting equipment and integrated circuits from China and export of same to neighboring countries in Asia (2020)

Domestic: fixed-line system provided by both a government-owned and commercial provider; wireless service expanding rapidly; fixed-line 4 per 100 and mobile-cellular 166 per 100 (2019)

International: country code - 66; landing points for the AAE-1, FEA, SeaMeWe-3,-4, APG, SJC2, TIS, MCT and AAG submarine cable systems providing links throughout Asia, Australia, Africa, Middle East, Europe, and US; satellite earth stations - 2 Intelsat (1 Indian Ocean, 1 Pacific Ocean) (2019)

Note: the COVID-19 pandemic continues to have a significant impact on production and supply chains globally; since 2020, some aspects of the telecom sector have experienced downturn, particularly in mobile device production; many network operators delayed upgrades to infrastructure; progress towards 5G implementation was postponed or slowed in some countries; consumer spending on telecom services and devices was affected by large-scale
job losses and the consequent restriction on disposable incomes; the crucial nature of telecom services as a tool for work and school from home became evident, and received some support from governments.

Broadcast media
26 digital TV stations in Bangkok broadcast nationally, 6 terrestrial TV stations in Bangkok broadcast nationally via relay stations - 2 of the stations are owned by the military, the other 4 are government-owned or controlled, leased to private enterprise, and all are required to broadcast government-produced news programs twice a day; multi-channel satellite and cable TV subscription services are available; radio frequencies have been allotted for more than 500 government and commercial radio stations; many small community radio stations operate with low-power transmitters (2017)

Internet country code .th

Internet users
Total: 38,987,531
percent of population: 56.82% (July 2018 est.)

Broadband - fixed subscriptions
Total: 11,599,513 (2020)

Subscriptions per 100 inhabitants: 16.62 (2020 est.)

Transportation
National air transport system

Number of registered air carriers: 15 (2020)

Inventory of registered aircraft operated by air carriers: 283

Annual passenger traffic on registered air carriers: 76,053,042 (2018)

Annual freight traffic on registered air carriers: 2,666,260,000 mt-km (2018)

Civil aircraft registration country code prefix HS

Airports
Total: 101 (2013)

Airports - with paved runways
Total: 63
over 3,047 m: 8
2,438 to 3,047 m: 12
1,524 to 2,437 m: 23
914 to 1,523 m: 14
under 914 m: 6 (2013)

Airports - with unpaved runways
total: 38
2,438 to 3,047 m: 1
1,524 to 2,437 m: 1
914 to 1,523 m: 10
under 914 m: 26 (2013)

Heliports
7 (2013)

Pipelines
2 km condensate, 5900 km gas, 85 km liquid petroleum gas, 1 km oil, 1097 km refined products (2013)

Railways
total: 4,127 km (2017)
note: the Thai Rangers (aka Thahan Phrahan or 'Hunter Soldiers') is a paramilitary force formed in 1978 to clear Communist Party of Thailand guerrillas from mountain strongholds in the country's northeast; it is a light infantry force led by regular officers and non-commissioned officers and comprised of both full- and part-time personnel; it conducts counterinsurgency operations in the southern region; on the eastern border with Laos and Cambodia, the Rangers have primary responsibility for border surveillance and protection.

Military expenditures
1.4% of GDP (2020 est.)
1.3% of GDP (2019)
1.4% of GDP (2018)
1.6% of GDP (2017)
1.6% of GDP (2016)

Military and security service personnel strengths
Estimates for the size of the Royal Thai Armed Forces (RTARF) vary widely; approximately 350,000 active duty personnel (240,000 Army; 65,000 Navy; 45,000 Air Force); est. 20,000 Thai Rangers; est. 5-6,000 Internal Security Operations Command (2021)

Military equipment inventories and acquisitions
The RTARF has a diverse array of foreign-supplied weapons systems, including a large amount of obsolescent or second-hand US equipment; since 2010, Thailand has received military equipment from nearly 20 countries with China, South Korea, Sweden, Ukraine, and the US as the leading suppliers (2020)

