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VIETNAM

Disaster Management Reference Handbook

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Front Cover

View from Che Cu Nha, Yen Bai province, Doan Tuan on Unsplash. https://unsplash.com/photos/Whrmcr_1mjk

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Letter from the Director

Vietnam is among the maritime Southeast Asian countries affected by natural hazards that climate change is amplifying, such as severe storms, cyclones, typhoons, floods, and coastal erosion. With an extensive coastline, 70% of Vietnam's population resides in coastal communities that are exposed to the adverse impact of rising sea levels. The World Bank has ranked Vietnam among the five countries globally likely to be the most impacted by climate change.

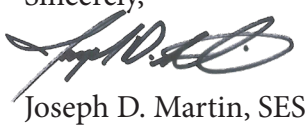
The U.S. and Vietnam continue to partner with the aim to bolster Vietnam's and the Indo-Pacific region's disaster preparedness. Humanitarian assistance and disaster relief is a key priority of the U.S. and Vietnam defense cooperation as outlined in the Memorandum of Understanding on Advancing Bilateral Defense Cooperation signed in 2011, and the U.S.-Vietnam Joint Vision Statement on Defense Relations signed in 2015. In 2019, Vietnam was among the host nations of the U.S. Navy's Pacific Fleet-led Pacific Partnership, the largest annual multinational humanitarian assistance and disaster relief preparedness mission conducted in the Indo-Pacific region. Vietnam hosted the U.S. and partner nations with a variety of events, including first aid and preventive medicine expert exchanges, healthcare symposiums, engineering projects, disaster response seminars, and a variety of community outreach engagements. Vietnam will again host the Pacific Partnership in 2022.

Since the passage of the Law on Natural Disaster Prevention and Control in 2013, and subsequent legal and policy enactments, Vietnam has further enhanced its disaster management capability. Vietnam's multi-agency approach, led by the Prime Minister, the Deputy Prime Minister, the Vietnam Disaster Management Authority under the Ministry of Agriculture and Rural Development, and the Ministry of Defense, is well coordinated with international partners and local and international disaster relief organizations. In 2020, the Government of Vietnam (GVN) with support from international and national partners, effectively responded to the historical flooding in Central Vietnam, which impacted 14 out of the country's 63 provinces/municipalities, and led the GVN to declare a state of emergency in seven. Relief efforts were carried out in the context of the ongoing COVID-19 pandemic.

Looking forward, Vietnam is addressing the challenges of climate change through mitigation and adaptation. At the 2021 UN Climate Change Conference (COP26) held in Glasgow in the UK, Vietnam pledged to achieve carbon emission neutrality by 2050, to phase out coal-fueled power generation by 2040, and to stop deforestation by 2030. The U.S. is supporting the GVN's climate priorities through a series of programs and partnerships on adaptation, reducing environmental pollution, renewable energy, and sustainable landscapes through the U.S. Agency for International Development.

This Vietnam Disaster Management Reference Handbook offers an operational understanding of both the country's disaster management capability and information on demographics, hazards, infrastructure, laws and guidelines, risks and vulnerabilities, 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 Vietnam 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

Vietnam is one of the most hazard-prone countries in the Asia-Pacific Region. With an extensive coastline of 3,260 kilometers (km), 2025.67 miles (mi) the country is regularly exposed to hydro-meteorological hazards including severe storms, cyclones, typhoons, floods, landslides, and coastal erosion.[1] Vietnam is home to an estimated 98.2 million people in 2021, 70% of whom live in coastal communities with high exposure to storms and flooding, which climate change is intensifying.[23]

Vietnam is ranked among the five countries globally likely to be the most impacted by climate change.[4] With maritime Southeast Asia facing sea level rise four times faster than the global average, Vietnam's low-lying coastline and low-lying delta regions are highly vulnerable to coastal erosion.[5] Rising global temperatures will also increase the likelihood of heat waves in Vietnam, and, therefore, increase the probability of drought occurring in all of the country's regions.[6]

Since the enactment of the Law on Natural Disaster Prevention and Control in 2013, Vietnam has further systematized its Disaster Risk Management (DRM) and disaster response capability, referred herein as disaster management.[7] Vietnam is implementing a multi-agency and hierarchical model for disaster management, which also incorporates elements of Community-Based Disaster Risk Management (CBDRM). The GVN coordinates its work at the national level under the umbrella of inter-ministerial and intra-ministerial steering committees, which are replicated at the provincial, district, and commune/ward-level. International partners and non-government organizations (NGO) further support the government's disaster management system.

Vietnam's effective response to the 2020 historical flooding in Central Vietnam reflects a maturing of the country's disaster management system. Fourteen provinces were flooded after Vietnam experienced six consecutive storms and the strongest typhoon to make landfall in the country in 20 years. The GVN declared a state of emergency in seven of the fourteen affected central provinces, and the U.S. Ambassador to Vietnam, Daniel J. Kritenbrink, declared the events a disaster, paving the way for U.S. disaster relief assistance.[8] Vietnam implemented a whole-of-government response, led by the Prime Minister in coordination with local and international partners. Twenty-seven organizations implemented about $US20.4 million in disaster relief assistance.[9] The UN in its After Action Report assessed there was clear government leadership in response efforts.[10]

Looking forward, responding to climate change is at the forefront of Vietnam's disaster management policy efforts. The GVN recognizes that climate change, extreme weather, and natural disaster have become increasingly complicated, unpredictable, and has had adverse impacts on the economy and society.[11] Vietnam has set a target of reducing Greenhouse Gas Emissions (GHG) by 9% by 2030 or by 27% with international support. [12] Yet, Vietnam is one of the fastest growing per-capita GHG emitters in the world – increasing at about 5 percent annually.[13] The Communist Party of Vietnam (CPV) issued a directive in 2020 that signals there is top-level political will and commitment to addressing the challenges of climate change and strengthening disaster management in Vietnam.[14]

COUNTRY OVERVIEW

History

Life in ancient Vietnam centered on the Red River Valley (as shown in Photo 1).[15] Vietnam became independent after throwing off Chinese rule around 938 Common Era (CE), but maintained a tributary system with China until French occupation around 1884. The first European incursion into Vietnam was by the Portuguese who built a port and trading center in modern-day Hoi An on Vietnam's central coast. French missionaries followed, with the best-known being Alexandre de Rhodes, who transcribed the Vietnamese language into the Roman script that is used today as the official written system of Vietnam.[16] French conquest of Vietnam began in 1858 and was completed by 1884. Vietnam became part of French Indochina in 1887.[17] Vietnam's nationalist movement began around the time French rule was established. After World War I the national liberation movement intensified.[18] In 1925 Ho Chi Minh founded the Revolutionary Youth League of Vietnam, the predecessor of the Indochinese Communist Party, now CPV.

French rule continued until World War II, when Vietnam as part of Indochina was a French-administered possession of Japan.[19] Vietnam declared independence after World War II, but France continued to rule until defeated by communist forces led by Ho Chi Minh in the first Indochina War. Under the Geneva Accords of 1954, Vietnam was divided into the communist North and anti-communist South. U.S. economic and military aid to South Vietnam grew through the 1960s in an attempt to bolster the government of South Vietnam, which led to U.S. military intervention.[20] U.S. armed forces were withdrawn following a cease-fire agreement in 1973. In 1975, North Vietnamese forces overran the South and reunited the country.[21]

Despite the return of peace, Vietnam faced considerable challenges, little economic growth, mass emigration particularly from the South, and growing international isolation. However, since the enactment of Vietnam's "Doi Moi" (economic rejuvenation) policy in 1986, Vietnamese authorities have committed to increased economic liberalization and enacted structural reforms needed to modernize the economy and to produce more competitive, export-driven industries. Since implementation in 1988, this policy has driven strong economic growth, particularly in agricultural and industrial production, construction, exports, and foreign investment. Increased tourism has also become a key component of economic growth.[22]



Photo 1: Ninh Binh, Vietnam

Culture and Demographics

Population

Vietnam's population is estimated to be 98.2 million people in 2021, making it the most populous country in the Mekong region and the 16th most populous country in the world.[23] Vietnam's last census was completed in 2019 and Vietnam's population was counted at 96,208,984 with an estimated 1% annual growth rate.[24] According to the 2019 Population Census Report, 55.5% of the population is under 35 years of age, with a life expectancy of 76 years, the highest among countries in the region at a similar income level. At the time of the census, Vietnam had 55.77 million people of working age (15-64 years). The young population, people aged 14-24, accounts for 70% of the population. However, this "golden population" era (higher percentage of working age adults) is estimated to end by 2040.[25] Vietnam's emerging middle class, currently accounting for 13% of the population, is expected to reach 26% by 2026.[26]

Overall, population growth in Vietnam is quite low, increasing by just 1.07% in 2016 and 1.15% in 2019. This reflects the policy intention of Vietnam's National Strategy on Population and Reproductive Health (2011-2020), which sought to ensure access to contraceptives for 70% of women by 2020, and access for all women by 2030. Population and family planning and cultural preferences for boys have led to gender disparities in the population. In part, this contributed to a sex-at-birth ratio of 111.5 boys/100 girls in 2019. Although this ratio was somewhat more equitable than China's sex-at-birth ratio of 120/100 in the early 2000s, it is significantly less equal than other Mekong countries, such as Thailand, Cambodia, and Laos.[27]

Human Development Index

Vietnam's Human Development Index (HDI) for 2019 was 0.704 (out of scale of 10; with 1 being lowest human development and 10 being highest human development). This reflects an increase from 0.691 in 2016, and ranks Vietnam 117 out of 189 countries.[28] The prevalence of undernourishment (6.7% of the population),[29] child malnutrition (23.8% prevalence of stunting in children under 5 years),[30] maternal mortality (43 per 100,000 live births in 2017),[31] and child mortality (19.9 under-5 per 1,000 live birth in 2019)[32] remains relatively high compared to other countries in the region at similar national income levels.

Migration patterns

For the last decade, Vietnam has experienced both internal migration and net emigration (est. -0.23 migrant(s)/1,000 population in 2021), driven by humanitarian and economic reasons. Internal migration – rural-rural and rural-urban, temporary, and permanent – continues to be a means of coping with Vietnam's extreme weather and flooding. Although Vietnam's population is still mainly rural, increasingly young people are moving to the country's urban centers where they are more likely to find steady jobs and higher pay in the growing industrial and service sectors.[33]

Ethnic Makeup

Vietnam recognizes 54 ethnic groups. The largest ethnic groups according to their percentage of the population are the Kinh (Viet) 85.3%, Tay 1.9%, Thai 1.9%, Muong 1.5%, Khmer 1.4%, Mong 1.4%, and Nung 1.1%, respectively.[34]

Key Population Centers

One-third of Vietnam's total population lives in urban centers. The largest urban centers are in the major cities of Ho Chi Minh City (est. 3,467,331) and Hanoi (est. 1,431,270). Rapid urbanization has also seen population booms in the industrial cities of Da Nang (est. 752,493) and Hai Phong est. 602,695.[35] The rate of increase in urbanization is estimated at 2.7% per annum (2020-25 est.).[36]

Language

Vietnamese is the official national language. English is increasingly favored as a second language. French, Chinese, and Khmer are

spoken amongst smaller numbers of people.[37] Ethnic groups in Vietnam are classified based on five linguistic families, namely Nam A, Thai – Ka-dai (or Kam–Thai), Han–Tang, Nam Dao (or Ma-lai – Da-dao), and Mong–Dao (or Meo-Dao).[38]

Religion

Vietnam has long-established religious diversity and cultural beliefs. Three religions account for less than 13% of the population – Catholicism (6.1%), Buddhism (5.8%), and Protestantism (1%) – while Vietnamese who adhere to no particular religion account for 86.3% of the population.[39]

Vulnerable Groups

A society's vulnerable groups are often the hardest hit by natural and man-made disasters but may not be systematically included in pre-disaster preparedness or in planning for disaster management or recovery. Vietnam's disaster management law defines a vulnerable group as a group of people, due to their characteristics and circumstances, as likely to suffer more adverse impact from natural disaster than other groups. Vulnerable groups in Vietnam include children, elderly people, pregnant women, women nursing children 12 months old or younger, people with disabilities, people suffering from dangerous diseases, and poor people.[40]

Children

Despite progress in reducing child malnutrition in recent years, nearly one-quarter of Vietnamese children are stunted (low height for age, caused by long-term malnutrition) – and stunting among ethnic minorities is up to four times higher than among the general population. Vulnerable children in Vietnam's underserved communities face limited access to essential health care, education, and protection services. [41] These challenges are exacerbated during natural disasters, which are becoming more frequent and intense due to the impact of climate change. During the historical flooding in October 2020 in Central Vietnam, 2.5 million children faced a lack of drinking water and an unhygienic environment. In Vietnam, The United Nations Children's Fund (UNICEF) has advocated for child-centered risk reduction by strengthening the resilience of children, families, and communities before a crisis, including though preparedness, disaster risk reduction, and climate change adaptation.[42]

Elderly

Vietnam is one of the fastest aging countries in Asia. The number of older people is increasing while the birthrate has dropped, accelerating the rate of population aging. By 2050, the number of people 60 years and older will make up almost one-third of the total population. The number of people over 80 will also triple to almost 6% of the population.[43] This will expose a broader vulnerable population to disaster risk, particularly among low-income groups highly exposed to hazards.[44]

The elderly are among the most vulnerable group when a natural disaster strikes. Poverty among the elderly is relatively high. In 2014, approximately 29% of older people (equivalent to 2.76 million people) received pension and social insurance support. In 2018, this figure rose with 39.9% of those older than the statutory pensionable age in Vietnam receiving an old-age pension (contributory, noncontributory, or both).[45]

Following a natural disaster, the elderly can be vulnerable to physical impairments as well as cognitive limitations because they are often unable to advocate for their own interests. Sudden loss of medication or loss of access to pharmacies can severely jeopardize lives of the elderly. For example, during the October 2020 historical flooding in Central Vietnam, health facilities were damaged or destroyed, disrupting routine public health programs.[46] Additionally, employment opportunities for young people have increasingly drawn them away from home, and other socio-economic changes have left the elderly on their own and with less family support.[47]

Women

Pregnant women and women nursing infants (12 months old or younger) are defined by law as particularly vulnerable to natural disasters because of their limited mobility during natural disaster events.[48] In addition, assigned gender roles mean that women are likely to be caregivers during natural disasters. Women are more likely to make sacrifices, such as being the last to leave their houses as they help the children and elderly to safety.[49] Women are also more likely to take on unpaid work, caring responsibilities, and household responsibilities contributing to time poverty, which can be exacerbated during a disaster. Moreover, since disaster damage and loss assessment are not disaggregated by sex and are usually recorded in terms of productive resources, which tend to be owned by men, the impact on women of disasters is underestimated. During the 2016 drought, women, who constitute 60% of poor farmers, had to bear additional burdens to meet household needs while experiencing additional financial limitation and added work commitments.[50]

In September 2013, the GVN issued a decree that for the first time provides space for women to be part of the Central Committee for Natural Disaster Prevention and Control, now referred to as the National Steering Committee for Natural Disaster Prevention and Control. The legal enactment made women part of the planning and decision-making process for disaster preparedness and prevention.[51] The law brings the Vietnam Women's Union, the leading advocate of women's rights and interests in Vietnam, into the State's disaster management system. The Women's Union is a socio-political organization, dedicated to promoting women's development and gender equality.[52] The Women's Union has an estimated 13 million members active in every province, district, town, and commune.[53]

People with disabilities and people suffering from chronic disease

A 2016 national survey of people with disabilities conducted by UNICEF found that over 7% of the population aged two years and older have a disability, and an additional 13% live in a household with a person with a disability. Households having members with disabilities tend to be poorer than the national average. Children with disabilities attend school less, and adults with disabilities are less employed than their peers without disabilities. [54]

Many of the challenges faced by people with disabilities are compounded during and in the aftermath of a natural disaster. During the 2016 drought, people with disabilities were among the vulnerable groups who faced challenges reaching out to drought relief services and accessing clean water, proper sanitation, and healthcare services. Education is another factor increasing the vulnerability of people with disabilities. Households with more education have been found to have more resilience against floods and droughts than those with low education, due to higher capability to prepare, including financially, and to anticipate impact.[55] Given that children with disabilities have less access to education and adults with disability have less access to employment, people with disabilities tend to have lower resilience to responding to a natural disaster.

In 2020, the Prime Minister approved a program to support people with disabilities. The program aims to promote the implementation of the United Nations Convention on the Rights of Persons with Disabilities and Vietnam's Law on Persons with Disabilities. The program set a target for 2030 to have 90% of people with disabilities accessing health services in different forms, and 80% of children from birth to six years old screened for early detection of birth defects and developmental disorders and given early intervention for various types of disabilities. The program also sets a target of 90% of children with disabilities having access to education from pre-school to high school. If achieved, these outcomes will increase the resilience of people with disabilities to natural disaster.[56]

People with chronic disease are similarly vulnerable. Natural disasters can damage or disrupt health services needed by people

suffering from chronic disease. Disruptions in routine health services, such as vaccination or vector control, can lead to further waves of diseases and disabilities.[57]

People living in poverty

A 2019 study examining the relationship between flooding and poverty in Vietnam did not find that poor areas are more exposed to floods, however it did find that poor communities are more vulnerable to natural disasters as their incomes are more dependent on weather, their housing and assets are less protected, and they are more prone to health impacts. People who are poor also have a lower capacity to cope with and adapt to shocks due to less access to savings, borrowing, or social protection.[58]

Vietnam's population distribution is most dense in coastal areas and river deltas that are prone to storms and flooding. Coastal areas are experiencing rapid urbanization with the development of industries attracting migration to coastal cities. However, regional governments' capacities are often not adequate to meet increasing demand for housing, utilities, and city services for an ever-growing population. Uncontrolled settlements generating slums and squatters on the riverbanks and waterways reflect the deteriorating conditions of the urban poor, who are among the groups most vulnerable to flood risk, water pollution, and environmental degradation occurring in major cities. Lack of clean drinking water often contributes to the spread of vector-borne diseases such as diarrhea, eye infections, cholera, dysentery and typhoid. Recurrent flood may also result in loss of contingency in the healthcare sector, especially during severe events.[59]

A particularly vulnerable subset of the poor population are ethnic minority communities, who are more likely to reside in areas with poor infrastructure, rely on subsistence farming, and suffer higher rates of poverty.[60] People from ethnic minority groups make up about 15% of Vietnam's population, but, significantly, 47% of the poor.[61] As a result, ethnic minority groups are also more likely to be excluded from disaster risk reduction and emergency relief.[62] People from ethnic minority groups have further been displaced by development and infrastructure projects into more vulnerable housing. For example, the development of the Son La Hydropower Project (2005-2013) resulted in the resettlement of 91,000 ethnic minority people, the largest such resettlement in Vietnam's history.[63]

The northwestern region of Vietnam is one of the poorest parts of the country. Ethnic minority groups including the Tay, Thai, and Hmong peoples make up 95.6% of the population in the region.[64] The poverty rate among eople from ethnic minority groups is 73% and the extreme poverty rate is 45.5%. This stands in stark comparison to an extreme poverty rate of 2.9% among the Kinh ethnic majority nationwide.[65] Flooding and landslides have significantly impacted the northwestern provinces of Son La, Dien Bien, Yen Bai, and Lai Chau in recent years, adversely affecting the livelihood of ethnic minority communities.

In the central region, ethnic minority communities face similar disparities and disadvantages during natural disasters. The Asian Development Bank (ADB) has noted that significant gaps exist between the economically booming coastal communities and the interior upland areas, which has a high concentration eople from ethnic minority groups.[66]

Economics

Vietnam's economic development in the past 30 years has been exemplary. Economic and political reforms under Doi Moi launched in 1986 to promote a socialist-oriented market economy spurred rapid economic growth, transforming Vietnam from one of the poorest nations in the world into a lower middle-income country by 2010.[67] Between 2002 and 2018, Gross Domestic Product (GDP) per capita increased by 2.7 times, reaching over US$2,700 in 2019, and more than 45 million people were lifted out of poverty (although ethnic minority groups still make up 47% of Vietnam's poor).[68] Poverty rates

declined sharply from over 70% to 5.8% of the population in 2020. Vietnam has also performed well in human development and social inclusion, including a remarkable reduction in poverty, a reasonably equitable increase in living standards, and a good education system.[69]

Like every country in the world, the Coronavirus Disease 2019 (COVID-19) pandemic adversely impacted Vietnam's economy in 2020 and 2021. Vietnam's economy performed better than most countries around the world, achieving GDP growth of 2.9% in 2020.[70] In 2021, the World Bank projects Vietnam's GDP will grow at about 4.8%, which is 2% lower the Bank's initial projection made in 2020. The lower growth rate reflects the negative impact of the COVID-19 resurgence in early 2021 on Vietnam's economy. Contributing to lower growth is the sharpest decline in retail sales (19.8%) since the beginning of the pandemic and disruption in industrial zones and supply chains caused by the broad-based COVID-19 resurgence, which has forced exporters to close factories or delay production. Yet, despite these challenges, the World Bank assessed the economic fundamentals in Vietnam's economy to be solid and for Vietnam's economy to regain pre-pandemic GDP growth of 6.5-7% from 2022 onwards. [71]

The service sector has continued to grow as Vietnam's largest economic sector from 36.94% of GDP in 2010 to 41.63% of GDP in 2021. The service sector's growth has mirrored the decline of the agriculture, forestry, and fishing sectors from 18.38% of GDP in 2010 to 14.85% in 2020. Industry, including construction continues to contribute to one-third of Vietnam's economy, comprising 32.13% of GDP in 2010 and 33.7% of GDP in 2020.[72] Despite a shrinking agriculture sector, rice production continues to play a vital role for the country in terms of food security, rural employment, and access to foreign exchange. Rice production employs two-thirds of the rural labor force, and Vietnam is still one of the world's largest rice producers.[73]

Vietnam plans to expand its digital economy. The COVID-19 pandemic has accelerated the digital transformation of Vietnam's economy as an increasing number of businesses have transitioned to providing services online. The GVN has also enhanced the digitization of its own procedures and databases. The World Bank's analysis suggests that Vietnam's digital expansion, like much of the rest of the world, will not be determined by its ability to produce technological breakthroughs, but rather its capacity to successfully leverage digital technologies developed elsewhere.[74]

Vietnam has the most industrial zones in the Mekong region with more than 726 square km (280.31 square mi) comprising 257 industrial zones that are being used for manufacturing of export products. Vietnam's industrial zones are concentrated and organized into three regions. The North Key Economic Zone (NKEZ) comprises up to seven cities and provinces, including Hanoi, Hai Phong, Bac Ninh, Hai Duong, Hung Yen, Vinh Phuc, and Quang Ninh. The NKEZ attracts companies that want to move manufacturing operations to Vietnam but continue to operate in China. The Central Key Economic Zone (CKEZ) is made up of five provinces – Thua Thien Hue, Da Nang, Quang Nam, Quang Ngai, and Binh Dinh – with the majority of activity occurring around Da Nang. The key industries in the CKEZ include light industry projects such as food processing. The Southern Key Economic Zone (SKEZ) covers eight cities and provinces, including Ho Chi Minh City (as shown in Photo 2),[75] Binh Duong, Dong Nai, Long An, Ba Ria-Vung Tau, Binh Phuoc, Tay Ninh, and Tien Giang. This region is also known as the industrial hub because it attracts the highest foreign direct investment (FDI) in the country.[76]

Vietnam's industrialization has come at a cost to the environment and the country's natural assets. Vietnam is one of the fastest growing per-capita GHG emitters in the world – growing at about 5% annually. Demand for water continues to increase, while water productivity is low, at about 12% of global benchmarks. The country's unsustainable exploitation of natural assets such as sand, fisheries, and timber could negatively affect prospects for long-term growth. Compounding the problem is Vietnam's high exposure to natural hazards that are being



Photo 2: Ho Chi Minh City, Vietnam

exacerbated by climate change. The GVN is well aware of the need for sustainable economic development. The GVN has enacted laws, polices and plans to stimulate green growth and sustainable use of the country's natural assets.[77]

Government

Communist Party of Vietnam

Since 1976 Vietnam has been a one-party state governed by the CPV.[78] The highest institution of the CPV is the party's National Congress, which elects the Central Committee. The Central Committee in turn elects the Politburo, which in turn nominate Vietnam's official four 'pillars' of leadership: the General Secretary of the CPV, the State President, the Prime Minister, and the Chairperson of the National Assembly. The Central Committee then votes to approve the four leaders.[79] The new Politburo will go on to nominate a new cabinet, which the National Assembly will approve. The National Congress takes place every five years.[80]

13th National Congress and Politburo

From 25 January to 2 February 2021, Vietnam held its 13th National Congress. A 1,600-member National Congress elected the 200-member Central Committee, which in turn elected the 18-member Politburo to lead Vietnam until 2026.[81] In the 13th Politburo, the Vietnam People's Army (VPA) doubled its representation from one seat to two.[82] The 13th Politburo also has a heavy police presence. The Minister of Public Security is serving again, alongside three other members with a policing background. For the first time the head of the party school, the National Ho Chi Minh Academy of Politics, joined the Politburo. The number of women in the Politburo was reduced from three to one representative.[83]

Central Government

The General Secretary of the CPV is the highest office within the CPV and the top leader in Vietnam.[84] The General Secretary is also the Secretary of the Central Military Commission, the leading Party organ on military policy.[85] The incumbent is Nguyen Phu Trong (since 2011).[86]

The Chairperson of the National Assembly presides over the 500-member National Assembly, the highest representative body of the people and the highest body of state power.[87] The Vietnam National Assembly is a unicameral body elected to a five-year term and meets twice a year. The assembly appoints the President, the Prime Minister, the Chief Justice of the Supreme People's Court, the Head of the Supreme People's Procuracy, and the 21-member Government.[88] Members of the National Assembly elect its Chairperson. The Standing Committee, of which the Chairperson is a member, is a permanent body, which controls the activities of the National Assembly when it is not in session.[89] The incumbent is Vuong Dinh Hue (since March 2021; formerly Minister of Finance).[90]

The President is the head of state, elected by the National Assembly from its members. The President is generally considered to hold the second highest position in Vietnam's political system, after the General Secretary of the CPV. As head of state, the President represents Vietnam both domestically and internationally. The President appoints the head of government, the Prime Minister. The President is also the Commander-in-Chief of the Armed Forces although effective command authority resides with the Central Military Commission of the CPV, led by the General Secretary of the CPV.[91] The incumbent president is Nguyen Xuan Phuc (since April 2021; formerly Prime Minister).[92]

The Prime Minister is the head of the Government and presides over the meetings of the Central Government Committee. The Prime Minister directs the work of cabinet members and is currently supported by four deputy prime ministers.[93] The incumbent is Pham Minh Chinh (since April 2021). [94]

Subnational governance

The 2013 Constitution of Vietnam establishes four administrative levels: the national or central level, provincial level, district level, and commune or ward level. Vietnam is divided into 58 provinces and five centrally governed cities, to make up a total of 63 administrative units. The centrally governed cities have the same status as provinces and include the cities of Hanoi, Ho Chi Minh City, Can Tho, Da Nang, and Hai Phong. Districts consist of a number of communes, which in turn consist of a number of villages/hamlets. Communes in cities are referred to as urban wards.[95] Administratively, Vietnam is also divided into six regions: Red River Delta, Northern Midlands and Mountainous Areas, North Central and Central Coast Areas, Central Highlands, South East, and the Mekong River Delta, relevant for disaster management because of their diverse geography.[96]

Socio-political organizations

The CPV is supported in its governance role by affiliated socio-political organizations, including the most prominent, Vietnam Fatherland Front (VFF). The VFF is a voluntary political coalition of political organizations, socio-political organizations, social organizations, and individuals from all classes, social strata, ethnic groups, and religions, including overseas Vietnamese.[97] Other socio-political organizations recognized in the 2013 Constitution include the Vietnam Trade Union, the Vietnam Peasant Society, the Ho Chi Minh Communist Youth Union, the Vietnam Women's Society (Women's Union), and the Vietnam Veteran Society.[98]

Sources of laws in Vietnam

Vietnam has a civil law system with legislation the most important source of law. Courts are subordinate to the legislature and make decisions based on codified law. Additionally, CPV and Politburo resolutions are authoritative guidance and can lead to future legal changes.[99] The following is a list of the types of legal instruments that are sources of law in Vietnam and Figure 1 shows the authorities that issue these instruments:[100]

- **Laws** are passed by the National Assembly and are Vietnam's highest form of legal direction.
- **Ordinances, Resolutions** are passed by the Standing Committee of the National Assembly when the Assembly is not in session.

- **Decrees** are passed by the government and generally implement Laws and Ordinances. Decrees are often supplemented by more detailed Regulation.
- **Orders** are issued by the State President on the promulgation of Laws or Ordinances.
- **Government Decisions** are issued by the Prime Minister on the implementation of regulations of different issues.
- **Circulars** are issued by individual ministries and usually provide guidance as to how a particular ministry or government institution will administer a law, ordinance, or decree.
- **Guidelines** are not legal instruments. They are policy outlines issued by the Prime Minister indicating that governmental committees should be set up to deal with an issue.
- **Ministerial decisions** are issued by a Minister (or Vice Minister on behalf of the Minister) promoting the regulations of certain issues in the areas administered by the Ministry.

The recital of each legal instrument normally sets out the other legal instrument to which it is subordinate. If a legal instrument is intended to replace an earlier one, this will usually be mentioned near the end of the new instrument.