Military deployments
275 South Sudan (UNMISS) (Sep 2021)
Military service age and obligation
21 years of age for compulsory military service; 18 years of age for voluntary military service; males register at 18 years of age; 2-year conscript service obligation based on lottery (2019)

Military - note
Including the most recent in 2014, the military has attempted nearly 20 coups since the fall of absolute monarchy in 1932

Since 2004, the military has fought against separatist insurgents in the southern provinces of Pattani, Yala, and Narathiwat, as well as parts of Songkhla; the insurgency is rooted in ethnic Malay nationalist resistance to Thai rule that followed the extension of Siamese sovereignty over the Patani Sultanate in the 18th century; the insurgency consists of several armed groups, the largest of which is the Barisan Revolusi Nasional-Koordinasi (BRN-C): since 2018, the Thai military has been negotiating with an umbrella organization, MARA Pattani, that claims to represent the insurgency groups; since 2004, the fighting has claimed about 7,000 lives; as of late 2020, as many as 100,000 military and paramilitary forces were deployed in the south to combat the insurgency

Thailand has Major Non-NATO Ally (MNNA) status with the US; MNNA is a designation under US law that provides foreign partners with certain benefits in the areas of defense trade and security cooperation; while MNNA status provides military and economic privileges, it does not entail any security commitments

Transnational Issues

Disputes - international
Separatist violence in Thailand’s predominantly Malay-Muslim southern provinces prompt border closures and controls with Malaysia to stem insurgent activities; Southeast Asian states have enhanced border surveillance to check the spread of avian flu; talks continue on completion of demarcation with Laos but disputes remain over several islands in the Mekong River; despite continuing border committee talks, Thailand must deal with Karen and other ethnic rebels, refugees, and illegal cross-border activities; Cambodia and Thailand dispute sections of boundary; in 2011, Thailand and Cambodia resorted to arms in the dispute over the location of the boundary on the precipice surmounted by Preah Vihear temple ruins, awarded to Cambodia by ICJ decision in 1962 and part of a planned UN World Heritage site; Thailand is studying the feasibility of jointly constructing the Hatgyi Dam on the Salween river near the border with Burma; in 2004, international environmentalist pressure prompted China to halt construction of 13 dams on the Salween River that flows through China, Burma, and Thailand; approximately 100,000 mostly Karen refugees fleeing civil strife, political upheaval and economic stagnation in Burma live in remote camps in Thailand near the border

Refugees and internally displaced persons

Refugees (country of origin): 91,479 (Burma) (2021)

IDPs: 41,000

stateless persons: 480,695 (2020) (estimate represents stateless persons registered with the Thai Government; actual number may be as high as 3.5 million); note - about half of Thailand’s northern hill tribe people do not have citizenship and make up the bulk of Thailand’s stateless population; most lack documentation showing they or one of their parents were born in Thailand; children born to Burmese refugees are not eligible for Burmese or Thai citizenship and are stateless; most Chao Lay, maritime nomadic peoples, who travel from island to island in the Andaman Sea west of Thailand are also stateless; stateless Rohingya refugees from Burma are considered illegal migrants by Thai authorities and are detained in inhumane conditions or expelled; stateless persons are denied access to voting, property, education, employment, healthcare, and driving
note: Thai nationality was granted to more than 23,000 stateless persons between 2012 and 2016; in 2016, the Government of Thailand approved changes to its citizenship laws that could make 80,000 stateless persons eligible for citizenship, as part of its effort to achieve zero statelessness by 2024 (2018)