Environment

Vietnam is located in Southeast Asia. The country's terrain is mountainous with coastal lowlands and forested inland regions. The geography of the land can be divided into three major areas: the Red River Delta to the north, which is bordered by mountains on three sides; a large plateau with a narrow coastal plain in the middle of the country; and the Mekong Delta plain to the south.[101]

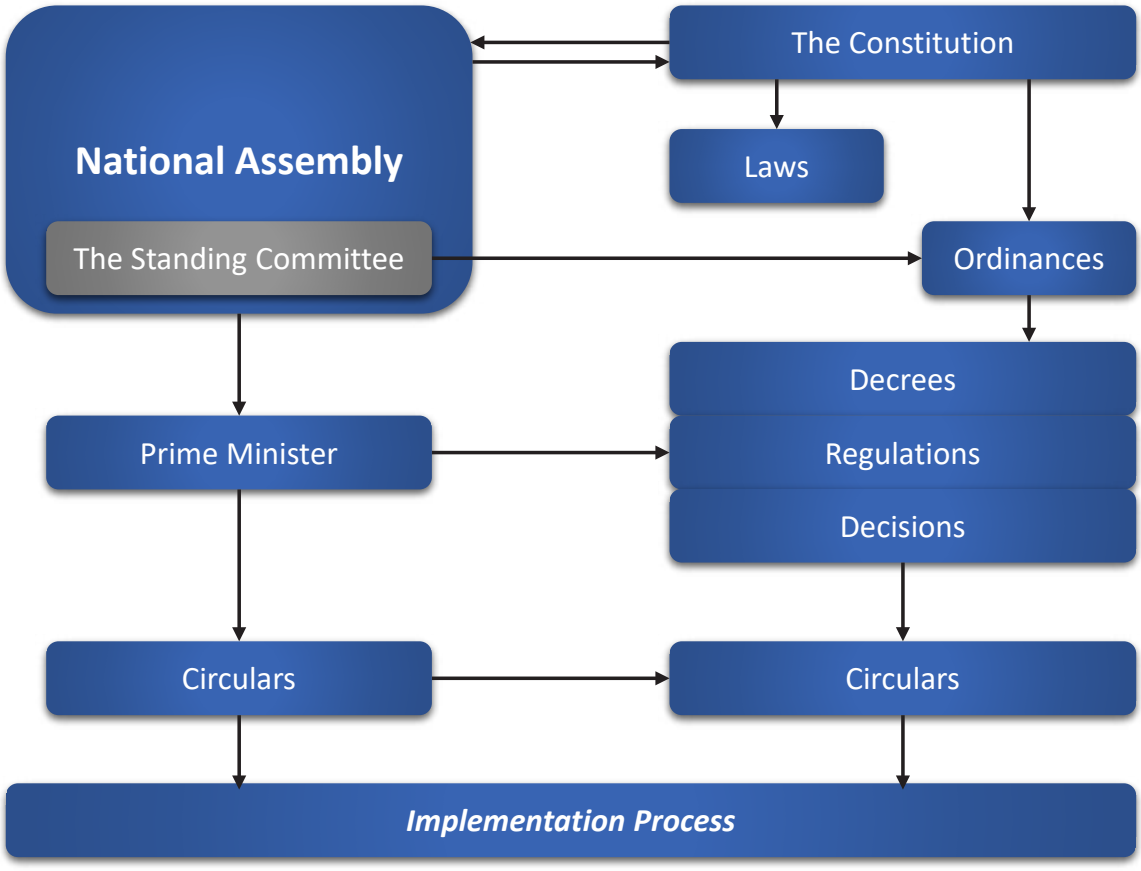


Figure 1: Sources of law in Vietnam

Geography

Vietnam comprises a total land area of 331,210 square km (12822.45 square mi) including 310,070 square km (11,9718.7 square mi) of land and 21,140 square km (8,162.2 square mi) of water of water. Figure 2 shows a map of Vietnam.[102]

Borders

Vietnam has land borders totaling 4,616 km (2,868.24 mi). It shares a 1,297 km (805.91 mi) border with China to the north; a 2161 km (1,342.78 mi) border with Laos to the northwest, and a 1,158 km (719.54 mi) border with Cambodia to the west. Vietnam's coastlines are on the Gulf of Thailand to the south and the Gulf of Tonkin and the South China Sea (referred to locally as the East Sea) to the east. On a map Vietnam appears as an S-shaped strip of land. The country's total length is 1,650 km (1025.26 mi) from the northernmost point to the southernmost point. Its width, from the eastern coast to the eastern border, is about 500 km (310.69 mi) at the widest part, and about 50 km (31 mi) at the narrowest part.[103]

Climate

Vietnam has both a tropical climate zone and a temperate climate zone, with all of the country experiencing the effects of the annual monsoon. Rainy seasons correspond to monsoon circulations, which bring heavy rainfall in the north and south from May to October, and in the central regions from September to January. In the northern regions, average temperatures range from 22–27.5°C (71.6-81.5°F) in summer and 15–20°C (59-68°F) in winter, while the southern areas stays warmer with a range of 28–29°C (82.5-84.2°F) in summer and 26–27°C (78.8-80.6°F) in winter. Vietnam's climate is also impacted by the El Niño Southern Oscillation, which influences monsoonal circulation, and drives complex shifts in rainfall and temperature patterns which vary spatially at a sub-national level.[104]



Figure 2: Map of Vietnam

DISASTER OVERVIEW

With an extensive eastern coastline, Vietnam is regularly exposed to hydro-meteorological hazards including severe storms, cyclones, typhoons, floods, landslides, and coastal erosion.[105] About 70% of the population lives in coastal communities with high exposure to storm and flooding, which climate change is intensifying.[106] Vietnam also faces low to moderate risks of droughts, earthquakes, tsunamis, forest fires, cold and heat waves, and zoonotic epidemics.[107] For 2022, the INFORM Global Risk Index ranks Vietnam 91 out of 191 countries for disaster risk and assigned Vietnam to a medium risk category. This ranking is based on Vietnam's high exposure to hazards but relatively low vulnerability and above average coping capacity.[108]

Vietnam's northern and central mountainous areas are highly exposed to flash flooding and landslides. The low-lying delta regions are vulnerable to flooding and storm surges.[109] Coastal regions are also prone to storms and typhoons. Moreover, suburban and peripheral zones have a high concentration of lower-quality houses, which are highly prone to hazards.[110] Figure 3 shows a map of eight geographical zones and their respective hazard risks.[111]

Climate Change

Climate change is reshaping, compounding, and expanding natural hazard risks in the Asia-Pacific region. Climate change and other factors have caused sea level in maritime Southeast Asia to rise four times faster than the global average.[112] Vietnam is among the maritime Southeast Asian countries affected by hazards that climate change is amplifying.[113] Vietnam is ranked among the five countries globally likely to be the most affected by climate change. Vietnam's extensive low-lying coastline and low-lying delta regions are highly vulnerable to rising sea levels. The World Bank and ADB in their 2021 Climate Risk Country Profile of Vietnam estimate that climate change will reduce national income by up to 3.5% by 2050. The World Bank and ADB further estimate that 3-9 million people will be affected by fluvial flooding by 2035-2044 and 6-12 million people will be affected by

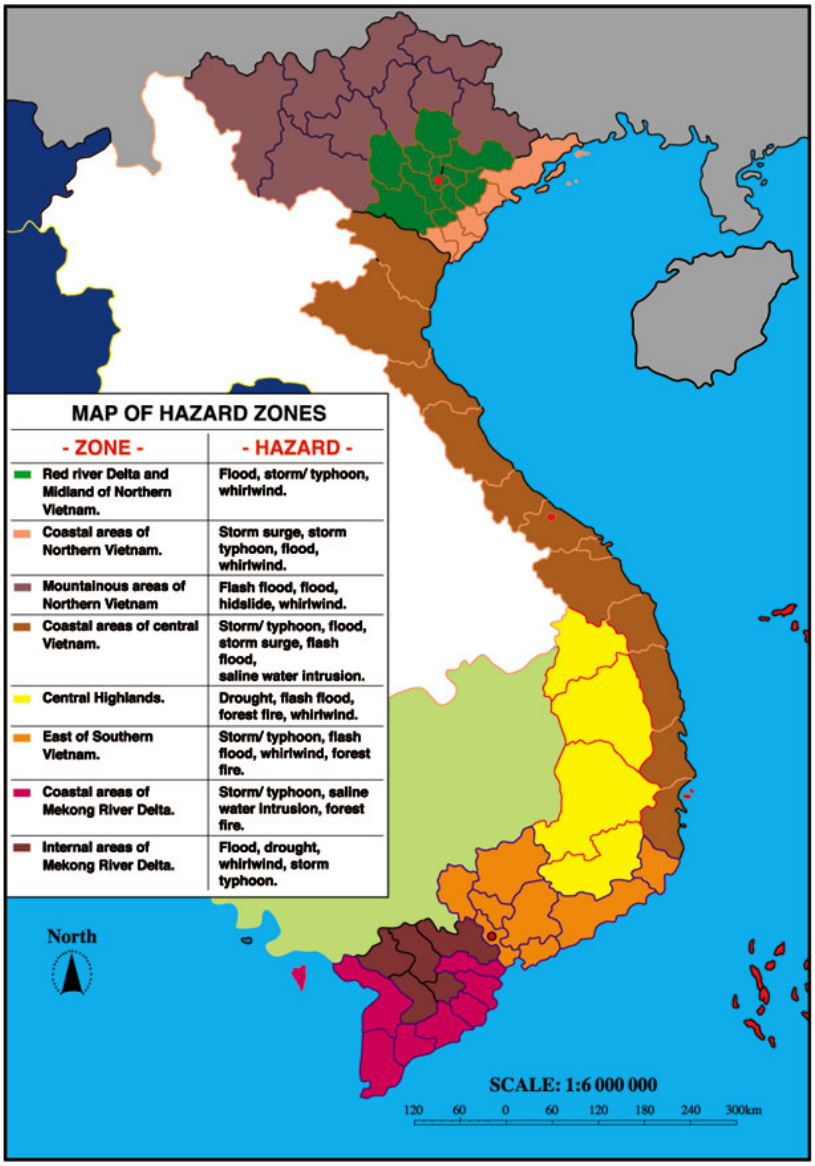


Figure 3: Map of hazard zones in Vietnam

coastal flooding by 2070-2100.[114] While many households in Vietnam will not have the same level of exposure, climate change threatens to enhance and expand exposure through its impacts on extreme events.[115]

Dr. Robert Glasser, an expert monitoring the Asia-Pacific region, is concerned about the growing risks of consecutive climate-related events or events occurring at the same time, resulting in back-to-back disasters, and cascading impacts that will test a state's capacity to respond.[116] Vietnam experienced such a scenario in October and November 2020, when back-to-back tropical depressions, storms, and typhoons resulted in widespread flooding and landslides in the central region causing the government to declare a state of emergency in seven of the fourteen affected provinces.[117]

Vietnam's climate future

Vietnam's mean annual temperature has increased by 0.5-0.7°C (an increase of 0.9-1.3°F) since 1960, with the rate of increase most rapid in the southern and central highlands of Vietnam.[118] The World Bank's analysis of temperature changes from 1901 to 2020 is shown in Figure 4.[119] The World Bank's multi-model predictive analysis for Vietnam's climate future suggests higher maximum temperatures. Vietnam is projected to experience an average temperature increase of 3.4°C (an increase of 6.1°F) by the period 2080–2100 under the highest emission pathway modeled. This warming is slightly less than the global average increase of 3.7°C (increase of 6.7°F) projected by the Intergovernmental Panel on Climate Change (IPCC) in its 2014 Fifth Assessment Report (AR5). [120]

The World Bank's analysis finds no statistically significant projection of future precipitation change.[121] The World Bank's analysis predicts some increase in extreme rainfall in southern and central Vietnam, and a slight reduction elsewhere in the country. This analysis also suggests that sub-daily extreme rainfall events will increase with temperature. Alternatively, the Vietnam Ministry of Natural Resource and Environment (MONRE), the focal point for climate change policy in Vietnam, has conducted modeling that predicts with more confidence annual precipitation increase across all mainland regions of Vietnam.

Climate-related hazards

The World Bank's analysis predicts rising global temperatures will exacerbate the following natural hazards in Vietnam:

- Increase in the daily probability of heat wave;
- A rise in the annual probability of drought in all of Vietnam's regions, with drought

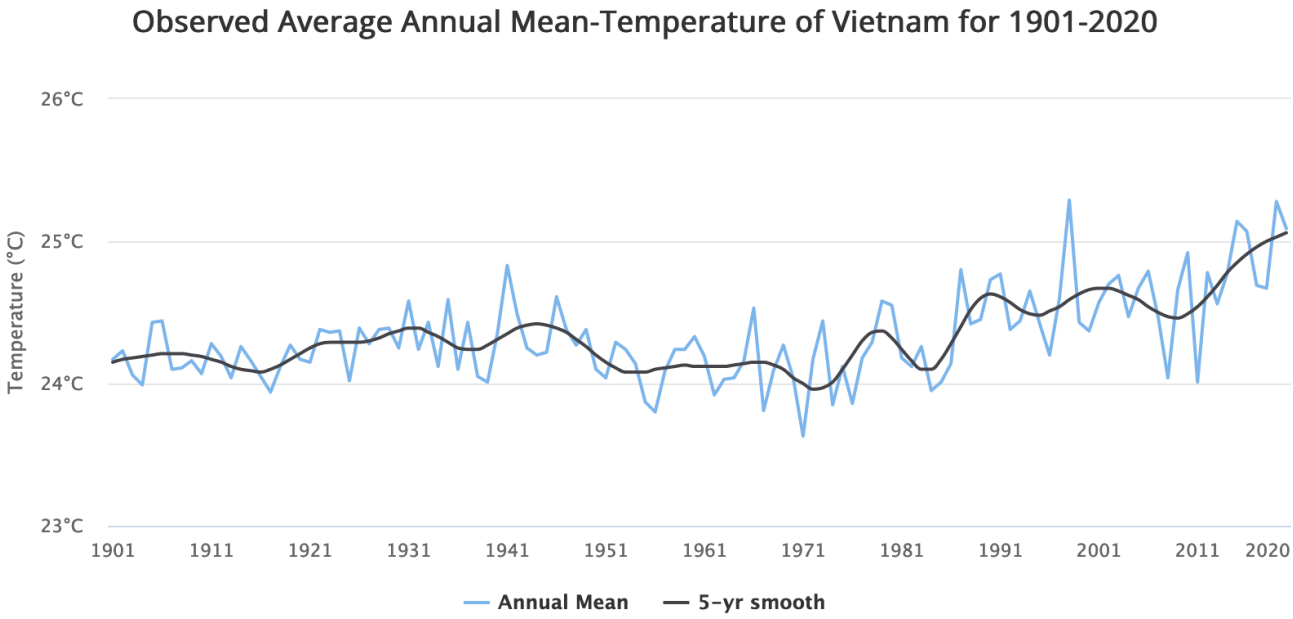


Figure 4: Observed average annual temperature of Vietnam from 1901 to 2020

projected to take place more often and for longer periods. The percentage of the population vulnerable to flooding will rise from the current rate of 33% of the population to 38%-46% of the population;
- Sea-level rise will exacerbate the damage caused by cyclone-induced storm surges and the possibility of increased wind speed and precipitation intensity.[122]

Although a predicted rise in annual precipitation and the increased probability of drought may appear contradictory, the combination is possible as some modeling of climate change scenarios find that warming increases precipitation variability, meaning there will be more periods of both extreme precipitation and drought.[123]

Flooding represents the largest risk in terms of economic impact in Vietnam, accounting for an estimated 97% of average annual losses from hazards. The impact of climate-related flooding is heavily concentrated in the Red River and Mekong River, and urban areas in their vicinity, including the urban centers of Hanoi and Ho Chi Minh City. [124]

Moreover, coastal erosion has been one of the most visible impacts of climate change and sea level rise in Vietnam as shown in Figure 5.[125] The GVN notes that stretches of coastline in the Mekong Delta are suffering from serious erosion, with many parts experiencing annual erosions of 20-30 m (65.61-98.4 feet (ft)) . This has meant that a dike built 1 km (0.62 mi) from the shoreline 30 years ago is now at sea level.[126] It is estimated that a 1 m (3.2 ft) rise in sea level would partially inundate 11% of the population and 7% of agricultural land.[127] The World Bank and ADB have predicted that without adaption an estimated 12 million people face permanent inundation, with the low-lying areas the most at risk.[128]

Vietnam's climate change response

The GVN recognizes that climate change, extreme weather, and natural disasters have become increasingly complicated and unpredictable and have had adverse impacts on Vietnam's economy and society. To address these challenges, the GVN has prioritized natural resource management, environmental protection, and climate change response.[129] Vietnam demonstrates its commitment to combating climate change through signing onto a range



Figure 5: 200 m of the beach has disappeared in 19 years in Cua Dai near Hoi An, Central Vietnam

of international commitments, and adopting national policies and concrete measures.[130] Vietnam has adopted the Sendai Framework for Disaster Risk Reduction (2015-2030),[131] ratified the Paris Agreement,[132] and has committed to, and is implementing the country's Nationally Determined Contribution (NDC) with the target of reducing GHG emissions by 9% by 2030, or by 27% with international support.[133] Domestically, Vietnam has issued an updated National Climate Change Strategy, outlining the objectives for 2021-2030 and vision to 2050.[134] Vietnam has also adopted the National Green Growth Strategy, which includes mitigation targets and measures. Moreover, the GVN enacted the Law on Disaster Prevention and Control in 2013 (and its amendment in 2021), which provides that the country's natural disaster prevention and control activities must adapt to climate change.[135] The MONRE is the national focal point for the implementation of the Paris Agreement, the Kyoto Protocol, the United Nations Framework Convention on Climate Change (UNFCCC), and other climate related commitments, including preparation of the periodical national reports to the UNFCCC.[136]

At the 26th UN Climate Change Conference (COP26) held in Glasgow, UK in 2021, nations agreed to 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 more than the 1.5°C (rise no more than 2.7°F).[137] Towards this goal, Vietnam pledged net zero emission by 2050 in in line with other nations, Vietnam pledged to stop deforestation by 2030 and phase out coal-fueled power generation by 2040.[138] Vietnam will focus on mitigation and adaptation pursuant to the National Climate Change Strategy 2021-2030. Vietnam is addressing GHG reduction in the energy, agriculture land use, land-use change, forestry, and waste sectors. Adaptation will continue to focus on institutional, political, financial, human resources, and technology gaps.[139]

Hazards

According to Vietnam's disaster management law, Vietnam is prone to over 22 types of natural hazards. Natural hazards recognized by law include typhoon, tropical low pressure, whirlwind, lightning, heavy rain, flood, flashflood, inundation, landslide and land subsidence due to floods or water currents, water rise, seawater intrusion, extreme hot weather, drought, damaging cold, hail, hoarfrost, earthquake, tsunami, and other types of natural disaster.[140]

Recurring natural hazards in Vietnam with the most adverse societal and economic impacts are flooding and landslides caused by storms, cyclones, and typhoons. Droughts are also becoming more frequent with climate change. Vietnam further faces low to moderate risk of earthquakes. In addition, Vietnam faces epidemic risks from vector-born and zoonotic diseases, as exemplified by the COVID-19 pandemic.

Storms

Vietnam is prone to destructive storms that trigger floods and landslides, with the central coastal areas most vulnerable (as shown in Photo 3).[141] Vietnam has very high exposure to tropical cyclones due to a high rate of landfall along its northern coast.[142] Vietnam is prone to both typhoons in the Northern Pacific Ocean and severe tropical cyclones in the Southern Pacific Ocean. The typhoon season runs approximately from the month of May through the end of November, and the tropical cyclone season runs from November to April of the following year.[143] Given recent flooding disasters in the central region during October and November 2020, including six consecutive storms and two typhoons, the months of October to December are considered most prone to storm occurrence. Climate change is interacting with cyclone hazard in complex ways, which are currently poorly understood although known risks include sea-level rise, which can exacerbate the damage caused by cyclone-induced storm surges along with the possibility of increased wind speed and precipitation intensity.[144]



Photo 3: Flooding in Hoi An, Central Vietnam

Flooding

Vietnam experiences coastal flooding, riverine flooding, and flash floods. Flooding is the most significant recurring natural hazard and results in loss of life, destruction of property and infrastructure, displacement of people, and disruption to agriculture. Flooding represents the highest risk in terms of loss of life and economic impact.[145] An estimated 930,000 people are affected annually by flooding with an estimated impact on GDP of US$2.6 billion.[146]

The central region of Vietnam, home to the majority of the country's coastal communities, is the most prone to heavy flooding. The 2020 Resilient Shores report by the GVN, the World Bank, and the Global Facility for Disaster Reduction, finds that around 12 million people in coastal provinces are at risk of intense flooding, and over 35% of settlements are located on eroding coastlines.[147]

Vietnam's northern mountainous region is vulnerable to flash floods and landslides caused by tropical storms.[148] The GVN estimates over 300 flash flood events have occurred over the last two decades.[149] The occurrence of storms and flooding is rising globally, and Asia is particularly impacted.[150] Vietnam's high exposure to storms and flooding will increase its disaster risk profile in the years to come.

Landslides

Although heavy rainfall is the main cause of landslides, deforestation, construction, and other man-made changes to the natural terrain have exacerbated landslide risks during floods and storms.[151] The northern mountainous parts of Vietnam are particularly vulnerable to landslide triggered by flash floods.[152]

Earthquake

Vietnam faces low to moderate risk from earthquakes. Although earthquakes occur periodically, they are mild and generally do not result in deaths.[153] Vietnam is located on the southeast section of the Eurasian plate, between the Indian, Philippine, and Australian plates. Vietnam is not located on any major fault lines[154] and lies about 1000 km (621.371 mi) from the so-called "Ring of Fire", reducing the country's exposure to earthquakes.

Northern Vietnam has low to moderate seismicity but some fault systems, such as along the Red River, the Ma River, and in the northwestern provinces of Lai Chau and Dien Bien increase the risk of earthquakes in these areas. These fault lines likely stretch several hundred kilometers and slip rates range 0.5-2 mm (0.02-0.08 inches) each year. Fault segments of this length could potentially generate earthquakes between magnitudes 5.7 and 7.8.[155]

Since the 1900s Vietnam has experienced three major earthquakes, measuring more than magnitude 6.0. These events include the 1923 submarine volcanic earthquake, the earthquake in Dien Bien in 1935, and the earthquake in Tuan Giao, a district of Dien Bien, in 1982.[156] The most recent earthquake occurred in July 2020 in northern Son La province and was of magnitude 5.3. Aftershocks were felt as far as Hanoi.[157]

Tsunami

Vietnam faces a risk of tsunami along its

eastern coastline from earthquakes occurring in the South China Sea, although no tsunami has occurred in recent history. However, it is predicted that an earthquake of magnitude 8.0 in the Manila Trench could generate a tsunami that would reach the central coast of Vietnam within two hours. The most exposed area is from Quang Binh province up to Binh Thuan province. [158]

Drought

Vietnam has an annual dry season from around November to April, which is when drought risk is heightened. Vietnam faces two types of drought risk – meteorological, which is usually associated with a precipitation deficit, and hydrological, generally associated with a deficit in surface and subsurface water flow. In Central Vietnam, droughts are caused by a lack of rainfall and limited water retention capacity of reservoirs, exacerbated by high temperatures. In 2016, Vietnam experienced the most severe drought in 90 years, impacting two million people and about 275,263 ha of rice paddies and 189,878 ha of perennial crops.[159] In 2019-2020, Vietnam experienced severe drought and saltwater intrusion in the Mekong River Delta, limiting water access for over 200,000 households. [160]

Epidemic

Vietnam's epidemic risk includes vector-borne diseases, such as malaria and dengue, and zoonotic diseases. The annual occurrence of malaria and dengue can stress the healthcare system, particularly during the monsoon season (October to December).[161] Typhoid fever and tuberculosis are also relatively common. In 2014, USAID assessed Vietnam to be "prone to serious zoonotic disease and emerging infectious disease with pandemic potential." Vietnam has been affected by Severe Acute Respiratory Syndrome (SARS); Highly Pathogenic Asian Avian Influenza A (H5N1); Highly Pathogenic Asian Avian Influenza A (H5N6); the pandemic strain of influenza A H1N1; and COVID-19.[162] Vietnam's zoonotic disease risk is heightened by risky practices related to the bio-diversity of wildlife and livestock farming and the trade and consumption of animal products. Vietnam was affected by the 2019 African swine flu, which had severe impacts on domestic consumption and exports.[163]

Vietnam like every country in the world has been affected by the COVID-19 pandemic, yet the country has been successful in mitigating its impacts. Vietnam's trace and test approach and transparent public communication has been key to its success in combating COVID-19.[164] According to the Johns Hopkins University's COVID-19 database, Vietnam had 939,463 reported cases and 22,283 reported deaths from the start of the pandemic through 3 November 2021, with 26% of the population vaccinated.[165]

History of Natural Disasters

The following is a list of natural disasters in Vietnam in the last five years.

Floods and tropical depression – October 2021

Floods and landslides caused by heavy rain affected northern and Central Vietnam, resulting in casualties. In Quang Binh province, up to 1,903 residents across seven towns and districts were evacuated, and more than 1,300 houses were damaged. In Quang Ngai and Quang Nam at least one person died, 7,000 people were evacuated, and more than 16,400 houses were flooded. Floods and landslides blocked many of the main roads across central and north Vietnam, and power outages were reported in Thua Thien-Hue Province.[166]

Storm Conson – September 2021

Storm Conson triggered flash floods in Central Vietnam, which resulted in two fatalities, hundreds of houses damaged, and over 1,000 ha of rice fields destroyed. The most affected provinces were Quang Ngai, Quang Tri, Kon Tum, and Gia Lai. Rough seas caused problems for ships and 18 people were rescued from two ships that ran aground.[167]

Flash floods - April 2021

Floods swept through a village in Minh Luong Commune, Van Ban District, in Lao Cai Province of northern Vietnam on 17 April 2021. The sudden flood caused a landslide. Three people were killed, and 36 homes damaged.[168]

Floods – December 2020

Widespread floods triggered by heaving rainfall in central and southern Vietnam resulted in five fatalities, left one person missing, and saw 5,000 people evacuated from the central and southern provinces of Khanh Hoa, Lam Dong, Dai Lak, and Quang Nam. This came on the tail of the worst flooding in the past decade in October to November 2020, which affected most of Central Vietnam and is discussed below.[169]

Central Vietnam floods – October to November 2020

In October and November 2020, Vietnam experienced the worst flooding in the past decade with the Inter Tropical Convergence Zone combined with six consecutive tropical depressions, storms, and tropical typhoons that resulted in widespread flooding in most of Central Vietnam, killing 291 people with an additional 66 persons reported missing, and severely affecting 1.5 million people. The disaster destroyed over 500,000 houses, 144,000 ha of rice paddies, 787 km of dikes and canals, and eroded and damaged 272 km of coastline, resulting in economic damage worth US$1,443,850. The VNDMA reported that many areas in Central Vietnam recorded a total rainfall of more than 2.4 m (7.87 ft), and in some locations, floodwaters exceeded the previous historical high recorded in 1979 and 1999. Figure 5 shows a timeline of the weather systems involved in this disaster. [170]

Typhoon Molave, which made landfall on 28 October 2020 with winds up to 145km/h, was one of the most devastating typhoons in the country for decades. The GVN declared a state of emergency in seven of the fourteen affected central provinces, and the U.S. Ambassador to Vietnam, Daniel J. Kritenbrink declared the events a disaster, paving the way for U.S. disaster relief assistance. [171]

Floods and landslides – August 2020

Heavy rains, floods, flash floods, and landslides impacted 13 provinces and cities in northern Vietnam, resulting in seven deaths, one person missing, over 1,000 damaged houses, and over 2,000 ha of rice and crops destroyed.[172]

Earthquakes – July 2020

In July 2020, Vietnam experienced a magnitude 5.3 earthquake in Son La province, which impacted residences as far away as Hanoi (roughly 300km). An approximate 16 aftershocks of greater than magnitude 2.5 and 15 aftershocks of less than magnitude 2.5 were measured two days after the initial event.[173]

Floods – April 2020

Storms brought strong winds, lightning, and heavy rainfall, causing flooding in Quang Binh. Three people were killed and 13 more injured due to wind and lightning impacts on shelters. Over 6,000 houses were damaged. Lao Cai, Ha Giang, Yen Bai, and Son La were the worst affected provinces.[174]

Severe drought and saltwater intrusion – January-April 2020

During this period, 10 of the 13 provinces in the Mekong River Delta area were affected by drought and saltwater intrusion, resulting in

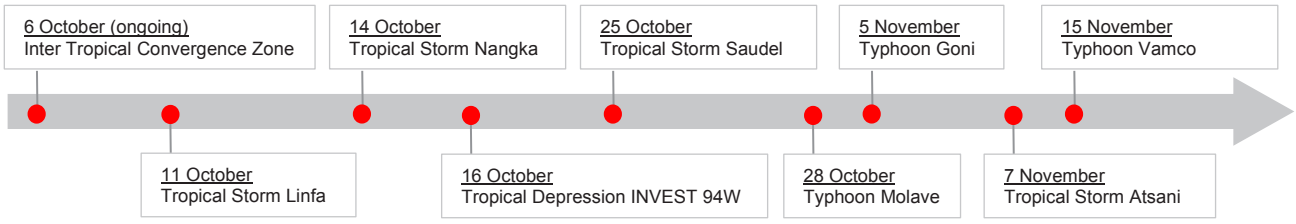


Figure 6: Timeline of weather systems from 6 October to 15 November 2020

water shortages, significant damage to crops, and limited access to water for over 200,000 households. More than 685,000 people had their access to livelihoods and basic services disrupted, with an estimated loss of production from 460,000 ha of rice paddy.[175]

Tornados and thunderstorms – March 2020

Tornados, heavy rain, and thunderstorms in northern Vietnam resulted in five fatalities and at least 17 people injured; more than 777 houses were damaged.[176]

Tropical cyclone Nakri – November 2019

Tropical Cyclone Nakri passed over South-Central Vietnam on 13 November 2021, killing two people, destroying 430 houses, damaging several roads, and flooding over 1,000 ha of crops.[177]

Typhoon Matmo, floods, and landslides – October 2019

Typhoon Matmo passed over Central Vietnam on 30 October, destroying 179 houses and damaging 2,314 others in the provinces of Quang Ngai. Binh Dinh, Phu Yen, Gia Lai, and Thua Thien Hue. As a result one person was reported missing and 14 more people were injured.[178] In the same month, heavy rain caused flooding in other parts of Central Vietnam including Nghe An, Binh Dinh, and Ha Tinh, where three fatalities and damage to over 5,000 houses was reported. The heavy rain also triggered landslides, which blocked major roads in several areas.[179]

Tropical cyclone Podul – September 2019

Tropical Cyclone Podul made landfall over Quang Binh province in Central Vietnam on 29 August with maximum sustained winds of 55-65 km/h. Six people died as a result of wind-induced damage and flooding.[180]

Floods – August 2019

Following torrential rains in August 2019, several provinces in the central highlands and southern region were flooded. The worst affected provinces were Kien Giang, Lam Dong, Dak Lak, and Dak Nong. Other provinces affected include Gia Lai, Kon Tum, Dong Nai, Binh Thuan, and Binh Phuoc. The disaster resulted in 11 deaths and one missing person, five injuries, and over 1,985 people evacuated. In total, 12,307 houses were flooded.[181]

Floods – August 2019

In August 2019, Phu Quoc, a popular tourist destination island, experienced the worst flooding in its history. Within seven days, Phu Quoc received more than 1 m (3.28 ft) of rain, while the average annual rainfall on the island is 3 m (9.84 ft). The heavy rainfall flooded 8,424 houses and caused damages totaling US$4.6 million.[182]

Floods - June 2018

In June 2018, the northern mountain provinces of Vietnam experienced heavy rainfall. Some areas such as Sin Ho (Lai Chau), Mu Cang Chai (Yen Bai), Ha Giang, Ngan Son (Bac Can), and Bac Quang (Ha Giang) got as much as 330 mm (12.99 in) of rain. The heavy rains caused significant flooding and landslides to the region.[183]

Typhoon Damrey - November 2017

The aftermath of Typhoon Damrey affected 4.3 million people in nine provinces and left 107 people dead. The typhoon destroyed approximately 3,400 houses and damaged approximately 141,100 houses. The government evacuated more than 36,000 people in the coastal Can Gio district of Ho Chi Minh City. The typhoon also submerged 5,296 ha of paddy fields and nearly 15,000 ha of vegetables and fruit fields.[184]

Floods - June - August 2017

Heavy rain triggered flash floods and landslides in four northwestern Vietnamese provinces, which left 27 dead, 14 people missing, and 231 houses washed away or collapsed. In addition, landslides damaged 425 houses and about 340 ha of agricultural land.[185]

Landslides - October 2017

Landslides along the Krong No River damaged 15 ha of land along with agriculture produce. In addition, 50 households were damaged, and 19 land erosions were reported.[186]

Drought - 2015-2017

The worst drought Vietnam had seen in 90 years started in 2015 and lasted until 2017. The drought was attributed to the El Niño weather event, with 52 out of 63 provinces affected. In addition, the drought was aggravated by saltwater intrusion that extended up to 90 km (56 mi) inland in some coastal areas, leaving river water too salty for human or animal consumption, or to irrigate crops and for fish-farming production.[187] In total, 2 million people including 520,000 children and 1 million women, were in need of humanitarian assistance.[188]

Floods and Landslides - August 2016

Tropical Storm Dianmu triggered floods and landslides in Yen Bai, Phu Tho, Lai Chau, Dien Bien, Son La, Hoa Binh, and Thanh Hoa provinces. At least nine people were reported dead, and 1,341 houses were inundated in the first month. By December 2016, it was reported that 134 people had died, 151 people were injured, 233,271 houses flooded, and 4,093 houses were damaged or collapsed.[189]

Country Risks
Vietnam Risk Profile

Risk calculation generally takes into account exposure to hazards, vulnerability, and institutional coping capacity, all of which are important factors in disaster risk management. The INFORM Global Risk Index (GRI) measures the risk of humanitarian crisis and disasters in 191 countries to support a proactive crisis management framework.[190] The 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: 1) Hazards and Exposure, 2) Vulnerability, and 3) 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 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.[191]

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.[192] The higher the score the more at risk a country is to disasters.

For 2022, Vietnam scored 3.7 out of 10 on the INFORM GRI, placing the country at 91 out of 191 countries in terms of humanitarian crisis and disaster risk. This ranking places Vietnam in the "medium" risk category. The Hazards and Exposure dimension score takes into account a combination of both natural and human hazards, and Vietnam rated 5.6 out of 10. The Vulnerability dimension score was 2.2 out of 10, and the Lack of Coping Capacity dimension score was 4.2 out of 10. Physical exposure to flooding measured at a 10 out of 10 risk for the vulnerability dimension. Governance was rated 5.7 out of 10 in the Lack of Coping Capacity dimension.[193]

Vietnam has extremely high exposure to flooding and is ranked first in the world alongside Bangladesh. Threats include riverine, flash, and coastal flooding. Vietnam also has high exposure to tropical cyclones and their associated hazards. Vietnam's epidemic risk is relatively high with an INFORM Risk score of 6.8 out 10, despite Vietnam's strong performance in mitigating the impact of COVID-19 in early 2020. Vietnam's low rates of vaccination saw rising cases and a more extended period of

COVID-19-related lockdown and restrictions in mid- to late-2021. Vietnam's overall ranking on the INFORM GRI is mitigated by its better scores in terms of low vulnerability (despite high exposure) and moderate coping capacity. A breakdown of the INFORM GRI scores for Vietnam in the various categories is shown in Figure 7.[194]

In Vietnam the poor, ethnic minority groups, women, and children are more vulnerable to natural disasters than other members of the population. The GVN has invested in improving the adaptive capacity of rural households, with investments in climate change resilience crop production.[195]

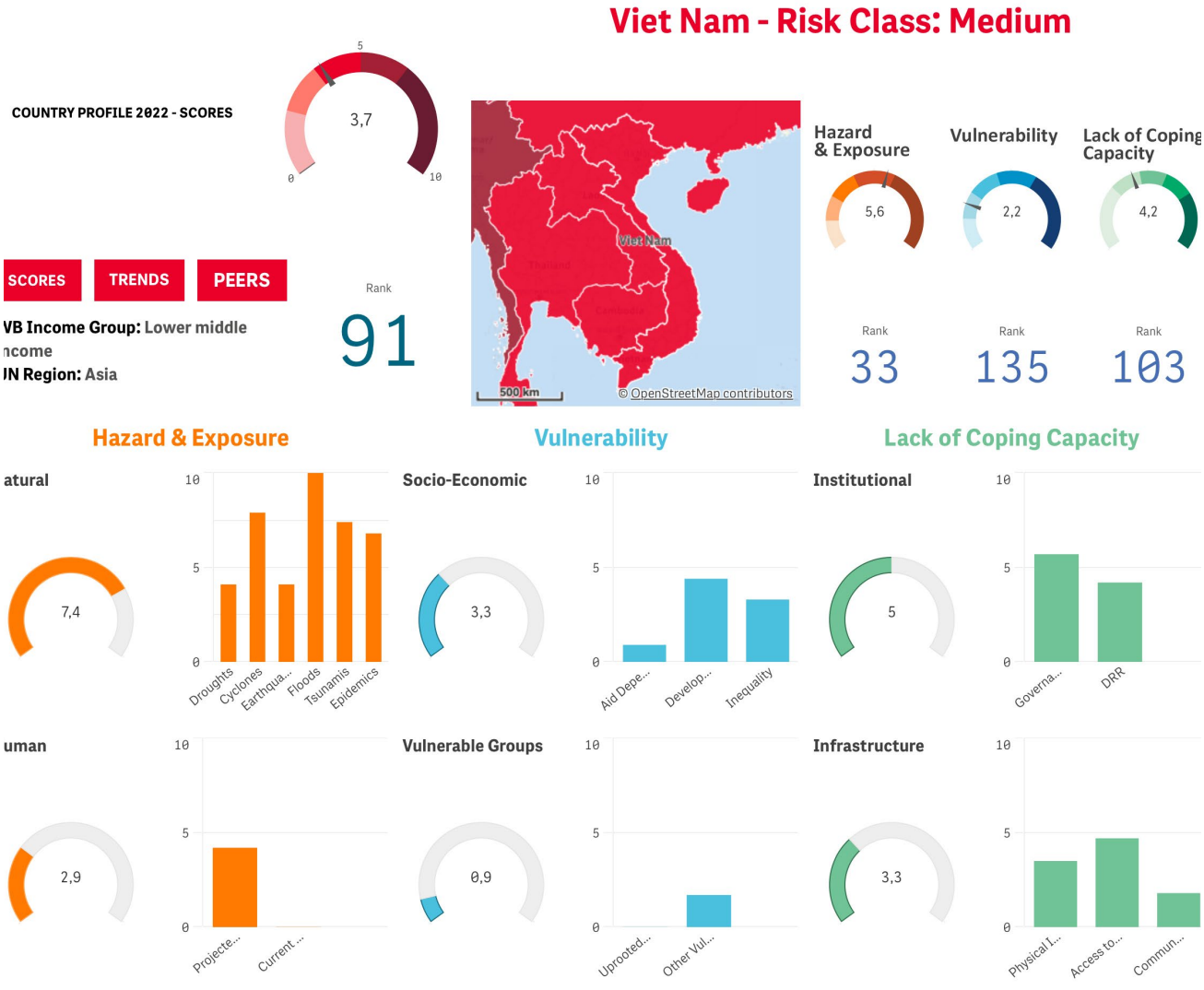


Figure 7: Vietnam INFORM 2022 risk profile

ORGANIZATIONAL STRUCTURE FOR DISASTER MANAGEMENT

Since the enactment of the Law on Natural Disaster Prevention and Control (Law No. 33/2013/QH13) (LNDPC) in 2013, and its amendment by Law 60/2020/QH14 in 2021, Vietnam has further systematized its disaster management apparatus.[196] The LNDPC is the first stand-alone law to set out Vietnam's institutional arrangements, functions, and mandates for disaster management. It is also the first law to cover all natural hazards in the country.[197]

The structure and responsibility for Disaster Risk Management (DRM) and disaster response is set out in the LNDPC and its supporting decrees (regulations), which lay out a multi-agency and hierarchical model for disaster management, while also incorporating elements of CBDRM.[198] The GVN coordinates its work at the national level under the umbrella of inter-ministerial committees, which are replicated at the provincial, district, and commune/ward-level. Bilateral and multilateral partners alongside international and local NGOs further support the government's disaster management system and coordinate their work through the mechanisms of the Disaster Risk Reduction Partnership DRRP Partnership and the Disaster Management Working Group (DMWG), respectively.

Lead Government Agencies in Disaster Response

Lead responsibility in disaster management is assigned to central, provincial, district, and local authorities based on a five-level assessment of risk. The Deputy Prime Minister is the national focal point according to the recent Prime Minister Decision 1527/QD-Ttg issued on 14 September 2021.[199] At the central level, the National Steering Committee for National Disaster Prevention and Control (NSCNDPC) is the lead body. The NSCNDPC is supported by Commanding Committees for Natural Disaster Prevention and Control, Search and Rescue (CCNDPC/SAR) at the national, provincial, district, and communal/ward-level. The standing office of the NSCNDPC is the Vietnam Disaster Management Authority (VNDMA), under the Ministry of Agriculture and Rural Development (MARD). Figure 8 shows how risk level impacts lead government agency[200] and Figure 9 shows Vietnam's disaster management structure.[201]

National Steering Committee for National Disaster Prevention and Control (NSCNDPC)

The NSCNDPC, formerly the Central Steering Committee for Disaster Prevention and Control is the top body for the GVN's disaster management policy development and decision-making.[202] The Standing Office of the NSCNDPC is the VNDMA, an agency under the MARD.[203]

Although the NSCNDPC is established under the LNDPC, its mandate and structure is further elaborated through supporting decrees (regulations) issued by the Prime Minister, which has allowed the government to refine the role and responsibilities of the NSCNDPC over time through periodic amendments.

The Deputy Prime Minister chairs the NSCNDPC.[204] The Minister of MARD is the Permanent Vice-Chairperson of the NSCNDPC, and the Prime Minister has discretion to appoint other Deputy Chairs.[205] In practice, the General Director of the VNDMA and the Head of the Ministry of Defense (MOD) have acted as effective Vice-Chairpersons of the NSCNDPC.[206] Members of the NSCNDPC include senior representatives of ministries, ministerial agencies, and governmental agencies senior representatives of Vietnam Television, Voice of Vietnam, Vietnam News Agencies, and the Chief of the Office of the National Committee for Incidents and Disasters Response, Search and Rescue (VINASARCOM).[207]



Figure 8: Lead agencies based on risk level

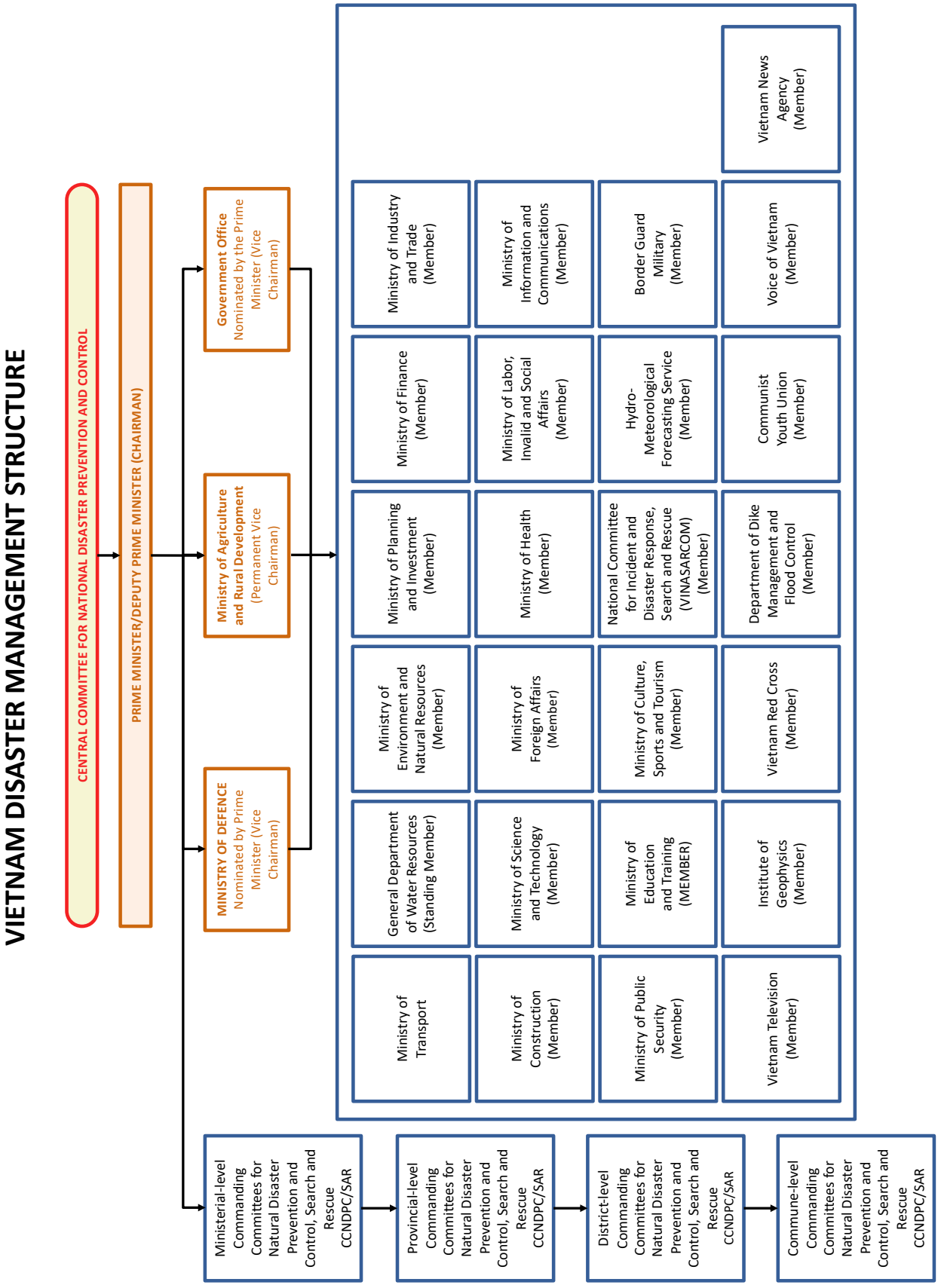


Figure 9: Vietnam disaster management structure

The mandate of the NSCNDPC is wide-ranging from policy and planning to directing disaster response, and includes the following responsibilities:

- Provide guidance for the formulation and implementation of national strategies and plans, and policies and laws on natural disaster management;
- Preside over the preparation of disaster response plans;
- Direct and coordinate disaster response and recovery nationwide, including directing response for "Level 3" disasters;
- Provide advice on directing response for "Level 4" and "Level 5" natural disasters;
- Coordinate and assist or direct local authorities to respond to "Level 1" and "Level 2" natural disasters, if such disasters have unanticipated developments which may result in serious consequences;
- Depending on the natural disaster developments and actual situation, decide to take urgent measures and mobilize resources of ministries, ministerial agencies, governmental agencies, organizations and individuals to respond to and remedy the consequences of natural disasters in accordance with regulations of LNDPC;
- Direct the production of statistics on damage and local authorities and ministries' demands for emergency assistance, recovery and reconstruction;
- Consolidate and consider proposing to the government and Prime Minister for their decision on measures, use of central government budget and other legal resources for emergency response and disaster recovery nationwide;
- Inspect, expedite, and provide guidelines for natural disaster management by ministries and local authorities as prescribed by law;
- Direct, organize drills, and provide training for forces involved in natural disaster management;
- direct, implement and organize the implementation of measures to gradually increase civil capacity for natural disaster response;
- Direct and organize the provision of infrastructure, equipment, materials, and special-purpose vehicles;
- Establish database to serve issuance of decisions on command over disaster management at all levels;
- Call for, receive, and provide domestic and foreign assistance in case of disaster-related emergency due to natural disasters;
- Provide guidelines, inspect, expedite, and consolidate results of provision of assistance resources and report same to the Prime Minister;
- Direct and prepare documents, provide training, disseminate and communicate information via social networks, and raise community awareness of natural disaster management on an annual basis;
- Provide guidance on activities of internal voluntary forces in charge of natural disaster management;
- Advise the Prime Minister on establishing a Front Line Steering Committee responsible for providing directions in the areas affected by disasters in special situations;
- Preside over developing and publishing a white paper on disaster management on an annual basis;
- Provide directions and formulate an operating plan and plan for provision of funding for performance of tasks on an annual basis.[208]

Ministerial-level Commanding Committees for Natural Disaster Prevention and Control, Search and Rescue (CCNDPC/SAR)

Search and rescue (SAR) is a frontline service provided by the GVN. The GVN has promoted a steering committee model (referred to as a commanding committee) at the ministerial, provincial, district, and commune level to lead disaster management and SAR efforts. Ministries, ministerial-agencies, and government agencies are required to establish a Commanding Committee for Natural Disaster Prevention and Control, Search and Rescue (CCNDPC/SAR), chaired by the respective head of the ministry, ministerial-body, or government agency.

Each CCNDPC/SAR is responsible for:

- Advising on the performance of tasks of natural disaster management and SAR under its management;
- Cooperating with relevant ministries, ministerial agencies, and local authorities in natural disaster management and SAR nationwide under the direction of the Prime Minister, NSCNDPC, and VINASARCOM;
- Deciding to adopt urgent measures and mobilize resources of the respective Ministry for prompt natural disaster response and recovery and SAR under the management of the respective Ministry and assist local authorities.[209]

The following ministries have established CCNDPC/SARs: Ministry of Defense; Ministry of Public Security; MARD; Ministry of Transport; Ministry of Construction, Ministry of Industry and Trade; MONRE; Ministry of Information and Communications; Ministry of Health; Ministry of Education and Training; Ministry of Labor; War Invalids and Social Affairs; and Ministry of Culture; Sports and Tourism.

Provincial, district, and commune-level CCNDPC/SAR

- The CCNDPC/SAR model is replicated at the provincial, district, and commune-level. The Provincial CCNDPC/SAR is headed by the Chairperson of the Provincial People's Committee and assists the Provincial People's Committee in commanding and administering natural disaster management and SAR within the province. The Provincial CCNDPC/SAR is composed of:
- Committee's Head who is the Chairman/ Chairwoman of the provincial People's Committee;
- Committee's Standing Deputy Head who is the Deputy Chairman/Chairwoman of the provincial People's Committee;
- Committee's Deputy Heads who are the Director of the Department of Agriculture and Rural Development(DARD),
- Commanding Officer of provincial Military Command;
- Commanding Officer of provincial border guard;
- Director of the provincial police department;
- Members who are directors or senior representatives of departments related to natural disaster management and SAR, leaders of VFF, Women's Union, Viet Nam Red Cross Society (VNRC), Youth Union, and provincial mass organizations (also called socio-political organizations).

The provincial DARD is the standing disaster management agency. The Military Command or Border Guard Command is the standing SAR agency of the Provincial CCNDPC/SAR.

Decree No. 66/2021/ND-CP requires the Chairman/Chairwoman of the provincial People's Committee to establish a specialized department affiliated with the DARD to act as a Standing Office of CCNDPC/SAR in the province.

The Provincial CCNDPC/SAR is responsible for:

- Advising and assisting the provincial People's Committee to perform natural disaster management tasks as prescribed in Clause 1 Article 43 of the LNDPC;
- Directing and expediting the formulation and submission of disaster response plans for approval;
- Commanding natural disaster response, search and rescue during natural disasters within the province;
- Inspecting and expediting the performance of natural disaster management tasks by local departments and agencies;
- Assisting the provincial People's Committee in directing, inspecting, expediting and consolidating reports on production of statistics on damage, determination of assistance demands, natural disaster recovery, post-disaster recovery and reconstruction;
- Complying with regulations concerning the disaster management funds;

- Organizing drills and providing training for forces involved in natural disaster management, SAR;
- Disseminating and communicating information and raising community awareness of natural disaster management;
- Directing, implementing, and organizing the implementation of measures to gradually increase civil capacity or disaster response;
- Providing human resources, equipment, and combat gears for the Standing Office of the provincial CCNDPC/SAR;
- Electronically connect with central natural disaster management agencies and local natural disaster management agencies at all levels to serve command over natural disaster management.

The Provincial CCNDPC/SAR model is repeated at the district and commune level, and the structure is well established.[210]

Coordination between NSCNDPC and CCNDPC/SAR

According to Article 32 of Decree No. 66/2021/ND-CP the NSCNDPC and the CCNDPC/SAR will cooperate as follows:

- The NSCNDPC shall preside over and cooperate with the CCNDPC/SAR in promulgating instructional documents to respond to specific natural disaster.
- The NSCNDPC and the CCNDPC/SAR shall proactively notify and cooperate with each other immediately after being informed of accidents and incidents occurring during a natural disaster, and reach an agreement on remedial measures, mobilize forces, vehicles, materials, and equipment for disaster response and recovery;
- The NSCNDPC shall agree with the CCNDPC/SAR about requests for search and rescue assistance from foreign countries in the case of serious natural disasters before submission thereof to the Prime Minister for decision;
- The NSCNDPC shall preside over mobilizing resources and directing natural disaster response and recovery activities, and cooperate with the CCNDPC/SAR in mobilizing and coordinating search and rescue forces to carry out disaster search and rescue.

Vietnam Disaster Management Authority (VNDMA)

The VNDMA is the Standing Office of the NSCNDPC. From its origins 20 years ago as the Department of Dike Management and Flood Control, VNDMA's mandate has widened to cover the 22 or so different types of hazards identified under the LNDPC. VNDMA serves as a natural disaster management authority all year round. During the October 2020 historical flooding in Central Vietnam, the VNDMA was as an active responder and implementer of disaster relief funds. With the establishment of the Natural Disaster Prevention and Control Funds (NDPCFs), to be managed by MARD/VNDMA, VNDMA will have more authority to mobilize funds from domestic and international donors to strengthen its role in supporting relief efforts.[211] Photo 4 shows General Director of the VNDMA Mr. Tran Quang Hoai (center left) with Colonel Thomas M. Stevenson, Senior Defense Official and Defense Attaché to the U.S. Embassy in Vietnam (center right), and the VNDMA and U.S. Embassy delegation at the VNDMA on 29 April 2021.[212]



Photo 4: VNDMA and U.S. Embassy delegation meet at MARD on 29 April 2021, Hanoi

Disaster Management Policy and Technology Center (DMPTC)

The DMPTC under the VNDMA was established on the basis of the merger of the Disaster Management Center and Water Resource Consultant and Technology Transfer Center.[213] DMPTC has a Director and two Deputy Directors. The Director runs the activities and is responsible for all activities of the DMPTC. The Deputy Director assists the Director to monitor and direct some activities as assigned by the Director. The Center has seven professional divisions: Planning and Finance Division, Information and Database Management Division, Policy and Science Research Division, Training Division, Remote Sensing and Disaster Simulation, Material Testing and Laboratory, Disaster Management, and Dike Tehnical Division. Each Division has a head and a deputy head of division.

National Committee for Incidents and Disasters Response, Search and Rescue (VINASARCOM)

VINASARCOM is responsible for the conduct of SAR operations. The Government established VINASARCOM to comprise the following members:

- President of VINASARCOM (Deputy Prime Minister);
- Standing Deputy President (Vice Minister of Defense) (now mandated to be the Deputy Chief of General Staff of MOD);
- Standing member and Chief of VINASARCOM Office (Director General of Department for SAR/MOD);
- Other members (Vice Ministers of relevant ministries and branches).

The Government assigns MOD as the standing agency of VINASARCOM to perform the following functions:

- To help the government in guiding and directing ministries and branches to elaborate and implement the strategy, long-term and annual plans for disaster prevention and control and SAR;
- To direct and coordinate forces and assorted means of the ministries, branches, and localities, for prompt SAR activities nationwide;
- To direct ministries and branches to organize training courses, exercises for SAR, and disaster response;
- To preside, coordinate with relevant agencies in the implementation of regional and international agreements and commitments on SAR.[214]

VINASARCOM has an ongoing partnership with the Oregon National Guard since 2012 as part of the U.S. and Vietnam security cooperation.[215] Figure 10 shows the organizational structure for VINASARCOM.[216]

Disaster Relief and Emergency Response

In the event of a disaster, the provincial people's committees, ministers or head of ministerial agencies, or the Prime Minister, are deemed the competent authorities to declare a disaster-related emergency. According to the LNDPC, a disaster related emergency is defined as a situations of "disaster that have occurred or are occurring or threaten lives, health and houses of many people and the safety of dikes, dams, reservoirs, works serving natural disaster management, important infrastructural constructions in use such as aerodromes, railways, highways, national routes, provincial routes, national terminals, high-voltage grid system (66kV or above), national historical sites, schools, hospitals at the district level or higher, premises of agencies at district level or higher, economic zones, and industrial parks."[217]

Figure 11 shows the authorities that possess the competency to declare a disaster-related emergency.[218] Figure 12 shows the "four on-the-spot motto" response structure, which comprises leadership, human resources, materials, and logistics on the spot.[219]

In response to the October 2020 historical

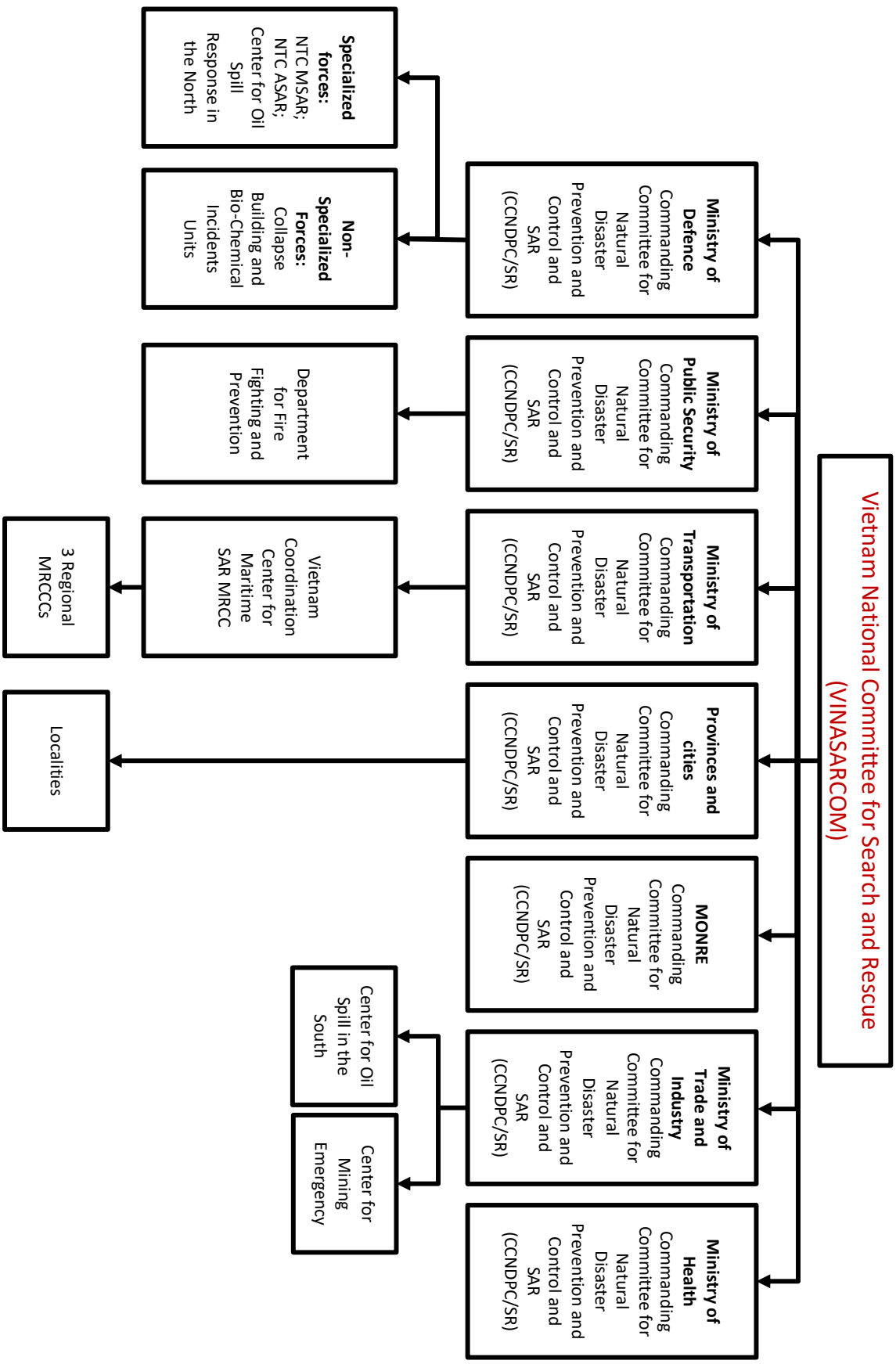


Figure 10: VINASARCOM organizational structure

Declaring a disaster-related emergency

Prime Minister Declares large-scale disaster that is beyond the capacity for response and recovery of ministries and local authorities and on the advice of the NSCNDPC.
Ministers and Heads of Ministerial Agencies Declares disaster-related emergency which affects the work and infrastructure under their management on the advice of the provincial CCNDPC/SAR or specialized agencies affiliated with ministries and ministerial agencies.
Provincial People's Committee Chairperson(s) Declares disaster-related emergency occurring in the province on the advice of the provincial CCNDPC/SAR.

Figure 11: Authorities competent to declare a disaster-related emergency

"Four on-the-spot motto"

Local organizations, households, and individuals are on-the-spot forces, who carry out natural disaster prevention and control activities.	**Militia and self-defense forces** are on-the-spot forces, who perform natural disaster prevention and control tasks under local natural disaster prevention and control plans and the mobilization of competent persons.
People's Army and People's Public Security forces perform natural disaster prevention and control tasks and act as the core (primary responder) in the evacuation of people, means, and properties, rescue and salvage, and assurance of security and social order and safety under the mobilization of competent persons.	**Organizations and individuals that voluntarily** support natural disaster prevention and control activities under the command of competent persons.

Figure 12: The "four on the spot motto" structure

flooding in Central Vietnam the Prime Minister, the NSCNDPC, and VINASARCOM coordinated response efforts at all levels of government, and across sectors and functional agencies, particularly with the provincial People's Committee in the affected provinces.[220] Twenty-seven international partners and local and international organizations supported the GVN's effort.[221] The After Action Review (AAR) prepared by UN agencies in Vietnam made the following key observations:

- There was clear government leadership;
- Strong UN collaboration with the GVN and local partners (including provincial offices of the VNRC and NGOs; and NGOs);
- UN agencies reduced reliance on importing relief items and supplies;
- There was a significant expansion of cash programming in responses;
- There was an emphasis of UN support to the most vulnerable people in the targeted provinces, including pregnant women and the elderly, and people with disability;
- There was an emphasis on gender and the protection needs of disaster-affected populations, including the risk of gender-based violence in emergency (GBViE).[222]

The UN AAR identified the following challenges for relief efforts:

- International movement restrictions (the inability to surge staff);
- Increased vulnerabilities due to COVID-19 (both affected people and responders);
- Gap remaining between assistance provided and needs on the ground;
- Limited awareness (e.g. on gender, protection, child protection in emergencies);
- Approval processes and internal coordination/parallel coordination structures.
    1) How can we build stronger relationships with local organizations and ensure adequate support in preparedness?
    2) What can be done to further strengthen the use of cash as a response modality?
    3) What is the added value of the international community in a response – how can it strengthen its role in protection, gender, accountability, etc?
    4) How do we strengthen response monitoring, which is aligned with the Government's monitoring?[223]

Armed Forces Role in Disaster Relief

The People's Army of Vietnam (PAVN) also known as the Vietnam People's Army (VPA) comprises Ground Forces, Navy (includes Naval Infantry), Air Force and Air Defense, Border Defense Force, Vietnam Coast Guard, Vietnam People's Public Security, and Vietnam Civil Defense Force.[224] The total size of total VPA forces varies, and in 2020 is estimated to be 470,000 active duty troops (400,000 ground; 40,000 naval; 30,000 air); and an estimated 40,000 personnel in the Border Defense Force and Coast Guard.[225]

The Central Military Commission of the CPV and the MOD consider disaster SAR to be a part of the mission of the VPA during peacetime.[226] The Head of the MOD is a deputy chairperson of the NSCNDPC. The Ministry of Public Security (MPS) participates in the NSCNDPC as a Member.