Illicit drugs
A minor producer of opium, heroin, and cannabis products; major part of the illegal drug market for the Southeast Asia region and the interconnected markets in East Asia and Oceania; transit point for illicit heroin en route to the international drug market from Burma and Laos; “Yaba,” a tablet containing methamphetamine, caffeine, and other stimulants, is the most widely abused drug in Thailand.
### Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>°C</td>
<td>degree Celsius</td>
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<tr>
<td>°F</td>
<td>degree Fahrenheit</td>
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<td>%</td>
<td>percentage</td>
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<tr>
<td>ACMECS</td>
<td>Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy</td>
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<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
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<td>ADINET</td>
<td>ASEAN Disaster Information Network</td>
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<td>ADPC</td>
<td>Asian Disaster Preparedness Center</td>
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<td>ADRA</td>
<td>Adventist Development and Relief Agency</td>
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<td>AEDP</td>
<td>Alternative Energy Development Plan</td>
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<td>AFRIMS</td>
<td>Armed Forces Research Institute of Medical Sciences</td>
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<td>AHA Centre</td>
<td>ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management</td>
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<td>AIS</td>
<td>Advanced Info Service</td>
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<td>AMR</td>
<td>Antimicrobial Resistance</td>
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<td>AOT</td>
<td>Airports of Thailand Public Company Limited</td>
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<td>APAN</td>
<td>All Partners Access Network</td>
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<td>APEC</td>
<td>Asia-Pacific Economic Cooperation</td>
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<td>APCSS</td>
<td>Asia-Pacific Center for Security Studies</td>
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<td>ARF</td>
<td>ASEAN Regional Forum</td>
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<td>ASEAN</td>
<td>Association of Southeast Asian Nations</td>
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<tr>
<td>BHA</td>
<td>Bureau for Humanitarian Assistance</td>
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<tr>
<td>BIS</td>
<td>Bank for International Settlements</td>
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<td>BMA</td>
<td>Bangkok Metropolitan Authority</td>
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<td>BPFA</td>
<td>Beijing Platform for Action</td>
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<td>BMDMC</td>
<td>Bangkok Metropolitan Disaster Management Center</td>
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<td>BTS</td>
<td>Bangkok Transit System</td>
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<td>CARAT</td>
<td>Cooperation Afloat Readiness and Training</td>
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<td>CCWC-SBP</td>
<td>Children and Women in the Southern Border Provinces</td>
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<td>CDC</td>
<td>Centers for Disease Control (CDC)</td>
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<tr>
<td>CFE-DM</td>
<td>Center for Excellence in Disaster Management and Humanitarian Assistance</td>
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<tr>
<td>CFO</td>
<td>Chief Financial Officer</td>
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<td>CG20</td>
<td>Cobra Gold 2020</td>
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<td>CG21</td>
<td>Cobra Gold exercise 2021</td>
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<td>CICA</td>
<td>Conference on Interaction and Confidence Building Measures in Asia</td>
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<tr>
<td>COVID-19</td>
<td>Coronavirus Disease 2019</td>
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<tr>
<td>COP26</td>
<td>26th UN Climate Change Conference</td>
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<td>CMCOORD</td>
<td>Civil-Military Coordination</td>
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<td>CP</td>
<td>Colombo Plan</td>
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<td>CPGE</td>
<td>Committee to Promote Gender Equality</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>CPIRD</td>
<td>Collaborative Project to Increase Rural Doctors</td>
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<td>CSSF</td>
<td>Comprehensive School Safety Framework</td>
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<td>DMC</td>
<td>Disaster Management Center</td>
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<td>DDPM</td>
<td>Department of Disaster Prevention and Mitigation</td>
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<td>DDMC</td>
<td>District Disaster Management Centers</td>
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<tr>
<td>DFAT</td>
<td>Australian Government Department of Foreign Affairs and Trade</td>
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<td>DKI-APCSS</td>
<td>Daniel K. Inouye Asia-Pacific Center for Security Studies</td>
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<tr>
<td>DOD</td>
<td>U.S. Department of Defense</td>
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<td>DRC</td>
<td>Disaster Relief Center</td>
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<td>DRM</td>
<td>Disaster Risk Management</td>
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<td>DRM Act 2007</td>
<td>Disaster Prevention and Mitigation Act of 2007</td>
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<td>DRR</td>
<td>Disaster Risk Reduction</td>
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<td>DWT</td>
<td>Deadweight tonnage</td>
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<td>EGAT</td>
<td>Electricity Generating Authority</td>
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<td>EMOPs</td>
<td>Emergency Operations</td>
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<td>EU</td>
<td>European Union</td>
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<td>EXAT</td>
<td>Expressway Authority of Thailand</td>
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<td>EWS</td>
<td>Early Warning System</td>
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<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
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<tr>
<td>FDI</td>
<td>foreign direct investment</td>
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<td>ft.</td>
<td>feet</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GDACS</td>
<td>Global Disaster Alert and Coordination System</td>
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<td>GFDRR</td>
<td>Global Facility for Disaster Risk Reduction and Response</td>
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<tr>
<td>GHD</td>
<td>Global Health Diplomacy</td>
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<td>GHS</td>
<td>Global Health Security</td>
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<td>HADR</td>
<td>Humanitarian assistance and disaster response</td>
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<td>HCT</td>
<td>Humanitarian Country Teams</td>
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<td>HDI</td>
<td>Human Development Index</td>
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<td>HDX</td>
<td>Humanitarian Data Exchange</td>
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<td>HFA</td>
<td>Hyogo Framework for Action</td>
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<td>IAEA</td>
<td>International Atomic Energy Agency</td>
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<td>IATA</td>
<td>International Air Transport Association</td>
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<td>IBRD</td>
<td>International Bank for Reconstruction and Development</td>
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<td>ICAO</td>
<td>International Civil Aviation Organization</td>
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<td>ICRC</td>
<td>International Committee of the Red Cross</td>
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<tr>
<td>ICC</td>
<td>International Chamber of Conference</td>
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<td>ICRM</td>
<td>Institute of Catastrophe Risk Management</td>
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<tr>
<td>IFAD</td>
<td>International Fund for Agricultural Development</td>
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<td>IFC</td>
<td>International Finance Corporation</td>
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<td>Acronym</td>
<td>Full Form</td>
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<tr>
<td>IFRC</td>
<td>International Federation of Red Cross and Red Crescent Societies</td>
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<td>ILO</td>
<td>International Labour Organization</td>
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<td>IHO</td>
<td>International Hydrographic Organization</td>
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<td>IMF</td>
<td>International Monetary Fund</td>
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<td>IMO</td>
<td>International Maritime Organization</td>
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<td>IMSO</td>
<td>International Mobil Satellite Organization</td>
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<td>INFORM GRI</td>
<td>INFORM GRI</td>
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<td>INTERPOL</td>
<td>International Criminal Police Organisation</td>
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<td>IOC</td>
<td>International Olympic Committee</td>
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<tr>
<td>IOM</td>
<td>UN International Organization for Migration</td>
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<td>IPU</td>
<td>Inter-Parliamentary Union</td>
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<td>ISO</td>
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Endnotes