Since Decision No. 5570/QĐ-BQP dated 27 December 2014 of the MOD approving the VPA's participation in humanitarian assistance and disaster relief activities, the VPA has focused on the preparedness of the following five response teams:

- Structural Collapse Rescue Team under the Engineer Command;
- Environmental Recovery Team under the Chemical Command;
- Disaster Relief Medical Team under the Military Medical Department;
- Specialized Dogs SAR under the Border Guard Command; and
- Maritime SAR vessels under the Naval Command.[227]

In 2020, the VPA mobilized 364,262 people (132,849 officers and soldiers; 231,413 militia and self-defense forces) and 12,945 vehicles to respond to 1,411 SAR efforts, saving 1,770 lives and 55 vehicles. The VPA also provided warning

to 3,110,095 people on 656,709 boats and vessels regarding incoming storms; relocated 201,236 households to safety; transported 178.5 tons of food and equipment; transported 13,823 cubic meters of clean water to drought-affected areas; repaired 60,030 houses; and harvested 146 ha of rice.[228]

The VPA's disaster response teams have provided national, regional, and international relief. The VPA has conducted training to improve SAR skills for its forces as well as the CCNDPC/SAR within ministries, provincial departments, and local authorities. The VPA training has emphasized the "four on the spot motto".[229]

VPA is engaged in regional disaster management training efforts and regularly holds disaster relief drills with the militaries of its neighbors, Cambodia, China, and Laos.[230] The VPA is further contributing its forces to the UN peacekeeping mission in South Sudan.[231] Photo 5 shows VPA officers of the Engineering Unit Rotation 1 and Level-2 Field Hospital Rotation 4, who are participating in the UN peacekeeping mission in South Sudan.[232]

Disaster Management Partners

In addition to the organizations below, the American Red Cross and the Pacific Disaster Center (PDC) are key partners in Vietnam. More information on these collaborations are discussed further below.

In Vietnam, bilateral and multilateral donors coordinate disaster management assistance through the forum of the Disaster Risk Reduction Partnership (DRR Partnership). International and local NGOs who implement response efforts coordinate their work through the Disaster Management Working Group (DMWG). A snapshot of major disaster management partners can be captured from the response to the 2020 historical flooding in Central Vietnam. There were 33 relief efforts from the central government, as well as international and local organizations during the disaster. Twenty-seven international and national disaster management partners responded to deliver US$20.4 million in disaster relief assistance.[233]



Photo 5: VPA officers who will be joining a UN peacekeeping mission in South Sudan

Disaster Risk Reduction Partnership (DRR Partnership)

The DRR Partnership is established under the NSCNDP, and has members from key UN agencies, international NGOs, and bilateral and multi-lateral partners.[234] It provides a forum to effectively enhance cooperation and coordination between the Vietnamese government, donors and development partner community, NGOs, and private sector entities in a concerted effort for disaster risk reduction.[235] The ADB is co-chair of the DRR Partnership with the MARD/VNDMA in 2021.[236] The U.S. Agency for International Development (USAID) is a member of the DRR Partnership.

During the October 2020 flooding disaster in Vietnam, the GVN met with the DRR Partnership regularly to coordinate response efforts. For example, as the disaster unfolded the GVN met with the DRR Partnership to request food, SAR equipment, cash, water and sanitation assistance, shelter repair, support for evacuation centers, livelihood restoration support., and psychological support.[237]

Disaster Management Working Group (DMWG)

The DMWG was established in the period immediately following floods in 1999, when it was felt that NGOs in Vietnam needed to coordinate their relief operations more closely. Since 2001, the group has continued to meet regularly and holds emergency meetings when there is a need for joint action in relation to disasters in Vietnam.[238] Oxfam Vietnam is Chair of the DMWG in 2021.[239]

The DMWG defines disaster management to include disaster risk reduction, mitigation/preparedness, and relief/recovery. The DMWG's goal is to enhance disaster management in Vietnam through improved information sharing, coordination of initiatives, and joint action to promote the highest possible standards and practices. The DMWG undertakes the following efforts to achieve this goal:

- Promote information sharing and experience exchange;
- Promote the development and sharing of standards, accountability, best practices, research projects, and guidelines;
- Joint training activities and workshops;
- Advocacy and policy dialogue;
- Coordinated emergency preparedness and response.[240]

The Vietnam Union of Friendship Organization (VUFO) NGO Resource Centre acts as the secretariat for the DMWG in close collaboration with the DMWG Chair and the core group members. The Natural Disaster Mitigation Partnership (NDMP) is the DMWG focal point with regards to policy dialogue, coordination of resources, and information sharing. The VUFO NGO Resource Centre maintains a website for the working group at *https://www.ngocentre.org.vn/dmwg*.

In response to the October 2020 historical flooding in Central Vietnam, the DMWG responded in coordination with the Cash Working Group (CWG), Protection Working Group (PWG), Shelter Working Group (SWG), Water, Sanitation, and Hygiene (WASH) in Emergency Working Group, and Health in Emergency Working Group and Anticipatory Action Technical Working Group (AA TWG).[241] Eleven members took a lead role in the response and post-response assessment phase including Care International, Catholic Relief Service, Food and Agriculture Organization, Oxfam, Plan International, Save the Children, United Nations Development Program, UNICEF, UN Women, VNRC, and World Vision.[242]

Joint Government, NGO, and UN Disaster Management Group (DMG)

The Joint DMG is a strategic and operational information-sharing platform co-chaired by the DMWG Chair at country director level and the UN Resident Coordinator. Its composition includes representatives at senior and decision-making level from the GVN through the VNDMA, national and international NGOs, the International Red Cross and Red Crescent Movement, and UN agencies. The DMG is responsible for agreeing on common strategic issues related to humanitarian action in Vietnam

at the request of the Government.[243]

The DMG's overall goal is to ensure that inter-agency humanitarian action alleviates human suffering and protects the lives, livelihoods, and dignity of people in need. As the main inter-agency humanitarian leadership body in the country, the DMG's purpose is to provide strategic direction for collective inter-agency humanitarian preparedness and response. Whenever possible and requested by the GVN, the DMG operates in support and in coordination with national and local authorities, as well as with regional and international partners. The DMG plays an active role during severe disaster events, and is on stand-by during non-disaster periods.

International Assistance

According to the UN Office for the Coordination of Humanitarian Affairs (OCHA) Financial Tracking Service (FTS) 021 Vietnam has received a reported $17.9 million in humanitarian assistance as of 24 November 2021. Figure 13 shows key funding partners, mechanisms, and contributions. The largest contributions have come from the Government of Japan, the Central Emergency Response Fund (CERF), the Government of Australia and the European Commission. The major contributors to the CERF are shown in Figure 14.[244]

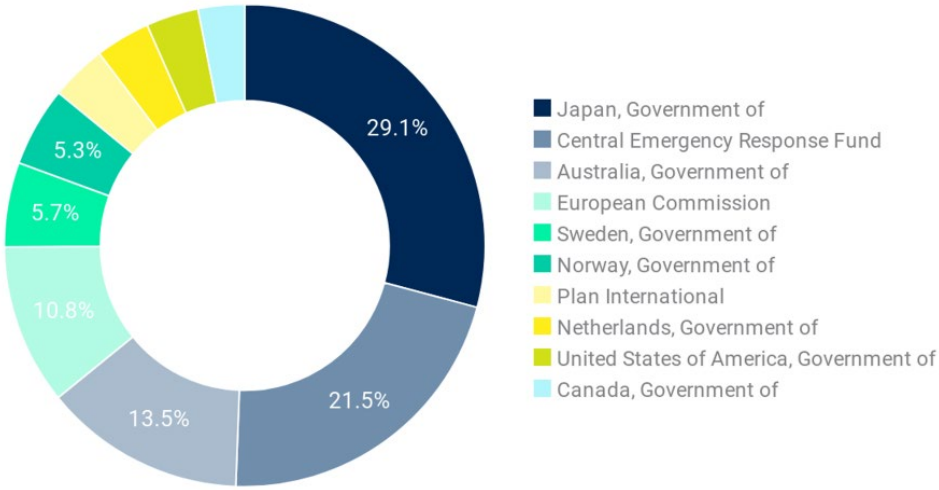


Figure 13: Major partners and contribution to humanitarian assistance as of 24 October 2021

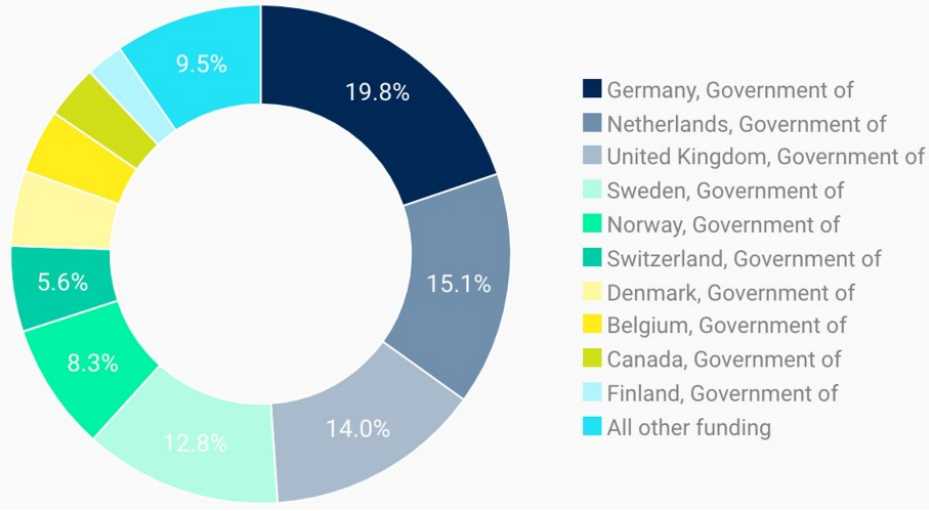


Figure 14: Major partners and contribution to the Central Emergency Response Fund as of 24 November 2021

Bilateral partners

Table 1 describes the involvement of bilateral partners in Vietnam's disaster-related activities.[245]

Australian Government Department of Foreign Affairs and Trade	Australia's development assistance to Vietnam focuses on three pillars: strengthening health security; promoting stability through strengthening institutions and leadership to manage future shocks and regional challenges, and supporting Vietnam's economic recovery. The Government of Australia has allocated AU$57.2 million (US$41.32 million) for development assistance to Vietnam in 2021-2022. Website: https://www.dfat.gov.au/geo/vietnam/development-assistance/development-assistance-in-vietnam
JICA	Japan's engagement in Vietnam is outlined in the Country Assistance Policy for Vietnam and Rolling Plans. Japan's assistance is implemented through the Japanese International Cooperation Agency (JICA) and focuses on three areas of priority: promoting economic growth and international competitiveness; responding to areas of fragility including natural disaster, climate change; and good governance. Website: https://www.jica.go.jp/vietnam/english/office/index.html
EUROPEAN	A Framework Cooperation Agreement provides the basis for cooperation between the EU and Vietnam. For the period 2014-2020, a Multi-Annual Indicative Program 2014-2020 contributes €400 million (US$465,619,00) to support Vietnam's socio-economic development by developing a sustainable energy sector and by strengthening governance and the rule of law. Website: https://eeas.europa.eu/delegations/vietnam_en
USAID	USAID Vietnam Country Development Cooperation Strategy 2020-2025 focuses on four priority areas: increasing economic competitiveness; prevention and control of infectious diseases; improving environmental security; and overcoming war and agent orange legacies. Since 2000, USAID, through the Bureau for Humanitarian Assistance, has provided more than $34 million in disaster response, preparedness, and disaster risk reduction assistance in Vietnam. Website: https://www.usaid.gov/vietnam/cdcs

Table 1: Bilateral partners supporting disaster-related activities in Vietnam

The above list is not exhaustive and is shown as an illustrative example of the types of disaster-related activities supported by bilateral partners.

Multilateral partners

Table 2 describes the involvement of multilateral partners in Vietnam's disaster-related activities.[246]

ADB	Vietnam was one of the founding members of the Asian Development Bank (ADB) in 1966. The ADB has since supported the country's poverty reduction achievements, infrastructure developments, and has more recently been helping to guide measures to address income inequality and socioeconomic disparities, particularly for people from ethnic minority groups and other vulnerable groups. The ADB supports various projects focused on climate change adaptation. Website: https://www.adb.org/countries/viet-nam/main#projects
THE WORLD BANK	The World Bank Group's (WBG) Country Partnership Framework (CPF) guides the WBG's engagement in Vietnam from 2018 to 2022. The CPF has four priority areas in Vietnam – enabling inclusive growth and private sector participation; investment in people and knowledge; ensuring environmental sustainability and resilience; and promoting good governance. In 2020 the WBG and GVN jointly prepared the Resilient Shores report providing in depth and multi-sectoral analysis of natural risks in coastal Vietnam. Website: https://www.worldbank.org/en/country/vietnam/overview#2
VIET NAM	The UN's current focus in Vietnam is on strengthening institutions, policies, social protection, health, education, agriculture, and more. The UN has worked since the mid-1990s on disaster risk reduction in Vietnam. The UN Resident Coordinator leads the UN Country Team in consultations with the GVN to define and agree on the UN strategic response to the GVN's development priorities. The UN in Vietnam adopted the "Delivering as One" initiative in 2006 with the One UN approach for greater harmonization and impacts of the UN operation in Vietnam. The UN framework of work for Vietnam is under the One Strategic Plan 2017-2021.Website: https://vietnam.un.org/en/about/about-the-resident-coordinator-office
UNDP	The UN Development Programme (UNDP) in Vietnam conducted a three-year technical assistance project, titled "Strengthening institutional capacity for disaster risk management in Vietnam, including climate change-related disasters" (SCDM Phase I) from 2008 to 2011. Building on the achievements of SCDM I, UNDP Vietnam continued its support through the Disaster Management Center's (DMC) four-year SCDM II from 2012-2016 with the the focus areas being environment, climate change and disasters. Website: https://www.vn.undp.org/content/vietnam/en/home.html.
unicef	The UN Children's Fund (UNICEF) is prioritizing the impact of climate change on children in Vietnam and is conducting a Child-Centered Disaster Reduction Program focused on a long-term strategy for sustainable and resilient development to ensure current and future generations can cope with climate change. Website: https://www.unicef.org/vietnam/

Table 2: Multilateral partners supporting disaster-related activities in Vietnam

	The Food and Agriculture Organization (FAO) priorities in Vietnam under the draft Country Programme Framework (2022 - 2025) is focused on four key areas: 1) enabling One Health implementation; 2) effective mitigation and adaptation to climate change, disaster risk reduction and resilience building, and the sustainable management of natural resources; 3) transformed food systems; and 4) better governance and more integrated of cross-cutting issues. Website: https://www.fao.org/vietnam/en/
	The UN Populations Fund (UNFPA) played a role in the joint needs assessment during the October 2020 flooding in Central Vietnam, supported mobile and outreach health care clinics, the distribution of Dignity Kits with essential hygiene items, the provision of vital maternal health equipment and supplies such as the Doppler Fetal Heart Rate Detector. Website: https://vietnam.unfpa.org/en
	Among its priorities, UN Women supports humanitarian action and disaster risk reductions in Vietnam. In the aftermath of the October 2020 floods in Vietnam, UN Women provided a total of 315 vulnerable women-headed households affected by the flooding and COVID-19 in Quang Tri province, Central Vietnam, cash grants of VND 4 million (US$173) each to rebuild their livelihoods. Website: https://asiapacific.unwomen.org/en/focus-areas/cedaw-human-rights/viet-nam
	An area of priority for the International Organization for Migration (IOM) in Vietnam is the impact of climate change, flooding, and environmental change on migration. Website: https: https://vietnam.iom.int/en
	The World Health Organization's (WHO) three strategic priorities in Vietnam include: 1) strengthening key health system objectives towards universal health coverage, 2) building sustainable national capacities and partnerships to ensure public health, security, and safety, and 3) managing effectively communicable and non-communicable diseases of public health importance. WHO is emphasizing the impact of climate change on health in Vietnam and around the world. Website: https://www.who.int/vietnam/our-work.

Table 2: Multilateral partners supporting disaster-related activities in Vietnam (cont.)

Implementing partners

Table 3 includes international NGOs and NGOs active in disaster management.[247]

care®	CARE International began its work in Vietnam from 1954 to 1975. CARE International then re-established its presence in Vietnam in 1989 and has since worked in almost all of Vietnam's 63 provinces and cities, implementing more than 300 development projects. Today, CARE International in Vietnam delivers humanitarian and emergency assistance in times of crisis, but primarily focuses on ensuring long-term positive change for marginalized groups, especially women, by tackling the underlying causes of poverty, vulnerability, and social injustice. Website: https://www.care.org.vn/
CRS CATHOLIC RELIEF SERVICES	Catholic Relief Service (CRS) began working in Vietnam in 1992, and today assists government partners and civil society organizations to build capacity in the areas of inclusion of people with disabilities, mine risk education and victim assistance, and disaster risk reduction and climate change adaptation. Website: https://www.crs.org/our-work-overseas/where-we-work/vietnam
HelpAge International	HelpAge International started operating in Vietnam in 1997. By 2011, when Vietnam officially became a country with a rapidly ageing population, a country office was established to ensure the well-being of Vietnamese older people. In Vietnam HelpAge International focuses on health and care, income security, and rights and entitlements. Throughout Vietnam HelpAge helps set up older people's associations and intergenerational self-help clubs that provide a hub for older men and women in communities. Website: https://www.helpage.org/where-we-work/east-asia/vietnam/
OXFAM	Oxfam International began working in Vietnam in 1955 and is now one of the leading NGOs in Vietnam focused on rural development, disaster risk reduction and humanitarian response, civil society development, issues related to people from ethnic minority groups, and women's empowerment. In 2021, Oxfam is the chair of the DMWG, a coordinating mechanism for NGOs and stakeholders working on disaster management. Website: https://vietnam.oxfam.org//
Plan	Plan International had a presence in Vietnam in 1954 and established its operations in Vietnam in 1993. Currently, Plan International focuses on the following areas: quality and inclusive education; nutrition and health services; building resilience to the impacts of natural disasters and climate change; creating safe cities with access to good jobs; and preventing all forms of violence and harmful practices. Website: https://plan-international.org/vietnam

Table 3: International and local NGOs implementing disaster-related activities in Vietnam

Save the Children	Save the Children started its work in Vietnam in 1990 and today focuses on six key program areas: education, health and nutrition, child protection, child rights governance, child poverty, disaster risk reduction and emergency response. Save the Children implements its programs in partnership with government agencies, civil society organizations, the private sector, and academic and research institutions. Website: https://vietnam.savethechildren.net/
World Vision	World Vision started working in Vietnam with emergency relief assistance in 1988 and opened an office in Hanoi in 1990. Since 1990, World Vision has implemented relief, development, and advocacy programs, partnering with the government, other NGOs, and communities. A total of 70,000 registered children are given assistance through child-sponsorship in Vietnam. Website: https://www.wvi.org/vietnam/about-us

Table 3: International and local NGOs implementing disaster-related activities in Vietnam (cont.)

The above list is not exhaustive and many more international NGOs and local NGOs in Vietnam are involved in disaster management such as the Center for Environment and Community Research; Centre for Sustainable Community Development (S-CODE); Church World Service; Child Fund, Development Workshop; East Meets West Foundation; Ha Tinh Centre for Community Development; and Live and Learn, etc.

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 application of International Humanitarian Law, and it is neutrality 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 undertake humanitarian initiatives as a neutral and independent intermediary.[248] Website: *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.[249]

The IFRC's Country Cluster Delegation for Thailand, Cambodia, Laos, and Vietnam is based in Bangkok. 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.[250]

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, disaster risk management, 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.[251] Website: *https://www.ifrc.org/*.

Vietnam Red Cross Society

The Vietnam Red Cross Society (VNRC) is a social humanitarian organization which mobilize all Vietnamese people at home and overseas irrespective of their class, ethnicity, religion, or sexual orientation to carry out humanitarian activities. VNRC was founded on 23 November 1946 by the late President Ho Chi Minh. It is a member of the Vietnamese Fatherland Front and a member of the IFRC.[252]

VNRC is one of the leading professional humanitarian organizations in Vietnam, with over four million members and a network of branches in all 63 provinces and major cities to district and commune levels. VNRC has 15,069 paid staff, 423,000 Red Cross volunteers registered, and 4,330,730 members.[253] VNRC has a national disaster response team (NDRT) and 31 provincial disaster response teams (PDRT) located in disaster-prone provinces to ensure timely response in the event of emergencies.[254]

VNRC has its mission and principles of being a social humanitarian organization playing the role of connecting and encouraging Vietnamese people at home and overseas without discrimination of class, ethnicity, religion, and sex to carry out humanitarian activities. VNRC's ultimate goal is humanity, peace, friendship, with the aim of developing a a powerful Vietnam with wealthy people, strong nation, equitable, democratic and civilized society that provides for a good life with freedom, well-being, and conditions for comprehensive development.

The VNRC has strong support from the GVN at all levels, which partly covers salaries and operational support to the Red Cross chapters and branches. The government has adopted the 'Law on Red Cross Activities' (Law No. 11/2008/QH12) valid from 1 January 2009, which defined the VNRC's seven core area of activities: (1) emergency relief and humanitarian aid; (2) health care; (3) first aid; (4) donation of blood, tissues, organs, and bodies; (5) tracing of relatives missing in wars, natural disasters, and other disasters; (6) dissemination on humanitarian values; and (7) participation in disaster preparedness and response. The Law places the VNRC in a unique position to deploy its staff and volunteers to disaster zones, to help people, to access government funds, and to raise funds from the public for disaster risk management.

In addition, the Statute of VNRC, adopted at the 10th VNRC National Congress and approved by the Prime Minister states clearly the position, roles, and responsibilities of the VNRC to provide support to the national governmental bodies in humanitarian efforts and to undertake activities such as: (1) strengthen and scale up VNRC's contribution towards Vietnam's development as part of their contribution to national development programs in the areas of health, poverty reduction, disaster management, and shelter; (2) expand disaster response and recovery capacity through preparing for and addressing the impacts of natural and man-made hazards, with a particular focus on the influence of climate change, and infectious and non-communicable diseases; and (3) continue to support the institutional capacity of the VNRC in the areas of financial management, resource mobilization, human resources management, communication, and humanitarian diplomacy.

Moreover, the 2013 LNDPC recognizes the VNRC's role in disaster relief and allows the VNRC alongside the Vietnam Fatherland Front Central Committee, to mobilize contributions and allocated resources for emergency relief.[255] Website: *http://redcross.org.vn/lien-he*.

U.S. Government Agencies in Vietnam

United States Agency for International Development (USAID)

Since 2000, USAID, through the Bureau for Humanitarian Assistance (BHA), has provided more than US$34 million in disaster response, preparedness, and disaster risk reduction assistance in Vietnam. USAID/BHA supports Vietnam's disaster relief efforts in partnership with the VNRC to address the immediate humanitarian needs of vulnerable communities in areas most affected by natural disasters while developing the capacity of critical VNRC provincial and community branches in emergency preparedness and response.[256]

USAID/BHA supports an important consortium of five organizations to help Vietnam increase its resilience to natural disasters. The Consortium's members include the VNRC/American Red Cross, CRS, Plan International, Save the Children, and HelpAge International. On 25 June 2019 USAID and its partners launched Phase III of the Building Resilience to Natural Hazards in Central Vietnam project. Since Phase I began in October 2015, the project has provided support to 61 communes/wards and 64 primary and secondary schools in four highly vulnerable Central Region provinces (Quang Nam, Quang Ngai, Ha Tinh, and Quang Tri), reaching approximately 147,500 people directly and 674,000 people indirectly. Phase III will provide support to 20 communes/wards within the same four Central provinces.[257]

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Laws, Policies, and Plans on Disaster Management

A 2015 review by the IFRC found that there are more than 100 legal instruments[258] in Vietnam that are relevant to Disaster Risk Reduction (DRR).[259] The UN Office for Disaster Risk Reduction 2020 Status Report for Vietnam notes a broad set of overlapping and interrelated laws and policies concerning disaster management.[260] Most of the laws and regulations on natural hazards are concerned with high-risk hazards such as floods and storms, while other hazards were addressed in separate laws and regulations. This reflects the historical origins of Vietnam's natural disaster management framework in 1946 when the Central Dike Protection Committee the forerunner of the present NSCNDPC was established by decree of President Ho Chi Minh.[261] The following are some of the key legal instruments relevant to disaster management in Vietnam.

Law on Disaster Prevention and Control, Law No. 33/2013/QH13 (LNDPC) and Amending Law No. 60/2020/QH14

The Law on Disaster Prevention and Control, Law No. 33/2013/QH13 (LNDPC), effective 1 May 2014, is the first comprehensive law on disaster management in Vietnam. Prior to the law's passage, there was no stand-alone law on disaster management, and hazards were dealt with under separate pieces of legislation and regulation.[262] The LNDPC encompasses all natural disasters, including hydro-meteorological and geophysical.

The LNDPC set outs a CBDRM approach and outlines the rights and obligations of agencies, organizations, households and individuals engaged in natural disaster prevention and control activities. The law also sets out the state management of natural disaster prevention and control. The LNDPC applies to Vietnamese organizations and individuals as well as foreign organizations and individuals and international organizations residing, operating, or participating in disaster management in Vietnam.[263] Natural disaster prevention and control are carried out under the 'four on-the-spot motto': command on the spot, manpower on the spot, means and supplies on the spot, and logistics on the spot".[264]

Moreover, the LNDPC indicates the GVN's openness to international assistance in disaster response and identifies the MARD as the focal point for international cooperation in disaster prevention and control.[265] Moreover, the LNDPC identifies the Fatherland Front Central Committee and the VNRC as key partners in disaster response.[266]

On 17 June 2020, Law No. 60/2020/QH14 was enacted, and came into effect on 1 July 2021, amending the LNDPC as well as the Law on Dikes (not discussed here). Through the amendment, the definition of natural disasters is widened to include wind at sea; landslide and land subsidence due to drought; wildfire, and fog. In addition, persons engaged in natural disaster prevention and control activities at state agencies that perform natural disaster prevention and control tasks, are now considered to be manpower for natural disaster prevention and control. Furthermore, natural disaster prevention and control funds currently established at the provincial level and managed by the provincial People's Committee, will now become part of the off-budget state financial funds, established under Decree 78/2021/NĐ-CP discussed further below.[267]

Decree No. 66/2021/ND-CP supporting the LNDPC

The LNDPC is supported by a series of decrees (similar in status to regulation) that supplement implementation of the law. The supporting decrees have been amended over time.[268] The most recent decree is Decree No. 66/2021/ND-CP, effective from 28 August 2021.[269] The Decree sets out the responsibility for news broadcasting; the allocation of responsibility and cooperation in natural disaster response; provides for disaster-related emergencies and disaster recovery; outlines the rights and obligations of foreign organizations and individuals and international organization participating in disaster response and recovery in Vietnam; and establishes benefits for communal voluntary forces in charge of natural disaster management.[270]

Decree 78/2021/NĐ-CP on the establishment and management of natural disaster prevention and control funds

Decree 78/2021/NĐ-CP on the establishment and management of natural disaster prevention and control funds came into effect 15 September 2021. The decree establishes the Natural Disaster Prevention and Control Fund (NDPCF) as an off-budget state financial fund with its own legal status and seal. The central NDPCF is managed by the MARD/VNDMA and provincial-level NDPCFs are managed by People's Committees of provinces and centrally-run cities.

The decree also established the Central Fund Management Council, which has a maximum of nine members, including: the Chairperson (the MARD), two Vice-Chairpersons and

members who are appointed or approved by the chairperson of the Fund Management Council at the request of the Fund Management Agency. The Supervisory Board of the Central Fund has a maximum of five members, including the Head of the Supervisory Board, who is appointed or approved by the chairperson of the Fund Management Council at the request of the Fund Management Council, and its members.

The Central NDPCF is used for relieving and supporting natural disaster response activities that are beyond the local response capacity. In such a scenario, priority shall be given to emergency relief in food, drinking water, curative medicines and other essentials to those suffering from damage caused by natural disasters, supporting the repair of houses, health establishments and schools, and for dealing with environmental sanitation issues in natural disaster-hit areas; supporting the remediation of natural disaster consequences for localities suffering from damage caused by natural disasters beyond their remediation capacity; supporting emergency projects for natural disaster prevention, control and remediation, etc.[271]

National Strategy for Natural Disaster Prevention and Control to 2030 with a vision to 2050

The National Strategy for Natural Disaster Prevention, Response and Mitigation to 2020 was first prepared in 2007 with legal backing from the Prime Minister's Decision No. 173/2007/QD-TTG. [272]An updated National Strategy for Natural Disaster Prevention and Control to 2030 with a vision to 2050 was approved on 17 March 2021 by Prime Minister Decision No.379/2021/QD-TTg.[273]

The 2030 Strategy reiterates many of the original principles of the 2020 Strategy by articulating long-term goals for DRR, mainstreaming DDR across state management functions, linking DRR to socio-economic developments, and promoting a decentralized approach to DRR through the "four on-the-spot motto".

The 2030 Strategy sets as a common goal for 2030, the promotion of proactive action to prevent and combat natural disaster, adaptation to climate change, and efforts to minimize the loss of life and property of the State and people, safeguarding security and national defense, and building a safe society against natural disasters. It states the GVN's vision by 2050 for the proactive prevention and control of natural disaster and the prompt response to natural disaster, rapid and sustainable recovery and reconstruction, and the creation of conditions for sustainable economic and socio-economic development.[274]

In addition, the Strategy sets out specific targets toward 2030 as follows:

- Reduce damage caused by natural disasters, focusing on ensuring the safety of people's lives during storms and floods, and reducing the loss of people's lives due to flash floods and landslides by 50% compared to the 2011-2020 period;
- 100% of government agencies at all levels, organizations and households to fully receive information and to possess natural disaster prevention skills;
- 100% of national, regional and provincial directing and operating agencies for natural disaster prevention and control shall complete the natural disaster prevention database, etc.[275]

Directive No. 42-CT/TW of the Politburo Secretariat on Strengthening the Party's leadership in Natural Disaster Management

On 2 April 2020 the Politburo Secretariat issued Directive No. 42-CT/TW on strengthening the CPV's leadership on prevention and response to natural disasters. The Directive recognizes the rapid and complicated trend set by climate change including rising sea levels, increasing natural disasters, and more abnormal and extreme natural disaster events. The Directive requests the Party Committees, Party Organization, Government, Fatherland Front, socio-political organizations and mass organizations (such as the VNRC) to take

action to, inter alia, strengthen the leadership and organization of disaster prevention and response; strengthen the legal framework on disaster management; and improve forecasting, early warning systems, and mentoring of natural disasters.[276]

The Directive also calls for the following regional prioritization:

- Northern Delta and North Central region: strengthen dike and reservoir safety;
- Northern and Central Coast areas: improve capacity to cope with heavy floods, storms, typhoons and coastal erosion;
- Central Highlands: ensure water sources for production and daily life;
- Southern region: actively cope with, adapt to major floods, drought, saltwater intrusion, and landslide of riverbanks.[277]

The Directive is a clear indication of Vietnam's intent and commitment at the highest level, to address climate change and to strengthen its disaster management system.