4 Ibid, 6, 11.

5 Ibid, 8; See also Sophita Thanyalakmetha, “Thailand Country Report 2020”, Asian Disaster Reduction Center, https://www.adrc.org

6 31.8% of Thailand’s workforce is employed in the agricultural sector. CIA World Factbook, Thailand, accessed 29 December 2021, https://www.cia.gov/the-world-factbook/countries/thailand/#security

7 UNDRR and ADPC, 18.

8 Ibid.


10 Although these targets were announced at the COP26, Thailand has not submitted an updated Nationally Determined Contribution to the UNFCCC at the time of writing (19 January 2022). See reporting of the COP26 pledges by Thailand. Pratch Rujivanarom “Thai pledges undermining climate push”, Bangkok Post, 22 November 2021, accessed https://www.bangkokpost.com/thailand/general/2219231/thai-pledges-undermining-climate-push

11 UNDRR and ADPC, 33.


15 CIA World Factbook

16 Ibid

17 Email from U.S. Embassy Bangkok, Thailand, 20 January 2022.

18 Email from U.S. Embassy Bangkok, Thailand, 20 January 2022.


22 CIA World Factbook.

23 UNFPA; CIA World Factbook.


25 Ibid

26 CIA World Factbook.


29 CIA World Factbook.

30 Ibid

31 Ibid

32 National DRM Plan, 130.

33 Ibid, 85.

34 Communication from Nidhirat Srisirirojanakorn, Humanitarian Affairs Analyst, United Nations Office for the Coordination of Humanitarian Affairs (OCHA), Regional Office for Asia and the Pacific (ROAP) 20 December 2021.
37 National DRM Plan 2015, 85.
42 National DRM Plan 2015, 85.
45 National DRM Plan 2015, 85.
46 UNDRR and ADPC, 16.
64 Disaster Risk Reduction in Thailand: Status Report 2020”, UN Office for Disaster Risk Reduction (UNDRR) and Asian Disaster Preparedness Center (ADPC), 5.
65 National DRM Plan 2015.
66 UNDRR and ADPC, 6.
68 Ibid, 6-7.
69 UNDRR and ADPC, 33.
73 WBG and ADB, 6.
74 Ibid, 13.
75 UNDRR and ADPC, 13.
77 UNDRR and ADPC, 21.
78 Ibid, 18.
79 Ibid.
80 WBG and ADB, 19.
81 University of Notre Dame, Notre Dame Global Adaption Initiative, accessed 30 November 2021, https://gain.nd.edu/our-work/country-index/rankings/
82 Ibid, Thailand.
84 “Thailand’s Updated Nationally Determined Contribution”, October 2020, https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Thailand%20First/Thailand%20Updated%20NDC.pdf, 2.
86 Ibid.
89 Although these targets were announced at the COP26, Thailand has not submitted an updated Nationally Determined Contribution to the UNFCCC at the time of writing (19 January 2022). See reporting of the COP26 pledges by Thailand. Pratch Rujivanarom “Thai pledges undermining climate push”, Bangkok Post, 22 November 2021, accessed https://www.bangkokpost.com/thailand/general/2219231/thai-pledges-undermining-climate-push.
92 Royal Thai Embassy.
93 WBG and ADB, 13.
95 Ibid, 2.
96 UNDRR and ADPC 2020, 5.
97 Ibid.
98 Ibid, 14.
100 Ibid, 11.
102 “UNDRR and ADPC 2020, 11.”
103 Ibid.
104 WBG and ADB, 13.
105 UNDRR and ADPC 2020, 11.
107 Ibid.
109 Ibid, 12.
114 See for e.g., Tanyaluk Sakoot, “Thailand’s tsunami warning buoys both out of action”, The Phuket News, 15 September 2020, accessed 3 December 2021.
115 WBG and ADB, 13.
117 WBG and ADB, 14.
121 UNDRR and ADPC, 12.
123 UNDRR and ADPC, 4.
135 Thanyalakmetha, ADRC, 6.
152 UNDRR and ADPC, 21.
153 Section 17 of the DPM Act 2007.
154 Section 3.2 of the National Disaster Prevention and Mitigation Plan 2015, 28.
155 Ibid, 28-32.
157 Section 6 and 7 of the DPM Act 2007.
158 UNDRR and ADPC, 21.
162 UNDRR and ADPC, 21.
167 Section 17 of the DPM Act 2007.
168 Section 15 of the DPM Act 2007.
169 National DRM Plan, 22.
170 Section 6 of the DPM Act 2007. See also Section 3.2 of the National Plan, 33.
171 National DRM Plan, 83 and 48.
172 National DRM Plan, 38.
173 National DRM Plan, 30.
175 National DRM Plan, 32.
176 Ibid.
180 National DRM Plan, 42.
182 National Plan, 46.
198 National DRM Plan, 46.
199 Khunwishit  and McEntire, 14.
204 Thailand Red Cross Society, accessed 19 December 2021, https://english.redcross.or.th/
208 Email from IFRC Country Cluster Delegation for Thailand, Cambodia, Laos, and Vietnam Programme Coordinator, Hung Ha Nguyen 28 October 2021.
209 Ibid.
211 Thailand Red Cross Society, accessed 19 December 2021, https://english.redcross.or.th/
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214 Ibid.