Prime Minister Decision No. 553/QD-TTg dated 6 April 2021 approving the "Project for community awareness raising and community-based natural disaster risk management, with a vision to 2030"

The Prime Minister approved a government-led community awareness raising and community-based natural disaster risk management project to be implemented in all communes and rural-districts nationwide, with priority given for high-risk areas in communes and rural-districts frequently affected by natural disasters. The program sets the following targets for 2030:

- 100% of general training levels shall include natural disaster risk mitigation and prevention in some the curriculum;
- 100% of the people in communes prone to frequent typhoon, flashflood, landslide, flood, inundation, drought and seawater intrusion, and at least 50% of the people in other areas shall be disseminated natural disaster- related information;
- 100% of households to receive sufficient information on natural disasters and disaster prevention and control directions, etc.;
- In addition, the decision reiterates guidance on the implementation of community awareness raising and community-based and community capacity and skills in natural disaster risk mitigation.[278]

Laws governing foreign assistance

There are legal instruments that are not directly related to disaster management but have direct implications for response and recovery efforts. They include the following:

- Decree 80/2020/ND-CP on the use of grant aid not in the form of official development assistance of foreign agencies, organization, and individuals;
- Decree 50/2020/ND-CP on receiving, management and utilization of international assistance for response and recovery;
- Prime Minister Decision No. 06/2020/QD-TTg on the organization and management of international conferences and seminars in Vietnam.

Foreign organizations or foreign-funded projects in Vietnam are required to apply for approval under one or more of the listed instruments to carry out work. These legal instruments had direct implication in the 2020 historical flooding in Central Vietnam, where response efforts carried out by international organizations and local organizations with foreign funding, were slowed due to the need to obtain approval under the respective legal instruments, listed above, before implementing response efforts.[279]

Regional and International agreements

The GVN has signed and ratified the Association of Southeast Asian Nations (ASEAN) Agreement on Disaster Management and Emergency Response (AAMER) alongside all other ASEAN member countries.[280] AAMER aims to provide effective mechanisms to achieve substantial reduction of disaster losses in lives

and in the social, economic, and environmental assets of the ASEAN countries and to support joint response to disaster emergencies through national efforts and intensified regional and international cooperation.[281]

The GVN endorsed the Hyogo Framework of Action 2005-2015: Building the Resilience of Nations and Communities to Disasters (HFA) and its successor the Sendai Framework for Disaster Risk Reduction 2015-2030. The VDMA is the lead agency for coordinating Sendai Framework implementation in Vietnam. Vietnam's 2020 UNDRR Status Report finds that achieving and maintaining the envisaged development on a resilient, sustainable, equitable and climate adaptive pathway remains a critical challenge for the country. The report also finds the agriculture sector and related sub-sectors to be under adverse pressures from extreme weather events.[282] Moreover, issues related to risk management are more pronounced in urban regions, with the expansion of cities.[283]

Disaster Management Communications

Early Warning Systems

Vietnam has significantly improved its hazard monitoring and Early Warning Systems (EWS) in the past decade. The system is now equipped with radar technology and a multi-transmission capability that allows the synchronization of data from regional, provincial, and local stations to be transferred between forecasting facilities.[284] However, localized hazards such as flash flooding still require systems that can undertake specialized monitoring. Dissemination of EWS information to communities at the local level also remains a challenge, which is being addressed by standardizing community radio, door knocks, and community announcements, and using mobile alerts through Short Message Service (SMS).[285]

Vietnam Disaster Monitoring System (VNDMS)

The VNDMA developed a VNDMS in 2018, as a multi-hazard EWS, to integrate monitoring information in real and near-real time, such as hydro-meteorological data, reservoir data, ship on sea data etc., combined with existing data on natural disaster prevention efforts, dikes and local disaster prevention resources.[286]

The Center for Disaster Policy and Technology of the VNDMA has developed a Disaster Monitoring Application (App-VNDMS) to support the VNDMS. App-VNDMS is widely used by staff of the VNDMA, and helps to exploit the data collected by the VNDMS. The main features of App-VNDMS includes alerts of natural disaster events, disaster warning, field data updates, e.g. rain over 50mm/24 hours, strong wind, and above normal water level rise in discharging irrigation/hydropower reservoirs.[287]

The VNDMS is further supported by a 24-hour Disaster Response Department (as shown in Photo 6).[288] The VNDMS can be accessed here: *http://vndms.dmc.gov.vn/*.



Photo 6: The VDMS at MARD

National Center for Hydro-meteorological Forecasting (NCHMF)

Forecasting of hydro-meteorological hazards is carried out by the NCHMF and the Vietnam Hydro-Meteorological Service (VHMS) under the MONRE.[289] NCHMF is an operational unit under VHMS. Its function is to carry out hydro-meteorological forecasting and implement the specialized hydro-meteorological telecommunication networks for the whole country with the aim to meet all the requirements for disaster prevention and preparedness, and the socio-economic

development and national security of Vietnam.[290] Provincial hydro-meteorological centers coordinate closely with Provincial CCNDPC/SAR as part of the provincial-level EWS.[291] Website: *https://nchmf.gov.vn/KttvsiteE/en-US/2/index.html*

Vietnam Earthquake Information and Tsunami Warning Center (EITWC)

The Vietnam EITWC, under the Institute of Geophysics of the Vietnam Academy of Science is responsible for the monitoring of seismic activity and tsunamis.[292] The EITWC was established in the wake of the 2004 Indian Ocean tsunami by Decision No 1798/QD-KHCNVN of the President of Vietnam Academy of Science and Technology on 4 September 2007. The EITWC observes and analyzes earthquake data, acquisition of sea level and other related information, and data in the territory and sea areas of Vietnam, issues warning bulletins, cooperates with earthquake and tsunami warning systems in the region and around the world, carries out training and public awareness for earthquake and tsunami preparedness and prevention, and represents Vietnam in the Pacific Tsunami Warning and Mitigation System (PTWS) and is the designated Tsunami National Contact and Tsunami Focal Point. Website: *http://igp-vast.vn/index.php/en/organization/vietnam-earthquake-information-and-tsunami-warning-center*

VinAWARE

In 2018 Vietnam and the Pacific Disaster Center (PDC), with funding support from USAID, launched VinAWARE, a custom early warning and decision support system developed and deployed in Vietnam by PDC, based on the Center's powerful DisasterAWARE technology.[293] The system was built to support central-level officials in Hanoi and flood management offices at the provincial level in Central Vietnam.[294]

Community-based EWS

At the community-level, different EWS are being tested. For example, in the northern province of Lao Cai, which is prone to flash floods, flooding, and landslides, there are currently nine hydro-meteorological stations, 53 automatic rain gauge stations, and three natural disaster EWS developed with state funds. In addition, the Korean Meteorological Administration is supporting the upgrading and piloting of an EWS, and Taiwan is supporting the piloting of a mud and rock flood warning station.[295]

Broadcasting of EWS information

The dissemination of warning messages is carried out through the public media, community-level door knock, and SMS alert systems. The recently issued Decree No. 66 /2021/ND-CP assigns responsibility to the following broadcasters to disseminate information on disaster responses direction from the Prime Minister, the NSCNDPC and VINASARCOM -- Vietnam Television, Voice of Vietnam, Vietnam News Agency, coastal communication stations, radio and television stations of provinces and central-affiliated cities, and press agencies and newspapers. Further guidance is set out in the Prime Minister Decision No. 18/2021/QD-TTg dated 22 April 2021 on natural disaster forecast, warning and information transmission and disaster severity levels. The guidance requires the following authorities to forecast and provide early warning of natural hazards (e.g. storms, tropical depression, heavy precipitation, extreme heat, drought, salt-water intrusion, landslides, strong wind and fog over the South China Sea, earthquakes with a magnitude of 3.5 etc.) -- ministries, central authorities, local governments, organizations and individuals involved in natural disaster prevention, response, and recovery; and organizations and individuals whose operations are related to natural disaster forecasting, warning, and information transmission.[296]

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 relief (HADR) resources are will assist Joint Task Force leaders and staff during mission planning.[297] Sharing information is critical since no single responding entity, NGO, International Governmental Organization, assisting country government, or the host government can be the source of all the required information.[298]

Collaboration, information sharing, and networking have been the backbone of successful disaster response and preparation. Disseminating information not only to those in-country and threatened by disaster, but also to those responding to assist in the emergency has been crucial to timely, efficient, and effective disaster response. 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 disaster risk management 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 before, during, and after a natural disaster. This section will discuss country-specific, humanitarian, regional, government, and U.S. Department of Defence (DoD) information sources.

Vietnam Information Sources:

Vietnam Disaster Management Authority (VNDMA)

VNDMA is Vietnam's lead agency in charge of disaster management domestically. VNDMA is a unit under the MARD. VNDMA acts as the Standing Office of NSCNDPC. VNDMA carries out the State management functions related to disaster management, as well as monitoring, and response efforts. VNDMA runs an information hotline and disseminates information collected through its early warning system to public media.

Address: A4, 2 Ngoc Ha Stree, Ba Dinh, Hanoi, Vietnam
Tel: +84-4-3733 5693
Fax: +84-4-3733 5701
Hotline: 024.37333664; 024.373.49821; 069.696348.
E-mail: *pcttvietnam@mard.gov.vn*;
Website: *phongchongthientai.mard.gov.vn*

Vietnam Red Cross Society (VNRC)

VNRC is one of the leading humanitarian organizations in Vietnam, and is present in all 63 provinces and municipalities. VNRC is mandated by the Law on Red Cross Activities (Law No. 11/2008/QH12) to inter alia, provide emergency relief and humanitarian aid and participate in disaster preparedness and response.

Address: 82, Nguyen Du Street, Hai Ba Trung district, Hanoi
Phone: +84-24-3826 3703
Email: *vnrchq@netnam.org.vn*
Website: *http://redcross.org.vn/*
Facebook: *https://www.facebook.com/redcross.org.vn*

Humanitarian Information Sources

Global Disaster Alert and Coordination System (GDACS)

GDACS is a cooperation framework between the UN, the European Commission, and disaster managers worldwide to improve alerts, information exchange, and coordination in the first phase after major sudden-onset disasters.
Website: *https://www.gdacs.org/alerts/*

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*

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 including the VNRC, a secretariat in Geneva, Switzerland, and over 60 delegations around the world. The IFRC carries out relief operations to assist victims of disasters and combines this with development work to strengthen the capacities of its member National Societies. IFRC's work focuses on four core areas: promoting humanitarian values, disaster response, disaster preparedness, and health and community care.[299]
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 international humanitarian law and universal humanitarian principles. ICRC, together with the IFRC and the 192 Red Cross Red Crescent Societies, make up the International Red Cross and Red Crescent Movement.[300]
Website: *https://www.icrc.org/en*

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

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 the "Subscribe" button at the bottom of the page.

ReliefWeb

ReliefWeb is a service of the 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 UNDRR to consolidate disaster risk reduction information into an online, easy to understand platform.
Website: *https://www.preventionweb.net/english/*

UNICEF in Vietnam

UNICEF in Vietnam is focusing on child-centered risk reduction.
Website: *https://www.unicef.org/vietnam/child-centred-disaster-risk-reduction*

Virtual OSOCC

The Virtual 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 stated are based

on published hazard data, provided by a range of private, academic and public organizations. Information is provided on the Vietnam regarding hazards, country assessments, projects, EWS, 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 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 OCHA's Center for Humanitarian Data in The Hague.
Website: *https://data.humdata.org/*

Regional Information Sources

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 occured 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 verifies and validates submitted information and adds new information from its sources. ADINET has been recording disaster information in the region since the AHA Centre was operational in 2012.
Website: *https://ahacentre.org/disaster-information-management/*

Changi Regional HADR Coordination Centre (RHCC)

Singapore's Ministry of Defence launched the Changi RHCC 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. With the 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/*

The USAID Bureau for Humanitarian Assistance (USAID/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 prepare for, respond to, and recover from humanitarian crises.[301]

USAID/BHA products include situation reports and maps, which are available via email mailing lists as well as Reliefweb.org. Info products (HA Updates/Fact Sheets, etc.) are also available at: *https://www.usaid.gov/humanitarian-assistance*

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

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

Pacific Disaster Center Global (PDC)

PDC Global has trademarked an early warning and decision support system called DisasterAWARE®. DisasterAWARE® is primarily for disaster management practitioners and senior decision makers. It supports disaster risk reduction and best practices throughout all phases of disaster management from early warning to multi-hazard monitoring. It has a collection of scientifically verified, geospatial, data and modeling tools to assess hazard risks and impacts. A restricted version of DisasterAWARE is the Emergency Operations (EMOPS) system, which is specifically for the disaster management community, including government agencies and humanitarian assistance organizations serving at local, state, federal, and regional levels.[302]

PDC also provides a public version, Disaster Alert, which offers open access to a world map documenting 18 hazard types.[303] Disaster Alert also has a free, early-warning app to receive customizable maps based visual alerts of active hazards. The app offers a global notification system covering natural and man-made hazards. It is available on both iPhone and Android.[304]
Website: *https://www.pdc.org/* and *https://www.pdc.org/apps/disasteraware/*
EMOPS system (request account): *https://emops.pdc.org/emops/*

All Partners Access Network (APAN)

APAN is the Unclassified Information Sharing Service (UISS) for the DoD. APAN provides the DoD and mission partners community space and collaboration tools to leverage information to effectively plan, train and respond to meet their business requirements and mission objectives. Importantly, APAN's technology team has been supporting humanitarian assistance and disaster response (HADR) operations for over 15 years.[305] 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.[306]
Website: *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)

JTWC provides advanced warning for U.S. Government agencies and organizations in relevant areas.
Website: *https://www.metoc.navy.mil/jtwc/jtwc.html*

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

DKI-APCSS is a U.S. Department of Defense 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/*

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

CFE-DM is a U.S. Department of Defense 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 Centre, 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/*

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.*

Climate Change Impact Program at CFE-DM

CFE-DM is the lead at USINDOPACOM on climate change. CFE-DM's Climate Change Impact Program serves the Command as a trusted source of information and knowledge about the impacts of climate change on security in its area of responsibility, and serves as a focal point for collaboration with allies and partners to address those impacts and enhance regional security.

COVID-19 Information Sharing Sources

Portal of the Vietnam Ministry of Health About COVID-19 Pandemic

The Vietnam Ministry of Health's COVID-19 portal provides up-to-date information about the number of cases in the country, with provincial and city disaggregation. The portal also provides a newsletter, guidance on vaccines, and prevention and treatment.
Website: *https://covid19.gov.vn/ban-tin-covid-19.htm*

Johns Hopkins University

The John Hopkins University 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). It is supported by ESRI Living Atlas Team and the Johns Hopkins University Applied Physics Lab (JHU APL). Website: *https://github.com/CSSEGISandData/COVID-19*

INFORM 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".[307]

The INFORM COVID-19 Risk Index is 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.[308]

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.[309] Figure 15 shows the INFORM COVID-19 Risk Formula.[310] Website: *https://data.humdata.org/dataset/inform-covid-19-risk-index-version-0-1-4*

<table>
<tr><td>Risk</td><td colspan="5">INFORM COVID-19 RISK</td></tr>
<tr><td rowspan="2">Dimension</td><td colspan="5">RISK FORMULA</td></tr>
<tr><td colspan="2">Hazard & Exposure</td><td colspan="2">Vulnerability</td><td>Lack of Coping Capacity</td></tr>
<tr><td rowspan="3">Category</td><td colspan="2">P2P</td><td colspan="2">GEOMETRIC AVERAGE</td><td>GEOMETRIC AVERAGE</td></tr>
<tr><td colspan="2">ARITHMETIC AVERAGE</td><td rowspan="2">INFORM Vulnerability</td><td rowspan="2">Covid-19 Vulnerability</td><td rowspan="2">INFORM Lack of Coping Capacity</td><td rowspan="2">Covid-19 Lack of Coping Capacity</td></tr>
<tr><td>WaSH</td><td>Population</td></tr>
</table>

Figure 15: INFORM COVID-19 risk formula

INFRASTRUCTURE

Investment in public infrastructure has been central to Vietnam's economic development. Between 2010 and 2017, infrastructure made up 53% of total Official Development Assistance (ODA).[311] Vietnam has invested heavily in transportation, particularly roads, airports, and seaports over the past two decades. On 1 September 2021, the GVN approved a plan to spend US$43-65 billion on building and upgrading road, rail, inland waterways, sea, and air transport infrastructure from 2021 to 2030.[312] To support infrastructure investments, the GVN has enacted a new Public Private Partnership (PPP) Law, effective 29 March 2021, to support and regulate private investment in the transportation, power grids, and power plants sectors.

Recurring natural disasters have adversely impacted Vietnam's infrastructure system. During the October 2020 historical flooding in Central Vietnam, delivery of assistance was hampered by extensive damage to public transportation infrastructure. The VNDMA reported 165 km (102.53 mi) of local roads and three bridges were heavily damaged in nine of the 14 affected provinces. Rescue teams were required to access affected areas by boat to deliver relief items and to evacuate vulnerable people. Communication was also hampered by a loss of electricity in affected areas.[313] Relatedly, the World Bank's 2020 Resilient Shore report identifies a lack of systematic maintenance of infrastructure systems as a challenge for Vietnam.[314]

Transport

In Vietnam, roads and inland waterways dominate passenger transport. For cargo, Vietnam relies heavily on roads, inland waterways, and maritime transport. Table 5 shows the share of cargo and passenger traffic of each major transport sector.[315]

The Ministry of Transport (MOT) oversees the state management function of roads, railways, inland waterways, and maritime and aviation transportation nationwide, through bodies described in Table 6.[316]

Transport	Cargo	Passenger
Roads	75.6%	94.09%
Inland Waterways	17.8%	4.7%
Airport	0.08%	0.6%
Railway	0.64%	0.42%
Maritime	5.8%	n/a

Table 5: Shares of cargo and passenger traffic of each transport sector

Transport	Government Authority	Website
Roads	Civil Aviation Authority of Vietnam (CAAV)	https://centreforaviation.com/data/profiles/government-bodies/civil-aviation-authority-of-vietnam-caav
Seaports	Vietnam Maritime Administration (VINMARINE)	https://vinamarine.gov.vn/
Roads	Directorate of Roads	http://drvn.mt.gov.vn/
Railways	Vietnam Railway Authority (VRNA)	http://vnra.mt.gov.vn/
Inland Waterways	Vietnam Inland Waterway Administration (VIWA)	http://viwa.gov.vn

Table 6: Vietnam transport authorities

Airports

Vietnam has 11 international airports, with Noi Bai International Airport and Tan Son Nhat International Airport, in Hanoi and Ho Chi Minh City respectively, being the two major airports for international destinations. Vietnam also has 12 domestic airports, servicing all regions and most provinces in Vietnam. The

Civil Aviation Authority of Vietnam manages all major civilian airports and oversees three regional airport authorities - Northern Airport Authority, Middle Airport Authority, and Southern Airport Authority. Some airports, such as the airport located in Cam Ranh, are for mixed civilian and military use. Tables 7 and 8 provide the codes and specifications of the major international and domestic airports in Vietnam, respectively.[317]

Airport Name	Location	IATA/ICAO Code	Maximum Runway	Runway Surface	Website Source/Notes
Noi Bai International	Hanoi City 45 km (28 mi)	HAN/ VVNB	3,800 m (12,468 f.)	Concrete	Largest airport in terms of capacity. Largest cargo airport, and second busiest passenger. https://www.hanoiairportonline.com/
Tan Son Nhat International Airport	Ho Chi Minh (HCMC) City 4 km (2.5 mi)	SGN/ VVTS	3,800 m (12,468 ft)	Concrete	Busiest passenger airport. Serves HCMC and rest of Southeastern Vietnam. https://www.hochiminhcityairport.com/
Danang International Airport	Da Nang City	DAD/ VVDN	3,500 m (11,483 ft)	Asphalt	Gateway access to Central Vietnam. Limited military use of runway. https://www.danangairportonline.com/
Can Tho International Airport	Can Tho	VCA/ VVCT	2,404 m (7,886 ft)	Asphalt	https://skybrary.aero/airports/vvct
Cat Bi International Airport	Thuận An City 8 km (5 mi), Hai Phong	HPH/ VVCI	3,050 m (10,007 ft)	Asphalt	https://haiphongairport.com/
Phu Bai International Airport	Hue city 13 km (8 mi)	HUI/ VVPB	2,675 m (8,775 ft)	Asphalt	https://vietnamairport.vn/phubaiairport/en/
Cam Ranh International Airport	Cam Ranh or Nha Trang 30 km (18.6 mi)	CXR/ VVCR	3,048 m (10,000 ft)	Concrete	Originally built by the U.S. Navy during the Vietnam War. https://camranh.aero/homepage
Phu Quoc International Airport	Center of Phu Quoc island	PQC/ VVPQ	3,000 m (9,843 ft)	Asphalt	Built in 2012 and replaced an existing airport located 10km (6 miles) away. https://www.phuquocairport.com/
Van Don International Airport	Cam Pha, Quang Ninh, 20 km (12.4 mi)	VDO/ VVVD	3,600 m (11,811 ft)	Concrete	Newest airport, build to improve access to Halong Bay. http://www.vandon-airport.com/
Vinh International Airport	Vinh city	VII/ VVVH	2,400 m (7,874 ft)	Asphalt	Mixed civilian and military airport. https://www.flightradar24.com/data/airports/vii
Lien Khuong International Airport	Da Lat	DLI/VVDL	3,250 m (10,663 ft)	Asphalt	http://www.vietnam-guide.com/dalat/da-lat-airport.htm

Table 7: Codes and runway lengths for international airports in Vietnam

Airport Name	Location	IATA/ICAO Code	Maximum Runway Length	Runway Surface	Website Source/Notes
Buon Ma Thuot (Phuong-Duc)	Buon Ma Thuot, Da Lat	BMV/ VVBM	3,000 m (9,843 ft.)	Asphalt	Has second incomplete runway. https://vietnamairport.vn/buonmathuotairport/en/
Ca Mau	Ca Mau province.	CAH/ VVCM	1,500 m (4,921 ft.)	Asphalt	https://centreforaviation.com/data/profiles/airports/ca-mau-airport-cah
Con Son (Con Dao)	Con Son island	VCS/VVCS	1,830 m (6,004 ft.)	Asphalt	http://www.gcmap.com/airport/VCS
Chu Lai	Tam Ky city, Quang Nam	VCL/VVCA	3,050 m (10,000 ft.)	Concrete	Located in the Chu Lai Open Economic Zone. https://skybrary.aero/airports/vvca
Dien Bien Phu Airport	Dien Bien Phu	DIN/VVDB	1,830 m (6,003 ft.)	Concrete	Serves the northwest region. https://acukwik.com/Airport-Info/VVDB
Dong Hoi	Đồng Hới city, Quang Binh	VDH/ VVDH	2,400 m (7,874 ft.)	Concrete	https://www.vietnamairport.vn/donghoiairport/
Pleiku	Gia Lai province	PXU/VVPK	2,400 m (7,874 ft.)	Asphalt	https://www.vietnamairport.vn/pleikuairport/
Phu Cat	Phu Cat district, Binh Dinh	UIH/VVPC	3,051 m (10,010 ft.)	Concrete	https://centreforaviation.com/data/profiles/airports/qui-nhon-phu-cat-airport-uih
Rach Gia	Rach Gia, Kien Giang	VKG/ VVRG	1,500 m (4,921 ft.)	Asphalt	https://www.vietnamairport.vn/en/rach-gia-airport
Tuy Hoa	Tuy Hoa, Phú Yên	TBB/ VVTH	2,902 m (9,521 ft.)	Concrete	http://tuyhoaairport.vn/
Vung Tau	Vung Tau, Bà Rịa–Vũng Tàu	VTG/VVVT	1,800 m (5,906 ft.)	Unknown	https://airportguide.com/airport/info/VTG
Tho Xuan	Tho Xuan, Thanh Hóa	THD/VVTX	3,200 m (10,498 ft.)	Concrete	Mixed military and civilian airport. Relief airport for Hanoi's Noi Bai. https://skybrary.aero/airports/vvtx

Table 8: Codes and runway lengths for domestic airports in Vietnam

Seaports

Vietnam has a total of 320 ports[318] (seaports and river ports) of which 163 are international ports and 44 are seaports.[319] The three major seaports in Vietnam are Hai Phong (northern region), Da Nang (central region), and Ho Chi Minh City (southern region). With supply chain shifts, shipping demand is increasing. For example, in the first half of 2021, Vietnam's container traffic rose 3% year-on-year while, for example Hong Kong's dropped 8%. Yet, Vietnam ranks 80th among 139 countries according to the World Economic Forum on the quality of port infrastructure, with an average score of 3.8 on a scale of 1 (lowest) to 7 (highest) between 2006 and 2018.[320]

The GVN has developed a plan to invest nearly US$13.8 billion to expand the country's seaport system in the period 2021-2030. The plan aims to increase the system's capacity to handle 1.1-1.4 billion tons of cargo, including 38-47 million twenty-foot equivalent units (TEU) of container cargo and the movement of about 10.1 to 10.3 million passengers. The GVN will continue to promote private sector investment in the development of seaport infrastructure. The master plan will also address shortcomings in the railway and road systems servicing seaports, with investment in a railway network to connect special-class seaports in the North-South

corridor and a national highway system linking special-class seaports.[321]

Vietnam's seaport system is classified into five groups as follows:

- First seaport group: Haiphong, Quang Ninh, Thai Binh, Nam Dinh, and Ninh Binh;
- Second seaport group: Thanh Hoa, Nghe An, Ha Tinh, Quang Binh, Quang Tri, and Thua Thien – Hue;
- Third seaport group: Danang, Quang Nam, Quang Ngai, Binh Dinh, Phu Yen, Khanh Hoa, Ninh Thuan, and Binh Thuan;
- Fourth seaport group: HCMC, Dong Nai, Ba Ria - Vung Tau, Binh Duong, and Long An;
- Fifth seaport group: Can Tho, Dong Thap, Tien Giang, Vinh Long, Ben Tre, An Giang, Hau Giang, Soc Trang, Tra Vinh, Ca Mau, Bac Lieu, and Kien Giang.[322]

Hai Phong

Hai Phong is the main seaport for northern Vietnam and Hanoi. It is in the Red River Delta and located approximately 90 km east of Hanoi. This port is a natural harbor, which has been recently improved by dredging and updating terminals, with further port expansion planned. Northern Vietnam is a hub for electronics, automobiles, and machinery production. In May 2018 the Haiphong International Container Terminal (HICT) deep-water port in Hai Phong opened.[323] The main services offered are container handling, international transshipment, container services, maintenance and repair, and barging transport.[324]

Da Nang

The Da Nang port is the main seaport in Central Vietnam and links Vietnam to Laos, Myanmar, and Thailand.[325] Da Nang city is developing rapidly as a hub for high tech industries.[326] Currently, Da Nang port includes the main port area, managed by Tien Sa Port Enterprise, and its member companies, who own nearly 1,700 m (1 mi) of berths with the capacity to receive general cargo ships up to 70,000 deadweight tonnage (DWT), container ships up to 4,000 TEUs and passenger ships up to 170,000 gross tonnage (GT), along with modern handling and storage facilities.[327]

Ho Chi Minh City

The HCMC port network of ports including the Saigon port is currently the 26th biggest container port in the world and the fifth biggest in ASEAN.[328] The Cai Mep-Thi Via Port (Cai Mep) is a deep-water port located around 80 km (49.7 mi) south of HCMC. Cai Mep mostly handles goods for Dong Nai and Binh Duong, which are major production centers in the southern region, and is a key route to the U.S. and EU because of its deep-water capabilities.[329]

Roads

Vietnam currently has an estimated 195,468 km (12,1458 mi) of roads with 76% of it paved.[330] The most common forms of motorized travel are motorbikes and scooters. The bicycle is also a common mode of transportation in Vietnam. Vietnam is now the world's fourth-largest motorcycle market after China, India, and Indonesia. There are extensive networks of subsidized bus services in HCMC and Hanoi in order to combat inner city traffic congestion, and all major cities have public and private taxi services. A large informal transport network in the cities, consisting of "xich lo" (pedicabs), "xe om"' (motorbike taxis), and "xe lam" (ageing Lambretta people carriers) transport people where they need to go.[331]

On 1 September 2021, the GVN approved a plan to build an estimated 5,000-9,000 km (3,107-5,592 mi) of expressway to connect Vietnam's economic and political centers, key economic regions, seaports and international airports. Concurrently, national highways will be gradually upgraded from 2021 to 2030.[332]

To increase the resilience of rural roads to natural disaster, particularly flooding, the GVN and international partners such as the World Bank have invested in climate resilient designs, including using flood proofing pavement materials, protective structures, and road drainage systems for low volume rural roads. The GVN has also enacted climate resilient

maintenance, including tree planting along rural roads.[333] Photo 7 depicts a rural road in Da Lat, Lam Dong province.[334]



Photo 7: Da Lat, Central Vietnam

Railways

The rail system in Vietnam was built during the French colonial period over 140 years ago and is outdated.[335] Vietnam's rail system has faced chronic under investment, with only 3% of the infrastructure budget allocated to rail compared to roads, which receive 90% of the budget.[336] The current railway system is a total of 2,600 km (1,615.6 mi), with 2,169 km (1,347.8 mi) being narrow gauge (1m or 3 ft 2 in), 178km (110.6 mi) standard gauge (1.4 m or 4 ft 7 in), and 245 km (152 mi) is mixed gauge.[337]

The GVN plans to build nine new railway routes, running 2,362 km (1467.7 mi) during the period 2021 to 2030. The longest route would run from Hanoi to HCMC, covering 1,545 km (960 mi). The MOT has proposed two sections be prioritized on this route: Hanoi to the central city of Vinh; and HCMC to the central town of Nha Trang. These routes will be serviced by high-speed rail with trains travelling up to speed of 350 km/h (960 mi).The railway sector aims to transport 11.8 million tons of goods annually by 2030, being 0.27% of total goods transported, and 460 million passenger, being 4.4% of passengers transported annually.. The total capital needed for these projects accumulates to US$10.3 million, set to come from the State budget and private investors.[338]

The GVN has also been planning an international railway route to southern China since 2008. On 25 November 2019 Vietnam and China announced a plan to refurbish a colonial-era railway between the two countries. The route will connect Hai Phong through Hanoi to Lao Cai to Kunming in China's southern Yunnan province. However, re-establishing the railway system requires upgrading Vietnam's narrow gauge with the standard gauge used in China. Cost is also the other major factor.[339]

Increased costs have delayed the Hanoi Urban Metro Project. The project was approved in November 2008 and entails building a metro system of 11.5 km (7 mi). The cost is estimated at US$838 million with ODA from Japan as reciprocal capital. Hanoi Urban Railway Management Board is the main investor. The project marked for completion in 2017, has been delayed due to rising costs.[340] The project is now slated for completion in 2021.[341]

Waterways

Waterways play an important role in the transportation of people and goods in Vietnam. The most important networks are those formed by the Mekong River and Red River tributaries. The country has over 47,130 km (2,9285 mi) of waterway.[342] The Vietnam Inland Waterway Administration (VIWA) estimates that inland waterways carry about 17.8% of cargo and 4.7% of passengers; making it the second most used transportation system after roads. For example, inland waterways carry nearly 200 million tons per annum or 18% of freight transport in Vietnam.[343] However, inland water ways has attracted the least state investment, receiving

an estimated 1% of total transport investment. Inland waterways will attract further investment under the GVN's plan to spend US$43-65 billion on roads, rail, inland waterways, sea, and air transport infrastructure during the period 2021-2030.[344]

Schools

According to statistics reported by the Ministry of Education and Training (MOET) in 2018, there were over 15,000 preschools, 14,437 primary schools, 10,091 lower secondary schools, 436 secondary schools, 2,398 upper secondary schools, and 236 universities or institutions of higher education in Vietnam.[345] The majority of schools are public. There are a growing number of private schools driven by Vietnam's growing expat community and the expansion of international schools, mostly in HCMC, as well as Hanoi, Hoi An, and Da Nang.[346]