215 Ibid.

216 Email from Hung Ha, Programme Coordinator, Mekong Cluster Thailand, Cambodia, Laos, Vietnam on 4 January 2022.


218 Email from Hung Ha, Programme Coordinator, Mekong Cluster Thailand, Cambodia, Laos, Vietnam on 4 January 2021.


226 UNDRR and ADPC 2020, 22.

227 Section 4 of the DPM Act 2007.

228 UNDRR and ADPC 2020, 21.

229 Section 3.6.1 of the National DRM Plan, 51.

230 Preface to the National DRM Plan.

231 National DRM Plan, 16.

232 Ibid, 17.


234 Communication from Nidhirat Srisirirojanakorn, Humanitarian Affairs Analyst United Nations Office for the Coordination of Humanitarian Affairs (OCHA), Regional Office for Asia and the Pacific (ROAP) 20 December 2021.


236 Ibid.


238 UNDRR and ADPC, 24.


240 Ibid.


242 Khunwishit  and McEntire, 9.


248 UNDRR and ADPC, 24.


253 Email communication from Julia Hartelius, Interim Disaster Law Coordinator, International Federation of Red Cross and Red Crescent Societies (IFRC). Asia Pacific Regional Office. April 15, 2019.


263 Ibid.

264 Ibid.


266 WEF, 550.

267 Ibid.


269 From each authorities respective website as listed in Table 8.


272 Airport Hub Thailand, accessed 20 December 2021, http://donmueang.thailandairportshub.com/th/category-view/airport-information#:~:text=ICAO%20%3A%20VTBD%20IATA%20%3A%20DMK%20%E0%B9%80%E0%B8%A7%E0%B8%85%E0%B8%82,(11%2C461%20%E0%B8%9F%E0%B8%8B%E0%B8%95%2F147%20%E0%B8%9F%E0%B8%B8%20%E0%B8%85)


285 “Ports and Terminals”, CIA World Factbook.
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324 Ibid.

325 Ibid.


334 The 2021 GHS Index assesses countries across 6 categories, 37 indicators, and 171 questions using publicly available information. The GHS Index benchmarks health security in the context of other factors critical to fighting outbreaks, such as political and security risks, the broader strength of the health system, and country adherence to global norms. See “What is the GHS Index”, GHS Index, accessed 21 December 2021, https://www.ghsindex.org/about/

335 UNDRR and ADPC, 4.


339 Ibid, 23.

340 WHO CCS, 17.

341 Ibid.

342 Ibid, 18.

343 Ibid, 21.

344 Ibid, 22.


348 Avert.

349 WHO CCS, 17.

350 Ibid, 7.

351 Ibid.


353 UNDRR and ADPC, 4.

354 Ibid.


358 Ibid, 5.

359 Ibid, 6 and 22.


367 ibid, 65.


369 ibid.

370 ibid.

371 ibid.


374 ibid.

375 ibid, 18.

376 ibid.

377 WBG and ADB, 19.


379 Although these targets were announced at the COP26, Thailand has not submitted an updated Nationally Determined Contribution to the UNFCCC at the time of writing (19 January 2022). See reporting of the COP26 pledges by Thailand. Pratch Rujivvanarom “Thai pledges undermining climate push”, Bangkok Post, 22 November 2021, accessed https://www.bangkokpost.com/thailand/general/2219231/thai-pledges-undersmoothing-climate-push 380 UNDRR and ADPC, 33.


397 Ibid.

398 Ibid.

399 Ibid.


401 Ibid.


410 UNISDR. Sendai Framework for Disaster Risk Reduction. https://www.unisdr.org/we/coordinate/sendai-framework