Disaster Risk Reduction in the Education Sector

In 2018, the MARD and MOET launched a five-year program (2018-2023) to strengthen schools' preparedness for natural disaster. The program aims to integrate disaster preparedness into the school system through disaster education for students, teachers, and communities. MOET will develop teaching materials that target different regions and ages of children to be incorporated into the regular school curriculum and extracurricular activities.[347]

VNRC has worked with MARD and MOET, and through the informal networks of the Disaster Management and Climate Change Working Groups, to promote CBDRM, risk reduction and adaptation, EWS, and safer schools with the provincial departments of MARD and MOET, respectively. VNRC has also promoted the establishment of Natural Disaster Management Boards in Schools, which will coordinate DRM efforts with the commune/ward CCNDPC/SAR, to further expand the CBDRM network.[348]

A number of international partners have supported Vietnam to integrate DRM into schools. The Guidelines on Safe School Framework for natural disaster prevention in Vietnam was developed by MOET, in cooperation with Plan International and UNICEF in early 2019. The guidelines comprise three pillars: (1) Safe Learning Facilities, (2) School Disaster Management, and (3) Risk Reduction and Resilience Education. Interventions under all three pillars will be aimed at protecting students, school staff, and school assets from the adverse impact of natural disasters, ensuring continuous access to education even at times of emergencies, and building up disaster risk reduction and resilience of school communities through education.[349]

Communications

Fixed-landlines and Mobile Cellular Phones

Fixed-landline subscriptions continue to decline in Vietnam with the growth in mobile cellular subscriptions. In 2020, there were about 3 million fixed-line telephones subscriptions.[350] In comparison, almost all households in Vietnam own a mobile phone. There were over 138 million mobile cellular phone subscrptions or 142.73 per 100 people in 2020.[351] Vietnam has three major providers of telecommunications - Viettel, which is owned and operated by the MOD; Vinaphone, a subsidiary of the Vietnam Posts and Telecommunication Group (VNPT); and MobiFone, which split from VNPT and is managed by the Ministry of Information and Communication (MIC). The three operators account for 93% of total mobile connections.[352]

Internet Access

Most households in Vietnam are using the internet, with internet penetration in 2020 at 70.9% of the population.[353] In 2020, fixed broadband subscriptions topped 16 million connections.[354]In addition, over 3 million people use secure internet servers.[355] However, quality of internet access is not uniform, with poor households in mountainous areas having limited 3G/4G signals, which restricts access to internet services. Far fewer rural households own a computer compared to their urban counterparts,

and even fewer poor households own a computer, because of the high cost. Internet speed is slow, with 4G not yet universal.[356] In December 2020, the MIC announced plans to introduce 5G services by mid-2021. The roll out will be prioritized in major cities, such as Hanoi, HCMC, and Da Nang, given their denser population.[357] In early 2021, major providers began to expand their ongoing trial 5G services to more providers.[358]

Mass Media

The mass media in Vietnam is comprised of newspapers, radio, television, and online sites. The government controls all broadcast media exercising oversight through the MIC. Government-controlled national TV provider, Vietnam Television (VTV), operates a network of channels with regional broadcasting centers; programming is relayed nationwide via a network of provincial and municipal TV stations. Vietnam law limits access to satellite TV, but many households are able to access foreign programming via home satellite equipment. The government-controlled Voice of Vietnam, the national radio broadcaster, broadcasts on several channels and is repeated on AM, FM, and shortwave stations throughout Vietnam. Although social media is widely used in Vietnam, the government curtails political content.[359]

Messaging applications

Messaging applications such as Zalo, Telegram, Facebook Messenger, Viber, WhatsApp, and WeChat are widely used. In 2019, the most popular messaging app was Facebook Messenger, used by 70% of people using chat applications. In 2021, a number of online sources ranked Zalo, a local provider, as the most popular messaging site, with 80% of chat application users.[360]

Post

Vietnam Posts and Telecommunications Group (VNPT) is responsible for running the national post office. At the regional level, however, the postal system is controlled by Vietnam Post. Every city or province of Vietnam has one central post office and many minor post offices. Many post offices have facilities for express mail services.[361] FedEx, DHL, and UPS are also available and accessible from major cities.[362] Amazon does ship to Vietnam, with shipping costs.[363]

Utilities

Power

In 2019, 99.4% of the population had access to electricity in Vietnam.[364] In urban areas there is 100% electricity access. In rural areas, the rate is 99%. The main electricity provider is the state-owned Vietnam Electricity Company (EVN), which is regulated by the Ministry of Industry and Trade. EVN manages and operates the national electricity network throughout the country. Since one-third of Vietnam's electric transmission and distribution grid are in forested areas, they are vulnerable to falling trees during storms causing power outages.[365]

Water and Sanitation

Responsible authorities

Three different ministries in Vietnam manage water, sanitation, and hygiene (WASH). The Ministry of Construction manages urban water supply and sewerage; the MARD oversees rural water supply; and the Ministry of Health (MOH) is responsible for rural sanitation and hygiene. State-owned provincial Water Service Companies (WSC) provide water in cities and some larger towns. Provincial WSCs have evolved from a centralized national water supply organization since the 1990s. Sewerage and wastewater treatment in cities is the responsibility of provincial urban environmental companies. In small towns and rural areas service providers include the provincial branch of the National Center for Rural Water Supply and Sanitation, directly managed by the town-level People's Committee; community management; agricultural Cooperatives; and other state-owned enterprises; and private water companies.[366]

Access to WASH services

Vietnam has made significant improvements in the provision of WASH services. Access to improved water supplies increased from 65% of the population in 2000 to 95% in 2017, while access to sanitation rose from 52% to 84% in the same period.[367] In 2000, the GVN developed the National Rural Clean Water Supply and Sanitation Strategy to 2020 with support from WHO, UNICEF, the World Bank, and other international organizations. The Strategy sets the foundation for all government agencies to work towards universal access to water and sanitation, going beyond the target set by the Millennium Development Goals (MDG).[368] For example, Photo 8 shows water facilities in the Red River Delta developed with support from the World Bank's Program-for-Results (PforR).[369]

However, Vietnam continues to face inequitable access to WASH services. Water service coverage is diminishing in remote and mountainous communities. Poor investment and design, incomplete or low quality constructions, and insufficient operation and maintenance means that one-third of water distribution systems will only be partially functioning or out of commission after five years in operation.[370]

A rapid assessment conducted by UNICEF in August 2020 found that severe drought and saltwater intrusion in 13 provinces of the Mekong Delta region (home to 19 million people; including one-third of whom are children) exacerbated the lack of access to clean water for most disadvantaged groups. Some 95,000 households lacked safe drinking water during the drought, and 35% of commune health stations in Dien Bien, Gia Lai, Kon Tum, and Ninh Thuan reported insufficient or unsafe drinking water.[371]

Women in rural communities face discrimination and challenges accessing WASH services. Clean water, basic toilets, and good hygiene practices remain a challenge for children living in rural communities. According to a February 2020 policy brief by UNICEF, open defecation is still practiced by an estimated 10.7 million people (10.15 million in rural areas and 550,000 in urban areas).[372]



Photo 8: Water facilities in the Red River Delta developed with support from the World Bank

HEALTH

Health Care System Structure

Vietnam is on track to achieve Universal Health Coverage (UHC). Vietnam's UHC index is at 73, which is higher than regional and global averages, with 87% of the population covered.[373] Vietnam has a mixed public-private healthcare system. The public system is organized across four-levels – national, provincial, district, and communes. There are three major levels of service – primary level under districts and communes, secondary level under provinces, and tertiary level under tertiary hospitals under the central government. Vietnam has 47 hospitals at the central-level, 419 hospitals at the provincial-level, and 684 district-level hospitals. In addition, there are 182 private hospitals mostly located in urban areas.[374] From 2018, public hospitals, mostly at the provincial and central level, have been operating autonomously; they are no longer dependent on the direct budget subsidy for their operating cost. Figure 16 depicts the structure of the healthcare system in Vietnam.[375]

Central-Level

The MOH carries out the state management of healthcare protection and promotion, including preventive medicine, curative care, rehabilitation, traditional medicine, prophylactic and treatment drugs, cosmetics, food safety and hygiene, oversight of medical equipment, and management of public services under ministry control.

Provincial-Level

The provincial health department is managed by the Provincial People's Committee, and works to advise the Provincial People's Committee on the state management of local healthcare protection and promotion. The provincial health department performs tasks and duties as authorized by the Provincial People's Committee and legal regulations. The Provincial People's Committee controls the direction, organizational management, payroll, and operations of the provincial health department. The provincial health department is also under the control of MOH for technical directions, guidance, monitoring, and inspections.

District-Level

The district health bureau is managed by the District People's Committee, and works to advise the District People's Committee on the state management of local healthcare protection and promotion. The district health bureau performs designated tasks and obligations as authorized by the District People's Committee and the provincial health department. The District People's Committee controls the district health bureau in terms of direction, organizational management, payroll, and operations. The district health bureau is also under the control of the provincial health department for technical directions, guidance, monitoring, and inspections. At the district level, there are also district hospitals (including polyclinics) and district centers for preventive medicine. The district centers for preventive medicine are now separate from the district health centers and are under provincial health department stewardship and management.

Commune-Level

Commune health centers are the first point of contact with the government healthcare system and provide primary healthcare services, conduct early detection of epidemics, provides care for common diseases and deliveries, mobilize people to use birth control, teach preventive hygiene practices, and manage health promotion. The commune health center is responsible to the district health bureau and the Commune People's Committee for local healthcare protection and promotion, and receives technical guidance from the district hospitals. Commune health centers also supervises village health workers who are active close to homes and worksites. Every village has a village health worker with 3–9 months of training.

Figure 16: Vietnam healthcare structure

Health Strategies and Surveillance

In Vietnam, the healthcare sector is both a responder to natural disasters and highly exposed to the adverse impact of natural hazards. Nearly half of Vietnam's health care facilities are in high-risk flood zones, and in some provinces nearly all of them are exposed to flooding.[376] Storms and floods damage and disrupt the capacity of health systems to respond to health crises and affect the overall quality of, and access to health care.[377]

The MOH and its provincial departments participate in the national DRM system. At the central-level, the MOH is a member of the NSCNDP and is responsible for prevention and responding to climate change-related health issues. For example, MOH has set a threshold of 28°C (82.4°F) as a maximum for safe heavy labor.[378] At the local level, district emergency plans for storms and floods are reviewed and updated annually.

The 2008 National Target Program to Respond to Climate Change (NTP-RCC) provides the overarching framework for Vietnam's response to climate change and sets out the directions for the development of both provincial level and sectoral adaptation action plans. The NTP-RCC includes public health as a key area of focus. In 2015, the MOH issued a health sector action plan to respond to natural disasters for the period 2015–2020, which provided measures for the health sector to deal with natural disasters by region including the Vietnamese Mekong Delta.[379]

The ADB supported a six-year regional project, ending in 2020, titled Strengthening Resilience to Climate Change in the Health Sector in the Greater Mekong Subregion (GMS). The project helped Cambodia, Laos, and Vietnam to adopt national health adaptation plans to address weather-related health risks like heat-related and communicable diseases such as dengue, malaria, heat stress, and diarrhea.[380]

A 2014 study into the primary healthcare system's capacities in a rural district in Central Vietnam found plans focused largely on disaster response rather than prevention. It also found that the plans lacked clear information on the coordination mechanism among different participating sectors and organizations including the role of primary healthcare in the implementation of the health emergency plan. Moreover, plans did not generally address the needs of vulnerable groups or included gender considerations. The study further identified a gap in budgeting for health emergency plans. Every facility reported that they lacked an emergency plan and that they were passive in responding to disaster problems. Moreover, health facilities did not have specific job descriptions for staff in handling storm and flood-related health problems.[381]

A more recent study in 2018, which aimed to assess the vulnerability and adaptive capacity of the healthcare sector to climate change found that despite high exposure to climate change risks, the adaptive capacity of the health sector remains low. Low capacity was assessed in adaptive strategies including capacity of healthcare staff, improving awareness and capacity of the community, developing and implementing EWS, promoting inter-sectoral and international collaboration, strengthening scientific research, adapting health services to improve management of climate-sensitive diseases, and developing and refining regulations, policies, and mechanisms.[382]

Communicable Diseases

Vietnam is burdened with the following communicable diseases: dengue, malaria, and Japanese encephalitis. Vietnam still battles vaccine preventable diseases including measles, diphtheria, pertussis, and hepatitis B. In addition, the rate of HIV infections is high among people who inject drugs, men who have sex with men, and female sex workers.[383]

Dengue

Climate change is exacerbating the prevalence of dengue. In July 2019, Vietnam recorded 300,000 cases, the highest number of cases in five years. Dengue was at the highest level around the world in that year.[384] In 2020, dengue cases in Vietnam dropped by 66% to 60,525 cases.

Dengue is one of the fastest-spreading mosquito-borne diseases. Worldwide, the incidence of dengue has increased 30-fold over the past 50 years. Climate conditions, unclean environments, unplanned urban settlements, and rapid urbanization can lead to increased mosquito breeding, especially in urban and semi-urban areas.[385]

Malaria

In Vietnam, malaria transmission is concentrated in hilly, forested areas in the southern and central highlands, with the peak risks being from December to February. Vietnam has made significant progress in combatting malaria in the last decade. Malaria cases have dropped by 60% from 11,355 in 2008 to 4,548 in 2017. During the same period, the number of deaths from malaria dropped by 76%.[386]

Tuberculosis

Vietnam is among the highest burden Tuberculosis (TB) countries in the world.[387] TB remains one of the most common communicable diseases. Annually, it is estimated that Vietnam has 17,000 TB deaths. An estimated 180,000 people have active TB each year; 5,000 of those cases are classified as multi-drug resistant (MDR)-TB. Only 52% of persons with TB are provided with treatment. While TB diagnosis and treatment is provided for free, the ultimate patient cost can be equal to as much as to one year of income in Vietnam. This is due to costs associated with hospital stays and additional nutritional needs during treatment.[388]

Measles

Vietnam is a country with a high endemic level of measles and rubella, although the WHO has reported that the measles-containing vaccine coverage rate is more than 90%. In 2018, Vietnam had 1,177 confirmed measles cases, twice as many cases as in 2017. Most cases are related to lack of vaccination due to parents deciding to delay vaccination of their children. In late 2018, the MOH launched an additional measles-rubella vaccination campaign for 4.2 million children aged between 1 and 5 years in vulnerable areas in 57 cities and provinces.[389]

HIV/AIDS

In 2020, there were about 250,000 adults and children living with HIV/AIDS in Vietnam. This is the same estimate for 2019, but higher than the 240,000 estimate in 2018.[390]

Coronavirus Disease 2019 (COVID-19)

Vietnam has experienced "four waves" of COVID-19 since the pandemic began in January 2020. When the first cases of COVID-19 in Vietnam were recorded on 23 January 2020 ("first wave"), the government responded swiftly imposing strict border controls and restrictions on travel. This helped to mitigate the spread of the virus and, following a hard lockdown in April 2020, the country was able to re-open in May 2020.[391] The "second wave" of COVID-19 occurred from 25 July 2020, when community transmission rose, and the country experienced its first death from COVID-19.[392] Social distancing measures and restrictions were imposed in affected areas. The "third wave" began in January 2021 following the identification of an individual infected with the Alpha variant of the virus.

By July 2021, Vietnam, like most of the world, was impacted by the more contagious Delta variant ("fourth wave"), and the government ordered another hard lockdown from August until the end of September 2021.[393] Before Delta's arrival, the country had recorded fewer than 3,000 cases and 35 deaths over 15 months. But by July 2021, the new case numbers surged to thousands daily and the spread was increasingly hard to control. The highest (to date) single-day record of 9,684 cases on 8 August 2021 is equivalent to four times the number of all cases in Vietnam in all of 2020.[394]

According to the Johns Hopkins database, Vietnam had 939,463 reported cases and 22,283 reported deaths from the start of the pandemic with 26% of the population vaccinated as of 3 November 2021.[395] Since the start of the

pandemic, Vietnam has had about 694 cases per 100,000 residents, better than neighbors such as Singapore and Malaysia, who experienced over 3,000 and 7,000 cases per 100,000, respectively. Yet, in the face of the highly contagious Delta variant, Vietnam's lagging vaccination rate, one of the lowest in the region, may slow the lifting of lockdown restrictions.

Vietnam COVID-19 Response

Despite its high exposure to COVID-19, Vietnam has performed remarkably well in mitigating COVID-19 risks. The UN in Vietnam has assessed Vietnam's COVID-19 response to demonstrate national preparedness, prevention, and control, with a low number of cases and deaths despite a shared border with China, the original epicenter of the virus.[396]

Vietnam launched a response plan on 15 January 2020 with the convening of a COVID-19 focused National Steering Committee chaired by Deputy Prime Minister Vu Duc Dam. Vietnam then issued a National COVID-19 Response Plan on 20 January and updated it on 31 January. The aim of the plan was to detect and contain COVID-19 infections to minimize the incidence of illness and death from the disease. Central and local government budgets and social health insurance were mobilized to cover the costs of the national response plan and to ensure that out of pocket payments would not be an obstacle to personal safety, testing, tracing, quarantine, and treatment for the disease.[397]

Vietnam also was one of the few countries in the world able to mitigate the economic impact of the COVID-19 virus, recording GDP growth in 2020 during a year that saw economies contract around the world. In April 2020, the government issued a VND 62 trillion (equivalent to US$2.6 billion) social protection package for cash support to the most vulnerable people and workers that had lost their jobs during April to June 2020. The government also provided affected enterprises with credit at zero/low interest rates to pay workers' salaries. In addition, the GVN embarked on an expansionary fiscal stance to strengthen its national health systems, shore up the local economy, and provide income assistance to the most vulnerable and impoverished.[398]

Non-Communicable Diseases

According to the U.S. Centers for Disease Control and Prevention (CDC), the top six causes of death in Vietnam are non-communicable diseases (NCD): cardiovascular diseases, neoplasms, diabetes and kidney diseases, respiratory infections and TB, chronic respiratory diseases, and digestive diseases.[399] The increase of these NCDs are related to risk factors such as smoking, harmful use of alcohol, unhealthy nutrition, lack of physical activity along with an increase in obesity and people who are overweight, hypertension, hyperglycemia, and dyslipidemia.[400]

The rate of NCDs detected, treated, and managed in the community is still modest; the health service delivery system has not been able to meet demand.[401] Figure 17 shows the CDC's list of the top ten causes of death in Vietnam, with the top six being NCDs.[402]

Vietnam Top 10 Causes of Death

1. Cardiovascular Diseases
2. Neoplasms
3. Diabetes & Kidney Diseases
4. Respiratory Infections & TB
5. Chronic Respiratory Diseases
6. Digestive Diseases
7. Unintentional Injury
8. Transport Injury
9. Neurological Disorders
10. Self-harm and Violence

Figure 17: CDC list of the top ten causes of death in Vietnam

WOMEN, PEACE, AND SECURITY

In 2020 Vietnam played a key role in advancing the global Women, Peace, and Security (WPS) agenda. To commemorate 25 years of the Beijing Platform for Action on Women's Empowerment and the 20th anniversary of the landmark UN Security Council Resolution 1325 on Women, Peace, and Security, Vietnam, a non-permanent UN Security Council member (2020 – 2021) hosted the International Conference on Women, Peace, and Security titled Strengthening Women's Role in Building and Sustaining Peace: from Commitments to Results on 7-9 December 2020 in partnership with the UN, led by UN Women and the UN Resident Coordinator's Office in Vietnam and supporting Member States.[403] Five hundred delegates attended the event from 90 countries.

Tong Thi Phong, First Vice President of the National Assembly of Vietnam stated in support of the event:

"It is a consistent policy of the Party and State of Vietnam to fully promote the immense role and potential of women in our national construction and defense, to raise the standing of women, and to advocate gender equality in every domain: political, economic, cultural and social. These key lines for action have been enshrined in our Constitution, Law for Gender Equality, and numerous laws and policy. We have in place clear strategies and plans for economic and social development, in order to advance women's contributions in making Viet Nam into a modern industrial country by 2045."

The three key outcomes of the Conference included: (1) continued affirmation of commitments and efforts to promote gender equality, women's empowerment, and effective implementation of the four key pillars of the WPS agenda; (2) new initiatives and proposals on how to address the root cause of conflicts, mainstream gender perspectives in conflict prevention and settlement, women's empowerment in different sectors particularly in decision making process, and international cooperation to support the developing countries in achieving the Sustainable Development Goals (SDG); and (3) Vietnam's proposal "Hanoi Action Commitment" stressing the importance of continued implementation of the WPS agenda and detailing activities to strengthen women's participation in peace progress and women's empowerment in various sectors. This document received support from 11 nations present at the conference, namely Estonia, Finland, Mexico, Malaysia, Laos, New Zealand, Norway, the United Kingdom, Sweden, Germany, and Myanmar, and will be introduced to other UN Member States before Vietnam officially submits the Commitment to the UN Secretary-General and Security Council Chair.[404]

Vietnam has a strong track record of supporting efforts to advance gender equality. During its last term as a non-permanent member and president of the UN Security Council (2008-2009), Vietnam held an open debate on WPS, after which Resolution 1889 on Women, Peace, and Security was adopted. This was the first resolution responding to the needs of women and girls in post-conflict periods, which has been a critical foundation for advancing women's participation in peacebuilding on the ground. This was also the first time that Vietnam drafted a UN resolution.[405]

In recent years, Vietnam has increased its engagement in global peacekeeping efforts. In 2017, Vietnam sent the first female staff officer, Major Do Thi Hang Nga to join the UN peacekeeping mission in South Sudan. In 2020, Vietnam had 10 female officers serving in the United Nations Mission in South Sudan (UNMISS). Vietnam's contribution has received commendations from the UN health division based in New York, the heads of the UN health agency, the UN peacekeeping force's medical division, and the UNMISS health department.[406]

CONCLUSION

Vietnam's effective response to the October 2020 historical flooding in Central Vietnam reflects a maturing of the country's disaster management system. Vietnam successfully implemented a whole-of-government response, led by the Prime Minister in coordination with local and international partners. In total, 33 disaster-relief activities were delivered by the central government, and local and international organizations, with around US$20.4 million in disaster relief assistance.[407]

Vietnam's multi-agency approach, led by the VNDMA, is well coordinated with international partners and local and international organizations. From its origins twenty years ago as the Department of Dike Management and Flood Storm Control, VNDMA's mandate has widened to cover the 22 or so different types of hazards identified under the LNDPC. VNDMA serves as a natural disaster management authority all year round. In addition to its state management function, VNDMA became an active responder and implementer of disaster relief assistance. With the establishment of the NDPCF to be managed by the MARD/VNDMA, VNDMA will have more access to non-state resources to carry out its mandate.[408]

Vietnam's National Strategy for Natural Disaster Prevention and Control to 2030, with vision to 2050, sets as a common goal for 2030, the promotion of proactive action to prevent and combat natural disaster, adaptation to climate change, and efforts to minimize the loss of life and property of the State and people, safeguarding security and national defense, and building a safe society against natural disasters. It states the GVN's vision by 2050 for the proactive prevention and control of natural disaster; prompt response to natural disaster; rapid and sustainable recovery and reconstruction; and the creation of conditions for sustainable economic and development.[409]

Beyond national preparedness, Vietnam is contributing to regional disaster risk reduction and preparedness. Vietnam holds regular disaster relief drills with its neighbors including Cambodia, China, and Laos, and participated in the U.S. Navy's Pacific Fleet-led Pacific Partnership in 2018 and 2019, to improve humanitarian assistance and disaster preparedness in the Indo-Pacific region.

Looking forward, responding to climate change will be at the forefront of Vietnam's disaster management policy efforts. The GVN recognizes that climate change, extreme weather, and natural disaster have become increasingly complicated unpredictable and has had adverse impacts on the economy and society.[410] Vietnam has set a target of reducing GHG emissions by 9% by 2030 or by 27% with international support.[411] Yet, Vietnam is one of the fastest growing per-capita GHG emitters in the world – growing at about 5% annually.[412] The CPV's 2020 directive signals there is top-level political will for addressing the challenges of climate change and strengthening disaster management in Vietnam.[413]

At the 2021 UN COP26 Vietnam pledged net zero emission by 2050, to phase out coal-fueled power generation by 2040, and to stop deforestation by 2030.[414] Vietnam's National Climate Change Strategy 2021-2030 outlines the government's prioritization of GHG reduction in the energy, agriculture, land use, forestry, and waste sectors. Vietnam is focusing its adaptation efforts on institutional, political, financial, human resources, and technology gaps.[415]

APPENDICES

DoD DMHA Engagements in the Past Five Years (FY 2016-2021)

Since the normalization of diplomatic relations with Vietnam in 1995, the U.S.-Vietnam relationship has become increasingly cooperative and comprehensive, evolving into a flourishing partnership that spans political, economic, security, and people-to-people ties. The U.S. and Vietnam are committed to strengthening defense cooperation between the two countries as outlined in the Memorandum of Understanding on Advancing Bilateral Defense Cooperation signed in 2011 and the U.S.-Vietnam Joint Vision Statement on Defense Relations signed in 2015, giving priority to humanitarian cooperation, war legacy issues, maritime security, peacekeeping, and humanitarian assistance and disaster relief.[416]

The list below describes U.S. Disaster Management and Humanitarian Assistance (DMHA) engagements with Vietnam in the last five years. Due to travel restrictions and other COVID-19 precautions, annual programs such as the Pacific Partnership and Pacific Angel (PAC ANGEL) program did not take place in Vietnam in 2020 and 2021.

Secretary of Defense Austin's Visit to Vietnam, July 2021

Defense Secretary Austin travelled to Vietnam on 21 July 2021 to meet with Vietnam President Nguyen Xuan Phuc, Prime Minister Pham Minh Chinh, and National Defense Minister Phan Van Giang. During his visit, Secretary Austin highlighted the U.S. support to Vietnam in combatting COVID-19, including the donation of 5 million doses of the Moderna vaccine. The meetings also included discussion of the Vietnam Wartime Accounting Initiative between the two countries.[417]

PACAF Surgeon General, Vietnamese Military Medical University, Virtual knowledge exchange, May 2021

In May 2021, Airmen from the U.S. Pacific Air Forces (PACAF) Surgeon General office (SGO) and members of the Vietnamese Military Medical University (VMMU) took part in a virtual knowledge exchange to discuss topics related to aerospace and expeditionary medicine. The exchange highlighted Vietnam's COVID-19 prevention and management initiatives. The discussion also focused on the relation of aerospace medicine and aeromedical evacuation to humanitarian assistance and disaster relief operations.[418]

U.S. Army Corps of Engineers opens dual-use kindergarten in Vietnam, May 2019

Chief of the U.S. Office of Defense Cooperation in Vietnam, Maj. Joshua Rodriguez, presided over a ceremony to inaugurate a 339 square m (3,650 square ft) kindergarten for 320 children on 7 May 2019. The kindergarten was built as part the U.S. Overseas, Humanitarian Disaster Assistance, and Civic Action Program's efforts to construct dual-use disaster shelters, management coordination centers, clinics, bridges, and schools. These efforts strengthen Vietnam's education system as well its ability to respond when disaster strikes. These humanitarian construction projects are part of the U.S. Army Corps of Engineers engagement with partners in the Pacific.[419]

Pacific Partnership, May 2019

In 2019, Vietnam was one of several host nations of the Pacific Partnership. The Pacific Partnership is an initiative of U.S. Navy's Pacific Fleet and was established in the wake of the 2014 tsunami, to improve humanitarian assistance and disaster preparedness in the Indo-Pacific region.[420] The U.S., Vietnam, and partner nations took part in a variety of events, including first-aid and preventive medicine expert exchanges,

various healthcare symposiums, engineering projects, disaster response seminars, and a variety of community outreach engagements.[421]

Secretary of Defense Mattis' Visit to Vietnam, October 2018

U.S. Secretary of Defense Mattis visited HCMC 16-17 October 2018. The visit highlighted the significant growth in the comprehensive partnership between Vietnam and the U.S. Secretary Mattis visited the Bien Hoa Airbase, situated 30 km (18.6 mi) outside of HCMC, to reaffirm the U.S. commitment to contribute to dioxin remediation and address war legacies. USAID, together with the Vietnam MOD, completed a successful five-year, US$110 million effort to clean dioxin-contaminated soil at Da Nang International Airport. There is also a subsequent dioxin remediation project at Bien Hoa Airbase.[422]

PAC ANGEL, September 2018

The U.S. and Vietnam along with other partners worked together to conduct humanitarian assistance engagements on 10-15 September 2021, as part of the Pacific Angel (PAC ANGEL) program in Quang Nam province. PAC ANGEL, now in its 11th year, is an annual U.S.-led joint and combined humanitarian assistance and disaster relief engagement that includes general health, dental, optometry, pediatrics, and engineering programs, as well as various subject-matter expert exchanges (SMEE). The 2018 PAC ANGEL program provided free medical checkups, medicine, and treatment to more than 4,000 Vietnamese who have ophthalmological and dental problems. A SME exchange for woman and infant health took place at the provincial Department of Health, and Reproductive Healthcare Centre in Tam Ky city. The SMEE included the participation of 80 doctors, nurses, midwifes, and other healthcare workers, and focused on early screening of breast and cervical cancer, and global initiatives for breast-feeding while providing updates on birth control methods. Additionally, the other SMEE for NCDs was held at the Preventive Medicine Centre of Quang Nam province, with a focus on theories, techniques, and practices for the control and management of diabetes and hypertension.[423]

PAMS XLII and SELF IV, August 2018

On 20 August 2018, Vietnam and the U.S hosted the 42nd Pacific Armies Management Seminar (PAMS XLII) and the 4th Senior Enlisted Leader Forum (SELF IV). The PAMS seminar is a forum for senior-level land force officers to meet and discuss professional military subjects on a non-attribution basis. SELF is a similar forum for enlisted leaders and warrant officers in the region to meet for an open and candid dialogue to share lessons learned, build and maintain relationships, and provide understanding for what each force can and cannot provide during crisis situations. The event in 2018 marked the first time Vietnam co-hosted the PAMS seminar with the U.S. The theme of both the PAMS and SELF are "Cooperation among Indo-Pacific Land Forces in Humanitarian Assistance/Disaster Response (HADR)." Topics covered included Land Forces' Initial Responses to HADR, Multilateral Cooperation, and Enhancing Roles in Regional Cooperation for HADR and Search and Rescue.[424]

Rim of the Pacific (RIMPAC), July 2018

In July 2018, Vietnam participated for the first time in the RIMPAC military exercise. Vietnam sent observers in 2012 and 2016. RIMPAC is a biennial event hosted by the U.S. and its allies and partners in and around the Hawaiian Islands and Southern California. RIMPAC is the world's largest international maritime exercise.[425]

Secretary of State Pompeo's Visit to Vietnam, July 2018

U.S. Secretary of State Pompeo met with General Secretary of the CPV Nguyen Phu Trong, Prime Minister Nguyen Xuan Phuc, and Deputy Prime Minister and Foreign Minister Pham Binh Minh on 8 and 9 July 2018 in Hanoi. The U.S. Secretary of State and Vietnamese leaders affirmed their shared

interest in upholding peace and security in the South China Sea, and their shared concerns over militarization and the adherence to international law. Vietnamese leaders welcomed a strong U.S. role in ensuring stability in the South China Sea.[426]

Pacific Partnership, May-June 2018

As the U.S. Navy Pacific Fleet's signature HADR engagement program, the mission worked in Vietnam in 2018 as the first year of a five-year mandate of disaster preparedness engagement. The mission took place from 17 May to 2 June in Nha Trang, Vietnam, and included a range of activities with the hospital ship U.S Naval Ship (USNS) MERCY and the USNS BRUNSWICK acting as the base for engagement. The comprehensive engagement program delivered a range of HADR activities including side-by side medical engagements, engineering projects focused on disaster response infrastructure, and HADR related SMEE based on refining local to regional level response SOPs. The mission window was expanded in response to work done in support of infrastructure repairs to community buildings damaged during Typhoon Damrey which affected Nha Trang in November 2017.[427]

Exercise Pacific Endeavor, MCIP, 2013-2018

Pacific Endeavor is a communications exercise under the Multinational Communications Interoperability Program (MCIP) to develop common communications operating procedures to enable military forces in the Asia-Pacific region to work collectively in the wake of a disaster. Pacific Endeavor began in 2005 and focuses on establishing rapid and effective interoperable communication systems to jointly act in disaster relief operations. Pacific Endeavor consists of Interoperability Assessments, testing and validating Multinational Force (MNF) Standard Operating Procedures (SOP), Chapter 6, multinational coordination center (MNCC) concept in scenario based field training exericse (FTX) exercising host nations emergency communications plans, Cyber Endeavor (Cyber Security Training with Cyber Range), Spectrum Endeavor (Spectrum Management during HADR), SATCOM Endeavor (Very Small Aperture Terminals (VSAT) training with Certification from the Global VSAT forum), and the Pacific Senior Communicator Meeting (PSCM), flag level officers from all participating nations and U.S. Components. Below is a list of MCIP involvement in instructing and sharing information through Exercise Pacific Endeavor, the capstone event of MCIP from 2013 to 2018 by Vietnam:[428]

- 2017: SATCOM and Cyber Endeavor participants. Data Systems to validate standard data network for MNCC operation. Data and Cyber Security SME, Corporate Board and PSCM.
- 2018: Spectrum and Cyber Endeavor participants, High Frequency (HF)/Data SMEs (2) with HF/ Data systems, Corporate Board and PSCM.
- 2016: One SATCOM and one Cyber Endeavor participant. Vietnam provided a Data SME to the Data Technical Working Group to Co- Chair, HF/Data System for Interoperability Assessments and FTX, Corporate Board and PSCM
- 2015: Vietnam hosted the first Planning Staff Workshop for PE15 cycle with 22 nations present. Cyber and Spectrum SMEs provided instruction on Cyber Security and Spectrum management to 30 Vietnam military personnel. They also provided a Data SME to Chair the Data Technical Working Group responsible for all data systems planning for PE15. One Cyber Endeavor and one Spectrum Endeavor participant, and one Radio SME with HF/Data systems
- 2014: Cyber Endeavor, Spectrum Endeavor, SATCOM Endeavor participants, Corporate Board, Pacific Senior Communicator. Very High Frequency (VHF) radio systems for interoperability assessments and FTX.
- 2013: Cyber Endeavor Participant, and Corporate Board member and Pacific Senior Communicator

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

The Vietnam MARD and U.S. Army Pacific (USARPAC) hosted the Lower Mekong Initiative Disaster Response Exercise & Exchange (LMI DREE) in Hue, Vietnam, on 5-9 December 2017. The four-day LMI DREE is an annual U.S. Pacific Command sponsored, multi-national exercise intended to enhance integrated sub-regional cooperation between the governments of Cambodia, Lao PDR, Myanmar, Thailand, Vietnam, and the U.S. in the areas of connectivity, education, energy security, environment, water, food security, agriculture, and health. The focus of the 2017 LMI DREE was flood response in the Lower Mekong region. The LMI DREE included working groups, panel sessions and interactive events, site survey, and a TTX.[429]

PACANGEL, September 2017

From 5 to 18 September 2017, the VPA and U.S. forces, along with several NGOs, came together for PACANGEL 17-2. PACANGEL consists of several humanitarian assistance and disaster relief activities including medical health services outreach, engineering assistance programs, and SMEE. SME exchanges took place at medical facilities in Tam Ky and the Vietnam Air Defense Air Force Search and Rescue Center in Hanoi. The exchange covered a variety of medical specialties including control and prevention of vector-borne diseases, emergency maternal and fetal care, and medical aspects of water survival and management of metabolic syndromes.[430]

Oregon National Guard Disaster Management Engagement Activity, August 2017

Members of the Oregon National Guard's Chemical, Biological, Radiological, Nuclear and Explosives (CBRNE) Enhanced Response Force Package (CERFP) participated in a DMHA activity in August 2017 in Hanoi, Vietnam. During the training, SMEs from Oregon's CERFP team and VINASARCOM shared concepts and best practices in the medical and chemical triage fields. Troops from both nations were able to develop professional relationships and to work together as one team during a simulated disaster event. The partnership between the Oregon National Guard and VINASARCOM began in 2012 as part of the U.S. National Guard Bureau's State Partnership Program. This program pairs states with countries around the world to support security cooperation between the U.S. and other nations. Building and maintaining capabilities as emergency managers in times of humanitarian assistance and disaster relief promote stability, prosperity, and domestic resiliency in the Pacific region.[431]

US-Vietnam Disaster Response Table Top Exercise, May 2016

In May 2016 VINASARCOM hosted the CFE-DM for the first-ever U.S.-Vietnam Disaster Response and Civil-Military Coordination Table Top Exercise (TTX), which was held in Hanoi, Vietnam. The TTX provided an opportunity for countries' military and civilian organizations to identify solutions to interoperability, best practices, and to share lessons learned. The TTX supported collaboration in the shared interest of the U.S. and Vietnam. The four-day event included participants from the VPA, the U.S. Embassy, U.S. Pacific Command, Oregon National Guard, OCHA, AHA Centre, and USAID. Approximately 150 Vietnamese senior leaders and disaster response stakeholders and almost 40 U.S. participants responded to a simulated super typhoon exercise which caused severe damage to several northern and central provinces. The training focused on maritime SAR, urban SAR, chemical spill response, and medical assistance and field hospital deployment.[432]

Cobra Gold, February 2016

Vietnam sent army personnel to join the Cobra Gold military exercise as an observer. The VPA does not traditionally conduct military exercises with foreign powers. The objective of the multinational exercise is to foster military

ties among the countries involved, enhance the capacity in the joint military operation, and practice guidelines for multinational forces.[433]

International/Foreign Relations

Vietnam has comprehensive partnerships with 13 nations, including the U.S. and Australia.[434] In addition, Vietnam has strategic partnerships with 17 countries including China, Russia, and India, with the relationship described as a hybrid comprehensive strategic partnership.[435]

The Political Report of the 13th Party Congress, held 25 January to 1 February 2021, emphasized Vietnam's longstanding foreign policy doctrine of independence, self-reliance, diversification, and multilateralism. It also reaffirmed the "four nos" of Vietnam's defense policy – no alliances, no foreign basing on its territory, no alignment with a second country against a third, and no use of force or no threat to use force in international relations. The report highlighted a new development in Vietnam's foreign policy. It emphasizes the pioneering role of diplomacy in preserving national sovereignty and territorial integrity, and that diplomacy should play a more central role in national development and defense.[436]

In 2014, Vietnam laid out a policy for international integration and multilateral diplomacy. Vietnam sought to transform its multilateral diplomacy posture from active participation to proactive contribution to shaping the rules of the game, which it continues to build on.[437] Since then, Vietnam has taken on leadership roles in international forums. Vietnam hosted the Asia-Pacific Economic Cooperation (APEC) forum in 2017, the World Economic Forum on ASEAN in 2018, the 26th Annual Meeting of the Asia-Pacific Parliamentary Forum in 2018, the summit between the U.S. and the Democratic People's Republic of Korea (DPRK) in 2019, chaired ASEAN and the ASEAN Inter-Parliamentary Assembly in 2020, and was a non-permanent member of the UN Security Council for 2020-2021.[438]

Vietnam's strategic interests in the South China Sea (referred to locally as the East Sea) continue to be a key foreign policy priority. Vietnam mobilizes international support to oppose unilateral infringement, advocate the settlement of disputes through peaceful measures in line with international law, and seeks to maintain stable relations with neighbors.[439] Vietnam also prioritizes the management of its common land borders with Cambodia, China, and Laos.[440] Vietnam regularly holds disaster relief drills with its neighbors, Cambodia, China, and Laos.[441]

The U.S. and Vietnam have had a comprehensive partnership since July 2013. Since the normalization of relations with Vietnam in 1995, the U.S.-Vietnam relationship has grown to span political, economic, security, and people-to-people ties. In 2020, Vietnam and the U.S. commemorated 25 years of diplomatic relations between the two countries. The trajectory of U.S and Vietnam military ties is positive but incremental. While the U.S and Vietnam share security and other concerns about China, Vietnam is careful not to overly provoke China. There are comprehensive deep ties between Vietnam and its neighbor.[442]

Participation in International Organizations

Table 9 is a list of international organizations and forums that Vietnam participates in.[443]

UN peacekeeping missions that Vietnam is contributing personnel to, as of 30 September 2021, include:[444]

- UN Mission in Republic of South Sudan (UNMISS) – 68 total personnel; 63 medical troops; four experts, one staff officer. Vietnam's contingent completed their mission in October 2021.
- UN Multidimensional Integrated Stabilization Mission in the Central African Republic (MINUSCA) – seven total personnel; six staff officers; and one expert.

ADB	Asian Development Bank
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
ASEAN ARF	ASEAN Regional Forum
BIS	Bank for International Settlements
CD	Conference on Disarmament
CICA	Conference on Interaction and Confidence Building Measures in Asia
CP	Colombo Plan
EAS	East Asia Summit
FAO	Food and Agriculture Organization
G-77	Group of 77
IAEA	International Atomic Energy Agency
IBRD	International Bank for Reconstruction and Development
ICAO	International Civil Aviation Organization
ICC	International Chamber of Conference
IDA	International Development Association
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IFRC	International Federation of Red Cross and Red Crescent Societies
IHO	International Hydrographic Organization
ILO	International Labour Organization
IMF	International Monetary Fund
IMO	International Maritime Organization
IMSO	International Mobile Satellite Organization
INTERPOL	International Criminal Police Organization
IOC	International Olympic Committee
IOM	UN International Organization for Migration
IPU	Inter-Parliamentary Union
ISO	International Organization for Standardization
ITSO	International Telecommunications Satellite Organization
ITU	International Telecommunications Union
ITUC	International Trade Union Confederation (NGOs)
MIGA	Multilateral Investment Guarantee Agency
NAM	Non-Aligned Movement
OPCW	Organization for the Prohibition of Chemical Weapons
PCA	Permanent Court of Arbitration - joined October 2021
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNESCO	UN Educational, Scientific, and Cultural Organization
UNHCR	UN High Commissioner for Refugees
UNIDO	UN Industrial Development Organization
UNWTO	World Tourism Organization
UPU	Universal Postal Union
WCO	World Customs Organization
WFTU	World Federation of Trade Unions (NGOs)
WHO	World Health Organization
WIPO	World Intellectual Property Organization
WMO	World Meteorological Organization
WTO	World Trade Organization

Table 9: List of international organizations and forums in which Vietnam participates

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 Vietnam (www.fcg.pentagon.mil). All official travel and personal travel for active duty personnel must be submitted through an Aircraft and Personnel Automated Clearance System (APACS) request. Contact information for the Defense Attaché Office can be found in the FCG if you have additional questions.[445]

Passport/Visa

Country entrance requirements for U.S. citizens include a valid passport and a visa (or pre-approval for a visa on arrival) to enter Vietnam. Your passport must be valid for six months beyond your planned stay, and you must have at least one blank visa page.[446]

Safety and Security

Vietnam's chaotic traffic is a major safety concern. Safety standards in Vietnam are not at the same level as those in the U.S. and vary greatly from company to company and province to province. This is especially true in regard to fire codes. Travelers should be aware that many buildings, including hotels, shops and restaurants, have limited or no safety equipment or emergency exits. Ground and water transportation also lack safety regulations.[447]

Violent crime against foreigners is rare; however, petty crimes, such as theft and pick pocketing occur regularly, especially in crowded areas and tourist locations. Typically, there is a rise in petty crime during the Christmas and Tet (Lunar New Year) holiday seasons, including during the day and in well-lit areas. Motorcyclists are known to snatch bags, cameras, cell phones, and other valuables from pedestrians or passengers riding in "cyclos" (pedicabs) or on the back of motorcycles, sometimes using a sharp weapon such as a knife to cut bag straps.[448]

Offenders might also use a knife to threaten and rob you while you are withdrawing money from an ATM. If thieves target you, do not resist, and report the incident immediately to local police and to the U.S. Embassy in Hanoi or the U.S. Consulate General in Ho Chi Minh City.[449]

Emergency Contact Information

U.S. Embassy Hanoi - Consular Annex
170 Ngoc Khanh
Ba Dinh District
Hanoi, Vietnam
Telephone:
From outside Vietnam: +84-24-3850-5000
From the U.S.: 011-84-24-3850-5000
From landline within Hanoi: 3850-5000
From mobile or landline within Vietnam: 024-3850-5000

Emergency:
From outside Vietnam: +84-24-3850-5000 or +84-24-3850-5105
From the U.S.: 011-84-24-3850-5000
From landline within Hanoi: 3850-5000 or 3850-5105
From mobile or landline within Vietnam: 024-3850-5000 or 024-3850-5105
Fax: (+84-24) 3850-5010
Email: *acshanoi@state.gov*

U.S. Consulate General Ho Chi Minh City
4 Le Duan, District 1
Ho Chi Minh City, Vietnam
Telephone:
From outside Vietnam: +84-28-3520-4200
From the U.S.: 011-84-28-3520-4200
From landline within Ho Chi Minh City: 3520-4200
From mobile or landline within Vietnam: 028-3520-4200

Emergency:
From outside Vietnam: +84-28-3520-4200
From the U.S.: 011-84-28-3520-4200
From landline within Ho Chi Minh City: 3520-4200
From mobile or landline within Vietnam: 028-3520-4200
Fax: (+84-8) 3520-4244
Email: Go to *https://vn.usembassy.gov/u-s-citizen-services/acs-inquiry-form/.*

Emergency services within Vietnam
Police: 113
Fire brigade: 114
Ambulance: 115

Currency Information

The currency in Vietnam is the Vietnamese Dong. There is no currency restriction upon entry into Vietnam. However bringing in Vietnamese Dong in excess of VND 150,000,000 or foreign currency in excess of US$5,000 or equivalent must be declared. There is no currency restriction upon exiting Vietnam. However, Vietnamese Dong in excess of VND 150,000,000 or foreign currency in excess of US$5,000 or equivalent must be declared.[450]

Travel Health Information

The U.S. Centers for Disease Control and Prevention (CDC) provides guidance that all travelers to Vietnam should be up to date on routine vaccinations. The following are additional recommendations for travel to Vietnam. The information in Tables 10 and 11 are taken directly from the CDC website under the Travelers Health Section (*https://wwwnc.cdc.gov/travel/destinations/list/*).[451]

Routine vaccines (for all travelers)	Make sure you are up-to-date on all routine vaccines before your trip. Some of these vaccines include • Chickenpox (Varicella) • Diphtheria-Tetanus-Pertussis • Flu (influenza) • Measles-Mumps-Rubella (MMR) • Polio • Shingles
COVID-19	Everyone 12 years of age and older should get fully vaccinated for COVID-19 before travel.
Hepatitis A	You can get typhoid through contaminated food or water. The CDC recommends this vaccine for most travelers, especially if you are staying with friends or relatives, visiting smaller cities or rural areas.
Hepatitis B	Recommended for unvaccinated travelers of all ages to the Vietnam.
Japanese Encephalitis	Recommended for travelers who: • Are moving to an area with Japanese encephalitis to live • Spend long periods of time, such as a month or more, in areas with Japanese encephalitis • Frequently travel to areas with Japanese encephalitis Consider vaccination for travelers: • 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 • Going to areas with Japanese encephalitis who are uncertain of their activities or how long they will be there • Not recommended for travelers planning short-term travel to urban areas or travel to areas with no clear Japanese encephalitis season.
Malaria	CDC recommends that travelers going to certain areas of the Vietnam take prescription medicine to prevent malaria. Depending on the medicine, 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.
Measles	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.
Polio	A single lifetime booster dose of Inactivated Polio Vaccine (IPV) is recommended for adults who received the routine polio vaccination series as children; the routine series is recommended for unvaccinated or incompletely vaccinated children and adults and those with unknown vaccination status.
Rabies	Rabid dogs are commonly found in Vietnam. If bitten or scratched by a dog or other mammal while in Vietnam, there may be limited or no rabies treatment available. Consider rabies vaccination before your trip if your activities mean you will be around dogs or wildlife. Travelers more likely to encounter rabid animals include • Campers, adventure travelers, or cave explorers (spelunkers) • Veterinarians, animal handlers, field biologists, or laboratory workers handling animal specimens • Visitors to rural areas Since children are more likely to be bitten or scratched by a dog or other animals, consider rabies vaccination for children traveling to the country.
Typhoid	Recommended for most travelers, especially those staying with friends or relatives or visiting smaller cities or rural areas.

Table 10: CDC information for vaccine-preventable diseases

Chikungunya	Mosquito bites can carry chikungunya; there is no prophylaxis. Avoid bug bits.
Dengue	Mosquito bites can carry dengue; there is no prophylaxis. Avoid bug bits.
Hantavirus	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.
Leptospirosis	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.
Schistosomiasis	Schistosomiasis can be spread by wading, swimming, bathing, or washing in contaminated freshwater streams, rivers, ponds, lakes, or untreated pools. Avoid contaminated water.
Tuberculosis (TB)	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.
Zika	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.

Table 11: CDC information for non-vaccine preventable diseases

Health Alerts for Vietnam: At the time of writing this handbook (11 November 2021), the CDC lists Vietnam as a "Level 3" or "high level" country for COVID-19. The agency recommends the following for persons traveling to Vietnam during the pandemic:

- Make sure you are fully vaccinated before traveling to Vietnam. Unvaccinated travelers should avoid nonessential travel to Vietnam.

The following are 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 Vietnam. 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.

Safety and Security

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

Sendai Framework

The Sendai Framework is the global blueprint and fifteen-year plan to build the world's resilience to natural disasters.[452] 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 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.[453]

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 UN World Conference on Disaster Risk Reduction in Sendai, Japan in 2015.[454] 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.[455] Figure 18 shows the Sendai DRR Framework.[456]

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 2020	Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this framework by 2030	Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030

Figure 18: 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 Vietnam are represented in Figure 19 and Table 12.[457] Table 12 provides an overview of the overall challenges and the future outlook statement from the HFA report. The 2013-2015 is the most recent HFA report available for Vietnam.

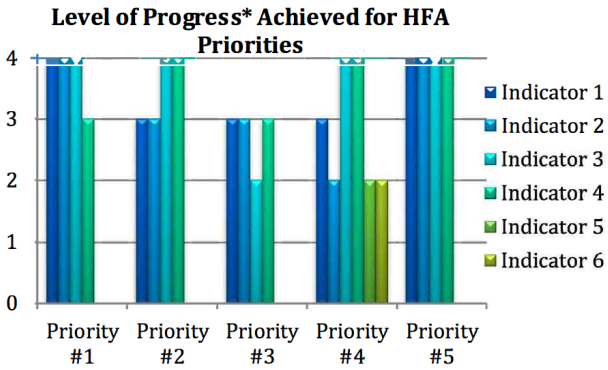


Figure 19: HFA level of progress achieved

Core Indicator*	Indicator Description	Level of progress Achieved*
Priority for Action #1: Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.		
1	National policy and legal framework for disaster risk reduction exists with decentralized responsibilities and capacities at all levels.	4
2	Dedicated and adequate resources are available to implement disaster risk reduction plans and activities at all administrative levels.	4
3	Community participation and decentralization is ensured through the delegation of authority and resources to local levels.	4
4	A national multi sectoral platform for disaster risk reduction is functioning.	3
Priority for Action #2: Identify, assess and monitor disaster risks and enhance early warning.		
1	National and local risk assessments based on hazard data and vulnerability information are available and include risk assessments for key sectors.	3
2	Systems are in place to monitor, archive and disseminate data on key hazards and vulnerabilities.	3
3	Early warning systems are in place for all major hazards, with outreach to communities.	4
4	National and local risk assessments take account of regional / trans-boundary risks, with a view to regional cooperation on risk reduction.	4
Priority for Action #3: Use knowledge, innovation and education to build a culture of safety and resilience at all levels		
1	Relevant information on disasters is available and accessible at all levels, to all stakeholders (through networks, development of information sharing systems, etc.).	3
2	School curricula, education material and relevant trainings include disaster risk reduction and recovery concepts and practices.	3
3	Research methods and tools for multi-risk assessments and cost benefit analysis are developed and strengthened.	2
4	Research methods and tools for multi-risk assessments and cost benefit analysis are developed and strengthened.	3

Table 12: National progress report on the implementation of the HFA

Priority for Action #4: Reduce the underlying risk factors.		
1	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.	3
2	Social development policies and plans are being implemented to reduce the vulnerability of populations most at risk.	2
3	Economic and productive sectorial policies and plans have been implemented to reduce the vulnerability of economic activities.	4
4	Planning and management of human settlements incorporate disaster risk reduction elements, including enforcement of building codes.	4
5	Disaster risk reduction measures are integrated into post disaster recovery and rehabilitation processes.	2
6	Procedures are in place to assess the disaster risk impacts of major development projects, especially infrastructure.	2
Priority for Action #5: Strengthen disaster preparedness for effective response at all levels.		
1	Strong policy, technical and institutional capacities and mechanisms for disaster risk management, with a disaster risk reduction perspective are in place.	4
2	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.	4
3	Financial reserves and contingency mechanisms are in place to support effective response and recovery when required.	4
4	Procedures are in place to exchange relevant information during hazard events and disasters, and to undertake post-event reviews.	4

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 12: 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:	Inter-sectoral coordination for the elaboration and implementation of the plans is still an area that requires further work. This is not only important for DRR but more broadly for sustainable socio-economic development. There is need for improved inter-sectoral coordination in order that plans do not conflict, compromise the effectiveness of other plans to reduce vulnerabilities or indeed through their cumulative effect actually serve to increase disaster risk impacts or vulnerabilities. There is also a need for a more coherent, integrated, structured and holistic approach towards DRM planning as opposed to dealing with specific hazards such as floods individually.
Future Outlook Statement:	The legal documents related to the issue of disaster risk reduction are currently scattered in many different places and further consolidation and coordination in implementation is required. The Law on Disaster Prevention and Control is a strong base to strengthen this process.
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:	Challenges exist in terms of institution building and the implementation of policies, legal documents, projects, programs and activities on DRM. In Vietnam most disasters are water related, and state management of water resources still overlap and are inconsistent. A lack of close collaboration between DRR and Climate Change works persists. Enhanced information sharing, communication and legal requirements are required to ensure closer integration of these two communities.
Future Outlook Statement:	Vietnam's new Disaster Prevention and Control Law (2013) aims to strengthen institutional structures and coordination mechanisms with the intention being to streamline CCA and DRR. It also proposes a new Department for Disaster Prevention and Control within MARD. This will assist considerably with institutional coordination, in ensuring that DRR considerations are better mainstreamed and potentially facilitate inter-sectoral planning and integrated approaches to DRM planning.
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 increased occurrence, intensity and severity of disasters, combined with a rapidly expanding population and economic growth, with cities and towns particularly with more physical assets of greater economic value, has meant that the costs of post-disaster response, recovery and reconstruction are increasing in real terms. A challenge lies in being able to mobilize financial resources and quickly in order that the economy remains on track and that the country is able to grow and develop sustainably.
Future Outlook Statement:	Implementation of national policy will require further investments of resources to ensure that disaster affected communities are able to 'build back better'. A more structured approach to post-disaster recovery and reconstruction is also required for the future, which will necessarily have to include a fairly substantial reform to the way in which post-disaster recovery and reconstruction is currently financed. Improved tools for conducting damage and needs assessments (recently reviewed in the aftermath of disasters) will assist greatly in determining more accurately the required costs for recovery and reconstruction.

Table 13: HFA country progress report future outlook areas, Vietnam

Country Profile

The information in the Country Profile section is sourced directly from the CIA World Fact book for Vietnam. 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.[458]

Background

Ancient Vietnam was centered on the Red River Valley and was under Han Chinese rule until approximately the 10th century. The Ly Dynasty (11th-13th century) ruled the first independent Vietnamese state, which was known as Dai Viet, and established their capital at Thang Long (Hanoi). Under the Tran Dynasty (13th-15th century), Dai Viet forces led by one of Vietnam's national heroes, TRAN Hang Dao, fought off Mongol invaders in 1279. Following a brief Chinese occupation in the early 1400s, the leader of Vietnamese resistance, LE Thai To, made himself emperor and established the Le Dynasty, which lasted until the late 18th century, although not without decades of political turmoil, civil war, and division. During this period, Dai Viet expanded southward to the Central Highlands and Mekong Delta, reaching the approximate boundaries of modern-day Vietnam by the 1750s. Dai Viet suffered additional civil war and division in the latter half of the 18th century, but was reunited and renamed Vietnam under Emperor NGUYEN Phuc Anh (aka Gia Long) in 1802.

The Nguyen Dynasty would be the last Vietnamese dynasty before the conquest by France, which began in 1858 and was completed by 1884. Vietnam became part of French Indochina in 1887. It declared independence after World War II, but France continued to rule until its 1954 defeat by communist forces under Ho Chi MINH. Under the Geneva Accords of 1954, Vietnam was divided into the communist North and anti-communist South. US economic and military aid to South Vietnam grew through the 1960s in an attempt to bolster the government, but US armed forces were withdrawn following a cease-fire agreement in 1973. Two years later, North Vietnamese forces overran the South reuniting the country under communist rule. Despite the return of peace, for over a decade the country experienced little economic growth because of conservative leadership policies, the persecution and mass exodus of individuals - many of them successful South Vietnamese merchants - and growing international isolation. However, since the enactment of Vietnam's "doi moi" (renovation) policy in 1986, Vietnamese authorities have committed to increased economic liberalization and enacted structural reforms needed to modernize the economy and to produce more competitive, export-driven industries. Since implementation, the economy has seen strong growth, particularly in agricultural and industrial production, construction, exports, and foreign investment. Increased tourism has also become a key component of economic growth. Nevertheless, the Communist Party maintains tight political and social control of the country and the country faces considerable challenges including rising income inequality, corruption, inadequate social welfare, and a poor human rights record.

Despite some tensions with Beijing, particularly over rival claims in the South China Sea, China remains Vietnam's most important bi-lateral relationship and is its largest trading partner.

Geographical coordinates

Southeastern Asia, bordering the Gulf of Thailand, Gulf of Tonkin, and South China Sea, as well as China, Laos, and Cambodia

Geographic coordinates

16 10 N, 107 50 E

Map references
Southeast Asia

Area
Total: 331,210 sq km
Land: 310,070 sq km
Water: 21,140 sq km

Land boundaries
Total: 4,616 km
Border countries (3): Cambodia 1158 km, China 1297 km, Laos 2161 km

Coastline
3,444 km (excludes islands)

Maritime claims
Territorial sea: 12 nm
Contiguous zone: 24 nm
Exclusive economic zone: 200 nm
Continental shelf: 200 nm or to the edge of the continental margin

Climate
Tropical in south; monsoonal in north with hot, rainy season (May to September) and warm, dry season (October to March)

Terrain
Low, flat delta in south and north; central highlands; hilly, mountainous in far north and northwest

Elevation
Highest point: Fan Si Pan 3,144 m
Lowest point: South China Sea 0 m
Mean elevation: 398 m

Natural resources
Antimony, phosphates, coal, manganese, rare earth elements, bauxite, chromate, offshore oil and gas deposits, timber, hydropower, arable land

Land use
Agricultural land: 34.8% (2018 est.)
Arable land: 20.6% (2018 est.)
Permanent crops: 12.1% (2018 est.)
Permanent pasture: 2.1% (2018 est.)
Forest: 45% (2018 est.)
Other: 20.2% (2018 est.)

Irrigated land
46,000 sq km (2012)

Major watersheds (area sq km)
Pacific Ocean drainage: Mekong (805,604 sq km)

Major rivers (by length in km)
Mekong (shared with Burma, Laos, Thailand, Cambodia, and China) - 4,350 km; Pearl (shared with China) - 2,200 km; Red (shared with China) - 1,149 km

Population distribution
Though it has one of the highest population densities in the world, the population is not evenly dispersed; clustering is heaviest along the South China Sea and Gulf of Tonkin, with the Mekong Delta (in the south) and the Red River Valley (in the north) having the largest concentrations of people

Natural hazards
Occasional typhoons (May to January) with extensive flooding, especially in the Mekong River delta

People and Society

Population
102,789,598 (July 2021 est.)(revised on 10 November 2021).

Nationality
noun: Vietnamese (singular and plural)
adjective: Vietnamese

Ethnic groups
Kinh (Viet) 85.3%, Tay 1.9%, Thai 1.9%, Muong 1.5%, Khmer 1.4%, Mong 1.4%, Nung 1.1%, other 5.5% (2019 est.)
Note: 54 ethnic groups are recognized by the Vietnamese Government

Languages
Vietnamese (official), English (increasingly favored as a second language), some French, Chinese, and Khmer, mountain area languages (Mon-Khmer and Malayo-Polynesian)

Major-language sample(s):
Dữ kiện thế giới, là nguồn thông tin cơ bản không thể thiếu. (Vietnamese)

Age structure
0-14 years: 22.61% (male 11,733,704/female 10,590,078)
15-24 years: 15.22% (male 7,825,859/female 7,202,716)
25-54 years: 45.7% (male 22,852,429/female 22,262,566)
55-64 years: 9.55% (male 4,412,111/female 5,016,880)
65 years and over: 6.91% (male 2,702,963/female 4,121,969) (2020 est.)

Dependency ratios
Total dependency ratio: 45.1
Youth dependency ratio: 33.6
Elderly dependency ratio: 11.4
Potential support ratio: 8.8 (2020 est.)

Median age
Total: 31.9 years
Male: 30.8 years
Female: 33 years (2020 est.)

Population growth rate
1% (2021 est.)

Birth rate
16.04 births/1,000 population (2021 est.)

Death rate
5.78 deaths/1,000 population (2021 est.)

Net migration rate
-0.23 migrant(s)/1,000 population (2021 est.)

Population distribution
Though it has one of the highest population densities in the world, the population is not evenly dispersed; clustering is heaviest along the South China Sea and Gulf of Tonkin, with the Mekong Delta (in the south) and the Red River Valley (in the north) having the largest concentrations of people

Urbanization
urban population: 38.1% of total population (2021)
rate of urbanization: 2.7% annual rate of change (2020-25 est.)

Major urban areas - population
8.838 million Ho Chi Minh City, 4.875 million HANOI (capital), 1.703 million Can Tho, 1.341 million Hai Phong, 1.157 million Da Nang, 1.046 million Bien Hoa (2021)

Sex ratio
At birth: 1.09 male(s)/female
0-14 years: 1.11 male(s)/female
15-24 years: 1.09 male(s)/female
25-54 years: 1.03 male(s)/female
55-64 years: 0.88 male(s)/female
65 years and over: 0.66 male(s)/female
Total population: 1.01 male(s)/female (2020 est.)

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

Infant mortality rate
Total: 15.09 deaths/1,000 live births
Male: 15.42 deaths/1,000 live births
Female: 14.71 deaths/1,000 live births (2021 est.)

Life expectancy at birth
Total population: 75.25 years
Male: 72.67 years
Female: 78.12 years (2021 est.)

Total fertility rate
2.06 children born/woman (2021 est.)

Contraceptive prevalence rate
76.5% (2018/19)

Drinking water source
Improved: urban: 98.6% of population
Rural: 92.6% of population
Total: 94.7% of population
Unimproved: urban: 1.4% of population
Rural: 7.4% of population
Total: 5.3% of population (2017 est.)

Current Health Expenditure
5.9% (2018)

Physicians density
0.83 physicians/1,000 population (2016)

Hospital bed density
2.6 beds/1,000 population (2014)

Sanitation facility access
Improved: urban: 96.9% of population
Rural: 82.1% of population
Total: 87.3% of population
Unimproved: urban: 3.1% of population
Rural: 17.9% of population
Total: 12.7% of population (2017 est.)

HIV/AIDS - adult prevalence rate
0.3% (2020 est.)

HIV/AIDS - people living with HIV/AIDS
250,000 (2020 est.)

HIV/AIDS - deaths
3,800 (2020 est.)

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

Obesity - adult prevalence rate
2.1% (2016)

Children under the age of 5 years underweight
13.4% (2017)

Education expenditures
4.1% of GDP (2019)

Literacy
Definition: age 15 and over can read and write
Total population: 95.8%
Male: 97%
Female: 94.6% (2019)

Unemployment, youth ages 15-24
Total: 7.6%
Male: 6.6%
Female: 8.9% (2020 est.)

Environment

Environment - current issues
Logging and slash-and-burn agricultural practices contribute to deforestation and soil degradation; water pollution and overfishing threaten marine life populations; groundwater contamination limits potable water supply; air pollution; growing urban industrialization and population migration are rapidly degrading environment in Hanoi and Ho Chi Minh City

Environment - international agreements
Party to: Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Climate Change-Paris Agreement, Comprehensive Nuclear Test Ban, Desertification, Endangered Species, Environmental Modification, Hazardous Wastes, Law of the Sea, Ozone Layer Protection, Ship Pollution, Tropical Timber 2006, Wetlands
Signed, but not ratified: none of the selected agreements

Air pollutants
Particulate matter emissions: 29.66 micrograms per cubic meter (2016 est.)
Carbon dioxide emissions: 192.67 megatons (2016 est.)
Methane emissions: 110.4 megatons (2020 est.)

Climate
Tropical in south; monsoonal in north with hot, rainy season (May to September) and warm, dry season (October to March)

Land use
Agricultural land: 34.8% (2018 est.)
Arable land: 20.6% (2018 est.)
Permanent crops: 12.1% (2018 est.)
Permanent pasture: 2.1% (2018 est.)
Forest: 45% (2018 est.)
Other: 20.2% (2018 est.)

Urbanization
Urban population: 38.1% of total population (2021)
Rate of urbanization: 2.7% annual rate of change (2020-25 est.)

Total population growth rate v. urban population growth rate, 2000-2030

Revenue from forest resources
Forest revenues: 1.49% of GDP (2018 est.)

Revenue from coal
Coal revenues: 0.35% of GDP (2018 est.)

Waste and recycling
Municipal solid waste generated annually: 9,570,300 tons (2011 est.)
Municipal solid waste recycled annually: 2,201,169 tons (2014 est.)
Percent of municipal solid waste recycled: 23% (2014 est.)

Major rivers (by length in km)
Mekong (shared with Burma, Laos, Thailand, Cambodia, and China) - 4,350 km; Pearl (shared with China) - 2,200 km; Red (shared with China) - 1,149 km

Major watersheds (area sq km)
Pacific Ocean drainage: Mekong (805,604 sq km)

Total water withdrawal
Municipal: 1.206 billion cubic meters (2017 est.)
Industrial: 3.074 billion cubic meters (2017 est.)
Agricultural: 77.75 billion cubic meters (2017 est.)

Total renewable water resources
884.12 billion cubic meters (2017 est.)

Country name
Conventional long form: Socialist Republic of Vietnam

Conventional short form: Vietnam
Local long form: Cong Hoa Xa Hoi Chu Nghia Viet Nam
Local short form: Viet Nam

Abbreviation: SRV
Etymology: "Viet nam" translates as "Viet south," where "Viet" is an ethnic self identification dating to a second century B.C. kingdom and "nam" refers to its location in relation to other Viet kingdoms

Government type
Communist state

Capital
Name: Hanoi (Ha Noi)

Geographic coordinates: 21 02 N, 105 51 E

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

Etymology: the city has had many names in its history going back to A.D. 1010 when it first became the capital of imperial Vietnam; in 1831, it received its current name of Ha Noi, meaning "between the rivers," which refers to its geographic location

Administrative divisions
58 provinces (tinh, singular and plural) and 5 municipalities (thanh pho, singular and plural)

Provinces: An Giang, Bac Giang, Bac Kan, Bac Lieu, Bac Ninh, Ba Ria-Vung Tau, Ben Tre, Binh Dinh, Binh Duong, Binh Phuoc, Binh Thuan, Ca Mau, Cao Bang, Dak Lak, Dak Nong, Dien Bien, Dong Nai, Dong Thap, Gia Lai, Ha Giang, Ha Nam, Ha Tinh, Hai Duong, Hau Giang, Hoa Binh, Hung Yen, Khanh Hoa, Kien Giang, Kon Tum, Lai Chau, Lam Dong, Lang Son, Lao Cai, Long An, Nam Dinh, Nghe An, Ninh Binh, Ninh Thuan, Phu Tho, Phu Yen, Quang Binh, Quang Nam, Quang Ngai, Quang Ninh, Quang Tri, Soc Trang, Son La, Tay Ninh, Thai Binh, Thai Nguyen, Thanh Hoa, Thua Thien-Hue, Tien Giang, Tra Vinh, Tuyen Quang, Vinh Long, Vinh Phuc, Yen Bai

Municipalities: Can Tho, Da Nang, Ha Noi (Hanoi), Hai Phong, Ho Chi Minh City (Saigon)

Independence
2 September 1945 (from France)

National holiday
Independence Day (National Day), 2 September (1945)

Constitution
History: several previous; latest adopted 28 November 2013, effective 1 January 2014

Amendments: proposed by the president, by the National Assembly's Standing Committee, or by at least two thirds of the National Assembly membership; a decision to draft an amendment requires approval by at least a two-thirds majority vote of the Assembly membership, followed by the formation of a constitutional drafting committee to write a draft and collect citizens' opinions; passage requires at least two-thirds majority of the Assembly membership; the Assembly can opt to conduct a referendum

Legal system
Civil law system; note - the civil code of 2005 reflects a European-style civil law

International law organization participation
Has not submitted to the International Court of Justice (ICJ) jurisdiction declaration; non-party state to the International Criminal Court (ICC)

Citizenship
Citizenship by birth: no
Citizenship by descent only: at least one parent must be a citizen of Vietnam
Dual citizenship recognized: no
Residency requirement for naturalization: 5 years

Suffrage
18 years of age; universal

Executive branch
Chief of state: President Nguyen Xuan PHUC (since 26 July 2021)

Head of government: Prime Minister Pham Minh CHINH (since 26 July 2021); Deputy Prime Ministers Le Van Thanh (since April 2021 est.), Le Minh KHAI (since 8 April 2021), Vu Duc DAM (since 13 November 2013), Le Van THANH (since 8 April 2021), Pham Binh MINH (since 13 November 2013).

Cabinet: Cabinet proposed by prime minister confirmed by the National Assembly and appointed by the president

Elections/appointments: president indirectly elected by National Assembly from among its members for a single 5-year term; election last held on 26 July 2021 (next to be held in spring 2026); prime minister recommended by the president and confirmed by National Assembly; deputy prime ministers confirmed by the National Assembly and appointed by the president

Legislative branch
Description: unicameral National Assembly or Quoc Hoi (500 seats - number following 2016 election - 494; number of current serving members - 484; members directly elected in multi-seat constituencies by absolute majority vote; members serve 5-year terms)

Elections: last held on 22 May 2016 (next to be held in May 2021)

Election results: percent of vote by party -CPV 95.8%, non-party members 4.2%; seats by party - CPV 474, non-party CPV-approved 20, self-nominated 2; note - 494 candidates elected, 2 CPV candidates-elect were disqualified; composition - men 364, women 122, percent of women 26.6%

Judicial branch

Highest courts: Supreme People's Court (consists of the chief justice and 13 judges)
Judge selection and term of office: chief justice elected by the National Assembly upon the recommendation of the president for a 5-year, renewable term; deputy chief justice appointed by the president from among the judges for a 5-year term; judges appointed by the president and confirmed by the National Assembly for 5-year terms

Subordinate courts: High Courts (administrative, civil, criminal, economic, labor, family, juvenile); provincial courts; district courts; Military Court; note - the National Assembly Standing Committee can establish special tribunals upon the recommendation of the chief justice

Political parties and leaders
Communist Party of Vietnam or CPV [Nguyen Phu TRONG]
Note: other parties proscribed

International organization participation
ADB, APEC, ARF, ASEAN, CICA, CP, EAS, FAO, G-77, IAEA, IBRD, ICAO, ICC (NGOs), ICRM, IDA, IFAD, IFC, IFRCS, ILO, IMF, IMO, IMSO, Interpol, IOC, IOM, IPU, ISO, ITSO, ITU, MIGA, NAM, OIF, OPCW, PCA, UN, UNCTAD, UNESCO, UNIDO, UNWTO, UPU, WCO, WFTU (NGOs), WHO, WIPO, WMO, WTO

Diplomatic representation in the US
Chief of mission: Ambassador Ha Kim NGOC (since 17 September 2018)
Chancery: 1233 20th Street NW, Suite 400, Washington, DC 20036
Telephone: [1] (202) 861-0737
FAX: [1] (202) 861-0917
Email address and website:
vanphong@vietnamembassy.us
http://vietnamembassy-usa.org/

Consulate(s) general: Houston, San Francisco
Consulate(s): New York

Diplomatic representation from the US
Chief of mission: Ambassador (vacant); Chargé d'Affaires Christopher KLEIN (since 16 April 2021)
Embassy: 7 Lang Ha Street, Hanoi
Mailing address: 4550 Hanoi Place, Washington, DC 20521-4550
Telephone: [84] (24) 3850-5000
FAX: [84] (24) 3850-5010
Email address and website:
ACShanoi@state.gov
https://vn.usembassy.gov/
Consulate(s) general: Ho Chi Minh City

Flag description
Red field with a large yellow five-pointed star in the center; red symbolizes revolution and blood, the five-pointed star represents the five elements of the populace - peasants, workers, intellectuals, traders, and soldiers - that unite to build socialism

National symbol(s)
Yellow, five-pointed star on red field; lotus blossom; national colors: red, yellow

National anthem
name: "Tien quan ca" (The Song of the Marching Troops)

Lyrics/music: Nguyen Van CAO

Note: adopted as the national anthem of the Democratic Republic of Vietnam in 1945; it became the national anthem of the unified Socialist Republic of Vietnam in 1976; although it consists of two verses, only the first is used as the official anthem

Economy

Real GDP (purchasing power parity)
$798.21 billion note: data are in 2017 dollars (2020 est.)
$775.67 billion note: data are in 2017 dollars (2019 est.)
$724.81 billion note: data are in 2017 dollars (2018 est.)
Note: data are in 2017 dollars

Real GDP growth rate
6.8% (2017 est.)
7.16% (2017 est.)
6.2% (2016 est.)

Real GDP per capita
$8,200 note: data are in 2017 dollars (2020 est.)
$8,000 note: data are in 2017 dollars (2019 est.)
$7,600 note: data are in 2017 dollars (2018 est.)
Note: data are in 2010 dollars
GDP (official exchange rate)
$259.957 billion (2019 est.)

Inflation rate (consumer prices)
2.7% (2019 est.)
3.5% (2018 est.)
3.5% (2017 est.)

Credit ratings
Fitch rating: BB (2018)
Moody's rating: Ba3 (2018)
Standard & Poors rating: BB (2019)

GDP - composition, by sector of origin
Agriculture: 15.3% (2017 est.)
Industry: 33.3% (2017 est.)
Services: 51.3% (2017 est.)

GDP - composition, by end use
Household consumption: 66.9% (2017 est.)
Government consumption: 6.5% (2017 est.)
Investment in fixed capital: 24.2% (2017 est.)
Investment in inventories: 2.8% (2017 est.)
Exports of goods and services: 100% (2017 est.)
Imports of goods and services: -101% (2017 est.)

Agricultural products
Rice, vegetables, sugar cane, cassava, maize, pork, fruit, bananas, coffee, coconuts

Industries
Food processing, garments, shoes, machine-building; mining, coal, steel; cement, chemical fertilizer, glass, tires, oil, mobile phones

Industrial production growth rate
8% (2017 est.)

Labor force
54.659 million (2019 est.)

Labor force - by occupation
Agriculture: 40.3%
Industry: 25.7%
Services: 34% (2017)

Unemployment rate
3.11% (2018 est.)
2.2% (2017 est.)

Population below poverty line
6.7% (2018 est.)

Gini Index coefficient - distribution of family income
35.7 (2018 est.)
37.6 (2008)

Household income or consumption by percentage share
Lowest 10%: 2.7%
Highest 10%: 26.8% (2014)

Budget
Revenues: 54.59 billion (2017 est.)
Expenditures: 69.37 billion (2017 est.)

Budget surplus (+) or deficit (-)
-6.7% (of GDP) (2017 est.)

Public debt
58.5% of GDP (2017 est.)
59.9% of GDP (2016 est.)

Taxes and other revenues
24.8% (of GDP) (2017 est.)

Fiscal year
Calendar year

Current account balance
$12.478 billion (2019 est.)
$5.769 billion (2018 est.)

Exports
$280.83 billion note: data are in current year dollars (2019 est.)
$258.49 billion note: data are in current year dollars (2018 est.)
$204.169 billion (2017 est.)

Exports - partners
United States 23%, China 14%, Japan 8%, South Korea 7% (2019)

Exports - commodities
Broadcasting equipment, telephones, integrated circuits, footwear, furniture (2019)

Imports
$261.68 billion note: data are in current year dollars (2019 est.)
$245.63 billion note: data are in current year dollars (2018 est.)
$217.684 billion (2017 est.)

Imports - partners
China 35%, South Korea 18%, Japan 6% (2019)

Imports - commodities
Integrated circuits, telephones, refined petroleum, textiles, semiconductors (2019)

Reserves of foreign exchange and gold
$49.5 billion (31 December 2017 est.)
$36.91 billion (31 December 2016 est.)

Debt - external
$96.58 billion (31 December 2017 est.)
$84.34 billion (31 December 2016 est.)

Exchange rates
Dong (VND) per US dollar -
23,129 (2020 est.)
23,171.5 (2019 est.)
23,312.5 (2018 est.)
21,909 (2014 est.)
21,189 (2013 est.)

Energy

Electricity access
Electrification - total population: 100% (2019)

Electricity - production
158.2 billion kWh (2016 est.)

Electricity - consumption
143.2 billion kWh (2016 est.)

Electricity - exports
713 million kWh (2017 est.)

Electricity - imports
2.733 billion kWh (2016 est.)

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

Electricity - from fossil fuels
56% of total installed capacity (2016 est.)

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

Electricity - from hydroelectric plants
43% of total installed capacity (2017 est.)

Electricity - from other renewable sources
1% of total installed capacity (2017 est.)

Crude oil - production
242,000 bbl/day (2018 est.)

Crude oil - exports
324,600 bbl/day (2015 est.)

Crude oil - imports
0 bbl/day (2015 est.)

Crude oil - proved reserves
4.4 billion bbl (1 January 2018 est.)

Refined petroleum products - production
153,800 bbl/day (2015 est.)

Refined petroleum products - consumption
438,000 bbl/day (2016 est.)

Refined petroleum products - exports
25,620 bbl/day (2015 est.)

Refined petroleum products - imports
282,800 bbl/day (2015 est.)

Natural gas - production
8.098 billion cu m (2017 est.)

Natural gas - consumption
8.098 billion cu m (2017 est.)

Natural gas - exports
0 cu m (2017 est.)

Natural gas - imports
0 cu m (2017 est.)

Natural gas - proved reserves
699.4 billion cu m (1 January 2018 est.)

Communications

Telephones - fixed lines
Total subscriptions: 3,658,005
Subscriptions per 100 inhabitants: 3.63 (2019 est.)

Telephones - mobile cellular
Total subscriptions: 136,230,406
Subscriptions per 100 inhabitants: 135.32 (2019 est.)

Telecommunication systems
General assessment: Though communist, government plans to partially privatize the state's holdings in telecom companies; competition is thriving in the telecom market place and driving e-commerce; mobile dominates over fixed-line; FttH market is growing; government is the driving force for growth with aims of commercializing 5G services with test licenses; Ho Chi Minh City to become the first smart city in Vietnam with cloud computing infrastructure, big data, data centers, and security-monitoring centers (2020)

Domestic: all provincial exchanges are digitalized and connected to Hanoi, Da Nang, and Ho Chi Minh City by fiber-optic cable or microwave radio relay networks; main lines have been increased, and the use of mobile telephones is growing rapidly; fixed-line 4 per 100 and mobile-cellular 141 per 100 (2019)

International: country code - 84; landing points for the SeaMeWe-3, APG, SJC2, AAE-1, AAG and the TGN-IA submarine cable system providing connectivity to Europe, Africa, the Middle East, Asia, Southeast Asia, Australia, and the US; satellite earth stations - 2 Intersputnik (Indian Ocean region) (2020)

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
Government controls all broadcast media exercising oversight through the Ministry of Information and Communication (MIC); government-controlled national TV provider, Vietnam Television (VTV), operates a network of several channels with regional broadcasting centers; programming is relayed nationwide via a network of provincial and municipal TV stations; law limits access to satellite TV but many households are able to access foreign programming via home satellite equipment; government-controlled Voice of Vietnam, the national radio broadcaster, broadcasts on several channels and is repeated on AM, FM, and shortwave stations throughout Vietnam (2018)

Internet country code
.vn

Internet users
Total: 68,267,875
Percent of population: 70.35% (July 2018 est.)

Broadband - fixed subscriptions
Total: 14,802,380

Subscriptions per 100 inhabitants: 14.7 (2019 est.)

Transportation
National air transport system
Number of registered air carriers: 5 (2020)
Inventory of registered aircraft operated by air carriers: 224
Annual passenger traffic on registered air carriers: 47,049,671 (2018)
Annual freight traffic on registered air carriers: 481.37 million mt-km (2018)

Civil aircraft registration country code prefix
VN

Airports
Total: 45 (2013)

Airports - with paved runways
Total: 38
Over 3,047 m: 10
2,438 to 3,047 m: 6
1,524 to 2,437 m: 13
914 to 1,523 m: 9 (2013)

Airports - with unpaved runways
Total: 7
1,524 to 2,437 m: 1
914 to 1,523 m: 3
Under 914 m: 3 (2013)

Heliports
1 (2013)

Pipelines
72 km condensate, 398 km condensate/gas, 955 km gas, 128 km oil, 33 km oil/gas/water, 206 km refined products, 13 km water (2013)

Railways
Total: 2,600 km (2014)
Standard gauge: 178 km 1.435-m gauge; 253 km mixed gauge (2014)
Narrow gauge: 2,169 km 1.000-m gauge (2014)

Roadways
Total: 195,468 km (2013)
Paved: 148,338 km (2013)
Unpaved: 47,130 km (2013)

Waterways
47,130 km (30,831 km weight under 50 tons) (2011)

Merchant marine
Total: 1,909
By type: bulk carrier 102, container ship 40, general cargo 1,196, oil tanker 121, other 450 (2020)

Ports and terminals
Major seaport(s): Cam Pha Port, Da Nang, Haiphong, Phu My, Quy Nhon
Container port(s) (TEUs): Saigon (7,220,377), Cai Mep (3,742,384), Haiphong (5,133,150) (2019)
River port(s): Ho Chi Minh (Mekong)

Military and Security

Military and security forces
People's Army of Vietnam (PAVN; aka Vietnam People's Army, VPA): Ground Forces, Navy (includes naval infantry), Air Force and Air Defense, Border Defense Force, and Vietnam Coast Guard; Vietnam People's Public Security; Vietnam Civil Defense Force (2021)

Military expenditures
2.3% of GDP (2020 est.)
2.3% of GDP (2019 est.)
2.4% of GDP (2018 est.)
2.3% of GDP (2017 est.)
2.5% of GDP (2016 est.)

Military and security service personnel strengths
Information is limited and estimates of the size of the People's Army of Vietnam (PAVN) vary; approximately 470,000 active duty troops (400,000 ground; 40,000 naval; 30,000 air); est. 40,000 Border Defense Force and Coast Guard (2020)

Military equipment inventories and acquisitions
the PAVN is armed largely with weapons and equipment from Russia and the former Soviet Union; Russia remains the main supplier of newer PAVN military equipment, although in recent years Vietnam has begun diversifying its procurement with purchases from other countries including Belarus, India, Israel, South Korea, and Ukraine (2020)

Maritime threats
The International Maritime Bureau reports the territorial and offshore waters in the South China Sea as high risk for piracy and armed robbery against ships; numerous commercial vessels have been attacked and hijacked both at anchor and while underway; hijacked vessels are often disguised and cargo diverted to ports in East Asia; the number of reported incidents increased from two in 2019 to four in 2020, primarily near the port of Vung Tau

Military service age and obligation
18-27 years of age for compulsory and voluntary military service (females eligible for conscription, but in practice only males are drafted); conscription typically takes place twice annually and service obligation is 2 years (Army, Air Defense) and 3 years (Navy and Air Force) (2019)

Military - note
The PAVN is the military arm of the ruling CPV and responsible to the CMC, the highest party organ on military policy; the CMC is led by the CPV General Secretary. As of 2021, Vietnam maintained a security policy of non-alignment, but noted in 2019 that it would consider developing appropriate defense and security

relations with other countries depending on circumstances

Transnational Issues

Disputes - international
Southeast Asian states have enhanced border surveillance to check the spread of Asian swine fever; Cambodia and Laos protest Vietnamese squatters and armed encroachments along border; Cambodia accuses Vietnam of a wide variety of illicit cross-border activities; progress on a joint development area with Cambodia is hampered by an unresolved dispute over sovereignty of offshore islands; an estimated 300,000 Vietnamese refugees reside in China; establishment of a maritime boundary with Cambodia is hampered by unresolved dispute over the sovereignty of offshore islands; the decade-long demarcation of the China-Vietnam land boundary was completed in 2009; China occupies the Paracel Islands also claimed by Vietnam and Taiwan; Brunei claims a maritime boundary extending beyond as far as a median with Vietnam, thus asserting an implicit claim to Lousia Reef; the 2002 "Declaration on the Conduct of Parties in the South China Sea" eased tensions but differences between the parties negotiating the Code of Conduct continue; Vietnam continues to expand construction of facilities in the Spratly Islands; in March 2005, the national oil companies of China, the Philippines, and Vietnam signed a joint accord to conduct marine seismic activities in the Spratly Islands; Economic Exclusion Zone negotiations with Indonesia are ongoing, and the two countries in Fall 2011 agreed to work together to reduce illegal fishing along their maritime boundary; in May 2018, Russia's RosneftVietnam unit started drilling at a block southeast of Vietnam which is within the area outlined by China's nine-dash line and Beijing issued a warning

Refugees and internally displaced persons
Stateless persons: 32,890 (2020); note - Vietnam's stateless ethnic Chinese Cambodian population dates to the 1970s when thousands of Cambodians fled to Vietnam to escape the Khmer Rouge and were no longer recognized as Cambodian citizens; Vietnamese women who gave up their citizenship to marry foreign men have found themselves stateless after divorcing and returning home to Vietnam; the government addressed this problem in 2009, and Vietnamese women are beginning to reclaim their citizenship

Trafficking in persons
Current situation: human traffickers exploit domestic and foreign victims in Vietnam, and traffickers exploit Vietnamese abroad; Vietnamese men and women who migrate abroad for work may be subject to exploitation and illegally high fees from recruiters trapping them in debt bondage; traffickers subject victims to forced labor in construction, fishing, agriculture, mining, maritime industries, logging, and manufacturing, primarily in Taiwan, Malaysia, Republic of Korea, Laos, Japan, and to a lesser extent, some parts of Europe and the UK; traffickers mislead Vietnamese women and children with fraudulent employment opportunities and sex traffick them to brothels on the borders of China, Cambodia, Laos, and elsewhere in Asia; traffickers use the Internet, gaming sites, and particularly social media to lure victims; domestic traffickers are sometimes family members or small-scale networks exploiting Vietnamese men, women, and children - including street children and children with disabilities - in forced labor as street beggars or in brick kilns and mines; child sex tourists from elsewhere in Asia and other countries exploit children; prisoners reportedly are forced to work in agriculture, manufacturing, and hazardous industries, such as cashew processing

Tier rating: Tier 2 Watch List — Vietnam does not fully meet the minimum standards for the elimination of trafficking but is making significant efforts to do so; efforts include providing trafficking victims the right to legal representation in judicial proceedings, increasing the amount of shelter time for victims by one

month, providing financial support, continuing large-scale awareness campaigns in vulnerable communities and to workers going overseas, and training law enforcement; however, fewer victims were identified or assisted and procedures remained slow and ineffective; provincial officials unfamiliar with anti-trafficking law impede anti-trafficking efforts; labor recruitment firms extorted illegal high fees from workers looking for overseas employment putting them at risk for forced labor; no investigations, prosecutions, or convictions of officials complicit in trafficking offenses were made (2020)

Illicit drugs
Transshipment point for transnational criminal organizations (TCOs) trafficking traffic heroin, crystal methamphetamine, and ketamine throughout East Asia and the Pacific; approximately 90% of the illicit drugs in the country originate in Laos, Burma, and Thailand

Acronyms and Abbreviations

°C	Celsius
°F	Fahrenheit
ADB	Asian Development Bank
ADINET	ASEAN Disaster Information Network
AAMER	ASEAN Agreement on Disaster Management and Emergency Response
AAR	After Action Review
AHA Centre	ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management
APAN	All Partners Access Network
AR5	Fifth Assessment Report
ASEAN	Association of Southeast Asian Nations
AFTA	ASEAN Free Trade Area
BHA	Bureau for Humanitarian Assistance
CBDRM	Community-Based Disaster Risk Management
CCNDPC	Central Committee for Natural Disaster Prevention and Control
CCNDPC/SR	Commanding Committee for Natural Disaster Prevention and Control, Search and Rescue
CDC	U.S. Centers for Disease Control and Prevention
CE	Common Era
CFE-DM	Center for Excellence in Disaster Management and Humanitarian Assistance
CKEZ	Central Key Economic Zone
CBRNE	Chemical, Biological, Radiological, Nuclear and Explosives
CERFP	CBRNE Enhanced Response Force Packages
COVID-19	Coronavirus Disease 2019
CPV	Communist Party of Vietnam
CRS	Catholic Relief Service
Cyber Endeavor	Cyber Security Training with Cyber Range
DARD	Department of Agriculture and Rural Development
DKI-APCSS	Daniel K. Inouye Asia-Pacific Center for Security Studies
DRR	Disaster Risk Reduction
DRRP	Disaster Risk Reduction Partnership
DM	Disaster Management
DMG	Disaster Management Group
DMPTC	Disaster Management Policy and Technology Center
DMWG	Disaster Management Working Group
DOD	Department of Defense
DWT	Dead Weight Tonnage
EITWC	Vietnam Earthquake Information and Tsunami Warning Center
EU	European Union
EWS	Early Warning Systems

FAO	Food and Agriculture Organization
FCG	Foreign Clearance Guide
FTA	Free Trade Agreements
FTS	Financial Tracking System
FTX	Field Training Exercise
GBViE	Gender-Based Violence in Emergency
GDACS	Global Disaster Alert and Coordination System
GDP	Gross Domestic Product
GHG	Greenhouse Gas Emission
GRI	Global Risk index
GT	Gross Tonnage
GVN	Government of Vietnam
H5N1	Highly Pathogenic Asian Avian Influenza AH5N1
H5N6	Highly Pathogenic Asian Avian Influenza A H5N6
ha	Hectares
HADR	Humanitarian Assistance and Disaster Response
HCT	Humanitarian Country Teams
HDI	Human Development Index
HDX	Humanitarian Data Exchange
HF	High Frequency
HFA	Hyogo Framework of Action 2005-2015: Building the Resilience of Nations and Communities to Disasters
ICJ	International Court of Justice
ICC	International Criminal Court
ICRC	International Committee of the Red Cross
IFRC	International Federation of Red Cross and Red Crescent Societies
INGO	International non-government organization
IOM	International Organization for Migration
IPCC	John Hopkins University
JHU	Johns Hopkins University Applied Physics Lab
JHU APL	JHU Center for Systems Science and Engineering
JHU CSSE	Japanese International Cooperation Agency
JICA	Kilometer
km	Intergovernmental Panel on Climate Change
LNDPC	Law on Natural Disaster Prevention and Control
MARD	Ministry of Agriculture and Rural Development
MNCC	Multinational coordination center
MCIP	Multinational Communications Interoperability Program
mi	Miles
mm	Millimeters

MMR	Measles-Mumps-Rubella
MOD	Ministry of Defense
MONRE	Ministry of Natural Resource and Environment
mph	Miles per hour
MPS	Ministry of Public Security
NCD	Non-communicable diseases
NCHMF	National Center for Hydro-meteorological Forecasting
NDC	National Determined Contribution
NGO	Non-government organizations
NKEZ	North Key Economic Zone
NSCNDPC	National Steering Committee for National Disaster Prevention and Control
ODA	Official Development Assistance
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
OSOCC	On-Site Operations Coordination Centre
PACAF	Pacific Air Forces
PAC ANGEL	U.S. Pacific Angel
PACFLEET	U.S. Pacific Fleet
PAMS	Pacific Armies Management Seminar
PAVN	People's Army of Vietnam
PSCM	Pacific Senior Communicator Meeting
PDC	Pacific Disaster Center
PTWS	Pacific Tsunami Warning and Mitigation System
RHCC	Changi Regional HADR Coordination Centre
RIMPAC	Rim of the Pacific
ROAP	Regional Office for Asia and the Pacific
SAR	Search and Rescue
SARs	Severe Cute Respiratory Syndrome
SATCOM	Satellite communication
SDG	Sustainable Development Goals
SGO	Surgeon General Office
SKEZ	Southern Key Economic Zone
SitRep	Situation Report
sq. km	Square Kilometers
SOPs	Standard Operating Procedures
SME	Subject matter experts
SMS	Short Message Service
Spectrum Endeavor	Spectrum Management during HADR
TB	Tuberculosis
TEU	Twenty-foot equivalent units
TTX	Table Top Exercise

UISS	Unclassified Information Sharing Service
UNDRR	UN Office for Disaster Risk Reduction
UNFPA	United Nations Populations Fund
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
USNS	U.S. Naval Ship
USAID	United States Agency for International Development
USARPAC	U.S. Army Pacific
USG	United States Government
VDMA	Vietnam Disaster Management Authority
VFF	Vietnam Fatherland Front
VHF	Very High Frequency
VHMS	Vietnam Hydro-Meteorological Service
VINASARCOM	National Committee for Search and Rescue of Vietnam
VND	Vietnamese Dong
VNRC	Vietnam Red Cross Society
VPA	Vietnam People's Army
VSAT	Very Small Aperture Terminals
WASH	Water and Sanitation and Hygiene
WHO	World Health Organization
WSC	Water Service Companies

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